

SIRIUS · SENTRON · SIVACON

Catalog LV 1 · 2010



Low-Voltage Controls and Distribution

Answers for industry.

SIEMENS

Related catalogs

Low-Voltage Controls and Distribution
SIRIUS · SENTRON · SIVACON
Order No.:
E86060-K1002-A101-A9-7600

LV 1



Low-Voltage Controls and Distribution
Controls and Components
for Applications according to UL
Order No.:
E86060-K1816-A101-A2-7600

LV 16



SIMATIC NET
Industrial Communication
Order No.:
E86060-K6710-A101-B6-7600

IK PI



SIVACON System Cubicles and Cubicle Air-Conditioning
Order No.:
E86060-K1920-A101-A3-7600

LV 50



SIDAC Reactors and Filters
Order No.:
E86060-K2803-A101-A5-7600

LV 60



SIVACON 8PS CD-L, BD01, BD2 Busbar Trunking Systems up to 1250 A
Order No.:
E86060-K1870-A101-A4-7600

LV 70



The Offline Mall
Order No.:
E86060-D4001-A510-C8-7600 (DVD)

CA 01



The Online Mall
Internet:
www.siemens.com/automation/mall



Catalog-PDF
Internet:
www.siemens.com/industrial-controls/catalogs



Contents

Industrial communication • Controlgear: Contactors and contactor assemblies, soft starters and solid-state switching devices • Protection equipment • Load feeders and motor starters • Monitoring and control devices • Detecting devices • Commanding and signaling devices • Transformers • Power supplies • Planning and configuration with SIRIUS • Power Management System • SIVACON Power, distribution boards, busway and cubicle systems • SENTRON switching and protection devices for power distribution: Air circuit breakers, molded case circuit breakers, switch disconnectors, busbar systems • Software for power distribution • BETA low-voltage circuit protection

SIRIUS 3RV17 and 3RV18 circuit breakers according to UL 489/CSA C22.2 No. 5-02 • SIVACON Components for Feeder Circuit • SENTRON 3WL5 air circuit breakers/non-automatic air circuit breakers according to UL 489/IEC 60947-2 • SENTRON 3VL Molded Case Circuit Breakers according to UL 489/IEC 60947-2 • ALPHA Devices according to UL Standard • BETA Devices according to UL standard

PROFINET/Industrial Ethernet • Industrial Wireless Communication • PROFIBUS • SIMATIC ET 200 distributed I/Os • AS-Interface • Telecontrol • Routers • ECOFAST system

System cubicles • Cubicle modifications • Cubicle expansion components • Accessories • Special cubicles • Cubicle solutions in applications • Cubicle air-conditioning • Special colors

Commutating reactors for converters • Mains reactors for frequency converters • Iron-core output reactors • Ferrite output reactors • Iron-core smoothing reactors • Smoothing air-core reactors • Filter reactors • Application-specific reactors • Radio interference suppression filters • dv/dt filters • Sinewave filters

Busbar trunking systems, overview • CD-L system (25 A to 40 A) • BD01 system (40 A to 160 A) • BD2 system (160 A to 1250 A)

All products of automation, drives and installation technology, including those in the catalogs listed above.

All products of automation, drives and installation technology, including those in the catalogs listed above.

All catalogs for low-voltage controls and distribution can be downloaded as PDF files.

Registered trademarks

All product designations may be registered trademarks or product names of Siemens AG or other supplying companies. Third parties using these trademarks or product names for their own purposes may infringe upon the rights of the trademark owners.

Further information about low-voltage controls is available on the Internet at:
www.siemens.com/industrial-controls

Technical Assistance



Expert technical assistance for industrial controls.

Tel.: +49 (9 11) 8 95-59 00

Fax: +49 (9 11) 8 95-59 07

E-Mail: technical-assistance@siemens.com

Low-Voltage Controls and Distribution

SIRIUS · SENTRON · SIVACON

Catalog LV 1 · 2010



The products and systems listed in this catalog are manufactured/distributed using a certified quality management system which complies with EN ISO 9001 (for the Certificate Register No. see the Appendix). The certificate is recognized in all IQNet countries.

Supersedes:

Catalog LV 1 · 2009

Catalog News LV 1 N up to 09/2009

Refer to the Industry Mall for current updates of this catalog

www.siemens.com/automation/mall

The products in this catalog can also be found in the electronic catalog CA 01.

Order No.: E86060-D4001-A510-C8-7600

Contact your local Siemens sales office for further information

© Siemens AG 2010



The CD-ROM attached contains the following catalogs in electronic form as structured PDF files:

- LV 1 Low-Voltage Controls and Distribution – SIRIUS · SENTRON · SIVACON
- LV 1 N SIRIUS Innovations¹⁾ – Industrial Controls
- LV 16 Controls and Components for Applications according to UL
- LV 50 SIVACON Cubicle Systems and Cubicle Air-Conditioning
- LV 60 SIDAC Reactors and Filters
- LV 70 SIVACON 8PS Busbar Trunking Systems
- ET A1 ALPHA Distribution Boards and Terminal Blocks
- ET B1 BETA Low-Voltage Circuit Protection
- D81.1 Low-Voltage Motors, IEC Squirrel-Cage Motors
- IK PI Industrial Communication
- SI 10 Safety Integrated – Safety Technology for Factory Automation

1)

- French, Italian, Spanish downloadable as PDF at http://www.automation.siemens.com/infocenter/order_form.aspx?lang=en&msg=false&nodekey=key_517764

- French, Spanish in printed form can be ordered from LZ FÜRTH-BISLOHE

- Italian in printed form, contact the regional company in Milan, Italy.



■ **Compact Feeders with I/O-Link**

■ Order No. 3RA64, 3RA65

■ Page 6/38



■ **M200D Motor Starters**

■ Order No. 3RK13 15

■ Page 6/119



■ **MCU Motor Starters**

■ Order No. 3RK43

■ Page 6/143



■ **Timing Relays**

■ Order No. 7PV15

■ Page 7/40



■ **Position Switches 1NO+2NC with Make-Before-Break / 2NO+1NC**

■ Order No. 3SE51 ...-0M/-0P
3SE52 ...-0M/-0P

■ Page (ff.) 8/20



■ **Position Switches Ambient Temperature up to -40 °C**

■ Order No. 3SE51 ...-1AJ0
3SE52...-1AJ0

■ Page 8/28 and 8/42



■ **PAC3100, PAC4200 Multifunction Measuring Instruments**

■ Order No. 7KM3 133
7KM4 212

■ Page 13/3



■ **SIKUS 1600 Power Distribution Boards**

■ Order No. 8PQ

■ Page 14/10



■ **Main and EMERGENCY-STOP Switches up to 250 A**

■ Order No. 3LD23, 3LD24

■ Page 17/3



■ **In-Line Switch Disconnectors with Fuses up to 630 A**

■ Order No. 3NJ62

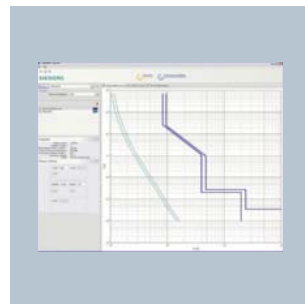
■ Page 17/58



■ **Fuse Switch Disconnectors up to 630 A**

■ Order No. 3NP1

■ Page 17/79



■ **SIMARIS curves Tool for comparing tripping characteristics**

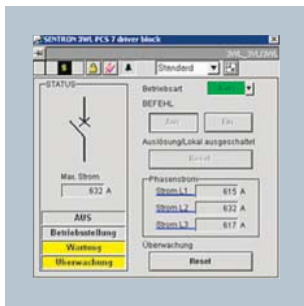
■ Page 18/5



■ **SIMATIC PCS 7 powerrate V 3.0, SIMATIC WinCC powerrate V 3.0**

■ Order No. 3ZS2 785-1CC30,
3ZS2 795-1CC30

■ Pages 18/6, 18/8



■ **3WL/3VL Function Block Library for SIMATIC PCS 7**

■ Order No. 3ZS2 782-1CC10

■ Page 18/11



■ **Miniature Circuit Breakers according to UL 489 and IEC**

■ Order No. 5SJ4 ...-HG42

■ Page 19/38



■ **SIQUENCE Residual Current Protective Devices, Type B / B+**

■ Order No. 5SM3 ...-KK14

■ Page 19/50

1

Answers for Industry.

Low-voltage controls and distribution.
The basis for advanced solutions.

11

Power Supplies

4AV Non-Stabilized Power Supplies
6EP Stabilized Power Supplies
- SITOP
- LOGO!Power

2

Industrial communication

AS-Interface **New**
IO-Link

12

Planning, Configuration and Visualizing for SIRIUS

Soft Starter ES
Motor Starter ES
SIMOCODE ES
Modular Safety System ES
ECOFAS ES

3

**Controls –
Contactors and Contactor Assemblies**

3RT, 3TB, 3TF Contactors for Switching Motors
3RA13, 3RA14, 3TD, 3TE Contactor Assemblies
3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications
3RH, 3TH Contactor Relays · 3RT Coupling Relays
3TX7, 3RS18 Coupling Relays · Coupling Relays with LZS, LZX
Plug-In Relays · 3TG10 Power Relays/Miniature Contactors

13

Power Management System

System Overview
SENTRON Multifunction Measuring Instruments **New**

4

**Controls -
Soft Starters and Solid-State Switching Devices**

3RW Soft Starters
Solid-State Switching Devices for Switching Resistive Loads
- 3RF20, 3RF21, 3RF22 Solid-State Relays
- 3RF23, 3RF24 Solid-State Contactors · 3RF29 Function Modules
Solid-State Switching Devices for Switching Motors
- 3RF24 Solid-State Contactors and Solid-State Reversing Contactors

14

**SIVACON Power Distribution Boards,
Busway Systems and Cubicle Systems**

S8, 8PV and 8PT Power Distribution Boards and Motor Control Centers
SIKUS 1600 Power Distribution Boards **New**
8PS Busbar Trunking Systems · 8MC, 8MF Cubicle Systems
8MR, 8ME Cubicle Air-Conditioning
ALPHA Distribution Boards · ALPHA FIX Terminal Blocks
ALPHA 8HP Molded-Plastic Distribution System

5

Protection Equipment

3RV Motor Starter Protectors up to 100 A
3RV Molded Case Motor Starter Protectors up to 800 A
3RU1 Thermal Overload Relays
3RB2 Solid-State Overload Relays

15

**SENTRON Switching and Protection Devices
for Power Distribution**

3WL Air Circuit Breakers

6

Load Feeders and Motor Starters

3RA1 Load Feeders
3RA6 Compact Feeders **New**
ET 200S Motor Starters and Safety Motor Starters
ET 200pro Motor Starters · **M200D Motor Starters** **New**
Compact Starters for AS-Interface, 400 V AC
ECOFAS Motor Starters · **MCU Motor Starters** **New**
3RE Encapsulated Starters Motor Starters for AS-Interface, 24 V DC
Energy Communication Field Installation System

16

**SENTRON Switching and Protection Devices
for Power Distribution**

3VL, 3VF2 Molded Case Circuit Breakers

7

Monitoring and Control Devices

SIMOCODE 3UF Motor Management and Control Devices
LOGO! Logic Modules · 3RP, 3RT19, **7PV Timing Relays** **New**
3UG Monitoring Relays for Electrical and Additional Measurements
3RS10, 3RS11 Temperature Monitoring Relays
3RN1 Thermistor Motor Protection
3TK28 Safety Relays
3RK3 Modular Safety System
3RS17 Interface Converters

17

**SENTRON Switching and Protection Devices
for Power Distribution**

3LD, 3KA, 3KE Switch Disconnectors **New**
3KL, 3KM, 3NJ6 Switch Disconnectors with Fuses **New**
3NP, 3NJ4, 3NJ5 Fuse Switch Disconnectors **New**
NH Fuse Systems
SENTRON 8US Busbar Systems

8

Detecting Devices

3SE2, 3SE3, **3SE5, 3SF1 Position Switches** **New**
3SE2, 3SE5, 3SF1 Hinge Switches
3SE6 Magnetically Operated Switches

18

Software for Power Distribution

Planning the Power Distribution System with **SIMARIS** **New**
Configuring, Visualizing and Controlling with **SIMATIC** **New**
Configuring, Visualizing and Controlling with **SENTRON**

9

Commanding and Signaling Devices

3SB2, 3SB3, 3SF5 Pushbuttons and Indicator Lights
3SE7, 3SF2 Cable-Operated Switches
3SE2, 3SE3 Foot Switches
8WD4 Signaling Columns
8WD5 Integrated Signal Lamps

19

BETA Low-Voltage Circuit Protection

Miniature Circuit Breakers (MCBs) **New**
Residual current protective devices **New**
Low-Voltage Fuse Systems
SITOR Semiconductor Fuses
SR 60 Busbar Systems
Overvoltage Protection Devices
Socket Outlets
Measuring Devices

10

Transformers

Single-Phase Transformers
Three-Phase Transformers

20

Appendix

Training · Ordering notes · Further documentation
Standards and approvals · Quality management · Siemens
contacts · Online services
Customer support · Software licenses · Subject index · Order
number index including export markings ·
Terms and conditions of sale and delivery, export regulations

PG 041, 101, 121, 230, 250, 540, ...

PG 041, 101, 121

PG 041, 101

PG 041, 044, 101, 102, 143

PG 041, 101, 102, 103, 121, 131, ...

PG 101, 102, 121, 131, 192, 200, ...

PG 102, 121, 574

PG 101, 102, 121

PG 104, 114

PG 121, 131, 200

PG 133

PG 016, 103

PG 103, 133

PG 101, 102, 103, 113, 131, 250

PG 013, 046, 101, 102, 103, 113

PG 133

PG 001, 002, 003, 004, 005, 007, ...

Explanations

General information

Things you should know about Catalog LV 1 · 2010

Catalog LV 1 · 2010 contains all selection and order-relevant data.

Technical information is available at www.siemens.com/industrial-controls/support

under Product List:
- Technical specifications

under Entry List:
- Updates

- Downloads
- FAQ
- Manuals/operating instructions
- Characteristic curves
- Certificates

and at www.siemens.com/industrial-controls/configurators

- Configurators

Delivery time class (DT)

- ▶ Preferred type
- A 2 working days
- B 1 week
- C 3 weeks
- D 6 weeks
- X On request

Preferred types are available immediately from stock, i.e. are dispatched within 24 hours.

Normal quantities of the products are usually delivered within the specified time following receipt of your order at our branch.

In exceptional cases, the actual delivery time may differ from that specified.

The delivery times apply up to the ramp at Siemens AG (products ready for dispatch). The transport times depend on the destination and type of shipping. The standard transport time for Germany is 1 day.

The delivery time classes specified here represent the state of 10/2009. They are permanently optimized. Up-to-date information can be found at www.siemens.com/automation/mall.

Note:

For delivery time classes for transformers and power supply units see pages 10/4 and 11/3.

Price units (PU)

The price unit defines the number of units, sets or meters to which the specified price and weight apply.

Packaging sizes (PS)

The packaging size defines the number, e. g. of units, sets or meters, for outer packaging.

Only the quantity defined by the packaging size or a multiple thereof can be ordered!

For multi-unit packing and reusable packaging see [Appendix](#).

Price groups (PG)

Each product is assigned to a price group.

Weight

The defined weight is the net weight in kg and refers to the price unit (PU).



















Dimensions

All dimensions in mm.

Explanations

Symbols

In the catalog LV 1 · 2010 you will find the symbols listed alongside. These symbols are used in conjunction with an orange background to mark special selection criteria (e. g. connections, types of coordination, etc.).

Terminals	Screw terminals	
	Cage Clamp terminals/spring-type terminals	
	Combicon connection	
	Flat connectors	
	Solder pin connections	
	Ring terminal lug connections	
	Plug-in terminals	
	Types of coordination	Type of coordination "1"
Type of coordination "2"		
Distinguishing between units	Complete units	
	Modular system	
Switching capacity of 3WL circuit breakers	ECO switching capacity (I_{cu} up to 55/66 kA at 500 V)	
	Standard switching capacity (I_{cu} up to 66/80 kA at 500 V)	
	High switching capacity (I_{cu} up to 100 kA at 500 V)	
	Very high switching capacity (I_{cu} up to 150 kA (3-pole)/130 kA (4-pole) at 500 V)	
	Switching capacity for DC current	
Switching capacity of 3VL circuit breakers	Standard switching capacity (I_{cu} up to 55 kA at 415 V)	
	High switching capacity (I_{cu} up to 70 kA at 415 V)	
	Very high switching capacity (I_{cu} up to 100 kA at 415 V)	

Explanations

Low-voltage controls and distribution. The secrets of UL. You have our support.

Our low-voltage controls and distribution products are designed not only for the IEC market. Numerous devices have both UL and IEC approval. This makes it easier for manufacturers of switchgear and controlgear assemblies to enter the North American market.

Exports to North America require special approvals which differ from the IEC directives. On the IEC market, directives define only the essential functions of a system. The technical details are not listed. By contrast, directives on the American market go into the details of how to carry out the installation work etc.

For OEMs and machine manufacturers it is important to know the main differences between the two technical worlds and to work together respectively with manufacturers and suppliers who have the right products and know-how.

Siemens is a strong partner in this case. Our know-how extends from the production of UL-approved devices to the wiring of control cabinets according to UL directives.

These UL requirements are already taken into account when designing our low-voltage control devices. They are developed not only for the IEC market but also for the UL market.

We have been working with UL (Underwriters Laboratories Inc.®), the leading technical certification company in the USA, since 1969. We are also glad to share our knowledge with you in the form of training courses.

With our UL-certified products for low-voltage controls and distribution and low-voltage circuit protection you are on the safe side and can build control cabinets according to UL standard easily and quickly.

UL-certified products to be found in this catalog LV1 include for example:

- SIRIUS controls, from motor-protective circuit breakers and motor starter protectors to contactors and overload relays
- SIRIUS transformers and power supplies
- SENTRON circuit breakers and switch disconnectors
- SIRIUS detecting devices and commanding devices
- ALPHA FIX terminal blocks
- SENTRON busbar systems
- Miniature circuit breakers and fuses from the BETA low-voltage circuit protection range



In addition to looking in the LV1 you should also check out our catalog LV16 "Controls and Components for Applications According to UL" for UL-specific products:

- SIRIUS 3RV17 and 3RV18 circuit breakers
- Components for SENTRON 8US distribution systems
- SENTRON 3WL5 and 3VL circuit breakers
- ALPHA distribution boards and terminal blocks
- BETA low-voltage circuit protection

Take a look at our range of products and convince yourself. Or simply click on

www.siemens.com/lowvoltage/ul-europa

Here you will find information on for example UL standards, UL classification and a number of technical particularities of UL.

Under "UL Overview/Standards and Approvals" we provide a summary of the available products and product groups. A table lists the UL standards to which the products conform and contains links to the corresponding UL reports.

Under "Portfolio" we round off with a list of the most relevant products for low-voltage switching and protection technology (including links to the respective Internet product pages).

Simply click on the navigation bar and go on a UL discovery tour!

Explanations

ATEX explosion protection

In many industries the production, processing, transport and storage of combustible substances are accompanied by escaping gases, vapor or spray which find their way into the environment. Other processes result in combustible dust. Together with the oxygen in the air, the result can be an explosive atmosphere which will explode if ignited.

Serious injury to persons and damage to property can result particularly in the chemical and petrochemical industry, mineral oil and natural gas production, mining, mills (e. g. grain, solid materials) and many other sectors.

To guarantee the maximum possible safety in these areas, the legislators of most countries have drawn up requirements in the form of laws, regulations and standards. In the course of globalization, great progress has been made with regard to uniform directives for explosion protection.

With Directive 94/9/EC, the European Union laid the foundations for complete harmonization by requiring that all new devices as from 1st July 2003 have to be approved in accordance with this directive.

In this catalog, special attention is drawn to devices which comply with the ATEX Directive. However, it does not replace intensive study of the relevant fundamentals and directives when planning and installing electrical systems.



Helpful Internet addresses

Industrial Controls	www.siemens.com/industrial-controls
Newsletter	www.siemens.com/industrial-controls/newsletter
Catalogs and information material (InfoCenter)	www.siemens.com/industrial-controls/catalogs
Demo software (InfoCenter)	www.siemens.com/industrial-controls/demosoftware
InfoCenter "General"	www.siemens.com/industrial-controls/infomaterial
Manuals (Service&Support)	www.siemens.com/industrial-controls/manuals
Product images/graphics	www.siemens.com/industrial-controls/bilddb
Industry Mall	www.siemens.com/industrial-controls/mall
Offline Mall	www.siemens.com/automation/ca01
Online support	www.siemens.com/industrial-controls/support
Technical assistance	www.siemens.com/industrial-controls/technical-assistance
Certificates	www.siemens.com/industrial-controls/approvals
ATEX	www.siemens.com/industrial-controls/atex
Training	www.siemens.com/industrial-controls/training

Notes



Introduction

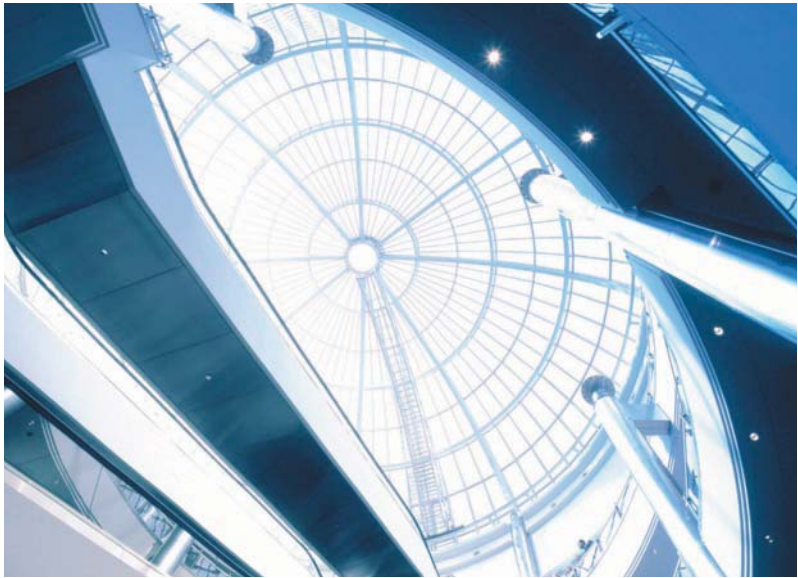
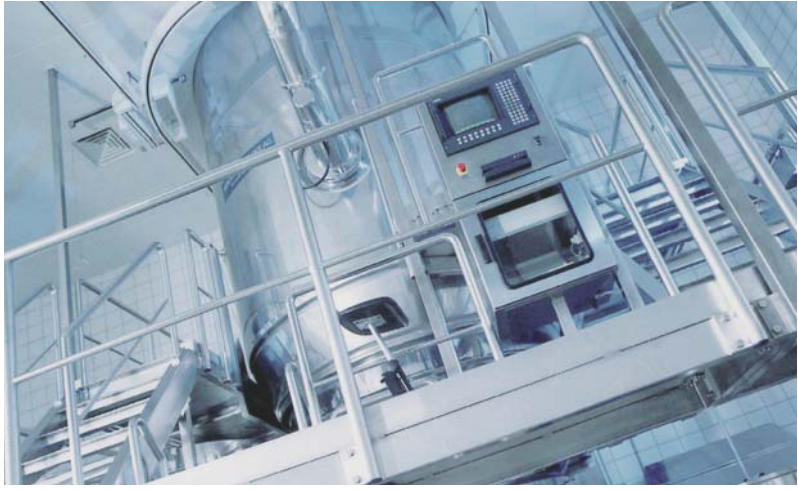


1/2

Answers for Industry.

1/4

**Low-voltage controls and distribution.
The basis for progressive solutions.**



Answers for Industry.

Siemens Industry answers the challenges in the manufacturing and the process industry as well as in the building automation business. Our drive and automation solutions based on Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) are employed in all kinds of industry. In the manufacturing and the process industry. In industrial as well as in functional buildings.

Siemens offers automation, drive, and low-voltage switching technology as well as industrial software from standard products up to entire industry solutions. The industry software enables our industry customers to optimize the entire value chain – from product design and development through manufacture and sales up to after-sales service. Our electrical and mechanical components offer integrated technologies for the entire drive train – from couplings to gear units, from motors to control and drive solutions for all engineering industries. Our technology platform TIP offers robust solutions for power distribution.

The high quality of our products sets industry-wide benchmarks. High environmental aims are part of our eco-management, and we implement these aims consistently. Right from product design, possible effects on the environment are examined. Hence many of our products and systems are RoHS compliant (Restriction of Hazardous Substances). As a matter of course, our production sites are certified according to DIN EN ISO 14001, but to us, environmental protection also means most efficient utilization of valuable resources. The best example are our energy-efficient drives with energy savings up to 60 %.

Check out the opportunities our automation and drive solutions provide. And discover how you can sustainably enhance your competitive edge with us.

Low-voltage controls and distribution. The basis for progressive solutions.

Extremely high demands are made on modern low-voltage controls and distribution:

users want cost-effective solutions that are easy to integrate in control cabinets, distribution boards and distributed systems and can communicate perfectly with each other.

Siemens has the answer: SIRIUS industrial controls and low-voltage power distribution with Power Management, SIVACON and SENTRON.

SIRIUS industrial controls

The SIRIUS range has everything you need for switching, protecting and starting loads. Products for monitoring, control, detection, commanding, signaling and power supply round off the spectrum of industrial controls.

Building control cabinets should be quick, easy, flexible and space-saving. But how can all these requirements be met simultaneously? The answer lies in the unique SIRIUS modular system up to 250 kW/400 V, where you will find everything that you need for switching, protecting and starting motors and industrial systems.

Furthermore, all components of the SIRIUS modular system are characterized by a space-saving design and high flexibility and are optimally coordinated with each other. Configuring, installing, wiring and maintenance are extremely easy and time-saving to perform.

Regardless of whether you want to build up your own load feeders with motor starter protectors/circuit breakers or overload relays, contactors or soft starters, or decide instead in favor of preassembled feeders: SIRIUS has the right product for every application.

Continuous further development and regular innovations ensure that our customers are optimally equipped with SIRIUS and benefit from efficient solutions - today and tomorrow.

Combined with Totally Integrated Automation and Safety Integrated, our product portfolio can be bundled to create optimized systems. All in all, Siemens provides innovative controls with modern features, such as integrated communication and safety technology that work to your advantage: the basis for ground-breaking integrated solutions.

Safety Integrated by Siemens is the consistent implementation of safety technology in accordance with the concept of Totally Integrated Automation. Direct integration of safety-related functions in our standard products and the consistent integration of safety concepts in the standard automation environment offer many advantages for machine manufacturers and system operators.

Our SIRIUS Safety Integrated controls are a central element of the Siemens Safety Integrated concept. Whether for failsafe sensing, instructing and reporting, monitoring and evaluating or starting and reliable shutting down - our SIRIUS Safety Integrated controls are expert at performing safety tasks in your plant.





SIRIUS Safety Integrated uses failsafe communication via standard fieldbus systems, e. g. ASIsafe via AS-Interface and PROFIsafe via PROFIBUS, to solve even networked safety tasks of greater complexity. Integration in the world of Totally Integrated Automation and in the Siemens Safety Integrated concept is thus assured.

Low-voltage power distribution with Power Management, SIVACON and SENTRON

Non-residential buildings and industrial plants have one thing in common: without electricity, everything comes to a halt. The availability, safety and cost effectiveness of the power distribution system is of utmost importance – from the medium

voltage supply point through to the socket outlet. And only integrated solutions can ensure maximum efficiency for planning, configuration and operation.

The concept is called Totally Integrated Power from Siemens. Total integration in planning and configuration creates synergies and saves costs.

Perfectly matched products and systems provide efficient engineering and reliable operation.



Industrial Communication



2/2	Introduction	Ch. 6	Motor starters for operation in the control cabinet
	AS-Interface	Ch. 6	Motor starters for operation in the field, high degree of protection
	<u>Introduction</u>	Ch. 9	3SF5 pushbuttons and indicator lights
2/9	Transmission technology	Ch. 9	8WD4 signaling columns
2/10	Configuration examples	2/60	AS-Interface connections for LOGO!
2/11	Communication overview		<u>Power Supply Units</u>
2/12	AS-Interface specification	2/61	AS-Interface power supplies, IP20
	<u>ASIsafe</u>		<u>Transmission Media</u>
2/14	Introduction	2/62	AS-Interface shaped cables
2/16	AS-Interface safety monitors		<u>System Components and Accessories</u>
2/19	AS-Interface safety modules	2/63	Repeaters
Ch. 8	SIRIUS 3SF1, 3SF3 position switches for AS-Interface	2/64	Extension plugs
Ch. 9	SIRIUS 3SF2 cable-operated switches for AS-Interface	2/65	Addressing units
FS 10 ¹⁾	SIMATIC FS400 light curtains and arrays	2/66	Analyzers
FS 10 ¹⁾	SIMATIC FS600 laser scanners	2/69	Miscellaneous accessories
Ch. 9	SIRIUS EMERGENCY-STOP mushroom pushbuttons for AS-Interface		<u>Software</u>
Ch.9	AS-Interface F adapters for EMERGENCY-STOP devices	2/72	AS-i function block library for PCS 7
	<u>Masters</u>		IO-Link
	Masters for SIMATIC S7		<u>System Overview</u>
2/21	- CP 243-2	2/73	General data
2/22	- CP 343-2P, CP 343-2		<u>IO-Link Master Modules</u>
	<u>Routers</u>	2/74	IO-Link master modules and IO-Link SIRIUS modules
2/24	DP/AS-i LINK Advanced		<u>I/O Modules</u>
2/27	DP/AS-Interface Link 20E	2/75	General data
2/29	DP/AS-i F-Link	2/76	IO-Link K20 modules
2/33	IE/AS-i LINK PN IO		<u>Industrial Controls</u>
	<u>Slaves</u>	Ch. 6	Load feeders and motor starters
	I/O modules for operation in the field, high degree of protection		- Motor starters for operation in the control cabinet, SIRIUS 3RA6 compact feeders
2/36	- Introduction	FS 10 ¹⁾	<u>Sensors</u>
2/37	- Digital I/O modules, IP67 - K60		Technical Information
2/39	- Digital I/O modules, IP68/IP69K - K60R		can be found at
2/42	- Digital I/O modules, IP67 - K45		www.siemens.com/industrial-controls/support
2/44	- Digital I/O modules, IP67 - K20		under Product List:
2/47	- Digital I/O modules, IP67 - user modules		- Technical Specifications
2/48	- Analog I/O modules, IP67 - K60		under Entry List:
	I/O modules for operation in the control cabinet		- Updates
2/51	- Introduction		- Downloads
2/52	- SlimLine		- FAQ
2/54	- F90 modules		- Manuals/Operating instructions
2/54	- Flat modules		- Characteristic curves
	Special integrated solutions		- Certificates
2/55	- AS-Interface communication modules		and at
	Modules with special functions		www.siemens.com/industrial-controls/configurators
2/57	- Counter modules		- Configurators
2/58	- Ground-fault detection modules	1)	See Catalog FS 10 "Sensor Technology".
2/58	- Overvoltage protection modules		

Introduction

Overview

2

		Order No.	Page
AS-Interface/ASIsafe			
	<p>ASIsafe enables the integration of safety-oriented components in an AS-Interface network, for example:</p> <ul style="list-style-type: none"> • EMERGENCY-STOP pushbuttons • Protective door switches • Safety light arrays <p>The simple wiring of AS-Interface, which is a major advantage, is maintained.</p>		
	<p>Safety monitors</p> <p>AS-Interface safety monitors</p> <ul style="list-style-type: none"> • Key element of ASIsafe • Monitors safe participants and links safe inputs • Ensures safe disconnection • Modular construction according to individual requirements • Available with one or two release circuits with 2-channel configuration • All versions also with removable screw terminals or spring-type terminals • All safety monitors in revised Version 3 with additional options • Filtering out of brief single-channel interruptions in the sensor circuit with the expanded safety monitor Version 3 • Expanded safety monitor with integrated safe slave for controlling a distributed safe AS-i output or for safe coupling a safe signal from one AS-i network to another AS-i network • New configuration software ASIMON V3 with graphic function diagram presentation <p>Your advantage: Easy to configure safety functions up to Category 4, PL e, SIL 3.</p>	3RK1	2/16
	<p>K45F</p> <p>AS-Interface safety modules</p> <ul style="list-style-type: none"> • Complete portfolio of ASIsafe modules <ul style="list-style-type: none"> - For connection of safety switches with contacts (position switches etc.) as well as solid-state safety sensors (BWS) • Degree of protection IP65/IP67 or IP20 • Very compact dimensions, from 20 mm width • Up to 4 safe inputs per module • Standard outputs are available on the module in addition • Up to Category 4, PL e, SIL 3. <p>Your advantage: Easy integration of safe signals, be it in the control cabinet or in the field</p>	3RK1	2/19
	<p>S22.5F (SlimLine)</p> <p>Position switches</p> <ul style="list-style-type: none"> • Plastic with degree of protection IP65 and metal with degree of protection IP66/IP67 • ASIsafe electronics integrated in the enclosure, with low power consumption < 60 mA • Available with separate actuator or solenoid interlocking <p>Your advantage: Conventional wiring of safety safety functions required no longer required.</p>	3SF1	Ch. 8
	<p>Position switch</p> <p>Cable-operated switches</p> <ul style="list-style-type: none"> • Degree of protection IP65 • Direct connection of cable-operated switches for detection of signals • Metal enclosures 	3SF2	Ch. 9
	<p>Light curtain and array</p> <p>SIMATIC FS400 light curtains and light arrays and SIMATIC FS600 laser scanners</p> <ul style="list-style-type: none"> • Degree of protection IP65 • Connection to AS-Interface either direct or through safe solid-state input module • Up to Category 4, PL e, SIL 3 (light curtains/arrays) or Category 3, PL d, SIL 2 (laser scanners) <p>Your advantage: Direct connection of active and optical protection for persons to ASIsafe.</p>	3SF7 3RG7 84...	See Catalog FS 10 "Sensor Technology"
	<p>EMERGENCY-STOP for mounting on front plates</p> <p>EMERGENCY-STOP pushbuttons</p> <ul style="list-style-type: none"> • Degree of protection IP65/IP67 • EMERGENCY-STOP directly on AS-Interface using integrated modules • Metal or plastic version <p>Your advantage: Easy direct connection of service-proven control elements to ASIsafe.</p>	3SF5	Ch. 9

		Order No.	Page
AS-Interface / masters			
<p>The AS-Interface master connects SIMATIC control systems to AS-Interface. It automatically organizes the data traffic on the AS-Interface cable and sees not only to querying the signals but also to performing the parameter setting, monitoring and diagnostics functions.</p> <p>Masters for SIMATIC</p> <ul style="list-style-type: none"> • Connection of up to 62 AS-Interface slaves • Integrated analog value transmission • Simple configuration by adopting the actual configuration as the desired configuration at the press of a button • Easy operation in the input/output address range • Monitoring of the control supply voltage on the AS-Interface shaped cable <p>Your advantage: Easy connection to SIMATIC S7-300, ET200 M or SIMATIC S7-200</p>		6GK7	2/21
	CP 343-2, CP 343-2P for SIMATIC S7-300		
	CP 243-2 for SIMATIC S7-200		
AS-Interface/Routers			
<p>As an alternative to the CPs, which are plugged directly in the controller it is also possible to use a link as AS-Interface master – at any position beneath the PROFIBUS DP or PROFINET IO.</p> <p>Routers</p> <ul style="list-style-type: none"> • Degree of protection IP20 • PROFIBUS slave or PROFINET IO device and AS-Interface master (single or double master in case of DP/AS-i LINK Advanced and IE/AS-i LINK PN IO) • Connection of up to 62 AS-Interface slaves • Integrated ground-fault monitoring (in case of DP/AS-i LINK Advanced and IE/AS-i LINK PN IO) • User-friendly local diagnostics and local start-up by means of a full graphic display and control keys or through a web interface with a standard browser (in case of DP/AS-i LINK Advanced and IE/AS-i LINK PN IO) • Integrated analog value transmission • Configuring and uploading of AS-Interface configuration in STEP 7 possible • User-friendly selection of AS-Interface slaves • Safety-orientated transition from ASIsafe to PROFI-safe also available as DP/AS-i F-Link <p>Your advantage: Optimum transition to PROFIBUS or PROFINET, integrated in STEP 7.</p>		3RK3 6GK1	2/29 2/24, 2/27, 2/33
	DP/AS-i LINK Advanced		
	DP/AS-Interface Link 20E		
	DP/AS-i F-Link		
	IE/AS-i LINK PN IO		

Introduction

2

AS-Interface/Slaves

Slaves contain the AS-Interface electronics and connection options for sensors and actuators in the field and in the control cabinet. A total of up to 62 slaves can be connected to one bus. The slaves then exchange their data in cyclic mode with a control module (master).

Field modules: Digital I/O modules IP67 - K60, K60R, K45 and K20

- Degree of protection IP65/IP67 or IP68/69K
- Modules available with up to degree of protection IP68/69K
- ATEX-certified modules available for Ex Zone 22
- Connection sockets in M8/M12
- Up to eight inputs and four outputs
- A/B technology available
- Contacting protected against polarity reversal
- Standard rail mounting and wall mounting possible
- Mounting of the module on the base plate using just one screw
- Diagnostics LEDs

Your advantage: Reduction of mounting and start-up times by up to 40 %.



K20 digital module



K45 digital module



K60 digital module



K60 analog module



SlimLine



F90 module



Flat module

Order No.

Page

3RK1, 3RK2

2/37, 2/39, 2/42,
2/44

3RK1

2/48

3RG9, 3RK1

2/51

Field modules: Analog I/O modules IP67 - K60

- Degree of protection IP65/IP67
- Detects or transmits analog signals locally
- 2/4-channel
- Input modules for up to four sensors with current signal, sensors with voltage signal or sensors with thermal resistor
- Output modules for current or voltage

Your advantage: Easy integration of analog values.

Cabinet modules

- Degree of protection IP20
- No M12 plugs required for connection
- Up to 16 inputs
- Narrow design of the SlimLine modules with width from 22.5 mm
- Removable, finger-safe terminal blocks that cannot be mixed up (SlimLine)
- Flat design of the flat modules for small control cabinets and confined conditions
- Connection with screw-type or spring-type terminals
- Standard rail mounting and wall mounting possible
- Diagnostics LEDs

Your advantage: Modules enable use in cabinets and small local control cabinets.

	Order No.	Page
 <p>Counter module</p>	Modules with special functions: Counter modules <ul style="list-style-type: none"> Degree of protection IP20 For evaluation of pulses Connection with screw-type or spring-type terminals <p>Your advantage: Evaluation of pulses which exceed even the clock frequency of AS-Interface.</p>	3RK1 2/57
 <p>Ground-fault detection module</p>	Modules with special functions: Ground-fault detection modules <ul style="list-style-type: none"> Degree of protection IP20 Display using LEDs Two signaling outputs <p>Your advantage: Automatic diagnostics of ground faults on AS-Interface.</p>	3RK1 2/58
 <p>Overvoltage protection module</p>	Modules with special functions: Overvoltage protection modules <ul style="list-style-type: none"> Degree of protection IP67 Discharge through ground cable with oil-proof outer sheath Protection at transition of lightning protection zones <p>Your advantage: The AS-Interface overvoltage protection module protects downstream AS-Interface devices or individual sections in AS-Interface networks from conducted overvoltages.</p>	3RK1 2/58
 <p>3RA61 compact feeder</p>	Compact feeders 3RA61 direct-on-line starters, 3RA62 reversing starters <ul style="list-style-type: none"> Degree of protection IP20 Up to 15 kW/400 V Wide setting range Weld-free Removable terminals Optional AS-i add-on module <p>Your advantage: Less space and wiring work needed in the control cabinet, no welding, connection to AS-Interface.</p>	3RA6 Ch. 6
 <p>Compact starter</p>	Motor starters/compact starters (400 V AC) <ul style="list-style-type: none"> Degree of protection IP65/IP67 Up to 5.5 kW at 400/500 V AC Electromechanical or solid-state design Optional with brake contact <p>Your advantage: No local control cabinets required thanks to completely factory-wired load feeder with IP65 protection.</p>	3RK1 Ch. 6
 <p>ECOFAST motor starter</p>	Motor starters/ECOFAST motor starters and soft starters <ul style="list-style-type: none"> Degree of protection IP65/IP67 Standardized interfaces according to ECOFAST Specification (complies with DESINA) Mechanical or solid-state soft switching function <p>Your advantage: Less space required in the control cabinet, the starters can be installed near the motor or be plugged on the motor.</p>	3RK1 Ch. 6
 <p>Motor starter</p>	Motor starters/motor starters (24 V DC) <ul style="list-style-type: none"> Degree of protection IP65/IP67 Direct-on-line starters, double starters or reversing starters Up to 70 W Quick stop function <p>Your advantage: Simple motor starter in service-proven module construction for 24 V DC motors.</p>	3RK1 Ch. 6

Introduction

2



Pushbutton

Pushbuttons and indicator lights

- Modular construction according to individual requirements
- Metal and plastic version
- Available with standard or A/B slaves and ASIsafe slave
- With LEDs

Your advantage: Complete 3SF58 operating system with simple AS-Interface connection for your plant.

Order No.**3SF58****Page**

Ch. 9



Signaling column

Signaling columns

- Many optical and acoustic elements can be combined
- Also as A/B slaves according to AS-Interface Specification 2.1
- Up to three signaling elements can be connected using an adapter element
- With LEDs or incandescent lamps

Your advantage: signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy AS-Interface connection.

8WD4

Ch. 9



Connections for LOGO!

AS-Interface connections for LOGO!

- AS-Interface slave for the connection of LOGO!
- Distributed controller functionality
- Four inputs/four outputs (virtual)

Your advantage: Intelligence can be used locally.

3RK1

2/60

AS-Interface/Power supply units

AS-Interface power supply units generate a controlled direct voltage of 30 V DC with high stability and low residual ripple, working according to the principle of a primary switchgear. They are an integral component of the AS-Interface network and enable the simultaneous transmission of data and energy on one cable.



IP20, 3 A

Power supply units

Power supply units with protection class IP20:

- With wide performance spectrum from 2.6 to 8 A
- UL/CSA approval means the power supplies can be used worldwide
The 2.6 A version is approved according to NEC Class 2
- Less space required thanks to compact dimensions
- Easy and quick installation
- Certified for global use
- Integrated ground-fault and overload detection save the need for additional components and makes applications reliable
- Diagnostics memory, remote indication and remote reset allow fast detection of faults in the system
- Removable terminal blocks reduce downtimes
- The ultra-wide input range enables single- and two-phase applications (8 A version)

Your advantage: Optimum performance for each application.

3RX9

2/61



IP20, 8 A

AS-Interface/Transmission media

AS-Interface shaped cable for connection of network stations.



Shaped cables

AS-Interface shaped cables

- No polarity reversal thanks to trapezoidal shape
- Cables made of optimized material for different operating conditions
- Special version according to UL Class 2 available

Your advantage: Fast replacement and connection to AS-Interface by piercing method.





3RX9

2/62




AS-Interface/System components and accessories		Order No.	Page
<p>Accessories comprise tools for mounting, installation and operating as well as individual components.</p> <p>Repeaters and extension plugs</p> <ul style="list-style-type: none"> Repeaters for extending the AS-Interface cable by 100 m per repeater Extension plug for extending the AS-Interface segment to max. 200 m Maximum two repeaters and one extension plug in series (max. 300 m) Parallel switching of several repeaters possible (star configuration option) Maximum size increases (when combined) to more than 600 m Easy mounting IP67 module enclosure <p>Your advantage: Lower infrastructure costs, more possibilities of use and greater freedom for plant planning.</p>		3RK1, 6GK1	Repeater 2/63 Extension plugs: 2/64
	Repeater		
	Extension plug		
<p>Addressing units</p> <ul style="list-style-type: none"> Addressing all stations of the AS-Interface network (standard and A/B slaves) Reading out the slave profile (I/O.ID.ID2 and ID1 code) Setting the ID1 code and temporary setting of the slave parameters (e. g. for testing of analog slaves) Measurement of AS-Interface voltage Enables direct setting of outputs and reading in of a slave's inputs Storage of complete system configurations <p>Your advantage: Easiest way to address and parameterize the slaves.</p>		3RK1	2/65
	Addressing unit		
<p>AS-Interface analyzers</p> <ul style="list-style-type: none"> Diagnostics units for completely checking the quality and function of an AS-Interface installation Transmission of collected data through an RS 232 interface to a PC, evaluation by software Easy and user-friendly operation Automatically generated test logs Advanced trigger functions enable exact analysis Process data can be monitored online In addition to digital I/O data it is also possible to view analog values and safety slaves in data mode <p>Your advantage: Preventative testing of an AS-Interface network is possible, recorded logs facilitate remote diagnostics.</p>		3RK1	2/66
	Analyzers		
<p>Miscellaneous accessories</p> <p>AS-Interface system manual, individual components such as sealing caps, cable adapters, distributors etc.</p>		3RK2, 3RG7, 3RG9, 3RK1, 3RX9, 6ES7	2/69
	M12 sealing cap		
	Cable terminating pieces		
AS-Interface / software			
<p>AS-i function block library for PCS 7</p> <ul style="list-style-type: none"> Engineering software and runtime software Easy connection of AS-Interface to PCS 7 Engineering work reduced to positioning and connecting the function blocks in the CFC With no additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system is optimally guaranteed <p>Your advantage: Easy connection of AS-Interface to PCS 7, little engineering and configuration</p>		3ZS1	2/72
	AS-i function block library for PCS 7		

Introduction

2

		Order No.	Page
IO-Link  IO-Link family			2/73
<p>IO-Link is a new communication standard for sensors and actuators - defined by the Profibus User Organization (PNO).</p> <ul style="list-style-type: none"> • Dynamic changing of sensor/actuator parameters directly by the PLC • Storage of parameters enables devices to be exchanged during operation, without a PC or programming device, through re-parameterization via the user program • Fast commissioning thanks to central data storage • Consistent diagnostic information as far as the sensor/actuator level • Uniform and greatly reduced wiring of different sensors/actuators/controls <p>Your advantage: Fast commissioning and flexible maintenance thanks to central data storage, less wiring work because no passive distributors are needed.</p>			
IO-Link / IO-Link master modules  SIRIUS ET 200S 4SI solid-state module		6ES7, 3RK1	2/74 2/74
<p>The IO-Link master modules form the heart of the IO-Link system.</p> <p>ET 200S 4SI IO-Link solid-state modules</p> <ul style="list-style-type: none"> • Up to 4 IO-Link devices (three-conductor connection) can be connected • Up to 4 standard actuators/sensors (two-conductor/three-conductor connection) can be connected <p>SIRIUS ET 200S 4SI solid-state modules</p> <ul style="list-style-type: none"> • Up to 16 SIRIUS controls can be connected with IO-Link (grouped) • Supports firmware update (STEP 7 V5.4 SP4 and higher). <p>ET 200eco PN block I/Os</p> <ul style="list-style-type: none"> • Up to 4 IO-Link devices (three-conductor connection) can be connected • Up to 8 standard sensors (8 DI) and up to 4 standard actuators (4 DO) can be connected in addition. <p>Your advantage: Easy connection to SIMATIC S7-300 or ET200S</p>			
IO-Link / I/O modules  IO-Link K20 module with four digital inputs		3RK5	2/75 2/76
<p>IO-Link I/O modules make full use of the potential of IO-Link and economically are a more attractive solution than a direct sensor/actuator connection.</p> <p>IO-Link K20 modules</p> <ul style="list-style-type: none"> • Four or eight digital inputs • Degree of protection IP65/IP67 • Connection sockets in M8/M12 • Contacting protected against polarity reversal <p>Your advantage: Reduction of mounting and start-up times by up to 40 %.</p>			
IO-Link / industrial controls  SIRIUS 3RA64 direct-on-line starter		3RA64, 3RA65	Ch. 6
<p>Up to four 3RA64/65 compact feeders (direct-on-line starters/reversing starters) can be connected together and conveniently linked to the IO-Link master through a standardized IO-Link connection.</p> <p>Load feeders and motor starters / for use in the control cabinet / SIRIUS 3RA6 compact feeders</p> <p>3RA64 direct-on-line starters, 3RA65 reversing starters</p> <ul style="list-style-type: none"> • Degree of protection IP20 • Up to 15 kW/400 V • Wide setting range • Weld-free • Removable terminals <p>Your advantage: detailed diagnostics data and a high density of information in the local range</p>			
IO-Link / sensors  Sonar SIMATIC PXS310C M18 proximity switches		6GR6, 6GR1	Catalog FS 10 "Sensor Technology"
<p>The product portfolio of IO-Link devices also covers ultrasonic sensors and optical sensors with IO-Link interface.</p> <p>Ultrasonic:</p> <ul style="list-style-type: none"> • M18 design • Object scanning at a distance of 10 cm to 100 cm • Switchable operating modes <p>Optical:</p> <ul style="list-style-type: none"> • 5 colors can be detected • Recipe management <p>Your advantage: Dynamic parameterization of measuring range limits (ultrasonic), dynamic change of color detection (optical)</p>			

Note:

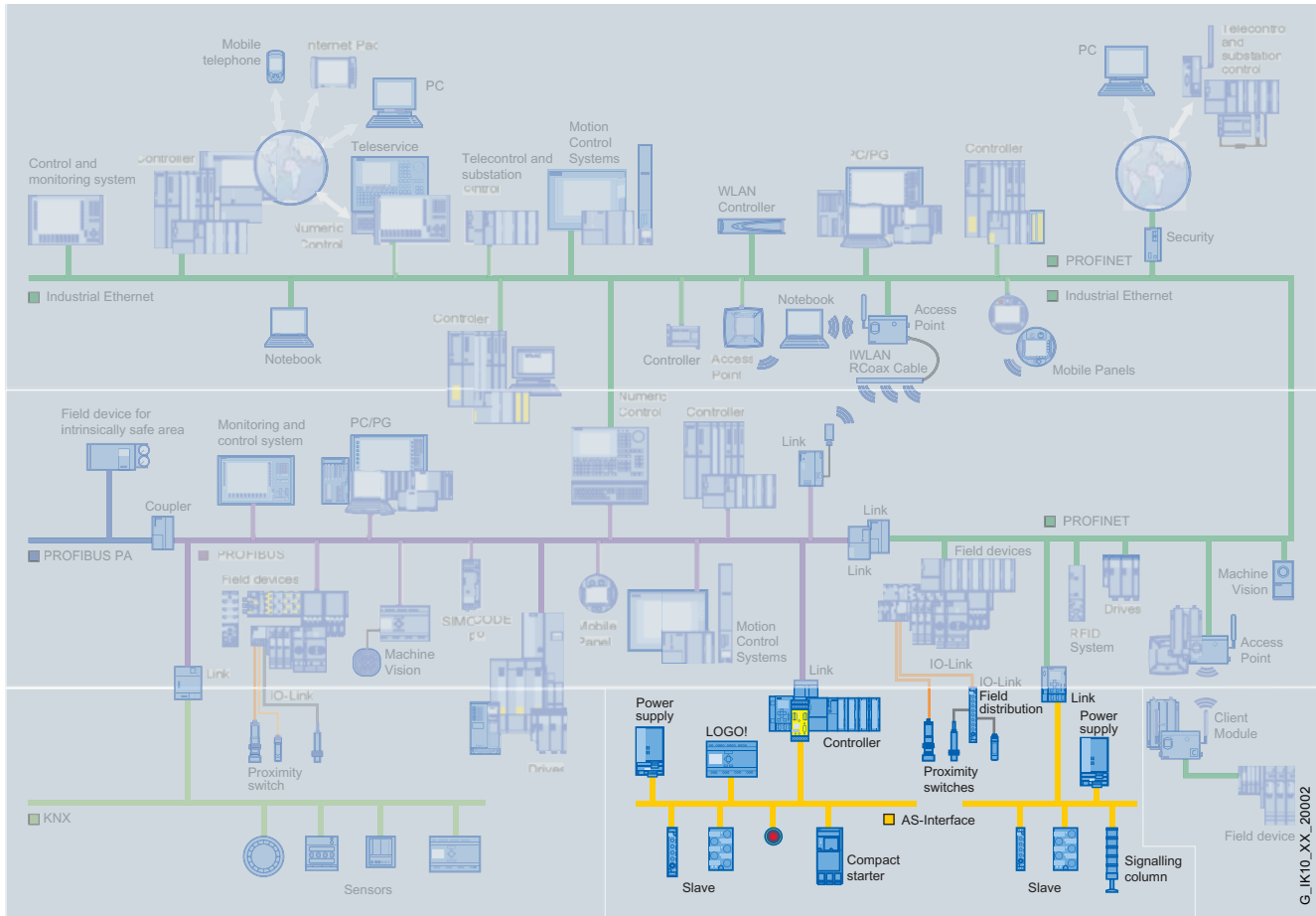
-  Screw terminals
-  Spring-type terminals
-  Combicon connection

The terminals are indicated in the selection and ordering data by orange backgrounds.

Overview

AS-Interface is an open, international standard according to EN 50295 and IEC 62026-2 for process and field communication. Leading manufacturers of actuators and sensors all over the world support the AS-Interface. Interested companies are provided with the electrical and mechanical specifications by the AS-Interface Association.

AS-Interface is a single master system. For automation systems from Siemens there are communications processors (CPs) and routers (links) which control the process or field communication as masters, and actuators and sensors which are activated as AS-Interface slaves.



Benefits



A key feature of AS-Interface technology is the use of a shared two-conductor cable for data transmission and the distribution of auxiliary power to the sensors/actuators. An AS-Interface power supply unit that meets the requirements of the AS-Interface transmission method is used for the distribution of auxiliary power. The AS-Interface cable used for the wiring is mechanically coded and hence protected against polarity reversal and can be easily contacted by the insulation piercing method.

Elaborately wired control cables in the control cabinet and marshalling racks can be replaced by AS-Interface.

The AS-Interface cable can be connected to any points thanks to a specially developed cable and connection by the insulation piercing method.

With this concept you become extremely flexible and achieve high savings.

Application

Operating modes

Generally, master interfaces have the following operating modes:

I/O data exchange

In this operating mode the inputs and outputs of the binary AS-Interface slaves are read and written.

Analog value transmission

AS-Interface masters according to the AS-Interface Specification V2.1 or V3.0 support integrated analog value processing. This means that data exchange with analog AS-Interface slaves (according to Analog Profile 7.3 or 7.4) is just as easy as with digital slaves.

Command interface

In addition to I/O data exchange with binary and analog AS-Interface slaves the AS-Interface masters provide a number of other functions through the command interface.

Hence it is possible, for example, for slave addresses to be issued, parameter values transferred or diagnostics information read out from user programs.

AS-Interface Introduction

Configuration examples

2

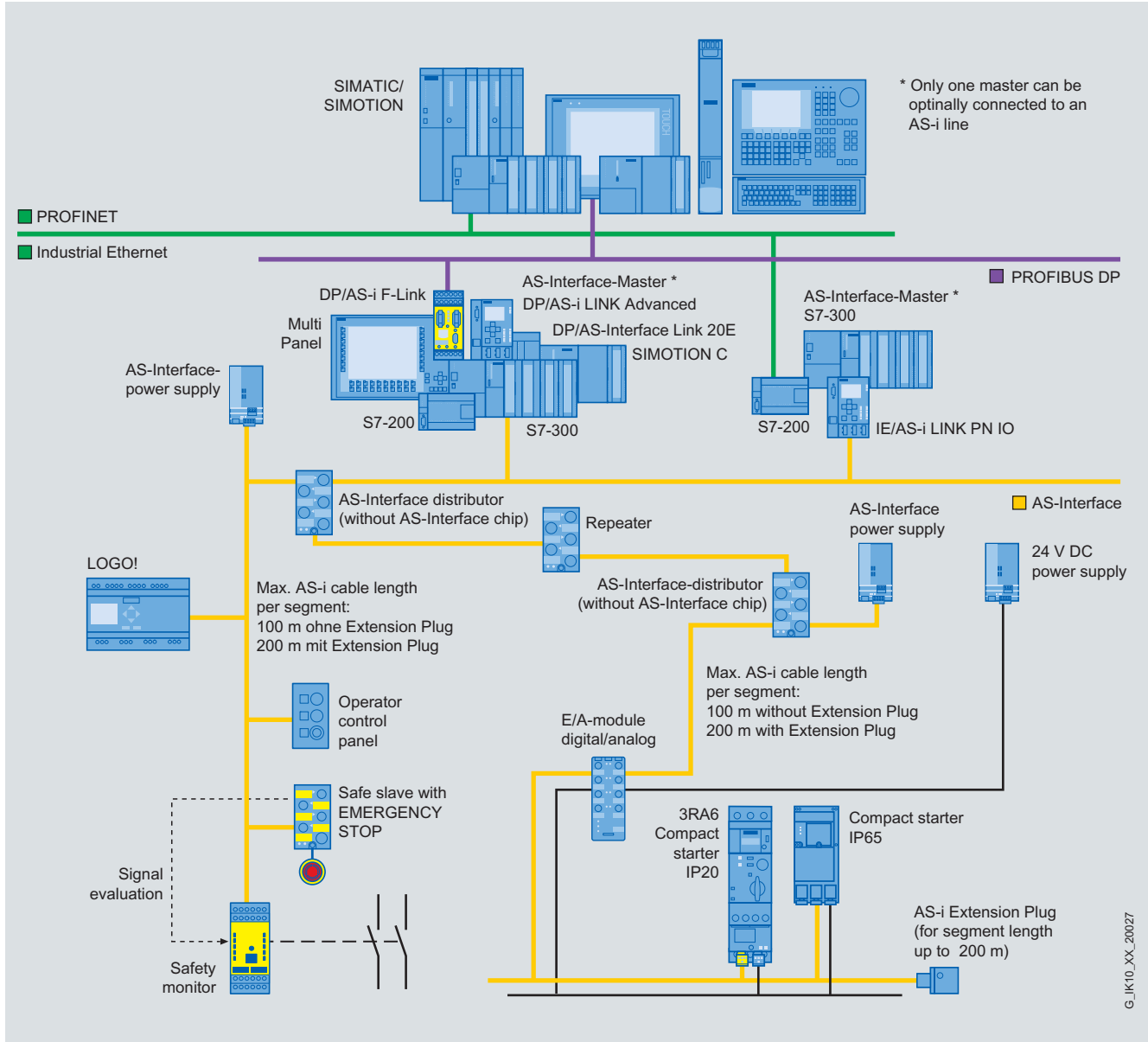
Overview

Process or field communication

AS-Interface is used where individual actuators and sensors are spaced apart over a machine (e. g. a bottle filling line, production line, etc.).

It replaces complicated cable harnesses and connects binary and analog actuators and sensors such as proximity switches, valves and indicator lights to a controller, e. g. a SIMATIC or PC.

In practice this means: Installation is straightforward because data and energy are conveyed together over one cable. No special know-how for installation and commissioning is required. And thanks to the simple laying of the cable, its clear-cut structure and special version there is not only far less risk of errors but also less effort during maintenance and servicing.



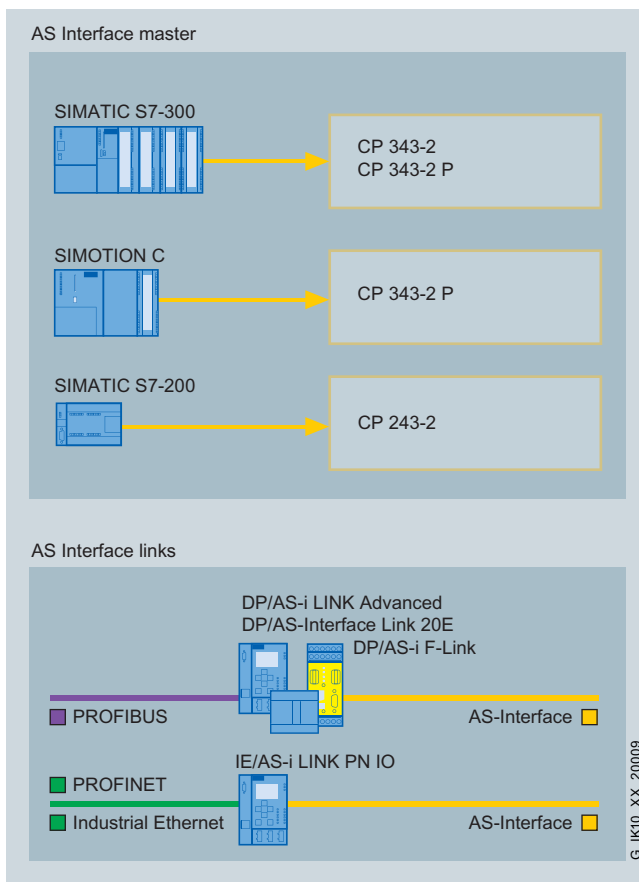
Example of a system configuration

Overview

System components

Numerous system components are offered for implementing the communication. The key elements of a system installation are:

- Master interface modules for central control units such as SIMATIC S5 and SIMATIC S7, ET 200 M distributed peripherals or routers from PROFIBUS/PROFINET to AS-Interface
- AS-Interface shaped cables
- Network components such as repeaters and extension plugs
- Power supplies for the slaves
- Modules for connection of standard sensors/actuators
- Actuators and sensors with integrated AS-i slave
- Safety modules for transmitting safety-oriented data through AS-Interface
- Addressing units for setting the slave addresses during commissioning



AS-Interface masters and AS-Interface links (see Routers)

Features

Standard	EN 50295 / IEC 61158
Topology	Line, star or tree structure (same as electrical wiring)
Transmission medium	Unshielded two-conductor cable (2 x 1.5 mm ²) for data and auxiliary power
Connection method	Contacting of the AS-Interface cable by insulation piercing method
Maximum cable length	100 m without repeater 200 m with extension plug 300 m with two repeaters in series connection 600 m with extension plugs and two repeaters in parallel switching Longer cable lengths also possible through parallel switching of more repeaters
Maximum cycle time	5 ms with full expansion using standard addresses, 10 ms with full expansion using A/B addresses, profile-specific for Spec. 3.0 slaves
Number of stations per AS-Interface line	31 slaves according to AS-Interface Spec. V2.0; 62 slaves (A/B technology) according to AS-Interface Spec. V2.1 and V3.0, integrated analog value transmission
Number of binary sensors and actuators	Max. 124 DI/124 DO according to Spec. V2.0; max. 248 DI/186 DO according to Spec. V2.1; max. 496 DI/496 DO according to Spec. 3.0
Access control	Cyclic polling master slave method, cyclic data transfer by host (PLC, PC)
Error safeguard	Identification and repetition of faulty message frames

More information

For the modules referred to above please also note the conditions of application and the additional information.

AS-Interface system manual

More information about AS-Interface is available in the AS-Interface system manual.

The German-language AS-Interface System Manual can be downloaded free from the Internet at:

support.automation.siemens.com/WW/view/de/26250840

The English-language AS-Interface System Manual can be downloaded free from the Internet at:

support.automation.siemens.com/WW/view/en/26250840

A print version of the AS-Interface System Manual is also available in both English and German, see page 2/69.

Internet

You can find more information on the Internet at:

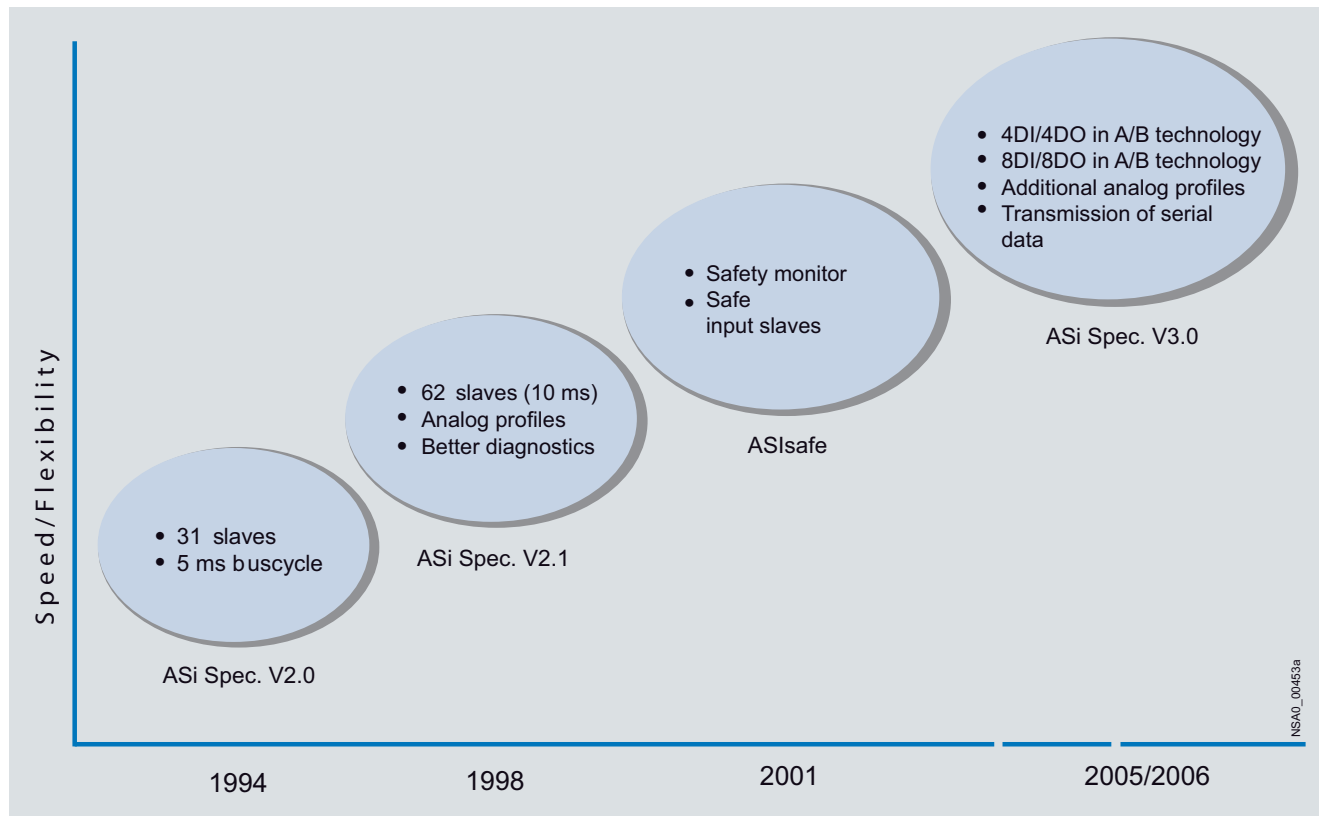
support.automation.siemens.com/WW/view/en/10805888/130000

AS-Interface

Introduction

AS-Interface specification

Overview



Technology development of the AS-Interface

System limitations of AS-Interface specification

AS-Interface specification	Maximum number of slaves			Number of digital inputs DI	Number of digital outputs DO
	Digital	Analog	ASIsafe		
Version 2.0	31	31	31	31 × 4 = 124	31 × 4 = 124
Version 2.1	62	31	31	62 × 4 = 248	62 × 3 = 186
Version 3.0	62	62	31	62 × 8 = 496	62 × 8 = 496

Basic data of AS-Interface Specification 2.0

- AS-Interface Specification 2.0 describes a fieldbus system with an AS-i master and up to 31 AS-i slaves.
- Each AS-i slave has up to 4 digital inputs and 4 digital outputs.
- With full expansion, the complete transmission of all input/output data requires max. 5 ms cycle time.

Expansions of AS-Interface Specification 2.1

AS-Interface Specification 2.1 enables the number of network stations to be doubled from 31 to 62 as follows:

- The standard slaves continue to occupy one AS-i address (1 ... 31).
- Slaves with extended addressing divide an address into an A address (1A...31A) and a B address (1B...31B). Up to 62 A/B slaves can be connected accordingly to one AS-i network.
- Mixed operation of standard slaves and A/B slaves is possible without difficulty. The AS-i master identifies automatically which type of slave is connected. No special adjustments are required of the user.

Another function of the AS-Interface Specification V2.1 is the integrated analog value transmission function. Access to both analog values and digital values is possible without the need for any special function blocks.

Expansions of AS-Interface Specification 3.0

- AS-Interface Specification 3.0 enables the connection of a nearly 1000 digital inputs/outputs (profile S-7.A.A: 8DI/8DO as A/B slave).
- New profiles have also enabled the option of expanded addressing for analog slaves.
- Acceleration of analog value transmission through "Fast Analog Profile".
- Variable use of analog modules: Optional parameterization of resolution (12/14 bit) and 1 and 2-channel capability.
- Asynchronous serial protocol 100 baud or 50 baud, bidirectional.

AS-Interface masters

To be able to operate A/B slaves on an AS-Interface network you must use master modules that meet the minimum requirements of Specification 2.1.

A/B technology is supported by all current AS-i master modules and AS-i links from Siemens.

The AS-i masters for S7-300 / ET200M and all DP/AS-i links and IE/AS-i links comply with AS-Interface Specification 3.0 and support all new and previous slaves.

AS-Interface specification	Available masters
Version 2.1	CP 243-2 (S7-200)
Version 3.0	CP 343-2, 343-2P (S7-300 / ET200M), DP/AS-i Link Advanced, DP/AS-i F-Link, DP/AS-Interface Link 20E, IE/AS-i Link PN IO

The AS-Interface specification relevant for the respective slave is noted in the [Selection and ordering data](#).

The exact slave profile can be found in the [AS-Interface system manual](#).

Communication cycle

AS-Interface specification	Maximum cycle time (digital signals)
Version 2.0	5 ms
Version 2.1	5 ms with 31 slaves 10 ms with 62 slaves
Version 3.0	5 ms with 31 slaves 10 ms with 62 slaves, supplementary, up to 20 ms with A/B slaves using 4DI/4DO, up to 40 ms with A/B slaves using 8DI/8DO.

Each address is queried in max. 5 ms cycle time. If two A/B slaves are operated on one basic address (e. g. 12A and 12B), a maximum 10 ms will be required for updating the data of both slaves.

Whether an AS-Interface slave is a standard slave or an A/B slave can be seen in the [section "Selection and ordering data"](#) or the [AS-Interface system manual](#).

All slave types can be mixed and used on a single AS-Interface network.

Benefits

- Reduction of master and power supply costs thanks to a higher number of slaves and I/Os per AS-Interface line
- Improved decentralization in plants with numerous, widely spread signals
- Further expansion of existing AS-Interface systems is possible

More information

More information about AS-Interface is available in the AS-Interface system manual.

The German-language AS-Interface System Manual can be downloaded free from the Internet at: support.automation.siemens.com/WW/view/de/26250840

The English-language AS-Interface System Manual can be downloaded free from the Internet at: support.automation.siemens.com/WW/view/en/26250840

A print version of the AS-Interface System Manual is also available in both English and German, [see page 2/69](#).

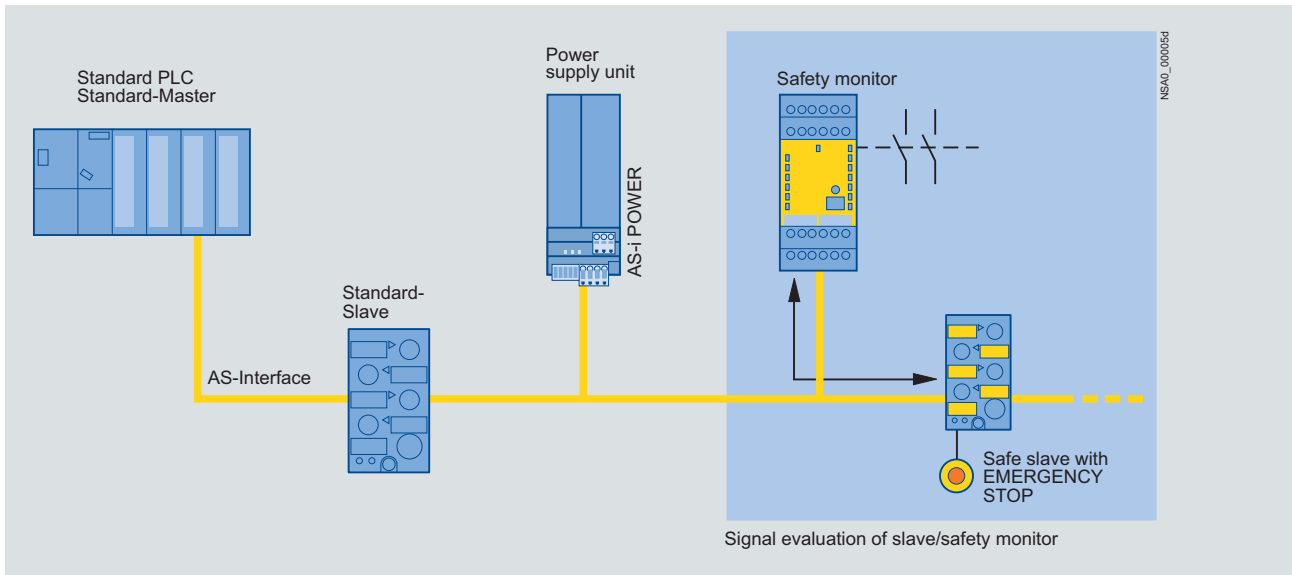
AS-Interface

ASIsafe

Introduction

Overview

2



Secure communication and standard communication on AS-Interface

Safety is included

The ASIsafe concept supports the integration of safety-related components, such as EMERGENCY-STOP switches, protective door switches or safety light arrays, in the AS-Interface network. These are fully compatible with the familiar AS-Interface components (masters, slaves, power supplies, repeaters, etc.) in accordance to IEC 62062/EN 50295 and are operated in conjunction with them on the yellow AS-Interface cable.

A failsafe controller or a special master is not required. The master regards safety slaves like all other slaves and receives the safety data solely for information purposes. Hence it is also possible to expand all existing AS-Interface networks.

ASIsafe ensures a maximum response time of 40 ms. This is the time between the signal being applied to the input of the safe slave and the output on the safety monitor being switched off.

Tested safety

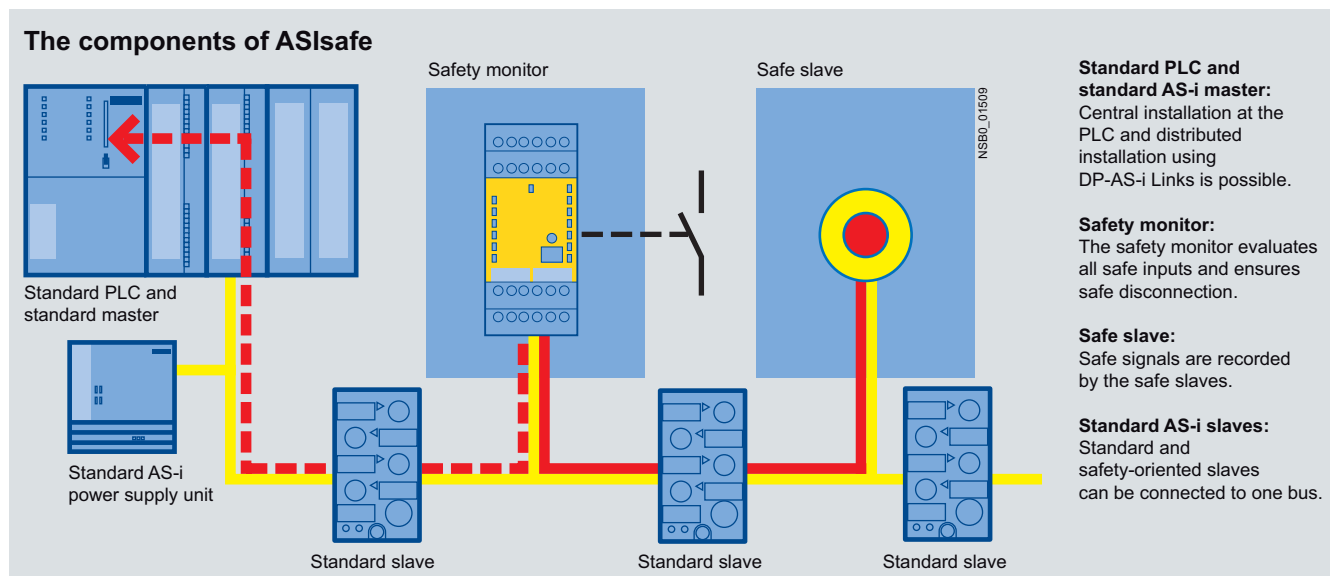
The system was tested and approved by TÜV (Germany), NRTL (USA) and INRS (France). The transmission procedure for safety-oriented signals is configured for implementing applications up to Category 4 according to EN 954-1, up to PL e according to EN ISO 13849-1 and up to SIL 3 according to IEC 61508.

Design

The design of the safety systems is identical to the wiring of AS-Interface as it is known today.

The family of safe AS-Interface products comprises the safety monitor which monitors the safe stations. The range of safe stations comprises the safety modules and the safety-related sensors with integrated interface.

Sensors and monitors can be connected to any points of the AS-Interface network. Also, several monitors can be used on one network.



The ASIsafe components and their signal flows

Standard PLC and standard AS-i master: Central installation at the PLC and distributed installation using DP-AS-i Links is possible.

Safety monitor: The safety monitor evaluates all safe inputs and ensures safe disconnection.

Safe slave: Safe signals are recorded by the safe slaves.

Standard AS-i slaves: Standard and safety-oriented slaves can be connected to one bus.

Function

Like the standard stations, the safe stations send their information to the master after master calls. The safety monitor monitors this transmission from the safe stations to the master and switches into the safe state.

The safety monitor provides OR logic, AND logic, timer functions, buffer storage, etc.

Software

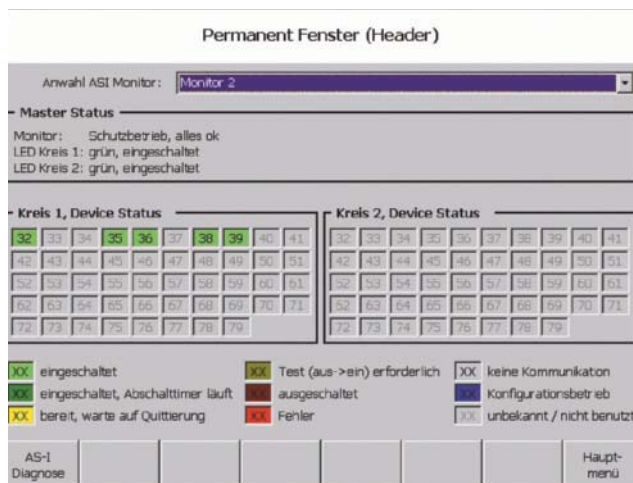
With the ASIMON configuration software you can configure safety-oriented applications and transfer them into the monitor. The configuration comprises the input signals of the safe stations and the internal functions of the safety monitor.

The software also enables online diagnostics.

Integration

The existing infrastructure such as the master and the power supply unit can be used as before for integrating the safety systems in AS-Interface. For the safety systems the safety monitor is integrated as monitoring element and the safe stations as interface between the safe sensors and the system. The safe sensors can be used as before.

Integration within TIA is performed using function blocks which are offered on the ASIsafe CD-ROM for S7-200 and S7-300. These function blocks enable detailed diagnostics of all parameterized modules. This requires an AS-i address to be issued to the safety monitor by means of the configuration software. Evaluation is performed by means of function blocks in the PLC. With the help of prefabricated WinCC flexible modules this evaluation can then be visualized system-wide on existing HMI devices (OP/TP 270 and higher).



Diagnostics interface for ASIsafe components via S7-200 or S7-300

Benefits

- No failsafe PLC or special master is required for the ASIsafe Solution local (safety monitor)
- Alternatively integration in SIMATIC / SINUMERIK safety architectures with the help of DP/AS-i F-Link (ASIsafe Solution PROFIsafe)
- Simple system structure thanks to standardized AS-Interface technique
- Safety-related and standard data on the same bus
- Existing systems can be expanded quickly and easily
- Optimum integration in TIA (Safety Diagnostics) and Safety Integrated
- Safe signals can be combined in groups
- Inclusion of the safety signals in the plant diagnostics, also on existing HMI panels
- Approved to Category 4 according to EN 954-1 or PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508
- ASIsafe is certified by TÜV (Germany), NRTL (USA) and INRS (France)

Application

Integrated safety technology in the AS-Interface system is used wherever EMERGENCY-STOP pushbuttons, protective door interlocks, stop Category 0 and 1, two-hand operator controls and light arrays now installed.

More information

More information and circuit examples for safety systems with AS-Interface Safety Monitor and DP/AS-i F-Link can be found on the Internet at

support.automation.siemens.com/WW/view/en/24509484

AS-Interface

ASIsafe

AS-Interface safety monitors

Overview



Safety monitor with screw terminals (removable terminals)

The safety monitor is the centerpiece of ASIsafe Solution local. It enables safety-orientated responding to signals from the ASIsafe (input) slaves on the same AS-i network and has 1-2 enabling circuits. A safe application is configured using a PC. Various application-specific operating modes can be selected for this. They include, for example, an EMERGENCY-STOP function, door tumbler and selection of stop Category 0 or Category 1.

To be able to make full use of the AS-Interface diagnostics options, the monitor can also be operated with an AS interface address if required. With the help of the diagnostics module for STEP 7, which is included on the ASIsafe CD, the full diagnostics spectrum can be processed further in the higher-level PLC.

The AS-Interface safety monitor is currently offered in the latest Version 3 (Firmware V3.x) and is available in three expansion levels.

Both basic/expanded expansion levels are available with one or two-channeled configured enabling circuits.

The expanded safety monitor is also available as a version with integrated safe slave which can be used for the control of a safe AS-i output or for safe coupling of a switch signal on another safety monitor or F-Link.

The safety monitor is used in an AS-Interface bus system to monitor protective devices, e. g. protective doors, EMERGENCY-STOP switches, etc.

The safety monitor can be used up to Category 4 according to EN 954-1, to PL e according to EN ISO 13849-1 and to SIL 3 according to IEC 61508.

The safety characteristics for a maximum service life (T1) of 20 years are:

- PFD: 7.2×10^{-5} for monitor type 1, 2, 3, 4 or 6.1×10^{-5} for monitor type 6
- PFH D: 6.1×10^{-5} for all monitor types

The user must calculate the PFD value of the total loop.

Note:

Depending on the choice of safety components used, the complete safety system may also be classified in a lower safety category.

The safety monitor is mounted on the standard mounting rail. Disassembly from the standard mounting rail is quick and easy and requires no tools. With an additional accessory (push-in lugs), the safety monitor can also be screwed on.

Application

The safety monitor acts as a "bus-based safety relay". It provides a user-friendly introduction to safety-orientated communication over fieldbuses thanks to its simple configuration using the graphic PC software ASIMON. The standard infrastructure of the AS-i network (AS-i master under standard PLC, AS-i power supply unit) can still be used without restriction.

The monitor comes in three expansion levels:

- Basic safety monitor with starter set of modules and basic functionality
- Expanded safety monitor with expanded features and functionality
- The expanded safety monitor is also available as a version with integrated safe slave which can be used for the control of a distributed safe AS-i output or for safe coupling of a switch signal on another safety monitor or F-Link.

Basic safety monitor versus expanded safety monitor

	Basic	Expanded
Number of monitoring modules	32	48
Number of OR gates (inputs)	2	6
Number of AND gates (inputs)	--	6
Wildcards for monitoring modules	3	3
Deactivating of monitoring modules	3	3
Fault release	3	3
Diagnostics hold	3	3
A/B slaves for acknowledgment	3	3
Safe time functions	--	3
"Button" function	--	3
Debouncing of contacts	--	3
Filtering out of brief disconnections	--	3 (as of Version 3)
Control of safe AS-i output/safe coupling	--	✓ (in version with integrated safe slave)

- ✓ Available
- Not available

Number of monitoring modules

The number of devices which the safety monitor can process is increased with the expanded safety monitor from 32 to 48. Applications of greater complexity and size can thus be simulated in the safety monitor.

Logic OR operation

At the logic operation level two elements can be linked by OR operations in the basic version and up to six in the expanded version.

Logic AND operation






In addition to the standard AND operation in the main path of an enabling circuit, an AND operation can also be inserted in an OR operation on the expanded safety monitor. More than two elements can be linked in this AND.

AS-Interface

ASIsafe

AS-Interface safety monitors

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
 3RK1 105-1BE04-0CA0	Basic safety monitors		Screw terminals 					
	Version 3 With screw terminals, removable terminals							
	• One enabling circuit (monitor type 1)	A	3RK1 105-1AE04-0CA0		1	1 unit	121	0.336
	• Two enabling circuits (monitor type 2)	A	3RK1 105-1BE04-0CA0		1	1 unit	121	0.408
	Expanded safety monitors							
	Version 3 With screw terminals, removable terminals							
	• One enabling circuit (monitor type 3)	A	3RK1 105-1AE04-2CA0		1	1 unit	121	0.336
	• Two enabling circuits (monitor type 4)	A	3RK1 105-1BE04-2CA0		1	1 unit	121	0.408
	Expanded safety monitor with integrated safe slave							
	Version 3 With screw terminals, removable terminals							
• Two enabling circuits including control of a safe AS-i output/safe coupling (monitor type 6)	A	3RK1 105-1BE04-4CA0		1	1 unit	121	0.450	
	Basic safety monitors		Spring-type terminals 					
	Version 3 With spring-type terminals, removable terminals							
	• One enabling circuit (monitor type 1)	A	3RK1 105-1AG04-0CA0		1	1 unit	121	0.300
	• Two enabling circuits (monitor type 2)	A	3RK1 105-1BG04-0CA0		1	1 unit	121	0.368
	Expanded safety monitors							
	Version 3 With spring-type terminals, removable terminals							
	• One enabling circuit (monitor type 3)	A	3RK1 105-1AG04-2CA0		1	1 unit	121	0.300
	• Two enabling circuits (monitor type 4)	A	3RK1 105-1BG04-2CA0		1	1 unit	121	0.368
	Expanded safety monitor with integrated safe slave							
	Version 3 With spring-type terminals, removable terminals							
• Two enabling circuits including control of a safe AS-i output/safe coupling (monitor type 6)	A	3RK1 105-1BG04-4CA0		1	1 unit	121	0.450	
Accessories								
 3RK1 901-5AA00	ASIsafe CD		3RK1 802-2FB06-0GA1		1	1 unit	121	0.212
	Included in the scope of supply:							
	• ASIMON V3 configuration software on CD ROM, for PC (Windows 95/98, ME, 2000, NT, XP, Vista Business/Ultimate 32)							
	• Diagnostics package for STEP 7 including ready-to-use HMI templates for WinCC flexible							
	• Extensive documentation (manuals and certificates)							
Cable sets		3RK1 901-5AA00		1	1 unit	121	0.054	
Included in the scope of supply:								
• PC configuration cable for communication between PC (serial interface) and safety monitor, length approx. 1.50 m								
• Transfer cable between two safety monitors, length approx. 0.25 m								
USB/serial adapters		B	3UF7 946-0AA00-0		1	1 unit	131	0.150
To connect a serial PC cable (for connection to serial PC interface/RS 232) to the USB port of a PC, recommended for use in conjunction with AS-i safety monitor								
Sealable covers			3RP1 902		1	5 units	101	0.004
For securing against unauthorized configuration of the safety monitor								
Push-in lugs			3RP1 903		1	10 units	101	0.002
for screw fixing								

Overview



AS-Interface safety modules: K45F (left), K20F (center) and S22.5F (right)

Safety modules for AS-Interface (ASIsafe modules) are available for field use in degree of protection IP67 (K20F and K45F compact modules) and for the control cabinet (S22.5F SlimLine modules) in degree of protection IP20.

A very compact module with an optimum price /performance ratio is thus available for very application.

All modules for the connection of (mechanical) switches and safety sensors with contacts feature crossover monitoring of the connected sensor lead. On versions for the connection of solid-state switches and safety sensors (e. g. light arrays) the crossover monitoring must be performed by the sensor.

Following modules are available for selection:

K20F compact safety modules for operation in the field

Being only 20 mm wide, the K20F module is particularly well suited for applications where modules need to be arranged in the most confined space. The K20F modules are connected to the AS-Interface with a round cable with M12 cable box instead of with the AS-Interface flat cable. This enables extremely compact installation. The flexibility of the round cable means that it can also be used on moving machine parts without any problems. The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

K45F compact safety modules for operation in the field

The platform of the K45F modules covers the following variations:

- Connection of ("mechanical") switches/safety sensors with contacts:
 - K45F 2F-DI: Two safety-oriented inputs in operation up to Category 2 according to EN ISO 13849-1. If Category 4 is required, a two-channel input is available on the module.
 - K45F 2F-DI/2DO: There are also two standard outputs in addition to the safe inputs. Supplied from the yellow AS-i cable
 - K45F 2F-DI/2DO U_{aux} : same as K45F 2F-DI/2DO, but supplied from the black 24 V DC cable
 - K45F 4F-DI: four safety-oriented inputs in operation up to Category 2, two for Category 4. Extremely compact double slave (uses two full AS-i addresses).
- Connection of solid-state switches/safety sensors (non-contact protective devices):
 - K45F LS (light sensor): safe input module for connection of solid-state safety sensors with testing semiconductor outputs (OSSD). In particular non-contact protective devices such as active, optoelectronic light arrays and light curtains for Type 2 and Type 4 according to IEC/EN 61496. Transmitters as well as receivers are supplied with power from the yellow AS-i cable. Matching sensor cables and optionally a separate transmitter supply module are available as accessories.

S22.5F SlimLine safety modules for operation in control cabinets and local control cabinets

The S22.5F SlimLine safety module has two safety inputs. The safe connection of signals to ASIsafe networks in the control cabinet is also possible therefore. For operation up to Category 2, both inputs can be assigned separately; if Category 4 is required, a two-channel input is available on the module.

In addition there are two S22.5F module versions which have two standard outputs in addition to the two safety inputs; power is supplied either from only the yellow AS-Interface cable or as auxiliary voltage from the black 24 V DC cable.

AS-Interface

ASIsafe

AS-Interface safety modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
K20F compact safety modules								
I/O type		U_{aux} 24 V						
2 F-DI	--	A	3RK1 205-0BQ30-0AA3	1	1 unit	121	0.075	
K45F compact safety modules								
Modules supplied without mounting plate								
I/O type		U_{aux} 24 V						
2 F-DI	--	▶	3RK1 205-0BQ00-0AA3	1	1 unit	121	0.103	
4 F-DI	--	A	3RK1 205-0CQ00-0AA3	1	1 unit	121	0.110	
2 F-DI/2 DO	--	B	3RK1 405-0BQ20-0AA3	1	1 unit	121	0.110	
2 F-DI/2 DO	✓	B	3RK1 405-1BQ20-0AA3	1	1 unit	121	0.110	
2 F-DI LS type 2 ¹⁾	--	A	3RK1 205-0BQ21-0AA3	1	1 unit	121	0.108	
2 F-DI LS type 4 ²⁾	--	A	3RK1 205-0BQ24-0AA3	1	1 unit	121	0.108	
1) Connection of Siemens light curtain FS 400 3RG7843 (type 2) through socket 1/3								
2) Connection of Siemens light curtain FS 400 3RG7846 (type 4) through socket 1/3, other makes through socket 2/3								
S22.5F SlimLine safety modules								
Connection	I/O type		U_{aux} 24 V					
Screw	2 F-DI	--	A	3RK1 205-0BE00-0AA2	1	1 unit	121	0.132
	2 F-DI/2 DO	--	A	3RK1 405-0BE00-0AA2	1	1 unit	121	0.180
	2 F-DI/2 DO	✓	A	3RK1 405-1BE00-0AA2	1	1 unit	121	0.180
Spring	2 F-DI	--	A	3RK1 205-0BG00-0AA2	1	1 unit	121	0.102
	2 F-DI/2 DO	--	B	3RK1 405-0BG00-0AA2	1	1 unit	121	0.170
	2 F-DI/2 DO	✓	B	3RK1 405-1BG00-0AA2	1	1 unit	121	0.170
Accessories								
K45 mounting plates								
For mounting K45F								
• For wall mounting ▶ 3RK1 901-2EA00 1 1 unit 121 0.027								
• For standard rail mounting ▶ 3RK1 901-2DA00 1 1 unit 121 0.036								
Connecting cables for K45F LS (light sensor)								
For transmitters, 5-pole, both ends with M12 plug								
• Straight, plug/box, length 5 m C 3RG7848-3EA 1 1 unit 575 0.259								
• Straight/angled, plug/box, length 5 m C 3RG7848-3EB 1 1 unit 575 0.271								
• Straight, plug/box, length 10 m C 3RG7848-3EC 1 1 unit 575 0.485								
• Straight/angled, plug/box, length 10 m C 3RG7848-3ED 1 1 unit 575 0.052								
• Straight, plug/box, length 15 m C 3RG7848-3EE 1 1 unit 575 0.702								
• Straight/angled, plug/box, length 15 m C 3RG7848-3EF 1 1 unit 575 0.052								
For transmitters, 8-pole, both ends with M12 plug								
• Straight, plug/box, length 5 m C 3RG7848-3CA 1 1 unit 575 0.306								
• Straight/angled, plug/box, length 5 m C 3RG7848-3CB 1 1 unit 575 0.360								
• Straight, plug/box, length 10 m C 3RG7848-3CC 1 1 unit 575 0.580								
• Straight/angled, plug/box, length 10 m C 3RG7848-3CD 1 1 unit 575 0.052								
• Straight, plug/box, length 15 m C 3RG7848-3CE 1 1 unit 575 0.845								
• Straight/angled, plug/box, length 15 m C 3RG7848-3CF 1 1 unit 575 0.859								
24 V supply modules for K45F LS (light sensor)								
Optional, for transmitter supply with large protective field widths A 3RK1 901-1NP00 1 1 unit 121 0.075								
Modules supplied without mounting plate								
Input bridges for K45F								
• Black version A 3RK1 901-1AA00 1 1 unit 121 0.012								
• Red version D 3RK1 901-1AA01 1 1 unit 121 0.013								
AS-Interface sealing caps M12								
For free M12 sockets ▶ 3RK1 901-1KA00 100 10 units 121 0.100								
AS-Interface sealing caps M12, tamper-proof								
For free M12 sockets A 3RK1 901-1KA01 100 10 units 121 0.100								

* You can order this quantity or a multiple thereof.

Overview



CP 243-2

The CP 243-2 is the AS-Interface master for the SIMATIC S7-200 and has the following features:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission (Analog Profiles 7.3 and 7.4)
- Supports all AS-Interface master functions according to the extended AS-Interface Specification V2.1
- Indication of the operating state and readiness for operation of connected slaves by means of LEDs in the front panel
- Fault indications (e. g. AS-Interface voltage fault, configuration fault) by means of LEDs in the front panel
- Compact enclosure in SIMATIC S7-200 design

Design

The CP 243-2 is connected like an expansion module to the S7-200. It has:

- Two terminal connections for direct connection of the AS-Interface cable
- LEDs in the front panel for indicating the operating state and functional readiness of all connected slaves
- Two pushbuttons for indicating the status information of the slaves, for switching over the operating state and for adopting the existing ACTUAL configuration as the DESIRED configuration.

Function

The CP 243-2 supports all specified functions of the extended AS-Interface Specification V2.1.

In the process image of the S7-200 the CP 243-2 occupies one digital input byte (status byte), one digital output byte (control byte), and 8 analog input and 8 analog output words. The CP 243-2 thus occupies two (logic) slots. The operating mode of the CP 243-2 can be set with the status byte and the control byte using the user program. Depending on the operating mode the CP 243-2 saves either the digital or analog I/O data of the AS-Interface slaves or diagnostic values in the analog address area of the S7-200, or it enables master calls (e. g. re-addressing of the slaves).

Configuration

All connected AS-Interface slaves are configured at the press of a button. No further configuration of the CP is required.

Benefits



- More flexibility and versatility in the use of SIMATIC S7-200 as the result of the distinct increase in the number of digital and analog inputs/outputs available

- Shorter start-up times through simple configuration at the press of a button
- Reduction of standstill and servicing times in the event of a fault thanks to the LED indicators
- Status of the CP
 - Indication of all the slaves connected and their readiness for operation
 - Monitoring of the AS-Interface mains voltage

Application

The CP 243-2 is the AS-Interface master connection for the 22x CPUs of the SIMATIC S7-200. Through connection to AS-Interface the number of inputs and outputs available for S7-200 is greatly increased (max. 248 DI / 186 DO on the AS-Interface per CP).

Analog values (per CP a maximum of 31 standard analog slaves with up to 4 channels each) also become available on the AS-Interface for the S7-200 thanks to the integrated analog value processing. On the S7-200, up to two CP 243-2 communications processors can be operated simultaneously.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
CP 243-2 communications processors For connection of the SIMATIC S7-200 to AS-Interface; corresponds to AS-Interface Specification V2.1; dimensions (W x H x D / mm): 71 x 80 x 62 (without fixing lugs)	A	6GK7 243-2AX01-0XA0		1	1 unit	121	0.204

More information

The manuals are available on the Internet at support.automation.siemens.com/WW/view/en/10805937/133300

* You can order this quantity or a multiple thereof.

AS-Interface

Masters

Masters for SIMATIC S7
CP 343-2P, CP 343-2

Overview



CP 343-2P / CP 343-2

The CP 343-2P is the AS-Interface master for the SIMATIC S7-300 and the ET 200M distributed I/O station, with user-friendly parameterizing options.

The CP 343-2 is the basic version of the same module.

The CP343-2P / CP 343-2 has the following features:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission (all analog profiles)
- Supports all AS-Interface master functions according to the AS-Interface Specification V3.0
- Status displays of operating states and indication of the readiness for operation of connected slaves by means of LEDs in the front panel
- Fault indications (e. g. AS-Interface voltage fault, configuration fault) by means of LEDs in the front panel
- Compact enclosure in the design of the SIMATIC S7-300
- Extra with the CP343-2P: Supports detailed configuration of the AS-Interface-network with STEP 7 V5.2 and higher

Design

The CP 343-2P / CP 343-2 is connected like an I/O module to the S7-300. It has:

- Two terminal connections for direct connection of the AS-Interface cable
- LEDs in the front panel for indicating the operating state and the readiness for operation of all connected and activated slaves
- Pushbuttons for switching over the master operating state and for adopting the existing ACTUAL configuration of the AS-i slave as the DESIRED configuration

Function

The CP 343-2P / CP 343-2 supports all specified functions of the extended AS-Interface Specification V3.0.

The CP 343-2 / CP 343-2P occupies 16 bytes each in the I/O address area of the SIMATIC S7-300. The digital I/O data of the standard slaves and A slaves are saved in this area. The digital I/O data of the B slaves and the analog I/O data can be accessed with the S7 system functions.

If required, master calls can be performed with the command interface FC ASI_3422, e. g. read/write parameters, read/write configuration. The FC including a STEP7 sample program can be downloaded from the Internet at support.automation.siemens.com/WWW/view/en/5581657.

Configuration

All connected AS-Interface slaves are configured at the press of a button. No further configuration of the CP is required.

Additional features of the CP 343-2P

The CP 343-2P also supports configuring of the AS-Interface network with STEP 7 V5.2 and higher. Specifying the AS-i configuration in HW-Config facilitates the setting of slave parameters and documentation of the plant. Uploading the ACTUAL configuration of an already configured AS-Interface network is also supported. The saved configuration cannot be overwritten at the press of a button and is therefore tamper-proof.

Benefits



- Shorter start-up times through simple configuration at the press of a button
- Construction of flexible distributed structures by use in the DP slave ET 200M
- Provides diagnostics of the AS-Interface networks
- Well suited also for complex applications thanks to connection options for 62 slaves and integral analog value processing

- Reduction of standstill and servicing times in the event of a fault thanks to the LED indicators:
 - Status of the AS-Interface network
 - Slaves connected and their readiness for operation
 - Monitoring of the AS-Interface mains voltage
- Lower costs for stock keeping and spare parts because the CP can be used for the SIMATIC S7-300 as well as for the ET 200M
- Extra with the CP 343-2P: Improved plant documentation and support for service assignments thanks to a description of the AS-Interface configuration in the STEP 7 project

Application

The CP 343-2P / CP 343-2 is the AS-Interface master connection for the SIMATIC S7-300 and the ET 200M.

Through connection to AS-Interface it is possible to access max. 248 DI/248 DO per CP, using 62 A/B slaves with 4DI/4DO each.

With the integrated analog value processing it is easy to transmit analog signals (per CP up to 62 A/B analog slaves with a maximum of two channels each or up to 31 A/B analog slaves with a maximum of 4 channels each).

The CP 343-2P is the further development of the CP 343-2 and contains its entire functionality. An existing STEP 7 user program for a CP 343-2 can thus be used without restrictions with a CP 343-2P. It is only in STEP 7 HW-Config that the two modules are configured differently, with the CP 343-2P offering additional options. This is why the CP 343-2P is recommended.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
CP 343-2P communications processors For connection of SIMATIC S7-300 and ET 200M to AS-Interface; configuration of the AS-Interface network using the SET key or STEP 7 (V5.2 and higher); including manual on CD-ROM (English, French, German, Italian, Spanish); without front connector; corresponds to AS-Interface Specification V3.0; dimensions (W x H x D / mm): 40 x 125 x 120	A	6GK7 343-2AH11-0XA0		1	1 unit	121	0.050
CP 343-2 communications processors Basic version for connection of SIMATIC S7-300 and ET 200M to AS-Interface Configuration of the AS-i network using the SET key; including manual on CD-ROM (English, French, German, Italian, Spanish); without front connector; corresponds to AS-Interface Specification V3.0; dimensions (W x H x D / mm): 40 x 125 x 120	A	6GK7 343-2AH01-0XA0		1	1 unit	121	0.050
Front connectors 20-pole, with screw-type contacts	A	6ES7 392-1AJ00-0AA0		1	1 unit	230	0.069
Front connectors 20-pole, with spring-type terminals	A	6ES7 392-1BJ00-0AA0		1	1 unit	230	0.059

More information

The manuals are available on the Internet at
support.automation.siemens.com/WW/view/en/14310380/133300

AS-Interface Routers

DP/AS-i LINK Advanced

Overview



DP/AS-i LINK Advanced

PN	DP-M	DP-S	ASI-M
		■	■

The DP/AS-i LINK Advanced is a compact router between PROFIBUS (DP Slave) and AS-Interface, with the following features:

- Single and double AS-Interface master (according to AS-Interface Specification V3.0) for connection of 62 AS-Interface slaves or 124 AS-Interface slaves (with a double master)
- Integrated analog value transmission (all analog profiles)
- Integrated ground-fault monitoring for the AS-Interface cable
- User-friendly local diagnostics and start-up by means of a full graphic display and control keys or through a web interface with a standard browser
- Optimum TIA integration using STEP 7
- Integration in non-Siemens engineering tools using the PROFIBUS GSD file
- Vertical integration (standard web interface) through Industrial Ethernet
- Supply voltage from the AS-Interface shaped cable or alternatively with 24 V DC (optional)
- Module exchange without entering the connection parameters (PROFIBUS address etc) using C-PLUG (optional)

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- Compact design:
 - Pixel graphics display in the front panel for detailed indication of the operating state and readiness for operation of all connected AS-Interface slaves
 - 6 pushbuttons for starting up and testing the AS-Interface line directly on the DP/AS-i LINK Advanced
 - LED indication of the operating state of PROFIBUS DP and AS-Interface
 - Integrated Ethernet port (RJ45 socket) for user-friendly start-up, diagnostics and testing of DP/AS-i LINK Advanced through a web interface using a standard browser
- Small mounting depth thanks to recessed plug mounting
- Operation without fans and batteries

Function

Communication

The DP/AS-i LINK Advanced enables a PROFIBUS DP master to cyclically access the I/O data of all the slaves of a lower-level AS-Interface segment. Also supported are the expanded slave types with higher I/O data volume according to AS-i Specification V3.0.

The DP/AS-i LINK Advanced occupies the following address area:

- As a single master: 32 bytes of input data and 32 bytes of output data in which the I/O data of the connected AS-Interface slaves (standard and A/B slaves) of an AS-i line are stored.
- A double master occupies twice the number of bytes.

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the DP master.

The integrated evaluation of analog signals is just as easy as access to digital values because the analog process data also lie directly in the I/O address area of the CPU.

PROFIBUS DP V1 masters are able in addition to initiate AS-Interface master calls (e. g. to write parameters, change addresses, read diagnostic values) through the acyclic PROFIBUS services.

Using an operating display in AS-i Link it is possible to fully commission the lower-level AS-Interface line. DP/AS-i LINK Advanced is equipped with an additional Ethernet port which enable use of the integrated web server. Firmware updates are also possible without difficulty using this port.

The optional C-PLUG supports module exchange without entering the connection parameters (IP address etc.), keeping downtimes to a minimum in the event of a fault.

Diagnostics

The following diagnostics is possible using LEDs, the display and control keys, web interface or STEP 7:

- Operating state of the DP/AS-i LINK Advanced
- Status of the link as a PROFIBUS DP slave
- Diagnostics of the AS-Interface network
- Message frame statistics
- Standard diagnostics pages in the web interface for fast diagnostics access through Ethernet using a standard browser

Configuration

DP/AS-i LINK Advanced can be configured either by means of STEP 7 version V5.4 and higher or simply by adopting the AS-Interface actual configuration on the display.

With STEP 7 configuring the AS-Interface configuration can be uploaded in STEP 7 V5.4 and higher. User-friendly configuring of Siemens AS-i slaves in HW-Config is also possible in this case (slave selection dialog).

Alternatively, DP/AS-i LINK Advanced can be integrated by means of the PROFIBUS GSD file in the engineering tool (e. g. for STEP 7 V5.4 and lower or for non-Siemens engineering tools).

Benefits

get Designed for Industry

- Short start-up times through simple configuration at the press of a button and testing of the AS-Interface line using the display or web interface
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display or web interface and through simple module exchange with the help of the C-PLUG exchange medium

- Reduction of installation costs because the power supply comes completely from the AS-Interface cable, making an additional power supply superfluous
- Reduced amount of engineering work thanks to user-friendly configuration of Siemens slaves using the slave catalog in HW-Config (STEP 7)
- Costs saved by the double AS-Interface master when large volumes of project data are involved

Application

The DP/AS-i LINK Advanced is a PROFIBUS DP-V1 slave (according to EN 50170) and an AS-Interface master (based on AS-Interface Specification V3.0 according to EN 50295). It enables transparent data access to AS-Interface from PROFIBUS DP.

Exchanging data with the PROFIBUS DP master

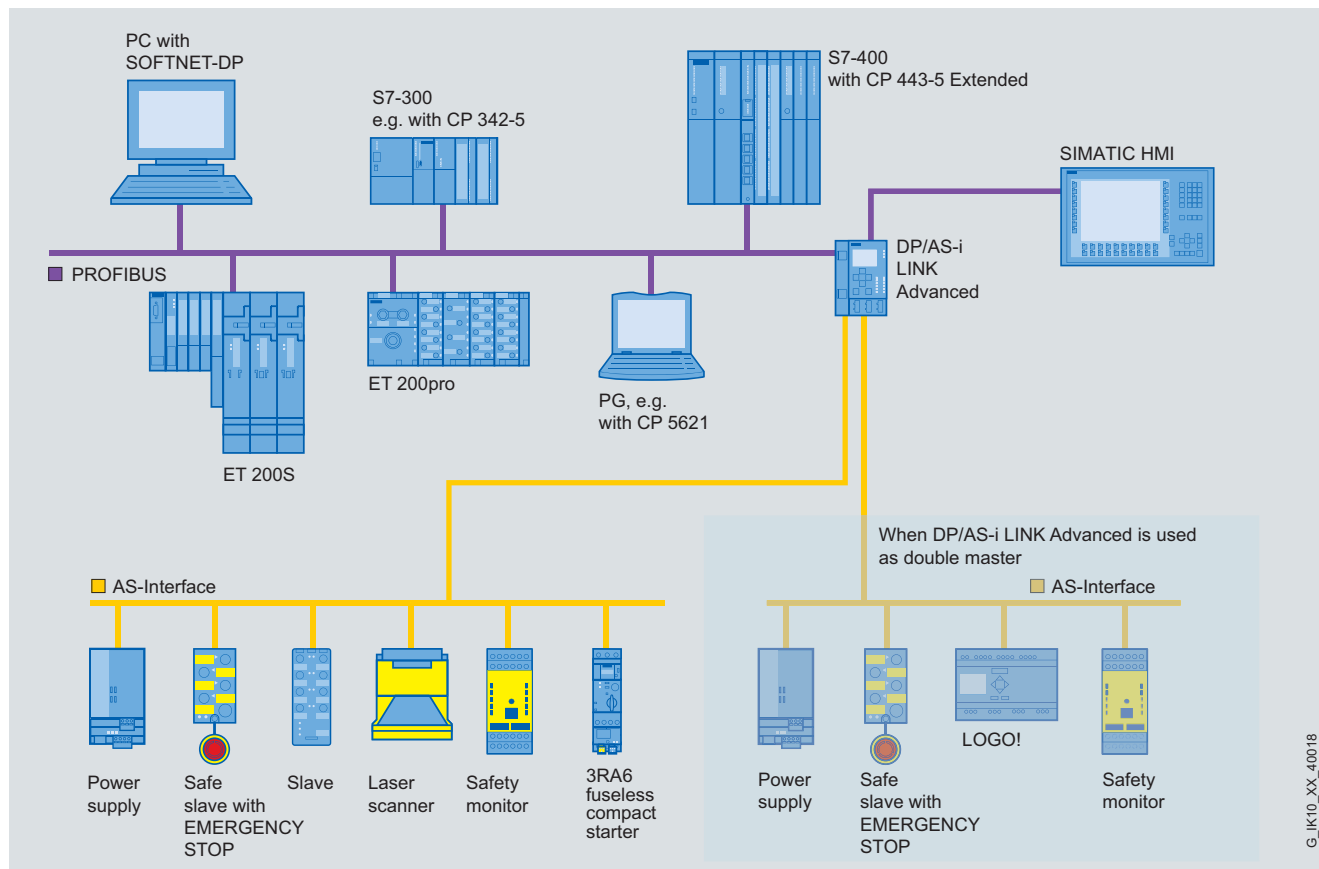
PROFIBUS DP masters (DP-V0) can exchange I/O data with AS-Interface in cyclic mode. PROFIBUS DP masters with acyclic services (DP-V1) are able in addition to initiate AS-Interface master calls (e. g. reading/writing the AS-i configuration during normal operation). As such, the DP/AS-i LINK Advanced is particularly well suited for a decentral construction and for connection of a lower-level AS-Interface network.

Single masters

For applications with typical volumes of project data it is sufficient to use the DP/AS-i LINK Advanced in its version as an AS-Interface single master. The single master can operate up to 248 DI/248 DO, using 62 A/B slaves with 4DI/4DO each.

Double masters

For applications with large volumes of project data the DP/AS-i LINK Advanced in its version as an AS-Interface double master is used. In this case, twice the volume of project data can be used on two AS-Interface lines running independently of each other. The double master can operate up to 496 DI/496 DO, using 2 AS-i networks with 62 A/B slaves each with 4DI/4DO each.



Integration of AS-Interface on PROFIBUS through DP/AS-i LINK Advanced as single/double master

AS-Interface Routers

DP/AS-i LINK Advanced

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
DP/AS-i LINK Advanced							
Router between PROFIBUS DP and AS-Interface; Degree of protection IP20; including manual on CD-ROM (English, French, German, Italian, Spanish); corresponds to AS-Interface Specification 3.0; dimensions (W x H x D / mm): 90 x 132 x 88.5							
• Single master with display	A	6GK1 415-2BA10		1	1 unit	121	0.380
• Double master with display	A	6GK1 415-2BA20		1	1 unit	121	0.380
Accessories							
C-PLUG							
Exchange medium for the simple exchange of devices in the event of a fault; for accommodating configuration and application data; can be used in SIMATIC NET products with a C-PLUG slot							
	A	6GK1 900-0AB00		1	1 unit	5N3	0.030
PROFIBUS FC Standard Cable GP							
Standard type with special design for fast installation, 2-core, shielded							
	A	6XV1 830-0EH10		1	1 M	5K2	0.082
PROFIBUS FastConnect RS485 bus connectors with angled cable feeder (35°)							
With insulation displacement connection the max. transmission rate is 12 Mbit/s							
• Without PG interface	A	6ES7 972-0BA60-0XA0		1	1 unit	250	0.045
• With PG interface	A	6ES7 972-0BB60-0XA0		1	1 unit	250	0.050
PROFIBUS FastConnect Stripping Tool I							
Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables							
	A	6GK1 905-6AA00		1	1 unit	5K2	0.065
IE FC RJ45 Plug 90							
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder							
• 1 pack = 1 unit	A	6GK1 901-1BB20-2AA0		1	1 unit	5K2	0.030
• 1 pack = 10 units	A	6GK1 901-1BB20-2AB0		1	1 unit	5K2	0.300
• 1 pack = 50 units	A	6GK1 901-1BB20-2AE0		1	1 unit	5K2	1.500

More information

The manuals are available on the Internet at support.automation.siemens.com/WW/view/en/28602701/133300

Overview



DP/AS-Interface Link 20E

PN	DP-M	DP-S	ASI-M
		■	■

DP/AS-Interface Link 20E connects PROFIBUS DP to AS-Interface and has the following features.

- PROFIBUS DP slave and AS-Interface master
- Up to 62 AS-Interface slaves, each with 4 digital inputs and 4 digital outputs as well as analog slaves can be connected
- Integrated analog value transmission (all analog profiles)
- Supports all AS-Interface master functions according to the AS-Interface Specification V3.0
- Supply from AS-Interface cable; hence no additional power supply required
- Supports the uploading of the AS-Interface configuration in STEP 7 V5.2 and higher

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- LEDs in the front panel for indicating the operating state and functional readiness of all connected slaves
- Setting option for PROFIBUS DP address by pressing a button
- LED indication of the PROFIBUS DP slave address, DP bus faults and diagnostics
- Two pushbuttons for switching over the operating state and for adopting the existing ACTUAL configuration as the DESIRED configuration

Function

Communication

DP/AS-Interface Link 20E enables a DP master to access all the slaves of an AS-Interface network.

DP/AS-Interface Link 20E occupies as standard 32 bytes of input data and 32 bytes of output data in which the digital I/O data of the connected AS-Interface slaves (standard and A/B slaves) of an AS-i line are stored.

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the DP master.

The analog I/O data can be accessed with the S7 system functions for read/write data record.

Configuration

DP/AS-Interface Link 20E can be configured either by means of STEP 7 version V5.1 SP2 and higher or simply by adopting the AS-Interface actual configuration using the SET pushbutton on the front panel.

With STEP 7 configuring the AS-Interface configuration can be uploaded in STEP 7 V5.2 and higher.

User-friendly configuring of Siemens AS-i slaves in HW-Config is also possible in this case (slave selection dialog).

Alternatively, DP/AS-Interface Link 20E can be integrated by means of the PROFIBUS GSD file in the engineering tool (e. g. for STEP 7 V5.1 and lower or for non-Siemens engineering tools).

Benefits



- Reduction of installation costs because the power supply comes completely from the AS-Interface cable, making an additional power supply superfluous

- Short start-up times through simple configuration at the press of a button
- Reduction of standstill and servicing times in the event of a slave failure thanks to the LED indicators
- Easy and fast start-up through reading out the AS-Interface configuration

Application

The DP/AS-Interface Link 20E is a PROFIBUS DP slave (according to EN 50170) and an AS-Interface master (according to EN 50295). It enables the AS-Interface to be operated on PROFIBUS DP.

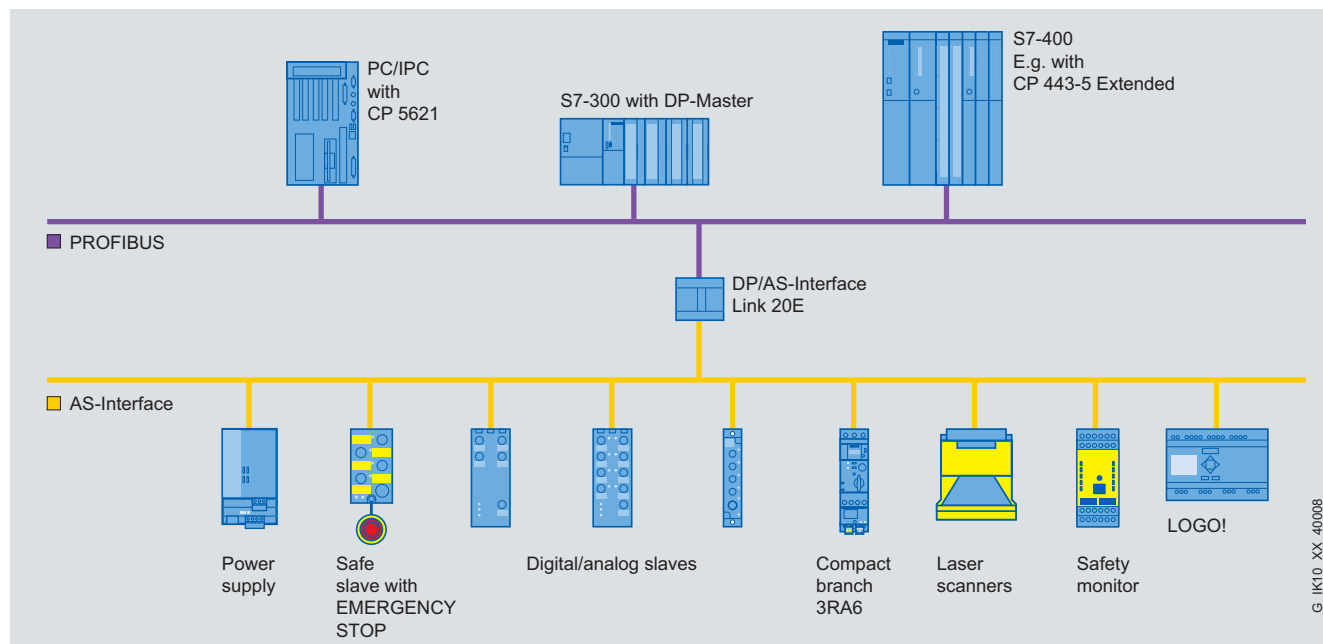
DP/AS-Interface Link 20E can operate up to 248 DI / 248 DO when using 62 A/B slaves with 4DI/4DO each.

PROFIBUS DP masters (DP-V0) can exchange I/O data with AS-Interface in cyclic mode.

PROFIBUS DP masters with acyclic services (DP-V1) are able in addition to initiate AS-Interface master calls (e. g. reading/writing the AS-i configuration during normal operation).

AS-Interface Routers

DP/AS-Interface Link 20E



Transition from PROFIBUS DP to AS-Interface using DP/AS-Interface Link 20E

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
DP/AS-Interface Link 20E Router between PROFIBUS DP and AS-Interface in degree of protection IP20; including manual on CD-ROM (English, French, German, Italian, Spanish); corresponds to AS-Interface Specification V3.0; dimensions (W x H x D / mm): 90 x 80 x 60 (without fixing lugs)	A	6GK1 415-2AA10		1	1 unit	121	0.200

Accessories

PROFIBUS FC Standard Cable GP Standard type with special design for fast installation, 2-core, shielded	A	6XV1 830-0EH10		1	1 M	5K2	0.082
PROFIBUS FastConnect RS485 bus connectors with 90° cable feeder With insulation displacement connection the max. transmission rate is 12 Mbit/s							
• Without PG interface	A	6ES7 972-0BA52-0XA0		1	1 unit	250	0.044
• With PG interface	A	6ES7 972-0BB52-0XA0		1	1 unit	250	0.049
PROFIBUS FastConnect RS485 bus connectors with angled cable feeder (35°) With insulation displacement connection the max. transmission rate is 12 Mbit/s							
• Without PG interface	A	6ES7 972-0BA60-0XA0		1	1 unit	250	0.045
• With PG interface	A	6ES7 972-0BB60-0XA0		1	1 unit	250	0.050
PROFIBUS FastConnect RS485 Plug 180 bus connectors With insulation displacement connection the max. transmission rate is 12 Mbit/s Cable feeder 180°							
• Without PG interface	A	6GK1 500-0FC10		1	1 unit	5N3	0.047
PROFIBUS FastConnect Stripping Tool Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables	A	6GK1 905-6AA00		1	1 unit	5K2	0.065

More information

The manuals are also available on the Internet at support.automation.siemens.com/WW/view/en/28602858/133300

Overview



DP/AS-i F-Link

PN	DP-M	DP-S	ASi-M
		■	■

The DP/AS-i F-Link is a compact, safety-oriented router between PROFIBUS (DP Slave) and AS-Interface, with the following features:

- Monitoring the inputs of safety-oriented digital AS-i slaves (ASIsafe slaves) and forwarding of data through PROFIsafe. No additional safety-oriented components required for the AS-Interface (e. g. safety monitor)
- Connection of up to 62 AS-Interface slaves
- Supports all AS-Interface master functions according to the AS-Interface Specification V3.0
- Typically easy transmission of non-safety-oriented input/output data of all AS-i slaves
- Integrated analog value transmission (all analog profiles)
- Direct integration in PROFIBUS networks.
Optional integration in PROFINET environments through PROFINET/PROFIBUS gateway (IE/PB Link PN IO) or through SIMATIC S7-315/317/319 F PN/DP or S7-416F-3 PN/DP
- Connection to ET 200S with IM-F-CPU using DP master module is possible
- Optimum TIA integration in STEP 7 using Object Manager, integration in non-Siemens engineering tools using PROFIBUS GSD file
- Local diagnostics using LEDs and display with control keys

Design

- Rugged, slim plastic enclosure, degree of protection IP20, for standard rail mounting or wall mounting (with adapter)
- Compact design:
 - LEDs in the front panel for indicating the operating state and functional readiness of all connected slaves
 - 2 buttons on the front for start-up and call up of diagnostics information
 - 4 LEDs for indication of the operating state of the device, of PROFIBUS DP and the AS-Interface network
 - Front PROFIBUS DP connection with sub D connector
 - Removable terminal blocks for connection of AS-i +/- and control supply voltage (using 24 V DC PELV power supply unit)
 - Narrow width (45 mm)
- Operation without fans and batteries
- Fast device replacement in the event of a fault

Function

Communication principle

The PROFIBUS DP master or the safe control communicates with the AS-Interface slaves over the DP/AS-i F-Link. The AS-Interface process data are mapped in different data areas for non-safety-oriented input and output data and safety-oriented input data.

Diagnostics

Extensive diagnostics is possible using the four LEDs, display and control keys or SIMATIC S7. Further details can be found in the manual.

Configuration

The DP/AS-i F-Link can be configured by means of STEP 7 Version V5.4 SP1 and higher. In particular the user-friendly parameterizing of Siemens AS-Interface slaves using the slave selection dialog is possible. Uploading the ACTUAL configuration of an already configured AS-Interface network is also supported.

Alternatively, DP/AS-i F-Link can be integrated in the engineering tool using the PROFIBUS GSD file. As a startup aid the actual configuration for activating the AS-Interface slaves can also be adopted directly on the device.

Programming

In contrast to the AS-Interface safety monitor, the DP/AS-i F-Link functions solely as a gateway, and does not process its own safety logic. Programming of the safety function is implemented at the level of the higher-level failsafe PLC, e. g.:

- With Distributed Safety, Version V5.4 SP1 or higher for SIMATIC S7-300F/416F
- With the SAFETY INTEGRATED "SI-Basic" or "SI-COMFORT" NCU Software for SINUMERIK 840D pl/sl

The safety range and the standard range can access the digital and analog I/O data of the connected AS-Interface slaves directly through the I/O address area of the CPU.

Benefits



- Gaps in (bus-based) safety technology closed: safety-oriented signals (EMERGENCY-STOP, door tumbler, light curtains etc.) collected with AS-i and transferred to higher-level F PLC. This enables:
 - Quick installation, easy commissioning: Use of AS-i virtues in the field now fully consistent for Safety Integrated
 - Cost-effective solution as ASIsafe is ideally suited for the collection of "fewer but more distributed failsafe bits".
- Price advantage: As a fully fledged AS-i master according to Specification V3.0, more input and outputs can be used, e. g.:
 - up to 248 DI / 248 DO when using 62 A/B slaves with 4DI/4DO each
 - up to 62 digital or analog slaves
- Investment protection:
 - Connection to PROFIBUS networks, such as DP/AS-i Link Advanced or DP/AS-interface Link 20E
 - Downward compatibility to AS-Interface specification V2
- Open for modern automation concepts with AS-i
- Teaching the code sequences of ASIsafe slaves is possible at the press of a button
- Reduced amount of engineering work thanks to user-friendly configuration of all AS-i slaves from Siemens using the slave selection dialog in HW-Config (STEP 7), including setting the F-parameter of the ASIsafe slaves modeled on PROFIsafe slaves
- Cost-savings thanks to programming of the safety logic with the familiar, powerful commands of the distributed safety packages from the failsafe SIMATIC PLC in F-FUP or F-FOP, incl. TUV-certified function blocks for typical safety applications
- Use in machine-tools under SINUMERIK 840 D (pl/sl) possible
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display and through simple module exchange (only a few settings by control keys are required, without use of the configuring tool)

Application

Links between PROFIsafe and ASIsafe

The DP/AS-i F-Link is a PROFIBUS DP-V1 slave (according to EN 50170) and an AS-Interface master (based on AS-Interface Specification V3.0 according to EN 50295). It enables transparent data access to AS-Interface from PROFIBUS DP. The DP/AS-i F-Link is also the only AS-i master with which safety-oriented input data can be passed from ASIsafe slaves via the PROFIsafe protocol to a failsafe CPU with PROFIBUS DP master. No additional safety cabling or monitoring is required (in particular no AS-Interface safety monitor). The transmission of binary values or analog values is possible depending on the slave type. All slaves according to AS-Interface Specification V2.0, V2.1 or V3.0 can be used as AS-i slaves.

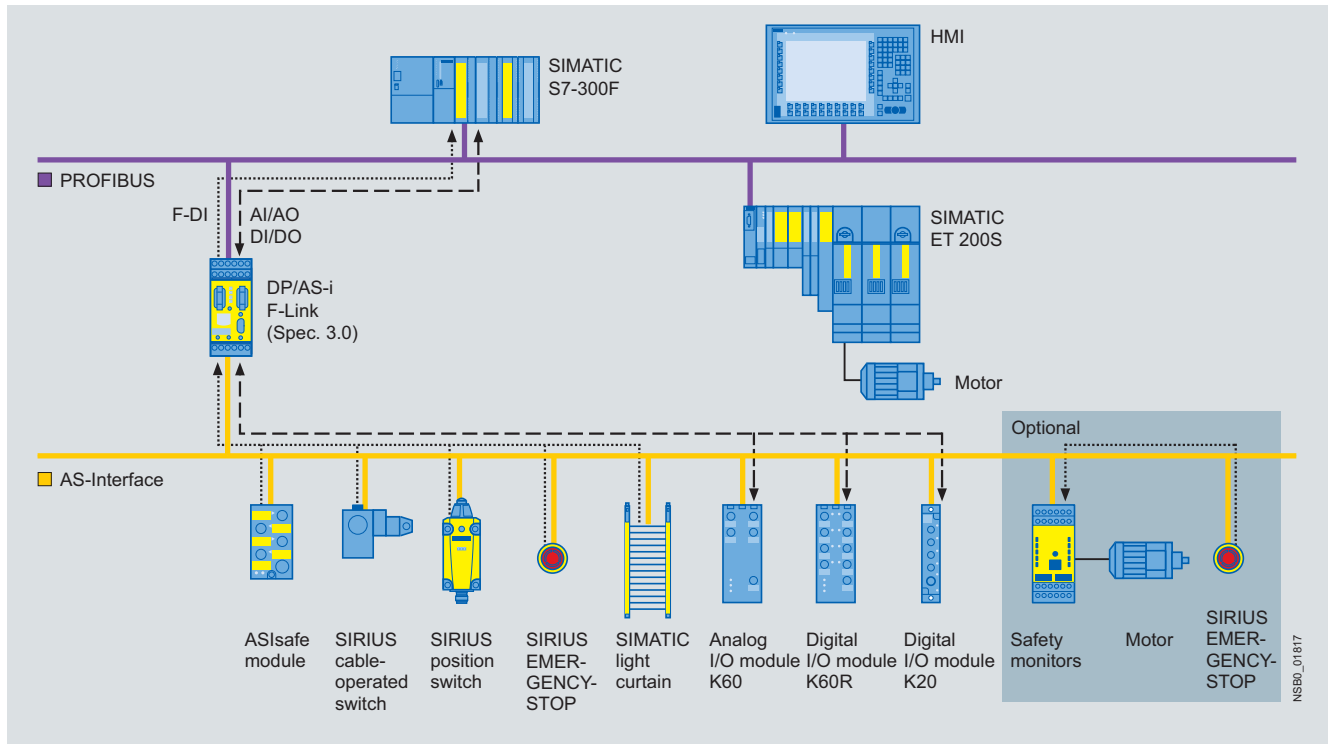
PROFIBUS DP masters according to DP-V0 or DP-V1 can exchange I/O data with lower-level AS-i slaves in cyclic mode. PROFIBUS DP masters with acyclic services according to DP-V1 are able in addition to initiate AS-i command calls (e. g. reading/writing the AS-i configuration during normal operation). In addition to digital I/O data, analog data can also be saved per-
formantly in the cyclic periphery of a failsafe S7-300/S7-416 F-CPU.

In configuring mode the DP/AS-i F-Link reads in the configuration data of the peripherals on the AS-Interface. Slave addresses can be set using the display and the control keys, and the code sequences of safe AS-i slaves can be taught.

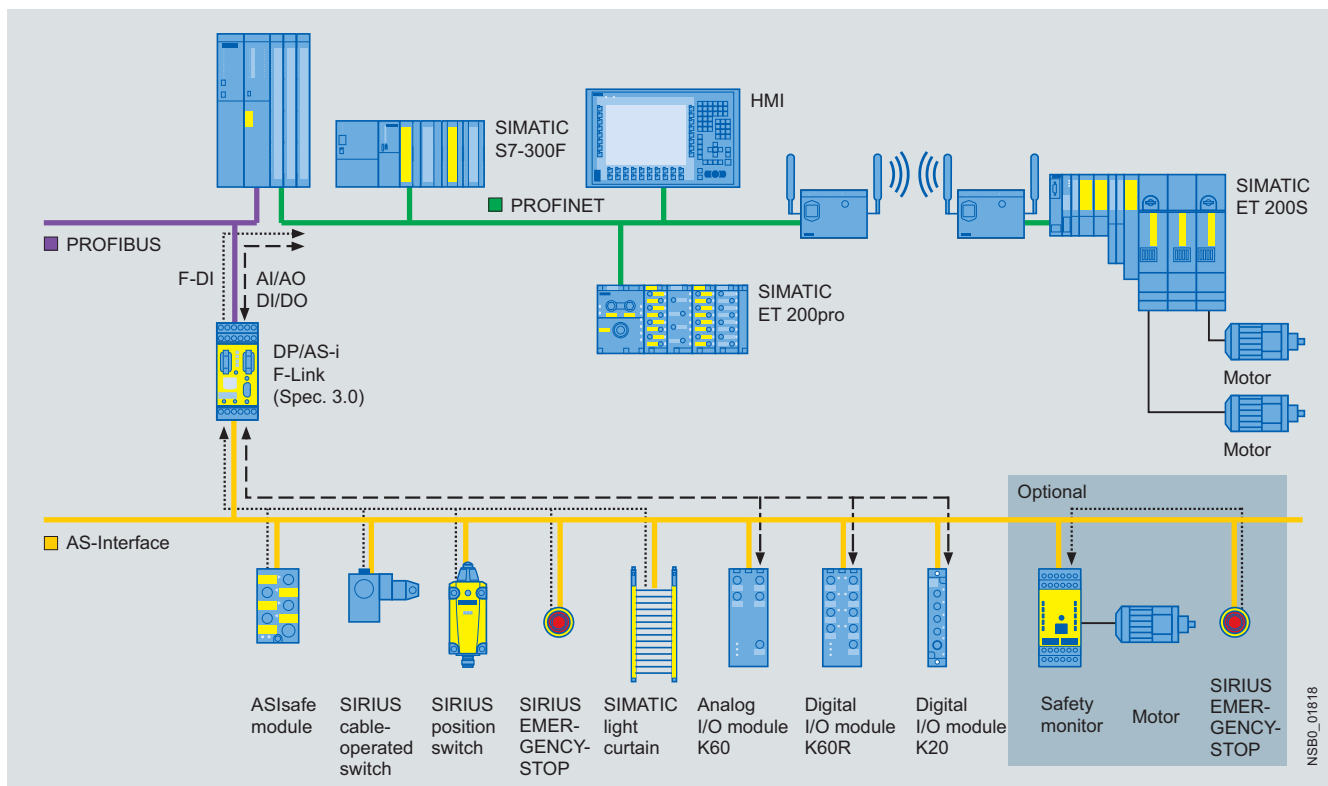
During operation, four display LEDs and the display provide detailed diagnostics information, which directly localizes the fault if required. Using the PLC user program it is possible to read out diagnostics data records and make them available to a higher-level operating and monitoring system (e. g. WinCC Flexible or TRANSLINE HMI).

Network connectivity

The DP/AS-i F-Link can be used in a variety of constellations.



Constellation 1: integration in PROFIBUS networks under SIMATIC F PLC



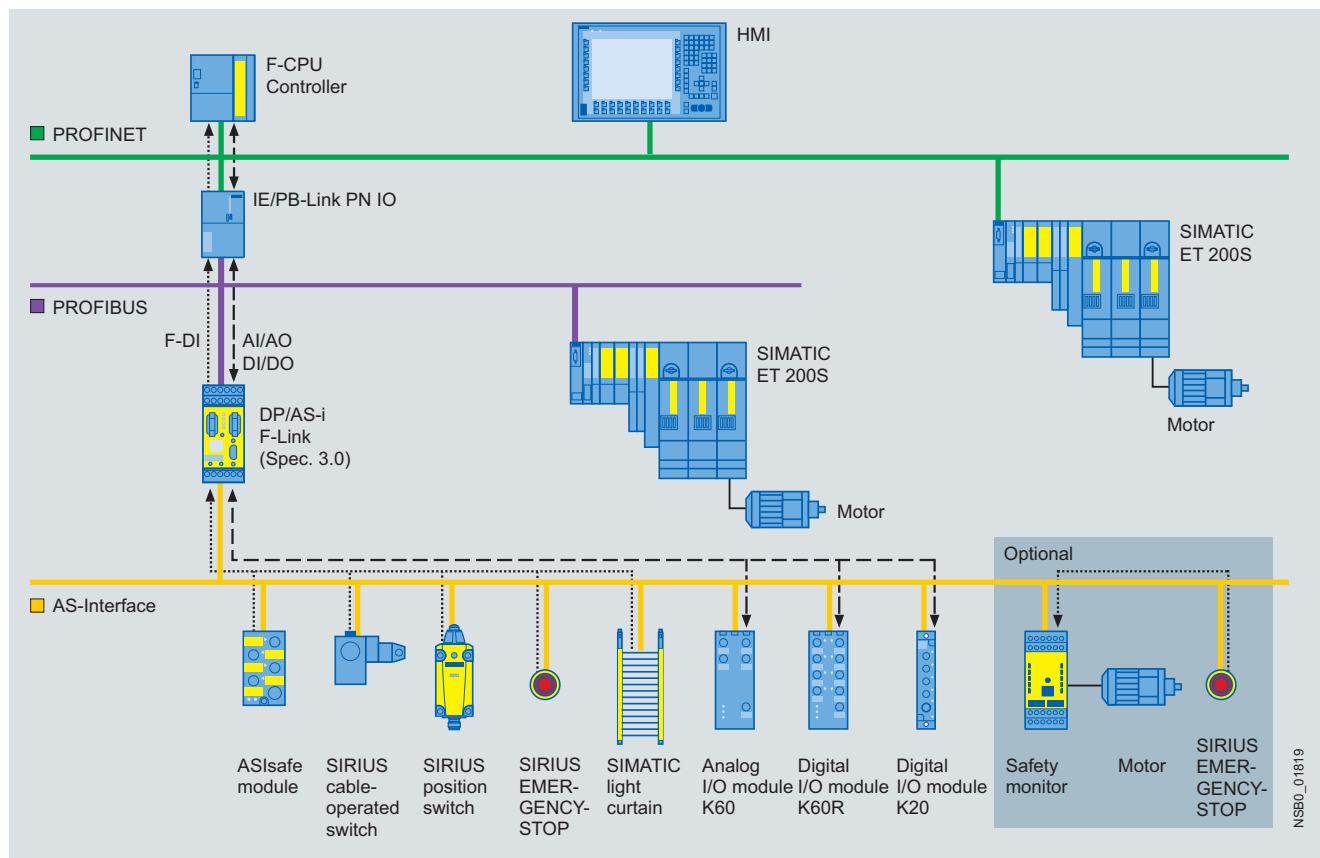
Constellation 2: integration in PROFINET networks under SIMATIC F PLC

AS-Interface

Routers

DP/AS-i F-Link

2




Constellation 3: alternatively integration in PROFINET networks under SIMATIC F PLC through IE/PB Link

Further network connectivity options:

- Integration in SINUMERIK Power Line and Solution Line
- Integration under non-Siemens failsafe control systems using PROFIBUS GSD file, available on the Internet at support.automation.siemens.com/WW/view/en/113250

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kg							
 <p>DP/AS-i F-Link Router between PROFIBUS DP and AS-Interface for safety-oriented data transmission from ASIsafe to PROFIBUS DP – PROFIsafe in degree of protection IP20; corresponds to AS-Interface Specification V3.0; dimensions (W x H x D / mm): 45 x 104 x 120</p> <ul style="list-style-type: none"> •Screw terminals •Spring-type terminals 	A	3RK3 141-1CD10		1	1 unit	121	0.300
	A	3RK3 141-2CD10		1	1 unit	121	0.300

More information

More accessories for the PROFIBUS connection can be found on [page 2/28](#).

The DP/AS-i F-Link manual is available on the Internet at support.automation.siemens.com/WW/view/en/24196041

Circuit examples for safety systems with DP/AS-i F-Link are available on the Internet at support.automation.siemens.com/WW/view/en/24509484

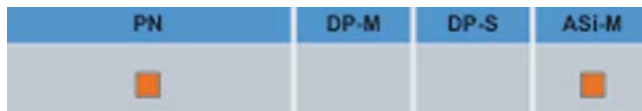
The F-Link Object Manager must be installed for configuring HW-Config (STEP 7). The Object Manager can be downloaded free of charge from the Internet at support.automation.siemens.com/WW/view/en/24724923.

More presales information can be found at www.siemens.com/as-interface/master.

Overview



IE/AS-i LINK PN IO



The IE/AS-i LINK PN IO is a compact router between PROFINET/Industrial Ethernet (PROFINET IO Device) and AS-Interface, with the following features:

- Single and double AS-Interface master (according to AS-Interface Specification V3.0) for connection of 62 AS-Interface slaves or 124 AS-Interface slaves (with a double master)
- Integrated analog value transmission (all analog profiles)
- Integrated ground-fault monitoring for the AS-Interface cable
- User-friendly local diagnostics and start-up by means of a full graphic display and control keys or through a web interface with a standard browser
- Optimum TIA integration using STEP 7
- Integration in non-Siemens engineering tools using the PROFINET GSD file
- Vertical integration (standard web interface) through Industrial Ethernet
- Supply voltage from the AS-Interface shaped cable or alternatively with 24 V DC
- Module exchange without entering the connection parameters (IP address etc) using C-PLUG (optional)
- Costs saved by the double AS-Interface master when large volumes of project data are involved

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- Compact design:
 - Pixel graphics display in the front panel for detailed indication of the operating state and readiness for operation of all connected AS-Interface slaves
 - Six pushbuttons for starting up and testing the AS-Interface line directly on the IE/AS-i LINK PN IO
 - LED indication of the operating state of PROFINET IO and AS-Interface
 - Integrated 2-port switch (RJ45 socket) for connection to Industrial Ethernet supports the line topology with an external switch
- Small mounting depth thanks to recessed plug mounting
- Operation without fans and batteries

Function

Communication

The IE/AS-i LINK PN IO enables a PROFINET IO controller to cyclically access the I/O data of all the slaves of a lower-level AS-Interface segment. Also supported are the expanded slave types with higher I/O data volume according to AS-i Specification V3.0.

The IE/AS-i LINK PN IO occupies the following address area:

- As a single master or IO controller with full expansion: 62 bytes of input data and 62 bytes of output data in which the I/O data of the connected AS-Interface slaves (standard and A/B slaves) of an AS-i line are stored.
- A double master occupies twice the number of bytes.

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the DP master.

The integrated evaluation of analog signals is just as easy as access to digital values because the analog process data also lie directly in the I/O address area of the CPU.

PROFINET IO controllers are able in addition to initiate AS-Interface master calls (e. g. to write parameters, change addresses, read diagnostic values) through the acyclic PROFINET services.

Using an operating display in AS-Interface Link it is possible to fully commission the lower-level AS-i line.

The IE/AS-i LINK PN IO is equipped with two Ethernet ports which are connected by an internal switch. With the Ethernet it is possible in addition to use the integrated web server. Firmware updates are also possible without difficulty using this port.

The optional C-PLUG supports module exchange without entering the connection parameters (IP address etc.), keeping downtimes to a minimum in the event of a fault.

Diagnostics

The following diagnostics is possible using the display and control keys, web interface or STEP 7:

- Operating state of the E/AS-i LINK PN IO
- Status of the link as a PROFINET IO device
- Diagnostics of the AS-Interface network
- Message frame statistics
- Standard diagnostics pages in the web interface for fast diagnostics access through Ethernet using a standard browser

Configuration

STEP 7 V5.4 or higher is required for configuring the full functional scope of the IE/AS-i LINK PN IO. With STEP 7 configuring the AS-Interface configuration can be uploaded in STEP 7 V5.4 SP2 and higher.

User-friendly configuring of Siemens AS-i slaves in HW-Config is also possible in this case (slave selection dialog).

Alternatively, E/AS-i LINK PN IO can be integrated by means of the PROFINET GSD file in the engineering tool (e. g. for STEP 7 V5.4 SP2 and lower or for non-Siemens engineering tools).

AS-Interface

Routers

IE/AS-i LINK PN IO

Benefits



- Short start-up times through simple configuration at the press of a button and testing of the AS-Interface line using the display or web interface
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display or web interface

- Reduction of installation costs because the power supply comes completely from the AS-Interface cable, making an additional power supply superfluous
- Reduced amount of engineering work thanks to user-friendly configuration of Siemens slaves by Drag&Drop in HW Config (STEP 7)

Application

The DP/AS-i LINK PN IO is a PROFINET IO device (according to IEC 61158) and an AS-Interface master (based on AS-Interface Specification V3.0 according to EN 50 295). It enables transparent data access to AS-Interface from Industrial Ethernet.

Exchanging data with PROFINET IO controllers

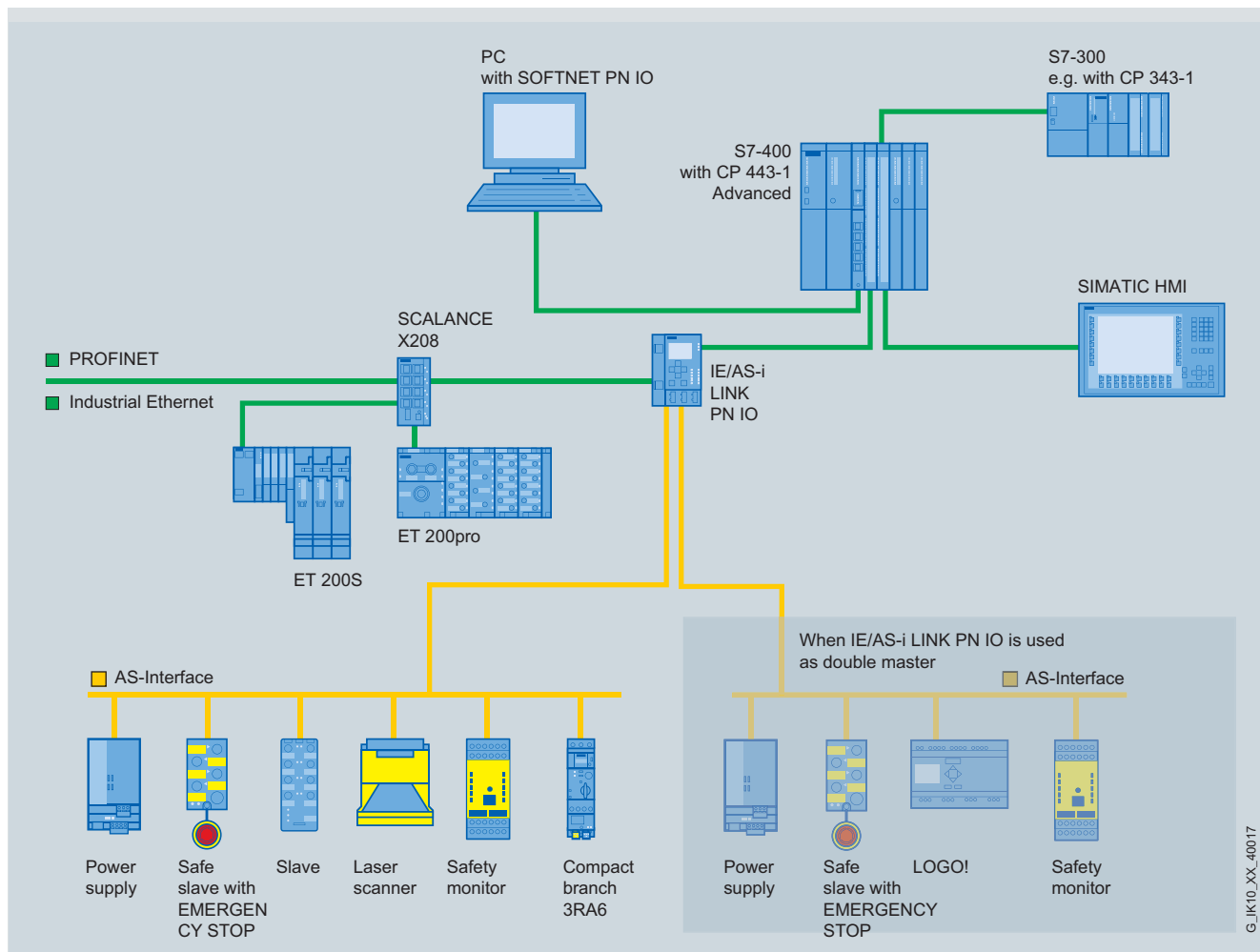
PROFINET IO controllers can exchange I/O data with AS-Interface in cyclic mode and can perform AS-i master calls in addition with acyclic services (e. g. reading/writing the AS-i configuration during normal operation). As such, the IE/AS-i LINK PN IO is particularly well suited for a decentral construction and for connection of a lower-level AS-Interface network.

Single masters

For applications with typical volumes of project data it is sufficient to use the IE/AS-i LINK PN IO in its version as an AS-i single master. The single master can operate up to 248 DI/248 DO, using 62 A/B slaves with 4DI/4DO each.

Double masters

For applications with large volumes of project data the IE/AS-i LINK PN IO in its version as an AS-i double master is used. In this case, twice the volume of project data can be used on two AS-i lines running independently of each other. The double master can operate up to 496 DI/496 DO, using 2 AS-i networks with 62 A/B slaves each with 4DI/4DO each.

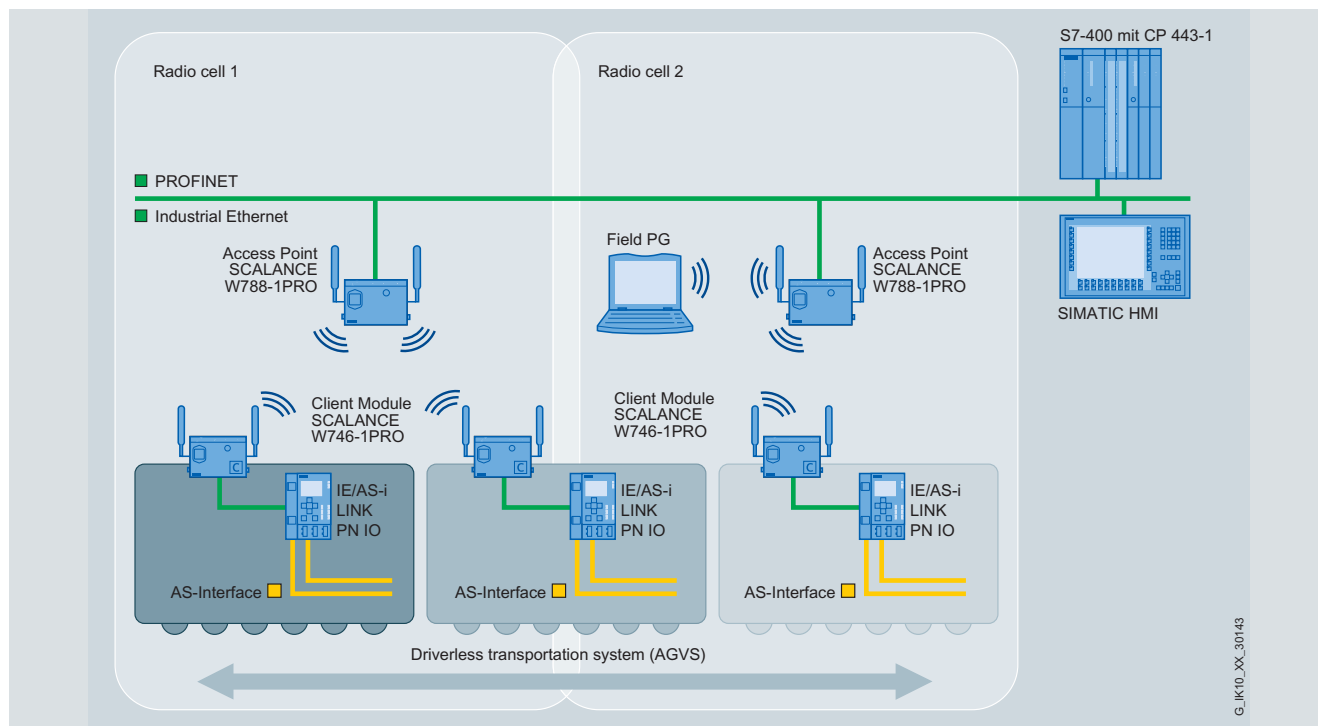


Integration of AS-Interface on PROFINET through IE/AS-i LINK PN IO as single/double master

Wireless communication

Using an upstream IWLAN client module, e. g. SCALANCE W746-1PRO, an AS-Interface line can be integrated in the PROFINET world by wireless means.

Sample uses are applications which up to now have been performed with fault-prone tow chain or collector wire technology. Maintenance costs are thus reduced.



Wireless communication between Industrial Ethernet and AS-Interface components

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IE/AS-i LINK PN IO							
Router between PROFINET/Industrial Ethernet and AS-Interface in degree of protection IP20; including manual on CD-ROM (English, French, German, Italian, Spanish); corresponds to AS-Interface Specification 3.0; dimensions (W x H x D / mm): 90 x 132 x 88.5							
• Single master with display	A	6GK1 411-2AB10		1	1 unit	121	0.380
• Double master with display	A	6GK1 411-2AB20		1	1 unit	121	0.380
Accessories							
C-PLUG							
Exchange medium for the simple exchange of devices in the event of a fault; for accommodating configuration and application data; can be used in SIMATIC NET products with a C-PLUG slot							
	A	6GK1 900-0AB00		1	1 unit	5N3	0.030
IE FC RJ45 Plug 90							
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder							
• 1 pack = 1 unit	A	6GK1 901-1BB20-2AA0		1	1 unit	5K2	0.030
• 1 pack = 10 units	A	6GK1 901-1BB20-2AB0		1	1 unit	5K2	0.300
• 1 pack = 50 units	A	6GK1 901-1BB20-2AE0		1	1 unit	5K2	1.500

More information

The manuals are available on the Internet at support.automation.siemens.com/WW/view/en/29992487/133300

* You can order this quantity or a multiple thereof.

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Introduction

Overview



K60



K45



K20

Three coordinated series of AS-Interface compact modules with digital and analog compact modules and a high degree of protection are available for operation in the field:

- Series K60 (digital and analog)
- Series K45 (digital)
- Series K20 (digital)

All compact modules are characterized by particularly simple handling. The K60 and K45 modules are mounted with a mounting plate. The mounting plate is used to receive the AS-Interface flat cables and enables mounting on a wall or standard mounting rail.

The K20 modules are directly mounted without a mounting plate and connected to the AS-Interface using a round cable.

Connection types

For flexible connection of different sensors and actuators, the following PIN assignments are available on the I/O modules with M12 sockets:

Standard assignment

With the standard assignment, one sensor/actuator is connected per M12 socket. In this case the signal for the outputs is at PIN4 while the signal for the inputs is detected at PIN4 and PIN2. As the result, sensors can be connected directly to PIN2 and PIN4.

Y assignment

With the Y assignment, two sensors or two actuators can be connected to one M12 socket. In this case, both PIN4 and PIN2 are provided for respectively one sensor/actuator signal on each M12 socket.

Y-II assignment

The Y-II assignment offers the following options:

- Individual connection of a sensor/actuator to one M12 socket
- Connection of respectively two sensors/actuators to one M12 socket as follows:
 - The signal of the first sensor/actuator is connected to PIN4 of the first socket.
 - The signal of the second sensor/actuator is connected to PIN2 of the first socket and to PIN4 of the second socket.
 In this case, the second socket is not required and is closed with a sealing cap.

Overview of digital compact modules

The following table provides an overview of the important features of the digital compact modules.

Version	K60	K45	K20
8 inputs/2 outputs	✓	--	--
8 inputs	✓	--	--
4 inputs/4 outputs	✓	✓	✓
4 inputs/3 outputs	✓	--	--
4 inputs/2 outputs	✓	--	--
4 inputs	✓	✓	✓
2 inputs/2 outputs	--	✓	✓
4 outputs	✓	✓	✓
3 outputs	--	✓	--
AS-Interface connection	Flat cable/round cable	Flat cable	Round cable
I/O connection method	M12	M12/M8	M12/M8
Pin assignment	Standard/Y-II/Y	Standard/Y	Standard/Y
Degree of protection	IP65/IP67/IP68/IP69K	IP65/IP67	IP65/IP67
ATEX 3D (Zone 22)	✓	--	--
Extended address mode	✓	✓	✓

✓ Available.

-- Not available.

Overview

The K60 digital AS-Interface compact modules are characterized by optimized handling characteristics and user-friendliness. They permit the mounting times and start-up times of AS-Interface to be reduced by up to 40 %.

Assembly of the K60 modules is performed with a mounting plate which accommodates the AS-Interface shaped cables. Two different mounting plates are offered for

- Wall mounting
- Standard rail mounting

Addressing of the K60 modules is performed using an addressing socket integrated in the compact module. The addresses can also be assigned after installed.

K60 compact modules with a maximum of four digital inputs and outputs

These compact modules contain the communication electronics and the M12 standard connections for inputs and outputs. Using M12 standard connectors, a maximum of four sensors and four actuators can be simply and reliably connected to the compact module.

The mounting plate and the compact module are joined together by means of a screw, with simultaneous contacting of the AS-Interface cable by the service-proven insulation piercing method.

K60 compact modules with a maximum of eight digital inputs

These modules have eight digital inputs for connection through M12 plugs.

The module requires two AS-Interface addresses for processing all eight inputs. As with every compact module, the addressing can be performed through a double addressing socket.

K60 compact modules with a four digital inputs and outputs according to AS-Interface Specification 3.0

The new AS-i specification 3.0 adds a number of completely new features to the AS-Interface bus system. The extended address mode (A/B addresses) enables the connection of up to 62 slaves on one AS-i network. With the extended address mode according to specification 3.0, four outputs are now possible even with A/B slaves (instead of only three outputs possible up to now with specification 2.1). Hence with full expansion of an AS-i network, there are now 248 inputs as well as 248 outputs available on one AS-i system. Modules with four inputs and four outputs as A/B slaves according to Specification 3.0 are also available as K60 compact modules.

Please note that these modules can be used only with a new master according to AS-i Specification 3.0 (e. g. the new DP/AS-i LINK Advanced or IE/AS-i LINK PN IO) and that the cycle times for the outputs can extend to max. 20 ms.

K60 data couplers

An AS-Interface data coupler has been added to the K60 compact module range. Integrated in this module are two AS-i slaves which are connected to two different AS-i networks. Each of the two integrated slaves has four virtual inputs and four virtual outputs. The bidirectional data transmission of 4 data bits between two AS-i networks is thus possible in a simple and cost-effective manner. The data coupler need its own address in each AS-i network.

Each AS-i network works with a different cycle time depending on the number of stations. Hence two AS-i networks are not necessarily synchronous. For this reason the AS-i data coupler can be used to transmit only standard data and no safe data.

K60 compact modules for use in hazardous areas (ATEX)

Two versions of the K60 modules are available for operation in Zone 22 hazardous areas according to Classification II 3D (dusty atmosphere, non-conductive dust). The version with four inputs and four outputs has the designation (Ex) II 3D Ex tD A22 IP65X T75°C and the version with four inputs has the designation (Ex) II 3D Ex tD A22 IP65X T60°C.


Special conditions have to be observed for the safe operation of these devices. In particular the module must be protected by suitable protective measures from mechanical damage. For other conditions for safe operation [see notes on Technical Information on page 2/1](#).

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP67 - K60

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg
Digital I/O modules, IP67 - K60 <ul style="list-style-type: none"> • PNP transistor • Connection method: M12 • Modules supplied without mounting plate 							
							
3RK1 400-1DQ00-0AA3							
Type	Current carrying capacity of outputs	Slave type	Pin assignment	Sensor power supply off			
8 inputs/ 2 outputs	2 A	A/B	Special	AS-i	A	3RK2 400-1HQ00-0AA3	1 1 unit 121 0.210
8 inputs	--	Standard	Y-II	AS-i	▶	3RK1 200-0DQ00-0AA3	1 1 unit 121 0.195
	--	A/B	Y-II	AS-i	▶	3RK2 200-0DQ00-0AA3	1 1 unit 121 0.191
	--	A/B	Y-II	U_{aux}	A	3RK2 200-1DQ00-1AA3	1 1 unit 121 0.191
4 inputs/ 4 outputs	2 A	Standard	Y-II	AS-i	▶	3RK1 400-1DQ00-0AA3	1 1 unit 121 0.209
	2 A	Standard	Standard	AS-i	▶	3RK1 400-1CQ00-0AA3	1 1 unit 121 0.209
	1 A	Standard	Y-II	AS-i	A	3RK1 400-1DQ01-0AA3	1 1 unit 121 0.208
	1 A	Standard	Standard	AS-i	▶	3RK1 400-1DQ03-0AA3	1 1 unit 121 0.207
	2 A	A/B slave (Spec. 3.0)	Y-II	AS-i	A	3RK2 400-1DQ00-0AA3	1 1 unit 121 0.212
	2 A	A/B slave (Spec. 3.0)	Y-II	U_{aux}	A	3RK2 400-1DQ00-1AA3	1 1 unit 121 0.212
4 inputs/ 3 outputs	2 A	A/B	Y-II	AS-i	▶	3RK2 400-1FQ03-0AA3	1 1 unit 121 0.212
4 inputs/ 2 outputs	2 A	Standard	Y-II	AS-i	▶	3RK1 400-1MQ00-0AA3	1 1 unit 121 0.206
4 inputs	--	Standard	Y-II	AS-i	▶	3RK1 200-0CQ00-0AA3	1 1 unit 121 0.204
2x2 inputs/ 2x2 outputs	1 A	Standard	Y	AS-i	B	3RK1 400-1DQ02-0AA3	1 1 unit 121 0.205
4 outputs	2 A	Standard	Y-II	AS-i	▶	3RK1 100-1CQ00-0AA3	1 1 unit 121 0.204
Digital I/O modules IP67 - K60, version ATEX (Ex) II 3D Ex tD A22 IP65X T75 °C/60° C <ul style="list-style-type: none"> • PNP transistor • Current carrying capacity of the inputs: 200 mA • Connection method: M12 • Modules supplied without mounting plate 							
Type	Current carrying capacity of outputs	Slave type	Pin assignment				
4 inputs/ 4 outputs	2 A	Standard	Y-II		C	3RK1 400-1DQ05-0AA3	1 1 unit 121 0.209
4 inputs	--	Standard	Y-II		B	3RK1 200-0CQ05-0AA3	1 1 unit 121 0.204
Digital I/O modules IP67 - K60 data couplers <ul style="list-style-type: none"> • Modules supplied without mounting plate 							
Type	Current carrying capacity of outputs	Slave type	Pin assignment				
Data coupler 4 inputs/ 4 outputs (virtual)	--	Standard	--		C	3RK1 408-8SQ00-0AA3	1 1 unit 121 0.200

Accessories



3RK1 901-0CA00

**K60 mounting plates**

Suitable for all K60 compact modules

- Wall mounting ▶
- Standard rail mounting ▶

▶ **3RK1 901-0CA00**

1 1 unit 121 0.065

▶ **3RK1 901-0CB01**

1 1 unit 121 0.095

AS-Interface sealing caps M12

For free M12 sockets

▶ **3RK1 901-1KA00**

100 10 units 121 0.100

AS-Interface sealing caps M12, tamper-proof

For free M12 sockets

A **3RK1 901-1KA01**

100 10 units 121 0.100

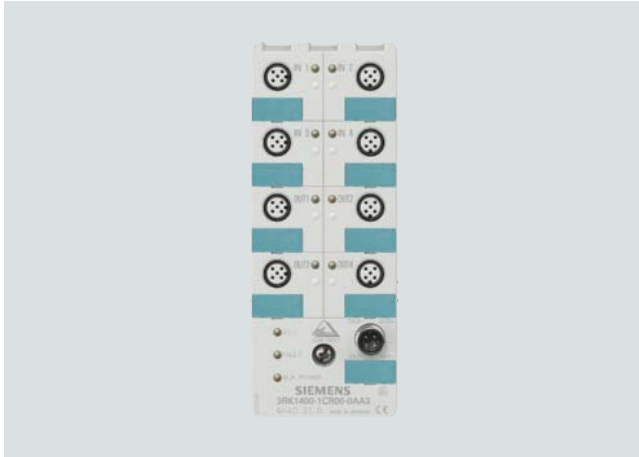
Sealing sets

- For K60 mounting plate and standard distributor
- Cannot be used for K45 mounting plate
- One set contains one straight and one shaped seal

A **3RK1 902-0AR00**

100 5 units 121 0.100

Overview



K60R module in degree of protection IP68/IP69K

Modules with degree of protection IP67 cannot be used in areas exposed to permanently high levels of humidity, in applications with drilling emulsions and cutting oils or when cleaning with high-pressure cleaners. The answer for these applications is provided by the expansion of the K60 compact modules with the K60R module with degree of protection IP68/IP69K.

The K60R modules are connected instead of the AS-Interface flat cable using a round cable with M12 cable box. The AS-Interface bus cable and the 24 V DC auxiliary voltage supply are routed in this case in a shared round cable.

Degree of protection IP68 permits many new applications, which were impossible with the former field modules with degree of protection IP67. In applications such as filling plants or machine-tools the K60R with degree of protection IP68 enables the module to be used directly in zones exposed to permanent loading by humidity. It is thus possible to make even more rigorous savings in wiring with AS-Interface. [The IP68 test conditions can be found in the section "IP68/IP69K tests" on page 2/40.](#)

Cleaning with high-pressure cleaners, such as is regularly performed in the food drinks industry for instance, is possible without difficulty (IP69K).

In applications with tow chains, many users rely on placing the AS-Interface bus cable in a round cable. With the K60R module there is a round cable connection for direct connection to a round cable. No adapter is required.

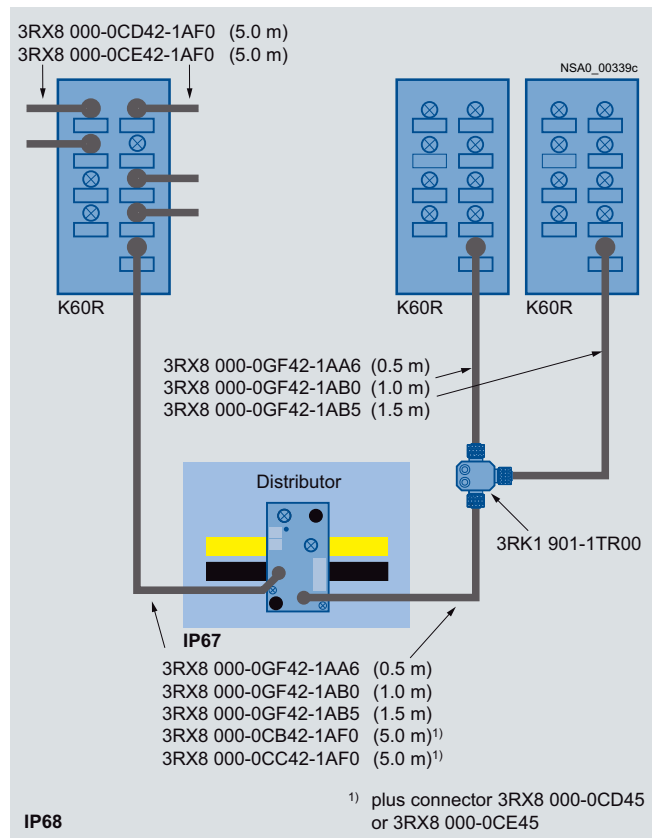
Mounting

The same mounting plates are used as for the K60 modules. Instead of using flat cables the K60R is connected using a 4-pole round cable with an M12 connection. With the K60R the mounting plate thus serves only as a fixture and ground terminal.

Addressing

Addressing is performed using the same socket as for the bus connection. Connecting the module to the 3RK1 904-2AB01 addressing unit is performed using a standard M12 cable (e. g. 3RX8 000-0GF32-1AB5). If the older version of the 3RK1 904-2AB00 addressing unit is used, a special addressing cable (3RK1 901-3RA00) is required. When the mounting is finished, the module is connected with the addressing cable to the addressing unit and addressed. The addressing cable is then removed and the module connected to the bus cable.

Connection



K60R connection options

In the IP67 environment the service-proven standard components are connected using flat cables. Spur lines are laid into the IP68 environment by means of an AS-Interface M12 feeder (3RK1 901-1NR..). The module is connected with a round cable to an M12 cable box. For this purpose the module has an M12 bus connection instead of the former addressing socket. The AS-Interface bus cable and the 24 V DC auxiliary voltage are routed together in a 4-pole round cable. There must be no ground conductor in this round cable. Connection to ground is made through the mounting plate.

In the IP68 environment only cables with extruded M12 plugs may be used. These cables are available preassembled as an M12 cable plug/cable box version:

- 3RX8 000-0GF42-1AA6: 0.5 m long
- 3RX8 000-0GF42-1AB0: 1.0 m long
- 3RX8 000-0GF42-1AB5: 1.5 m long

To connect the distributor and the K60R module over long distances it is also possible to use freely configurable cables with an M12 cable box and an open cable end, which are fitted with an M12 plug (straight version: 3RX8 000-0CD45, angle plug 3RX8 000-0CE45) and connected to the distribution board. This cable is available in two versions:

- 3RX8 000-0CB42-1AF0: 5 m long, with M12 cable box
- 3RX8 000-0CC42-1AF0: 5 m long, with M12 angular cable box

To connect more than one K60R module to one spur line, the spur line can be split again using a T distributor (3RK1 901-1TR00) with IP68 protection.

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP68/IP69K - K60R

Please note the following boundary conditions:

- The configuration guidelines for AS-Interface apply. For all M12 connecting cables the maximum permissible current is limited to 4 A. The cross-section of these cables amounts to just 0.34 mm². For connection of the K60R modules, the aforementioned M12 connecting cables can be used for the spur lines. The voltage drop caused by the ohmic resistance (approx. 0.11 Ω/m) must be taken into account.
- For round cable connections with shared AS-i and U_{AUX} in a single cable, the following maximum lengths apply:
 - per spur line from feeder to module: maximum 5 m
 - total of all round cable segments in an AS-Interface network: maximum 20 m

Tests IP68/IP69K

K60R modules were tested with the following tests:




- Stricter test than IP67:
 - 90 min in 1.8 m depth of water (IP67: 30 min at 1 m depth of water)
- Salt water test:
 - Five months in salt water, 20 cm deep, at room temperature
- Test with particularly creepable oil:
 - Five months completely under oil at room temperature
- Test with drilling emulsion:
 - Five months at room temperature (components of the drilling emulsion: Anionic and non-ionic emulsifiers, paraffinic low-aromatic mineral oil, boric acid alkanolamines, corrosion inhibitors, oil content 40 %)
- Test in oil bath (Excelence 416 oil) with alternating oil bath temperature:
 - 130 cycles of 15 °C to 55 °C, two months
- Cleaning with a high-pressure cleaner according to IP69K:
 - 80 to 100 bar, 10 cm to 15 cm distance, time per side > 30 sec, water temperature 80 °C

To simulate requirements as realistically as possible the modules were artificially aged prior to the tests by 15 temperature cycles of -25/+85 °C. During the test the modules were connected to 3RX1 connecting cables. Unassigned connections were closed with 3RK1 901-1KA00 sealing caps.

Note:

Sealing caps and M12 connections must be tightened with the correct torque.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 <p>Digital I/O modules IP68/IP69K - K60R</p> <ul style="list-style-type: none"> 4 inputs/4 outputs IP68/IP69K Standard assignment Current carrying capacity: <ul style="list-style-type: none"> - 200 mA (inputs) - 2 A (outputs) Standard slave Modules supplied without mounting plate 	A	3RK1 400-1CR00-0AA3		1	1 unit	121	0.275
Accessories							
 <p>K60 mounting plates Suitable for all K60 and K60R compact modules</p> <ul style="list-style-type: none"> Wall mounting ▶ Standard rail mounting ▶ 		3RK1 901-0CA00 3RK1 901-0CB01		1	1 unit	121	0.065
	3RK1 901-0CA00						
 <p>AS-Interface sealing caps M12 For free M12 sockets</p>	▶	3RK1 901-1KA00		100	10 units	121	0.100
3RK1 901-1KA00							

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP68/IP69K - K60R

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-Interface M12 feeders							
For flat cable	For	Cable length	Cable end in feeder				
AS-i / U _{aux}	M12 socket	--	Not available	A	3RK1 901-1NR20	1	1 unit 121 0.060
AS-i / U _{aux}	M12 cable box	1 m	Not available	A	3RK1 901-1NR21	1	1 unit 121 0.070
AS-i / U _{aux}	M12 cable box	2 m	Not available	A	3RK1 901-1NR22	1	1 unit 121 0.100
AS-Interface M12 feeders, 4-fold							
For flat cable	For	Cable length	Cable end in feeder				
AS-i / U _{aux}	4-fold M12 socket delivery includes coupling module	--	Available	A	3RK1 901-1NR00	1	1 unit 121 0.186
M12-T distributors							
				C	3RK1 901-1TR00	1	1 unit 121 0.038
<ul style="list-style-type: none"> • IP68 • 1 x M12 plug • 2 x M12 box 							
Addressing cable, with M12 plug to M12 socket							
				A	3RX8 000-0GF32-1AB5	1	1 unit 574 0.066
<ul style="list-style-type: none"> • For addressing slaves with M12 connection, e. g. K20 or K60R modules or light curtains • When using the current version of the 3RK1 904-2AB01 addressing unit • Length 1.5 m, 3-pole 							
Addressing cable, with M12 plug to addressing plug (hollow plug) ¹⁾							
<ul style="list-style-type: none"> • Included in scope of supply of the 3RK1 904-2AB01 addressing unit. • Length 1.5 m 							
Addressing cable, with banana plug to M12 socket							
				C	3RK1 901-3RA00	1	1 unit 121 0.064
<ul style="list-style-type: none"> • For addressing slaves with M12 connection, e. g. K20 or K60R modules or light curtains • Only when using the older version of the 3RK1 904-2AB00 addressing unit 							



3RK1 901-1NR21



3RK1 901-1NR00



3RK1 901-1TR00



3RX8 000-0GF32-1AB5



3RK1 901-3RA00

¹⁾ Can be ordered only from the following address:
GMC-I Messtechnik GmbH, Thomas-Mann-Str. 16-20, 90471 Nürnberg, Germany
Tel.: +49 (0) 911/8602-111, Fax: +49 (0) 911/8602-777,
E-mail: info@gossenmetrawatt.com, www.gossenmetrawatt.com

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP67 - K45

2

Overview

The K45 compact modules are the ideal supplement to the K60 large compact modules, which have proven their worth in industry. They are the logical consequence for rounding off the bottom end of the existing product range.

The acclaimed advantages of the existing K60 compact modules are fully emulated by the far smaller K45 modules. Their footprint is the same as that of the user modules. However, they have a mounting depth which is only two-thirds of the user module and hence an exact match for the compact module family.

Yet in spite of these small dimensions all the modules have large labels and an integrated addressing socket.

Two mounting plates are offered for the K45 compact modules:






- The mounting plate for wall mounting has a hole pattern that is identical to that of the K60 compact modules. This means that K60 compact modules can be mounted together with K45 modules in an aligned arrangement. The flat cables can be inserted in the recesses of the mounting plates where they cause no hindrance.
- The mounting plate for standard rail mounting has a hole pattern that is identical to that of the user modules.

Mounting the flat cables is now easier than ever. The yellow and black AS-Interface flat cable can be inserted into the mounting plates from the left or right regardless of the position of the coding lug. The correct polarity of the applied voltages is always guaranteed.

Sensors/actuators are connected using M12 sockets. The 4I module can be ordered optionally with M8 connection sockets.

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP67 - K45

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg
Digital I/O modules, IP67 - K45							
<ul style="list-style-type: none"> • PNP transistor • Current carrying capacity of the inputs: 200 mA • Modules supplied without mounting plate 							
	Type	Current carrying capacity of outputs	Slave type	Pin assignment	Connection methods		
3RK1 400-0GQ20-0AA3	4 inputs	--	Standard	Standard	M12	▶	3RK1 200-0CQ20-0AA3
			Standard	Standard	M8 screw	A	3RK1 200-0CT20-0AA3
			Standard	Standard	M8 snap	C	3RK1 200-0CU20-0AA3
			A/B	Standard	M12	▶	3RK2 200-0CQ20-0AA3
			A/B	Standard	M8 screw	B	3RK2 200-0CT20-0AA3
			A/B	Standard	M8 snap	C	3RK2 200-0CU20-0AA3
	2 x 2 inputs	--	A/B	Y	M12	A	3RK2 200-0CQ22-0AA3
	2 inputs/2 outputs	2 A ¹⁾	Standard	Standard	M12	▶	3RK1 400-1BQ20-0AA3
	2 x (1 input/1 output)	0.2 A	Standard	Y	M12	A	3RK1 400-0GQ20-0AA3
	4 x (1 input/1 output)	0.2 A	A/B (Spec. 3.0)	Y	M12	D	3RK2 400-0GQ20-0AA3
	3 outputs	1 A	A/B	Standard	M12	▶	3RK2 100-1EQ20-0AA3
	4 outputs	1 A	Standard	Standard	M12	▶	3RK1 100-1CQ20-0AA3
	2 outputs/2 inputs	2 A	A/B	Standard	M12	A	3RK2 400-1BQ20-0AA3
Accessories							
	K45 mounting plates						
3RK1 901-2EA00	<ul style="list-style-type: none"> • For wall mounting • For standard rail mounting 						
						▶	3RK1 901-2EA00
						▶	3RK1 901-2DA00
	AS-Interface sealing caps						
3RK1 901-1KA00	<ul style="list-style-type: none"> • For free M12 sockets • For free M8 sockets 						
						▶	3RK1 901-1KA00
						A	3RK1 901-1PN00
	Cable terminating pieces						
3RK1 901-1PN00	<ul style="list-style-type: none"> • For sealing of open cable ends (shaped AS-Interface cable) in IP67 						
						▶	3RK1 901-1MN00
							
3RK1 901-1MN00							

¹⁾ The typical current carrying capacity per output increases with version "E12" from 1.5 to 2 A (available since approx. 07/2003).

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP67 - K20

Overview



The K20 compact module range rounds off the AS-Interface compact modules with a particularly slim design and a width of a mere 20 mm. Thanks to its extremely compact dimensions, these modules are particularly suited for handling machine applications in the field of production engineering where modules need to be arranged in the smallest of spaces.

Robotics is yet another application area. Instead of the AS-Interface flat cable, the K20 modules are connected to AS-Interface over a round cable with M12 cable box. The AS-Interface bus cable and the 24 V DC auxiliary power supply are routed in this case in a shared round cable. This enables extremely compact installation.

The flexibility of the round cable means that it can also be used on moving machine parts without any problems. The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

In applications with tow chains, many users rely on placing the AS-Interface bus cable in a round cable. In this case, the K20 modules support direct connection to the round cable. No flat to round cable adapter is required.

The K20 compact module range includes standard AS-Interface modules, as well as an ASIsafe version for the connection of fail-safe sensors, such as EMERGENCY-STOP pushbuttons or protective door monitoring. All standard AS-Interface K20 modules support, as far as technically possible, the expanded address mode (A/B addresses) according to AS-Interface specification 2.1, which enables connection of 62 stations to an AS-Interface network. The K20 module with four inputs and four outputs works in expanded address mode according to AS-Interface specification 3.0 which, for the first time, supports four outputs with an A/B slave, thus enabling 248 inputs and 248 outputs in a fully expanded AS-Interface network.

For particularly space-saving dimensions, the sensors and actuators are connected over M8 plug-in connectors. Alternatively, M12 connectors with Y assignment can be used.

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP67 - K20




Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Digital I/O modules, IP67 – K20							
Type	Current carrying capacity of outputs	Slave type	Pin assignment	Connection method			
4 inputs	--	A/B	Standard	M8	A	3RK2 200-0CT30-0AA3	1 1 unit 121 0.075
	--	A/B	Y	M12	A	3RK2 200-0CQ30-0AA3	1 1 unit 121 0.075
2 inputs/ 2 outputs	1	A/B	Standard	M8	A	3RK2 400-1BT30-0AA3	1 1 unit 121 0.075
	1	A/B	Y	M12	A	3RK2 400-1BQ30-0AA3	1 1 unit 121 0.075
4 outputs	1	A/B (Spec. 3.0)	Standard	M8	A	3RK2 100-1CT30-0AA3	1 1 unit 121 0.075
4 inputs/ 4 outputs	1	Standard	Standard	M8	A	3RK1 400-1CT30-0AA3	1 1 unit 121 0.110
	1	A/B (Spec. 3.0)	Standard	M8	A	3RK2 400-1CT30-0AA3	1 1 unit 121 0.110
2 safe inputs	--	Standard	Y-II	M12	A	3RK1 205-0BQ30-0AA3	1 1 unit 121 0.075



3RK2 200-0CT30-0AA3

Accessories





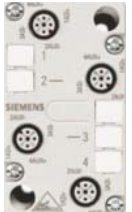



Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-Interface sealing caps							
 3RK1 901-1KA00	▶	3RK1 901-1KA00		100	10 units	121	0.100
		3RK1 901-1PN00		100	10 units	121	0.100
 3RK1 901-1PN00							
AS-Interface compact distributors, for AS-Interface flat cable							
 3RK1 901-1NN10	A	3RK1 901-1NN10		1	1 unit	121	0.040
Current carrying capacity up to 8 A							

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Digital I/O modules, IP67 - K20

2

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg			
AS-Interface M12 feeders										
 3RX9 801-0AA00	For flat cable	For	Cable length	Cable end in feeder						
AS-i	M12 socket	--	Available	▶	3RX9 801-0AA00	1	1 unit	121	0.029	
AS-Interface M12 feeders										
 3RK1 901-1NR10	For flat cable	For	Cable length	Cable end in feeder						
AS-i	M12 socket	--	Not available	A	3RK1 901-1NR10	1	1 unit	121	0.060	
 3RK1 901-1NR11	AS-i	M12 cable box	1 m	Not available	A	3RK1 901-1NR11	1	1 unit	121	0.070
 3RK1 901-1NR12	AS-i	M12 cable box	2 m	Not available	A	3RK1 901-1NR12	1	1 unit	121	0.100
 3RK1 901-1NR21	AS-i / U _{aux}	M12 socket	--	Not available	A	3RK1 901-1NR20	1	1 unit	121	0.060
	AS-i / U _{aux}	M12 cable box	1 m	Not available	A	3RK1 901-1NR21	1	1 unit	121	0.070
	AS-i / U _{aux}	M12 cable box	2 m	Not available	A	3RK1 901-1NR22	1	1 unit	121	0.100
AS-Interface M12 feeders, 4-fold										
 3RK1 901-1NR00	For flat cable	For	Cable length	Cable end in feeder						
AS-i / U _{aux}	4-fold M12 socket delivery includes coupling module	--	Available	A	3RK1 901-1NR00	1	1 unit	121	0.186	
M12-T distributors										
 3RK1 901-1TR00				C	3RK1 901-1TR00	1	1 unit	121	0.038	
M12 Y-shaped coupler plugs										
 6ES7 194-1KA01-0XA0				A	6ES7 194-1KA01-0XA0	1	1 unit	250	0.046	
	For connection of two sensors to one M12 socket with Y connector									
M12 addressing cables to M12										
 3RX8 000-0GF32-1AB5				A	3RX8 000-0GF32-1AB5	1	1 unit	574	0.066	
	• Standard M12 cable for addressing slaves with M12 connection, e. g. K20 modules									
	• When using the current version of the 3RK1 904-2AB01 addressing unit									
	• 1.5 m									
Addressing cables, with banana plug, to M12										
 3RK1 901-3RA00				C	3RK1 901-3RA00	1	1 unit	121	0.064	
	• For addressing slaves with M12 connection, e. g. K20 modules									
	• When using the older version of the 3RK1 904-2AB00 addressing unit									

For plug-in connectors and cables,
see [Catalog FS 10](#) -->
"Proximity Switches / Accessories / Plug-in Connectors" or
look on the Internet at www.siemens.com/as-interface

Overview

The AS-Interface user modules are the first module generation for AS-Interface. Today, innovated and further improved modules are available in the form of the K45 and K60 series of compact modules. We recommend replacing the user modules in future with the K45 compact module series. However, the user modules are still available for existing systems and replacement requirements.

More information can be found in the [Industry Mall](#).

Advantages of the K45 compact modules

The K45 compact modules provide extra advantages in addition to the functionality of the user modules:

- An integrated addressing socket enables the module to be addressed in the installed state
- Time is saved when mounting the module: Mounting with only one screw thanks to hinge system
- Extensive diagnostics by LED on the module (e. g. display of zero address, no communication with master, overload)
- Random insertion of the AS-Interface flat cable irrespective of the position of the profiled lug
- Smaller dimensions
- Versions with M12 and M8 connection sockets enable the direct connection of all sensors
- Modules in A/B technology enable up to 62 slaves on one AS-Interface network

Conversion table for user modules --> K45

User modules		Corresponding K45 type	
Order No.	Version	Order No.	Version
3RG9 001-0AA00	4 inputs (100 mA)	3RK1 200-0CQ20-0AA3	4 inputs (200 mA)
3RG9 001-0AG00	4 inputs (200 mA)	3RK1 200-0CQ20-0AA3	4 inputs (200 mA)
3RG9 001-0AH00	2 x 2 inputs	3RK2 200-0CQ22-0AA3	2 x 2 inputs A/B slave
3RG9 001-0AC00	2 inputs/2 outputs relay outputs	3RK1 400-1BQ20-0AA3	2 inputs/2 outputs solid-state outputs
3RG9 001-0CC00	2 inputs/2 outputs solid-state outputs	3RK1 400-1BQ20-0AA3	2 inputs/2 outputs solid-state outputs
3RG9 001-0AM00	2 inputs/2 outputs solid-state outputs U_{Aux} using M12 plug	3RK1 400-1BQ20-0AA3	2 inputs/2 outputs solid-state outputs U_{Aux} using black flat cable
3RG9 001-0AJ00	2 x (1 input/1 output) supply of I/O from AS-Interface cable	3RK1 400-0GQ20-0AA3	2 x (1 input/1 output) supply of I/O from AS-Interface cable
3RG9 001-0AB00	4 outputs relay outputs	3RK1 100-1CQ20-0AA3	4 inputs solid-state outputs
3RG9 001-0AL00	4 outputs U_{Aux} using M12 plug	3RK1 100-1CQ20-0AA3	4 outputs U_{Aux} using black flat cable
3RG9 001-0CB00	4 inputs solid-state outputs	3RK1 100-1CQ20-0AA3	4 inputs solid-state outputs

Note:

To use the K45 modules you require the 3RK1 901-2EA00 (wall mounting) or 3RK1 901-2DA00 (standard rail mounting) K45 mounting plates instead of the 3RG9 010-0AA00 and 3RG9 030-0AA00 coupling modules.

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Analog I/O modules, IP67 - K60

Overview



K60 analog compact module

AS-Interface analog modules from the K60 compact series detect or issue analog signals locally. These modules are linked to the higher-level controller through an AS-Interface master according to specification 2.1 or specification 3.0.

The analog modules are divided into five groups:

- Input module for sensors with current signal
- Input module for sensors with voltage signal
- Input module for sensors with thermal resistor
- Output module for current actuators
- Output module for voltage actuators

The input modules according to profile 7.3/7.4 are available with two or four input channels. It is possible in addition to convert the two-channel module to using only one input channel, thus enabling very short times before the analog value is available. The conversion is effected by means of a jumper plug at socket 3. The transmission times achieved with analog modules according to Profile 7.A.9 are shorter by half than those achieved with Profile 7.3/7.4. Operation is adjustable in this case, e. g. it is possible to choose with the ID1 Code whether the module is operated with one or two channels.

The output modules are configured as two-channel modules as standard.

The input and output channels are electrically separated from the AS-Interface network. If sensors with a higher power requirement are to be connected, more power can be supplied through the auxiliary voltage as an alternative to the internal supply.

In the manual the modules are presented in great detail along with their technical specifications and in-depth notes on operation. Sample function blocks round off the manual.

Benefits

- Analog modules are just as easy to integrate in AS-Interface as digital modules
- Analog values can be easily detected and issued locally
- Preprocessing of the analog value transmission in the master enables rapid evaluation of the analog values
- Up to four values can be detected using one analog module
- Faster transmission and conversion of analog values thanks to the new option for changing over to single-channel operation

In addition, Specification 3.0 now also offers:

- A/B technology, now also with analog modules
- On average, double fast transmission times (only 3 or 4 cycles, depending on the resolution selected)
- Variable adjustable mode: 12 bit or 14 bit resolution, 1 or 2-channel, selectable over the ID1 code
- Extra simple handling of analog processing with masters of Specification 3.0, the DP/AS-i LINK Advanced

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	-----------------------------



3RK1 207-1BQ44-0AA3

Analog I/O modules IP67 - K60, analog profile 7.3

- Slave type: Standard
- Modules supplied without mounting plate

Inputs	Type	Measuring range					
1 or 2 inputs (selectable using jumper plug at socket 3)	Current	4 ... 20 mA or ± 20 mA (selectable)	A	3RK1 207-1BQ40-0AA3	1	1 unit	121 0.187
	Voltage	±10 V or 1 ... 5 V (selectable)	A	3RK1 207-2BQ40-0AA3	1	1 unit	121 0.188
	Thermal resistance	Pt 100 or Ni 100 or 0 ... 600 Ω (selectable)	A	3RK1 207-3BQ40-0AA3	1	1 unit	121 0.183
4 inputs	Current	4 ... 20 mA or ±20 mA (selectable)	A	3RK1 207-1BQ44-0AA3	1	1 unit	121 0.190
	Voltage	±10 V or 1 ... 5 V (selectable)	C	3RK1 207-2BQ44-0AA3	1	1 unit	121 0.190
	Thermal resistance	Pt 100 or Ni 100 or 0 ... 600 Ω (selectable)	A	3RK1 207-3BQ44-0AA3	1	1 unit	121 0.190
Outputs	Type	Output range					
2 outputs	Current for 2-wire actuators	4 ... 20 mA or ±20 mA or 0 ... 20 mA (selectable)	A	3RK1 107-1BQ40-0AA3	1	1 unit	121 0.200
	Voltage for 2-wire actuators	±10 V or 0 ... 10 V or 1 ... 5 V (selectable)	A	3RK1 107-2BQ40-0AA3	1	1 unit	121 0.200



3RK2 207-2BQ50-0AA3

Analog I/O modules IP67 - K60, analog profile 7.A.9

- Slave type: A/B (Spec. 3.0)
- Modules supplied without mounting plate

Inputs	Type	Measuring range					
1 or 2 inputs (variably adjustable)	Current	4 ... 20 mA or ±20 mA (selectable)	A	3RK2 207-1BQ50-0AA3	1	1 unit	121 0.187
	Voltage	±10 V or 1 ... 5 V (selectable)	A	3RK2 207-2BQ50-0AA3	1	1 unit	121 0.187

AS-Interface

Slaves

I/O modules for operation in the field, high degree of protection
Analog I/O modules, IP67 - K60

2

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

Accessories

Manuals

Only available to download on the Internet:
www.siemens.com/automation/manuals

K60 mounting plates

- Wall mounting ▶
- Standard rail mounting ▶

▶ **3RK1 901-0CA00**

1

1 unit

121

0.065

▶ **3RK1 901-0CB01**

1

1 unit

121

0.095



3RK1 901-0CA00



3RK1 901-1KA00

M12 sealing caps ▶

▶ **3RK1 901-1KA00**

100

10 units

121

0.100

Sealing sets A

- For mounting plate K60 and distributor
- Cannot be used for K45 mounting plate
- One set contains one straight and one shaped seal

A **3RK1 902-0AR00**

100

5 units

121

0.100



3RK1 902-0AR00

Jumper plugs A

For changing over the 2-channel input modules

A **3RK1 901-1AA00**

1

1 unit

121

0.012



3RK1 901-1AA00

More information can be found in the Industry Mall.

Overview



SlimLine S22.5/S45



Flat module



F90 module

For AS-Interface applications inside control cabinets there are various module series for the most diverse requirements:

- SlimLine S22.5
- SlimLine S45
- F90 module
- Flat module

All modules of these series can be snap-mounted directly on a standard mounting rail or be fastened using screws.

AS-Interface modules in IP20 have direct terminals for the AS-Interface cables and therefore do not require a base.

Series	Spectrum	Mounting on 35 mm standard mounting rail acc. to EN 50022	Wall mounting using push-in lugs (Order No.: 3RP1 903)	Other possibilities
SlimLine S22.5	<ul style="list-style-type: none"> • 4I (standard and A/B modules) • 4O • 2I/2O (steady-state/relay outputs) • Counters¹⁾ • Ground-fault detection modules¹⁾ 	✓	✓	--
SlimLine S45	<ul style="list-style-type: none"> • 4I/4O (steady-state/relay outputs) • 4I/4O with floating I/Os • 4I/3O (A/B modules) • 4I/4O (A/B modules Spec. 3.0) 	✓	✓	--
F90 module	<ul style="list-style-type: none"> • 4I/4O (screw terminals) • 4I/4O (connection using Combicon connector) • 16I 	✓	--	--
Flat module	<ul style="list-style-type: none"> • 4I/4O (screw terminals) 	--	--	Integrated lugs for screw fixing

¹⁾ For more information about these modules see "Modules with Special Functions" from page 2/57

✓ Available.

-- Not available.

AS-Interface

Slaves

I/O modules for operation in the control cabinet
SlimLine

Overview

SlimLine modules of the S22.5 and S45 series

The AS-Interface series of modules for the "SlimLine" control cabinet with degree of protection IP20 creates space in the cabinet and in distributed local boxes.

For these modules the priority was placed on a narrow type of construction. They have a width of only 22.5 mm or 45 mm.

Standard sensors/actuators and the AS-Interface cable can be connected using removable screw-type or spring-type terminals.

Integrated adapters enable mounting onto a standard mounting rail. Disassembly from the standard mounting rail is quick and easy and requires no tools.

With an additional accessory (push-in lugs), the modules can also be screwed on.

All modules are fitted at the front with LEDs which indicate the module's status.

An addressing socket integrated at the front enables the module to be addressed also when it is installed.

In addition to the digital input/output modules there are modules of design S22.5 with special functions. These include:

- Counter module
- Ground-fault detection module












The new AS-Interface Specification 3.0 adds a number of completely new features to AS-Interface bus system. The extended address mode (A/B addresses) enables the connection of up to 62 slaves on one AS-Interface network. With the extended address mode according to specification 3.0, four outputs are now possible for the first time even with A/B slaves (instead of only three outputs possible up to now with specification 2.1). Hence with full expansion of an AS-Interface network, there are now 248 inputs as well as 248 outputs available on one AS-Interface system.

Modules with four inputs and four outputs as A/B slaves according to specification 3.0 are also available as SlimLine modules S45.

Note:

Please note that the modules according to Specification 3.0 can be used only with a new master according to AS-Interface Specification 3.0 (e. g. the new DP/AS-i LINK Advanced or IE/AS-i LINK PN IO) and that the cycle times for the outputs can extend to max. 20 ms.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg					
S22.5 SlimLine modules Inputs: PNP transistor												
 3RK1 200-0CE00-0AA2	4 inputs	Screw 	Standard	2-wire	--	▶	3RK1 200-0CE00-0AA2	1	1 unit	121	0.138	
			Standard	2- and 3-wire	--	▶	3RK1 200-0CE02-0AA2	1	1 unit	121	0.141	
			A/B slave	2- and 3-wire	--	▶	3RK2 200-0CE02-0AA2	1	1 unit	121	0.145	
		Spring 	Standard	2-wire	--	A	3RK1 200-0CG00-0AA2	1	1 unit	121	0.115	
			Standard	2- and 3-wire	--	A	3RK1 200-0CG02-0AA2	1	1 unit	121	0.117	
			A/B slave	2- and 3-wire	--	A	3RK2 200-0CG02-0AA2	1	1 unit	121	0.122	
	2 inputs/2 outputs	Screw 	Standard	2-wire	PNP transistor 2 A	▶	3RK1 400-0BE00-0AA2	1	1 unit	121	0.139	
			Standard	2-wire	Relays	▶	3RK1 402-0BE00-0AA2	1	1 unit	121	0.165	
			Standard	2-wire	PNP transistor 2 A	B	3RK1 400-0BG00-0AA2	1	1 unit	121	0.112	
		Spring 	Standard	2-wire	Relays	B	3RK1 402-0BG00-0AA2	1	1 unit	121	0.145	
			Screw 	Standard	--	PNP transistor 1 A	▶	3RK1 100-1CE00-0AA2	1	1 unit	121	0.138
				Standard	--	PNP transistor 1 A	A	3RK1 100-1CG00-0AA2	1	1 unit	121	0.114
 3RK1 400-1CE00-0AA2	4 inputs/4 outputs	Screw 	Standard	2- and 3-wire	PNP transistor 1 A	▶	3RK1 400-1CE00-0AA2	1	1 unit	121	0.291	
			Standard	2- and 3-wire	PNP transistor 2 A	▶	3RK1 400-1CE01-0AA2	1	1 unit	121	0.289	
			Standard	2- and 3-wire floating	PNP transistor 1 A floating	▶	3RK1 402-3CE01-0AA2	1	1 unit	121	0.287	
			Standard	2- and 3-wire	Relays	▶	3RK1 402-3CE00-0AA2	1	1 unit	121	0.316	
			A/B (Spec. 3.0)	2- and 3-wire	PNP transistor 2 A	A	3RK2 400-1CE01-0AA2	1	1 unit	121	0.289	
			Spring 	Standard	2- and 3-wire	PNP transistor 1 A	A	3RK1 400-1CG00-0AA2	1	1 unit	121	0.243
				Standard	2- and 3-wire	PNP transistor 2 A	B	3RK1 400-1CG01-0AA2	1	1 unit	121	0.241
				Standard	2- and 3-wire floating	PNP transistor 1 A floating	A	3RK1 402-3CG01-0AA2	1	1 unit	121	0.239
				Standard	2- and 3-wire	Relays	A	3RK1 402-3CG00-0AA2	1	1 unit	121	0.272
				A/B (Spec. 3.0)	2- and 3-wire	PNP transistor 2 A	B	3RK2 400-1CG01-0AA2	1	1 unit	121	0.241
				Screw 	A/B slave	2- and 3-wire	PNP transistor 2 A	▶	3RK2 400-1FE00-0AA2	1	1 unit	121
			Spring 		A/B slave	2- and 3-wire	PNP transistor 2 A	A	3RK2 400-1FG00-0AA2	1	1 unit	121
		Accessories										
		Sealable covers To secure against unauthorized addressing		▶		3RP1 902	1	5 units	101	0.004		
		Push-in lugs For screw fixing		▶		3RP1 903	1	10 units	101	0.002		





* You can order this quantity or a multiple thereof.

AS-Interface

Slaves

I/O modules for operation in the control cabinet
F90 module

Selection and ordering data



Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kg							
F90 modules							
Standard slave							
Type	Connection terminals	Inputs	Outputs				
4 inputs/4 outputs	Screw 	2- and 3-wire PNP transistor	PNP transistor 1A	A	3RG9 002-0DB00	1	1 unit 121 0.112
		2- and 3-wire PNP transistor	PNP transistor 2A	A	3RG9 002-0DA00	1	1 unit 121 0.112
		2- and 3-wire PNP transistor floating	PNP transistor 2A	A	3RG9 002-0DC00	1	1 unit 121 0.111
	Combicon 	2- and 3-wire PNP transistor	PNP transistor 1A	A	3RG9 004-0DB00	1	1 unit 121 0.090
		2- and 3-wire PNP transistor	PNP transistor 2A	A	3RG9 004-0DA00	1	1 unit 121 0.090
		2- and 3-wire PNP transistor floating	PNP transistor 2A	A	3RG9 004-0DC00	1	1 unit 121 0.107
16 inputs	Screw 	PNP transistor	--	A	3RG9 002-0DE00	1	1 unit 121 0.133
	Combicon 	PNP transistor	--	A	3RG9 004-0DE00	1	1 unit 121 0.086
Accessories							
Combicon connector sets				A	3RX9 810-0AA00	1	1 unit 121 0.062
<ul style="list-style-type: none"> • For 4I/4O modules with Combicon connection One set comprises: <ul style="list-style-type: none"> • 4 x 5-pole plug for connection • Standard sensors/actuators • 2 x 4-pole plug for AS-Interface and external auxiliary voltage 							



3RG9 002-0DB00

I/O modules for operation in the control cabinet
Flat module

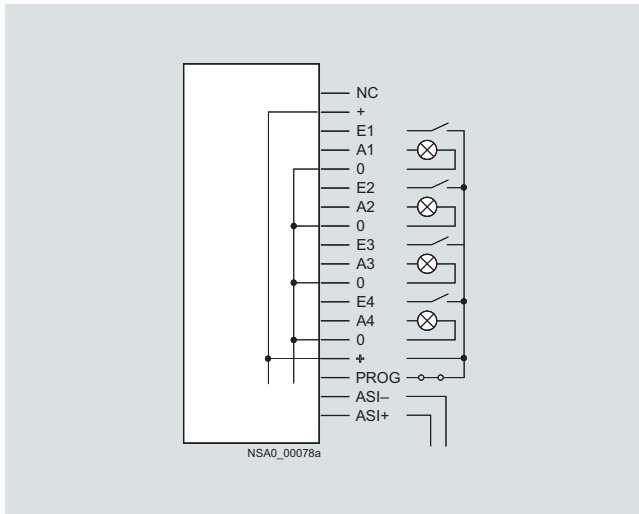
Selection and ordering data

Version	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kg						
Flat module						
<ul style="list-style-type: none"> • 4 inputs/4 outputs • 200 mA for all I/Os • Screw terminals 						
		Order No.	Price per PU			
		A	3RK1 400-0CE00-0AA3	1	1 unit 121	0.097

3RK1 400-0CE00-0AA3

Overview

3RK1 400-0CD00-0AA3 AS-Interface communication modules for printed circuit board installation

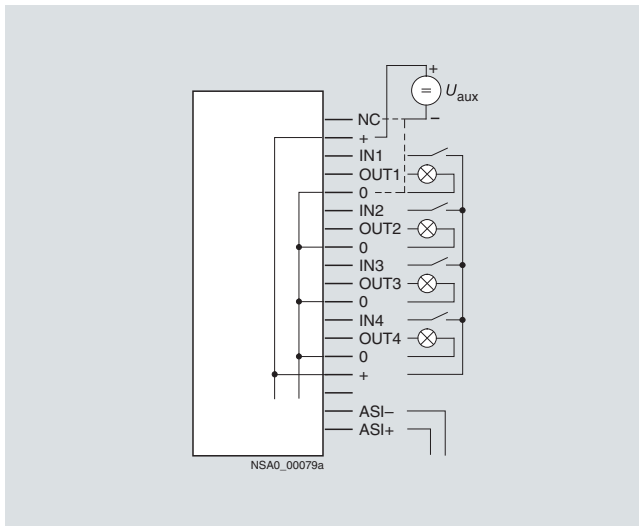


With the 4I/4O module for printed circuit board mounting it is possible for up to four mechanical contacts to be queried or indicator lights to be operated, the necessary energy being provided by the AS-Interface system (yellow AS-Interface cable).

Note:

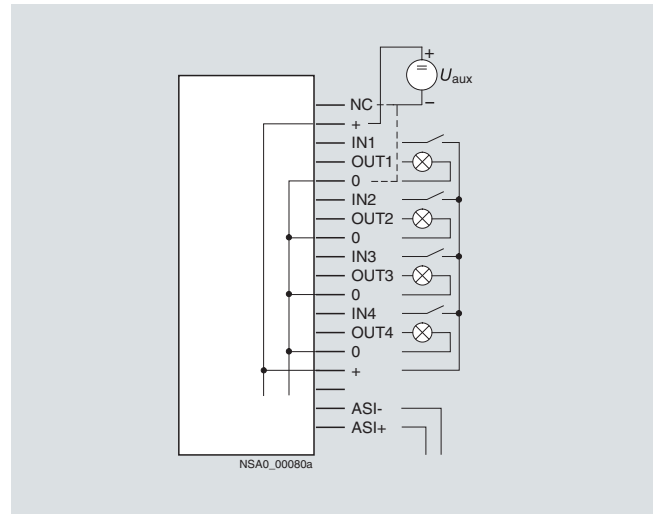
If the switching outputs are overloaded, the module does not respond to invoking by a master.

3RK1 400-0CD01-0AA3 AS-Interface communication modules for printed circuit board installation



With the 4I/4O module for printed circuit board mounting it is possible for up to four mechanical contacts to be queried or indicator lights to be operated, the necessary energy for the inputs and outputs being provided from the auxiliary voltage (24 V PELV). If (+) is connected to $U_{aux} +$ and (NC) to $U_{aux} -$, the outputs are not short-circuit and overload resistant; if $U_{aux} -$ is connected to (0), the outputs are overload and short-circuit resistant (maximum summation current 200 mA). In this case the module does not respond even to invoking by a master when the switching outputs are overloaded.

3RK9 005-0SA00 AS-Interface communication modules for printed circuit board installation



With the 4I/4O module for printed circuit board mounting it is possible for up to four mechanical contacts to be queried or indicator lights to be operated, the power for inputs and outputs being provided from an auxiliary voltage (24 V PELV). If (+) is connected to $U_{aux} +$ and (NC) to $U_{aux} -$, the outputs are not short-circuit and overload resistant; if $U_{aux} -$ is connected to (0), the outputs are overload and short-circuit resistant (maximum summation current 200 mA). In this case the module does not respond even to invoking by a master when the switching outputs are overloaded.

AS-Interface

Slaves

Special integrated solutions AS-Interface communication modules

3RK1 400-1CD00-0AA2, 3RK2 400-1FD00-0AA2 AS-Interface communication modules for printed circuit board installation

Connection	Connection pad ¹⁾
AS-i +	27, 29
AS-i -	28, 30
Sensor+	17, 18, 23, 24
Sensor-	13, 14, 19, 20
IN1	21
IN2	22
IN3	15
IN4	16
U_{aux+} (L24+)	2, 4
U_{aux-} (M24)	1, 3
OUT1	9
OUT2	10
OUT3	5
OUT4	6 (not assigned for 3RK2 400-1FD00-0AA2 4I/3O module)
OUT-	7, 8
Not assigned	11, 12, 25, 26

¹⁾ Note: Pad numbering, [see notes on Technical Information on page 2/1](#).

With the 4E/4A or 4E/3A module for printed circuit board mounting it is possible for up to four mechanical contacts or 3-conductor sensors according to IEC 947-5-2 to be connected. Up to four indicator lights via the 4I/4O module or up to three indicator lights via the 4I/3O module can also be controlled. The power for short-circuit proof solid-state switching outputs is provided from an auxiliary voltage (24 V PELV).

Mounting is very easy using a "Card Edge Board-to-Board Connector". This connector can be ordered for vertical and horizontal mounting from the company AMP, for example:

- 180° version for vertical mounting (AMP): Order No. 530843-2
- 90° version for horizontal mounting (AMP): Order No. 650118-1

If the inputs are loaded with more than 200 mA, the module does not respond to invoking by a master.

3RK1 200-0CD00-0AA2 AS-Interface communication modules for printed circuit board installation

Connection	Connection pad ¹⁾
AS-i +	27, 29
AS-i -	28, 30
Sensor+	17, 18, 23, 24
Sensor-	13, 14, 19, 20
IN1	21
IN2	22
IN3	15
IN4	16
Not assigned	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 25, 26

¹⁾ Note: Pad numbering [see notes on Technical Information on page 2/1](#).



With the 4I module for printed circuit board mounting it is possible for up to four mechanical contacts or 3-conductor sensors to be connected, the power for inputs being provided from AS-Interface cable.

Mounting is very easy using a "Card Edge Board-to-Board Connector". This connector can be ordered for vertical and horizontal mounting from the company AMP, for example:

- 180° version for vertical mounting (AMP): Order No. 530843-2
- 90° version for horizontal mounting (AMP): Order No. 650118-1

If the inputs are loaded with more than 200 mA, the module does not respond to invoking by a master.

Selection and ordering data

Version	Slave type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
 3RK1 400-0CD00-0AA3	4 inputs/4 outputs							
	• Supply of I/Os using AS-Interface cable (max. 200 mA) - Printed circuit board with solder pins, protected by enclosure	Standard	▶	3RK1 400-0CD00-0AA3		1	1 unit	121
	• Supply of I/Os using external auxiliary voltage (24 V PELV) - Printed circuit board with solder pins, protected by enclosure	Standard	D	3RK1 400-0CD01-0AA3		1	1 unit	121
	- Printed circuit board with solder pins for horizontal mounting	Standard	D	3RG9 005-0SA00		1	1 unit	121
 3RG9 005-0SA00	• Supply of outputs using external auxiliary voltage (24 V PELV) - Printed circuit board with gold-plated direct connector for 30-pole male connector socket for simple installation with direct connector	Standard	B	3RK1 400-1CD00-0AA2		1	5 units	121
	4 inputs/3 outputs	A/B	C	3RK2 400-1FD00-0AA2		1	1 unit	121
	• Supply of outputs using external auxiliary voltage (24 V PELV) - Printed circuit board with gold-plated direct connector for 30-pole male connector socket for simple installation with direct connector							
	4 inputs	Standard	C	3RK1 200-0CD00-0AA2		1	1 unit	121
	• Printed circuit board with gold-plated direct connector for 30-pole male connector socket for simple installation with direct connector							

Overview

This module is used to send hexadecimally coded count values (LSB=D0, MSB=D3) to a higher-level controller. The count value is increased by one for each valid count pulse at terminal 8. Beginning at 0, the module counts up to 15 and then begins again at 0. The controller adopts the current value and determines the number of pulses between two host invocations through subtraction from the previous value. The total number of count pulses is determined by adding these differences.

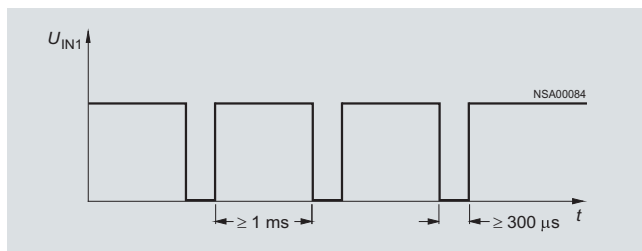
For the values sent to be unambiguous, no more than 15 count values are allowed between two host invocations or AS-Interface master invocations at terminal 8. The maximum permissible transmission frequency is calculated from these times:

$$f_{TRmax} = 15/T_{max}$$

T_{max} : max. possible transmission time from the slave to the host

Another condition for the maximum frequency is the pulse shaped required. For the counter to accept a pulse as valid, a Low must have been applied at the input for at least 300 μ s and a High for at least 1 ms. This results in a controller-independent maximum frequency of

$f_{Cmax} = 1/1.3 \text{ ms} = 769 \text{ Hz}$ for the counter module (see following figure).

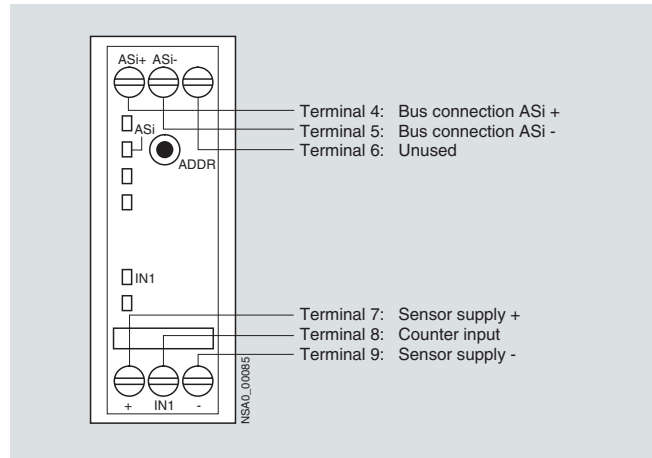


If the time criterion stipulated in the graphic is violated, the count value is rejected.

The counter is active only for the reset parameter P2 (default). The counter is deleted when P2 is set, and the incoming count pulses are not registered until after P2 is reset again.

Note:

A customized function block is necessary or must be programmed.



Connection options

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

Counter module

• With screw terminals		A	3RK1 200-0CE03-0AA2	1	1 unit	121	0.104
• With spring-type terminals		C	3RK1 200-0CG03-0AA2	1	1 unit	121	0.091



3RK1 200-0CE03-0AA2



3RK1 200-0CG03-0AA2

* You can order this quantity or a multiple thereof.

AS-Interface

Slaves

Modules with special functions Ground-fault detection modules

Overview

"... Ground faults in control circuits must not result in a machine's unintentional starting or hazardous movements, nor must they prevent it from stopping (EN 60204-1 or VDE 0113 Part 1)."



The AS-Interface ground-fault detection module is used to meet these requirements. Using this module from the SlimLine series, ground faults in AS-Interface systems can be reliably detected and reported.

The following ground faults are detected:

- Ground fault from AS-i "+"
- Ground fault from AS-i "-"
- Ground fault from sensors and actuators which are supplied from the AS-Interface voltage.

One module per AS-Interface network is required.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Ground-fault detection module							
• With screw terminals		3RK1 408-8KE00-0AA2		1	1 unit	121	0.142
• With spring-type terminals		3RK1 408-8KG00-0AA2		1	1 unit	121	0.117



3RK1 408-8KE00-0AA2

Modules with special functions Overvoltage protection module

Overview

The AS-Interface overvoltage protection module protects downstream AS-Interface devices or individual sections in AS-Interface networks from conducted overvoltages which can be caused by switching operations and remote lightning strikes.

The location of the overvoltage protection module forms within the lightning protection zone concept the transition from zone 1 to 2/3. Direct lightning strikes must be coped with using additional protective measures at the transitions from lightning protection zone 0A to 1.

[With the AS-Interface overvoltage protection module it is now also possible to integrate AS-Interface in the overall lightning protection concept of a plant or machine.](#)

The module has the same design, connection and degree of protection (IP67) as the AS-Interface user modules. It is a passive module without AS-i IC and as such does not need its own address on the AS-Interface network.

Connection to an AS-Interface system is effected through the FK-E or PG-E coupling module. Through use of the EEMS interface, the AS-Interface cable and the auxiliary voltage cable can be protected from overvoltage.

Overvoltages are discharged through a ground cable with a green/yellow oil-proof outer sheath. This cable is fixed in the module and must be connected with low resistance to the system's ground.

Rated discharge current I_{sn}

The rated discharge current is the peak value of a surge current with waveform 8/20 microseconds, for which the overvoltage protection module is rated in according to a specific test program.

With waveform 8/20, 100 % of the value is achieved after 8 microseconds and 50 % after 20 microseconds.

Protection level U_p

The protection level of an overvoltage protection module is the highest momentary value of the voltage at the terminals, established in individual tests.

The protection level characterizes the capability of an overvoltage protection module to limit overvoltages to a residual level.

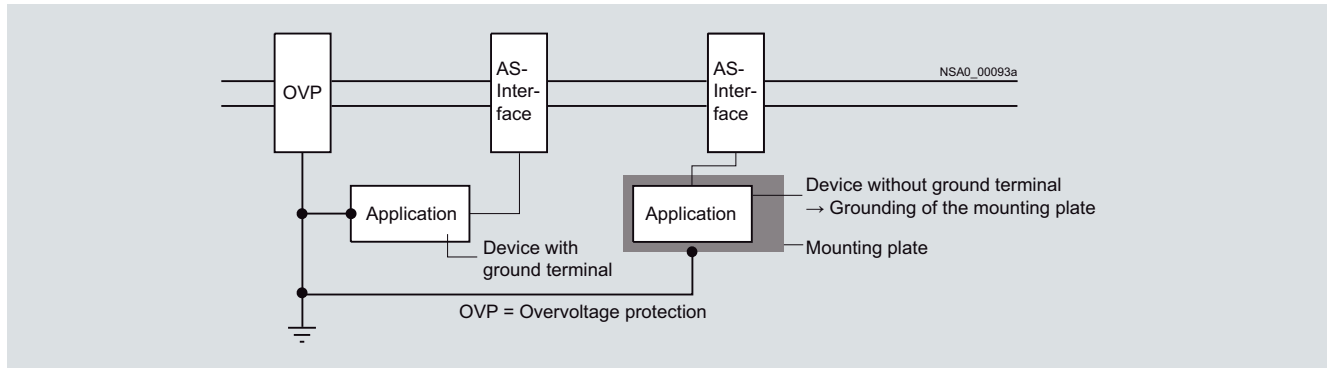
Accessories

An FK-E (3RG9030-0AA00) or PG-E (3RG9240-0AA00) coupling module is required for connection of the AS-Interface cable and the auxiliary power supply cable.

Modules with special functions Overvoltage protection modules

2

Configuration guidelines

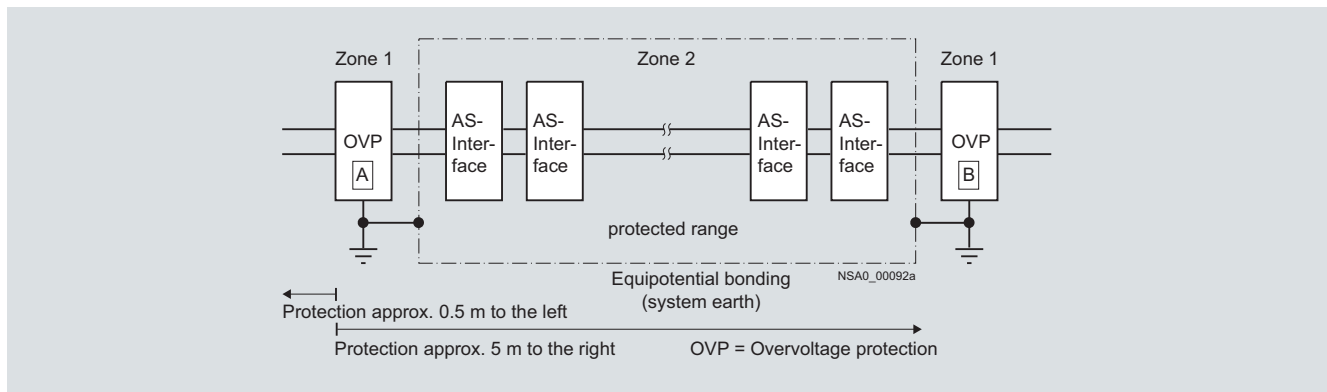


Configuration guidelines for overvoltage protection modules

The grounding of protection modules and the units to be protected must be effected through a shared grounding point (equi-

potential bonding). If insulated devices are protected, their mounts must be included in the grounding points.

Sample application



Sample application for overvoltage protection modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	B	3RK1 901-1GA00		1	1 unit	121	0.146 kg



3RK1 901-1GA00

* You can order this quantity or a multiple thereof.

AS-Interface

Slaves

AS-Interface connections for LOGO!

2

Overview


Every LOGO! can now be connected to the AS-Interface system

Using the AS-Interface connection for LOGO!, an intelligent slave can be integrated in the AS-Interface system. With the modular interface it becomes possible to integrate the different basic units in the system according to their functionality. Similarly, functionalities can be quickly and easily adapted to new requirements by exchanging the basic unit.

The interface module provides four inputs and four outputs on the system. These inputs and outputs do not actually exist in hardware terms, however, but are only virtually present through the interface on the bus.



Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 <p>AS-Interface connections for LOGO!</p> <ul style="list-style-type: none"> • Four virtual inputs • Four virtual outputs 	A	3RK1 400-OCE10-0AA2		1	1 unit	121	0.107

3RK1 400-OCE10-0AA2

Overview



AS-Interface power supply unit for 3A

AS-Interface power supply units are an essential part of an AS-Interface network. They supply the electronics of the network (AS-Interface modules and AS-Interface masters) and the connected sensor technology. Furthermore, the integrated data decoupling of AS-Interface power supply units separates data and energy, thus enabling AS-Interface to transmit data and power on a single cable.

Design

AS-Interface power supply units have compact dimensions in widths of 50/70/120 mm. No distances from other devices need to be observed when mounting the power supply units.



Function

- Higher rating: The power supply units deliver currents of 3 to 8 A.
- Integrated ground-fault detection: The power supply units ensure the reliable detection and signaling of ground faults according to EN 60204-1. The AS-Interface voltage can be switched off automatically in the event of a ground fault.
- Integrated overload detection: An output overload is detected and reported over a diagnostics LED.
- Diagnostics memory: Any ground faults or overloads on the output side are stored in a diagnostics memory until the device is reset.
- Remote reset and remote signaling: Using relay contacts, a ground fault can be signaled and evaluated by a central controller and/or indicator light.
- Diagnostics LEDs: Three different LEDs indicate the status of the AS-Interface power supply locally at the power supply unit.
- Two-phase connection / ultra-wide input range for 8 A version: The ultra-wide input range of 120 to 500 V of the 8 A version means that the supply units can be used in virtually any network worldwide. In addition, this version dispenses with the need for an N conductor as the device can be connected directly between 2 phases of a network.
- Operation with 24 V DC: The 3 A power supply unit is also available as a variant with a 24 V DC input. This power supply unit is suitable for use in battery-powered systems or in systems with UPS (uninterruptible power supply).
- Removable terminal blocks with spring-type connections: For easy exchanging of devices, each power supply unit has three removable terminal blocks: for the input side, for the output side and for Signal/Reset terminals.

Benefits

- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with a high power requirement
- Integrated ground-fault and overload detection saves the need for additional components and enhances safety
- Fast fault detection and reduced downtimes thanks to diagnostics memory, remote signaling (relay signaling contacts) and remote reset
- Reduced downtimes as the result of removable terminal blocks which enable the fast exchanging of devices
- Ultra-wide input range of the 8 A version permits single-phase and two-phase operation and saves the need for an N conductor
- Can be used world-wide thanks e. g. to UL/CSA approval - for the 2.6 A version the output power is limited to max. 100 W (acc. to UL/CSA approval)
- Also available as 3 A version with direct voltage input

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-Interface power supply units, IP20 <ul style="list-style-type: none"> • Single output IP20 • With integrated ground-fault detection • 2.6 A version with limitation of output power to max. 100 W • Dimensions: <ul style="list-style-type: none"> - Width: 50 mm (3 A; 2.6 A), 70 mm (5 A), 120 mm (8 A) - Height: 125 mm - Depth: 125 mm 							
							
3RX9 501-0BA00							
							
3RX9 503-0BA00							
	Output current	Input voltage					
	2.6 A / max. 100 W	120/230 V AC (selectable)	▶	3RX9 501-2BA00	1	1 unit	121 0.550
	3 A	120/230 V AC (selectable)	▶	3RX9 501-0BA00	1	1 unit	121 0.550
	3 A	24 V DC	▶	3RX9 501-1BA00	1	1 unit	121 0.570
	5 A	120/230 V AC (selectable)	▶	3RX9 502-0BA00	1	1 unit	121 0.710
	8 A	120/230 ... 500 V AC (selectable)	▶	3RX9 503-0BA00	1	1 unit	121 1.310

* You can order this quantity or a multiple thereof.

AS-Interface Transmission Media

Shaped cables

Overview



The actuator-sensor interface - the networking system used for the lowest field area - is characterized by very easy mounting and installation. A new connection method was developed specially for AS-Interface.

The stations are connected using the AS-Interface cable. This two-wire AS-Interface cable has a trapezoidal shape, thus ruling out polarity reversal.

Connection is effected by the insulation piercing method. In other words, male contacts pierce the shaped AS-Interface cable and make reliable contact with the two wires. Cutting to length and stripping are superfluous. Consequently, AS-Interface stations (e. g. I/O modules, intelligent devices) can be connected in the shortest possible time and exchanging devices is quick.

To enable use in the most varied ambient conditions (e. g. in an oily environment), the AS-Interface cable is available in different materials (rubber, TPE, PUR).

For special applications it is also possible to use an unshielded standard round cable H05VV-F 2x 1.5 mm² according to AS-i Specification. With AS-Interface, data and energy for the sensors (e. g. proximity switches BERO) and actuators (e. g. indicator lights) are transmitted over the yellow AS-Interface cable.

The black cable must be used for actuators with a 24 V DC supply (e. g. solenoid valves) and a high power requirement.

Suitable for operation in tow chains

The use of the AS-Interface shaped cables with TPE and PUR outer sheath was checked in a tow chain test with the following conditions:


Chain length	m	6
Travel	m	10
Bending radius	mm	75
Travel speed	m/s	4
Acceleration	m/s ²	4
Number of cycles		10 million
Duration of test		approx. 3 years (11 000 cycles per day)

After termination of the 10 million cycles only slight wear was visible due to the lugs of the tow chain. No damage to the cores and core insulation could be detected.

Note:

When using a tow chain the cables must be installed free from tensile forces. On no account may the cables be twisted, but must be routed flat through the tow chain.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
							kg		
AS-Interface shaped cables									
 Rubber		Yellow (AS-Interface)	100-m roll	▶	3RX9 010-0AA00	1	1 unit	121	7.148
	B	Yellow (AS-Interface)	1-km drum		3RX9 012-0AA00	1	1 unit	121	80.000
	▶	Black (24 V DC)	100-m roll		3RX9 020-0AA00	1	1 unit	121	7.092
	B	Black (24 V DC)	1-km drum		3RX9 022-0AA00	1	1 unit	121	80.000
TPE	▶	Yellow (AS-Interface)	100-m roll		3RX9 013-0AA00	1	1 unit	121	6.627
	B	Yellow (AS-Interface)	1-km drum		3RX9 014-0AA00	1	1 unit	121	78.000
	▶	Black (24 V DC)	100-m roll		3RX9 023-0AA00	1	1 unit	121	6.459
	B	Black (24 V DC)	1-km drum		3RX9 024-0AA00	1	1 unit	121	69.666
TPE special version acc. to UL Class 2	C	Yellow (AS-Interface)	100-m roll		3RX9 017-0AA00	1	1 unit	121	6.900
	C	Black (24 V DC)	100-m roll		3RX9 027-0AA00	1	1 unit	121	6.984
PUR	▶	Yellow (AS-Interface)	100-m roll		3RX9 015-0AA00	1	1 unit	121	6.131
	B	Yellow (AS-Interface)	1-km drum		3RX9 016-0AA00	1	1 unit	121	69.100
	▶	Black (24 V DC)	100-m roll		3RX9 025-0AA00	1	1 unit	121	6.323
	B	Black (24 V DC)	1-km drum		3RX9 026-0AA00	1	1 unit	121	200.000

Overview



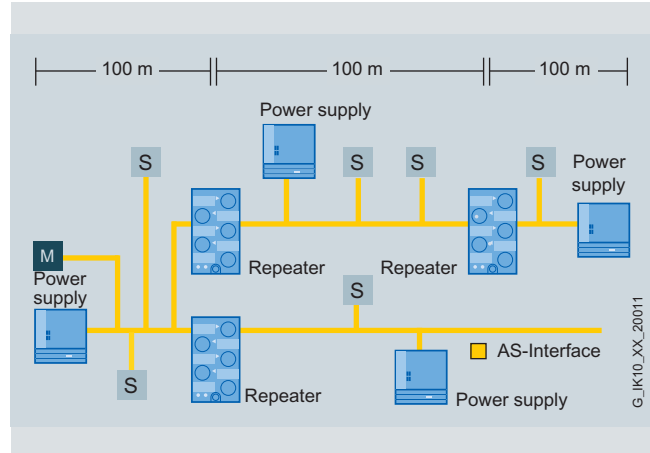
AS-Interface repeater

AS-Interface repeaters are used for extending the AS-Interface cable by 100 m per repeater and have the following features:

- Maximum two repeaters in series
- Parallel switching of several repeaters possible (star configuration option)
- Maximum size increase of an AS-Interface network to up to 500 m is thus possible
- Easy mounting
- IP67 module enclosure

Design of an AS-Interface network with repeaters

- Slaves can be used on both sides of the repeater
- AS-Interface power supply is required on both sides
- Electrical separation of the two AS-Interface shaped cable lines
- Installed in K45 module enclosure with mounting plate
- Separate indication of the correct AS-Interface voltage for each side
- Maximum two repeaters in series (max. cable length 300 m)
- Parallel switching of several repeaters possible (star configuration)
- Combination of series and parallel switching possible (max. range 500 m)



Design of an AS-Interface network with repeaters (example)

Benefits



- More possibilities of use and greater freedom for plant planning through extension of the AS-Interface network
- Reduced standstill and servicing times in the event of a fault thanks to separate indication of the correct AS-Interface voltage for each side

Application

The repeater is used to lengthen the AS-Interface segment by 100 m. In this case there are AS-Interface slaves and one AS-Interface power supply on each side of the repeater.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg



6GK1 210-0SA01

Repeaters for AS-Interface
For cable extension, including mounting plate

B **6GK1 210-0SA01** 1 1 unit 121 0.105

* You can order this quantity or a multiple thereof.

AS-Interface System Components and Accessories

Extension plugs

Overview



Extension plug (on AS-Interface M12 feeder)

With the extension plug/extension plug plus it is possible to double the cable length possible in an AS-Interface segment from

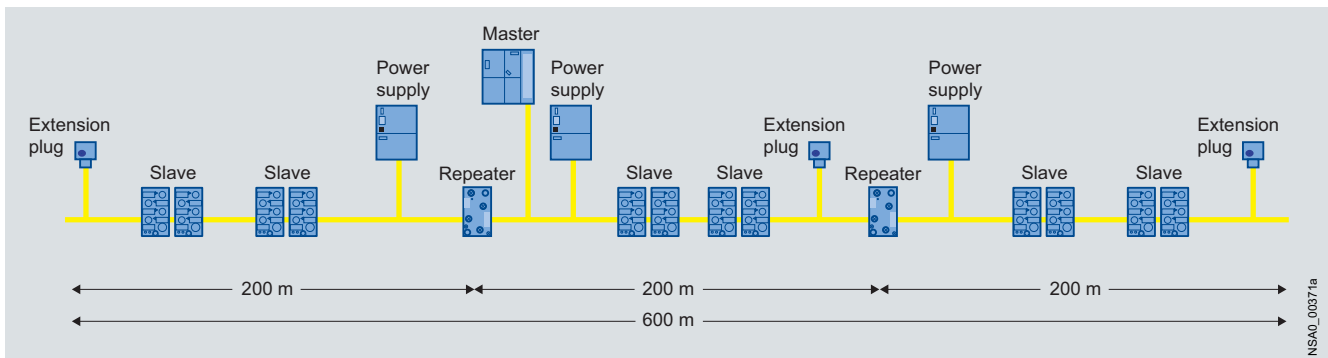
100 to 200 m. The extension plug is a passive component, the extension plug plus is equipped in addition with an A/B slave.

The extension plug / extension plug plus has an M12 plug for quick connection to the AS-Interface M12 feeder with degree of protection IP67. Only one power supply unit is needed to supply power to the slaves on the up to 200 m long segment.

Design of an AS-Interface segment with an extension plug




To construct an AS-Interface segment with a cable length of more than 100 m and up to a maximum of 200 m, the extension plug/extension plug plus is installed at that point of the network which in a range of approx. ±10 m is furthest from the AS-Interface power supply unit. The extension plug is not allowed to be used in AS-i networks smaller than 100 m.

As with all AS-i networks, any network structure (line, tree, star) is possible when using the extension plug/extension plug plus. Only one extension plug/extension plug plus is required per 200 m segment even with a tree or star structure.



Maximum network size with repeaters and extension plug (master at center of network)

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
 3RK1 901-1MX00		AS-Interface extension plugs¹⁾	▶	3RK1 901-1MX00	1	1 unit	121	0.035
		<ul style="list-style-type: none"> • Doubling of the cable length to 200 m per AS-Interface segment • Undervoltage monitoring signal by means of diagnostics LED 						
		AS-Interface extension plugs plus¹⁾	▶	3RK1 901-1MX01	1	1 unit	121	0.035
		<ul style="list-style-type: none"> • Doubling of the cable length to 200 m per AS-Interface segment • Undervoltage monitoring signal through integrated AS-Interface slave to AS-Interface master 						
Accessories								
 3RX9 801-0AA00		AS-Interface M12 feeders	▶	3RX9 801-0AA00	1	1 unit	121	0.029
		<ul style="list-style-type: none"> • For adaptation of shaped AS-Interface cable to a standard round cable • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Degree of protection IP67 						
 3RK1 901-1NR10	A	AS-Interface M12 feeders	▶	3RK1 901-1NR10	1	1 unit	121	0.060
		<ul style="list-style-type: none"> • Transition of AS-Interface cable without U_{aux} with M12 socket • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Max. 4 A • Degree of protection IP67/IP68/IP69K 						

¹⁾ For connection to the AS-Interface flat cable you need the AS-Interface M12 feeder, which must be ordered separately, see section "Accessories"

Overview



Addressing unit for AS-Interface

To be able to participate in data exchange with the master, every AS-i slave must be assigned an address (not zero) before commissioning. This can be done

- Offline by means of an addressing unit or
- Online using the master of the AS-Interface system.

The addresses themselves are the values 1 to 31 (or 1A to 31A and 1B to 31B in case of extended addressing, so-called A/B slaves).




A new slave that has not yet been addressed has the address 0. It is recognized accordingly by the master as a new slave that has not yet been addressed and is unable in this state to exchange I/O data.

The assignment of the address is independent of the position of the slave on the AS-i cable. An address is not allowed to occur more than once in an AS-i network.

Function

- Reading out and adjusting the slave address 0 to 31 or 1A to 31A, 1B to 31B (also for slave types according to AS-Interface Specification V3.0)
- Reading out the slave profile (IO, ID, ID2)
- Reading out and adjusting the ID1 code
- Input/output test when commissioning the slaves: Reading input signals and writing outputs in case of digital and analog slaves according to AS-Interface Specification V2.1
- Measuring the voltage on the AS-Interface cable (measuring range from 0 to 35 V)
- Indication of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 100 mA)
- Storage of complete network configurations (profiles of all slaves) as addressing aid

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		3RK1 904-2AB01		1	1 unit	121	0.540 kg
AS-Interface addressing units <ul style="list-style-type: none"> • For AS-Interface modules and sensors and actuators with integrated AS-Interface • Including extended addressing mode for A/B slaves • For setting the AS-i address of standard slaves and A/B slaves (also for slaves according to AS-Interface Version 3.0) • Battery operation with 4 batteries type AA (IEC LR6, NEDA 15) • Scope of supply: Addressing unit, operating manual (English, French, German, Italian, Spanish), addressing cable (1.5 m with addressing plug) 							
Accessories							
	A	3RK1 901-1MA00		1	1 unit	121	0.057
FK-E coupling modules, with integrated addressing socket (for hollow plug)¹⁾ For addressing the older module generation of the user module type							
	A	3RX8 000-0GF32-1AB5		1	1 unit	574	0.066
Addressing cable, with M12 plug to M12 socket¹⁾ <ul style="list-style-type: none"> • For addressing slaves with M12 connection, e. g. K20 or K60R modules or light curtains • When using the current version of the 3RK1 904-2AB01 addressing unit • Length 1.5 m, 3-pole 							
		Z236A					
Addressing cable, with M12 plug to addressing plug (hollow plug)²⁾ <ul style="list-style-type: none"> • Included in scope of supply of the 3RK1 904-2AB01 addressing unit. • Length 1.5 m 							
	C	3RK1 901-3RA00		1	1 unit	121	0.064
Addressing cable, with banana plug to M12 socket <ul style="list-style-type: none"> • For addressing slaves with M12 connection, e. g. K20 or K60R modules or light curtains • Only when using the older version of the 3RK1 904-2AB00 addressing unit 							

¹⁾ Not included in scope of supply of the 3RK1 904-2AB01 addressing unit

²⁾ Can be ordered only from the following address:
 GMC-I Messtechnik GmbH, Thomas-Mann-Str. 16-20, D-90471 Nürnberg, Germany
 Tel.: +49 (0)911/8602-111, Fax: +49 (0)911/8602-777,
 E-mail: info@gossenmetrawatt.com, www.gossenmetrawatt.com

AS-Interface

System Components and Accessories

Analyzers

Overview



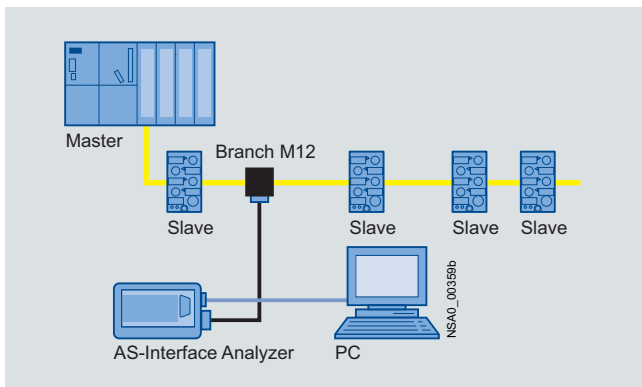
The AS-Interface analyzer is used to test AS-Interface networks. It enables systematic troubleshooting and permanent monitoring.

Installation errors, e. g. loose contacts or EMC interference under extreme loads, can be revealed by this device.

Thanks to the easy-to-use software the user can assess the quality of complete networks even if he lacks detailed specialist knowledge of AS-Interface. In addition it is an easy matter with the AS-Interface analyzer to create test logs from the records produced, thus providing documentation for start-ups and service assignments.

For advanced AS-Interface users there are trigger functions for detailed diagnostics.

Connection



The AS-Interface analyzer follows the communication on the AS-Interface network as a passive station. The unit is supplied simultaneously from the AS-Interface cable.

This analyzer interprets the physical signals on the AS-Interface network and records the communication.

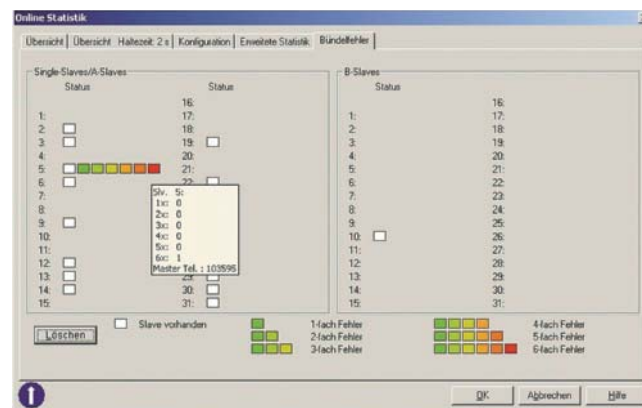
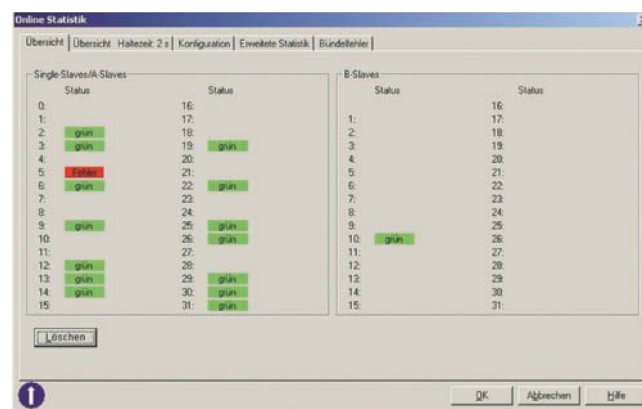
The data thus obtained are transferred through an RS 232 interface to a PC such as a notebook, for evaluation with the supplied diagnostics software.

Benefits

- Simple and user-friendly operation enables diagnostics of AS-Interface networks without help from specialists
- Speedy troubleshooting thanks to intuitive display in statistics mode
- Test logs provide verification of the state and quality of the installation for service and approval
- Recorded logs facilitate remote diagnostics by technical assistance
- Comprehensive trigger functions enable exact analysis
- Process data can be monitored online

Application

Online statistics



This mode provides a quick overview of the existing AS-Interface system. The error rates are presented per slave in a traffic-light function (green, yellow, red).

The bus configuration and the currently transmitted data of the slaves are shown in a well arranged presentation.

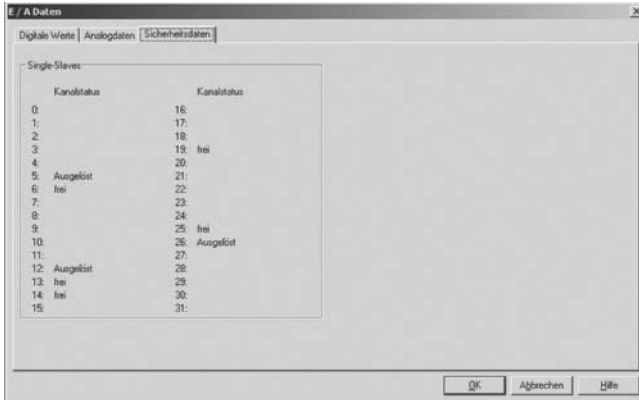
With the expanded statistics function it is possible to determine the error rates as the number of transmitted or faulty bus message frames.

The bundle error overview shows in steps how many multiple repetitions of message frames occurred in order to enable a selective and look-ahead assessment of the transmission quality.

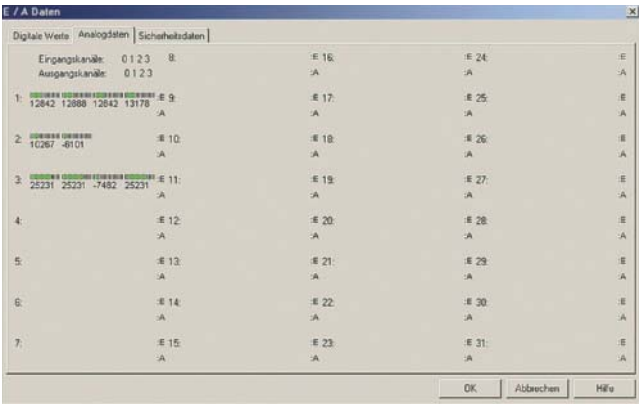
AS-Interface System Components and Accessories

Analyzers

Data mode

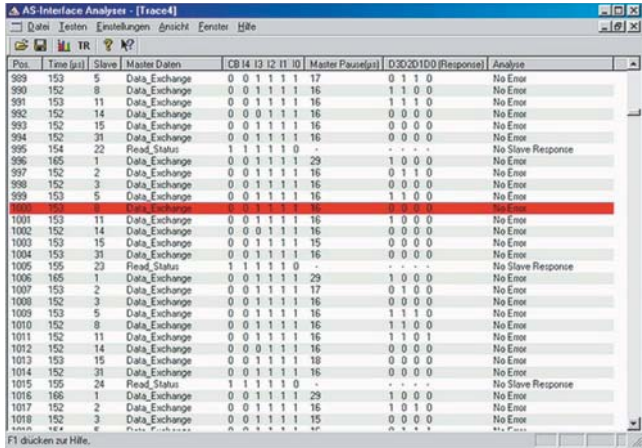


Test log



In this mode the analyzer now shows not only the digital input/output values but also the current analog values and the input status of the safety slaves.

Trace mode



The presentation of message frames in the style of a classic field bus analyzer is indispensable for complex troubleshooting. Extensive trigger functions and recording and viewing filters are available for this purpose.

An external trigger input and trigger output round off the scope of functions in order to find even the most difficult errors.

For troubleshooting in connection with safety monitor applications, changes of status in the code tables of safety slaves are identified and assessed.




2

AS-Interface









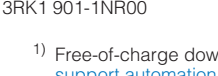
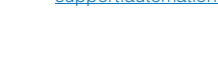

System Components and Accessories

Analyzers

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-Interface analyzers							
		3RK1 904-3AB01		1	1 unit	121	0.450
3RK1 904-3AB01		<ul style="list-style-type: none"> For testing actuator/sensor interface systems For service assignments in installations and networks with AS-Interface systems Scope of supply: <ul style="list-style-type: none"> AS-Interface analyzer RS 232 cable for connecting to PC USB/serial adapter / RS 232 adapter Screwdriver Magnetic adhesive tape for fastening the analyzer to metal surfaces Service case with foam insert, dimensions (W x H x D / mm): approx. 260 x 70 x 200 Diagnostics software (CD-ROM) for PC (Windows 95/98, ME, 2000, NT, XP, Vista Home Basic, Home Premium, Business, Ultimate, Windows 7) 					
Accessories							
USB/serial adapters							
	B	3UF7 946-0AA00-0		1	1 unit	131	0.150
		For connection to a USB port of a PC					
AS-Interface M12 feeders							
		3RX9 801-0AA00		1	1 unit	121	0.029
3RX9 801-0AA00		<ul style="list-style-type: none"> For adaptation of shaped AS-Interface cable to a standard round cable Insulation piercing method for connection of AS-Interface cable M12 socket for connection of standard round cable Degree of protection IP67 					
AS-Interface M12 feeders							
	A	3RK1 901-1NR10		1	1 unit	121	0.060
3RK1 901-1NR10		<ul style="list-style-type: none"> Transition of AS-Interface cable without U_{aux}, with M12 socket Insulation piercing method for connection of AS-Interface cable M12 socket for connection of standard round cable Max. 4 A Degree of protection IP67/IP68/IP69K 					
M12 cable plugs							
	A	3RX8 000-0CD42-1AF0		1	1 unit	574	0.174
		<ul style="list-style-type: none"> Cable: PUR, 4-pole Length: 5 m Color: Black Extruded M12 plug (straight cable feeder), other cable end open 					

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg																																																								
 <p>AS-Interface system manual Technical information and overview of the AS-Interface product range from Siemens, scope: approx. 600 pages</p> <ul style="list-style-type: none"> • German edition, paper version (black&white print)¹⁾ • English edition, paper version (black&white print)²⁾ 																																																															
	B	3RK2 703-3AB02-1AA1		1	1 unit	121	1.500																																																								
	B	3RK2 703-3BB02-1AA1		1	1 unit	121	1.500																																																								
3RK2 703-3AB02-1AA1	 <p>AS-Interface compact distributors, for AS-Interface flat cable</p> <ul style="list-style-type: none"> • Current carrying capacity up to 8 A • Degree of protection IP67/IP68/IP69K 																																																														
3RK1 901-1NN10	A	3RK1 901-1NN10		1	1 unit	121	0.040																																																								
 <p>AS-Interface M12 feeders</p> <ul style="list-style-type: none"> • Degree of protection IP67 <table border="1"> <thead> <tr> <th>For flat cable</th> <th>For</th> <th>Cable length</th> <th>Cable end in feeder</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>AS-i</td> <td>M12 socket</td> <td>--</td> <td>Available</td> <td>▶</td> <td>3RX9 801-0AA00</td> <td>1</td> <td>1 unit 121 0.029</td> </tr> </tbody> </table>								For flat cable	For	Cable length	Cable end in feeder					AS-i	M12 socket	--	Available	▶	3RX9 801-0AA00	1	1 unit 121 0.029																																								
For flat cable	For	Cable length	Cable end in feeder																																																												
AS-i	M12 socket	--	Available	▶	3RX9 801-0AA00	1	1 unit 121 0.029																																																								
3RX9 801-0AA00	 <p>AS-Interface M12 feeders</p> <ul style="list-style-type: none"> • Degree of protection IP67/IP68/IP69K <table border="1"> <thead> <tr> <th>For flat cable</th> <th>For</th> <th>Cable length</th> <th>Cable end in feeder</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>AS-i</td> <td>M12 socket</td> <td>--</td> <td>Not available</td> <td>A</td> <td>3RK1 901-1NR10</td> <td>1</td> <td>1 unit 121 0.060</td> </tr> <tr> <td>AS-i</td> <td>M12 cable box</td> <td>1 m</td> <td>Not available</td> <td>A</td> <td>3RK1 901-1NR11</td> <td>1</td> <td>1 unit 121 0.070</td> </tr> <tr> <td>AS-i</td> <td>M12 cable box</td> <td>2 m</td> <td>Not available</td> <td>A</td> <td>3RK1 901-1NR12</td> <td>1</td> <td>1 unit 121 0.100</td> </tr> <tr> <td>AS-i / U_{aux}</td> <td>M12 socket</td> <td>--</td> <td>Not available</td> <td>A</td> <td>3RK1 901-1NR20</td> <td>1</td> <td>1 unit 121 0.060</td> </tr> <tr> <td>AS-i / U_{aux}</td> <td>M12 cable box</td> <td>1 m</td> <td>Not available</td> <td>A</td> <td>3RK1 901-1NR21</td> <td>1</td> <td>1 unit 121 0.070</td> </tr> <tr> <td>AS-i / U_{aux}</td> <td>M12 cable box</td> <td>2 m</td> <td>Not available</td> <td>A</td> <td>3RK1 901-1NR22</td> <td>1</td> <td>1 unit 121 0.100</td> </tr> </tbody> </table>							For flat cable	For	Cable length	Cable end in feeder					AS-i	M12 socket	--	Not available	A	3RK1 901-1NR10	1	1 unit 121 0.060	AS-i	M12 cable box	1 m	Not available	A	3RK1 901-1NR11	1	1 unit 121 0.070	AS-i	M12 cable box	2 m	Not available	A	3RK1 901-1NR12	1	1 unit 121 0.100	AS-i / U _{aux}	M12 socket	--	Not available	A	3RK1 901-1NR20	1	1 unit 121 0.060	AS-i / U _{aux}	M12 cable box	1 m	Not available	A	3RK1 901-1NR21	1	1 unit 121 0.070	AS-i / U _{aux}	M12 cable box	2 m	Not available	A	3RK1 901-1NR22	1	1 unit 121 0.100
For flat cable	For	Cable length	Cable end in feeder																																																												
AS-i	M12 socket	--	Not available	A	3RK1 901-1NR10	1	1 unit 121 0.060																																																								
AS-i	M12 cable box	1 m	Not available	A	3RK1 901-1NR11	1	1 unit 121 0.070																																																								
AS-i	M12 cable box	2 m	Not available	A	3RK1 901-1NR12	1	1 unit 121 0.100																																																								
AS-i / U _{aux}	M12 socket	--	Not available	A	3RK1 901-1NR20	1	1 unit 121 0.060																																																								
AS-i / U _{aux}	M12 cable box	1 m	Not available	A	3RK1 901-1NR21	1	1 unit 121 0.070																																																								
AS-i / U _{aux}	M12 cable box	2 m	Not available	A	3RK1 901-1NR22	1	1 unit 121 0.100																																																								
3RK1 901-1NR10	 <p>AS-Interface M12 feeders, 4-fold</p> <p>Degree of protection IP67</p> <table border="1"> <thead> <tr> <th>For flat cable</th> <th>For</th> <th>Cable length</th> <th>Cable end in feeder</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>AS-i / U_{aux}</td> <td>4-fold M12 socket delivery includes coupling module</td> <td>--</td> <td>Available</td> <td>A</td> <td>3RK1 901-1NR00</td> <td>1</td> <td>1 unit 121 0.186</td> </tr> </tbody> </table>							For flat cable	For	Cable length	Cable end in feeder					AS-i / U _{aux}	4-fold M12 socket delivery includes coupling module	--	Available	A	3RK1 901-1NR00	1	1 unit 121 0.186																																								
For flat cable	For	Cable length	Cable end in feeder																																																												
AS-i / U _{aux}	4-fold M12 socket delivery includes coupling module	--	Available	A	3RK1 901-1NR00	1	1 unit 121 0.186																																																								
3RK1 901-1NR11																																																															
3RK1 901-1NR12																																																															
3RK1 901-1NR20																																																															
3RK1 901-1NR21																																																															
3RK1 901-1NR22																																																															
3RK1 901-1NR00																																																															

¹⁾ Free-of-charge download from the Internet at support.automation.siemens.com/WWW/view/de/26250840












²⁾ Free-of-charge download from the Internet at support.automation.siemens.com/WWW/view/en/26250840

AS-Interface

System Components and Accessories

Miscellaneous accessories

2

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
 3RK1 901-1TR00		M12-T distributors • IP68 • 1 x M12 plug • 2 x M12 box	C	3RK1 901-1TR00	1	1 unit	121	0.038
 6ES7 194-1KA01-0XA0		M12 Y-shaped coupler plugs For connection of two sensors to one M12 socket with Y connector	A	6ES7 194-1KA01-0XA0	1	1 unit	250	0.046
 3RX8 000-0GF32-1AB5		Addressing cable, with M12 plug to M12 socket • For addressing slaves with M12 connection, e. g. K20 or K60R modules or light curtains • When using the current version of the 3RK1 904-2AB01 addressing unit • Length 1.5 m, 3-pole	A	3RX8 000-0GF32-1AB5	1	1 unit	574	0.066
		Addressing cable, with M12 plug to addressing plug (hollow plug) ¹⁾ • Included in scope of supply of the 3RK1 904-2AB01 addressing unit. • Length 1.5 m		Z236A				
 3RK1 901-3RA00		Addressing cable, with banana plug to M12 socket • For addressing slaves with M12 connection, e. g. K20 or K60R modules or light curtains • Only when using the older version of the 3RK1 904-2AB00 addressing unit	C	3RK1 901-3RA00	1	1 unit	121	0.064
 3RK1 901-1KA00		AS-Interface sealing caps M12 For free M12 sockets	▶	3RK1 901-1KA00	100	10 units	121	0.100
 3RK1 901-1KA01		AS-Interface sealing caps M12, tamper-proof For free M12 sockets	A	3RK1 901-1KA01	100	10 units	121	0.100
 3RK1 901-1PN00		AS-Interface sealing caps M8 For free M8 sockets	A	3RK1 901-1PN00	100	10 units	121	0.100
 3RK1 901-1MD00		AS-Interface seals M20 • For AS-Interface cable, shaped • For insertion in M20 glands	A	3RK1 901-1MD00	100	10 units	121	0.100
 3RK1 901-3QM00		Cable adapters for flat cables Connection of AS-Interface cable to metric gland with insulation piercing method • Continuation using standard cable - For M16 gland • Continuation using pins - For M16 gland - For M20 gland	B B B B	3RK1 901-3QM00 3RK1 901-3QM10 3RK1 901-3QM01 3RK1 901-3QM11	1 1 1 1	1 unit 1 unit 1 unit 1 unit	121 121 121 121	0.015 0.017 0.015 0.015
 3RK1 901-3QA00		Cable clips for cable adapters	▶	3RK1 901-3QA00	100	10 units	121	0.100
 3RK1 901-1MN00		Cable terminating pieces For sealing of open cable ends (shaped AS-Interface cable) in IP67	▶	3RK1 901-1MN00	1	10 units	121	0.085

¹⁾ Can be ordered only from the following address:
GMC-I Messtechnik GmbH, Thomas-Mann-Str. 16-20, 90471 Nürnberg, Germany

AS-Interface

System Components and Accessories

Miscellaneous accessories

2

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
K45 mounting plates							
• For wall mounting	▶	3RK1 901-2EA00		1	1 unit	121	0.027
• For standard rail mounting	▶	3RK1 901-2DA00		1	1 unit	121	0.036
K60 mounting plates							
Suitable for all K60 compact modules	▶	3RK1 901-0CA00		1	1 unit	121	0.065
• For wall mounting	▶	3RK1 901-0CB01		1	1 unit	121	0.095
• For standard rail mounting							
Sealing sets							
• For K60 mounting plate and standard distributor	A	3RK1 902-0AR00		100	5 units	121	0.100
• Cannot be used for K45 mounting plate							
• One set contains one straight and one shaped seal							
Inscription labels							
• For K45 and K60 compact modules	D	3RT1 900-1SB50		100	380 units	101	0.100
• 20 x 9 mm pastel turquoise							
• 19 frames with 20 labels each							



3RK1 901-2EA00



3RK1 901-0CA00



3RK1 902-0AR00

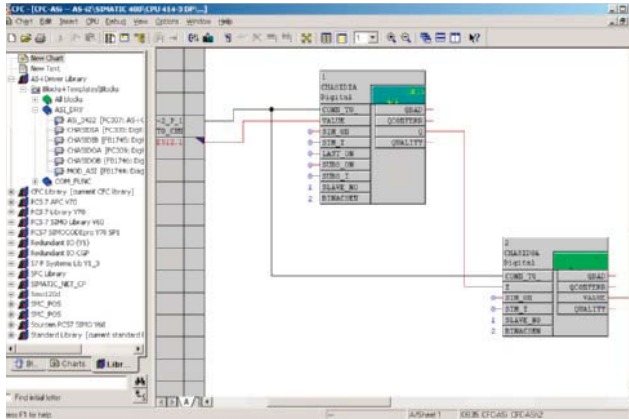
Other accessories:

- See Catalog FS 10, section "Proximity Switches" --> "Accessories" --> "Plug-in Connectors"
- See Industry Mall, section "Sensors, Measurement and Testing Systems" --> "Proximity Switches", "Accessories" --> "Plug-in Connectors"

AS-Interface Software

AS-i function block library for PCS 7

Overview



AS-i function block library for PCS 7: User interfaces

The AS-i function block library for PCS 7 is integrated in the SIMATIC PCS 7 process control system and expands it for integration of the AS-Interface system.

As the result, the advantages of AS-i such as the considerable reduction of wiring outlay for distributed actuators/sensors and very simple installation can also be used in a system based on PCS 7.

Benefits

Use of the AS-i function block library offers the following advantages:

- Easy connection of AS-Interface to PCS 7 is guaranteed
- Engineering work reduced to positioning and connecting the function blocks in the CFC
- With no additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system is optimally guaranteed

The library contains modules for accessing the I/O data of AS-i slaves, modules for diagnostics of the AS-i system, and a faceplate for the PCS 7 Maintenance Station.

The AS-i CP 343-2 / CP 343-2P masters are supported within an ET 200M station connected through PROFIBUS.

On the AS-i master it is possible to operate both digital AS-i standard slaves and digital A/B slaves (according to AS-Interface Specification V3.0).

Hardware and software requirements

The library requires PCS 7 Version 6.1 or V7.0+SP1.

Types of delivery and license

The AS-i function block library supplied on CD-ROM allows the user to run the required engineering software on the engineering station (single license) including the runtime software for executing the AS modules in an automation system (single license).

If the AS modules are to be used in additional automation systems, the corresponding number of runtime licenses are required which are supplied without a data carrier.

Application

The AS-i function block library for PCS 7 is used in systems based on PCS 7 where the actuators and sensors are to be connected using AS-Interface.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg
AS-i function block library for PCS 7 Engineering software for an engineering station (single license), contains: <ul style="list-style-type: none"> • Runtime software for execution of the AS module in an automation system (single license) • AS modules and faceplate for integrating AS-Interface into the PCS 7 process control system, for PCS 7 version V6.1 and 7.0 • Digital AS-i slaves supported at the AS-i CP 343-2 and CP 343-2P master • Operating language German/English selectable • Type of delivery: CD incl. electronic documentation 	A	3ZS1 635-1XX00-0YA0		1	1 unit	121	0.240
Runtime license for AS-i PCS 7 library Runtime software for execution of the AS module in an automation system (single license), contains: <ul style="list-style-type: none"> • AS modules for integrating AS-Interface into the PCS 7 process control system Version 6.1 / 7.0 • Type of delivery: License certificate (without software and documentation) 	A	3ZS1 635-2XX00-0YB0		1	1 unit	121	0.001

* You can order this quantity or a multiple thereof.

Overview



IO-Link product family

IO-Link is a new communication standard for sensors and actuators - defined by the Profibus User Organization (PNO). IO-Link technology is based on the point-to-point connection of sensors and actuators to the control system. Extensive parameter and diagnostics data are transmitted in addition to the cyclic operating data for the connected sensor/actuators. The simple, unshielded three-wire cable customary for standard sensors is used for this purpose.

Components of an IO-Link system

IO-Link is comprised of 2 components: IO-Link masters and IO-Link devices. They are available as listed below:

IO-Link mastersSIRIUS ET 200S 4SI
solid-state modules**IO-Link master modules**

IO-Link master modules and IO-Link SIRIUS modules

- ET 200S 4SI IO-Link solid-state modules
- SIRIUS ET 200S 4SI solid-state modules
- ET 200eco PN block I/Os

See page 2/74

IO-Link devicesIO-Link K20 modules with
four inputs**I/O modules**

IO-Link K20 modules

For IO-Link I/O modules see page 2/75,
for IO-Link K20 modules see page 2/76

Industrial controls**IO-Link starting controls**

SIRIUS 3RA6 compact feeders

- 3RA64 direct-on-line starters
- 3RA65 reversing starters

See Chapter 6

--> Load Feeders and Motor Starters

--> for Use in the Control Cabinet

--> SIRIUS 3RA6 Compact Feeders

SIRIUS 3RA64 direct-on-
line starters**Sensors**

IO-Link sensors, e. g.

- SIMATIC PXS310C M18
- SIMATIC PXO560C C50

See Catalog FS 10 "Sensor Technology"

Sonar SIMATIC PXS310C
M18 proximity switches**Compatibility of IO-Link**

IO-Link guarantees compatibility between IO-Link-capable modules and standard modules as follows:

- IO-Link sensors/actuators can be operated on IO-Link modules (master) as well as on standard I/O modules.
- IO-Link sensors/actuators as well as today's standard sensors/actuators can be used on IO-Link masters.
- If conventional components are used in the IO-Link system, then of course only the standard functions are available at this point.

Expansion through IO-Link I/O modules

IO-Link compatibility also permits connection of standard sensors/actuators, i. e. conventional sensors/actuators can also be connected to IO-Link. This is done particularly economically with IO-Link I/O modules which enable several sensors/actuators to be connected to the control system simultaneously over one cable.

Analog signals

Another advantage of IO-Link technology is that analog signals are digitized already in the IO-Link sensor itself and are digitally transmitted by the IO-Link communication. As the result, faults are prevented and there is no extra cost for cable shielding.

Integration in STEP 7

Integration of the device configuration in the STEP 7 environment guarantees:

- Easy and quick engineering
- Consistent data storage
- Speedy locating and rectifying of faults

Benefits

The IO-Link system offers decisive advantages for connecting complex (intelligent) sensors/actuators:

- Dynamic changing of sensor/actuator parameters directly by the PLC
- Consistent storage of parameters enables devices to be exchanged during operation, without a PC or programming device, through re-parameterization from the PLC
- Fast commissioning thanks to central data storage
- Consistent diagnostic information as far as the sensor/actuator level
- Uniform and greatly reduced wiring of different sensors/actuators/controls
- Integrated communication: Transmission of process data and service data to the control system
- Uniform and transparent configuring and programming through use of a parameterization tool integrated in SIMATIC STEP 7 (Port Configurator Tool, PCT)
- Transparent representation of all parameter and diagnostics data

Application

IO-Link can be used in the following applications:

- Easy connection of complex IO-Link sensors/actuators with a large number of parameters and diagnostic data to the control system
- Wiring-optimized replacement of sensor boxes for the connection of binary sensors through IO-Link I/O modules

In both cases, all the diagnostics data are transmitted to the higher-level control system through IO-Link. The parameter settings can be changed during operation. Central data storage means that it is possible to exchange an IO-Link sensor/actuator without a PC or programming device.

IO-Link

IO-Link Master Modules

IO-Link master modules and IO-Link SIRIUS modules

Overview



IO-Link master modules from left to right:
ET 200S 4SI IO-Link solid-state module,
SIRIUS ET 200S 4SI solid-state module,
ET 200eco PN block I/Os

IO-Link master module for SIMATIC ET 200S

The ET 200S 4SI IO-Link solid-state module is an IO-Link master and enables easy integration of sensors and actuators from different manufacturers in the SIMATIC ET 200S multifunctional, distributed I/O system at a total of four ports.

Features

To each IO-Link master module it is possible to connected

- Up to 4 IO-Link devices (three-conductor connection)
- Up to 4 standard actuators/sensors (two-wire/three-wire connection)

SIRIUS IO-Link modules for SIMATIC ET 200S

The SIRIUS ET 200S 4SI solid-state module enables the easy and cost-effect connection of SIRIUS controls to IO-Link.

Features

- Up to 16 SIRIUS controls with IO-Link (grouped) can be connected to each SIRIUS IO-Link module
- The ET 200S 4SI IO-Link and SIRIUS ET 200S 4SI solid-state modules have a width of 15 mm and can be used with the following universal terminal modules:
 - TM-E15S26-A1 (screw terminals)
 - TM-E15C26-A1 (spring-type terminals)
 - TM-E15N26-A1 (Fast Connect)
- Supports firmware updating (STEP 7 V5.4 SP4 and higher)




IO-Link master modules for SIMATIC ET 200eco

The ET 200eco PN IO-Link master module is an IO-Link master and enables easy connection of sensors and actuators from different manufacturers to the I/Os directly in the machine's field area.

Features

- Up to 4 IO-Link devices (3-wire connections) can be connected to each IO-Link master module.
- Up to 8 standard sensors (8 DI) and up to 4 standard actuators (4 DO) can be connected in addition.

Selection and ordering data

	Version	Connection methods	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	ET 200S 4SI IO-Link solid-state modules IO-Link masters for ET200S	Screw terminals, spring-type terminals or Fast Connect	A	6ES7 138-4GA50-0AB0		1	1 unit	250	0,057
6ES7 138-4GA50-0AB0									
	ET 200S 4SI SIRIUS solid-state modules IO-Link masters for SIRIUS controls for ET 200S	Screw terminals, spring-type terminals or Fast Connect	A	3RK1 005-0LB00-0AA0		1	1 unit	121	0,057
3RK1 005-0LB00-0AA0									
	ET 200eco PN block I/Os O-Link masters in degree of protection IP67	M12	A	6ES7 148-6JA00-0AB0		1	1 unit	250	0,900
6ES7 148-6JA00-0AB0									

More information

Further information and technical specifications are available in the Industry Mall at:

"Automation" --> "Industrial Communication"
-->"IO-Link" --> "IO-Link Master Modules"

* You can order this quantity or a multiple thereof.

Overview

IO-Link I/O modules

Using IO-Link technology it is also possible to connect standard sensors to IO-Link masters. However, connecting standard sensors directly to the IO-Link master does not exploit the full potential of IO-Link. The solution lies in the technology of the IO-Link modules. The use of this technology represents a more attractive solution in terms of cost than the direct connection of sensors/actuators.

IO-Link I/O modules are a useful addition to ET 200S distributed peripherals.

The technology of the IO-Link I/O modules expands IO-Link from a pure point-to-point wiring method in the direction of distributed structures. The maximum cable length of an IO-Link connection between an IO-Link module and an IO-Link master is 20 m. The use of sensor boxes with accordingly complex and error-prone wiring is no longer necessary.

Transmission of parameter and diagnostic signals

With IO-Link I/O modules it is possible in addition to transmit parameter and diagnostic signals. This enables for example the inputs of modules to be parameterized as NC contacts or NO contacts through IO-Link. An overload or short-circuit in the sensor supply is signaled to the control system through the IO-Link master.

M8 and M12 terminals

M8 and M12 terminals are available for connecting the sensors. Connection to the IO-Link master is made using a standard M12 connecting cable.

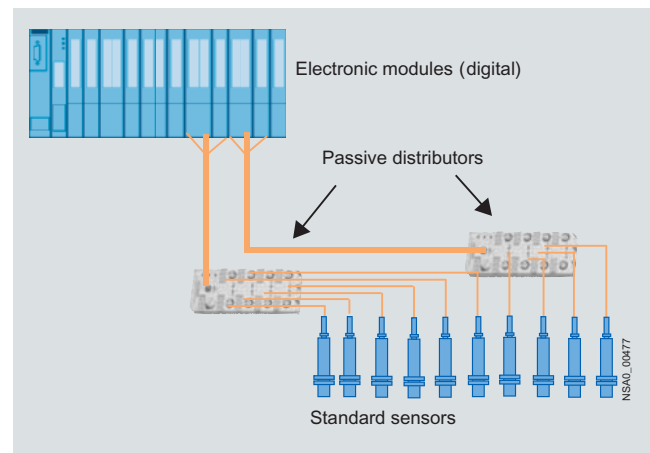
Benefits

The use of IO-Link I/O modules offers the following advantages:

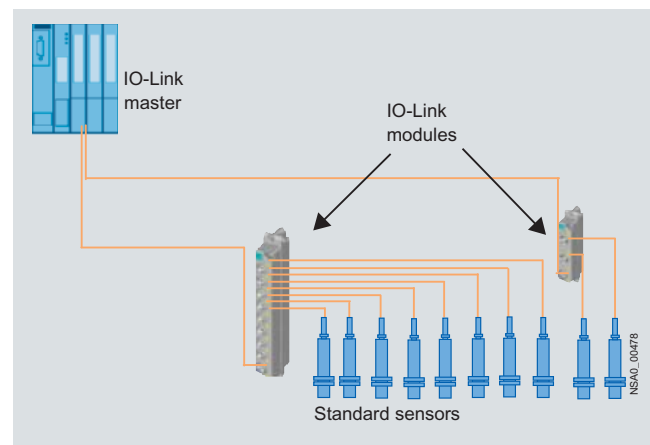
- Economical use of innovative IO-Link technology also for binary sensors
- Optimum use of all ports of the IO-Link master
- Connection of several binary sensors/actuators to one port of the IO-Link master, hence low-cost connection of also binary sensors/actuators to the control system through IO-Link
- Use of parameters also for binary sensors (e. g. NC contacts, NO contacts and input delay can be parameterized)
- Reduction of cabling and hence less risk of wiring errors by dispensing with sensor boxes
- Expansion toward distributed structures using pure point-to-point wiring
- Easy and elegant integration of sensors within a radius of 20 m around an ET200S station
- Possibility of transmitting parameter and diagnostic signals (e. g. sensor supply overload)
- Can also be used in harsh conditions thanks to the very compact design and degree of protection IP67

Application

IO-Link I/O modules are used in particular where sensor boxes were used up to now for the connection of binary sensors.

Application example: replacement of sensor boxes through the use of IO-Link I/O modules

Former technology with sensor boxes



Technology with IO-Link I/O modules

IO-Link I/O Modules

IO-Link K20 modules

2

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kg							
IO-Link K20 modules							
Type	Pin assignment	Connection method					
4 inputs	Y	M12	A	3RK5 010-0BA10-0AA0	1	1 unit	121 0.075
8 inputs	Standard	M8	A	3RK5 010-0CA00-0AA0	1	1 unit	121 0.110



3RK5 010-0BA10-0AA0



3RK5 010-0CA00-0AA0

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
AS-Interface sealing caps M12 For free M12 sockets	▶	3RK1 901-1KA00		100	10 units	121	0.100
AS-Interface sealing caps M8 For free M8 sockets	A	3RK1 901-1PN00		100	10 units	121	0.100



3RK1 901-1KA00



3RK1 901-1PN00

Other accessories:

- See Catalog FS 10, section "Proximity Switches" --> "Accessories" --> "Plug-in Connectors"
- See Industry Mall, section "Sensors, Measurement and Testing Systems" --> "Proximity Switches" --> "Accessories" --> "Plug-in Connectors"

Controls – Contactors and Contactor Assemblies



Technical Information

can be found at
www.siemens.com/industrial-controls/support

under Product List:
 - Technical specifications

under Entry List:
 - Updates
 - Downloads
 - FAQ
 - Manuals/Operating instructions
 - Characteristic curves
 - Certificates

and at
www.siemens.com/industrial-controls/configurators
 - Configurators

Note:
 For safety characteristics for contactors, see "Appendix" → "Standards and Approvals" → "Overview"

3/2	Introduction	
	3RT, 3TB, 3TF Contactors for Switching Motors	
3/5	General data	
3/11	3RT10 contactors, 3-pole, 3 ... 250 kW	
3/27	3RT12 vacuum contactors, 3-pole, 110 ... 250 kW	
3/28	3TF6 vacuum contactors, 3-pole, 335 ... 450 kW	
3/29	3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW	
3/30	3TF2 contactors, 3-pole, 2.2 ... 4 kW	
	3RA13, 3RA14 Contactor Assemblies	
	<u>3RA13 Reversing Contactor Assemblies</u>	
3/32	3RA13 complete units, 3 ... 45 kW	
3/37	Components for customer assembly	
	<u>3RA14 Contactor Assemblies for Wye-Delta Starting</u>	
3/40	3RA14 complete units, 3 ... 75 kW	
3/47	Components for customer assembly	
	3TD, 3TE Contactor Assemblies	
3/48	3TD6 reversing contactor assemblies, 335 kW	
3/49	3TE6 contactor assemblies for wye-delta starting, 630 kW	
	3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications	
	<u>3RT14 Contactors for Switching Resistive Loads (AC-1)</u>	
3/50	3-pole, 140 ... 690 A	
	<u>3RT13 Contactors for Switching Resistive Loads (AC-1)</u>	
3/52	4-pole, 4 NO, 18 ... 140 A	
	<u>3TK1 Contactors for Switching Resistive Loads (AC-1)</u>	
3/54	4-pole, 4 NO, 200 ... 1000 A	
	<u>3TK20 Contactors</u>	
3/55	4-pole, 4 kW	
	<u>3RT15 Contactors</u>	
3/57	4-pole, 2 NO + 2 NC, 4 ... 18.5 kW	
	<u>3RT16 Capacitor Contactors</u>	
3/58	12.5 ... 50 kvar	
	<u>Contactors with Extended Operating Range 0.7 ... 1.25 × U_{s2} for Railway Applications</u>	
3/59	3RH11 contactor relays	
3/60	3TH4 contactor relays	
3/61	3RT10 motor contactors, 5.5 ... 45 kW	
3/64	3TB5 motor contactors, 55 ... 200 kW	
3/65	3TC contactors for switching DC voltage, 2-pole	
	<u>3TC Contactors for Switching DC Voltage</u>	
3/66	1- and 2-pole, 32 ... 400 A	
	3RH, 3TH Contactor Relays	
3/69	3RH1 contactor relays, 4- and 8-pole	
3/72	3RH14 latched contactor relays, 4-pole	
3/73	3TH4 contactor relays, 8- and 10-pole	
3/75	3TH2 contactor relays, 4- and 8-pole	
3/78	3RH11 coupling relays for switching auxiliary circuits, 4-pole	
	3RT Coupling Relays	
3/79	3RT10 coupling relays (interface), for switching motors, 3-pole, 3 ... 11 kW	
	3TX7, 3RS18 Coupling Relays	
	<u>3TX7 Coupling Relays, Narrow Design</u>	
3/82	Relay couplers	
3/84	Relay couplers with plug-in connection	
3/86	Semiconductor couplers	
	<u>3RS18 Coupling Relays with Industrial Housing</u>	
3/88	Relay couplers	
	Coupling Relays with LZS/LZX Plug-In Relays	
3/89	Plug-in relay couplers	
	3TG10 Power Relays/Miniature Contactors	
3/96	4-pole, 4 kW	
	Accessories and Spare Parts	
	<u>For 3RT, 3RH Contactors and Contactor Relays</u>	
3/97	Accessories for 3RT contactors and 3RH contactor relays	
3/115	Spare parts for 3RT contactors and 3RH contactor relays	
	<u>For 3T Contactors and Contactor Relays</u>	
3/120	Accessories for 3TB, 3TC, 3TF contactors	
3/124	Accessories for 3TK, 3TG contactors	
3/125	Accessories for 3TH contactor relays	
3/128	Spare parts for 3TB, 3TC, 3TF, 3TK contactors	

Controls – Contactors and Contactor Assemblies

Introduction

Overview



Size
Type

S00
3RT10 1

S0
3RT10 2

S2
3RT10 3

3RT10 contactors • 3RT12 and 3TF68/69 vacuum contactors

Type	3RT10 15	3RT10 16	3RT10 17	3RT10 23	3RT10 24	3RT10 25	3RT10 26	3RT10 34	3RT10 35	3RT10 36
AC, DC operation	(p. 3/15, 3/19)			(p. 3/16, 3/20)			(p. 3/17, 3/21)			
Type	--			--			--			

AC-3

I_e /AC-3/400 V	A	7	9	12	9	12	17	25	32	40	50
400 V	kW	3	4	5.5	4	5.5	7.5	11	15	18.5	22
230 V	kW	2.2	3	3	3	3	4	5.5	7.5	11	15
500 V	kW	3.5	4.5	5.5	4.5	7.5	10	11	18.5	22	30
690 V	3RT10/12 kW	4	5.5	5.5	5.5	7.5	11	11	18.5	22	22
1 000 V	3RT10/12 kW	--	--	--	--	--	--	--	--	--	--

AC-4 (for $I_a = 6 \times I_e$)

400 V	kW	3	4	4	4	5.5	7.5	7.5	15	18.5	22
400 V	3RT10/12 kW	1.15	2	2	2	2.6	3.5	4.4	8.2	9.5	12.6
(200 000 operating cycles)											

AC-1 (40 °C, ≤ 690 V)

I_e	3RT10/12	A	18	22	22	40	40	40	40	50	60	60
-------	----------	---	----	----	----	----	----	----	----	----	----	----

3RT14 AC-1 contactors

Type	--	--	--
I_e /AC-1/40 °C ≤ 690 V	A	--	--

Accessories for contactors

Auxiliary switch blocks front lateral	3RH19 11	(p. 3/102)	3RH19 21	(p. 3/102)	3RH19 21	(p. 3/104)
Terminal covers	--	--	--	--	3RT19 36-4EA2	(p. 3/113)
Box terminal blocks	--	--	--	--	--	--
Surge suppressors	3RT19 16	(p. 3/108)	3RT19 26	(p. 3/108)	3RT19 26/36	(p. 3/108)

3RU1 and 3RB2 overload relays (Protection Equipment --> Overload Relays)

3RU11 , thermal, CLASS 10	3RU11 16	0.1 ... 12 A (Chap. 5)	3RU11 26	1.8 ... 25 A (Chap. 5)	3RU11 36	5.5 ... 50 A (Chap. 5)
3RB20/21 , solid-state, CLASS 5, 10, 20 and 30	3RB20 16 3RB21 16	0.1 ... 12 A (Chap. 5)	3RB20 26 3RB21 26	3 ... 25 A (Chap. 5)	3RB20 36 3RB21 36	6 ... 50 A (Chap. 5)
3RB22/23 , solid-state, CLASS 5, 10, 20 and 30	3RB2. 83 + 3RB29 06	0.3 ... 25 A (Chap. 5)	3RB2. 83 + 3RB29 06			10 ... 100 A (Chap. 5)

3RV10 motor starter protectors (Protection Equipment --> Motor Starter Protectors)

Type	3RV10 11	0.18 ... 12 A (Chap. 5)	3RV10 21	9 ... 25 A (Chap. 5)	3RV10 31	22 ... 50 A (Chap. 5)
Link modules	3RA19 11	(Chap. 5)	3RA19 21	(Chap. 5)	3RA19 31	(Chap. 5)

3RA13 reversing contactor assemblies

Complete units	Type	3RA13 15	3RA13 16	3RA13 17	3RA13 24	3RA13 25	3RA13 26	3RA13 34	3RA13 35	3RA13 36
400 V	kW	3	4	5.5	5.5	7.5	11	15	18.5	22
Assembly kits/wiring modules		3RA19 13-2A	(p. 3/38)		3RA19 23-2A	(p. 3/38)		3RA19 33-2A	(p. 3/38)	
Mechanical interlocks		3RA19 12-2H	(p. 3/39)		3RA19 24-1A/-2B	(p. 3/37)				

3RA14 contactor assemblies for wye-delta starting

Complete units	Type	3RA14 15	3RA14 16	3RA14 23	3RA14 25	3RA14 34	3RA14 35	3RA14 36	
400 V	kW	5.5	7.5	11	15/18.5	22/30	37	45	
Assembly kits/wiring modules		3RA19 13-2B	(p. 3/47)		3RA19 23-2B	(p. 3/47)		3RA19 33-2B/-2C	(p. 3/47)

Note:

For safety characteristics for contactors, see "Appendix" --> "Standards and Approvals" --> "Overview"



S3
3RT1. 4



S6
3RT1. 5



S10
3RT1. 6



S12
3RT1. 7



S14
3TF6

3RT10 44 (p. 3/18, 3/21)	3RT10 45	3RT10 46	3RT10 54 (p. 3/23)	3RT10 55	3RT10 56	3RT10 64 (p. 3/23)	3RT10 65	3RT10 66	3RT10 75 (p. 3/23)	3RT10 76	--
------------------------------------	-----------------	-----------------	------------------------------	-----------------	-----------------	------------------------------	-----------------	-----------------	------------------------------	-----------------	----

--	--	--	3RT12 64 (p. 3/27)	3RT12 65	3RT12 66	3RT12 75 (p. 3/27)	3RT12 76	3TF68 (p. 3/28)	3TF69
----	----	----	------------------------------	-----------------	-----------------	------------------------------	-----------------	---------------------------	--------------

65	80	95	115	150	185	225	265	300	400	500	630	820
30	37	45	55	75	90	110	132	160	200	250	335	450
18.5	22	22	37	45	55	55	75	90	132	160	200	260
37	45	55	75	90	110	160	160	200	250	355	434	600
45	55	55	110	132	160	200	250	250	400	400/500	600	800
30	37	37	75	90	90	90/315	132/355	132/400	250/560	250/710	600	800

30	37	45	55	75	90	110	132	160	200	250	355	400
15.1	17.9	22	29	38	45	54/78	66/93	71/112	84/140	98/161	168	191

100	120	120	160	185	215	275/330	330	330	430/610	610	700	910
------------	------------	------------	------------	------------	------------	----------------	------------	------------	----------------	------------	------------	------------

3RT14 46 140	(p. 3/50)	3RT14 56 275	(p. 3/51)	3RT14 66 400	(p. 3/51)	3RT14 76 690	(p. 3/51)	--	--
-------------------------------	-----------	-------------------------------	-----------	-------------------------------	-----------	-------------------------------	-----------	----	----

3RT19 46-4EA1/2 --	(p. 3/113)	3RT19 56-4EA1/2/3 3RT19 55/56-4G	(p. 3/113)	(p. 3/113)	3RT19 66-4EA1/2/3 3RT19 66-4G	(p. 3/113)	(p. 3/113)	--	3TY7 561 --	(p. 3/121)	(p. 3/121)
		3RT19 56-1C (RC element)	(p. 3/109)						3TX7 686/696	(p. 3/121)	
									3TX7 572	(p. 3/120)	

3RU11 46	18 ... 100 A (Chap. 5)	--	--	--	--	--	--	--	--	--	--
3RB20 46 3RB21 46	12.5 ... 100 A (Chap. 5)	3RB20 56 3RB21 56	50 ... 200 A (Chap. 5)	3RB20 66 3RB21 66	55 ... 630 A (Chap. 5)	3RB20 66 3RB21 66	160 ... 630 A (Chap. 5)	3RB20 66 3RB21 66	160 ... 630 A (Chap. 5)	3RB20 66 3RB21 66	160 ... 630 A (Chap. 5)
		3RB2. 83 + 3RB29 56	20 ... 200 A (Chap. 5)	3RB2. 83 + 3RB29 66	63 ... 630 A (Chap. 5)						

3RV10 41	45 ... 100 A (Chap. 5)	--	--	--	--	--	--	--	--	--	--
3RA19 41	(Chap. 5)	--	--	--	--	--	--	--	--	--	--

3RA13 44 (p. 3/36)	3RA13 45	3RA13 46	--	--	--	--	--	--	3TD68 04 (p. 3/48)		
30	37	45	55	75	90	110	132	160	200	250	335
3RA19 43-2A	(p. 3/38)	3RA19 53-2A	(p. 3/38)	3RA19 63-2A	(p. 3/38)	3RA19 73-2A	(p. 3/38)	3RA19 73-2A	(p. 3/38)	3TX7 680-1A	3TX7 686-1A
		3RA19 54-2A	(p. 3/37)								

3RA14 44 (p. 3/46)	3RA14 45	--	--	--	--	--	--	--	3TE68 04 (p. 3/49)	
55	75	--	--	--	--	--	--	--	630	
3RA19 43-2B/-2C	(p. 3/47)	3RA19 53-2B	(p. 3/47)	3RA19 63-2B	(p. 3/47)	3RA19 73-2B	(p. 3/47)	3RA19 73-2B	(p. 3/47)	3TX7 680-1B

Controls – Contactors and Contactor Assemblies

Introduction

The advantages at a glance



3TX7



3RS18



LZS/LZX








3TG10

		Order No.	Page
Coupling links, narrow design			
Relay couplers	<ul style="list-style-type: none"> Width 6.2 mm (1 NO, 1 CO), 12.5 mm and 17.5 mm Output coupling links Input coupling links with hard gold-plating 	3TX7 002, 3TX7 003, 3TX7 004, 3TX7 005	3/82
Plug-in base couplers, complete with relay	<ul style="list-style-type: none"> Width 6.2 mm (1 NO, 1 CO) Relays, replaceable 	3TX7 014-1..00	3/84
Plug-in base couplers, complete with relay and hard gold-plating	<ul style="list-style-type: none"> Width 6.2 mm (1 CO) 	3TX7 014-1..02	3/84
Semiconductor couplers	<ul style="list-style-type: none"> Output 1 semiconductor, triac or transistor 	3TX7 002, 3TX7 004, 3TX7 005	3/86
Coupling relays in industrial housing			
Relay couplers	<ul style="list-style-type: none"> Protective separation up to 300 V between contacts and relay circuits 1, 2 and 3 changeover contacts Hard gold-plated contacts in combination and wide voltage range versions 	3RS18	3/88
Coupling relays with plug-in relays			
Plug-in relay couplers with 2, 3 and 4 changeover contacts	<ul style="list-style-type: none"> Switching capacity 12 A/10 A/6 A Width 27 mm Base optionally with or without logical isolation 	LZS/LZX:PT	3/90
Plug-in relay couplers with 3 changeover contacts and circular base	<ul style="list-style-type: none"> Switching capacity 6 A 11-pole circular base Width 38 mm 	LZS/LZX:MT	3/92
Plug-in relay couplers with 1 or 2 changeover contacts	<ul style="list-style-type: none"> Switching capacity 16 A/8 A Width 15.5 mm Base optionally with or without logical isolation 	LZS/LZX:RT	3/93
Power relays			
With screw and flat connectors		3TG10	3/96

Connection methods

The contactors and relays are available with screw terminals (box terminals and flat connectors) or with Cage Clamp terminals or spring-type terminals. Some device types are also available with plug-type connectors.

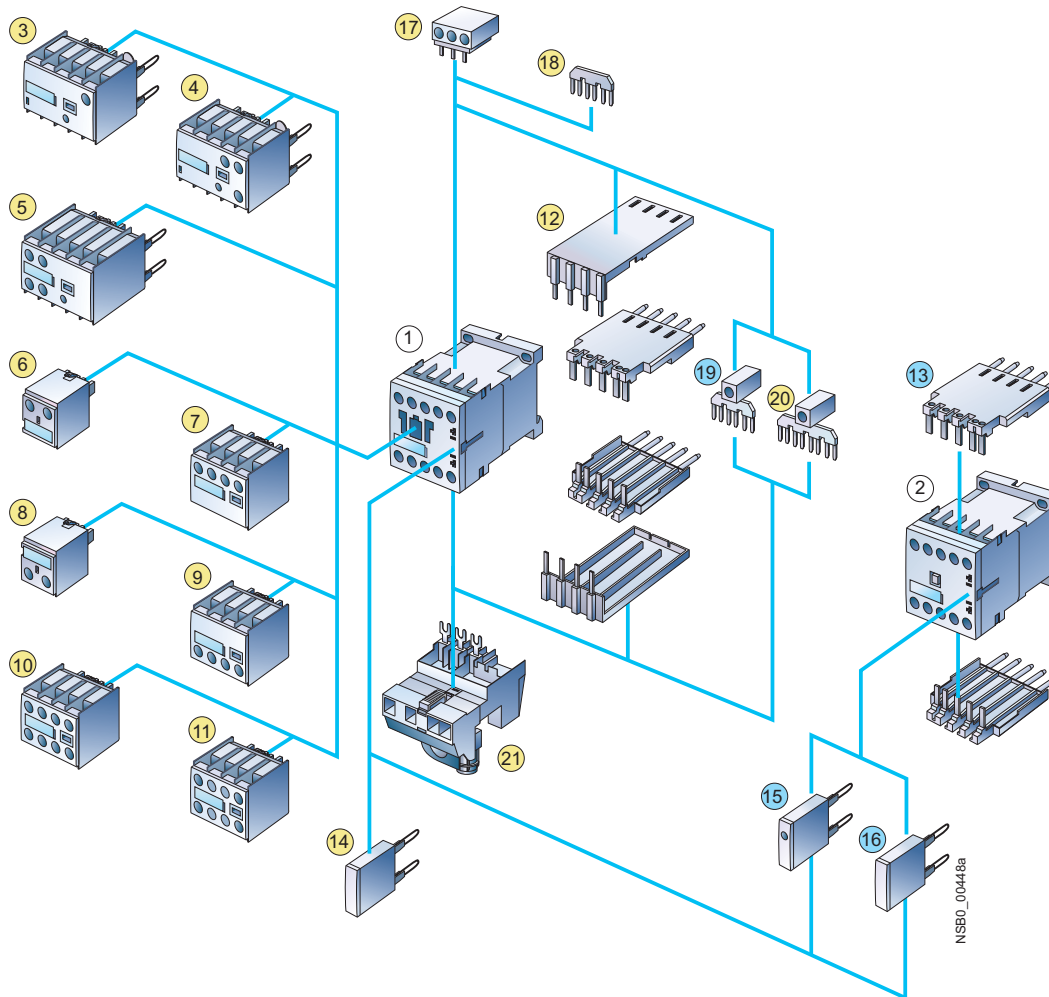
-  Screw terminals
-  Cage Clamp terminals or spring-type terminals
-  Flat connectors
-  Plug-in terminals
-  Solder pin connections

The terminals are indicated in the selection and ordering data by orange backgrounds.

Overview

3RT1 contactors and coupling relays
Size S00 with mountable accessories

The SIRIUS generation of controls is a complete, modular system family, logically designed right down to the last detail, from the basic units to the accessories.



- ① Contactor (page 3/15)
- ② Coupling relay (page 3/79)
- ③ Solid-state timing relay block, ON-delay (page 3/107)
- ④ Solid-state timing relay block, OFF-delay (page 3/107)
- ⑤ Auxiliary switch block with solid-state time delay (page 3/106)
(ON or OFF-delay or wye-delta function)
- ⑥ 1-pole auxiliary switch block, cable entry from above (page 3/102)
- ⑦ 2-pole auxiliary switch block, cable entry from above (page 3/102)
- ⑧ 1-pole auxiliary switch block, cable entry from below (page 3/102)
- ⑨ 2-pole auxiliary switch block, cable entry from below (page 3/102)
- ⑩ 4-pole auxiliary switch block (page 3/102)
(terminal designations according to EN 50012 or EN 50005)
- ⑪ 2-pole auxiliary switch block, standard version or
solid-state compatible version (pages 3/102, 3/105)
(terminal designations according to EN 50005)
- ⑫ Solder pin adapter for contactors with 4-pole auxiliary switch block
(page 3/112)
- ⑬ Solder pin adapter for contactors and coupling relays (page 3/111)

- ⑭ Additional load module for increasing the permissible residual current
(page 3/110)
- ⑮ Surge suppressor with LED (page 3/109)
- ⑯ Surge suppressor without LED (page 3/109)
- ⑰ Three-phase feeder terminal (page 3/47)
- ⑱ Link for paralleling (star jumper), 3-pole,
without connection terminal (page 3/47)
- ⑲ Link for paralleling, 3-pole, with terminal (page 3/112)
- ⑳ Link for paralleling, 4-pole, with terminal (page 3/112)
- ㉑ Connection module (adapter and plug) for contactors with screw-type
connection (page 3/111)

- For contactors
- For contactors and coupling relays (interface)

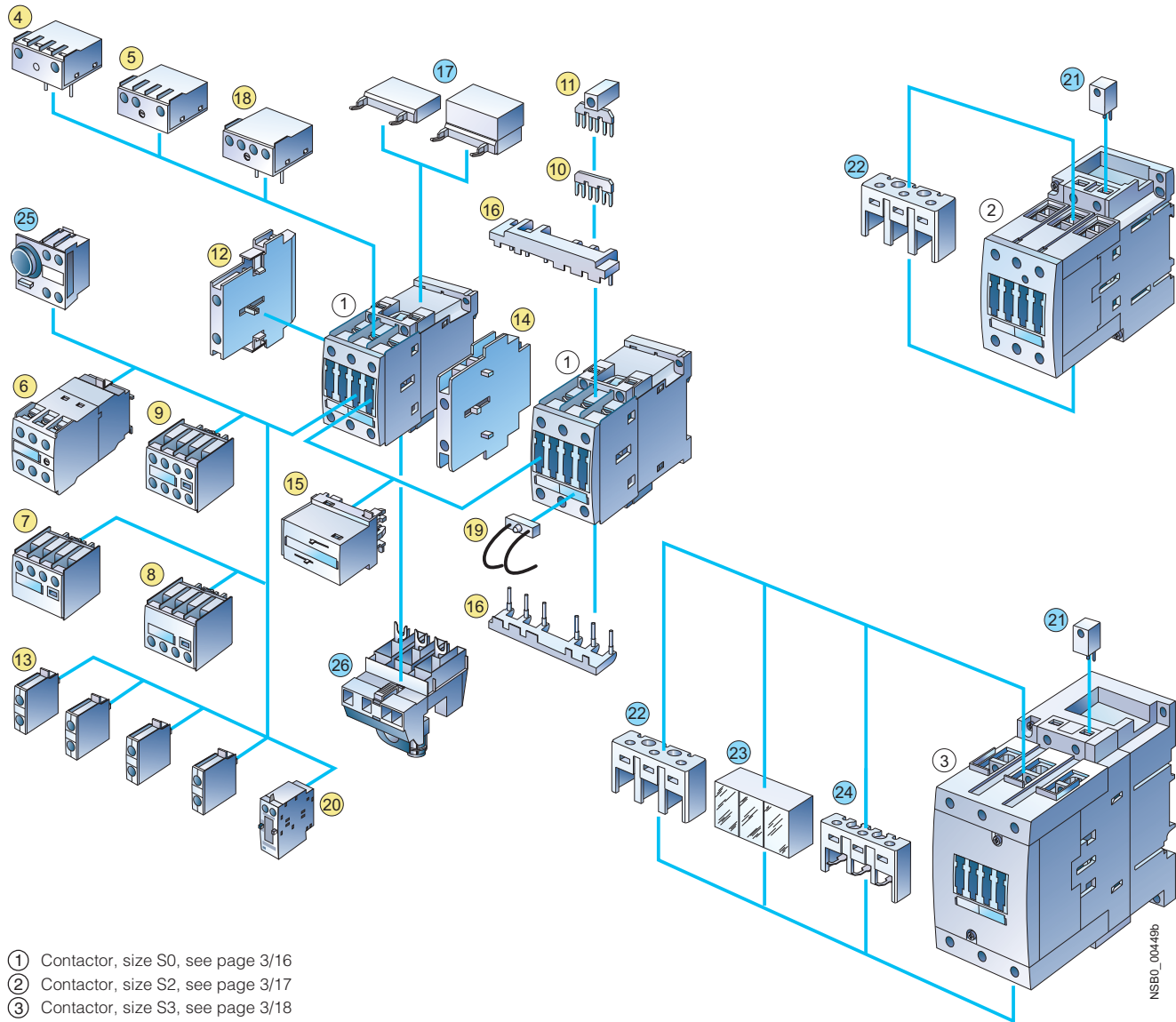
For contactor assemblies see pages 3/32 to 3/39.
For assembly kit for reversing contactor assemblies
(mech. interlocking, wiring modules) see page 3/38.
For mountable overload relays see Chapter 5
"Protection Equipment" → "Overload Relays".

For fuseless load feeders, see Chapter 6
"Load Feeders, Motor Starters and Soft Starters" →
"3RA Fuseless Load Feeders".

3RT, 3TB, 3TF Contactor for Switching Motors

General data

3RT1 contactors Sizes S0 to S3 with mountable accessories



- ① Contactor, size S0, see page 3/16
- ② Contactor, size S2, see page 3/17
- ③ Contactor, size S3, see page 3/18

For sizes S0 to S3:

- ④ Solid-state timing relay block, ON-delay (page 3/107)
 - ⑤ Solid-state timing relay block, OFF-delay (page 3/107)
 - ⑥ Auxiliary switch block with solid-state time delay (page 3/106) (ON or OFF-delay or wye-delta function)
 - ⑦ 2-pole auxiliary switch block, cable entry from above (page 3/103)
 - ⑧ 2-pole auxiliary switch block, cable entry from below (page 3/103)
 - ⑨ 4-pole auxiliary switch block (page 3/102, 3/103) (terminal designations according to EN 50012 or EN 50005)
 - ⑩ Link for paralleling (star jumper), 3-pole, without connection terminal (page 3/47)
 - ⑪ Link for paralleling, 3-pole, with terminal (page 3/112)
 - ⑫ 2-pole auxiliary switch block, laterally mountable left or right (page 3/104) (terminal designations according to EN 50012 or EN 50005)
 - ⑬ Single-pole auxiliary switch block (up to 4 can be snapped on) (page 3/103)
 - ⑭ Mechanical interlock, laterally mountable (page 3/37)
 - ⑮ Mechanical interlock, mountable on the front (page 3/37)
 - ⑯ Wiring modules on the top and bottom (reversing duty) (page 3/39)
 - ⑰ Surge suppressor (page 3/108) (varistor, RC element, diode assembly), can be mounted on the top or bottom (different for S0 and S2/S3)
 - ⑱ Coupling link for mounting directly onto contactor coil (page 3/111)
 - ⑲ LED module for indicating contactor operation (page 3/111)
- Only for size S0:
- ⑳ Pneumatic delay block (page 3/107)
 - ㉑ Connection module (adapter and plug) for contactors with screw-type connection (page 3/111)
- Only for sizes S0 and S2:
- ㉒ Mechanical latching (page 3/107)
- Only for sizes S2 and S3:
- ㉓ Coil repeat terminal for making contactor assemblies (page 3/37)
 - ㉔ Terminal cover for box terminals (page 3/113)
- Only for size S3:
- ㉕ Terminal cover for cable lugs and busbar connections (page 3/113)
 - ㉖ Auxiliary conductor terminal, 3-pole (page 3/111)

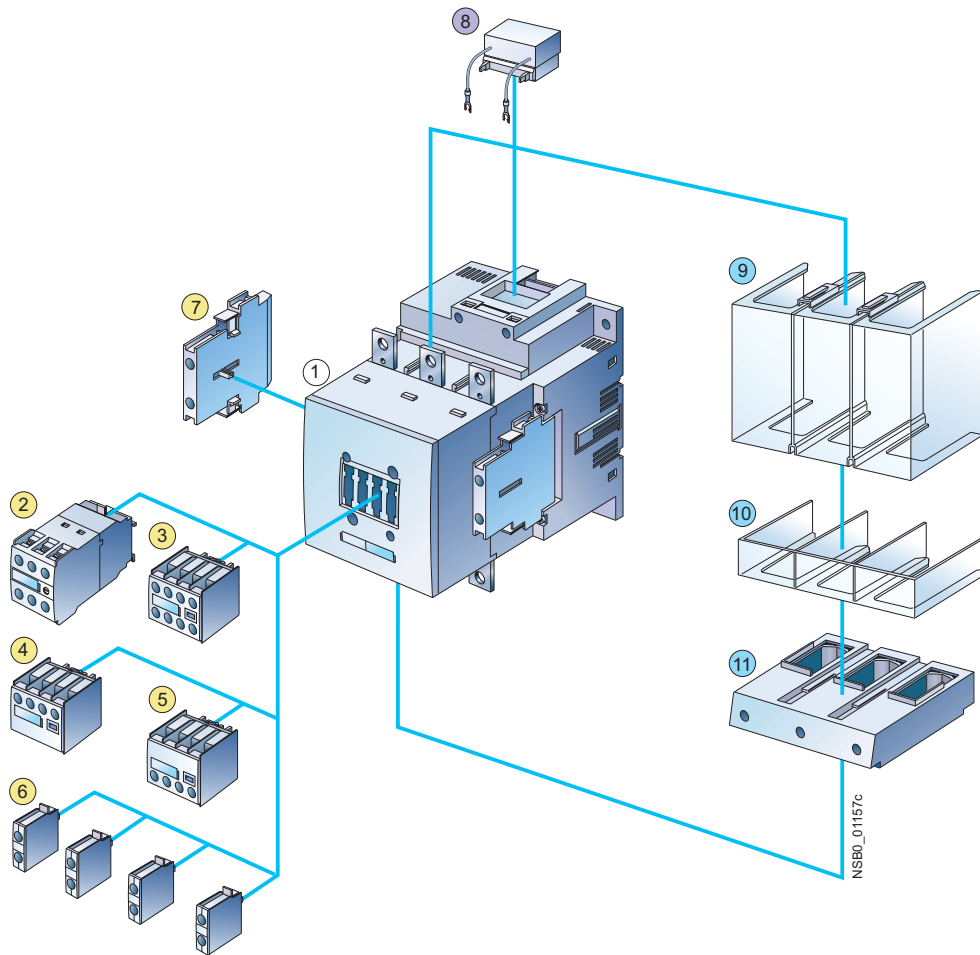
- Accessories identical for sizes S0 to S3
- Accessories differ according to size

NSBD_00449b

3RT, 3TB, 3TF Contactors for Switching Motors

General data

3RT1 contactors
Sizes S6 to S12 with accessories
(illustration for basic unit)



① 3RT10 and 3RT14 air-break contactor, sizes S6, S10 and S12
 (page 3/23 and 3/51)

② Auxiliary switch block with solid-state time delay (page 3/106)
 (ON or OFF-delay or wye-delta function)

③ 4-pole auxiliary switch block (page 3/102, 3/103)
 (terminal designations according to EN 50012 or EN 50005)

④ 2-pole auxiliary switch block, cable entry from above (page 3/103)

⑤ 2-pole auxiliary switch block, cable entry from below (page 3/103)

⑥ Single-pole auxiliary switch block (up to 4 can be snapped on)
 (page 3/103)

⑦ 2-pole auxiliary switch block, laterally mountable left or right
 (page 3/104) (terminal designations according to EN 50012 or EN 50005),
 identical for S0 to S12

⑧ Surge suppressor (RC element) (page 3/109),
 for plugging into top of withdrawable coil

⑨ Terminal cover for cable lug and busbar connection
 (page 3/113), different for sizes S6 and S10/S12

⑩ Terminal cover for box terminal, (page 3/113),
 different for sizes S6 and S10/S12

⑪ Box terminal block (page 3/113),
 different for sizes S6 and S10/S12

● Accessories identical for sizes S0 to S12

● Accessories identical for sizes S6 to S12

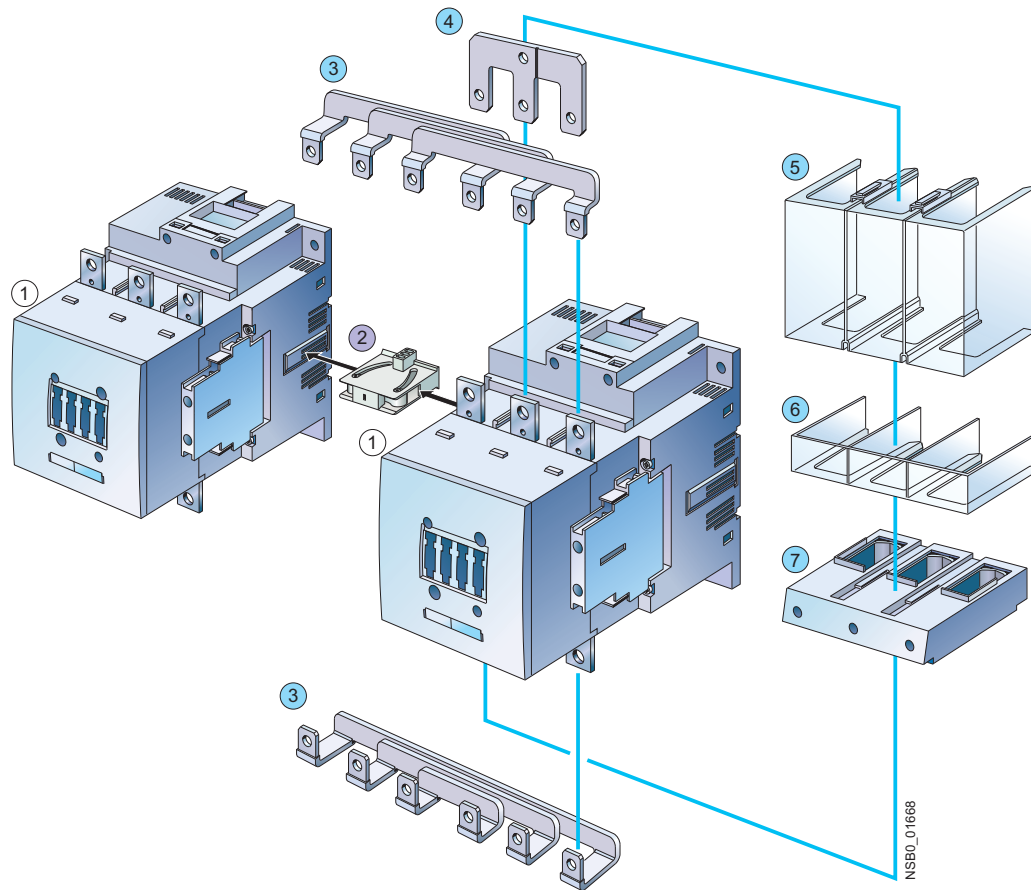
● Accessories differ according to size

For mountable overload relays see Chapter 5
 "Protection Equipment" → "Overload Relays".

3RT, 3TB, 3TF Contactor for Switching Motors

General data

3RA1 contactor assemblies, 3RT1 contactors
Size S6 with accessories

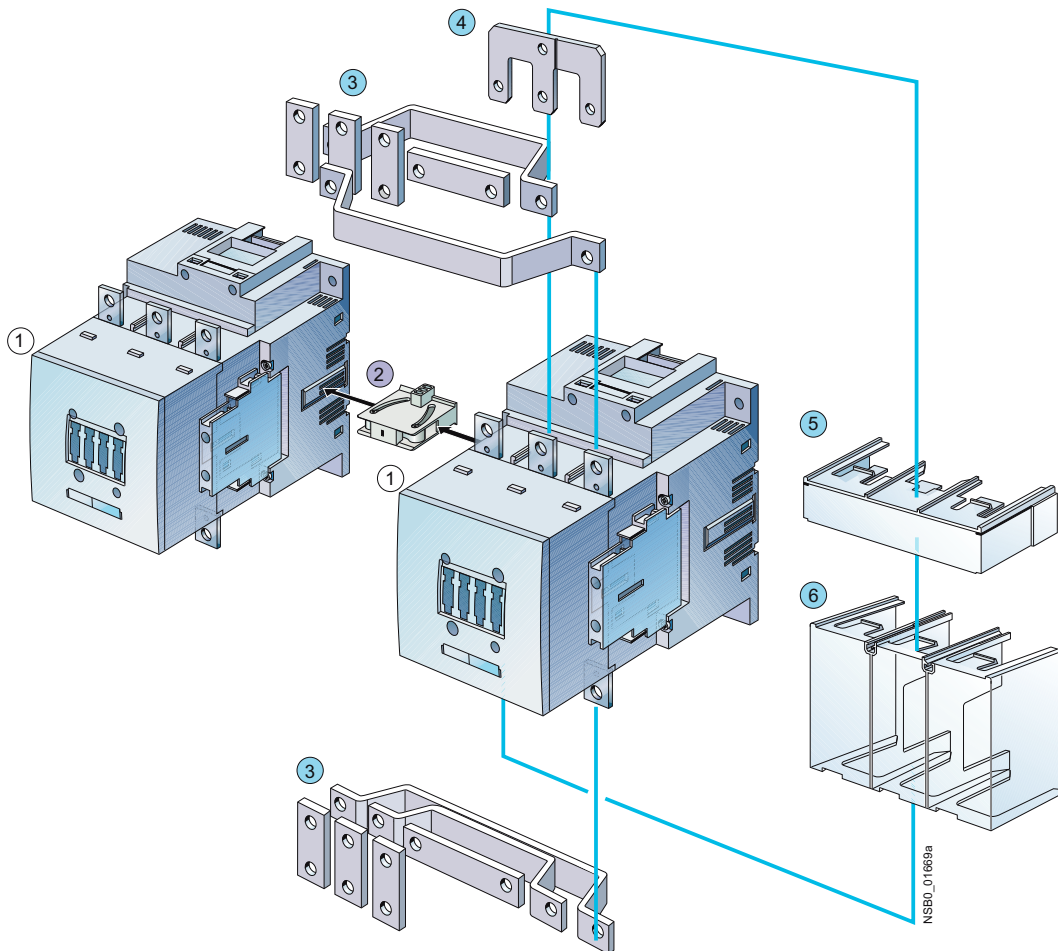


- ① 3RT10 and 3RT14 air-break contactors, size S6
(page 3/23 and 3/51)
- ② 3RA19 54-2A mechanical interlocks, laterally mountable
(page 3/37)
- ③ 3RA19 53-2A wiring modules on the top and bottom (page 3/39)
- ④ 3RT19 56-4BA31 link for paralleling (star jumper), 3-pole,
with through-hole (page 3/112)
- ⑤ Terminal cover for cable lug and busbar connection
(page 3/113), different for sizes S6 and S10/S12
- ⑥ Terminal cover for box terminal, (page 3/113),
different for sizes S6 and S10/S12
- ⑦ Box terminal block (page 3/113),
different for sizes S6 and S10/S12

- Accessories identical for sizes S6 to S12
- Accessories differ according to size

For mountable overload relays see Chapter 5
"Protection Equipment" → "Overload Relays".

3RA1 contactor assemblies, 3RT1 contactors
Sizes S6, S10 and S12 with accessories



① 3RT10 and 3RT14 air-break contactor, sizes S6, S10 and S12 (page 3/23 and 3/51) or 3RT12 vacuum contactor, sizes S10 and S12 (page 3/27)

② Mechanical interlock, laterally mountable (page 3/37)

③ 3RA19 wiring modules on the top and bottom (page 3/38)

④ 3RT19 56-4BA31 link for paralleling (star jumper), 3-pole, with through-hole (page 3/112)

⑤ Terminal cover for box terminal, (page 3/113), different for sizes S6 and S10/S12

⑥ Terminal cover for cable lug and busbar connection (page 3/113), different for sizes S6 and S10/S12

○ Accessories identical for sizes S6 to S12

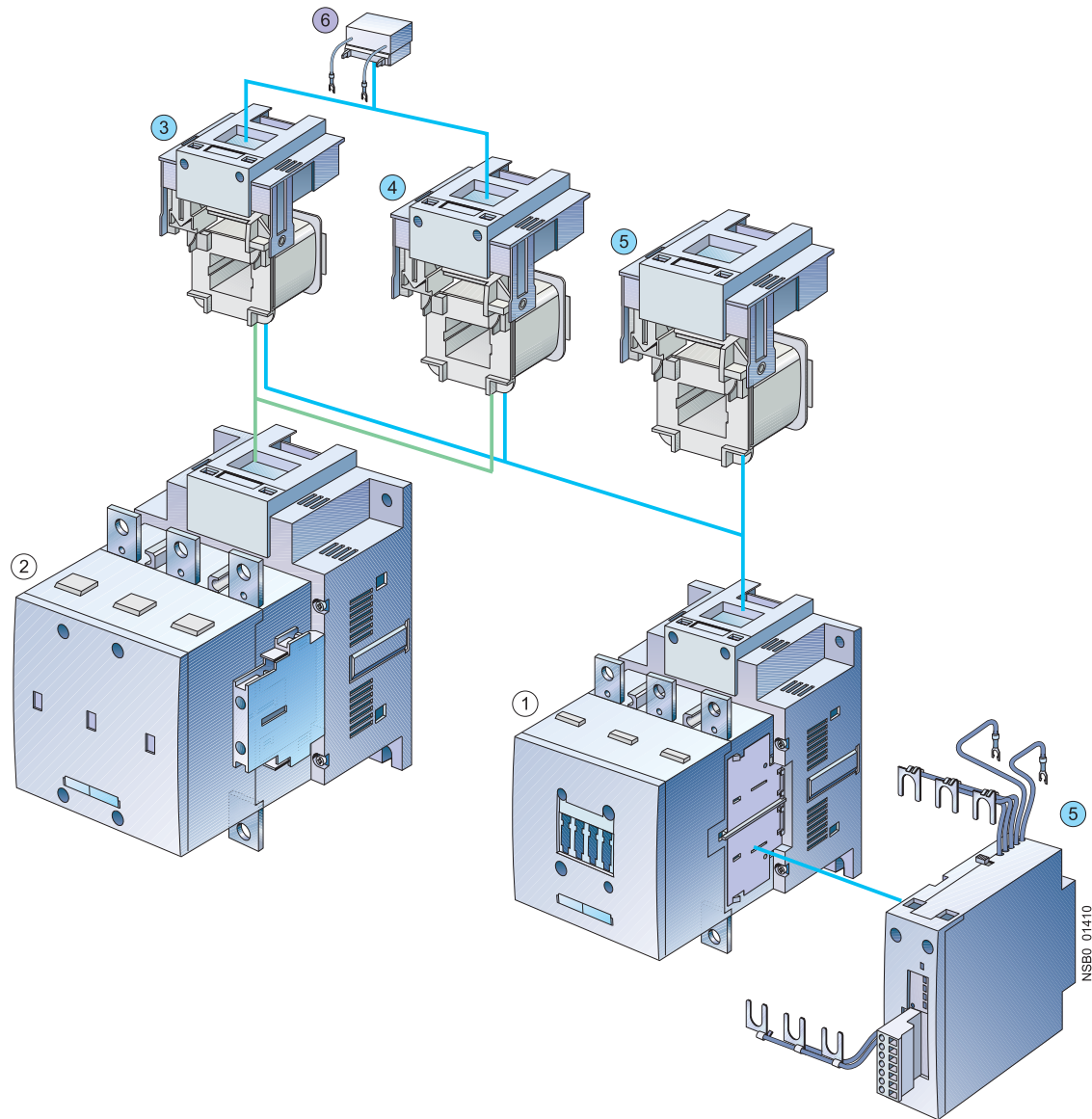
● Accessories differ according to size

For mountable overload relays see Chapter 5 "Protection Equipment" → "Overload Relays".

3RT, 3TB, 3TF Contactors for Switching Motors

General data

3RT1 contactors Sizes S6 to S12 with accessories



- ① Air-break contactor, sizes S6, S10 and S12 (page 3/23)
 ② Vacuum contactor, sizes S10 and S12 (page 3/27)

- ③ Withdrawable coils for 3RT1...-A... contactors with conventional operating mechanism
 (size S10: differentiation between 3RT10/3RT14 air-break contactors and 3RT12 vacuum contactors)
 (size S12: the same for air-break and vacuum contactors)
- ④ Withdrawable coils for 3RT1...-N... contactors with solid-state operating mechanism
 (size S10: differentiation between 3RT10/3RT14 air-break contactors and 3RT12 vacuum contactors)
 (size S12: the same for air-break and vacuum contactors)
- ⑤ Withdrawable coil and laterally mountable module (plug-on) for 3RT1...-P... and 3RT1...-Q... air-break contactors with solid-state operating mechanism and remaining lifetime indicator.
- ⑥ Surge suppressor (RC element) (page 3/108), plug-mountable on withdrawable coils
- 3RT1...-A... with conventional operating mechanism
 - 3RT1...-N... with solid-state operating mechanism

- Identical for sizes S6 to S12
 ● Different according to size

For mountable overload relays see Chapter 5 "Protection Equipment" → "Overload Relays".

Overview

Sizes S00 to S3, up to 45 kW

AC and DC operation

IEC 60947-1, EN 60947-1,
IEC 60947-4-1, EN 60947-4-1

The 3RT1 contactors are climate-proof. They are finger-safe according to EN 50274.

Size S00 contactors have an auxiliary contact integrated in the basic unit. The basic units of sizes S0 to S3 contain only the main contacts.

All basic units can be extended with auxiliary switch blocks. For size S0 and higher, complete units with 2 NO + 2 NC are available (connection designation according to EN 50012). The auxiliary switch block can be removed (for more information see [Accessories on page 3/97](#)).

In addition, complete units with permanently mounted auxiliary switch block (2 NO + 2 NC according to EN 50012) are offered for sizes S00 and S0. These versions are built according to special Swiss regulations "SUVA" and are distinguished externally by a red labeling plate.

Connection methods

The 3RT1 contactors are available with screw terminals (box terminals) or Cage Clamp terminals.

The size S3 contactors have removable box terminals for the main conductor connections. This permits connection of ring terminal lugs or busbars.

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT1 contactor or 3RH11 contactor relay should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are suitable for solid-state circuits with currents ≥ 1 mA at a voltage of 17 V.

Short-circuit protection of the contactors

For more information about short-circuit protection of contactors without overload relay, see [Technical specifications](#). For short-circuit protection of the contactors with overload relay, see ["Overload Relays"](#). To assemble fuseless motor feeders you must select combinations of motor starter protector and contactor as explained in ["Fuseless Load Feeders"](#).

Motor protection

3RU11 thermal overload relays or 3RB20 solid-state overload relays can be fitted to the 3RT1 contactors for protection against overload. The overload relays must be ordered separately.

Ratings of induction motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

Surge suppression

3RT1 contactors can be retrofitted with RC elements, varistors, diodes or diode assemblies (assembly of diode and Zener diode for short break times) for damping opening surges in the coil.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch block.

For size S0 to S3 contactors, varistors and RC elements can be snapped on either on the top or directly below the coil terminals. Diode assemblies are available in 2 different versions on account of their polarity. Depending on the application they can be connected either only at the bottom (assembly with motor starter protector) or only at the top (assembly with overload relay).

The plug-in direction of the diodes and diode assemblies is specified by coding.

Exceptions:

3RT19 26-1T.00 and

3RT19 36-1T.00, in this case the plug-in direction is marked with "+" and "-".

Coupling relays are supplied either without overvoltage damping or with a varistor or diode connected as standard, according to the version.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assemblies 2 to 6 times, varistor +2 to 5 ms).

Sizes S6 to S12, > 45 to 250 kW

- 3RT10, contactors for switching motors,
- 3RT12, vacuum contactors for switching motors,
- 3RT14, contactors for AC-1 applications.

Operating mechanism types

Two types of solenoid operation are available:

- Conventional operating mechanism
- Solid-state operating mechanism (with 3 performance levels)

UC operation

The contactors can be operated with AC (40 to 60 Hz) as well as with DC.

Withdrawable coils

For simple coil replacement, e. g. if the application is replaced, the solenoid coil can be pulled out upwards after the release mechanism has been actuated and can be replaced by any other coil of the same size.

Auxiliary contact complement

For details of the auxiliary switch fittings for the contactors S0 to S12 see [Accessories, page 3/97](#).

- 3RT10 and 3RT14 contactors:
Auxiliary contacts mounted laterally and on front
- 3RT12 vacuum contactors:
Auxiliary contacts mounted laterally

Note:

Auxiliary contact complement according to SUVA.

Contactors with permanently mounted auxiliary switch block for safety applications according to SUVA.

Contactors with conventional operating mechanism

Version 3RT1...-A:

The solenoid coil is switched directly on and off with the control supply voltage U_s by way of terminals A1/A2.

Multi-voltage range for the control supply voltage U_s :

Several closely adjacent control supply voltages, available around the world, are covered by just one coil, e. g. 110-115-120-127 V UC or 220-230-240 V UC. In addition, allowance is also made for a coil operating range of 0.8 times the lower ($U_{s\min}$) and 1.1 times the upper ($U_{s\max}$) rated control supply voltage within which the contactor switches reliably and no thermal overloading occurs.

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

Contactors with solid-state operating mechanism

The solenoid coil is supplied selectively with the power required for reliable switching and holding by upstream control electronics.

- **Wide voltage range for the control supply voltage U_s :**
Compared with the conventional operating mechanism, the solid-state operating mechanism covers an even broader range of control supply voltages used worldwide within one coil variant. For example, the coil for 200 to 277 V AC/DC ($U_{s \min}$ to $U_{s \max}$) covers the voltages 200-208-220-230-240-254-277 V used worldwide.
- **Extended operating range 0.7 to $1.25 \times U_s$:**
The wide range for the rated control supply voltage and the additionally allowed coil operating range of $0.8 \times U_{s \min}$ to $1.1 \times U_{s \max}$ results in an extended coil operating range of at least 0.7 to $1.25 \times U_s$, within which the contactors will operate reliably, for the most common control supply voltages of 24, 110 and 230 V.
- **Bridging temporary voltage dips:**
Control voltage failures dipping to 0 V (at A1/A2) are bridged for up to approx. 25 ms to avoid unintentional tripping.
- **Defined ON and OFF thresholds:**
For voltages above $0.8 \times U_{s \min}$ the electronics will reliably switch the contactor ON, and for voltages below the value $0.5 \times U_{s \min}$ it is reliably switched OFF. The hysteresis in the switching thresholds prevents the main contacts from chattering as well as increased wear or welding when operated in weak, unstable networks. This also prevents thermal overloading of the contactor coil if the voltage applied is too low (contactor does not close properly and is continuously operated with overexcitation).
- **Low control power consumption when closing and in the closed state.**

Electromagnetic compatibility (EMC)

The contactors with solid-state operating mechanism conform to the requirements for operation in industrial plants:

- Interference immunity
 - Burst (IEC 61000-4-4): 4 kV
 - Surge (IEC 61000-4-5): 4 kV
 - Electrostatic discharge, ESD (IEC 61000-4-2): 8/15 kV
 - Electromagnetic field (IEC 61000-4-3): 10 V/m
- Emitted interference
 - Limit value class A according to EN 55011

Note:

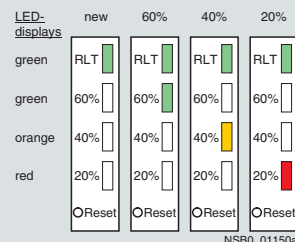
In connection with converters, the control cables must be routed separately from the load cables to the converter.

Indication of remaining lifetime (RLT)

Main contactor contacts are working parts which therefore must be replaced in good time when the end of their service life has been reached. The degree of contact erosion and thus the electrical endurance (= number of operating cycles) depends on the loading, utilization category, operating mode, etc. Up to now, routine checks/visual inspections by the maintenance personnel were needed in order to gain an insight into the state of the main contacts. The remaining lifetime indication function now takes over this task. It does not count the number of operating cycles – which does not provide information about contact erosion – but instead electronically identifies, evaluates and stores the actual progress of erosion of each one of the three main contacts, and outputs a warning when specified limits are reached. The stored data are not lost even if the control supply voltage for A1/A2 fails. After replacement of the main contacts, measurement the remaining lifetime must be reset using the "RESET" button (hold down RESET button for about 2 seconds using a pen or similar tool).

Advantages:

- Signaling through relay contact or AS-i when remaining life-time is 20 %, i. e. contact material wear is 80 %.
- Additional visual indication of various levels of erosion by means of LEDs on the laterally mounted solid-state module when remaining lifetime is 60 % (green), 40 % (orange) and 20 % (red).

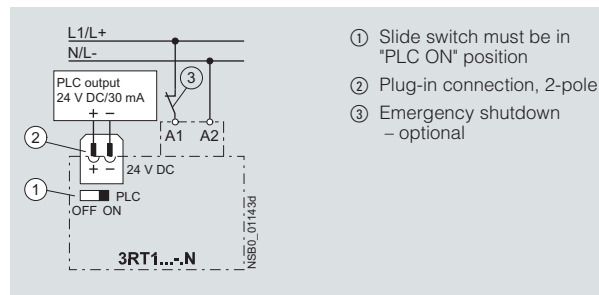


- Early warning to replace contacts
- Optimum utilization of contact material
- Visual inspection of the condition of contacts no longer necessary
- Reduction of ongoing operating costs
- Optimum planning of maintenance measures
- Avoidance of unforeseen plant downtimes

Version 3RT1...-N: for PLC output 24 V DC

2 control options:

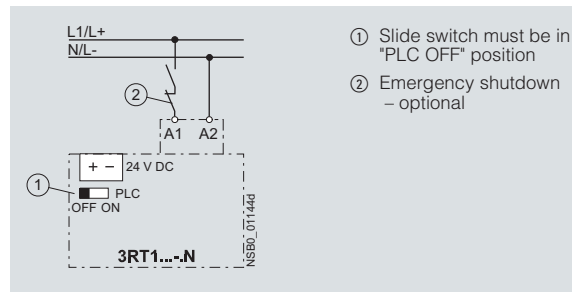
- Control without a coupling link directly through a 24 V DC/≥ 30 mA PLC output (EN 61131-2). Connection by means of 2-pole plug-in connection. The screwless spring-type connection is part of the scope of supply. The control supply voltage which supplies the solenoid operating mechanism must be connected to A1/A2.



Note:

Before start-up, the slide switch for PLC operation must be moved to the "PLC ON" position (setting ex works: "PLC OFF").

- Conventional control by applying the control supply voltage at A1/A2 through a switching contact.

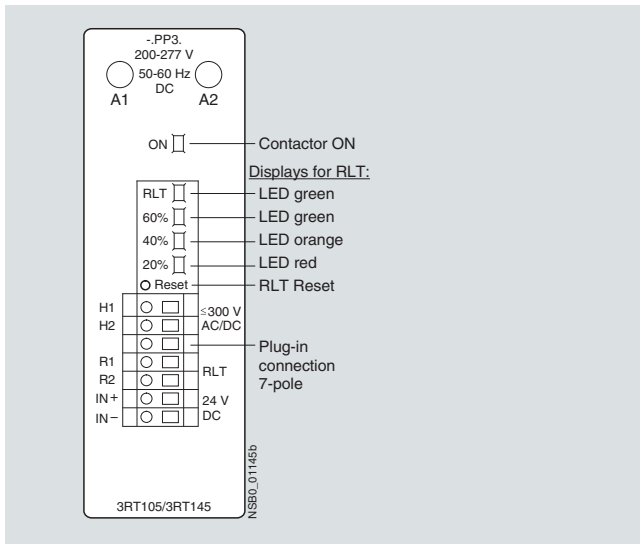


Note:

The slide switch must be in the "PLC OFF" position (= setting ex works).

3RT, 3TB, 3TF Contactors for Switching Motors

Version 3RT1...-P: for 24 V DC PLC output or PLC relay output, with remaining lifetime indicator (RLT)

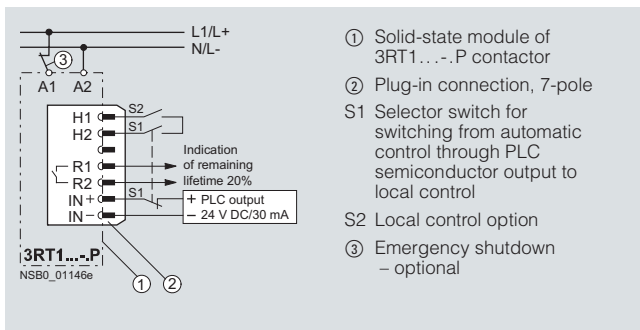


To supply the solenoid and the remaining lifetime indicator with power, the control supply voltage U_s must be connected to terminals A1/A2 of the laterally mounted solid-state module. The control inputs of the contactor are connected to a 7-pole plug-in connection; the screwless spring-type connection is part of the scope of supply.

- The "Remaining Lifetime RLT" status signal is available at terminals R1/R2 through a floating relay contact (hard gold-plated, enclosed) and can be input to SIMOCODE, PLC or other devices for processing, for example. Permissible current-carrying capacity of the R1/R2 relay output:
 - I_e/AC -15/24 to 230 V: 3 A
 - I_e/DC -13/24 V: 1 A
- LED indications
The following states are indicated by means of LEDs on the laterally mounted solid-state module:
 - Contactor ON (energized state): green LED ("ON")
 - Indication of remaining lifetime

2 control options:

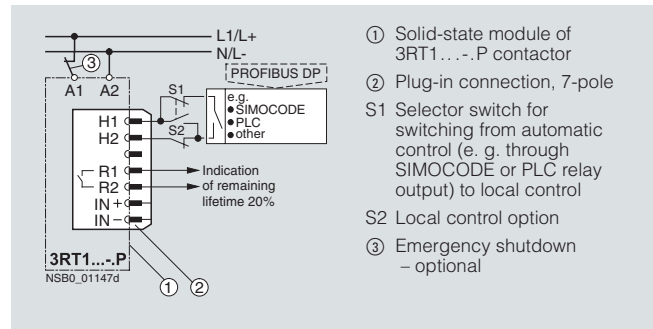
- Contactor control without a coupling link directly through a 24 V DC ≥ 30 mA PLC output (EN 61131-2) by way of terminals IN+/IN-.



Possibility of switching from automatic control to local control by way of terminals H1/H2, i. e. automatic control through PLC or SIMOCODE/PROFIBUS DP can be deactivated e. g. at start-up or in the event of a fault and the contactor can be controlled manually.

3RT10 contactors, 3-pole, 3 ... 250 kW

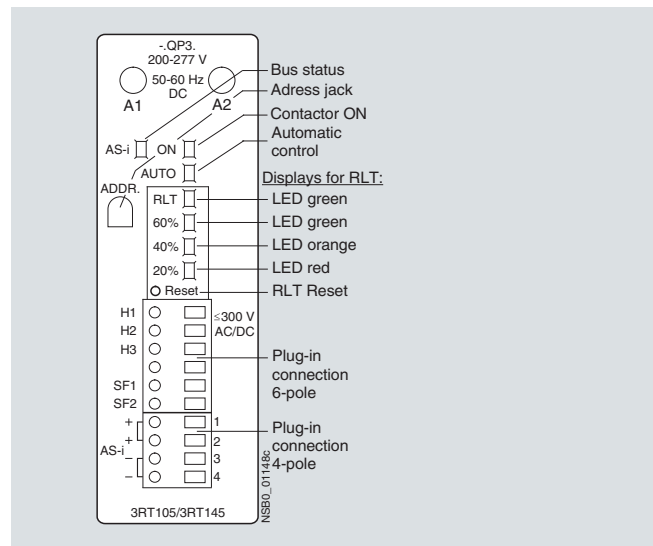
- Contactor control through relay outputs at connections H1/H2, e. g. by
 - PLC or
 - SIMOCODE.



Contact loading: U_s /approx. 5 mA.

When operated through SIMOCODE, a communication link to PROFIBUS DP is also provided.

Version 3RT1...-Q: Communication-capable with integrated AS-Interface and remaining lifetime indicator (RLT)



To supply the solenoid and the remaining lifetime indicator with power, the control supply voltage U_s must be connected to terminals A1/A2 of the laterally mounted solid-state module. The contactor itself is controlled by way of the integrated AS-Interface interface. The inputs and outputs are connected to a 10-pole plug-in connection; the screwless spring-type connections (6-pole for external connection and 4-pole for AS-Interface connection) are part of the scope of supply.

- LED displays:
The following states are indicated by means of LEDs on the laterally mounted solid-state module:
 - Contactor ON (energized state): green LED ("ON")
 - Automatic/local control: Green LED ("AUTO")
 - Bus status: Green/red dual LED ("AS-i")
 - Indication of remaining lifetime (RLT)
- AS-Interface addressing socket "ADDR":
The contactor address can be assigned after installation.

3RT, 3TB, 3TF Contactors for Switching Motors

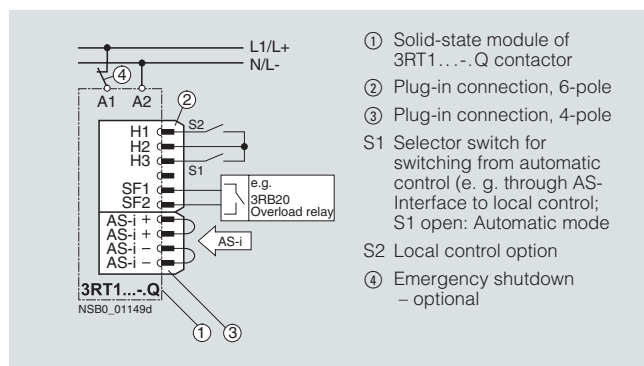
3RT10 contactors, 3-pole, 3 ... 250 kW

Control circuit:

- Contactor control through AS-Interface by way of terminals AS-i +/AS-i -. Each of these terminals is jumpered and connected twice to a 4-pole connector which is separate from the other control inputs.

Advantages:

- The AS-Interface cable is not interrupted if the connector is pulled out
- The contactor remains functional through the local control inputs and its own 6-pole connector
- Control signals through AS-i:
 - Contactor ON/OFF
- Status signals through AS-i:
 - Contactor ON/OFF
 - Automatic/local control
 - Indication of remaining lifetime (RLT)
 - Signal through free input, e. g. overload relay tripped.



Possibility of switching from automatic control to local control by means of terminals H1/H2/H3, i. e. automatic control through AS-Interface can be deactivated e. g. during start-up or in the event of a fault and the contactor can be controlled manually.

Technical specifications

AS-Interface		
I/O configuration (hex)		7
ID code (hex)		F
Power supply (acc. to AS-Interface Specification)	V	26.5 ... 31.6
Power consumption, max.	mA	20
Contact loading at SF1/2	mA	3 ... 6
Watchdog function (disconnects outputs in the event of AS-Interface fault)		Built-in

Indication behavior of the LEDs

State	LEDs
AS-Interface communication	OK ON
	Fault ON
Station address	0 (zero) Flashing
	Flashing

Contactor diagnostics using the user program

Inputs

Input signals	Device status
DI 0 "Ready"	0 Device not ready/manual operation
	1 Device ready/automatic mode
DI 1 "Running"	0 Contactor off
	1 Contactor on
DI 2 "Remaining lifetime"	0 Remaining lifetime RLT > 20 %
	1 Remaining lifetime RLT ≤ 20 %
DI 3 "Free input"	0 No input signal at SF1/2
	1 Input signal at SF1/2

Outputs

Output signals	Device status
DO 0 "Running"	0 Contactor off
	1 Contactor on
DO 1	0 --
	1 --
DO 2	0 --
	1 --
DO 3	0 --
	1 --

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 101



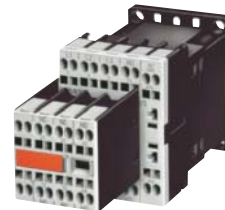
3RT10 1.-1A...



3RT10 1.-2A...



3RT10 1.-1AP04-3MA0



3RT10 1.-2AP04-3MA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s at 50/60 Hz	DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.	
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C	Operational current I_e up to	Rating of induction motors at 50 Hz and			Operational current I_e up to	Order No.			Price per PU	Order No.		Price per PU
400 V	400 V	A	kW	A									
		NO NC V AC											

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00¹⁾

Terminal designations according to EN 50012

7	3	18	10 E	1 --	24	▶	3RT10 15-1AB01	0.200	▶	3RT10 15-2AB01	0.200
					110	▶	3RT10 15-1AF01	0.200	▶	3RT10 15-2AF01	0.200
					230	▶	3RT10 15-1AP01	0.200	▶	3RT10 15-2AP01	0.200
			01	-- 1	24	▶	3RT10 15-1AB02	0.200	▶	3RT10 15-2AB02	0.200
					110	▶	3RT10 15-1AF02	0.200	▶	3RT10 15-2AF02	0.200
					230	▶	3RT10 15-1AP02	0.200	▶	3RT10 15-2AP02	0.200
9	4	22	10 E	1 --	24	▶	3RT10 16-1AB01	0.200	▶	3RT10 16-2AB01	0.200
					110	▶	3RT10 16-1AF01	0.200	▶	3RT10 16-2AF01	0.200
					230	▶	3RT10 16-1AP01	0.200	▶	3RT10 16-2AP01	0.200
			01	-- 1	24	▶	3RT10 16-1AB02	0.200	▶	3RT10 16-2AB02	0.200
					110	▶	3RT10 16-1AF02	0.200	▶	3RT10 16-2AF02	0.200
					230	▶	3RT10 16-1AP02	0.200	▶	3RT10 16-2AP02	0.200
12	5.5	22	10 E	1 --	24	▶	3RT10 17-1AB01	0.200	▶	3RT10 17-2AB01	0.200
					110	▶	3RT10 17-1AF01	0.200	▶	3RT10 17-2AF01	0.200
					230	▶	3RT10 17-1AP01	0.200	▶	3RT10 17-2AP01	0.200
			01	-- 1	24	▶	3RT10 17-1AB02	0.200	▶	3RT10 17-2AB02	0.200
					110	▶	3RT10 17-1AF02	0.200	▶	3RT10 17-2AF02	0.200
					230	▶	3RT10 17-1AP02	0.200	▶	3RT10 17-2AP02	0.200

Size S00¹⁾

With permanently mounted auxiliary switch block for safety applications according to SUVA

Terminal designations according to EN 50012

7	3	18	22 E	2 2	230	▶	3RT10 15-1AP04-3MA0	0.250	B	3RT10 15-2AP04-3MA0	0.250
9	4	22	22 E	2 2	230	▶	3RT10 16-1AP04-3MA0	0.250	B	3RT10 16-2AP04-3MA0	0.250
12	5.5	22	22 E	2 2	230	▶	3RT10 17-1AP04-3MA0	0.250	B	3RT10 17-2AP04-3MA0	0.250

For other voltages see page 3/26, for contactors with permanently mounted auxiliary switch block please inquire.

For accessories, see page 3/102.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ For size S00: Coil operating range
 at 50 Hz: $0.8 \dots 1.1 \times U_s$
 at 60 Hz: $0.85 \dots 1.1 \times U_s$.

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

AC operation

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 2.-1A.00



3RT10 2.-3A.00



3RT10 2.-1A.04



3RT10 2.-1AL24-3MA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s at 50 Hz	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals for coil terminals	Weight per PU approx.
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C	Ident. No.	Version			⊕			⊕	
Operational current I_e up to	Rating of induction motors at 50 Hz and					Order No.	Price per PU		Order No.	Price per PU
400 V	400 V									
A	kW	A	NO NC V AC				kg			kg

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S0

9	4	40 ¹⁾	--	--	--	24	▶	3RT10 23-1AB00	0.350 B	3RT10 23-3AB00	0.350
						110	▶	3RT10 23-1AF00	0.350 B	3RT10 23-3AF00	0.350
						230	▶	3RT10 23-1AP00	0.350 ▶	3RT10 23-3AP00	0.350
12	5.5	40 ¹⁾	--	--	--	24	▶	3RT10 24-1AB00	0.350 B	3RT10 24-3AB00	0.350
						110	▶	3RT10 24-1AF00	0.350 B	3RT10 24-3AF00	0.350
						230	▶	3RT10 24-1AP00	0.350 ▶	3RT10 24-3AP00	0.350
17	7.5	40 ¹⁾	--	--	--	24	▶	3RT10 25-1AB00	0.350 B	3RT10 25-3AB00	0.350
						110	▶	3RT10 25-1AF00	0.350 B	3RT10 25-3AF00	0.350
						230	▶	3RT10 25-1AP00	0.350 ▶	3RT10 25-3AP00	0.350
25	11	40 ¹⁾	--	--	--	24	▶	3RT10 26-1AB00	0.350 B	3RT10 26-3AB00	0.350
						110	▶	3RT10 26-1AF00	0.350 B	3RT10 26-3AF00	0.350
						230	▶	3RT10 26-1AP00	0.350 ▶	3RT10 26-3AP00	0.350

Size S0

With mounted auxiliary switch block (removable)²⁾

Terminal designations according to EN 50012

9	4	40 ¹⁾	22 E	2	2	24	▶	3RT10 23-1AB04	0.400	--	
						110	▶	3RT10 23-1AF04	0.400	--	
						230	▶	3RT10 23-1AP04	0.400	--	
12	5.5	40 ¹⁾	22 E	2	2	24	▶	3RT10 24-1AB04	0.400	--	
						110	▶	3RT10 24-1AF04	0.400	--	
						230	▶	3RT10 24-1AP04	0.400	--	
17	7.5	40 ¹⁾	22 E	2	2	24	▶	3RT10 25-1AB04	0.400	--	
						110	▶	3RT10 25-1AF04	0.400	--	
						230	▶	3RT10 25-1AP04	0.400	--	
25	11	40 ¹⁾	22 E	2	2	24	▶	3RT10 26-1AB04	0.400	--	
						110	▶	3RT10 26-1AF04	0.400	--	
						230	▶	3RT10 26-1AP04	0.400	--	

Size S0

With permanently mounted auxiliary switch block for safety applications according to SUVA

At 50/60 Hz
V AC

Terminal designations according to EN 50012

12	5.5	40 ¹⁾	22 E	2	2	230	B	3RT10 24-1AL24-3MA0	0.420	--	
17	7.5	40 ¹⁾	22 E	2	2	230	A	3RT10 25-1AL24-3MA0	0.420	--	
25	11	40 ¹⁾	22 E	2	2	230	A	3RT10 26-1AL24-3MA0	0.420	--	

For other voltages see page 3/26, for contactors with permanently mounted auxiliary switch block please inquire.

For accessories, see page 3/103.

For spare parts, see page 3/115.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ Minimum conductor cross-section 10 mm².

²⁾ Order No. for the auxiliary switch block (removable): 3RH19 21-1HA22 (2NO + 2NC according to EN 50012; 22E).

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

AC operation

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 3.-1A.00

3RT10 3.-3A.00

3RT10 3.-1A.04

Rated data		Auxiliary contacts	Rated control supply voltage U_s at 50 Hz	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals for coil terminals	Weight per PU approx.
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C	Ident. No. Version			⊕			⊕	
Operational current I_e up to 500 V	Rating of induction motors at 50 Hz and 400 V				Order No.	Price per PU		Order No.	Price per PU
A	kW	A	NO NC V AC			kg			kg

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S2

Size	Current (A)	Power (kW)	Terminal designation	Order No.	Weight (kg)	Order No.	Weight (kg)
32	15	50	24 110 230	▶ 3RT10 34-1AB00	0.850 B	3RT10 34-3AB00	0.850
				▶ 3RT10 34-1AF00	0.850 B	3RT10 34-3AF00	0.850
				▶ 3RT10 34-1AP00	0.850 ▶	3RT10 34-3AP00	0.850
40	18.5	60	24 110 230	▶ 3RT10 35-1AB00	0.850 B	3RT10 35-3AB00	0.850
				▶ 3RT10 35-1AF00	0.850 B	3RT10 35-3AF00	0.850
				▶ 3RT10 35-1AP00	0.850 ▶	3RT10 35-3AP00	0.850
50	22	60	24 110 230	▶ 3RT10 36-1AB00	0.850 B	3RT10 36-3AB00	0.850
				▶ 3RT10 36-1AF00	0.850 B	3RT10 36-3AF00	0.850
				▶ 3RT10 36-1AP00	0.850 ▶	3RT10 36-3AP00	0.850

Size S2

With mounted auxiliary switch block (removable)¹⁾

Terminal designations according to EN 50012

Size	Current (A)	Power (kW)	Terminal designation	Order No.	Weight (kg)	Order No.	Weight (kg)
32	15	50	22 E 2 2 24 110 230	▶ 3RT10 34-1AB04	0.950	--	--
				▶ 3RT10 34-1AF04	0.950	--	--
				▶ 3RT10 34-1AP04	0.950	--	--
40	18.5	60	22 E 2 2 24 110 230	▶ 3RT10 35-1AB04	0.950	--	--
				▶ 3RT10 35-1AF04	0.950	--	--
				▶ 3RT10 35-1AP04	0.950	--	--
50	22	60	22 E 2 2 24 110 230	▶ 3RT10 36-1AB04	0.950	--	--
				▶ 3RT10 36-1AF04	0.950	--	--
				▶ 3RT10 36-1AP04	0.950	--	--

Size S2

With permanently mounted auxiliary switch block

for safety applications according to SUVA

Terminal designations according to EN 50012

Size	Current (A)	Power (kW)	Terminal designation	Order No.	Weight (kg)	Order No.	Weight (kg)
32	15	50	22 E 2 2 230	B 3RT10 34-1AP04-3MA0	0.908	--	--
40	18.5	50	22 E 2 2 230	B 3RT10 35-1AP04-3MA0	0.950	--	--
50	22	50	22 E 2 2 230	B 3RT10 36-1AP04-3MA0	0.935	--	--

For other voltages see page 3/26, for contactors with mounted auxiliary switch block please inquire.

For accessories, see page 3/103.

For spare parts, see page 3/115.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ Order No. for the auxiliary switch block (removable): 3RH19 21-1HA22 (2 NO + 2 NC according to EN 50012; 22E).

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

AC operation

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 4.-1A.00



3RT10 4.-3A.00



3RT10 4.-1A.04

Rated data		Auxiliary contacts		Rated control supply voltage U_s at 50 Hz	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals for coil terminals	Weight per PU approx.
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C	Ident. No.	Version			⊕			⊕	
Operational current I_e up to	Rating of induction motors at 50 Hz and					Order No.	Price per PU		Order No.	Price per PU
500 V	400 V	690 V								
A	kW	A	NO NC V AC				kg			kg

For screw and snap-on mounting onto TH 35 and TH 75 standard mounting rail

Size S3

65	30	100	--	--	24		3RT10 44-1AB00	1.800 B	3RT10 44-3AB00	1.800
					110	▶	3RT10 44-1AF00	1.800 B	3RT10 44-3AF00	1.800
					230	▶	3RT10 44-1AP00	1.800 ▶	3RT10 44-3AP00	1.800
80	37	120	--	--	24	▶	3RT10 45-1AB00	1.800 B	3RT10 45-3AB00	1.800
					110	▶	3RT10 45-1AF00	1.800 B	3RT10 45-3AF00	1.800
					230	▶	3RT10 45-1AP00	1.800 ▶	3RT10 45-3AP00	1.800
95	45	120	--	--	24	▶	3RT10 46-1AB00	1.800 B	3RT10 46-3AB00	1.800
					110	▶	3RT10 46-1AF00	1.800 B	3RT10 46-3AF00	1.800
					230	▶	3RT10 46-1AP00	1.800 ▶	3RT10 46-3AP00	1.800

Size S3

With mounted auxiliary switch block (removable)¹⁾

Terminal designations according to EN 50012

65	30	100	22 E	2	2	24		3RT10 44-1AB04	1.950	--
						110	▶	3RT10 44-1AF04	1.950	--
						230	▶	3RT10 44-1AP04	1.950	--
80	37	120	22 E	2	2	24	B	3RT10 45-1AB04	1.950	--
						110	▶	3RT10 45-1AF04	1.950	--
						230	▶	3RT10 45-1AP04	1.950	--
95	45	120	22 E	2	2	24	B	3RT10 46-1AB04	1.950	--
						110	▶	3RT10 46-1AF04	1.950	--
						230	▶	3RT10 46-1AP04	1.950	--

Size S3

With permanently mounted auxiliary switch block for safety applications according to SUVA

Terminal designations according to EN 50012

65	30	50	22 E	2	2	230		3RT10 44-1AP04-3MA0	1.950	--
80	37	50	22 E	2	2	230	B	3RT10 45-1AP04-3MA0	1.933	--
95	45	50	22 E	2	2	230	▶	3RT10 46-1AP04-3MA0	1.950	--

For other voltages see page 3/26, for contactors with mounted auxiliary switch block please inquire.

For accessories, see page 3/103.

For spare parts, see page 3/116.

¹⁾ Order No. for the auxiliary switch block (removable): 3RH19 21-1HA22 (2 NO + 2 NC according to EN 50012; 22E).

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

DC operation - DC solenoid system

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



Rated data	Auxiliary contacts	Rated control supply voltage U_s	DT	Weight per PU approx.	DT	Weight per PU approx.
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C		Screw terminals		Cage Clamp terminals	
Operational current I_e up to	Rating of induction motors at 50 Hz and	Operational current I_e up to	Order No.	Price per PU	Order No.	Price per PU
400 V	400 V	690 V				
A	kW	A		kg		kg

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00

Terminal designations according to EN 50012

7	3	18	10 E	1 --	24 220	▶ 3RT10 15-1BB41	0.260	▶ 3RT10 15-2BB41	0.260
						A 3RT10 15-1BM41	0.260	B 3RT10 15-2BM41	0.260
			01	-- 1	24 220	▶ 3RT10 15-1BB42	0.260	▶ 3RT10 15-2BB42	0.260
						B 3RT10 15-1BM42	0.260	B 3RT10 15-2BM42	0.260
9	4	22	10 E	1 --	24 220	▶ 3RT10 16-1BB41	0.260	▶ 3RT10 16-2BB41	0.260
						B 3RT10 16-1BM41	0.260	B 3RT10 16-2BM41	0.260
			01	-- 1	24 220	▶ 3RT10 16-1BB42	0.260	▶ 3RT10 16-2BB42	0.260
						B 3RT10 16-1BM42	0.260	B 3RT10 16-2BM42	0.260
12	5.5	22	10 E	1 --	24 220	▶ 3RT10 17-1BB41	0.260	▶ 3RT10 17-2BB41	0.260
						B 3RT10 17-1BM41	0.260	B 3RT10 17-2BM41	0.260
			01	-- 1	24 220	▶ 3RT10 17-1BB42	0.260	▶ 3RT10 17-2BB42	0.260
						B 3RT10 17-1BM42	0.260	B 3RT10 17-2BM42	0.260

Size S00

With permanently mounted auxiliary switch block for safety applications according to SUVA

Terminal designations according to EN 50012

7	3	18	22 E	2 2	24	▶ 3RT10 15-1BB44-3MA0	0.300	B 3RT10 15-2BB44-3MA0	0.300
9	4	22	22 E	2 2	24	▶ 3RT10 16-1BB44-3MA0	0.300	A 3RT10 16-2BB44-3MA0	0.300
12	5.5	22	22 E	2 2	24	▶ 3RT10 17-1BB44-3MA0	0.300	B 3RT10 17-2BB44-3MA0	0.300

For other voltages see page 3/26, for contactors with permanently mounted auxiliary switch block please inquire.

For accessories, see page 3/102.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes"

* You can order this quantity or a multiple thereof.



3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

DC operation · DC solenoid system

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 2.-1B.40



3RT10 2.-3B.40



3RT10 2.-3B.44



3RT10 2.-1BB44-3MA0

Rated data		Auxiliary contacts	Rated control supply voltage U_s	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals for coil terminals	Weight per PU approx.
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C	Ident. No.	Version		⊕			⊗	
Operational current I_e up to	Rating of induction motors at 50 Hz and				Order No.	Price per PU		Order No.	Price per PU
400 V	400 V								
A	kW	A	NO NC V DC			kg			kg

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S0

9	4	40 ¹⁾	--	--	24	▶	3RT10 23-1BB40	0.580	▶	3RT10 23-3BB40	0.580
					220	B	3RT10 23-1BM40	0.580	B	3RT10 23-3BM40	0.580
12	5.5	40 ¹⁾	--	--	24	▶	3RT10 24-1BB40	0.580	▶	3RT10 24-3BB40	0.580
					220	A	3RT10 24-1BM40	0.580	B	3RT10 24-3BM40	0.580
17	7.5	40 ¹⁾	--	--	24	▶	3RT10 25-1BB40	0.580	▶	3RT10 25-3BB40	0.580
					220	A	3RT10 25-1BM40	0.580	B	3RT10 25-3BM40	0.580
25	11	40 ¹⁾	--	--	24	▶	3RT10 26-1BB40	0.580	▶	3RT10 26-3BB40	0.580
					220	A	3RT10 26-1BM40	0.580	B	3RT10 26-3BM40	0.580

Size S0

With mounted auxiliary switch block (removable)²⁾

Terminal designations according to DIN 50012

9	4	40 ¹⁾	22 E	2	2	24	▶	3RT10 23-1BB44	0.650	--	
						220	B	3RT10 23-1BM44	0.650	--	
12	5.5	40 ¹⁾	22 E	2	2	24	▶	3RT10 24-1BB44	0.650	--	
						220	B	3RT10 24-1BM44	0.650	--	
17	7.5	40 ¹⁾	22 E	2	2	24	▶	3RT10 25-1BB44	0.650	--	
						220	B	3RT10 25-1BM44	0.650	--	
25	11	40 ¹⁾	22 E	2	2	24	▶	3RT10 26-1BB44	0.650	--	
						220	B	3RT10 26-1BM44	0.650	--	

Size S0

With permanently mounted auxiliary switch block

for safety applications according to SUVA

Terminal designations according to DIN 50012

12	5.5	40 ¹⁾	22 E	2	2	24	A	3RT10 24-1BB44-3MA0	0.650	--	
17	7.5	40 ¹⁾	22 E	2	2	24	A	3RT10 25-1BB44-3MA0	0.650	--	
25	11	40 ¹⁾	22 E	2	2	24	A	3RT10 26-1BB44-3MA0	0.650	--	

For other voltages see page 3/26, for contactors with mounted auxiliary switch block please inquire.

For accessories, see page 3/103.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ Minimum conductor cross-section 10 mm².

²⁾ Order No. for the auxiliary switch block (removable): 3RH19 21-1HA22 (2 NO + 2 NC according to EN 50012; 22E).

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

DC operation - DC solenoid system

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 3.-1B.40

3RT10 3.-3B.40

3RT10 3.-1B.44

Rated data		Auxiliary contacts		Rated control supply voltage U_s	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals for coil terminals	Weight per PU approx.
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C	Ident. No.	Version			⊕			⊕	
Operational current I_e up to	Rating of induction motors at 50 Hz and					Order No.	Price per PU		Order No.	Price per PU
500 V	400 V	690 V								
A	kW	A		NO NC V DC			kg			kg

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S2												
32	15	50	--	--	--	24	▶	3RT10 34-1BB40	1.450	▶	3RT10 34-3BB40	1.450
						220	A	3RT10 34-1BM40	1.450	B	3RT10 34-3BM40	1.450
40	18.5	60	--	--	--	24	▶	3RT10 35-1BB40	1.450	▶	3RT10 35-3BB40	1.450
						220	B	3RT10 35-1BM40	1.450	B	3RT10 35-3BM40	1.450
50	22	60	--	--	--	24	▶	3RT10 36-1BB40	1.450	▶	3RT10 36-3BB40	1.450
						220	B	3RT10 36-1BM40	1.450	B	3RT10 36-3BM40	1.450

Size S2												
With mounted auxiliary switch block (removable) ¹⁾												
Terminal designations according to EN 50012												
32	15	50	22 E	2	2	24	▶	3RT10 34-1BB44	1.550	--		
						220	A	3RT10 34-1BM44	1.550	--		
40	18.5	60	22 E	2	2	24	▶	3RT10 35-1BB44	1.550	--		
						220	B	3RT10 35-1BM44	1.550	--		
50	22	60	22 E	2	2	24	▶	3RT10 36-1BB44	1.550	--		
						220	B	3RT10 36-1BM44	1.550	--		

Size S2												
With permanently mounted auxiliary switch block for safety applications according to SUVA												
Terminal designations according to EN 50012												
32	15	50	22 E	2	2	24	B	3RT10 34-1BB44-3MA0	1.550	--		
40	18.5	50	22 E	2	2	24	B	3RT10 35-1BB44-3MA0	1.550	--		
50	22	50	22 E	2	2	24	B	3RT10 36-1BB44-3MA0	1.550	--		

For other voltages see page 3/26, for contactors with mounted auxiliary switch block please inquire.

For accessories, see page 3/103.

For spare parts, see page 3/116.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ Order No. for the auxiliary switch block (removable): 3RH19 21-1HA22 (2 NO + 2 NC according to EN 50012; 22E).



3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

DC operation · DC solenoid system

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 4.-1B.40



3RT10 4.-3B.40



3RT10 4.-1B.44

Rated data		Auxiliary contacts	Rated control supply voltage U_s	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals for coil terminals	Weight per PU approx.
AC-2 and AC-3, T_U : Up to 60 °C	AC-1, T_U : 40 °C	Ident. No.	Version		⊕			⊗	
Operational current I_e up to	Rating of induction motors at 50 Hz and				Order No.	Price per PU		Order No.	Price per PU
500 V	400 V								
A	kW	A	NO NC V DC			kg			kg

For screw and snap-on mounting onto TH 35 and TH 75 standard mounting rail

Size S3

65	30	100	--	--	24	▶	3RT10 44-1BB40	2.800	▶	3RT10 44-3BB40	2.800
					220	B	3RT10 44-1BM40	2.800	B	3RT10 44-3BM40	2.800
80	37	120	--	--	24	▶	3RT10 45-1BB40	2.800	▶	3RT10 45-3BB40	2.800
					220	B	3RT10 45-1BM40	2.800	B	3RT10 45-3BM40	2.800
95	45	120	--	--	24	▶	3RT10 46-1BB40	2.800	▶	3RT10 46-3BB40	2.800
					220	B	3RT10 46-1BM40	2.800	B	3RT10 46-3BM40	2.800

Size S3

With mounted auxiliary switch block (removable)¹⁾

Terminal designations according to EN 50012

65	30	100	22 E	2	2	24	▶	3RT10 44-1BB44	2.900	--	
						220	B	3RT10 44-1BM44	2.900	--	
80	37	120	22 E	2	2	24	▶	3RT10 45-1BB44	2.900	--	
						220	B	3RT10 45-1BM44	2.900	--	
95	45	120	22 E	2	2	24	▶	3RT10 46-1BB44	2.900	--	
						220	B	3RT10 46-1BM44	2.900	--	

Size S3

With permanently mounted auxiliary switch block for safety applications according to SUVA

Terminal designations according to EN 50012

65	30	50	22 E	2	2	24	▶	3RT10 44-1BB44-3MA0	2.900	--	
80	37	50	22 E	2	2	24	▶	3RT10 45-1BB44-3MA0	2.900	--	
95	45	50	22 E	2	2	24	▶	3RT10 46-1BB44-3MA0	2.900	--	

For other voltages see page 3/26, for contactors with mounted auxiliary switch block please inquire.

For accessories, see page 3/103.

For spare parts, see page 3/116.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ Order No. for the auxiliary switch block (removable): 3RH19 21-1HA22 (2 NO + 2 NC according to EN 50012; 22E).

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

AC/DC operation (40 Hz to 60 Hz, DC)

Withdrawable coils with integrated coil circuit (Varistor)

Auxiliary and control conductors: screw terminals

Main conductors: busbar connections, for 3RT10 54 (55 kW) box terminals¹⁾



3RT1. 5.




3RT1. 6.




3RT1. 7.

Size	Rated data	AC-1, T _U : 40 °C	Auxiliary contacts, lateral	Rated control supply voltage U _s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I _e up to 500 V	Ratings of induction motors at 50 Hz and	Operational current I _e up to	Version							kg
	A	230 V kW 400 V kW 500 V kW 690 V kW	A	NO NC	V AC/DC						

Conventional operating mechanisms

Conventional operating mechanisms															
Screw terminals 															
S6	115	37	55	75	110	160	2	2	110 ... 127 220 ... 240	▶	3RT10 54-1AF36 3RT10 54-1AP36	1 1	1 unit 1 unit	101 101	3.600 3.600
	150	45	75	90	132	185	2	2	110 ... 127 220 ... 240	▶	3RT10 55-6AF36 3RT10 55-6AP36	1 1	1 unit 1 unit	101 101	3.500 3.500
	185	55	90	110	160	215	2	2	110 ... 127 220 ... 240	▶	3RT10 56-6AF36 3RT10 56-6AP36	1 1	1 unit 1 unit	101 101	3.500 3.500
S10	225	55	110	160	200	275	2	2	110 ... 127 220 ... 240	▶	3RT10 64-6AF36 3RT10 64-6AP36	1 1	1 unit 1 unit	101 101	6.500 6.500
	265	75	132	160	250	330	2	2	110 ... 127 220 ... 240	▶	3RT10 65-6AF36 3RT10 65-6AP36	1 1	1 unit 1 unit	101 101	6.500 6.500
	300	90	160	200	250	330	2	2	110 ... 127 220 ... 240	▶	3RT10 66-6AF36 3RT10 66-6AP36	1 1	1 unit 1 unit	101 101	6.500 6.500
S12	400	132	200	250	400	430	2	2	110 ... 127 220 ... 240	▶	3RT10 75-6AF36 3RT10 75-6AP36	1 1	1 unit 1 unit	101 101	10.500 10.500
	500	160	250	355	400	610	2	2	110 ... 127 220 ... 240	▶	3RT10 76-6AF36 3RT10 76-6AP36	1 1	1 unit 1 unit	101 101	10.500 10.500

Conventional operating mechanisms

Conventional operating mechanisms															
Cage Clamp terminals  for coil and auxiliary switch terminals															
S6	115	37	55	75	110	160	2	2	110 ... 127 220 ... 240	B	3RT10 54-3AF36 3RT10 54-3AP36	1 1	1 unit 1 unit	101 101	3.600 3.600
	150	45	75	90	132	185	2	2	110 ... 127 220 ... 240	B	3RT10 55-2AF36 3RT10 55-2AP36	1 1	1 unit 1 unit	101 101	3.600 3.600
	185	55	90	110	160	215	2	2	110 ... 127 220 ... 240	B	3RT10 56-2AF36 3RT10 56-2AP36	1 1	1 unit 1 unit	101 101	3.600 3.600
S10	225	55	110	160	200	275	2	2	110 ... 127 220 ... 240	B	3RT10 64-2AF36 3RT10 64-2AP36	1 1	1 unit 1 unit	101 101	6.600 6.600
	265	75	132	160	250	330	2	2	110 ... 127 220 ... 240	B	3RT10 65-2AF36 3RT10 65-2AP36	1 1	1 unit 1 unit	101 101	6.600 6.600
	300	90	160	200	250	330	2	2	110 ... 127 220 ... 240	B	3RT10 66-2AF36 3RT10 66-2AP36	1 1	1 unit 1 unit	101 101	6.600 6.600
S12	400	132	200	250	400	430	2	2	110 ... 127 220 ... 240	B	3RT10 75-2AF36 3RT10 75-2AP36	1 1	1 unit 1 unit	101 101	10.500 10.500
	500	160	250	355	400	610	2	2	110 ... 127 220 ... 240	B	3RT10 76-2AF36 3RT10 76-2AP36	1 1	1 unit 1 unit	101 101	10.500 10.500

For other voltages, see page 3/26.

For accessories, see page 3/103.

For spare parts, see page 3/117

¹⁾ Alternatively the 3RT10 54-1 contactor (55 kW) can be supplied with busbar connections instead of box terminals. Without additional price. In the 8th position of the Order No. the "1" must be replaced with "6" for screw terminals, e. g. 3RT10 54-6A.36; for Cage Clamp terminals the "3" must be replaced by "2", e. g. 3RT10 54-2A.36.

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

AC/DC operation (40 Hz to 60 Hz, DC)

Withdrawable coils with integrated coil circuit (Varistor)

Main conductors: busbar connections, for 3RT10 54 (55 kW) box terminals¹⁾

Auxiliary and control conductors: Screw terminals



3RT1. 5.



3RT1. 6.



3RT1. 7.

Size	Rated data AC-2 and AC-3, T _v : Up to 60 °C	AC-1, T _v : 40 °C	Auxiliary contacts, lateral	Rated control supply voltage U _s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I _e up to 500 V	Ratings of induction motors at 50 Hz and 690 V	Operational current I _e up to 690 V	Version							kg
	A	230 V kW	400 V kW	500 V kW	690 V kW	A					

Solid-state operating mechanisms · for 24 V DC PLC output

Screw terminals															
S6	115	37	55	75	110	160	2	2	96 ... 127 200 ... 277	A	3RT10 54-1NF36 3RT10 54-1NP36	1 1	1 unit 1 unit	101 101	3.500 3.500
	150	45	75	90	132	185	2	2	96 ... 127 200 ... 277	A	3RT10 55-6NF36 3RT10 55-6NP36	1 1	1 unit 1 unit	101 101	3.500 3.500
	185	55	90	110	160	215	2	2	96 ... 127 200 ... 277	A	3RT10 56-6NF36 3RT10 56-6NP36	1 1	1 unit 1 unit	101 101	3.500 3.500
S10	225	55	110	160	200	275	2	2	96 ... 127 200 ... 277	A	3RT10 64-6NF36 3RT10 64-6NP36	1 1	1 unit 1 unit	101 101	6.700 6.700
	265	75	132	160	250	330	2	2	96 ... 127 200 ... 277	A	3RT10 65-6NF36 3RT10 65-6NP36	1 1	1 unit 1 unit	101 101	6.700 6.700
	300	90	160	200	250	330	2	2	96 ... 127 200 ... 277	B	3RT10 66-6NF36 3RT10 66-6NP36	1 1	1 unit 1 unit	101 101	6.700 6.700
S12	400	132	200	250	400	430	2	2	96 ... 127 200 ... 277	A	3RT10 75-6NF36 3RT10 75-6NP36	1 1	1 unit 1 unit	101 101	10.500 10.500
	500	160	250	355	400	610	2	2	96 ... 127 200 ... 277	A	3RT10 76-6NF36 3RT10 76-6NP36	1 1	1 unit 1 unit	101 101	10.500 10.500

Solid-state operating mechanisms · for 24 V DC PLC output

Cage Clamp terminals															
for coil and auxiliary switch terminals															
S6	115	37	55	75	110	160	2	2	96 ... 127 200 ... 277	B	3RT10 54-3NF36 3RT10 54-3NP36	1 1	1 unit 1 unit	101 101	3.500 3.500
	150	45	75	90	132	185	2	2	96 ... 127 200 ... 277	B	3RT10 55-2NF36 3RT10 55-2NP36	1 1	1 unit 1 unit	101 101	3.500 3.500
	185	55	90	110	160	215	2	2	96 ... 127 200 ... 277	B	3RT10 56-2NF36 3RT10 56-2NP36	1 1	1 unit 1 unit	101 101	3.500 3.500
S10	225	55	110	160	200	275	2	2	96 ... 127 200 ... 277	B	3RT10 64-2NF36 3RT10 64-2NP36	1 1	1 unit 1 unit	101 101	6.700 6.700
	265	75	132	160	250	330	2	2	96 ... 127 200 ... 277	B	3RT10 65-2NF36 3RT10 65-2NP36	1 1	1 unit 1 unit	101 101	6.700 6.700
	300	90	160	200	250	330	2	2	96 ... 127 200 ... 277	B	3RT10 66-2NF36 3RT10 66-2NP36	1 1	1 unit 1 unit	101 101	6.700 6.700
S12	400	132	200	250	400	430	2	2	96 ... 127 200 ... 277	B	3RT10 75-2NF36 3RT10 75-2NP36	1 1	1 unit 1 unit	101 101	10.500 10.500
	500	160	250	355	400	610	2	2	96 ... 127 200 ... 277	B	3RT10 76-2NF36 3RT10 76-2NP36	1 1	1 unit 1 unit	101 101	10.500 10.500

For other voltages, see page 3/26.

For accessories, see page 3/103.

For spare parts, see page 3/115.

¹⁾ Alternatively the 3RT10 54-1 contactor (55 kW) can be supplied with busbar connections instead of box terminals. Without additional price. In the 8th position of the Order No. the "1" must be replaced with "6" for screw terminals, e. g. 3RT10 54-6A.36; for Cage Clamp terminals the "3" must be replaced by "2", e. g. 3RT10 54-2A.36.

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW
AC/DC operation (40 Hz to 60 Hz, DC)
Withdrawable coils with integrated coil circuit (Varistor)
Auxiliary and control conductors: screw terminals
Main conductors: busbar connections, for 3RT10 54 (55 kW) box terminals¹⁾
Remaining lifetime indicator (RLT)


3RT10 56-6P..

3RT10 56-6Q..

Size	Rated data AC-2 and AC-3, T_U : Up to 60 °C						Auxiliary contacts, lateral		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e up to	Ratings of induction motors at 50 Hz and				Operational current I_e up to	Version				Order No.	Price per PU			
	500 V	230 V	400 V	500 V	690 V	690 V	NO	NC	V AC/DC						kg
	A	kW	kW	kW	A	A									
Solid-state operating mechanisms · for 24 V DC PLC output/ PLC relay output, with remaining lifetime indicator (RLT)															
S6	115	37	55	75	110	160	1	1	96 ... 127 200 ... 277	B	3RT10 54-1PF35 3RT10 54-1PP35	1	1 unit	101	4.000
	150	45	75	90	132	185	1	1	96 ... 127 200 ... 277	B	3RT10 55-6PF35 3RT10 55-6PP35	1	1 unit	101	4.000
	185	55	90	110	160	215	1	1	96 ... 127 200 ... 277	B	3RT10 56-6PF35 3RT10 56-6PP35	1	1 unit	101	4.000
S10	225	55	110	160	200	275	1	1	96 ... 127 200 ... 277	B	3RT10 64-6PF35 3RT10 64-6PP35	1	1 unit	101	7.000
	265	75	132	160	250	330	1	1	96 ... 127 200 ... 277	B	3RT10 65-6PF35 3RT10 65-6PP35	1	1 unit	101	7.000
	300	90	160	200	250	330	1	1	96 ... 127 200 ... 277	B	3RT10 66-6PF35 3RT10 66-6PP35	1	1 unit	101	7.000
S12	400	132	200	250	400	430	1	1	96 ... 127 200 ... 277	B	3RT10 75-6PF35 3RT10 75-6PP35	1	1 unit	101	10.500
	500	160	250	355	400	610	1	1	96 ... 127 200 ... 277	B	3RT10 76-6PF35 3RT10 76-6PP35	1	1 unit	101	10.500
Solid-state operating mechanisms · with AS-Interface and remaining lifetime indicator (RLT)															
S6	115	37	55	75	110	160	1	1	96 ... 127 200 ... 277	B	3RT10 54-1QF35 3RT10 54-1QP35	1	1 unit	101	4.000
	150	45	75	90	132	185	1	1	96 ... 127 200 ... 277	B	3RT10 55-6QF35 3RT10 55-6QP35	1	1 unit	101	4.000
	185	55	90	110	160	215	1	1	96 ... 127 200 ... 277	B	3RT10 56-6QF35 3RT10 56-6QP35	1	1 unit	101	4.000
S10	225	55	110	160	200	275	1	1	96 ... 127 200 ... 277	B	3RT10 64-6QF35 3RT10 64-6QP35	1	1 unit	101	7.000
	265	75	132	160	250	330	1	1	96 ... 127 00 ... 277	B	3RT10 65-6QF35 3RT10 65-6QP35	1	1 unit	101	7.000
	300	90	160	200	250	330	1	1	96 ... 127 200 ... 277	B	3RT10 66-6QF35 3RT10 66-6QP35	1	1 unit	101	7.000
S12	400	132	200	250	400	430	1	1	96 ... 127 200 ... 277	B	3RT10 75-6QF35 3RT10 75-6QP35	1	1 unit	101	10.500
	500	160	250	355	400	610	1	1	96 ... 127 200 ... 277	B	3RT10 76-6QF35 3RT10 76-6QP35	1	1 unit	101	10.500

For other voltages, see page 3/26.

For accessories, see page 3/103.

For spare parts, see page 3/117.

¹⁾ Alternatively the 3RT10 54-1 contactor (55 kW) can be supplied with busbar connections instead of box terminals.

Without additional price. In the 8th position of the Order No. the "1" must be replaced with "6", e. g. 3RT10 54-6...35.

3RT, 3TB, 3TF Contactors for Switching Motors

3RT10 contactors, 3-pole, 3 ... 250 kW

Rated control supply voltages (the 10th and 11th position of the order number must be changed)

Rated control supply voltage U_s	3RT10 1	3RT10 2, 3RT10 3, 3RT10 4	3RT14 4	3RT13 1, 3RT15 1	3RT13 2 ... 3RT13 4, 3RT15 2 and 3RT15 3	3RT16
------------------------------------	---------	---------------------------------	---------	---------------------	---	-------

Sizes S00 ... S3

AC operation¹⁾

Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz²⁾)

24 V AC	B0	B0	B0	B0	B0	B0
42 V AC	D0	D0	D0	D0	--	--
48 V AC	H0	H0	H0	H0	--	--
110 V AC	F0	F0	F0	F0	F0	F0
230 V AC	P0	P0	P0	P0	P0	P0
400 V AC	V0	V0	V0	V0	V0	V0

Solenoid coils for 50 and 60 Hz²⁾

24 V AC	B0	C2	C2	B0	C2	C2
42 V AC	D0	D2	D2	D0	D2	--
48 V AC	H0	H2	H2	H0	H2	--
110 V AC	F0	G2	G2	F0	G2	G2
220 V AC	N2	N2	N2	N2	N2	N2
230 V AC	P0	L2	L2	P0	L2	L2

Solenoid coils (for USA and Canada³⁾)

50 Hz	60 Hz						
110 V AC	120 V AC	K6	K6	K6	K6	K6	K6
220 V AC	240 V AC	P6	P6	P6	P6	P6	P6

Solenoid coils (for Japan)

50/60 Hz ⁴⁾	60 Hz ⁵⁾						
100 V AC	110 V AC	G6	G6	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6	R6	R6

DC operation¹⁾

12 V DC	A4	--	--	A4	--	--
24 V DC	B4	B4	B4	B4	B4	--
42 V DC	D4	D4	D4	D4	D4	--
48 V DC	W4	W4	W4	W4	--	--
60 V DC	E4	E4	E4	--	--	--
110 V DC	F4	F4	F4	F4	F4	--
125 V DC	G4	G4	G4	G4	G4	--
220 V DC	M4	M4	M4	M4	M4	--
230 V DC	P4	P4	P4	P4	--	--

Sizes S6 ... S12

AC/DC operation (AC 40 ... 60 Hz, DC)

Conventional operating mechanisms

$U_s \text{ min} \dots U_s \text{ max}$ ⁶⁾	Contactor type	3RT1. 5.-.A 3RT1. 6.-.A 3RT1. 7.-.A	$U_s \text{ min} \dots U_s \text{ max}$ ⁶⁾	Contactor type	3RT1. 5.-.A 3RT1. 6.-.A 3RT1. 7.-.A
23 ... 26 V AC/DC	B3		240 ... 277 V	U3	
42 ... 48 V AC/DC	D3		380 ... 420 V	V3	
110 ... 127 V	F3		440 ... 480 V	R3	
200 ... 220 V	M3		500 ... 550 V	S3	
220 ... 240 V	P3		575 ... 600 V	T3	

Solid-state operating mechanism

$U_s \text{ min} \dots U_s \text{ max}$ ⁶⁾	Contactor type	3RT1. 5.-.N 3RT1. 6.-.N 3RT1. 7.-.N	3RT1. 5.-.P/Q 3RT1. 6.-.P/Q 3RT1. 7.-.P/Q
21 ... 27.3 V AC/DC	B3		--
96 ... 127 V AC/DC	F3		F3
200 ... 277 V	P3		P3

Examples

AC operating mechanism	3RT10 23-1AP00	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC.
	3RT10 23-1AG20	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC.
DC operating mechanism	3RT10 34-3BB40	Contactor with Cage Clamp terminals; for rated control supply voltage 24 V DC.
	3RT10 34-3BG40	Contactor with Cage Clamp terminals; for rated control supply voltage 125 V DC.

1) For deviating coil voltages and coil operating ranges of sizes S00 and S0, the 24 V DC SITOP Power power supply unit with wide range input (93 to 264 V AC; 30 to 264 V DC) can be used for coil excitation (see "Power Supplies" → "SITOP Power Power Supplies").

2) Coil operating range
at 50 Hz: 0.8 to 1.1 × U_s
at 60 Hz: 0.85 to 1.1 × U_s .

3) Coil operating range
Size S00: at 50 Hz: 0.85 to 1.1 × U_s
at 60 Hz: 0.8 to 1.1 × U_s
Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to 1.1 × U_s .

4) Coil operating range
Size S00: at 50/60 Hz: 0.85 to 1.1 × U_s
Sizes S0 to S3: at 50 Hz: 0.8 to 1.1 × U_s
at 60 Hz: 0.85 to 1.1 × U_s .

5) Coil operating range
at 60 Hz: 0.8 to 1.1 × U_s .

6) Operating range:
0.8 × $U_s \text{ min}$ to 1.1 × $U_s \text{ max}$.

3RT, 3TB, 3TF Contactors for Switching Motors

3RT12 vacuum contactors, 3-pole, 110 ... 250 kW

Overview

UC operation

The contactors can be operated with AC (40 to 60 Hz) as well as with DC.

Two types of solenoid operation are available:

- Conventional operating mechanism, version 3RT12...-A
- Solid-state operating mechanism, version 3RT12...-N

Withdrawable coils

For simple coil replacement, e. g. if the application is replaced, the solenoid coil can be pulled out upwards after the release mechanism has been actuated and can be replaced by any other coil of the same size.

Vacuum interrupters

In contrast with the 3RT10 contactors – the main contacts operate in air under atmospheric conditions – the contact gaps of the

3RT12 vacuum contactors are contained in hermetically enclosed vacuum contact tubes. Neither arcs nor arcing gases are produced. The particular benefit of 3RT12 vacuum contactors, however, is that their electrical endurance is at least twice as long as that of 3RT10 contactors. They are therefore particularly well suited to frequent switching in jogging/mixed operation, e. g. in crane control systems.

Note:

Vacuum contactors are basically unsuitable for switching DC voltage.

Auxiliary contact complement

The contactors can be fitted with up to 8 lateral auxiliary contacts (identical auxiliary switch blocks from S0 to S12). Of these, no more than 4 are permitted to be NC contacts.

Selection and ordering data

AC/DC operation (40 Hz to 60 Hz, DC)

Withdrawable coils with integrated coil circuit (Varistor)

Auxiliary and control conductors: screw terminals

Main conductors: busbar connections



3RT12 6.



3RT12 7.

Size	Rated data						Auxiliary contacts, lateral		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	AC-2 and AC-3, T_U : Up to 60 °C		Ratings of induction motors at 50 Hz and				AC-1, T_U : 40 °C	Operational current I_e up to							
Operational current I_e up to	1000 V	230 V	400 V	500 V	690 V	1000 V			NO	NC	V AC/DC	kg			
Conventional operating mechanisms															
S10	225	55	110	160	200	330	2	2	110 ... 127 220 ... 240	A	3RT12 64-6AF36 3RT12 64-6AP36	1	1 unit	101	7.300
	265	75	132	160	250	330	2	2	110 ... 127 220 ... 240	A	3RT12 65-6AF36 3RT12 65-6AP36	1	1 unit	101	7.300
	300	90	160	200	250	330	2	2	110 ... 127 220 ... 240	A	3RT12 66-6AF36 3RT12 66-6AP36	1	1 unit	101	7.300
S12	400	132	200	250	400	610	2	2	110 ... 127 220 ... 240	A	3RT12 75-6AF36 3RT12 75-6AP36	1	1 unit	101	10.500
	500	160	250	355	500	610	2	2	110 ... 127 220 ... 240	A	3RT12 76-6AF36 3RT12 76-6AP36	1	1 unit	101	10.500
	Solid-state operating mechanisms · for 24 V DC PLC output														
S10	225	55	110	160	200	330	2	2	96 ... 127 200 ... 277	B	3RT12 64-6NF36 3RT12 64-6NP36	1	1 unit	101	7.300
	265	75	132	160	250	330	2	2	96 ... 127 200 ... 277	B	3RT12 65-6NF36 3RT12 65-6NP36	1	1 unit	101	7.300
	300	90	160	200	250	330	2	2	96 ... 127 200 ... 277	B	3RT12 66-6NF36 3RT12 66-6NP36	1	1 unit	101	7.300
S12	400	132	200	250	400	610	2	2	96 ... 127 200 ... 277	B	3RT12 75-6NF36 3RT12 75-6NP36	1	1 unit	101	10.500
	500	160	250	355	500	610	2	2	96 ... 127 200 ... 277	B	3RT12 76-6NF36 3RT12 76-6NP36	1	1 unit	101	10.500

For other voltages see page 3/26.

For more 3TF68/69 vacuum contactors (335 kW and 450 kW), see page 3/28.

For accessories, see page 3/104.

* You can order this quantity or a multiple thereof.

3RT, 3TB, 3TF Contactors for Switching Motors

3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

Selection and ordering data

Auxiliary and control conductors: screw terminals
Main conductors: busbar connections, size 14

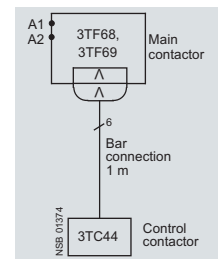
IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102).

The 3TF68/69 contactors are climate-proof.

They are finger-safe according to EN 50274. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices (see [Accessories and Spare Parts](#) on page 3/121)



3TF68



3TF6. 33-.Q.7

Rated data		Ratings of induction motors at 50 Hz and					AC-1	Auxiliary contacts		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Operational current I_e up to 690 V	230 V	400 V	500 V	690 V	1000 V	Operational current I_e (at 40 °C)	Version				Order No.	Price per PU			kg		
A	kW	kW	kW	kW	kW	A	NO	NC	V								
AC operation¹⁾²⁾ · 50/60 Hz																	
630	200	335	434	600	--	700	4	4	110 ... 132 AC A 200 ... 240 AC A	A	3TF68 44-0CF7 3TF68 44-0CM7		1	1 unit	101	20.000	
630	200	335	434	600	600	700	4	4	110 ... 132 AC D 200 ... 240 AC B	D	3TF68 44-8CF7 3TF68 44-8CM7		1	1 unit	101	20.000	
820	260	450	600	800	--	910	4	4	110 ... 132 AC A 200 ... 240 AC A	A	3TF69 44-0CF7 3TF69 44-0CM7		1	1 unit	101	22.200	
820	260	450	600	800	800	910	4	4	110 ... 132 AC D 200 ... 240 AC D	D	3TF69 44-8CF7 3TF69 44-8CM7		1	1 unit	101	22.200	
DC operation · DC economy circuit²⁾																	
630	200	335	434	600	-- 600	700	3	3	DC 24	D	3TF68 33-1DB4 3TF68 33-8DB4		1	1 unit	101	19.500	
820	260	450	600	800	-- 800	910	3	3	DC 24	D	3TF69 33-1DB4 3TF69 33-8DB4		1	1 unit	101	22.500	
AC operation · 50/60 Hz²⁾³⁾ · Version for AC controls which are subject to strong interference																	
630	200	335	434	600	--	700	3	3	110 ... 120 AC C 220 ... 240 AC D 380 ... 420 AC D	C D D	3TF68 33-1QG7 3TF68 33-1QL7 3TF68 33-1QV7		1	1 unit	101	21.000	
						600	700	3	3	220 ... 240 AC D	D	3TF68 33-8QL7		1	1 unit	101	21.000
820	260	450	600	800	--	910	3	3	110 ... 120 AC D 220 ... 240 AC D 380 ... 420 AC D	D D D	3TF69 33-1QG7 3TF69 33-1QL7 3TF69 33-1QV7		1	1 unit	101	23.000	
						800	910	3	3	110 ... 120 AC D 220 ... 240 AC D	D D	3TF69 33-8QG7 3TF69 33-8QL7		1	1 unit	101	23.000

For accessories, see page 3/120, for spare parts, see page 3/130.

1) Built-in surge suppression: varistor circuit.

2) For EMC see note on Technical Information on page 3/1.

3TF68/69 vacuum contactors are supplied with integrated overvoltage damping for the main current paths (see note on Technical Information on page 3/1). The surge suppression circuit is not required for operation in circuits with DC choppers, frequency converters or speed-variable operating

mechanisms, for example. It could be damaged by the voltage peaks and harmonics and cause phase-to-phase short-circuits. For this reason, the contactors can also be supplied without integrated overvoltage damping. Without additional price.

The order number must include **"-Z"** and the order code **"A02"**.

3) With this version, a solenoid system with DC economy circuit and rectifier unit is used. A 3TC44 17-4A. . switchover contactor is included in the scope of supply of the vacuum contactor.

Rated control supply voltages (the 10th and 11th position of the order number must be changed)

Contactor type	3TF68 ...-C/D, 3TF69 ...-C/D
AC operation	
Solenoid coils for 50/60 Hz	
110 ... 132 V	F7
200 ... 240 V	M7
230 ... 277 V	P7
380 ... 460 V	Q7
500 ... 600 V	S7
DC operation	
24 V DC	B4
110 V DC	F4
125 V DC	G4
220 V DC	M4
230 V DC	P4

* You can order this quantity or a multiple thereof.

3RT, 3TB, 3TF Contactors for Switching Motors

3TB5 contactors with DC solenoid system,
3-pole, 55 ... 200 kW

Selection and ordering data

Auxiliary and control conductors: screw terminals
Main conductors: busbar connections

IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102).

The 3TB5 contactors are suitable for use in any climate.

They are finger-safe according to EN 50274.

Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices (see [Accessories and Spare Parts on page 3/121](#)).



3TB50

Size	Rated data AC-2 and AC-3 (up to 55 °C)					AC-1	Auxiliary contacts		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e up to 690 V	Ratings of induction motors at 50 Hz and up to 690 V					Operational current I_e (at 40 °C)	Version							
	A	kW	kW	kW	kW	A	NO	NC	V DC	Order No.	Price per PU				kg
DC operation · DC solenoid system															
6	110	37	55	75	90	170	2	2	24	A	3TB50 17-0BB4	1	1 unit	101	6.500
8	170	55	90	110	132	230	2	2	24	B	3TB52 17-0BB4	1	1 unit	101	8.500
10	250	75	132	160	200	325	2	2	24	D	3TB54 17-0BB4	1	1 unit	101	16.500
12	400	115	200	255	355	425	2	2	24	D	3TB56 17-0BB4	1	1 unit	101	16.500

For accessories, see page 3/120.

For spare parts, see page 3/128.

Rated control supply voltages (the 10th and 11th position of the order number must be changed)

Rated control supply voltage U_s	Contactor type	3TB50/3TB52/3TB54	3TB56
DC operation			
24 V DC		B4	B4
110 V DC		F4	--
220 V DC		M4	M4

3RT, 3TB, 3TF Contactors for Switching Motors

3TF2 contactors, 3-pole, 2.2 ... 4 kW

Overview

AC and DC operation

IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102).

The contactors are suitable for use in any climate.

The contactors with screw terminals are finger-safe according to EN 50274.

The contactors are available in versions with screw terminals, 6.3 mm plug-in terminals and solder pin connections for soldering in printed circuit boards.

Selection and ordering data

Size 00

AC-1: operational current $I_e = 16 A$ (at 55 °C)

Screw terminals

Rated data Utilization categories AC-2 and AC-3					Auxiliary contacts		DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational current I_e At 400/ 380 V	Ratings of induction motors at 50 Hz and				Ident. No.	Version							kg
	230/ 220 V	400/ 380 V	500 V	690/ 660 V		NO	NC						
A	kW	kW	kW	kW									

Contactors with screw terminals · for screw and snap-on mounting onto TH 35 standard mounting rail



3TF20 ...-0...
3TF28 ...-0...

AC operation

								Screw terminals					
5	1.3	2.2	2.9	3.8	10E	1	--	B	3TF28 10-0AP0	1	1 unit	101	0.200
					01E	--	1	C	3TF28 01-0AP0	1	1 unit	101	0.200
9	2.4	4	4	4	10E	1	--	A	3TF20 10-0AP0	1	1 unit	101	0.200
					01E	--	1	A	3TF20 01-0AP0	1	1 unit	101	0.200

DC operation · DC solenoid system

5	1.3	2.2	2.9	3.8	10E	1	--	C	3TF28 10-0BB4	1	1 unit	101	0.220
					01E	--	1	C	3TF28 01-0BB4	1	1 unit	101	0.220
9	2.4	4	4	4	10E	1	--	A	3TF20 10-0BB4	1	1 unit	101	0.220
					01E	--	1	A	3TF20 01-0BB4	1	1 unit	101	0.220

Contactors with 6.3 mm x 0.8 mm flat connectors · for screw and snap-on mounting onto TH 35 standard mounting rail



3TF20 ...-3...

AC operation

								Flat connectors					
9	2.4	4	4	--	10E	1	--	C	3TF20 10-3AP0	1	1 unit	101	0.170
					01E	--	1	C	3TF20 01-3AP0	1	1 unit	101	0.170

DC operation · DC solenoid system

9	2.4	4	4	--	10E	1	--	C	3TF20 10-3BB4	1	1 unit	101	0.190
					01E	--	1	C	3TF20 01-3BB4	1	1 unit	101	0.190

Contactors with 6.3 mm x 0.8 mm flat connectors · for screw fixing (diagonal)



3TF20 ...-7...

AC operation

9	2.4	4	4	--	10E	1	--	C	3TF20 10-7AP0	1	1 unit	101	0.160
					01E	--	1	C	3TF20 01-7AP0	1	1 unit	101	0.160

DC operation · DC solenoid system

9	2.4	4	4	--	10E	1	--	C	3TF20 10-7BB4	1	1 unit	101	0.190
					01E	--	1	C	3TF20 01-7BB4	1	1 unit	101	0.190

Contactors with solder pin connections for printed circuit boards · for screw fixing (diagonal)



3TF20 ...-6...

AC operation

								Solder pin connections					
9	2.4	4	4	--	10E	1	--	C	3TF20 10-6AP0	1	1 unit	101	0.160
					01E	--	1	C	3TF20 01-6AP0	1	1 unit	101	0.160

DC operation · DC solenoid system

9	2.4	4	4	--	10E	1	--	C	3TF20 10-6BB4	1	1 unit	101	0.190
					01E	--	1	C	3TF20 01-6BB4	1	1 unit	101	0.190

For accessories see pages 3/122 and 3/123.

3RT, 3TB, 3TF Contactors for Switching Motors

3TF2 contactors, 3-pole, 2.2 ... 4 kW

Rated data Utilization categories AC-2 and AC-3					Auxiliary contacts		DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational current I_e At 400/ 380 V	Ratings of induction motors at 50 Hz and				Ident. No.	Version	Order No.	Price € per PU				kg
	230/ 220 V	400/ 380 V	500 V	690/ 660 V								
A	kW	kW	kW	kW								

Contactors with permanently mounted auxiliary switch blocks with screw terminals, width 45 mm for screw and snap-on mounting onto TH 35 standard mounting rail



AC operation

5	1.3	2.2	2.9	3.8	11E	1	1	C	3TF29 11-0AP0	1	1 unit	101	0.230
					22E	2	2	C	3TF29 22-0AP0	1	1 unit	101	0.230
9	2.4	4	4	4	11E	1	1	C	3TF22 11-0AP0	1	1 unit	101	0.230
					22E	2	2	C	3TF22 22-0AP0	1	1 unit	101	0.230

DC operation - DC solenoid system

3TF22 ...-0..., 3TF29 ...-0...	5	1.3	2.2	2.9	3.8	11E	1	1	C	3TF29 11-0BB4	1	1 unit	101	0.250
						22E	2	2	C	3TF29 22-0BB4	1	1 unit	101	0.250
	9	2.4	4	4	4	11E	1	1	C	3TF22 11-0BB4	1	1 unit	101	0.250
						22E	2	2	C	3TF22 22-0BB4	1	1 unit	101	0.250

For accessories see pages 3/122 and 3/123.

Rated control supply voltages (the 10th and 11th position of the order number must be changed)

Rated control supply voltage U_s	Contactor type	3TF20, 3TF28
AC operation		
Solenoid coils for AC 50 and 60 Hz		
50 Hz	60 Hz	
24 V AC	29 V AC	B0
110 V AC	132 V AC	F0
230/220 V AC	276 V AC	P0 ¹⁾
AC operation		
Solenoid coils for AC 50/60 Hz		
230 V AC		L2
DC operation		
24 V DC		B4

Rated control supply voltage U_s	Contactor type	3TF22, 3TF29
AC operation		
Solenoid coils for AC 50 and 60 Hz		
50 Hz	60 Hz	
230/220 V AC	276 V AC	P0 ¹⁾
DC operation		
24 V DC		B4

¹⁾ Operating range at 220 V:
0.85 to 1.15 × U_s ; lower operating range limit according to IEC 60947.

Please inquire about other voltages.

3RA13, 3RA14 Contactor Assemblies

3RA13 Reversing Contactor Assemblies

3RA13 complete units, 3 ... 45 kW

Overview

The 3RA13 reversing contactor assemblies can be ordered as follows:

- Size S00 to S3
Fully wired and tested, with mechanical and electrical interlock. For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages ≥ 500 V; a dead interval of 30 ms is recommended for use with voltages ≥ 400 V. These dead times do not apply to assemblies with DC operation.
- Size S00 to S12
As individual parts for customer assembly.

There is also a range of accessories (auxiliary switch blocks, surge suppressors, etc.) that must be ordered separately.

For overload relays for motor protection, see "Protection Equipment" → "Overload Relays".

The 3RA13 contactor assemblies have screw terminals and are suitable for screw and snap-on mounting onto 35 mm standard mounting rails.

Complete units

The fully wired reversing contactor assemblies are suitable for use in any climate. They are finger-safe according to EN 50274.

The contactor assemblies consist of 2 contactors with the same power, with one NC contact in the basic unit. The contactors are mechanically and electrically interlocked (NC contact interlock).

For motor protection, either 3RU11 or 3RB2. overload relays for direct mounting or stand-alone installation or thermistor motor protection tripping units must be ordered separately.

Components for customer assembly

Assembly kits for all sizes are available for customer assembly of reversing contactor assemblies.

Contactors, overload relays, the mechanical interlock (as of size S0) and – for momentary-contact operation – auxiliary switch blocks for latching must be ordered separately.

Rated data AC-2 and AC-3 for AC 50 Hz 400 V		Size	Order No.	Contactor	Mechanical interlock ¹⁾	Mechanical interlock ²⁾	Mechanical interlock ³⁾	Assembly kit	Fully wired and tested contactor assemblies
Rating kW	Operational current I_e A								
3	7	S00	3RT10 15		-- ⁴⁾	--	--	3RA19 13-2A ⁵⁾	3RA13 15-8XB30-1 ..
4	9		3RT10 16						3RA13 16-8XB30-1 ..
5.5	12		3RT10 17						3RA13 17-8XB30-1 ..
5.5	12	S0	3RT10 24	3RA19 24-1A	3RA19 24-2B	--		3RA19 23-2A ⁶⁾	3RA13 24-8XB30-1 ..
7.5	17		3RT10 25						3RA13 25-8XB30-1 ..
11	25		3RT10 26						3RA13 26-8XB30-1 ..
15	32	S2	3RT10 34	3RA19 24-1A	3RA19 24-2B	--		3RA19 33-2A ⁷⁾	3RA13 34-8XB30-1 ..
18.5	40		3RT10 35						3RA13 35-8XB30-1 ..
22	50		3RT10 36						3RA13 36-8XB30-1 ..
30	65	S3	3RT10 44	3RA19 24-1A	3RA19 24-2B	--		3RA19 43-2A ⁷⁾	3RA13 44-8XB30-1 ..
37	80		3RT10 45						3RA13 45-8XB30-1 ..
45	95		3RT10 46						3RA13 46-8XB30-1 ..
55	115	S6	3RT10 54	--	--		3RA19 54-2A	3RA19 53-2M ⁸⁾	--
75	150		3RT10 55						
90	185		3RT10 56						
110	225	S10	3RT10 64	--	--		3RA19 54-2A	3RA19 63-2A ⁸⁾	--
132	265		3RT10 65						
160	300		3RT10 66						
200	400	S12	3RT10 75	--	--		3RA19 54-2A	3RA19 73-2A ⁸⁾	--
250	500		3RT10 76						

1) Can be mounted onto the front.

2) Laterally mountable with one auxiliary contact.

3) Laterally mountable without auxiliary contact.

4) Interlock can only be ordered with assembly kit.

5) Assembly kit contains: mechanical interlock; connecting clips for 2 contactors; wiring modules on the top and bottom.

6) Assembly kit contains: wiring modules on the top and bottom.

7) Assembly kit contains: 2 connecting clips for contactors; wiring modules on the top and bottom.

8) Assembly kit contains: wiring module on the top and bottom.

3RA13, 3RA14 Contactor Assemblies

3RA13 Reversing Contactor Assemblies

3RA13 complete units, 3 ... 45 kW

Selection and ordering data

Fully wired and tested contactor assemblies²⁾ · Size S00 · up to 5.5 kW

Rated data AC-2 and AC-3		Ratings of induction motors at 50 Hz and up to					Rated control supply voltage U_s ¹⁾	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational current I_e up to	400 V	230 V	400 V	500 V	690 V			Order No.	Price per PU				kg	
A	kW	kW	kW	kW	V									

AC operation, 50/60 Hz



3RA13 1.-8XB30-1...

7	2.2	3	3.5	4	AC 24	A	3RA13 15-8XB30-1AB0	1	1 unit	101	0.430
					AC 110	A	3RA13 15-8XB30-1AF0	1	1 unit	101	0.430
					AC 230	▶	3RA13 15-8XB30-1AP0	1	1 unit	101	0.430
9	3	4	4.5	5.5	AC 24	A	3RA13 16-8XB30-1AB0	1	1 unit	101	0.430
					AC 110	A	3RA13 16-8XB30-1AF0	1	1 unit	101	0.430
					AC 230	▶	3RA13 16-8XB30-1AP0	1	1 unit	101	0.430
12	3	5.5	5.5	5.5	AC 24	A	3RA13 17-8XB30-1AB0	1	1 unit	101	0.430
					AC 110	A	3RA13 17-8XB30-1AF0	1	1 unit	101	0.430
					AC 230	▶	3RA13 17-8XB30-1AP0	1	1 unit	101	0.430

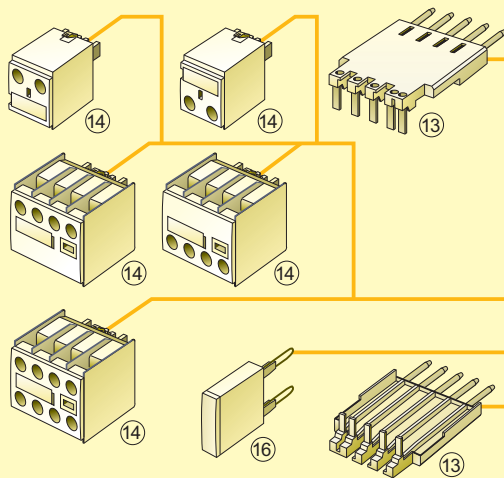
DC operation

7	2.2	3	3.5	4	DC 24	▶	3RA13 15-8XB30-1BB4	1	1 unit	101	0.550
9	3	4	4.5	5.5	DC 24	▶	3RA13 16-8XB30-1BB4	1	1 unit	101	0.550

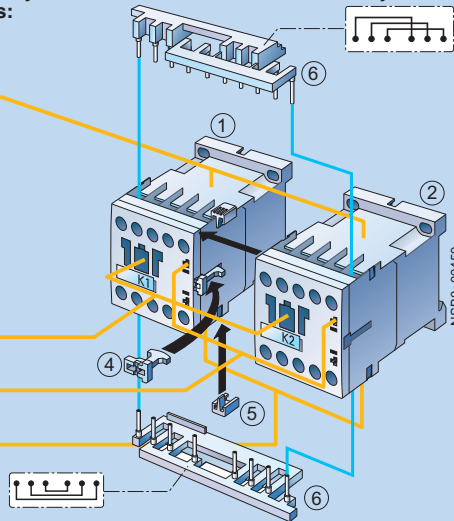
¹⁾ Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .

²⁾ The contactors integrated in the contactor assemblies have no unassigned auxiliary contacts.

Mountable accessories (to be ordered separately):



The fully wired and tested contactor assembly includes the following components:



Accessories	Order No.	Page	Individual parts	Order No.	Page	
				K1	K2	
13 Solder pin adapters	3RT19 16-4KA1	3/111	1 2	3RT10 15	3RT10 15	3/15
14 Auxiliary switch block, front (auxiliary switch block according to EN 50005 must be used)	3RH19 11-1....	3/102	1 2	3RT10 16	3RT10 16	3/15
			1 2	3RT10 17	3RT10 17	3/15
16 Surge suppressors	3RT19 16-1....	3/108, 3/109	4 5 6	3RA19 13-2A		3/38

The assembly kit contains:

- 4 Mechanical interlock
- 5 2 connecting clips for 2 contactors
- 6 Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included¹⁾, interruptible (NC contact interlock)

¹⁾ 3RT10 1. contactors with one NC contact in the basic unit are required for the electrical interlock.

3RA13, 3RA14 Contactor Assemblies

3RA13 Reversing Contactor Assemblies

3RA13 complete units, 3 ... 45 kW

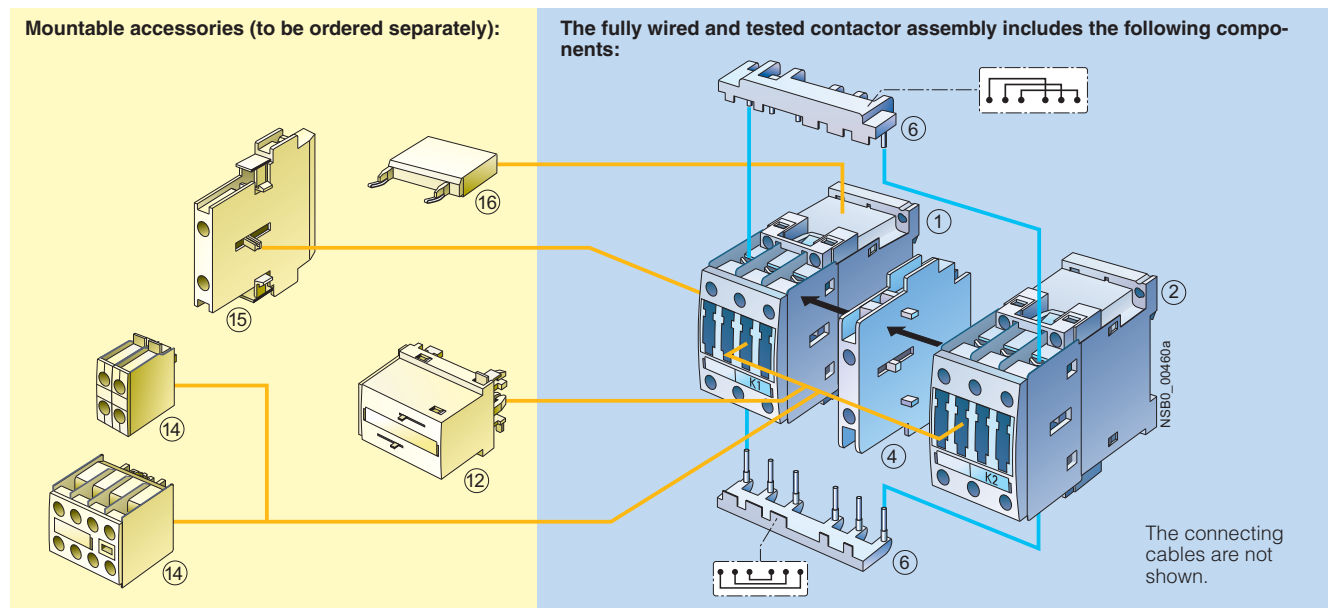
Fully wired and tested contactor assemblies - Size S0 - up to 11 kW



3RA13 2.-8XB30-1...

Rated data AC-2 and AC-3		Ratings of induction motors at 50 Hz and up to			Rated control supply voltage $U_s^{1)}$		DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational current I_e up to	400 V	230 V	400 V	500 V	690 V			Order No.	Price per PU			kg
A	kW	kW	kW	kW	V							
AC operation, 50/60 Hz												
12	3	5.5	7.5	7.5	AC 24	A	3RA13 24-8XB30-1AC2	1	1 unit	101	0.770	
					AC 110	A	3RA13 24-8XB30-1AG2	1	1 unit	101	0.770	
					AC 230	A	3RA13 24-8XB30-1AL2	1	1 unit	101	0.770	
17	4	7.5	10	11	AC 24	A	3RA13 25-8XB30-1AC2	1	1 unit	101	0.770	
					AC 110	A	3RA13 25-8XB30-1AG2	1	1 unit	101	0.770	
					AC 230	A	3RA13 25-8XB30-1AL2	1	1 unit	101	0.770	
25	5.5	11	11	11	AC 24	A	3RA13 26-8XB30-1AC2	1	1 unit	101	0.770	
					AC 110	A	3RA13 26-8XB30-1AG2	1	1 unit	101	0.770	
					AC 230	A	3RA13 26-8XB30-1AL2	1	1 unit	101	0.770	
DC operation												
12	3	5.5	7.5	7.5	DC 24	A	3RA13 24-8XB30-1BB4	1	1 unit	101	1.230	
17	4	7.5	10	11	DC 24	A	3RA13 25-8XB30-1BB4	1	1 unit	101	1.230	
25	5.5	11	11	11	DC 24	A	3RA13 26-8XB30-1BB4	1	1 unit	101	1.230	

1) Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .



Accessories	Order No.	Page	Individual parts	Order No. K1	Order No. K2	Page
12 Mechanical interlock, front	3RA19 24-1A	3/37	① ② Contactor, 5.5 kW	3RT10 24	3RT10 24	3/16
14 Auxiliary switch block, front	3RH19 21-1CA..	3/103	① ② Contactor, 7.5 kW	3RT10 25	3RT10 25	3/16
15 Auxiliary switch block, lateral	3RH19 21-1EA..	3/104	① ② Contactor, 11 kW	3RT10 26	3RT10 26	3/16
16 Surge suppressor	3RT19 26-1....	3/108	④ Mechanical interlock, lateral	3RA19 24-2B		3/37
			⑥ Assembly kit	3RA19 23-2A		3/38

The assembly kit contains wiring modules on the top and bottom (they also form the mechanical connection between the contactors).

3RA13, 3RA14 Contactor Assemblies

3RA13 Reversing Contactor Assemblies

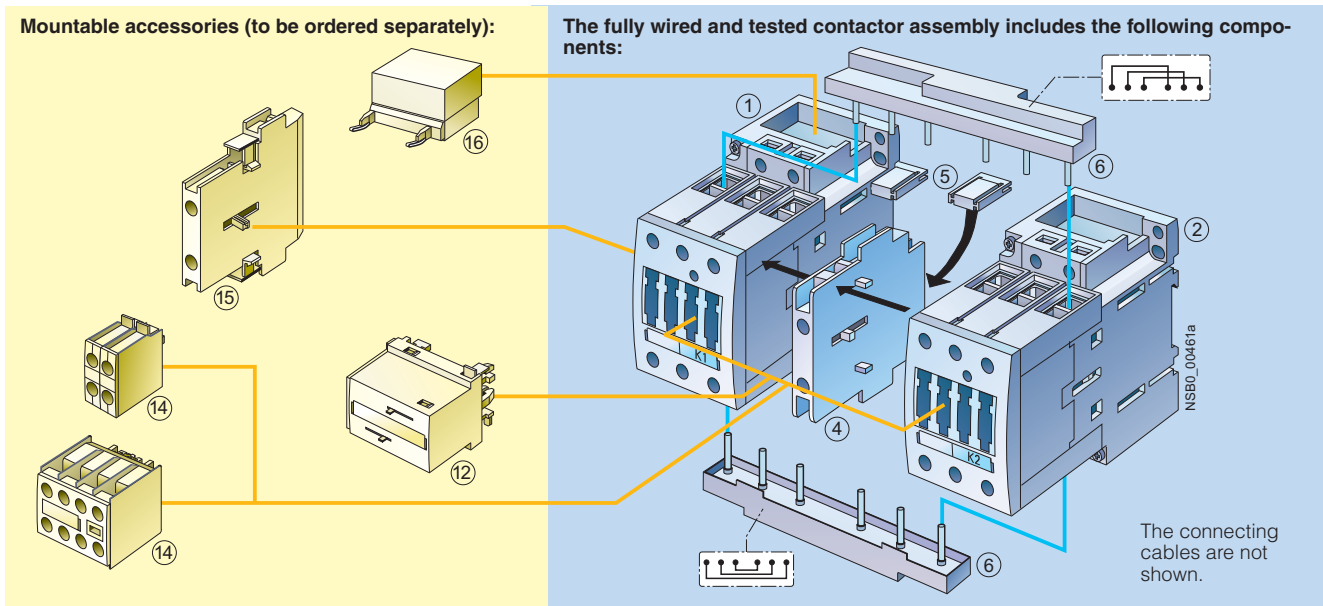
3RA13 complete units, 3 ... 45 kW

Fully wired and tested contactor assemblies · Size S2 · up to 22 kW



Rated data AC-2 and AC-3		Rated control supply voltage U_s ¹⁾		DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Operational current I_e up to	Ratings of induction motors at 50 Hz and										
500 V	230 V	400 V	500 V	690 V	Order No.	Price per PU			kg		
A	kW	kW	kW	V							
AC operation, 50/60 Hz											
32	7.5	15	18.5	18.5	AC 24	A	3RA13 34-8XB30-1AC2	1	1 unit	101	2.300
					AC 110	A	3RA13 34-8XB30-1AG2	1	1 unit	101	2.300
					AC 230	A	3RA13 34-8XB30-1AL2	1	1 unit	101	2.300
40	11	18.5	22	22	AC 24	A	3RA13 35-8XB30-1AC2	1	1 unit	101	2.300
					AC 110	A	3RA13 35-8XB30-1AG2	1	1 unit	101	2.300
					AC 230	A	3RA13 35-8XB30-1AL2	1	1 unit	101	2.300
50	15	22	30	22	AC 24	B	3RA13 36-8XB30-1AC2	1	1 unit	101	2.300
					AC 110	B	3RA13 36-8XB30-1AG2	1	1 unit	101	2.300
					AC 230	A	3RA13 36-8XB30-1AL2	1	1 unit	101	2.300
DC operation											
32	7.5	15	18.5	18.5	DC 24	A	3RA13 34-8XB30-1BB4	1	1 unit	101	3.450
40	11	18.5	22	22	DC 24	A	3RA13 35-8XB30-1BB4	1	1 unit	101	3.450
50	15	22	30	22	DC 24	A	3RA13 36-8XB30-1BB4	1	1 unit	101	3.450

¹⁾ Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .



Accessories	Order No.	Page	Individual parts	Order No.		Page
				K1	K2	
12	3RA19 24-1A	3/37	1 2	3RT10 34	3RT10 34	3/17
14	3RH19 21-1CA..	3/103	1 2	3RT10 35	3RT10 35	3/17
15	3RH19 21-1EA..	3/104	1 2	3RT10 36	3RT10 36	3/17
16	3RT19 26-1... 3RT19 36-1...	3/108	4	3RA19 24-2B		3/37
			5 6	3RA19 33-2A		3/38

The assembly kit contains:

- 5 2 connecting clips for 2 contactors with 10 mm distance
- 6 Wiring modules on the top and bottom for connecting the main current paths

3RA13, 3RA14 Contactor Assemblies

3RA13 Reversing Contactor Assemblies

3RA13 complete units, 3 ... 45 kW

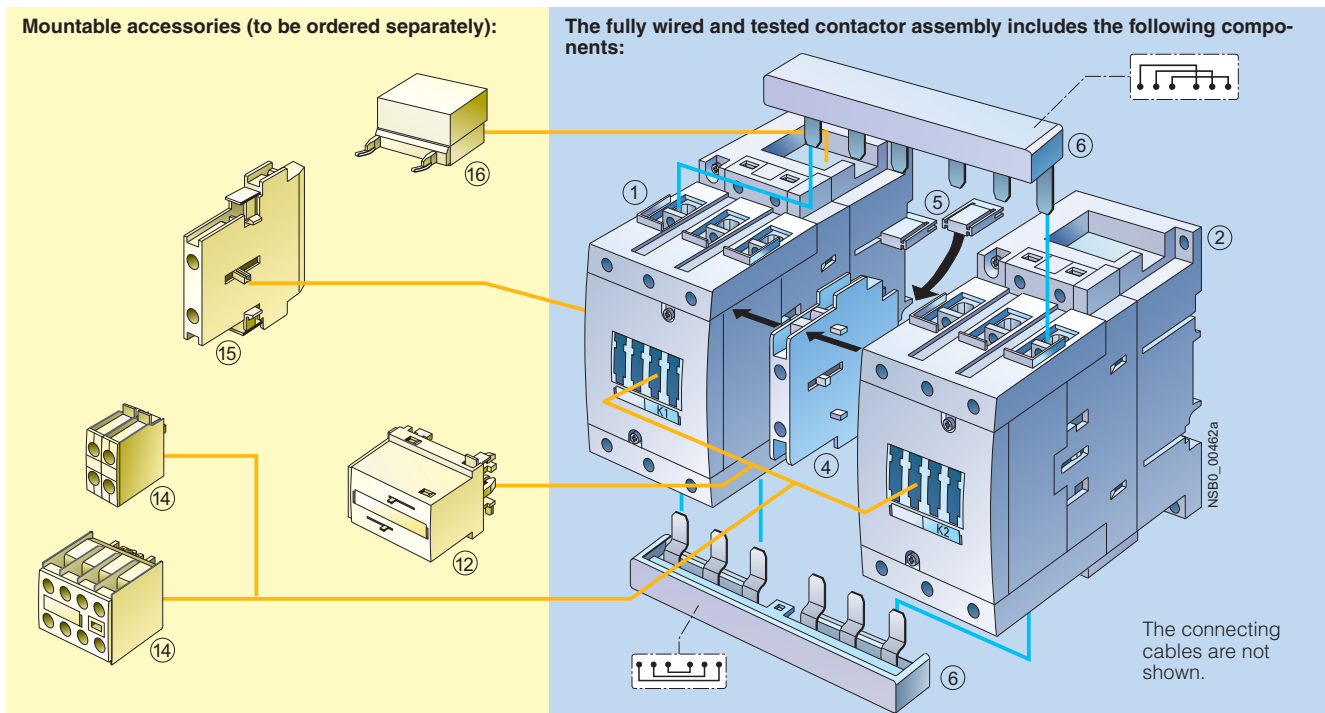
Fully wired and tested contactor assemblies · Size S3 · up to 45 kW

Rated data AC-2 and AC-3		Rated control supply voltage U_s ¹⁾		DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Operational current I_e up to	Ratings of induction motors at 50 Hz and up to				Order No.	Price per PU			kg		
	500 V	230 V	400 V	500 V						690 V	
A	kW	kW	kW	kW	V						
AC operation at 50/60 Hz											
65	18.5	30	37	45	AC 24	B	3RA13 44-8XB30-1AC2	1	1 unit	101	4.500
					AC 110	B	3RA13 44-8XB30-1AG2	1	1 unit	101	4.500
					AC 230	B	3RA13 44-8XB30-1AL2	1	1 unit	101	4.500
80	22	37	45	55	AC 24	B	3RA13 45-8XB30-1AC2	1	1 unit	101	4.500
					AC 110	B	3RA13 45-8XB30-1AG2	1	1 unit	101	4.500
					AC 230	B	3RA13 45-8XB30-1AL2	1	1 unit	101	4.500
95	22	45	55	55	AC 24	B	3RA13 46-8XB30-1AC2	1	1 unit	101	4.500
					AC 110	B	3RA13 46-8XB30-1AG2	1	1 unit	101	4.500
					AC 230	B	3RA13 46-8XB30-1AL2	1	1 unit	101	4.500
DC operation											
65	18.5	30	37	45	DC 24	B	3RA13 44-8XB30-1BB4	1	1 unit	101	6.500
80	22	37	45	55	DC 24	B	3RA13 45-8XB30-1BB4	1	1 unit	101	6.500
95	22	45	55	55	DC 24	B	3RA13 46-8XB30-1BB4	1	1 unit	101	6.500



3RA13 4.-8XB30-1...

¹⁾ Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .




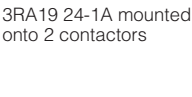



Accessories	Order No.	Page	Individual parts	Order No.		Page
				K1	K2	
12 Mechanical interlock, front	3RA19 24-1A	3/37	1 2 Contactor, 30 kW	3RT10 44	3RT10 44	3/18
14 Auxiliary switch block, front	3RH19 21-1CA..	3/103	1 2 Contactor, 37 kW	3RT10 45	3RT10 45	3/18
15 Auxiliary switch block, lateral	3RH19 21-1EA..	3/104	1 2 Contactor, 45 kW	3RT10 46	3RT10 46	3/18
16 Surge suppressor	3RT19 26-1.... 3RT19 36-1....	3/108	4 Mechanical interlock, lateral	3RA19 24-2B		3/37
			5 6 Assembly kit	3RA19 43-2A		3/38
The assembly kit contains:						
				5 2 connecting clips for 2 contactors with 10 mm distance		
				6 Wiring modules on the top and bottom for connecting the main current paths		

3RA13, 3RA14 Contactor Assemblies

3RA13 Reversing Contactor Assemblies

Components for customer assembly

Selection and ordering data

For contactors	Size	Version	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Type								kg		
Mechanical interlocks										
 <p>3RA19 24-1A mounted onto 2 contactors</p>	3RT10 2	S0	For lateral mounting¹⁾ Each with one auxiliary contact (1 NC contact) per contactor (can only be used to connect contactors which are not more than 1 size larger or smaller. The mounting depth of the smaller contactor has to be adapted.)	▶	3RA19 24-2B	1	1 unit	101	0.060	
	3RT10 3	S2								
	3RT10 4	S3								
	3RT13 2									
	3RT13 3									
3RT13 4										
3RT14 4										
3RT15 2										
3RT15 3										
 <p>3RA19 24-1A mounted onto 2 contactors</p>	3RT10 2	S0	For mounting to the front²⁾ Onto contactors with sizes S0 to S3 (for contactors of the same size) <i>Note:</i> <i>Size S0:</i> <i>Wiring modules must be mounted first.</i> <i>Sizes S2 and S3:</i> <i>Use 3RA19 32-2C mechanical connectors.</i>	▶	3RA19 24-1A	1	1 unit	101	0.050	
	3RT10 3	S2								
	3RT10 4	S3								
	3RT13 2	S0								
	3RT15 2									
 <p>3RA19 54-2A</p>	3RT1. 5 to 3RT1. 7	S6 S10 S12	For lateral mounting, without auxiliary contacts; size S6, S10 and S12 contactors can be interlocked with each other as required; no adaptation of mounting depth is necessary. Contactor clearance 10 mm.	▶	3RA19 54-2A	1	1 unit	101	0.050	
	 <p>3RA19 54-2C</p>	3RT10 4..-A to 3RT10 5	S3 with S6	Adapters, laterally mountable; for mechanical interlocking of contactor S3 (only for AC operation) with contactor S6 using 3RA19 54-2A locking device (must be ordered separately) incl. connecting clips	A	3RA19 54-2C	1	1 unit	101	0.050
		Coil repeat terminals								
 <p>3RA19 23-3B</p>	3RT10 3	S2, S3	For the coil terminals A1 and A2 for reversing starters (contactor sizes S2 and S3). 2 x A1 and 1 x A2 required per assembly (one set contains 10 x A1 and 5 x A2)	B	3RA19 23-3B	1	1 unit	101	0.080	
	3RT10 4									
Base plates										
	3RT10 5	S6	For customer assembly of reversing contactor assemblies	B	3RA19 52-2A	1	1 unit	101	1.300	
	3RT1. 6	S10		B	3RA19 62-2A	1	1 unit	101	2.100	
	3RT1. 7	S12		B	3RA19 72-2A	1	1 unit	101	2.300	


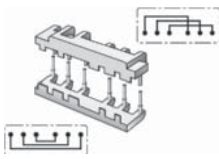
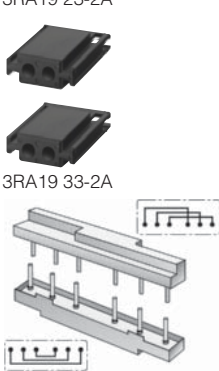
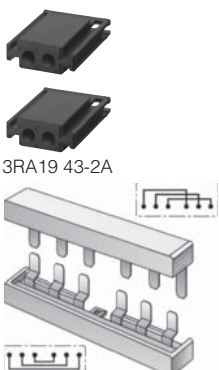
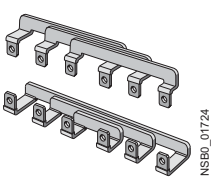
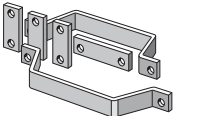
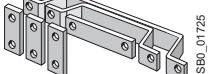

¹⁾ Can also be used for 4-pole contactors with sizes S2 and S3.

²⁾ Can also be used for size S0 4-pole contactors.

3RA13, 3RA14 Contactor Assemblies

3RA13 Reversing Contactor Assemblies

Components for customer assembly

For contactors	Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Type									kg	
Assembly kits for making 3-pole contactor assemblies										
	3RT10 1	S00	The assembly kit contains: mechanical interlock; 2 connecting clips for 2 contactors; wiring modules on the top and bottom	▶	3RA19 13-2A		1	1 unit	101	0.040
	3RT10 2	S0	The assembly kit contains: wiring modules on the top and bottom	▶	3RA19 23-2A		1	1 unit	101	0.060
	3RT10 3	S2	The assembly kit contains: 2 connecting clips for 2 contactors; wiring modules on the top and bottom	▶	3RA19 33-2A		1	1 unit	101	0.120
	3RT10 4	S3	The assembly kit contains: 2 connecting clips for 2 contactors; wiring modules on the top and bottom	▶	3RA19 43-2A		1	1 unit	101	0.300
	3RT10 5	S6	The assembly kit contains: Wiring modules on the top and bottom (for connection with box terminal)	A	3RA19 53-2A		1	1 unit	101	1.300
	3RT10 5	S6	The assembly kit contains: Wiring modules on the top and bottom (for connection without box terminal)	A	3RA19 53-2M		1	1 unit	101	0.900
	3RT1. 6	S10		A	3RA19 63-2A		1	1 unit	101	2.400
	3RT1. 7	S12		A	3RA19 73-2A		1	1 unit	101	3.000

* You can order this quantity or a multiple thereof.

3RA13, 3RA14 Contactor Assemblies

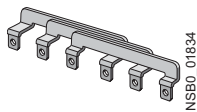
3RA13 Reversing Contactor Assemblies

Components for customer assembly

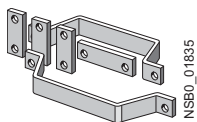
For contactors	Size	Contact- tor clear- ance	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type		mm								kg

Wiring modules, single

3RT10 1	S00-S00	0	Top (in-phase)	▶	3RA19 13-3D		1	5 units	101	0.015
			Bottom (with phase reversal)	▶	3RA19 13-3E		1	5 units	101	0.015
3RT10 2	S0-S0 and S0-S0	0 and 10	Top (in-phase)	▶	3RA19 23-3D		1	5 units	101	0.020
			Bottom (with phase reversal)	▶	3RA19 23-3E		1	5 units	101	0.020
3RT10 3	S2-S2	10	Top (in-phase)	▶	3RA19 33-3D		1	1 unit	101	0.065
			Bottom (with phase reversal)	▶	3RA19 33-3E		1	1 unit	101	0.065
3RT10 4	S3-S3	10	Top (in-phase)	▶	3RA19 43-3D		1	1 unit	101	0.160
			Bottom (with phase reversal)	▶	3RA19 43-3E		1	1 unit	101	0.160
3RT10 5	S6-S6	10	Top (in-phase, for connection with box terminal)	A	3RA19 53-3D		1	1 unit	101	0.620
			Top (with phase reversal, for connection with-out box terminal)	A	3RA19 53-3P		1	1 unit	101	0.440



3RA19 53-3D



3RA19 53-3P

For contactors	Size	Contact- tor clear- ance	Inter- locking	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type		mm									kg

Mechanical connectors

3RT1. 1 ¹⁾	S00-S00	0	Lateral	For 3- and 4-pole contactors	▶	3RA19 12-2H		1	10 units	101	0.010
3RT1. 2	S0-S0	0 10 ²⁾	On front Lateral	For 3- and 4-pole contactors	A ▶	3RA19 22-2C 3RT19 22-2D		1 100	10 units 20 units	101 101	0.025 11.000
3RT1. 3 3RT1. 4	S2-S2 S3-S3	0	On front	For 3-pole contactors	▶	3RA19 32-2C		1	10 units	101	0.010
3RT1. 3 3RT1. 4 3RT1. 5	S2-S2 S3-S3 S6-S6	10	Lateral	For 3-pole contactors	▶	3RA19 32-2D		1	10 units	101	0.010
3RT1. 3	S2-S2	10	Lateral	For 4-pole contactors	A	3RA19 32-2G		1	10 units	101	0.010
3RT1. 4	S3-S3	10	Lateral	For 4-pole contactors	B	3RA19 42-2G		1	10 units	101	0.010



3RA19 12-2H



3RA19 22-2C



3RA19 32-2C



3RA19 32-2D



3RA19 32-2G



3RA19 42-2G

¹⁾ This pack contains 10 additional interlocks.

²⁾ The connector function can be fulfilled with the wiring modules for size S0, a contactor clearance of 10 mm and a lateral interlock.

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

3RA14 complete units, 3 ... 75 kW

Overview

These 3RA14 contactor assemblies for wye-delta starting are designed for standard applications.

Note:

Contactor assemblies for wye-delta starting in special applications such as very heavy starting¹⁾ or wye-delta starting of special motors must be customized. Help with designing such special applications is available from Technical Assistance.

The 3RA14 contactor assemblies for wye-delta starting can be ordered as follows:

- **Sizes S00 to S3:**
Fully wired and tested, with electrical interlock, dead interval of up to 10 s on reversing (size S00 with electrical and mechanical interlocks).
- **Sizes S00 to S12:**
As individual parts for customer assembly.

A dead interval of 50 ms on reversing is already integrated in the time relay function.

There is also a range of accessories (auxiliary switch blocks, surge suppressors, etc.) that must be ordered separately.

For overload relays for motor protection see "Protection Equipment" → "Overload Relays" → "3RB2 Solid-State Overload Relays".

The 3RA14 contactor assemblies have screw terminals and are suitable for screw and snap-on mounting onto 35 mm standard mounting rails.

Fully wired and tested 3RA14 contactor assemblies have one unassigned NO contact which is mounted onto the front of the K3 delta contactor.

A solid-state time-delay auxiliary switch block is snapped onto the front of the complete contactor assemblies, size S00 up to 7.5 kW, while a timing relay is mounted onto the side of sizes S0 to S3, 11 kW to 75 kW.

Rated data at AC 50 Hz 400 V			Size			Accessories for customer assembly		
Rating kW	Operational current I_e A	Motor current A		Line/delta contactor	Star contactor	Order No. complete	Timing relays	Assembly kit A, for double infeed
5.5	12	9.5 ... 13.8	S00-S00-S00	3RT10 15	3RT10 15	3RA14 15-8XB31-1...	3RT19 16-2G.51	--
7.5	17	12.1 ... 17		3RT10 17		3RA14 16-8XB31-1...	3RP15 74-1N.30	
11	25	19 ... 25	S0-S0-S0	3RT10 24	3RT10 24	3RA14 23-8XC21-1...	3RP15 74-1N.30	--
15	32	24.1 ... 34		3RT10 26		3RA14 25-8XC21-1...		
18.5	40	34.5 ... 40						
22	50	31 ... 43	S2-S2-S0	3RT10 34	3RT10 26	3RA14 34-8XC21-1...	3RP15 74-1N.30	3RA19 33-2C ³⁾
30	50	48.3 ... 65		3RT10 34		--		
37	80	62.1 ... 77.8	S2-S2-S2		3RT10 34	3RA14 35-8XC21-1...		3RA19 33-2B ³⁾
45	86	69 ... 86		3RT10 36		3RA14 36-8XC21-1...		
55	115	77.6 ... 108.6	S3-S3-S2	3RT10 44	3RT10 35	3RA14 44-8XC21-1...	3RP15 74-1N.30	3RA19 43-2C ³⁾
75	150	120.7 ... 150		3RT10 45	3RT10 36	3RA14 45-8XC21-1...		
90	160	86 ... 160	S6-S6-S3	3RT10 54	3RT10 44	--	3RP15 74-1N.30	--
110	195	86 ... 195						
132	230	86 ... 230		3RT10 55	3RT10 45			
160	280	86 ... 280		3RT10 56	3RT10 46			
200	350	95 ... 350	S10-S10-S6	3RT10 64	3RT10 54	--	3RP15 74-1N.30	--
250	430	95 ... 430		3RT10 65	3RT10 55			
315	540	277 ... 540	S12-S12-S10	3RT10 75	3RT10 64	--	3RP15 74-1N.30	--
355	610	277 ... 610						
400	690	277 ... 690			3RT10 65			
500	850	277 ... 850		3RT10 76	3RT10 66			

¹⁾ For effective support from Technical Assistance you must provide the following details:

- Rated motor voltage
- Rated motor current
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature

Footnotes for page 3/41:

- ¹⁾ Assembly kit contains mechanical interlock, 3 connecting clips; wiring modules on the top (connection between line and delta contactor) and on the bottom (connection between delta and star contactor); star jumper.
- ²⁾ Assembly kit contains 5 connecting clips; wiring modules on the top (connection between line and delta contactor) and on the bottom (connection between delta and star contactor); star jumper.
- ³⁾ Assembly kit contains wiring module on the bottom (connection between delta and star contactor) and star jumper.
- ⁴⁾ Wiring module on top from reversing contactor assembly (note conductor cross-sections).

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

3RA14 complete units, 3 ... 75 kW

Components for customer assembly

Assembly kits with wiring modules and, if necessary, mechanical connectors are available for contactor assemblies for wye-delta starting. Contactors, overload relays, wye-delta timing relays, auxiliary switches for electrical interlock – if required also feeder terminals, mechanical interlocks (exception: In the case of the assembly kit for size S00 contactor assemblies the mechanical interlock between the delta contactor and the star contactor is included in the kit) and base plates – must be ordered separately.

The wiring kits for sizes S00 and S0 contain the top and bottom main conducting path connections between the line and delta contactors (top) and between the delta and star contactors (bottom).

In the case of sizes S2 to S12 only the bottom main conducting path connection between the delta and star contactors is included in the wiring module, owing to the larger conductor cross-section at the infeed.

Motor protection

Overload relays or thermistor motor protection tripping units can be used for overload protection.

The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.

Note:

The selection of contactor types refers to fused configurations (see note on Technical Information on page 3/1).

Assembly kit B, for single infeed	Star jumper	Base plates	Overload relay, thermal (trip class CLASS 10)		Overload relay, solid-state (CLASS 10 trip class)	
			Setting range	Order No.	Setting range	Order No.
			A		A	
3RA19 13-2B ¹⁾	3RT19 16-4BA31	--	5.5 ... 8	3RU11 16-1HB0	3 ... 12	3RB20 16-1SB0
			7 ... 10	3RU11 16-1JB0		
3RA19 23-2B ²⁾	3RT19 26-4BA31	--	11 ... 16	3RU11 26-4AB0	6 ... 25	3RB20 26-1QB0
			14 ... 20	3RU11 26-4BB0		
			20 ... 25	3RU11 26-4DB0		
3RV19 35-1A	3RT19 26-4BA31	3RA19 32-2E	18 ... 25	3RU11 36-4DB0	12.5 ... 50	3RB20 36-1UB0
			28 ... 40	3RU11 36-4FB0		
		3RT19 36-4BA31	3RA19 32-2F	36 ... 45	3RU11 36-4GB0	
--	3RT19 36-4BA31	3RA19 42-2E	40 ... 50	3RU11 36-4HB0		
			45 ... 63	3RU11 46-4JB0	25 ... 100	3RB20 46-1EB0
			70 ... 90	3RU11 46-4LB0		
3RA19 53-3D ⁴⁾	3RT19 46-4BA31	3RA19 52-2E	--	--	50 ... 200	3RB20 56-1FC2
--	3RT19 56-4BA31	3RA19 62-2E	--	--	55 ... 250	3RB20 66-1GC2
--	3RT19 66-4BA31	3RA19 72-2E	--	--	160 ... 630	3RB20 66-1MC2

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

3RA14 complete units, 3 ... 75 kW

Selection and ordering data

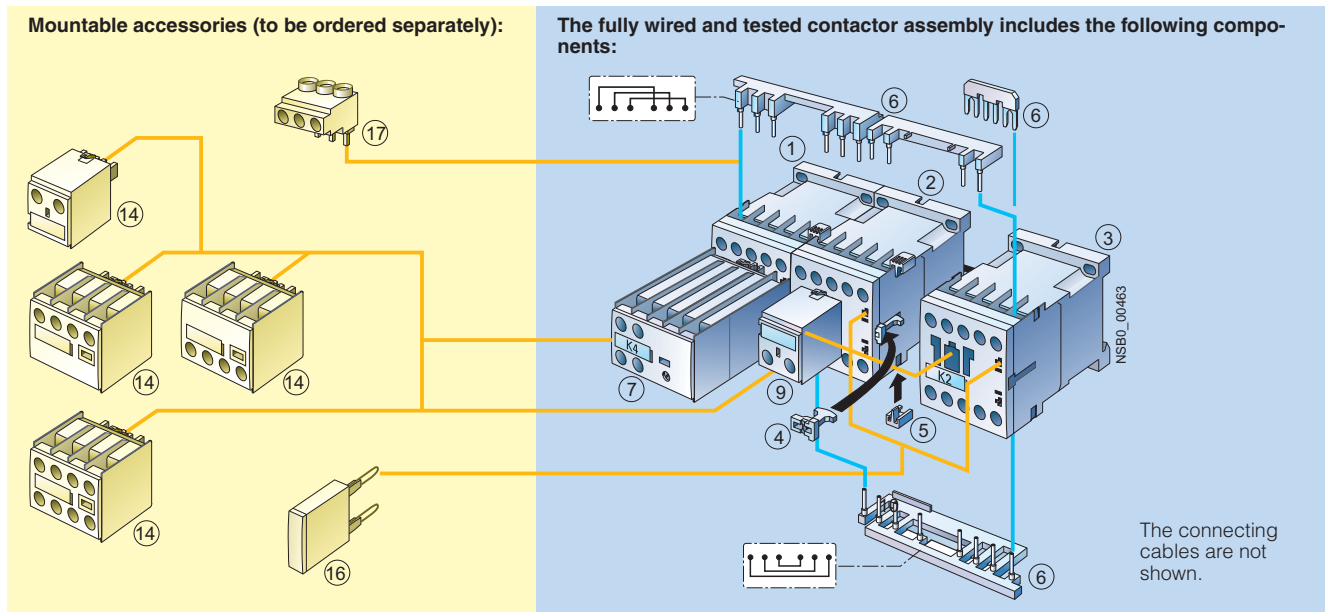
Fully wired and tested contactor assemblies · Size S00-S00-S00 · up to 7.5 kW



3RA14 1..-8XB31-1...

Rated data AC-3		Ratings of induction motors at 50 Hz and up to				Rated control supply voltage U_s ¹⁾	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational current I_e up to	400 V	230 V	400 V	500 V	690 V							
A	kW	kW	kW	kW	V			Order No.	Price per PU			kg
AC operation, 50/60 Hz												
12	3.3	5.5	7.2	9.2	AC 24	C	3RA14 15-8XB31-1AB0	1	1 unit	101	0.950	
					AC 110	C	3RA14 15-8XB31-1AF0	1	1 unit	101	0.950	
					AC 230	▶	3RA14 15-8XB31-1AP0	1	1 unit	101	0.950	
17	4.7	7.5	10.3	9.2	AC 24	B	3RA14 16-8XB31-1AB0	1	1 unit	101	0.990	
					AC 110	B	3RA14 16-8XB31-1AF0	1	1 unit	101	0.990	
					AC 230	▶	3RA14 16-8XB31-1AP0	1	1 unit	101	0.990	
DC operation												
12	3.3	5.5	7.2	9.2	DC 24	B	3RA14 15-8XB31-1BB4	1	1 unit	101	1.120	
17	4.7	7.5	10.3	9.2	DC 24	▶	3RA14 16-8XB31-1BB4	1	1 unit	101	1.120	

¹⁾ Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .



Accessories	Order No.	Page	Individual parts	Order No.			Page
				K1 ¹⁾	K3 ²⁾	K2 ²⁾	
14 Auxiliary switch block, front	3RH19 11-1...	3/102	1 2 3 Contactor, 5.5 kW	3RT10 15	3RT10 15	3RT10 15	3/15
16 Surge suppressors	3RT19 16-1...	3/108, 3/109	1 2 3 Contactor, 7.5 kW	3RT10 17	3RT10 17	3RT10 15	3/15
17 Three-phase feeder terminals	3RA19 13-3K	3/47	7 Solid-state time-delay auxiliary switch block, front	3RT19 16-2G.51			3/106
			9 Auxiliary switch block with 1 unassigned NO contact	3RH19 11-1BA10			3/102
			4 5 6 Assembly kit	3RA19 13-2B			3/47
The assembly kit contains:							
4 Mechanical interlock							
5 3 connecting clips							
6 Wiring modules on the top and bottom for connecting the main and control conducting paths							

¹⁾ Use version with 1 NO.
²⁾ Use version with 1 NC.

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

3RA14 complete units, 3 ... 75 kW

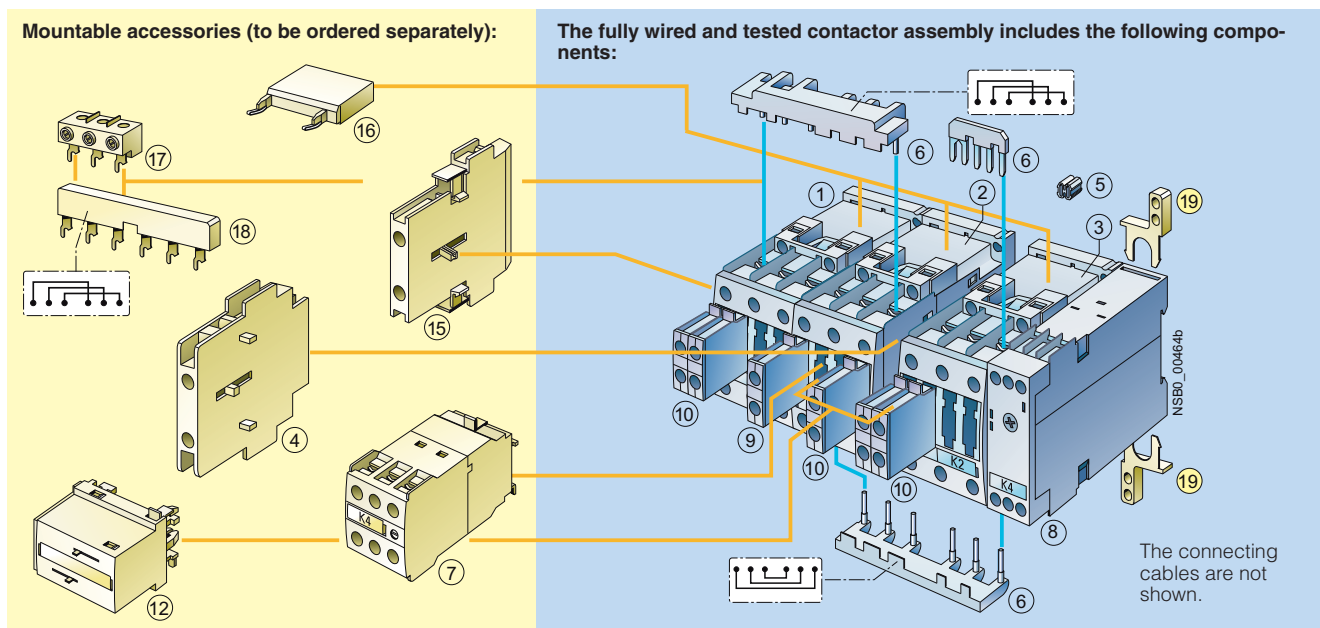
Fully wired and tested contactor assemblies · Size S0-S0-S0 · up to 18.5 kW



3RA14 2.-8XC21-1...

Rated data AC-3		Rated control supply voltage U_s 1)			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational current I_e up to	Ratings of induction motors at 50 Hz and	230 V	400 V	500 V	690 V						kg
A	kW	kW	kW	kW	V						
AC operation, 50/60 Hz											
25	7.1	11	15.6	19	AC 24	C	3RA14 23-8XC21-1AC2	1	1 unit	101	1.800
					AC 110	C	3RA14 23-8XC21-1AG2	1	1 unit	101	1.800
					AC 230	▶	3RA14 23-8XC21-1AL2	1	1 unit	101	1.800
32 / 40	11.4	15 / 18.5	19	19	AC 24	C	3RA14 25-8XC21-1AC2	1	1 unit	101	1.800
					AC 110	C	3RA14 25-8XC21-1AG2	1	1 unit	101	1.800
					AC 230	▶	3RA14 25-8XC21-1AL2	1	1 unit	101	1.800
DC operation											
25	7.1	11	15.6	19	DC 24	▶	3RA14 23-8XC21-1BB4	1	1 unit	101	2.450
32 / 40	11.4	15 / 18.5	19	19	DC 24	▶	3RA14 25-8XC21-1BB4	1	1 unit	101	2.450

1) Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .



Accessories	Order No.	Page	Individual parts	Order No.			Page
				K1	K3	K2	
4 Mechanical interlock, lateral	3RA19 24-2B	3/37	1 2 3 Contactor, 11 kW	3RT10 24	3RT10 24	3RT10 24	3/16
7 Solid-state time-delay auxiliary switch block, front ¹⁾	3RT19 26-2G...	3/106	1 2 3 Contactors, 15/18.5 kW	3RT10 26	3RT10 26	3RT10 24	3/16
12 Mechanical interlock, front	3RA19 24-1A	3/37	8 Timing relay, lateral	3RP15 74-1N.30			4)
15 Auxiliary switch block, lateral	3RH19 21-1EA...	3/104	9 Auxiliary switch block with 1 unassigned NO contact	3RH19 21-1CA10			3/103
16 Surge suppressor	3RT19 26-1...	3/108	10 Auxiliary switch block for local control	3RH19 21-1CA01			3/103
17 Three-phase feeder terminal ²⁾	3RV19 15-5A	3/47	- 2 units	3RH19 21-1CA10			
18 Three-phase busbar ²⁾	3RT19 26-4CC20	3/47	- 3 units	3RA19 23-2B			3/47
19 Push-in lug ³⁾ for timing relay screw fixing	3RP19 03	4)	5 6 Assembly kit				

The assembly kit contains:

- 5 Connecting clips
- 6 Wiring modules on the top and bottom for connecting the main and control paths

1) Generally possible. If a solid-state time-delay auxiliary switch block is mounted onto the front of K3, a standard auxiliary switch block can only be mounted onto the side.

2) 17 and 18 can only be mounted with contactors with screw terminal (coil).

3) Not included in the scope of supply of the preassembled contactor assemblies; can be ordered as an accessory.

4) See "Monitoring and Control Devices: 3RP, 7PV Timing Relays" → "3RP15 Timing Relays in Industrial Enclosure, 22.5 mm".

* You can order this quantity or a multiple thereof.

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

3RA14 complete units, 3 ... 75 kW

Fully wired and tested contactor assemblies · Size S2-S2-S0 · up to 30 kW

Rated data AC-3		Rated control supply voltage U_s ¹⁾		DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational current I_e up to	Ratings of induction motors at 50 Hz and								
400 V	230 V 400 V 500 V 690 V				Order No.	Price per PU			
A	kW kW kW kW	V							kg

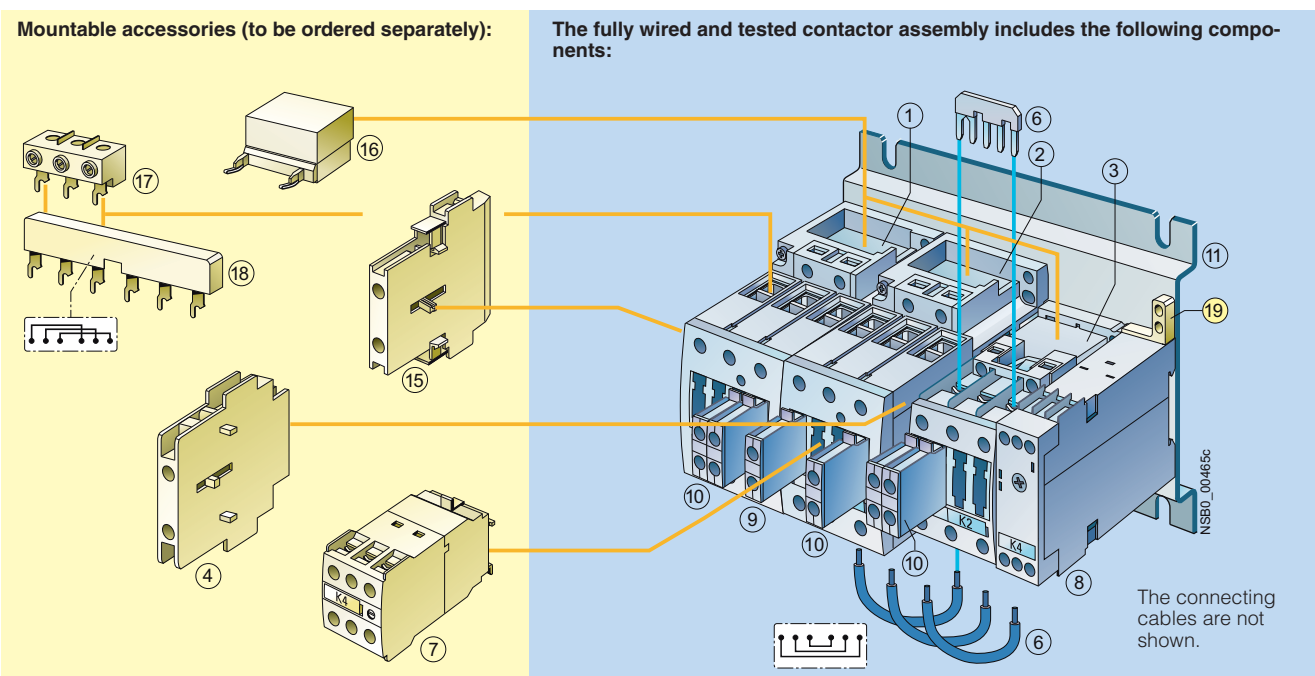
AC operation, 50/60 Hz											
50 / 65	19.6	22 / 30	35	34	AC 24 AC 110 AC 230	C C ▶	3RA14 34-8XC21-1AC2 3RA14 34-8XC21-1AG2 3RA14 34-8XC21-1AL2	1 1 1	1 unit 1 unit 1 unit	101 101 101	3.100 3.100 3.100

DC operation											
50 / 65	19.6	22 / 30	35	34	DC 24	▶	3RA14 34-8XC21-1BB4	1	1 unit	101	4.500



3RA14 34-8XC21-1...

¹⁾ Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .



Accessories	Order No.	Page	Individual parts	Order No.			Page
				K1	K3	K2	
4 Mechanical interlock, lateral Depth compensation required K3: 1.5 mm; K2: 0 mm ¹⁾	3RA19 24-2B	3/37	1 2 3 Contactors, 22/30 kW 8 Timing relay, lateral	3RT10 34	3RT10 34	3RT10 26	3/16 4)
7 Solid-state time-delay auxiliary switch block, front ²⁾	3RT19 26-2G...	3/106	9 Auxiliary switch block with 1 unassigned NO contact	3RH19 21-1CA10			3/103
15 Auxiliary switch block, lateral	3RH19 21-1EA..	3/104	10 Auxiliary switch block for local control	3RH19 21-1CA01 3RH19 21-1CA10			3/103
16 Surge suppressors	3RT19 26-1... 3RT19 36-1...	3/108, 3/109	11 Base plate	3RA19 32-2E			3/47
17 Three-phase feeder terminals	3RV19 35-5A	3/47	6 Assembly kit	3RA19 33-2C			3/47
18 Three-phase busbars	3RV19 35-1A	3/47	The assembly kit contains the star jumper on the top and the wiring module on the bottom for connecting the main current paths.				
19 Push-in lug ³⁾ for timing relay screw fixing	3RP19 03	4)					

¹⁾ Use the 3RA19 32-2B base plate for this configuration.
²⁾ Generally possible. If a solid-state time-delay auxiliary switch block is mounted onto the front of K3, a standard auxiliary switch block can only be mounted onto the side.
³⁾ Not included in the scope of supply of the preassembled contactor assemblies; can be ordered as an accessory.
⁴⁾ See "Monitoring and Control Devices: 3RP, 7PV Timing Relays" → "3RP15 Timing Relays in Industrial Enclosure, 22.5 mm".

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

3RA14 complete units, 3 ... 75 kW

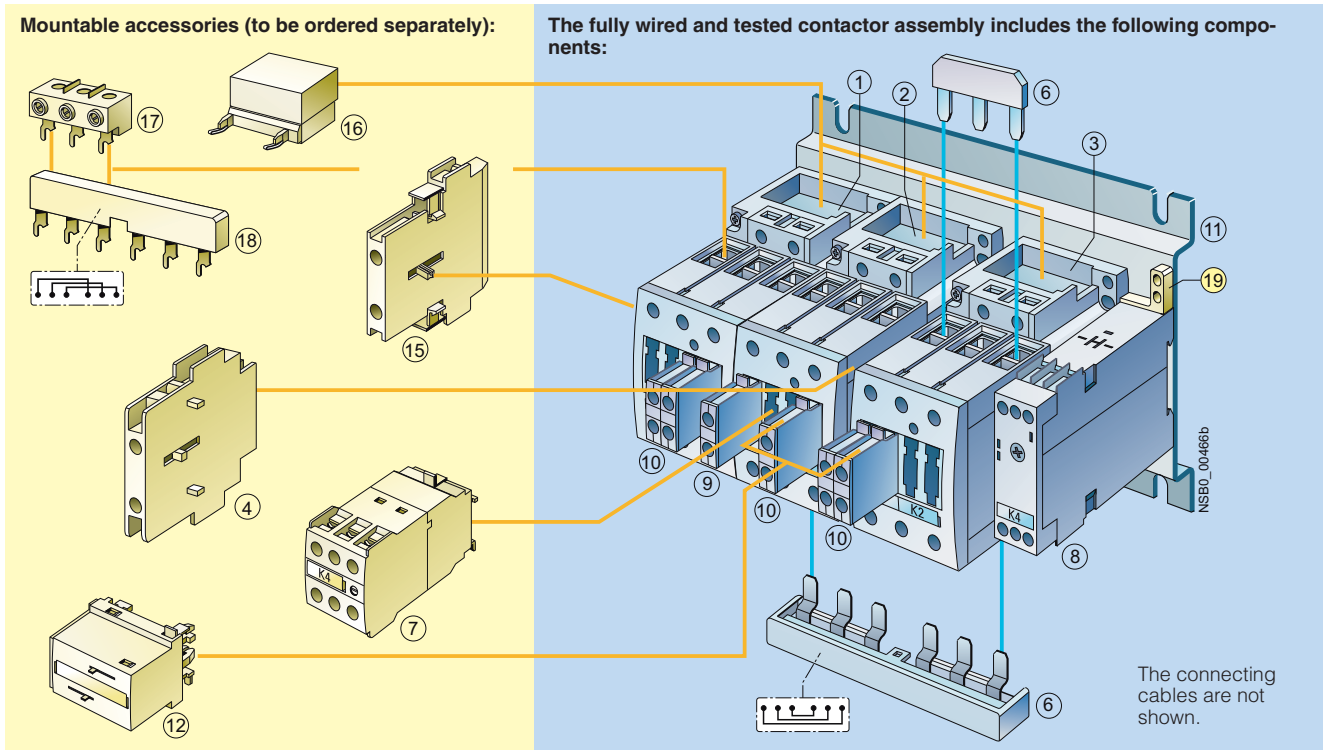
Fully wired and tested contactor assemblies · Size S2-S2-S2 · up to 45 kW



3RA14 3.-8XC21-1...

Rated data AC-3		Rated control supply voltage U_s ¹⁾			DT	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Operational current I_e up to	Ratings of induction motors at 50 Hz and	230 V	400 V	500 V	690 V	Order No.	Price per PU				
A	kW	kW	kW	kW	V				kg		
AC operation, 50/60 Hz											
80	25	37	51	63	AC 24	C	3RA14 35-8XC21-1AC2	1	1 unit	101	3.700
					AC 110	C	3RA14 35-8XC21-1AG2	1	1 unit	101	3.700
					AC 230	▶	3RA14 35-8XC21-1AL2	1	1 unit	101	3.700
86	27	45	55	63	AC 24	C	3RA14 36-8XC21-1AC2	1	1 unit	101	3.700
					AC 110	C	3RA14 36-8XC21-1AG2	1	1 unit	101	3.700
					AC 230	▶	3RA14 36-8XC21-1AL2	1	1 unit	101	3.700
DC operation											
80	25	37	51	63	DC 24	B	3RA14 35-8XC21-1BB4	1	1 unit	101	5.500
86	27	45	55	63	DC 24	B	3RA14 36-8XC21-1BB4	1	1 unit	101	5.500

¹⁾ Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .



Accessories	Order No.	Page	Individual parts	Order No.			Page
				K1	K3	K2	
4 Mechanical interlock, lateral	3RA19 24-2B	3/37	1 2 3 Contactor, 37 kW	3RT10 35	3RT10 35	3RT10 34	3/17
7 Solid-state time-delay auxiliary switch block, front ¹⁾	3RT19 26-2G...	3/106	1 2 3 Contactor, 45 kW	3RT10 36	3RT10 36	3RT10 34	3/17
12 Mechanical interlock, front	3RA19 24-1A	3/37	8 Timing relay, lateral	3RP15 74-1N.30			3)
15 Auxiliary switch block, lateral	3RH19 21-1EA..	3/104	9 Auxiliary switch block with 1 unassigned NO contact	3RH19 21-1CA10			3/103
16 Surge suppressor	3RT19 26-1... 3RT19 36-1...	3/108, 3/109	10 Auxiliary switch block for local control	3RH19 21-1CA01			3/103
17 Three-phase feeder terminal	3RV19 35-5A	3/47	- 2 units	3RH19 21-1CA10			
18 Three-phase busbars	3RV19 35-1A	3/47	11 Base plate	3RA19 32-2F			3/47
19 Push-in lug ²⁾ for timing relay screw fixing	3RP19 03	3)	6 Assembly kit	3RA19 33-2B			3/47

The assembly kit contains the star jumper on the top and the wiring module on the bottom for connecting the main current paths.

¹⁾ Generally possible. If a solid-state time-delay auxiliary switch block is mounted onto the front of K3, a standard auxiliary switch block can only be mounted onto the side.

²⁾ Not included in the scope of supply of the preassembled contactor assemblies; can be ordered as an accessory.

³⁾ See "Monitoring and Control Devices: 3RP, 7PV Timing Relays" → "3RP15 Timing Relays in Industrial Enclosure, 22.5 mm".

* You can order this quantity or a multiple thereof.

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

3RA14 complete units, 3 ... 75 kW

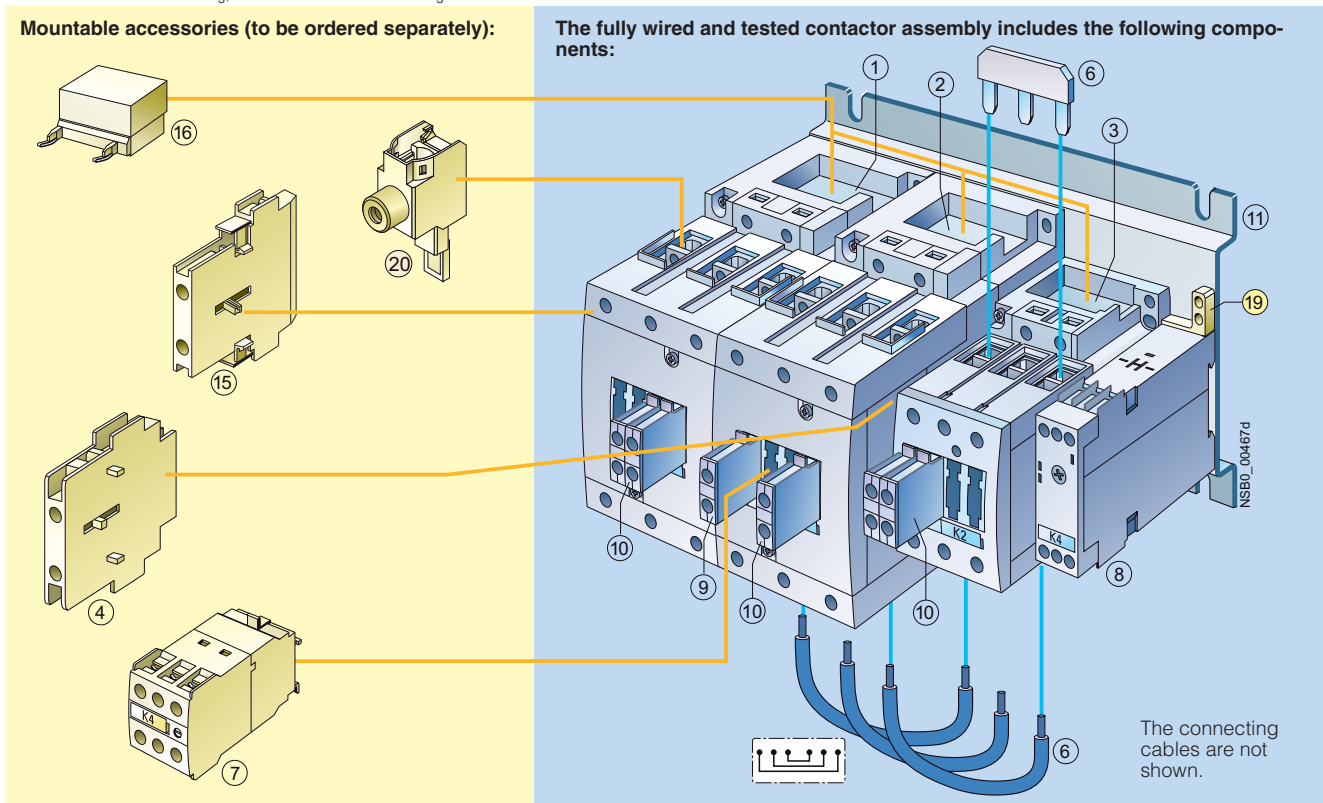
Fully wired and tested contactor assemblies · Size S3-S3-S2 · up to 75 kW



3RA14 4.-8XC21-1...

Rated data AC-3		Rated control supply voltage U_s ¹⁾		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Operational current I_e up to	Ratings of induction motors at 50 Hz and	230 V	400 V	500 V	690 V					kg	
A	kW	kW	kW	kW	V						
AC operation, 50/60 Hz											
115	37	55	81	93	AC 24	B	3RA14 44-8XC21-1AC2	1	1 unit	101	6.000
					AC 110	B	3RA14 44-8XC21-1AG2	1	1 unit	101	6.000
					AC 230	▶	3RA14 44-8XC21-1AL2	1	1 unit	101	6.000
150	47	75	103	110	AC 24	B	3RA14 45-8XC21-1AC2	1	1 unit	101	6.000
					AC 110	B	3RA14 45-8XC21-1AG2	1	1 unit	101	6.000
					AC 230	▶	3RA14 45-8XC21-1AL2	1	1 unit	101	6.000
DC operation											
115	37	55	81	93	DC 24	B	3RA14 44-8XC21-1BB4	1	1 unit	101	8.600
150	47	75	103	110	DC 24	B	3RA14 45-8XC21-1BB4	1	1 unit	101	8.600

¹⁾ Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s ; at 60 Hz: 0.85 ... 1.1 x U_s .



Accessories	Order No.	Page	Individual parts	Order No.			Page
				K1	K3	K2	
4 Mechanical interlock, lateral Depth compensation required K3: 0 mm; K2: 27.5 mm ¹⁾	3RA19 24-2B	3/37	1 2 3	3RT10 44	3RT10 44	3RT10 35	3/17
			1 2 3	3RT10 45	3RT10 45	3RT10 36	3/17
7 Solid-state time-delay auxiliary switch block, front ²⁾	3RT19 26-2G...	3/106	8	3RP15 74-1N.30			4)
15 Auxiliary switch block, lateral	3RH19 21-1EA...	3/104	9	3RH19 21-1CA10			3/103
16 Surge suppressor	3RT19.6-1...	3/108	10				
19 Push-in lug ³⁾ for timing relay screw fixing	3RP19 03	4)	11	- 2 units	3RH19 21-1CA01		
				- 3 units	3RH19 21-1CA10		3/103
20 Single-phase feeder terminals	3RA19 43-3L	3/47	6		3RA19 42-2E		3/47
					3RA19 43-2C		3/47

¹⁾ Use the 3RA19 42-2B base plate for this configuration.

²⁾ Generally possible. If a solid-state time-delay auxiliary switch block is mounted onto the front of K3, a standard auxiliary switch block can only be mounted onto the side.

³⁾ Not included in the scope of supply of the preassembled contactor assemblies; can be ordered as an accessory.

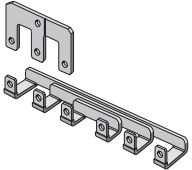
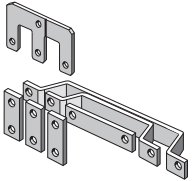
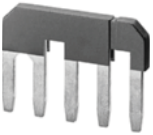
⁴⁾ See "Monitoring and Control Devices: 3RP, 7PV Timing Relays" → "3RP15 Timing Relays in Industrial Enclosure, 22.5 mm".

* You can order this quantity or a multiple thereof.

3RA13, 3RA14 Contactor Assemblies

3RA14 Contactor Assemblies for Wye-Delta Starting

Components for customer assembly
Selection and ordering data

Version	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Assembly kits								
The assembly kit contains: mechanical interlock; 3 connecting clips star jumper, wiring modules on the top and bottom	S00-S00-S00	▶	3RA19 13-2B		1	1 unit	101	0.050
The assembly kit contains: 5 connecting clips star jumper, wiring modules on the top and bottom	S0-S0-S0	▶	3RA19 23-2B		1	1 unit	101	0.060
The assembly kit contains: star jumper, wiring module on the bottom	S2-S2-S0	▶	3RA19 33-2C		1	1 unit	101	0.060
	S2-S2-S2	▶	3RA19 33-2B		1	1 unit	101	0.070
	S3-S3-S2	▶	3RA19 43-2C		1	1 unit	101	0.140
	S3-S3-S3	▶	3RA19 43-2B		1	1 unit	101	0.160
(Wiring module on the top is not included in the scope of supply. A double infeed between the line contactor and the delta contactor is recommended.)	S6-S6-S6	A	3RA19 53-2B		1	1 unit	101	0.850
	S6-S6-S6	A	3RA19 53-2N		1	1 unit	101	0.600
	S10-S10-S10	A	3RA19 63-2B		1	1 unit	101	1.800
	S12-S12-S12	B	3RA19 73-2B		1	1 unit	101	2.200
 NSB0_01836 3RA19 53-2B								
 NSB0_01837 3RA19 53-2N, 3RA19 63-2B, 3RA19 73-2B								
Single-phase feeder terminals								
Conductor cross-section: 95 mm ²	S3	A	3RA19 43-3L		1	1 unit	101	0.280
Three-phase feeder terminal								
Feeder terminal block for the line contactor for large conductor cross-sections								
Conductor cross-section: 6 mm ²	S00	▶	3RA19 13-3K		1	1 unit	101	0.020
Conductor cross-section: 25 mm ²	S0	▶	3RV19 25-5AB		1	1 unit	101	0.041
Conductor cross-section: 50 mm ²	S2	▶	3RV19 35-5A		1	1 unit	101	0.110
Three-phase busbars								
Bridging phase-by-phase of all input terminals of								
the line contactor (K1) and	S0	D	3RT19 26-4CC20		1	1 unit	101	0.030
the delta contactor (K3)	S2	▶	3RV19 35-1A		1	1 unit	101	0.150
Links for paralleling, 3-pole (star jumpers)								
Without connection terminal	S00	▶	3RT19 16-4BA31		1	1 unit	101	0.010
(the links for paralleling can be reduced by one pole)	S0	▶	3RT19 26-4BA31		1	1 unit	101	0.010
	S2	▶	3RT19 36-4BA31		1	1 unit	101	0.020
	S3	▶	3RT19 46-4BA31		1	1 unit	101	0.030
	S6¹⁾	▶	3RT19 56-4BA31		1	1 unit	101	0.160
	S10, S12¹⁾	▶	3RT19 66-4BA31		1	1 unit	101	0.500
 3RT19 26-4BA31								
Base plates								
For customer assembly of contactor assemblies for wye-delta starting with a laterally mounted timing relay								
Side-by-side mounting	S2, S2, S0	B	3RA19 32-2E		1	1 unit	101	0.450
10 mm distance between K3 and K2	S2, S2, S2	B	3RA19 32-2F		1	1 unit	101	0.480
Side-by-side mounting	S3, S3, S2	B	3RA19 42-2E		1	1 unit	101	0.870
10 mm distance between K1, K3 and K2	S6, S6, S3	B	3RA19 52-2E		1	1 unit	101	1.800
	S6, S6, S6	B	3RA19 52-2F		1	1 unit	101	1.950
	S10, S10, S6	B	3RA19 62-2E		1	1 unit	101	3.180
	S10, S10, S10	B	3RA19 62-2F		1	1 unit	101	3.400
	S12, S12, S10	B	3RA19 72-2E		1	1 unit	101	3.600
	S12, S12, S12	B	3RA19 72-2F		1	1 unit	101	3.700
For customer assembly of contactor assemblies for wye-delta starting with a front-mounted timing relay, 10 mm distance between K1, K3 and K2	S2, S2, S0	B	3RA19 32-2B		1	1 unit	101	0.450
	S2, S2, S2	B	3RA19 32-2B		1	1 unit	101	0.450
	S3, S3, S2	B	3RA19 42-2B		1	1 unit	101	0.700

¹⁾ The 3RT19 56-4EA1 (S6) or 3RT19 66-4EA1 (S10, S12) cover can be used for touch protection.

* You can order this quantity or a multiple thereof.

3TD, 3TE Contactor Assemblies

3TD6 reversing contactor assemblies, 335 kW

Overview

The contactor assemblies are suitable for use in any climate and the contactors are mechanically interlocked. They are finger-safe according to EN 50274.

Complete units and components for customer assembly are available. For motor protection, either overload relays for stand-alone installation or thermistor motor protection releases must be ordered separately.

Complete units




3TD68 contactor assemblies each consist of two mechanically interlocked 3TF68 contactors. Electrical interlocking is wired. The main and control circuits are wired according to the schematics.

An internal circuit diagram, a type designation and an unit labeling plate are provided on a common cover.

Auxiliary contacts

The contactor assemblies each have 2 NO + 2 NC contacts per contactor. 1 NO + 1 NC contacts with momentary-contact operation and 2 NO + 1 NC contacts with continuous operation are unassigned.

Selection and ordering data

Size	Rated data AC-3					Auxiliary contacts per direction of rotation		Rated control supply voltage U_s	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e up to	Ratings of induction motors at 50 Hz and				Version								
	690 V	230 V	400 V	500 V	690 V			V AC						kg
	A	kW	kW	kW	kW	NO	NC			Order No.	Price per PU			

Complete units

AC operation, 50/60 Hz

14	630	200	335	434	600	4	4	110 ... 132	C	3TD68 04-2CF7	1	1 unit	101	56.000
								200 ... 240	C	3TD68 04-2CM7	1	1 unit	101	56.000

3TD, 3TE Contactor Assemblies

**3TE6 contactor assemblies for wye-delta starting,
630 kW**

Overview

The contactor assemblies are suitable for use in any climate. They are finger-safe according to EN 50274.

3TE contactor assemblies are available as complete units and components for customer assembly.


The complete unit combinations are optionally supplied without a main conducting path connection between the line contactor and the delta contactor.

Motor protection

3TE68 contactor assemblies are supplied without overload protection. Overload relays or thermistor motor protection releases must be ordered separately.

The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.

Selection and ordering data

Size	Rated data AC-3					Rated control supply voltage U_s	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e up to 690 V	Ratings of induction motors at 50 Hz and										
A	kW	400 V	500 V	690 V		V AC						kg
			kW	kW	kW			Order No.	Price per PU			

Complete units, reversing time up to 10 s

AC operation, 50 Hz

Without main conducting path connection between line and delta contactor

14	1090	315	630	800	1000	110	C	3TE68 04-5CF0	1	1 unit	101	58.000
						230/220 ¹⁾	D	3TE68 04-5CP0	1	1 unit	101	58.000

For motor protection, overload relays for stand-alone installation must be ordered separately, see "Protection Equipment" → "Overload Relays" → "3RB2 Solid-State Overload Relays".

¹⁾ Operating range at 220 V:
0.85 ... 1.15 x U_s ;
lower operating range limit according to IEC 60947.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3RT14 Contactors for Switching Resistive Loads (AC-1)

3-pole, 140 ... 690 A

Overview

AC and DC operation (size S3)

UC operation (AC/DC) (sizes S6 to S12)

IEC 60947, EN 60947 (VDE 0660)


The contactors are suitable for use in any climate. They are finger-safe according to EN 50274.

3RT14 contactors are used for switching resistive loads (AC-1) or as contactors, for example for variable-speed operating mechanisms that normally only have to carry the current.

The accessories for the 3RT10 contactors can also be used here.

For more detailed descriptions about the sizes S3 to S12, see "3RT10 Contactors, 3-pole, 3 to 250 kW."

Selection and ordering data

Size	Rated data AC-1, $T_U: 40\text{ °C}$	Rated control supply voltage U_s	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e Up to 690 V	Ratings of AC loads (p.f. = 0.95) at 230 V 400 V 500 V 690 V		Order No.	Price per PU			kg
A		kW kW kW kW V						

For screw and snap-on mounting onto TH 35 and TH 75 standard mounting rail



3RT14 46-1A...0

AC operation

S3	140	53	92	115	159	AC 24, 50 Hz	B	3RT14 46-1AB00	1	1 unit	101	1.850
						AC 110, 50 Hz	B	3RT14 46-1AF00	1	1 unit	101	1.850
						AC 230, 50 Hz	▶	3RT14 46-1AP00	1	1 unit	101	1.850

DC operation · DC solenoid system

S3	140	53	92	115	159	DC 24	▶	3RT14 46-1BB40	1	1 unit	101	2.800
						DC 220	B	3RT14 46-1BM40	1	1 unit	101	2.800

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3RT14 Contactors for Switching Resistive Loads (AC-1)

3-pole, 140 ... 690 A




AC/DC operation (40 Hz to 60 Hz, DC)

Auxiliary and control conductors: screw terminals

Withdrawable coils

Integrated coil circuit (Varistor)

Main conductors: busbar connections

Size	Rated data AC-1, T_U : 40 °C	Ratings of AC loads (p.f. = 0.95) at				Auxiliary contacts		Rated control supply voltage U_s	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e					Version				Order No.	Price per PU			
Up to 690 V		230 V	400 V	500 V	690 V									kg
A		kW	kW	kW	kW	NO	NC	V						

Conventional operating mechanisms

S6	275	105	180	225	310	2	2	110 ... 127 220 ... 240	▶	3RT14 56-6AF36 3RT14 56-6AP36	1	1 unit	101	3.360
S10	400	151	263	329	454	2	2	110 ... 127 220 ... 240	▶	3RT14 66-6AF36 3RT14 66-6AP36	1	1 unit	101	6.600
S12	690	261	454	568	783	2	2	110 ... 127 220 ... 240	A ▶	3RT14 76-6AF36 3RT14 76-6AP36	1	1 unit	101	10.500

3RT14 6.

Solid-state operating mechanisms · for 24 V DC PLC output

S6	275	105	180	225	310	2	2	96 ... 127 200 ... 277	B A	3RT14 56-6NF36 3RT14 56-6NP36	1	1 unit	101	3.400
S10	400	151	263	329	454	2	2	96 ... 127 200 ... 277	B A	3RT14 66-6NF36 3RT14 66-6NP36	1	1 unit	101	6.600
S12	690	261	454	568	783	2	2	96 ... 127 200 ... 277	B A	3RT14 76-6NF36 3RT14 76-6NP36	1	1 unit	101	10.500

Solid-state operating mechanisms · for 24 V DC PLC output/PLC relay output, with remaining lifetime indicator (RLT)

S6	275	105	180	225	310	1	1	96 ... 127 200 ... 277	B B	3RT14 56-6PF35 3RT14 56-6PP35	1	1 unit	101	4.200
S10	400	151	263	329	454	1	1	200 ... 277	B	3RT14 66-6PP35	1	1 unit	101	5.700
S12	690	261	454	568	783	1	1	200 ... 277	B	3RT14 76-6PP35	1	1 unit	101	10.500

Solid-state operating mechanisms · with AS-Interface and remaining lifetime indicator (RLT)

S6	275	105	180	225	310	1	1	96 ... 127 200 ... 277	B B	3RT14 56-6QF35 3RT14 56-6QP35	1	1 unit	101	3.100
S10	400	151	263	329	454	1	1	200 ... 277	B	3RT14 66-6QP35	1	1 unit	101	5.700
S12	690	261	454	568	783	1	1	200 ... 277	B	3RT14 76-6QP35	1	1 unit	101	10.500

For other voltages see page 3/26.

For accessories, see page 3/102.

For spare parts, see page 3/115.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3RT13 Contactors for Switching Resistive Loads (AC-1)

4-pole, 4 NO, 18 ... 140 A

Overview

AC and DC operation

EN 60947-4-1 (VDE 0660 Part 102).

The contactors are suitable for use in any climate. They are finger-safe according to EN 50274.

The accessories for the 3-pole SIRIUS contactors can also be used for the 4-pole versions.

The contactors are also suitable for switching mixed loads in distribution systems (e. g. for supplying heaters, lamps, motors, PC power supply units) with p.f. > 0.8 according to IEC 60947-4-1, test conditions for utilization category AC-1.

Selection and ordering data

AC operation, 4 NO contacts

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT13 1.-1A.00



3RT13 2.-1A.00

Rated data AC-1, T_U : 40/60 °C Operational current I_e	Ratings of AC loads (p.f. = 0.95) at 50 Hz and 400 V	Rated control supply voltage U_s	DT	Screw terminals		Weight per PU approx. kg	DT	Cage Clamp terminals		Weight per PU approx. kg
				Order No.	Price per PU			Order No.	Price per PU	
A	KW	V AC								

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00¹⁾

18 / 16	12 / 11	24, 50/60 Hz	▶	3RT13 16-1AB00	0.200 B	3RT13 16-2AB00	0.200
		110, 50/60 Hz	▶	3RT13 16-1AF00	0.200 B	3RT13 16-2AF00	0.200
		230, 50/60 Hz	▶	3RT13 16-1AP00	0.200 B	3RT13 16-2AP00	0.200
22 / 20	14.5 / 13	24, 50/60 Hz	▶	3RT13 17-1AB00	0.200 B	3RT13 17-2AB00	0.200
		110, 50/60 Hz	▶	3RT13 17-1AF00	0.200 B	3RT13 17-2AF00	0.200
		230, 50/60 Hz	▶	3RT13 17-1AP00	0.200 B	3RT13 17-2AP00	0.200

Size S0

35 / 30 ²⁾	22 / 20	24, 50 Hz	▶	3RT13 25-1AB00	0.400	--	
		110, 50 Hz	▶	3RT13 25-1AF00	0.400	--	
		230, 50 Hz	▶	3RT13 25-1AP00	0.400	--	
40 / 35 ²⁾	26 / 23	24, 50 Hz	▶	3RT13 26-1AB00	0.400	--	
		110, 50 Hz	▶	3RT13 26-1AF00	0.400	--	
		230, 50 Hz	▶	3RT13 26-1AP00	0.400	--	

Size S2

60 / 55	39 / 36	24, 50 Hz	B	3RT13 36-1AB00	0.990	--	
		110, 50 Hz	B	3RT13 36-1AF00	0.990	--	
		230, 50 Hz	▶	3RT13 36-1AP00	0.990	--	

Size S3

110 / 100	72 / 66	24, 50 Hz	B	3RT13 44-1AB00	2.200	--	
		110, 50 Hz	B	3RT13 44-1AF00	2.200	--	
		230, 50 Hz	▶	3RT13 44-1AP00	2.200	--	
140 / 120	92 / 79	24, 50 Hz	B	3RT13 46-1AB00	2.200	--	
		110, 50 Hz	B	3RT13 46-1AF00	2.200	--	
		230, 50 Hz	▶	3RT13 46-1AP00	2.200	--	

Size S00:

Snap-on auxiliary switch blocks according to EN 50005.

Sizes S0 to S3:

Snap-on auxiliary switch blocks according to EN 50012 and EN 50005

(for S0 max. 2 auxiliary contacts) (for more information see [Accessories on page 3/97](#)).

For other voltages see page 3/26.

For accessories, see page 3/102.

For spare parts, see page 3/115.

1) For size S00: Coil operating range
 at 50 Hz: 0.8 ... 1.1 x U_s ,
 at 60 Hz: 0.85 ... 1.1 x U_s .

2) Minimum conductor cross-section 10 mm².

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3RT13 Contactors for Switching Resistive Loads (AC-1)

4-pole, 4 NO, 18 ... 140 A

DC operation · DC solenoid system, 4 NO contacts

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT13 1.-2B..0



3RT13 36-1...0



3RT13 4.-1...0

Rated data AC-1, T_{01} : 40/60 °C	Ratings of AC loads (p.f. = 0.95) at 50 Hz and 400 V	Rated control supply voltage U_s	DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.
				Order No.	Price per PU			Order No.	Price per PU	
A	kW	V DC				kg			kg	

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00

18 / 16	12 / 11	24 220	▶	3RT13 16-1BB40	0.250	▶	3RT13 16-2BB40	0.250
			B	3RT13 16-1BM40	0.250	B	3RT13 16-2BM40	0.250
22 / 20	14.5 / 13	24 220	▶	3RT13 17-1BB40	0.250	A	3RT13 17-2BB40	0.250
			B	3RT13 17-1BM40	0.250	B	3RT13 17-2BM40	0.250

Size S0

35 / 30 ¹⁾	22 / 20	24 220	▶	3RT13 25-1BB40	0.630	--		
			B	3RT13 25-1BM40	0.630	--		
40 / 35 ¹⁾	26 / 23	24 220	▶	3RT13 26-1BB40	0.630	--		
			B	3RT13 26-1BM40	0.630	--		

Size S2

60 / 55	39 / 36	24 220	▶	3RT13 36-1BB40	1.600	--		
			B	3RT13 36-1BM40	1.600	--		

Size S3

110 / 100	72 / 66	24 220	B	3RT13 44-1BB40	3.200	--		
			B	3RT13 44-1BM40	3.200	--		
140 / 120	92 / 79	24 220	B	3RT13 46-1BB40	3.200	--		
			B	3RT13 46-1BM40	3.200	--		

Size S00:

Snap-on auxiliary switch blocks according to EN 50005.

Sizes S0 to S3:

Snap-on auxiliary switch blocks according to EN 50012 and EN 50005
(for S0 max. 2 auxiliary contacts) (for more information see [Accessories on page 3/97](#)).

For other voltages see page 3/26.

For accessories, see page 3/102.

For spare parts, see page 3/115.

¹⁾ Minimum conductor cross-section 10 mm².

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3TK1 Contactors for Switching Resistive Loads (AC-1)

4-pole, 4 NO, 200 ... 1000 A

Overview

EN 60947-4-1 (VDE 0660 Part 102).

The contactors also comply with the requirements of NFC 63-110 and NFC 20-040.

The contactors are suitable for use in any climate. They are finger-safe according to EN 50274. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

The contactors are also suitable for switching mixed loads in distribution systems (e. g. for supplying heaters, lamps, motors, PC power supply units) with p.f. > 0.8 according to IEC 60947-4-1, test conditions for utilization category AC-1.

Solenoid coils for 3TK10 to 3TK13 contactors: as withdrawable coils.

Surge suppression

Control circuit

Solenoid coils for 3TK1 contactors: can be retrofitted with RC elements.

Selection and ordering data

Screw terminals
Screw fixing



3TK13

Rated data AC-1				Auxiliary contacts		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Operational current I_e up to 690 V (at 40 °C)	Ratings of AC loads (p.f. = 0.95) at				Version		V AC	Order No.	Price per PU			kg	
	230 V	400 V	690 V	1000 V	NO	NC							
A	kW	kW	kW	kW									
AC operation													
200	75	130	225	205	2	2	220 ... 230, 50 Hz 230 ... 240, 50 Hz 110/120, 50/60 Hz 24, 50 Hz	B D D D	3TK10 42-0AP0 3TK10 42-0AU0 3TK10 42-0AF0 3TK10 42-0AB0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	101 101 101 101	4.400 4.400 4.400 4.400
250	90	165	280	200	2	2	220 ... 230, 50 Hz 230 ... 240, 50 Hz 110/120, 50/60 Hz 24, 50 Hz	B D D D	3TK11 42-0AP0 3TK11 42-0AU0 3TK11 42-0AF0 3TK11 42-0AB0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	101 101 101 101	4.700 4.700 4.700 4.700
300	110	195	340	325	2	2	220 ... 230, 50 Hz 230 ... 240, 50 Hz 110/120, 50/60 Hz 24, 50 Hz	B D D D	3TK12 42-0AP0 3TK12 42-0AU0 3TK12 42-0AF0 3TK12 42-0AB0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	101 101 101 101	7.200 7.200 7.200 7.200
350	130	230	395	370	2	2	220 ... 230, 50 Hz 230 ... 240, 50 Hz 110/120, 50/60 Hz 24, 50 Hz	B D D D	3TK13 42-0AP0 3TK13 42-0AU0 3TK13 42-0AF0 3TK13 42-0AB0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	101 101 101 101	7.200 7.200 7.200 7.200
550	205	360	620	510	2	2	220 ... 230, 50 Hz ¹⁾ 230 ... 240, 50 Hz 110/120, 50/60 Hz	B D D	3TK14 42-0AP0 3TK14 42-0AU0 3TK14 42-0AF0	1 1 1	1 unit 1 unit 1 unit	101 101 101	19.000 19.000 19.000
800	300	525	905	575	2	2	220 ... 230, 50 Hz ¹⁾ 230 ... 240, 50 Hz 110/120, 50/60 Hz	B D D	3TK15 42-0AP0 3TK15 42-0AU0 3TK15 42-0AF0	1 1 1	1 unit 1 unit 1 unit	101 101 101	19.000 19.000 19.000
1000	375	655	1135	--	2	2	220 ... 230, 50 Hz ¹⁾ 230 ... 240, 50 Hz 110/120 50/60 Hz	B D D	3TK17 42-0AP0 3TK17 42-0AU0 3TK17 42-0AF0	1 1 1	1 unit 1 unit 1 unit	101 101 101	20.100 20.100 20.100

For accessories see page 3/120 onwards.
For spare parts, see page 3/128 onwards.

¹⁾ At 60 Hz: 240 V.

Overview

AC and DC operation

IEC 60947 (VDE 0660).

The contactors are suitable for use in any climate.

The contactors with screw terminals are finger-safe according to EN 50274.

The contactors are available in versions with screw terminals, 6.3 mm plug-in terminals and solder pin connections for soldering in printed circuit boards.

Application

The main area of application for the 3TK2 contactors with flat connectors is in household equipment. These contactors are also suitable for simple electric controllers. No auxiliary switch blocks can be retrofitted.

Selection and ordering data

Size 00

AC-1: operational current $I_e = 16 A$ (at 55 °C)

Rated data Utilization categories AC-2 and AC-3		Main contacts		DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Operational current I_e	Ratings of induction motors at 50 Hz and			Version							
	At 400/ 380 V	230/ 220 V	400/ 380 V	500 V	690/ 660 V	NO	NC				
A	kW	kW	kW	kW							kg

Contactors with screw terminals -
for screw and snap-on mounting onto TH 35 standard mounting rail

3TK20...-0...

AC operation

9	2.4	4	4	4	4	--	C
					3	1	C
					2	2	C

Screw terminals



3TK20 40-0AP0	1	1 unit	101	0.190
3TK20 31-0AP0	1	1 unit	101	0.190
3TK20 22-0AP0	1	1 unit	101	0.190

DC operation · DC solenoid system

9	2.4	4	4	4	4	--	C
					3	1	C
					2	2	C

3TK20 40-0BB4	1	1 unit	101	0.210
3TK20 31-0BB4	1	1 unit	101	0.210
3TK20 22-0BB4	1	1 unit	101	0.210

Contactors with 6.3 mm x 0.8 mm flat connectors
for screw and snap-on mounting onto TH 35 standard mounting rail

3TK20...-3...

AC operation

9	2.4	4	4	--	4	--	C
					3	1	C
					2	2	C

Flat connectors



3TK20 40-3AP0	1	1 unit	101	0.170
3TK20 31-3AP0	1	1 unit	101	0.170
3TK20 22-3AP0	1	1 unit	101	0.170

DC operation · DC solenoid system

9	2.4	4	4	--	4	--	C
					3	1	C
					2	2	C

3TK20 40-3BB4	1	1 unit	101	0.190
3TK20 31-3BB4	1	1 unit	101	0.190
3TK20 22-3BB4	1	1 unit	101	0.190

Contactors with 6.3 mm x 0.8 mm flat connectors
for screw fixing (diagonal)

3TK20...-7...

AC operation

9	2.4	4	4	--	4	--	C
					3	1	C
					2	2	C

3TK20 40-7AP0	1	1 unit	101	0.170
3TK20 31-7AP0	1	1 unit	101	0.170
3TK20 22-7AP0	1	1 unit	101	0.170

DC operation · DC solenoid system

9	2.4	4	4	--	4	--	C
					3	1	C
					2	2	C

3TK20 40-7BB4	1	1 unit	101	0.190
3TK20 31-7BB4	1	1 unit	101	0.190
3TK20 22-7BB4	1	1 unit	101	0.190

Contactors with solder pin connections for printed circuit boards¹⁾
for screw fixing (diagonal)

3TK20...-6...

AC operation

9	2.4	4	4	--	4	--	C
					3	1	C
					2	2	C

Solder pin connections



3TK20 40-6AP0	1	1 unit	101	0.170
3TK20 31-6AP0	1	1 unit	101	0.170
3TK20 22-6AP0	1	1 unit	101	0.170

DC operation · DC solenoid system

9	2.4	4	4	--	4	--	C
					3	1	C
					2	2	C

3TK20 40-6BB4	1	1 unit	101	0.190
3TK20 31-6BB4	1	1 unit	101	0.190
3TK20 22-6BB4	1	1 unit	101	0.190

For accessories, see page 3/123.

¹⁾ Operating range at AC-1
220 V: 0.85 to 1.15 x U_N ; lower operating range limit according to IEC 60947.

* You can order this quantity or a multiple thereof.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3TK20 Contactors

4-pole, 4 kW

Rated control supply voltages
(the 10th and 11th position of the order number must be changed)

Contactor type		3TK20
Rated control supply voltage U_s		
AC operation		
Solenoid coils for AC 50 and 60 Hz		
50 Hz	60 Hz	P0 ¹⁾
230/220 V AC	276 V AC	
DC operation		
24 V DC		B4

¹⁾ Operating range at 220 V:
0.85 to 1.15 x U_s ; lower operating range limit according to IEC 60947.

[Please inquire about other voltages.](#)

Overview

AC and DC operation

EN 60947-4-1 (VDE 0660 Part 102).

The contactors are suitable for use in any climate. They are finger-safe according to EN 50274.

The accessories for the 3-pole SIRIUS contactors can also be used for the 4-pole versions.

Selection and ordering data

AC and DC operation, 2 NO contacts + 2 NC contacts¹⁾

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT15 1.-1....



3RT15 1.-2....



3RT15 26-1....

Rated data		Rated control supply voltage U_s		DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
AC-2/AC-3, T_U : Up to 60 °C	AC-1, T_U : 40/60 °C				⊕			⊕	
Operational current I_e At 400 V	Ratings of induction motors at 50 Hz and	Operational current I_e			Order No.	Price per PU		Order No.	Price per PU
400 V									
A	kW	A	V			kg			kg

For screw and snap-on mounting onto TH 35 standard mounting rail

AC operation

Size S00²⁾

9	4	18 / 16	24, 50/60 Hz	B	3RT15 16-1AB00	0.200	B	3RT15 16-2AB00	0.200
			110, 50/60 Hz	B	3RT15 16-1AF00	0.200	B	3RT15 16-2AF00	0.200
			230, 50/60 Hz	▶	3RT15 16-1AP00	0.200	B	3RT15 16-2AP00	0.200
12	5.5	22 / 20	24, 50/60 Hz	A	3RT15 17-1AB00	0.200	B	3RT15 17-2AB00	0.200
			110, 50/60 Hz	▶	3RT15 17-1AF00	0.200	B	3RT15 17-2AF00	0.200
			230, 50/60 Hz	▶	3RT15 17-1AP00	0.200	▶	3RT15 17-2AP00	0.200

Size S0

25	11	40 / 35 ³⁾	24, 50 Hz	B	3RT15 26-1AB00	0.400	--	--	--
			110, 50 Hz	B	3RT15 26-1AF00	0.400	--	--	--
			230, 50 Hz	▶	3RT15 26-1AP00	0.400	--	--	--

Size S2

40	18.5	55 / 50	24, 50 Hz	B	3RT15 35-1AB00	1.000	--	--	--
			110, 50 Hz	B	3RT15 35-1AF00	1.000	--	--	--
			230, 50 Hz	▶	3RT15 35-1AP00	1.000	--	--	--

DC operation · DC solenoid system

Size S00

9	4	18 / 16	DC 24	▶	3RT15 16-1BB40	0.260	▶	3RT15 16-2BB40	0.260
			DC 220	B	3RT15 16-1BM40	0.260	B	3RT15 16-2BM40	0.260
12	5.5	22 / 20	DC 24	▶	3RT15 17-1BB40	0.260	B	3RT15 17-2BB40	0.260
			DC 220	B	3RT15 17-1BM40	0.260	B	3RT15 17-2BM40	0.260

Size S0

20	11	40 / 35 ³⁾	DC 24	▶	3RT15 26-1BB40	0.630	--	--	--
			DC 220	B	3RT15 26-1BM40	0.630	--	--	--

Size S2

40	18.5	55 / 50	DC 24	▶	3RT15 35-1BB40	1.590	--	--	--
			DC 220	B	3RT15 35-1BM40	1.590	--	--	--

Size S00: Snap-on auxiliary switch blocks according to EN 50005.

Sizes S0 to S3: Snap-on auxiliary switch blocks according to EN 50012 and EN 50005 (for S0 max. 2 auxiliary contacts) (for more information see Accessories on page 3/97).

For other voltages see page 3/26.
 For accessories, see page 3/102.
 For spare parts, see page 3/115.

1) Single device for pole reversal; not suitable for reversing duty.

2) For size S00: Coil operating range at 50 Hz: $0.8 \dots 1.1 \times U_s$ at 60 Hz: $0.85 \dots 1.1 \times U_s$.3) Required conductor cross-section: 10 mm².

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3RT16 Capacitor Contactors

12.5 ... 50 kvar

Overview

AC operation

IEC 60947, EN 60947 (VDE 0660).

The contactors are suitable for use in any climate. They are finger-safe according to EN 50274.

The 3RT16 capacitor contactors are special version of the size S00 to S3 SIRIUS contactors. The capacitors are precharged by means of the mounted leading NO contacts and resistors; only then do the main contacts close.

This prevents disturbances in the network and welding of the contactors.

Only discharged capacitors are permitted to be switched on with capacitor contactors.

The auxiliary switch block which is snapped onto the capacitor contactor contains the three leading NO contacts and in the case of S00 one standard NC contact and in the case of S0 and S3 one standard NO contact, which is unassigned. Size S00 also contains another unassigned NO contact in the basic unit.

In addition, a 2-pole auxiliary switch block can be mounted laterally on the 3RT16 47 capacitor contactors (2 NO, 2 NC or 1 NO + 1 NC versions); type 3RH19 21-1EA... The fitting of auxiliary switches for 3RT16 17 and 3RT16 27 is not expandable.

Capacitor switching capacity of the basic 3RT10 contactor version (see note on Technical Information on page 3/1).

Selection and ordering data

AC operation

Screw terminals



3RT16 17-1A.03



3RT16 27-1A.01



3RT16 47-1A.01

Utilization category AC-6b				Auxiliary contacts, unassigned	Rated control supply voltage $U_s^{2)}$	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Switching of AC capacitors for an ambient temperature of 60 °C ¹⁾											
Capacitor rating at operational voltage 50/60 Hz				Version							
At 230 V	At 400 V	At 525 V	At 690 V	NO	NC	V AC	Hz	Order No.	Price per PU		kg
kvar	kvar	kvar	kvar								

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00

3 ... 7.5	5 ... 12.5	7.5 ... 15	10 ... 21	1	1	24	50 / 60	B	3RT16 17-1AB03	1	1 unit	101	0.280
						110		B	3RT16 17-1AF03	1	1 unit	101	0.280
						230		▶	3RT16 17-1AP03	1	1 unit	101	0.280

Size S0³⁾

3.5 ... 15	6 ... 25	7.8 ... 30	10 ... 42	1	--	24	50	B	3RT16 27-1AB01	1	1 unit	101	0.440
						110		B	3RT16 27-1AF01	1	1 unit	101	0.440
						230		▶	3RT16 27-1AP01	1	1 unit	101	0.440

Size S3

3.5 ... 30	5 ... 50	7.5 ... 60	10 ... 84	1	--	24	50	B	3RT16 47-1AB01	1	1 unit	101	2.040
						110		B	3RT16 47-1AF01	1	1 unit	101	2.040
						230		▶	3RT16 47-1AP01	1	1 unit	101	2.040

For other voltages see page 3/26.

For accessories, see page 3/104.

¹⁾ For size S3: 55 °C.

²⁾ Operating range: 0.85 ... 1.1 x U_s .

³⁾ For conductor cross-sections > 6 mm² use 3RV19 25-5AB terminals (2 units).

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

Contactors with Extended Operating Range 0.7 ... 1.25 x U_s , for Railway Applications

3RH11 contactor relays

Overview

DC operation

IEC 60947-4-1, EN 60947-4-1 (VDE 0660, Part 102), for requirements according to IEC 60077-1 and IEC 60077-2.

The contactor relays are finger-safe according to EN 50274. The size S00 contactor relays have Cage Clamp connections for all terminals.

Ambient temperature

The permissible ambient temperature for operation of the contactor relays (across the full coil operating range) is -40 °C to +70 °C.

Uninterrupted duty at temperatures > +60 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. railway applications under extreme climatic conditions, rolling mills, etc.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

3RH11 22-2K.40-0LA0

The DC solenoid systems of the contactor relays are modified (to holding excitation) by means of a series resistor.

The size S00 contactor relays are supplied prewired with a plug-on module containing the series resistor. The varistor is integrated. A 4-pole auxiliary switch block (according to EN 50005) can be fitted additionally.

Mounting

At ambient temperatures up to 70°C, the size S00 contactor relays are allowed to be mounted side by side.

3RH11 22-2K.40:

These contactor relays have an extended operating range from 0.7 to 1.25 x U_s ; the coils are fitted with varistors as standard. An additional series resistor is not required. Please note:

No auxiliary switch block can be mounted on size S00.

Mounting

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C ≤ 70 °C.

Selection and ordering data

DC operation - DC solenoid system

Cage Clamp terminals

For screw and snap-on mounting onto standard mounting rail

Solenoid coil fitted with varistor



3RH11 22-2K.40



3RH11 22-2K.40-0LA0

Rated operational current I_e /AC-15/AC-14 T_U : 70 °C at				Contacts		Rated control supply voltage U_s	DT	Cage Clamp terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
230 V	400 V	500 V	690 V	Version				Order No.	Price per PU			kg
A	A	A	A	NO	NC	V DC						

3RH11 contactor relays

Size S00

Cage Clamp terminals for all connections

6	3	2	1	2	2 ¹⁾	24 ²⁾ 110 ²⁾	DT	3RH11 22-2KB40 3RH11 22-2KF40	1 1	1 unit 1 unit	101 101	0.260 0.260
6	3	2	1	2	3 ³⁾	24 110	A A	3RH11 22-2KB40-0LA0 3RH11 22-2KF40-0LA0	1 1	1 unit 1 unit	101 101	0.290 0.290

¹⁾ It is not possible to mount an auxiliary switch block. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

²⁾ Version without series resistor.

³⁾ One 4-pole auxiliary switch block according to EN 50005 can be mounted; no distance required up to 70 °C.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

Contactors with Extended Operating Range 0.7 ... 1.25 x U_s , for Railway Applications

3TH4 contactor relays

Overview

DC operation

EN 60947-4-1.

For requirements according to IEC 60077-1 and IEC 60077-2.

The contactors are finger-safe according to EN 50274. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full operating range of the solenoid coil) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current-carrying capacity of the conducting paths and the switching frequency.

At ambient temperatures > 55 °C, a distance of 10 mm must be observed if contactor relays and size 1 and 2 contactors are mounted side by side. There is no need to reduce the technical specifications.

Application

For operation in plants which are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Selection and ordering data

For screw and snap-on mounting onto 35 mm standard mounting rail
Solenoid coil fitted with varistor



3TH4

Contacts	Rated operational current $I_e/AC-15/AC-14$				Contacts ¹⁾		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	230 V	400 V	500 V	690 V	Ident. No. acc. to EN 50011	Version								Order No.
Number	A	A	A	A		NO	NC	V DC					kg	
3TH42 contactor relays · DC operation · DC solenoid system														
8	10	6	4	2	44E	4	4	24 110	▶	3TH42 44-0LB4	1	1 unit	101	0.670
									▶	3TH42 44-0LF4	1	1 unit	101	0.670
					53E	5	3	24 110	D	3TH42 53-0LB4	1	1 unit	101	0.670
									▶	3TH42 53-0LF4	1	1 unit	101	0.670
					62E	6	2	24 110	▶	3TH42 62-0LB4	1	1 unit	101	0.670
									▶	3TH42 62-0LF4	1	1 unit	101	0.670

For accessories, see page 3/125.

¹⁾ Contacts not extendable.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

Contactors with Extended Operating Range $0.7 \dots 1.25 \times U_s$, for Railway Applications

3RT10 motor contactors, 5.5 ... 45 kW

Overview

DC operation

IEC 60947-4-1, EN 60947-4-1, for requirements according to IEC 60077-1 and IEC 60077-2.

The contactors are finger-safe according to EN 50274 (exception: series resistors S0 to S3). The contactors are available with both Cage Clamp and screw connection. The size S00 contactors have Cage Clamp terminals for all connections. The auxiliary conductor and coil terminals of sizes S0 to S3 are all Cage Clamp terminals.

Control and auxiliary circuits

Contactors are available with:

- Conventional coils (sizes S00 and S0 only)
- Coils with series resistor
- Coils with solid-state control unit

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -40 °C to $+70\text{ °C}$.

Uninterrupted duty at temperatures $> +60\text{ °C}$ reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. railway applications under extreme climatic conditions, rolling mills, etc.

More information

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to $1.25 \times U_s$ and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

[3RT10 ..-2K.42-OLA0](#),
[3RT10 ..-3K.44-OLA0](#)

The DC solenoid systems of the contactors are modified (to holding excitation) by means of a series resistor.

Auxiliary switches

The size S00 contactors are supplied prewired with a plug-on module containing the series resistor. The varistor is integrated. A 4-pole auxiliary switch block (according to EN 50005) can be fitted additionally.

The size S0 to S3 contactors are equipped on the front with an auxiliary switch block with 2 NO + 2 NC contacts. The separate series resistor, which is attached laterally next to the contactor on the 35 mm standard mounting rail, is fitted with connecting cables for mounting onto contactors. A circuit diagram showing the terminals is stuck onto each contactor. One NC of the auxiliary contacts is required for the series resistor function. The selection and ordering data shows the number of additional, unassigned auxiliary contacts. It is only possible to extend the number of auxiliary contacts with size S00.

Mounting

At ambient temperatures up to 70 °C , the size S00 contactors and contactor relays are allowed to be mounted side by side. The resistor module of the size S0 to S3 contactors must be mounted to the left of the contactor owing to the prefabricated connecting cables.

Dimensions

Attaching resistors increases the width of contactor sizes S0 to S3 (see note on Dimensional Drawings, page 3/1).

[3RT10 17-2K.4.](#),
[3RT10 2.-3K.40](#)

These contactor relays have an extended operating range from 0.7 to $1.25 \times U_s$; the coils are fitted with varistors as standard. An additional series resistor is not required.

Please note:

- Size S00: It is not possible to mount an auxiliary switch block.
- Size S0: Up to two single-pole auxiliary switch blocks can be mounted.

Mounting

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures $> 60\text{ °C} \leq 70\text{ °C}$.

3RT10 contactors with contactor control unit, extended operating range

[3RT10 ..-X.40-OLA2](#)

They are supplied as complete units with a built-on contactor control unit.

Control and auxiliary circuits

The contactors are energized via upstream control electronics which ensure the coil operating range of 0.7 to $1.25 \times U_s$ at an ambient temperature of 70 °C .

A varistor is integrated for damping opening surges in the coil. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

The possibility of mounting auxiliary switches is the same as that for equivalent standard contactors.

Mounting

At ambient temperatures up to 70 °C , sizes S0 to S3 of these contactor versions are allowed to be mounted side by side.

Dimensions

Because of the built-on contactor control unit, the height of the size S0 to S3 contactors increases by up to 34 mm (see note on Dimensional Drawings, page 3/1).

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

Contactors with Extended Operating Range 0.7 ... 1.25 x U_s , for Railway Applications

3RT10 motor contactors, 5.5 ... 45 kW

Selection and ordering data

DC operation · DC solenoid system

Cage Clamp terminals

For screw and snap-on mounting onto standard mounting rail

Solenoid coil fitted with varistor



3RT10 17-2K.4.-0LA0



3RT10 2.-3K.40



3RT10 3.-3K.44-0LA0

Rated data AC-2 and AC-3 T_U : 70 °C	Ratings of induction motors at					Auxiliary con- tacts	Version	Rated control sup- ply voltage U_s	DT	Cage Clamp terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Operational cur- rent I_e at	230 V	400 V	500 V	690 V		NO	NC	V DC		Order No.	Price per PU			kg
400 V														
A	kW	kW	kW	kW										

3RT10 contactors for switching motors

Size S00

Cage Clamp terminals for all connections

12	3	5.5	5.5	5.5	1 ¹⁾	--	24 ³⁾ 110 ³⁾		▶	3RT10 17-2KB41 3RT10 17-2KF41	1 1	1 unit 1 unit	101 101	0.260 0.260
12	3	5.5	5.5	5.5	--	1 ¹⁾	24 ³⁾ 110 ³⁾		▶	3RT10 17-2KB42 3RT10 17-2KF42	1 1	1 unit 1 unit	101 101	0.260 0.260
12	3	5.5	5.5	5.5	--	1 ²⁾	24 110		▶	3RT10 17-2KB42-0LA0 3RT10 17-2KF42-0LA0	1 1	1 unit 1 unit	101 101	0.280 0.280

Size S0

Cage Clamp terminals for coil terminals and auxiliary contacts

17	4	7.5	10	11	--	-- ⁴⁾	24 ³⁾ 110 ³⁾		▶	3RT10 25-3KB40 3RT10 25-3KF40	1 1	1 unit 1 unit	101 101	0.600 0.600
25	5.5	11	11	11	--	-- ⁴⁾	24 ³⁾ 110 ³⁾		▶	3RT10 26-3KB40 3RT10 26-3KF40	1 1	1 unit 1 unit	101 101	0.600 0.600
17	4	7.5	10	11	2	1 ⁵⁾	24 110		▶	3RT10 25-3KB44-0LA0 3RT10 25-3KF44-0LA0	1 1	1 unit 1 unit	101 101	0.760 0.760
25	5.5	11	11	11	2	1 ⁵⁾	24 110		▶	3RT10 26-3KB44-0LA0 3RT10 26-3KF44-0LA0	1 1	1 unit 1 unit	101 101	0.760 0.760

Size S2

Cage Clamp terminals for coil terminals and auxiliary contacts

32	7.5	15	18.5	18.5	2	1 ⁵⁾	24 110		▶	3RT10 34-3KB44-0LA0 3RT10 34-3KF44-0LA0	1 1	1 unit 1 unit	101 101	1.670 1.670
40	11	18.5	22	22	2	1 ⁵⁾	24 110		▶	3RT10 35-3KB44-0LA0 3RT10 35-3KF44-0LA0	1 1	1 unit 1 unit	101 101	1.670 1.670
50	15	22	30	22	2	1 ⁵⁾	24 110		▶	3RT10 36-3KB44-0LA0 3RT10 36-3KF44-0LA0	1 1	1 unit 1 unit	101 101	1.670 1.670

Size S3

Cage Clamp terminals for coil terminals and auxiliary contacts

65	18.5	30	37	43	2	1 ⁵⁾	24 110		▶	3RT10 44-3KB44-0LA0 3RT10 44-3KF44-0LA0	1 1	1 unit 1 unit	101 101	3.100 3.100
80	22	37	45	55	2	1 ⁵⁾	24 110		▶	3RT10 45-3KB44-0LA0 3RT10 45-3KF44-0LA0	1 1	1 unit 1 unit	101 101	3.100 3.100
95	22	45	55	55	2	1 ⁵⁾	24 110		▶	3RT10 46-3KB44-0LA0 3RT10 46-3KF44-0LA0	1 1	1 unit 1 unit	101 101	3.100 3.100

For spare parts, see page 3/103.

- 1) It is not possible to mount an auxiliary switch block. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.
- 2) One 4-pole auxiliary switch block according to EN 50005 can be mounted; no distance required up to 70 °C.
- 3) Version without series resistor.
- 4) Up to two single-pole auxiliary switch blocks can be mounted. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.
- 5) The number of auxiliary contacts cannot be increased; no clearance required up to 70 °C.

* You can order this quantity or a multiple thereof.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

Contactors with Extended Operating Range 0.7 ... 1.25 x U_s , for Railway Applications

3RT10 motor contactors, 5.5 ... 45 kW

DC operation · DC solenoid system

For screw and snap-on mounting onto standard mounting rail

Contactor control unit

Solenoid coil fitted with varistor

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 ...-3X.40-0LA2

Rated data AC-2 and AC-3 T_U : Up to 70 °C		Auxiliary contacts ¹⁾		Rated control supply voltage U_s	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
Rated operational current I_e up to 400 V	Power of induction motors at 50 Hz 400 V	Ident. No.	Version			Order No.	Price per PU		Order No.	Price per PU
A	kW		NO NC	V DC			kg			kg

For screw and snap-on mounting onto TH 35 standard mounting rail**Size S0**

17	7.5	--	--	--	24	C	3RT10 25-1XB40-0LA2	0.640 B	3RT10 25-3XB40-0LA2	0.640
		--	--	--	110	B	3RT10 25-1XF40-0LA2	0.640 B	3RT10 25-3XF40-0LA2	0.640
25	11	--	--	--	24	B	3RT10 26-1XB40-0LA2	0.640 B	3RT10 26-3XB40-0LA2	0.640
		--	--	--	110	B	3RT10 26-1XF40-0LA2	0.640 B	3RT10 26-3XF40-0LA2	0.640

Size S2

32	15	--	--	--	24	B	3RT10 34-1XB40-0LA2	1.500 C	3RT10 34-3XB40-0LA2	1.500
		--	--	--	110	B	3RT10 34-1XF40-0LA2	1.500 B	3RT10 34-3XF40-0LA2	1.500
40	18.5	--	--	--	24	B	3RT10 35-1XB40-0LA2	1.500 C	3RT10 35-3XB40-0LA2	1.500
		--	--	--	110	B	3RT10 35-1XF40-0LA2	1.500 B	3RT10 35-3XF40-0LA2	1.500
50	22	--	--	--	24	B	3RT10 36-1XB40-0LA2	1.500 B	3RT10 36-3XB40-0LA2	1.500
		--	--	--	110	B	3RT10 36-1XF40-0LA2	1.500 B	3RT10 36-3XF40-0LA2	1.500

For screw and snap-on mounting onto TH 35 and TH 75 standard mounting rail**Size S3**

65	30	--	--	--	24	B	3RT10 44-1XB40-0LA2	2.900 B	3RT10 44-3XB40-0LA2	2.900
		--	--	--	110	B	3RT10 44-1XF40-0LA2	2.900 B	3RT10 44-3XF40-0LA2	2.900
80	37	--	--	--	24	B	3RT10 45-1XB40-0LA2	2.900 B	3RT10 45-3XB40-0LA2	2.900
		--	--	--	110	B	3RT10 45-1XF40-0LA2	2.900 B	3RT10 45-3XF40-0LA2	2.900
95	45	--	--	--	24	B	3RT10 46-1XB40-0LA2	2.900 B	3RT10 46-3XB40-0LA2	2.900
		--	--	--	110	B	3RT10 46-1XF40-0LA2	2.900 B	3RT10 46-3XF40-0LA2	2.900

1) Auxiliary switch blocks mountable as standard contactors.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

Contactors with Extended Operating Range $0.7 \dots 1.25 \times U_s$, for Railway Applications

3TB5 motor contactors, 55 ... 200 kW

Overview

EN 60947-4-1.

For requirements according to IEC 60077-1 and IEC 60077-2.

The contactors are finger-safe according to EN 50274. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

All specifications and technical specifications not mentioned here are identical to those of the standard 3TB contactors.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full operating range of the solenoid coil) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current-carrying capacity of the conducting paths and the switching frequency.

At ambient temperatures > 55 °C, a distance of 10 mm must be observed if contactor relays and size 1 and 2 contactors are mounted side by side. There is no need to reduce the technical specifications.

Series resistor

The DC solenoid systems of the 3TB contactors must be modified (to hold-in coil) by means of a series resistor. This series resistor is supplied separately packed with the contactors.

With types 3TB50, the series resistor must be attached onto the right-hand side of the auxiliary switch block by means of the enclosed mounting parts and sets of links provided. With types

3TB52 to 3TB56, the series resistor must be attached separately next to the contactors.

One NC of the auxiliary contacts is required for the series resistor function. The selection and ordering data show the number of additional, unassigned auxiliary contacts. It is not possible to extend the number of auxiliary contacts.

Reversing contactors

With the 3TB52 to 3TB56 contactors, the series resistor must be connected using an additional K2 reversing contactor (3RT13 17-1F.40). This contactor is automatically included in the scope of supply in the same packaging as the contactor.

Dimensions

Attaching resistors and varistors increases the width of the contactors (see note on Dimensional Drawings, page 3/1).

Application

For operation in plants which are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. in railway applications.

Control and auxiliary circuits


The solenoid coils of the contactors have an extended coil operating range from 0.7 to $1.25 \times U_s$ and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Selection and ordering data

3TB50 to 3TB56 contactors

For screw fixing

Solenoid coil fitted with varistor

Size	Rated data AC-2 and AC-3					Auxiliary contacts ¹⁾		Rated control supply voltage U_s	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e at 400 V	Ratings of induction motors at				Version								
	A	kW	kW	kW	kW	NO	NC	V DC						kg

Contactors for switching AC voltage DC operation · DC solenoid system

6	110	37	55	75	90	2	1	24 110	D	3TB50 17-0LB4	1	1 unit	101	6.600
										3TB50 17-0LF4	1	1 unit	101	6.600
8	170	55	90	110	132	2	1	24 110	D	3TB52 17-0LB4	1	1 unit	101	9.300
										3TB52 17-0LF4	1	1 unit	101	9.300
10	250	75	132	160	200	2	1	24 110	D	3TB54 17-0LB4	1	1 unit	101	16.800
										3TB54 17-0LF4	1	1 unit	101	16.800
12	400	115	200	255	355	2	1	110	D	3TB56 17-0LF4	1	1 unit	101	19.800

¹⁾ The number of auxiliary contacts cannot be increased.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

Contactors with Extended Operating Range 0.7 ... 1.25 x U_s , for Railway Applications

3TC contactors for switching DC voltage, 2-pole

Overview

EN 60947-4-1.

For requirements according to IEC 60077-1 and IEC 60077-2.

The contactors are finger-safe according to EN 50274 (exception: series resistor). Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

All specifications and technical specifications not mentioned here are identical to those of the standard 3TC contactors.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full operating range of the solenoid coil) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current-carrying capacity of the conducting paths and the switching frequency.

At ambient temperatures > 55 °C, a distance of 10 mm must be observed if contactor relays and size 1 and 2 contactors are mounted side by side. There is no need to reduce the technical specifications.

Series resistor

The DC solenoid systems of the 3TC contactors must be modified (to hold-in coil) by means of a series resistor. This series resistor is supplied separately packed with the contactors.

With types 3TC48, the series resistor must be attached onto the right-hand side of the auxiliary switch block by means of the en-

closed mounting parts and sets of links provided, while in the case of the 3TC44 it must be mounted and wired between the contactor poles. With types 3TC52 and 3TC56, the series resistor must be attached separately next to the contactors.

One NC of the auxiliary contacts is required for the series resistor function. The selection and ordering data show the number of additional, unassigned auxiliary contacts. It is not possible to extend the number of auxiliary contacts.

Reversing contactors

With the 3TC52 and 3TC56 contactors, the series resistor must be connected using an additional K2 reversing contactor (3RT13 17-1F.40). This contactor is automatically included in the scope of supply in the same packaging as the contactor.

Dimensions

Attaching resistors and varistors increases the width of the contactors (see note on Dimensional Drawings, page 3/1).

Application

For operation in plants which are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Selection and ordering data

3TC44: for screw and snap-on mounting onto 35 mm standard mounting rail

3TC48 to 3TC56: For screw fixing

Solenoid coil fitted with varistor



3TC48

Size	Utilization categories	Rated operational current I_o at 750 V	Rated power of loads at				Auxiliary contacts 1)		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			220 V	440 V	600 V	750 V	NO	NC							
			A	kW	kW	kW	kW				Order No.	Price per PU			
Contactors for switching DC voltage															
DC operation · DC solenoid system															
2	DC-1	32	7	14	19.2	24	2	1	24	B	3TC44 17-0LB4	1	1 unit	101	1.380
	DC-3/DC-5	7.5	5	9	9	4			110	C		3TC44 17-0LF4	1	1 unit	101
4	DC-1	75	16.5	33	45	56	2	1	24	C	3TC48 17-0LB4	1	1 unit	101	4.900
	DC-3/DC-5	75	13	27	38	45			110	C		3TC48 17-0LF4	1	1 unit	101
8	DC-1	170	48	97	132	165	2	1	24	C	3TC52 17-0LB4	1	1 unit	101	10.800
	DC-3/DC-5	170	41	82	110	110			110	C		3TC52 17-0LF4	1	1 unit	101
12	DC-1	400	88	176	240	300	2	1	24	C	3TC56 17-0LB4	1	1 unit	101	19.500
	DC-3/DC-5	400	70	140	200	250			110	D		3TC56 17-0LF4	1	1 unit	101

1) The number of auxiliary contacts cannot be increased.

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3TC Contactors for Switching DC Voltage

1- and 2-pole, 32 ... 400 A

Overview

3TC4 and 3TC5

EN 60947-4-1 (VDE 0660 Part 102).

The contactors are finger-safe according to EN 50274.

Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

The DC motor ratings given in the tables are applicable to the DC-3 and DC-5 utilization categories with two-pole switching of the load or with the two conducting paths of the contactor connected in series.

One contactor conducting path can switch full power up to 220 V. The ratings for higher voltages are available on request.

3TC7

EN 60947-4-1 (VDE 0660 Part 102).

The contactors are suitable for use in any climate. They are suitable for switching and controlling DC motors as well as all other DC loads. The electromagnetic excitation is designed for a particularly wide coil operating range.

It is between 0.7 or 0.8 to $1.2 \times U_g$.

3TC74 contactors can be used at up to 750 V/400 A and 50 Hz in AC-1 operation.

Application

The contactors are suitable for switching and controlling DC motors as well as all other DC circuits.

A version with an especially large coil operating range is available for operation in electrically driven vehicles and in switch-gear with significant fluctuations in the actuating voltage ([see page 3/65](#)).

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3TC Contactors for Switching DC Voltage

1- and 2-pole, 32 ... 400 A

3

Selection and ordering data



3TC44

3TC48

Size	Rated data Operational current $I_e^{3)}$	DC-3 and DC-5 ¹⁾ Ratings of DC motors at					Auxiliary contacts ²⁾ Version		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
		110 V	220 V	440 V	600 V	750 V	NO	NC							
A	kW	kW	kW	kW	kW	NO	NC	V							

3TC44 to 3TC56 two-pole contactors

DC operation

Screw and snap-on mounting onto TH 35 standard mounting rail

2	32	2.5	5	9	9	4	2	2	24 DC 110 DC 220 DC	▶ ▶ ▶	3TC44 17-0AB4 3TC44 17-0AF4 3TC44 17-0AM4	1 1 1	1 unit 1 unit 1 unit	101 101 101	1.100 1.100 1.100
Screw fixing															
4	75	6.5	13	27	38	45	2	2	24 DC 110 DC 220 DC	A A A	3TC48 17-0AB4 3TC48 17-0AF4 3TC48 17-0AM4	1 1 1	1 unit 1 unit 1 unit	101 101 101	4.700 4.700 4.700
8	220 ⁴⁾	20	41	82	110	110	2	2	24 DC 110 DC 220 DC	C C C	3TC52 17-0AB4 3TC52 17-0AF4 3TC52 17-0AM4	1 1 1	1 unit 1 unit 1 unit	101 101 101	10.800 10.800 10.800
12	400	35	70	140	200	250	2	2	24 DC 110 DC 220 DC	C C C	3TC56 17-0AB4 3TC56 17-0AF4 3TC56 17-0AM4	1 1 1	1 unit 1 unit 1 unit	101 101 101	19.500 19.500 19.500

AC operation, 50 Hz

Screw and snap-on mounting onto TH 35 standard mounting rail

2	32	2.5	5	9	9	4	2	2	220/230 AC ⁵⁾ 110/110 AC	▶ ▶	3TC44 17-0BP0 3TC44 17-0BF0	1 1	1 unit 1 unit	101 101	0.700 0.700
Screw fixing															
4	75	6.5	13	27	38	45	2	2	220/230 AC ⁵⁾ 110 AC	A C	3TC48 17-0BP0 3TC48 17-0BF0	1 1	1 unit 1 unit	101 101	3.500 3.500
8	220 ⁴⁾	20	41	82	110	110	2	2	220/230 AC ⁵⁾ 110 AC	A C	3TC52 17-0BP0 3TC52 17-0BF0	1 1	1 unit 1 unit	101 101	7.200 7.200
12	400	35	70	140	200	250	2	2	220/230 AC ⁵⁾ 110 AC	C C	3TC56 17-0BP0 3TC56 17-0BF0	1 1	1 unit 1 unit	101 101	14.500 14.500

For more rated control supply voltages U_s , see page 3/68.

1) For the permissible load for utilization category DC-1, see note on Technical Information on page 3/1.

2) The fitting of auxiliary switches cannot be altered on DC-operated contactors.

3) The following rated operational currents are permitted for reversing duty with 3TC44 to 3TC56 contactors:

Contactor Rated operational voltage

Type 110 V, 220 V 440 V

3TC44 32 A 7 A

3TC48 75 A 75 A

3TC52 170 A 170 A

3TC56 400 A 400 A

4) At > 600 V: $I_e = 170$ A.5) Operating range at 220 V: 0.85 to 1.15 x U_s .

3RT, 3RH, 3TB, 3TC, 3TH, 3TK Contactors for Special Applications

3TC Contactors for Switching DC Voltage

1- and 2-pole, 32 ... 400 A



3TC74



3TC78

Size	Rated data DC-3 and DC-5 ¹⁾								Auxiliary contacts ²⁾		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Operational current I_e	Ratings of DC motors at							Version								
	110 V	220 V	440 V	600 V	750 V	1200 V	1500 V				Order No.	Price per PU					
A	kW	kW	kW	kW	kW	kW	kW	NO	NC	V							

3TC74 1-pole contactors · Operational voltage up to 750 V

DC operation

12	400	35	70	140	200	250	--	--	4	4	24 DC	C	3TC74 14-0EB	1	1 unit	101	10.800
											110 DC	C	3TC74 14-0EF	1	1 unit	101	10.800

AC operation, 50 Hz

12	400	35	70	140	200	250	--	--	4	4	230/220 AC ³⁾	C	3TC74 14-1CM	1	1 unit	101	10.800
----	-----	----	----	-----	-----	-----	----	----	---	---	--------------------------	---	---------------------	---	--------	-----	--------

3TC78 2-pole contactors · Operational voltage up to 1500 V

DC operation

12	400	35	70	140	200	250	400	500	4	4	24 DC	C	3TC78 14-0EB	1	1 unit	101	22.500
											110 DC	C	3TC78 14-0EF	1	1 unit	101	22.500

AC operation, 50 Hz

12	400	35	70	140	200	250	400	500	4	4	230/220 AC ³⁾	C	3TC78 14-1CM	1	1 unit	101	23.800
----	-----	----	----	-----	-----	-----	-----	-----	---	---	--------------------------	---	---------------------	---	--------	-----	--------

For more rated control supply voltages U_s see below.
For spare parts, see page 3/130.

- ¹⁾ For the permissible load for utilization category DC-1, see note on Technical Information on page 3/1.
- ²⁾ The fitting of auxiliary switches cannot be altered on DC-operated contactors.
- ³⁾ Upper operating range limit at 230 V: $1.14 \times U_s$.

Rated control supply voltages (the 10th and 11th position of the order number must be changed)

Rated control supply voltage U_s	Contactor type	3TC44	3TC48	3TC52/56	3TC74/78
AC operation					
Solenoid coils for 50 Hz					
24 V AC		B0	B0	--	--
110 V AC		F0	F0	F0	--
230/220 V AC		P0 ¹⁾	P0 ¹⁾	P0 ¹⁾	M ²⁾
240 V AC		U0	U0	--	--
AC operation					
Solenoid coils for 50/60 Hz					
24 V AC		C2	--	--	--
110 V AC		G2	--	--	--
120 V AC		K2	--	--	--
220 V AC		N2	--	--	--
230 V AC		L2	--	--	--
DC operation					
24 V DC		B4	B4	B4	B
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	F4	F
125 V DC		G4	G4	--	--
220 V DC		M4	M4	M4	M
230 V DC		P4	P4	--	--

¹⁾ Operating range at 220 V or 380 V: 0.85 to $1.15 \times U_s$;
lower operating range limit according to IEC 60947.

²⁾ Upper operating range limit at 230 V: $1.14 \times U_s$.

Overview

AC and DC operation

IEC 60947, EN 60947.

The 3RH1 contactor relays are suitable for use in any climate.

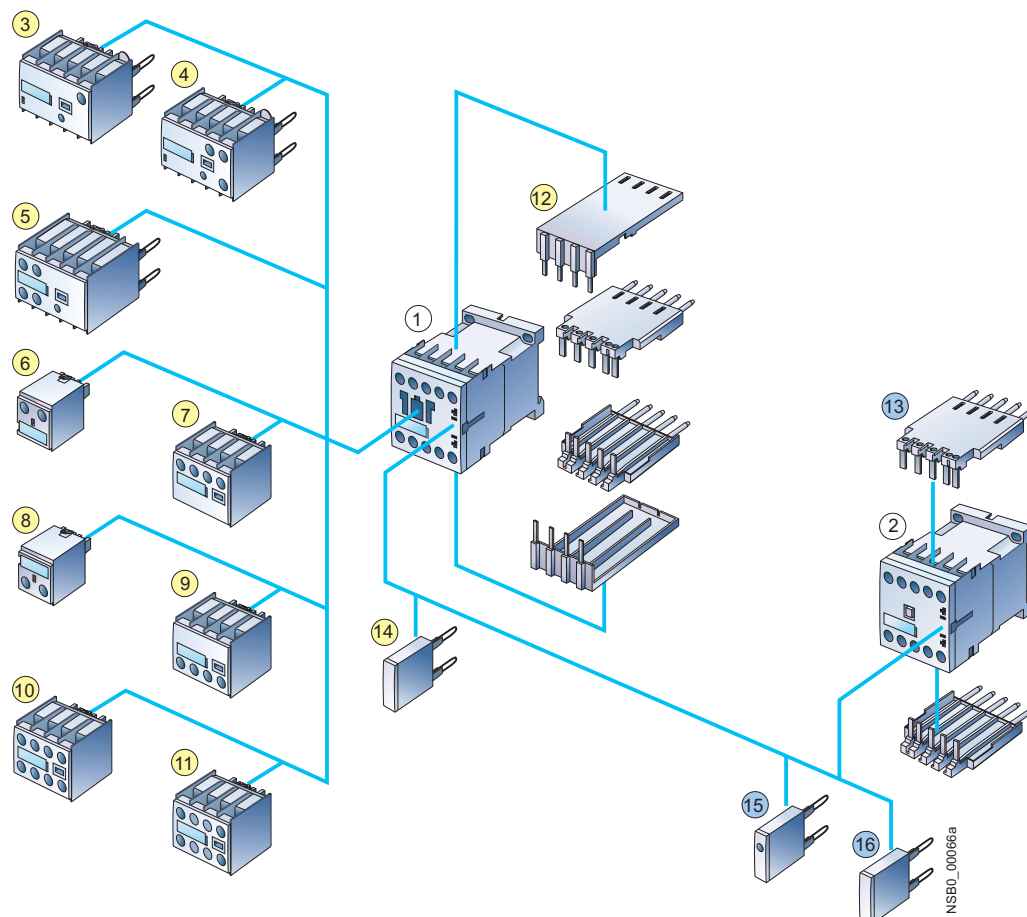
They are finger-safe according to EN 50274.

The 3RH1 contactor relays have screw or Cage Clamp terminals. Four contacts are available in the basic unit. For expansions see Accessories on page 3/97.

Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents > 1 mA at a voltage of 17 V.

Contactor relays and coupling relays size S00 with accessories



① Contactor relay, see page 3/70

② Coupling relay for auxiliary circuits, see page 3/78

③ Solid-state timing relay block, ON-delay, see page 3/107

④ Solid-state timing relay block, OFF-delay, see page 3/107

⑤ Auxiliary switch block, solid-state time delay, see page 3/106 (versions: ON or OFF-delay)

⑥ 1-pole auxiliary switch block, cable entry from above, see page 3/102

⑦ 2-pole auxiliary switch block, cable entry from above, see page 3/102

⑧ 1-pole auxiliary switch block, cable entry from below, see page 3/102

⑨ 2-pole auxiliary switch block, cable entry from below, see page 3/102

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) can be plugged onto all contactor relays from the front for damping opening surges in the coil. The plug-in direction is determined by a coding device.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assemblies 2 to 6 times, varistor +2 to 5 ms).

3RH, 3TH Contactor Relays

3RH1 contactor relays, 4- and 8-pole

Selection and ordering data

AC and DC operation

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 101

Size S00



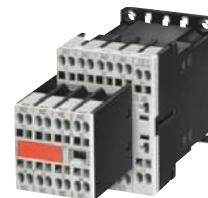
3RH11 ..-1...



3RH11 ..-2...



3RH12 ..-1...



3RH12 ..-2...

Rated operational current I_e /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage U_s	DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.
	Ident. No.	Version			⊕	⊙			⊕	⊙	
					Order No.	Price per PU			Order No.	Price per PU	
A		NO NC	V AC				kg				kg

For screw and snap-on mounting onto TH 35 standard mounting rail

Terminal designations according to EN 50011

AC operation

				50/60 Hz ¹⁾						
6	40 E	4	--	24	▶	3RH11 40-1AB00	0.200	▶	3RH11 40-2AB00	0.200
				110	▶	3RH11 40-1AF00	0.200	▶	3RH11 40-2AF00	0.200
				230	▶	3RH11 40-1AP00	0.200	▶	3RH11 40-2AP00	0.200
31 E	3	1	24	▶	3RH11 31-1AB00	0.200	▶	3RH11 31-2AB00	0.200	
			110	▶	3RH11 31-1AF00	0.200	▶	3RH11 31-2AF00	0.200	
			230	▶	3RH11 31-1AP00	0.200	▶	3RH11 31-2AP00	0.200	
22 E	2	2	24	▶	3RH11 22-1AB00	0.200	▶	3RH11 22-2AB00	0.200	
			110	▶	3RH11 22-1AF00	0.200	▶	3RH11 22-2AF00	0.200	
			230	▶	3RH11 22-1AP00	0.200	▶	3RH11 22-2AP00	0.200	

• With permanently mounted auxiliary switch block for safety applications according to SUVA

6	44 E	4	4	230	▶	3RH12 44-1AP00	0.250	B	3RH12 44-2AP00	0.250
	62 E	6	2	230	▶	3RH12 62-1AP00	0.250	B	3RH12 62-2AP00	0.250

DC operation · DC solenoid system

				DC						
6	40 E	4	--	24	▶	3RH11 40-1BB40	0.260	▶	3RH11 40-2BB40	0.260
				220	▶	3RH11 40-1BM40	0.260	B	3RH11 40-2BM40	0.260
				24	▶	3RH11 31-1BB40	0.260	▶	3RH11 31-2BB40	0.260
31 E	3	1	24	▶	3RH11 31-1BM40	0.260	B	3RH11 31-2BM40	0.260	
			220	▶	3RH11 22-1BB40	0.260	▶	3RH11 22-2BB40	0.260	
			220	▶	3RH11 22-1BM40	0.260	B	3RH11 22-2BM40	0.260	

• With permanently mounted auxiliary switch block for safety applications according to SUVA

6	44 E	4	4	24	▶	3RH12 44-1BB40	0.310	A	3RH12 44-2BB40	0.310
	62 E	6	2	24	▶	3RH12 62-1BB40	0.310	A	3RH12 62-2BB40	0.310

For other voltages see page 3/71, for contactors with permanently mounted auxiliary switch block please inquire.
 For accessories, see page 3/102 and 3/104.

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ Coil operating range
 at 50 Hz: 0.8 to 1.1 × U_s
 at 60 Hz: 0.85 to 1.1 × U_s .

Rated control supply voltages
(the 10th and 11th position of the order number must be changed)

	Contactor type	3RH11
Rated control supply voltage U_s	Control supply voltage at	

AC operation

Solenoid coils for AC 50/60 and 60 Hz

50/60 Hz ¹⁾	60 Hz	
24 V AC	--	B0
42 V AC	--	D0
48 V AC	--	H0
110 V AC	--	F0
220 V AC	--	N2
230 V AC	--	P0
400 V AC	--	V0

Solenoid coils for AC 50/60 and 60 Hz (for Japan²⁾)

100 V AC	110 V AC	G6
200 V AC	220 V AC	N6
400 V AC	440 V AC	R6

Solenoid coils for AC 50 and 60 Hz (for USA and Canada³⁾)

50 Hz	60 Hz	
110 V AC	120 V AC	K6
220 V AC	240 V AC	P6

DC operation

12 V DC	A4
24 V DC	B4
42 V DC	D4
48 V DC	W4
60 V DC	E4
110 V DC	F4
125 V DC	G4
220 V DC	M4
230 V DC	P4

¹⁾ Coil operating range
at 50 Hz: 0.8 to $1.1 \times U_s$
at 60 Hz: 0.85 to $1.1 \times U_s$.

²⁾ Coil operating range
at 50/60 Hz: 0.85 to $1.1 \times U_s$
at 60 Hz: 0.8 to $1.1 \times U_s$.

³⁾ Coil operating range
at 50 Hz: 0.85 to $1.1 \times U_s$
at 60 Hz: 0.8 to $1.1 \times U_s$.

3RH, 3TH Contactor Relays

3RH14 latched contactor relays, 4-pole

Overview

AC and DC operation

IEC 60947, EN 60947.

The terminal designations comply with EN 50011.

The contactor coil and the coil of the release solenoid are both designed for uninterrupted duty.

The number of auxiliary contacts can be extended by means of auxiliary switch blocks (up to 4 poles) (see [Accessories on page 3/97](#)).

RC elements, varistors diodes or diode assemblies can be fitted to both coils from the front for damping opening surges in the coil.

The contactor relay can also be switched on and released manually (see [note on Technical Information on page 3/1](#)).

Selection and ordering data



3RH14.-1...

Rated operational current I_e /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Ident. No. acc. to EN 50011	Version							
					Order No.	Price per PU			kg
A		NO NC V							

For screw and snap-on mounting onto TH 35 standard mounting rail

AC operation

6	40 E	4	--	AC 50/60 Hz ¹⁾		DT	Order No.	PU	PS*	PG	Weight per PU approx.
				24	42						
				24	42	B	3RH14 40-1AB00	1	1 unit	101	0.380
				110	230	B	3RH14 40-1AD00	1	1 unit	101	0.380
				110	230	B	3RH14 40-1AF00	1	1 unit	101	0.380
				230		A	3RH14 40-1AP00	1	1 unit	101	0.380
	31 E	3	1	24	42	B	3RH14 31-1AB00	1	1 unit	101	0.380
				110	230	B	3RH14 31-1AD00	1	1 unit	101	0.380
				110	230	B	3RH14 31-1AF00	1	1 unit	101	0.380
				230		B	3RH14 31-1AP00	1	1 unit	101	0.380
	22 E	2	2	24	42	B	3RH14 22-1AB00	1	1 unit	101	0.380
				110	230	B	3RH14 22-1AD00	1	1 unit	101	0.380
				110	230	B	3RH14 22-1AF00	1	1 unit	101	0.380
				230		▶	3RH14 22-1AP00	1	1 unit	101	0.380

DC operation · DC solenoid system

6	40 E	4	--	DC		DT	Order No.	PU	PS*	PG	Weight per PU approx.
				24	110						
				24	110	▶	3RH14 40-1BB40	1	1 unit	101	0.500
				220		B	3RH14 40-1BF40	1	1 unit	101	0.500
				220		B	3RH14 40-1BM40	1	1 unit	101	0.500
	31 E	3	1	24	110	B	3RH14 31-1BB40	1	1 unit	101	0.500
				220		B	3RH14 31-1BF40	1	1 unit	101	0.500
				220		B	3RH14 31-1BM40	1	1 unit	101	0.500
	22 E	2	2	24	110	▶	3RH14 22-1BB40	1	1 unit	101	0.500
				220		B	3RH14 22-1BF40	1	1 unit	101	0.500
				220		B	3RH14 22-1BM40	1	1 unit	101	0.500

For accessories, see page 3/102 and 3/104.

¹⁾ Coil operating range
at 50 Hz: 0.8 to 1.1 × U_s
at 60 Hz: 0.85 to 1.1 × U_s .

3RH, 3TH Contactor Relays

3TH4 contactor relays, 8- and 10-pole

Overview

AC and DC operation

IEC 60947, EN 60947.

The 3TH42 and 3TH43 contactor relays are suitable for use in any climate. They are finger-safe according to EN 50274.

Terminal designations acc. to EN 50011

In terms of their terminal designations, identification numbers and identification letters, the 3TH42/3TH43 contactor relays conform to the standard EN 50011 for "Specific contactor relays".

Selection and ordering data



3TH42 ...-0...

Contacts	Rated operational current I_g /AC-15/AC-14 at				Contacts	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	230/220 V	400/380 V	500 V	690/660 V							
Number	A	A	A	A			Order No.	Price per PU			kg

For screw and snap-on mounting onto TH 35 standard mounting rail

AC operation, rated control supply voltage $U_s = AC\ 50\ Hz\ 230/220\ V^1)$

8	10	6	4	2	80 E	8	--	--	--	▶	3TH42 80-0AP0	1	1 unit	101	0.420
					71 E	7	1	--	--	▶	3TH42 71-0AP0	1	1 unit	101	0.420
					62 E	6	2	--	--	D	3TH42 62-0AP0	1	1 unit	101	0.420
					53 E	5	3	--	--	▶	3TH42 53-0AP0	1	1 unit	101	0.420
					44 E	4	4	--	--	▶	3TH42 44-0AP0	1	1 unit	101	0.420
					44 E, U	3	3	1	1	▶	3TH42 93-0AP0	1	1 unit	101	0.420

DC operation · DC solenoid system, rated control supply voltage $U_s = 24\ V\ DC$

8	10	6	4	2	80 E	8	--	--	--	▶	3TH42 80-0BB4	1	1 unit	101	0.670
					71 E	7	1	--	--	▶	3TH42 71-0BB4	1	1 unit	101	0.670
					62 E	6	2	--	--	▶	3TH42 62-0BB4	1	1 unit	101	0.670
					53 E	5	3	--	--	▶	3TH42 53-0BB4	1	1 unit	101	0.670
					44 E	4	4	--	--	▶	3TH42 44-0BB4	1	1 unit	101	0.670
					44 E, U	3	3	1	1	▶	3TH42 93-0BB4	1	1 unit	101	0.670

For accessories, see page 3/125.

Spare parts

Solenoid coils:

AC operation: 3TY7 403-0A.

DC operation: 3TY4 803-0B.

(voltages on request)

Contacts:

The contacts cannot be replaced on 3TH42 contactor relays.

¹⁾ Operating range at 220 V: 0.85 to 1.1 × U_s ;
lower operating range limit according to IEC 60947.

3RH, 3TH Contactor Relays

3TH4 contactor relays, 8- and 10-pole



3TH43...0A..



3TH43...0B..

Contacts	Rated operational current I_e /AC-15/AC-14 at	Contacts	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	230 V	400 V	500 V	690 V	Ident. No. acc. to EN 50011	Version	Order No.	Price per PU
Number	A	A	A	A				
								kg

for screw and snap-on mounting onto TH 35 standard mounting rail

AC operation, rated control supply voltage $U_s = AC 50 Hz 230/220 V^{1)}$

10	10	6	4	2	100 E	10	--	--	--	▶ 3TH43 10-0AP0	1	1 unit	101	0.480
					91 E	9	1	--	--	▶ 3TH43 91-0AP0	1	1 unit	101	0.480
					82 E	8	2	--	--	▶ 3TH43 82-0AP0	1	1 unit	101	0.480
					73 E	7	3	--	--	▶ 3TH43 73-0AP0	1	1 unit	101	0.480
					73 E,U	6	2	1	1	▶ 3TH43 46-0AP0	1	1 unit	101	0.480
					64 E	6	4	--	--	▶ 3TH43 64-0AP0	1	1 unit	101	0.480
					55 E	5	5	--	--	▶ 3TH43 55-0AP0	1	1 unit	101	0.480
					55 E,U	4	4	1	1	▶ 3TH43 94-0AP0	1	1 unit	101	0.480

DC operation - DC solenoid system, rated control supply voltage $U_s = 24 V DC$

10	10	6	4	2	100 E	10	--	--	--	▶ 3TH43 10-0BB4	1	1 unit	101	0.710
					91 E	9	1	--	--	▶ 3TH43 91-0BB4	1	1 unit	101	0.710
					82 E	8	2	--	--	▶ 3TH43 82-0BB4	1	1 unit	101	0.710
					73 E	7	3	--	--	▶ 3TH43 73-0BB4	1	1 unit	101	0.710
					73 E, U	6	2	1	1	▶ 3TH43 46-0BB4	1	1 unit	101	0.710
					64 E	6	4	--	--	▶ 3TH43 64-0BB4	1	1 unit	101	0.710
					55 E	5	5	--	--	▶ 3TH43 55-0BB4	1	1 unit	101	0.710
					55 E, U	4	4	1	1	▶ 3TH43 94-0BB4	1	1 unit	101	0.710

For accessories, see page 3/125.

¹⁾ Operating range at 220 V: 0.85 to 1.1 x U_s .
lower operating range limit according to IEC 60947.

Spare parts
Solenoid coils:
AC operation: 3TY7 403-0A..
DC operation: 3TY4 803-0B..
Contacts:

The contacts cannot be replaced on 3TH43 contactor relays.

Rated control supply voltages (the 10th and 11th position of the order number must be changed)

Rated control supply voltage U_s	Contact type	3TH42/3TH43
Control supply voltage at		
AC operation		
Solenoid coils for AC 50 Hz		
50 Hz	60 Hz	
24 V AC	29 V AC	B0
36 V AC	42 V AC	G0
42 V AC	50 V AC	D0
48 V AC	58 V AC	H0
60 V AC	72 V AC	E0
110 V AC	132 V AC	F0
125/127 V AC	150/152 V AC	L0
230/220 V AC	276 V AC	P0 ¹⁾
240 V AC	288 V AC	U0
400/380 V AC	480/460 V AC	V0 ¹⁾
415 V AC	500 V AC	R0
500 V AC	600 V AC	S0
For Japan		
100 V AC	100-110 V AC	G6 ²⁾
200 V AC	200-220 V AC	N6 ²⁾
For USA and Canada		
110 V AC	120 V AC	K6 ²⁾
220 V AC	240 V AC	P6 ²⁾

¹⁾ Operating range at 220 V or 380 V: 0.85 to 1.1 x U_s .

²⁾ Operating range at 60 Hz: 0.85 to 1.1 x U_s .

Rated control supply voltage U_s	Contact type	3TH42/3TH43
Control supply voltage at		
Solenoid coils for AC 50 and 60 Hz		
50/60 Hz		
24 V AC		C2
42 V AC		D2
110 V AC		G2
115 V AC		J2
120 V AC		K2
220 V AC		N2
230 V AC		L2
240 V AC		P2
440 V AC		R2
DC operation		
12 V DC		A4
24 V DC		B4
30 V DC		C4
36 V DC		V4
42 V DC		D4
48 V DC		W4
60 V DC		E4
110 V DC		F4
125 V DC		G4
220 V DC		M4
230 V DC		P4
240 V DC		Q4

* You can order this quantity or a multiple thereof.

Overview**AC and DC operation**

IEC 60947, EN 60947.

The terminal designations comply with EN 50011.

3TH2 contactor relays

The 3TH2 contactor relays are suitable for use in any climate.

The contactor relays with screw terminal are finger-safe according to EN 50274.

Terminals

The 3TH20 contactors with 4 auxiliary contacts are available with SIGUT screw terminals, 6.3 mm x 0.8 mm flat connectors and solder pin connections.

The contactors with 6.3 mm x 0.8 mm flat connectors can be used in the plug-in base with solder pin connections for printed circuit boards. The contactor relays are coded and the plug-in base is codable in order to ensure non-interchangeability.

The 3TH22 contactor relays with 8 integrated contacts are available with screw terminals. The terminal designations are according to EN 50011.

Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents > 1 mA at a voltage of 17 V and higher.

3TH27 latched contactor relays

The contactor coil and the coil of the release solenoid are both designed for uninterrupted duty.

RC elements, varistors diodes or diode assemblies can be fitted to both coils from the front for damping opening surges in the coil.

The contactor relay can also be switched on and released manually.

Accessories**Auxiliary switch blocks**

The contactor relays with 4 contacts with screw terminals relays can be expanded by up to four contacts by the addition of snap-on auxiliary switch blocks.

A cover (with unit labeling plate) must be removed from the front of the contactor for this purpose. The auxiliary switch block is then easy to mount. The auxiliary switch blocks can be removed again by unlocking them with a laterally arranged slide.

The contactor relays with screw terminals with 4 contacts according to EN 50011, with the identification number 40E, can be extended with 80E, 71E, 62E, 53E or 44E auxiliary switch blocks to obtain contactor relays with 8 contacts according to EN 50011. The identification numbers 80E, 71E, 62E, 53E or 44E on the coded auxiliary switch blocks apply to the complete contactors. These auxiliary switch blocks cannot be combined with contactor relays with identification number 31E and 33E.

All contactor relays with screw terminals with 4 contacts according to EN 50011, identification number 40E, 31E or 22E, can be extended with auxiliary switch blocks with identification number 40, 31, 22, 20, 11 or 02 to obtain contactor relays with 6 or 8 contacts according to EN 50005. The identification numbers on the auxiliary switch blocks apply only to the attached auxiliary switch blocks.

[For a schematic representation of the expansion possibilities see figure for 3RH1 contactor relays on page 3/98.](#)

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode for short break times) can be plugged onto all contactors and auxiliary switch blocks with screw terminals from the front in order to damp opening surges in the coil. The unit labeling plate must be removed for this purpose.

It can be snapped onto the attached surge suppressor.

Additional load module



The 3TX4 490-1J additional load module (see Accessories) can be used by programmable logic controllers to increase the permissible residual current and to limit the residual voltage of semiconductor outputs.

This module ensures the safe opening of 3TH2 and 3TF2 contactors with direct control through 230 V AC semiconductor outputs. It is accommodated in the same enclosure as the 3TX4 490-3. surge suppressors and can be plugged into the contactor.


3RH, 3TH Contactor Relays

3TH2 contactor relays, 4- and 8-pole




Selection and ordering data

Contacts	Rated operational current I_{th} /AC-15/AC-14 at				Contacts		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	230/ 220 V	400/ 380 V	500 V	690/ 660 V	Ident. No. acc. to EN 50011	Version							kg
							 						
Number	A	A	A	A			NO NC						


**Contactor relays with screw terminals ·
For screw and snap-on mounting onto TH 35 standard mounting rail**

Image	AC operation						Screw terminals							
	4	4	3	2	1	40E 31E 22E	4 3 2	-- 1 2	A A A	3TH20 40-0AP0 3TH20 31-0AP0 3TH20 22-0AP0	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.200 0.200 0.200
	<i>DC operation · DC solenoid system</i>													
	4	4	3	2	1	40E 31E 22E	4 3 2	-- 1 2	A A A	3TH20 40-0BB4 3TH20 31-0BB4 3TH20 22-0BB4	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.220 0.220 0.220
	3TH20 ...0A...													


Contactor relays with 6.3 mm x 0.8 mm flat connectors

Image	AC operation						Flat connectors							
	4	4	3	2	--	40E 31E 22E	4 3 2	-- 1 2	C C C	3TH20 40-3AP0 3TH20 31-3AP0 3TH20 22-3AP0	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.170 0.170 0.170
	<i>DC operation · DC solenoid system</i>													
	4	4	3	2	--	40E 31E 22E	4 3 2	-- 1 2	C C C	3TH20 40-7AP0 3TH20 31-7AP0 3TH20 22-7AP0	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.170 0.170 0.170
	3TH20 ...3...													
	<i>DC operation · DC solenoid system</i>													
	4	4	3	2	--	40E 31E 22E	4 3 2	-- 1 2	C C C	3TH20 40-3BB4 3TH20 31-3BB4 3TH20 22-3BB4	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.190 0.190 0.190
	3TH20 ...7...													
	<i>DC operation · DC solenoid system</i>													
	4	4	3	2	--	40E 31E 22E	4 3 2	-- 1 2	C C C	3TH20 40-7BB4 3TH20 31-7BB4 3TH20 22-7BB4	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.190 0.190 0.190
	3TH20 ...7...													

Contactor relays with solder pin connections for printed circuit boards

Image	AC operation						Solder pin connections							
	4	4	3	2	--	40E 31E 22E	4 3 2	-- 1 2	C C C	3TH20 40-6AP0 3TH20 31-6AP0 3TH20 22-6AP0	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.170 0.170 0.170
	<i>DC operation · DC solenoid system</i>													
	4	4	3	2	--	40E 31E 22E	4 3 2	-- 1 2	C C C	3TH20 40-6BB4 3TH20 31-6BB4 3TH20 22-6BB4	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.190 0.190 0.190
	3TH20 ...6...													


**Contactor relays with permanently mounted auxiliary switch blocks
with screw terminals, width 45 mm ·
For screw and snap-on mounting onto TH 35 standard mounting rail**

Image	AC operation						Screw terminals							
	8	4	3	2	--	80E 71E 62E 53E 44E	8 7 6 5 4	0 1 2 3 4	C C C C C	3TH22 80-0AP0 3TH22 71-0AP0 3TH22 62-0AP0 3TH22 53-0AP0 3TH22 44-0AP0	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	101 101 101 101 101	0.240 0.240 0.240 0.240 0.240
	<i>DC operation · DC solenoid system</i>													
	8	4	3	2	--	80E 71E 62E 53E 44E	8 7 6 5 4	0 1 2 3 4	C C C C C	3TH22 80-0BB4 3TH22 71-0BB4 3TH22 62-0BB4 3TH22 53-0BB4 3TH22 44-0BB4	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	101 101 101 101 101	0.260 0.260 0.260 0.260 0.260
	3TH22 ...0A...													

For accessories, see page 3/126.

3RH, 3TH Contactor Relays

3TH2 contactor relays, 4- and 8-pole

Con- tacts	Rated operational current I_e /AC-15/AC-14 at				Contacts		DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	230/ 220 V	400/ 380 V	500 V	690/ 660 V	Ident. No. acc. to EN 50011	Version						
Number	A	A	A	A				Order No.	Price per PU			kg

**Latched contactor relays with screw terminals ·
For screw and snap-on mounting onto TH 35 standard mounting rail**



<i>AC operation</i>														
4	4	3	2	1	40E	4	--	C	3TH27 40-0AP0	1	1 unit	101	0.350	
					31E	3	1	C	3TH27 31-0AP0	1	1 unit	101	0.350	
					22E	2	2	C	3TH27 22-0AP0	1	1 unit	101	0.350	
<i>DC operation · DC solenoid system</i>														
3TH27 ..	4	4	3	2	1	40E	4	--	C	3TH27 40-0BB4	1	1 unit	101	0.400
						31E	3	1	C	3TH27 31-0BB4	1	1 unit	101	0.400
						22E	2	2	C	3TH27 22-0BB4	1	1 unit	101	0.400

For accessories, see page 3/126.

**Rated control supply voltages
(the 10th and 11th position of the order number must be
changed)**

Contactor type	3TH20 ..-0...	3TH20 ...-3..., 3TH20 ..-6..., 3TH20 ..-7..., 3TH22, 3TH27
Rated control supply voltage U_s		

AC operation

Solenoid coils for AC 50 and 60 Hz

50 Hz		60 Hz	
24 V AC		29 V AC	B0
110 V AC		132 V AC	F0
230/220 V AC		276 V AC	P0 ¹⁾

DC operation

24 V DC	B4	B4
110 V DC	F4	--
220 V DC	M4	--

¹⁾ Operating range at 220 V or 380 V:
0.85 to 1.15 x U_s ; lower operating range limit according to IEC 60947.

Please inquire about further voltages.

* You can order this quantity or a multiple thereof.



3RH, 3TH Contactor Relays

3RH11 coupling relays (interface) for switching auxiliary circuits, 4-pole

Overview

DC operation

IEC 60947, EN 60947.

The 3RH11 coupling relays for switching auxiliary circuits are tailored to the special requirements of working with electronic controls.

The 3RH11 coupling relays cannot be extended with auxiliary switch blocks.

The coupling relays have a low power consumption, an extended operating range of the solenoid coil and an integrated surge suppressor for damping opening surges (exceptions: 3RH11 ...HB40 and 3RH11 ...MB40-0KT0).

Selection and ordering data

DC operation

Low power consumption

Extended operating range of the solenoid coils

Integrated coil circuit

PU (UNIT, SET, M)= 1
PS* = 1 unit
PG = 101



3RH11 ..-1.B40



3RH11 ...-2.B40

Surge suppressor	Rated operational current $I_{e/AC-15/AC-14}$ at 230 V	Auxiliary contacts		DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.
		Ident. No. acc. to EN 50011	Version								
					Order No.	Price per PU		Order No.	Price per PU		
					 NO NC		kg			kg	

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00

Terminal designations according to EN 50011

Rated control supply voltage $U_s = 24$ V DC, operating range **0.7 to 1.25** x U_s Power consumption of the solenoid coils **2.3 W** at 24 V (no auxiliary switch blocks can be mounted)

Diode, varistor or RC element, attachable	6	40 E	4	--	▶	3RH11 40-1HB40	0.260 B	3RH11 40-2HB40	0.260
		31 E	3	1	▶	3RH11 31-1HB40	0.260 B	3RH11 31-2HB40	0.260
		22 E	2	2	▶	3RH11 22-1HB40	0.260 B	3RH11 22-2HB40	0.260
Built-in diode	6	40 E	4	--	▶	3RH11 40-1JB40	0.260 B	3RH11 40-2JB40	0.260
		31 E	3	1	▶	3RH11 31-1JB40	0.260 ▶	3RH11 31-2JB40	0.260
		22 E	2	2	▶	3RH11 22-1JB40	0.260 B	3RH11 22-2JB40	0.260
Built-in varistor	6	40 E	4	--	▶	3RH11 40-1KB40	0.260 B	3RH11 40-2KB40	0.260
		31 E	3	1	▶	3RH11 31-1KB40	0.260 ▶	3RH11 31-2KB40	0.260
		22 E	2	2	▶	3RH11 22-1KB40	0.260 ▶	3RH11 22-2KB40	0.260

Rated control supply voltage $U_s = 24$ V DC, operating range **0.85 to 1.85** x U_s Power consumption of the solenoid coils **1.4 W** at 24 V (no auxiliary switch blocks can be mounted)

Diode, varistor or RC element, attachable	6	40 E	4	--	B	3RH11 40-1MB40-0KT0	0.260 B	3RH11 40-2MB40-0KT0	0.260
		31 E	3	1	B	3RH11 31-1MB40-0KT0	0.260 B	3RH11 31-2MB40-0KT0	0.260
		22 E	2	2	A	3RH11 22-1MB40-0KT0	0.260 B	3RH11 22-2MB40-0KT0	0.260
Built-in diode	6	40 E	4	--	B	3RH11 40-1VB40	0.260 B	3RH11 40-2VB40	0.260
		31 E	3	1	A	3RH11 31-1VB40	0.260 B	3RH11 31-2VB40	0.260
		22 E	2	2	B	3RH11 22-1VB40	0.260 B	3RH11 22-2VB40	0.260
Built-in varistor	6	40 E	4	--	B	3RH11 40-1WB40	0.260 B	3RH11 40-2WB40	0.260
		31 E	3	1	A	3RH11 31-1WB40	0.260 B	3RH11 31-2WB40	0.260
		22 E	2	2	A	3RH11 22-1WB40	0.260 B	3RH11 22-2WB40	0.260

For accessories, see page 3/102 and 3/104.

3RT10 coupling relays (interface),
for switching motors, 3-pole, 3 ... 11 kW

Overview

DC operation

IEC 60947, EN 60947.

The 3RT10 coupling relays for switching motors are tailored to the special requirements of working with electronic controls.

The 3RT10 1 coupling relays cannot be extended with auxiliary switch blocks.

Two single-pole auxiliary switch blocks can be fitted to the 3RT10 2 coupling relays (see Accessories on page 3/97).

The coupling relays have a low power consumption, an extended operating range of the solenoid coil and an integrated surge suppressor for damping opening surges (exceptions: 3RT10 1.-1HB4. and 3RT10 1.-.MB4.-0KT0).

Selection and ordering data

DC operation

Low power consumption

Extended operating range of the solenoid coils

Integrated coil circuit

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 1.-1.B4.



3RT10 1.-2.B4.

Surge suppressor	Rated data AC-2 and AC-3, T_U : Up to 60 °C		Auxiliary contacts		DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.
	Operational current I_e up to 400 V	Rating of induction motors at 50 Hz and 400 V	Ident. No.	Version		Order No.	Price per PU			Order No.	Price per PU	
A	400 V	400 V						kg				kg
			NO	NC								

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00

Terminal designations according to EN 50012

Rated control supply voltage $U_s = 24$ V DC, coil operating range 0.7 to $1.25 \times U_s$ Power consumption of the solenoid coils 2.3 W at 24 V (no auxiliary switch blocks can be mounted)

Diode, varistor or RC element, attachable	7	3	10	1	--	▶	3RT10 15-1HB41	0.260	B	3RT10 15-2HB41	0.260
			01	--	1	▶	3RT10 15-1HB42	0.260	B	3RT10 15-2HB42	0.260
Built-in diode	7	3	10	1	--	▶	3RT10 15-1JB41	0.260	▶	3RT10 15-2JB41	0.260
			01	--	1	▶	3RT10 15-1JB42	0.260	▶	3RT10 15-2JB42	0.260
Built-in varistor	7	3	10	1	--	▶	3RT10 15-1KB41	0.260	▶	3RT10 15-2KB41	0.260
			01	--	1	▶	3RT10 15-1KB42	0.260	▶	3RT10 15-2KB42	0.260
Diode, varistor or RC element, attachable	9	4	10	1	--	▶	3RT10 16-1HB41	0.260	B	3RT10 16-2HB41	0.260
			01	--	1	▶	3RT10 16-1HB42	0.260	B	3RT10 16-2HB42	0.260
Built-in diode	9	4	10	1	--	▶	3RT10 16-1JB41	0.260	▶	3RT10 16-2JB41	0.260
			01	--	1	▶	3RT10 16-1JB42	0.260	▶	3RT10 16-2JB42	0.260
Built-in varistor	9	4	10	1	--	▶	3RT10 16-1KB41	0.260	▶	3RT10 16-2KB41	0.260
			01	--	1	▶	3RT10 16-1KB42	0.260	▶	3RT10 16-2KB42	0.260
Diode, varistor or RC element, attachable	12	5.5	10	1	--	▶	3RT10 17-1HB41	0.260	B	3RT10 17-2HB41	0.260
			01	--	1	▶	3RT10 17-1HB42	0.260	B	3RT10 17-2HB42	0.260
Built-in diode	12	5.5	10	1	--	▶	3RT10 17-1JB41	0.260	▶	3RT10 17-2JB41	0.260
			01	--	1	▶	3RT10 17-1JB42	0.260	A	3RT10 17-2JB42	0.260
Built-in varistor	12	5.5	10	1	--	▶	3RT10 17-1KB41	0.260	▶	3RT10 17-2KB41	0.260
			01	--	1	▶	3RT10 17-1KB42	0.260	▶	3RT10 17-2KB42	0.260

For accessories, see page 3/108.

3RT Coupling Relays

**3RT10 coupling relays (interface),
for switching motors, 3-pole, 3 ... 11 kW**

DC operation

Low power consumption

Extended operating range of the solenoid coils

Integrated coil circuit

PU (UNIT, SET, M)= 1
PS* = 1 unit
PG = 101



3RT10 1.-1.B4.



3RT10 1.-2.B4.

Surge suppressor	Rated data AC-2 and AC-3, T_{ij} : Up to 60 °C	Auxiliary contacts		DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.
		Ident. No.	Version		Order No.	Price per PU			Order No.	Price per PU	
	Operational current I_e up to 400 V A	Rating of induction motors at 50 Hz and 400 V kW	NO	NC			kg			kg	

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S00

Terminal designations according to EN 50012

Rated control supply voltage $U_s = 24$ V DC, operating range **0.85 to 1.85 x U_s**

Power consumption of the solenoid coils **1.4 W** at 24 V (no auxiliary switch blocks can be mounted)

Diode, varistor or RC element, attachable	7	3	10 01	1 --	-- 1	B B	3RT10 15-1MB41-0KT0 3RT10 15-1MB42-0KT0	0.260 B 0.260 B	3RT10 15-2MB41-0KT0 3RT10 15-2MB42-0KT0	0.260 0.260
Built-in diode	7	3	10 01	1 --	-- 1	B B	3RT10 15-1VB41 3RT10 15-1VB42	0.260 B 0.260 B	3RT10 15-2VB41 3RT10 15-2VB42	0.260 0.260
Built-in varistor	7	3	10 01	1 --	-- 1	A B	3RT10 15-1WB41 3RT10 15-1WB42	0.260 B 0.260 B	3RT10 15-2WB41 3RT10 15-2WB42	0.260 0.260
Diode, varistor or RC element, attachable	9	4	10 01	1 --	-- 1	B B	3RT10 16-1MB41-0KT0 3RT10 16-1MB42-0KT0	0.260 B 0.260 B	3RT10 16-2MB41-0KT0 3RT10 16-2MB42-0KT0	0.260 0.260
Built-in diode	9	4	10 01	1 --	-- 1	B B	3RT10 16-1VB41 3RT10 16-1VB42	0.260 B 0.260 B	3RT10 16-2VB41 3RT10 16-2VB42	0.260 0.260
Built-in varistor	9	4	10 01	1 --	-- 1	B B	3RT10 16-1WB41 3RT10 16-1WB42	0.260 B 0.260 B	3RT10 16-2WB41 3RT10 16-2WB42	0.260 0.260
Diode, varistor or RC element, attachable	12	5.5	10 01	1 --	-- 1	B B	3RT10 17-1MB41-0KT0 3RT10 17-1MB42-0KT0	0.260 B 0.260 B	3RT10 17-2MB41-0KT0 3RT10 17-2MB42-0KT0	0.260 0.260
Built-in diode	12	5.5	10 01	1 --	-- 1	B B	3RT10 17-1VB41 3RT10 17-1VB42	0.260 B 0.260 B	3RT10 17-2VB41 3RT10 17-2VB42	0.260 0.260
Built-in varistor	12	5.5	10 01	1 --	-- 1	B B	3RT10 17-1WB41 3RT10 17-1WB42	0.260 B 0.260 B	3RT10 17-2WB41 3RT10 17-2WB42	0.260 0.260

For accessories, see page 3/108.

3RT Coupling Relays

**3RT10 coupling relays (interface),
for switching motors, 3-pole, 3 ... 11 kW**

- DC operation**
- Low power consumption**
- Extended operating range of the solenoid coils**
- Integrated coil circuit**

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT10 2.-1KB40



3RT10 2.-3KB40

Surge suppressor		Rated data AC-2 and AC-3, T_U : Up to 60 °C		Auxiliary contacts		DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals for coil terminals		Weight per PU approx.
Operational current I_e up to 400 V		Rating of induction motors at 50 Hz and 400 V		Ident. No.	Version		Order No.	Price per PU			Order No.	Price per PU	
A	kW								kg				kg

For screw and snap-on mounting onto TH 35 standard mounting rail

Size S0

Rated control supply voltage $U_s = 24$ V DC, coil operating range **0.7 to 1.25 x U_s**
 Power consumption of the solenoid coils **4.2 W** at 24 V (**2 single-pole auxiliary switch blocks can be mounted**)

Varistor mounted	12	5.5	--	--	--	▶	3RT10 24-1KB40	0.600	B	3RT10 24-3KB40	0.600
	17	7.5	--	--	--	▶	3RT10 25-1KB40	0.600	▶	3RT10 25-3KB40	0.600
	25	11	--	--	--	▶	3RT10 26-1KB40	0.600	▶	3RT10 26-3KB40	0.600

For accessories, see page 3/103.

* You can order this quantity or a multiple thereof.



3TX7, 3RS18 Coupling Relays

3TX7 Coupling Relays, Narrow Design

Relay couplers

Application

AC and DC operation

EN 60947, EN 60664-1 and EN 50005.






In the coupling links in double-decker design, the connections are arranged on two levels; the units are extremely compact. Connection method: screw or spring-type terminals. For test purposes, versions are available with manual-0-automatic switches.

The input and output coupling links differ with regard to the positioning of the terminals and the LEDs. For equipment identification purposes, each coupling link has a blank labeling plate.

In accordance with the technical specifications of electronic systems, the coupling links have a lower power consumption.

Selection and ordering data

AC and DC operation · for snap-on mounting onto TH 35 standard mounting rail

	Rated control supply voltage U_s at AC 50/60 Hz	Contacts Version		Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	V	NO	CO	mm							kg
3TX7 002 relay coupling links with screw terminals											
	Output coupling links					Screw terminals 					
	24 AC/DC	1	--	11,5	▶	3TX7 002-1AB00		1	1 unit	101	0,035
	24 AC/DC	1 ¹⁾	--	11,5	▶	3TX7 002-1AB02		1	1 unit	101	0,035
	24 AC/DC	--	1	17,5	▶	3TX7 002-1BB00		1	1 unit	101	0,045
	230 AC/DC	--	1	17,5	▶	3TX7 002-1BF00		1	1 unit	101	0,045
	24 AC/DC	2 ²⁾	--	22,5	▶	3TX7 002-1CB00		1	1 unit	101	0,061
	24 AC/DC	--	2 ^{1) 2)}	22,5	▶	3TX7 002-1FB02		1	1 unit	101	0,061
	Input coupling links										
	24 AC/DC	1	--	11,5	▶	3TX7 002-2AB00		1	1 unit	101	0,035
	110 AC/DC	1	--	11,5	▶	3TX7 002-2AE00		1	1 unit	101	0,035
	230 AC/DC ²⁾	1	--	11,5	▶	3TX7 002-2AF00		1	1 unit	101	0,035
	230 AC/DC ²⁾	1	--	11,5	▶	3TX7 002-2AF05		1	1 unit	101	0,035
	230 AC/DC	--	1 ^{1) 3)}	17,5	▶	3TX7 002-2BF02		1	1 unit	101	0,045
3TX7 003 relay coupling links with spring-type terminals											
	Output coupling links					Spring-type terminals 					
	24 AC/DC	1	--	11,5	▶	3TX7 003-1AB00		1	1 unit	101	0,035
	24 AC/DC	--	1	17,5	▶	3TX7 003-1BB00		1	1 unit	101	0,045
	24 AC/DC	2 ²⁾	--	22,5	▶	3TX7 003-1CB00		1	1 unit	101	0,055
Input coupling links											
230 AC/DC	1	--	11,5	A	3TX7 003-2AF00		1	1 unit	101	0,035	

Note:

For coil voltages which are not listed, see SITOP power DC Power Supplies, e. g. 6EP1 331-2BA10 and 6EP1 731-2BA00, in "Power Supplies".

1) Hard gold-plated contacts.





2) The same potential must be applied to the output contacts of the 2 NO/2 CO relays.

3) Observe max. permissible cable length, (see Technical specifications, page 3/1).

3TX7, 3RS18 Coupling Relays

3TX7 Coupling Relays, Narrow Design

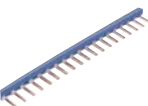

Relay couplers

Rated control supply voltage U_s at AC 50/60 Hz	Contacts Version		Manual-0-automatic switch for testing purposes	Width mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
	V	NO										CO
3TX7 004 relay couplers with screw terminals												
Output coupling links						Screw terminals 						
 3TX7 004-1LB0.	24 AC/DC	--	1	Without	6,2	▶	3TX7 004-1LB00	1	1 unit	101	0,035	
	24 AC/DC	--	1 ²⁾	Without	6,2	▶	3TX7 004-1LB02	1	1 unit	101	0,035	
	24 AC/DC	--	1	with	12,5	▶	3TX7 004-1BB10	1	1 unit	101	0,052	
	230 AC/DC	--	1	Without	6,2	▶	3TX7 004-1LF00	1	1 unit	101	0,035	
	230 AC/DC	--	1	Without	12,5 ¹⁾	▶	3TX7 004-1BF05	1	1 unit	101	0,051	
	24 AC/DC	1	--	Without	6,2	▶	3TX7 004-1MB00	1	1 unit	101	0,035	
	230 AC/DC	1	--	Without	6,2	▶	3TX7 004-1MF00	1	1 unit	101	0,035	
	Input coupling links											
	24 AC/DC		1 ²⁾	--	Without	6,2	▶	3TX7 004-2MB02	1	1 unit	101	0,035
	110 AC/DC		1 ²⁾	--	Without	6,2	▶	3TX7 004-2ME02	1	1 unit	101	0,035
230 AC/DC		1 ²⁾	--	Without	6,2	▶	3TX7 004-2MF02	1	1 unit	101	0,035	
3TX7 005 relay couplers with spring-type terminals												
Output coupling links						Spring-type terminals 						
 3TX7 005-2MB02	24 AC/DC	--	1	Without	6,2	▶	3TX7 005-1LB00	1	1 unit	101	0,035	
	24 AC/DC	--	1 ²⁾	Without	6,2	▶	3TX7 005-1LB02	1	1 unit	101	0,035	
	24 AC/DC ³⁾	--	1	Without	6,2	B	3TX7 005-1LN00	1	1 unit	101	0,035	
	230 AC/DC	--	1	Without	6,2	▶	3TX7 005-1LF00	1	1 unit	101	0,035	
	24 AC/DC	1	--	Without	6,2	▶	3TX7 005-1MB00	1	1 unit	101	0,035	
	230 AC/DC	1	--	Without	6,2	▶	3TX7 005-1MF00	1	1 unit	101	0,035	
	Input coupling links											
	24 AC/DC		1 ²⁾	--	Without	6,2	C	3TX7 005-2MB02	1	1 unit	101	0,035
	230 AC/DC		1 ²⁾	--	Without	6,2	B	3TX7 005-2MF02	1	1 unit	101	0,035

Note:
 For replacement products, see 3RS18 coupling links with industrial housing or other 3TX7 0 products.
 For coil voltages which are not listed, see SITOP power DC Power Supplies, e. g. 6EP1 331-2BA10 and 6EP1 731-2BA00, in "Power Supplies".

- 1) For long cables.
- 2) Hard gold-plated contacts.
- 3) Extended operating range 0.7 ... 1.25 x U_s .

Accessories

For coupling links	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Type								
Connecting comb, blue								
 3TX7 004-8AA00	3TX7 004	For linking the same potentials 24 terminals, current carrying capacity for infeed max. 26 A Width 6,2 mm	▶	3TX7 004-8AA00		1	1 unit	101 0,017
Connecting cable, blue								
 3TX7 004-8BA00	3TX7 002 and 3TX7 004 with screw terminals	with infeed, blue	A	3TX7 004-8BA00		1	1 unit	101 0,040
	3TX7 003 and 3TX7 005 with spring-type terminals	24 terminals, current carrying capacity for infeed max. 12 A length of cable between 2 terminals approx. 11 cm in each case						

* You can order this quantity or a multiple thereof.



3TX7, 3RS18 Coupling Relays

3TX7 Coupling Relays, Narrow Design

Relay couplers with plug-in connection





Benefits

Advantages

- Plug-in base couplers with spring-type terminals and 6.2 mm width
- Fast exchange with permanent wiring (plug-in relay)
- The wire inlet and terminals can be reached from the front. This results in faster wiring time and wiring errors are prevented.
- Tested complete units → short mounting time
- Single relays available as components
- Linking of control supply voltage and control signals with 16-pole connecting comb

- Galvanic isolation plate for isolating different voltages for neighboring units
- Device variants with hard gold-plated contacts, hence high contact reliability
- 24 V DC version also available as variant with NO contact
- Integrated reverse polarity protection and EMC arc-suppression diode
- Clearly visible functional state of the relay coupler by yellow LED
- Protective separation according to EN 50178
- 230 V AC/DC versions available

Selection and ordering data

Rated control supply voltage U_s at AC 50/60 Hz	Contacts Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
V	 NO  CO							kg
Plug-in base couplers, 6.2 mm, complete with relay			Screw terminals 					
24 DC	1	--	A	3TX7 014-1AM00	1	5 units	101	0,035
24 DC	--	1	A	3TX7 014-1BM00	1	5 units	101	0,035
24 AC/DC	--	1	A	3TX7 014-1BB00	1	5 units	101	0,035
115 AC/DC	--	1	A	3TX7 014-1BE00	1	5 units	101	0,045
230 AC/DC	--	1	A	3TX7 014-1BF00	1	5 units	101	0,041
Plug-in base couplers, 6.2 mm, complete with relay and hard gold-plating¹⁾								
24 DC	--	1	A	3TX7 014-1BM02	1	5 units	101	0,035
24 AC/DC	--	1	A	3TX7 014-1BB02	1	5 units	101	0,035
115 AC/DC	--	1	A	3TX7 014-1BE02	1	5 units	101	0,041
230 AC/DC	--	1	A	3TX7 014-1BF02	1	5 units	101	0,035
Plug-in base couplers, 6.2 mm, complete with relay			Spring-type terminals 					
24 DC	1	--	A	3TX7 015-1AM00	1	5 units	101	0,045
24 DC	--	1	A	3TX7 015-1BM00	1	5 units	101	0,045
24 AC/DC	--	1	A	3TX7 015-1BB00	1	5 units	101	0,045
115 AC/DC	--	1	A	3TX7 015-1BE00	1	5 units	101	0,045
230 AC/DC	--	1	A	3TX7 015-1BF00	1	5 units	101	0,045
Plug-in base couplers, 6.2 mm, complete with relay and hard gold-plating¹⁾								
24 DC	--	1	A	3TX7 015-1BM02	1	5 units	101	0,045
24 AC/DC	--	1	A	3TX7 015-1BB02	1	5 units	101	0,040
115 AC/DC	--	1	A	3TX7 015-1BE02	1	5 units	101	0,045
230 AC/DC	--	1	A	3TX7 015-1BF02	1	5 units	101	0,045

¹⁾ The versions with hard gold-plated contacts feature high contact reliability (also for low currents) and are therefore especially suitable for steady-state inputs of programmable logic controllers.

3TX7, 3RS18 Coupling Relays

3TX7 Coupling Relays, Narrow Design

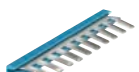
Relay couplers with plug-in connection

For coupling links	Rated control supply voltage U_s AC 50/60 Hz V	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
--------------------	--	---------	----	-----------	--------------	-------------------	-----	----	-----------------------------

Replacement relay modules¹⁾, 6.2 mm, 1 changeover contact


		For complete unit							
3TX7 014	12 DC	• 24 V AC/DC	A	3TX7 014-7BQ00		1	20 units	101	0,035
		• 24 V DC, hard gold-plating	A	3TX7 014-7BQ02		1	20 units	101	0,035
3TX7 014	24 DC	• 24 V DC	A	3TX7 014-7BM00		1	20 units	101	0,035
		• 24 V DC, hard gold-plating	A	3TX7 014-7BM02		1	20 units	101	0,035
3TX7 014	60 DC	• 115 V or 230 V AC/DC	A	3TX7 014-7BP00		1	20 units	101	0,035
		• 115 V or 230 V AC/DC, hard gold-plated	A	3TX7 014-7BP02		1	20 units	101	0,035

Connecting comb, blue

	3TX7 014	--	For linking the same potentials 16 terminals, current carrying capacity for infeed max. 6 A	A	3TX7 014-7AA00	1	5 units	101	0,035
---	----------	----	---	---	-----------------------	---	---------	-----	-------

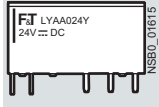
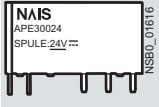
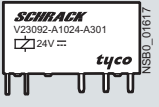
3TX7 014-7AA00


Galvanic isolation plates


	3TX7 014 and 3TX7 015	--	--	A	3TX7 014-7CE00	1	10 units	101	0,035
---	-----------------------	----	----	---	-----------------------	---	----------	-----	-------

3TX7 014-7CE00

¹⁾ The versions with hard gold-plated contacts feature high contact reliability (also for low currents) and are therefore especially suitable for steady-state inputs of programmable logic controllers.

3TX7 014-...	3TX7 015-...	(+)A1/(-)A2	NO (13/14) CO (11/12/14)	3TX7 014-...	 FTR-LY..	 APE..	 V23092-..
...1AM00 ¹⁾	...1BM00 ¹⁾	24 V DC	NO	...7BM00 ¹⁾	..CA024Y	..30024	..A1024-A301
...1BM00 ¹⁾	...1BB00 ¹⁾	24 V DC	CO	...7BM00 ¹⁾	..CA024Y	..30024	..A1024-A301
...1BB00 ¹⁾	...1BE00 ¹⁾	24 V AC/DC	CO	...7BQ00 ¹⁾	..CA012Y	..30012	..A1012-A301
...1BE00 ¹⁾	...1BF00 ¹⁾	115 V AC/DC	CO	...7BP00 ¹⁾	--	..30060	..A1060-A301
...1BF00 ¹⁾	...1BM02 ²⁾	230 V AC/DC	CO	...7BP00 ¹⁾	--	..30060	..A1060-A301
...1BM02 ²⁾	...1BB02 ²⁾	24 V DC	CO	...7BM02 ²⁾	..CA024V	..30124	..A1024-A201
...1BB02 ²⁾	...1BE02 ²⁾	24 V AC/DC	CO	...7BQ02 ²⁾	..CA012V	..30112	..A1012-A201
...1BE02 ²⁾	...1BF02 ²⁾	115 V AC/DC	CO	...7BP02 ²⁾	--	..30160	..A1060-A201
...1BF02 ²⁾		230 V AC/DC	CO	...7BP02 ²⁾	--	..30160	..A1060-A201

¹⁾  = AgSn0

²⁾  = AgSn0+Au

3TX7, 3RS18 Coupling Relays

3TX7 Coupling Relays, Narrow Design

Semiconductor couplers

Overview

AC and DC operation

EN 60664-1, EN 60947 and EN 50005; optocouplers: EN 60747-5, IEC 61131-2 (programmable controllers).


In the coupling links in double-decker design, the connections are arranged on two levels; the units are extremely compact. Connection method: screw or spring-type terminals. For test purposes, versions are available with manual-0-automatic switches.

The input and output coupling links differ with regard to the positioning of the terminals and the LEDs. For equipment identification purposes, each coupling link has a blank labeling plate.

In accordance with the technical specifications of electronic systems, the coupling links have a lower power consumption.

Selection and ordering data

AC and DC operation - for snap-on mounting onto TH 35 standard mounting rail

Rated control supply voltage U_s at AC 50/60 Hz	Switching voltage	Switching current	Width	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
V	V	A	mm		Order No.	Price per PU			kg

3TX7 002 semiconductor couplers with screw terminals, 1 transistor

Output coupling links

24 DC	48 ... 264 AC	1,8	12,5	▶	3TX7 002-3AB00	1	1 unit	101	0,033
	< 60 DC	1,5	11,5	▶	3TX7 002-3AB01	1	1 unit	101	0,035

Input coupling links

24 AC/DC	< 30 DC	0,1	12,5	▶	3TX7 002-4AB00	1	1 unit	101	0,031
110 ... 240 AC	< 30 DC	0,1	12,5	▶	3TX7 002-4AG00	1	1 unit	101	0,035




3TX7 002

Rated control supply voltage U_s at AC 50/60 Hz	Switching voltage	Switching current	Manual-0-automatic switch for testing purposes	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
V	V	A		mm							kg

3TX7 004 semiconductor couplers with screw terminals

Output coupling links

						Screw terminals 					
24 DC	≤ 48 DC	0,5	Without	6,2	▶	3TX7 004-3AB04	1	1 unit	101	0,034	
24 DC	11 ... 30 DC	1,5	Without	6,2	▶	3TX7 004-3PB54	1	1 unit	101	0,029	
24 DC	≤ 30 DC	3	Without	6,2	▶	3TX7 004-3PB74	1	1 unit	101	0,032	
110 ... 230 AC/DC	≤ 30 DC	3	Without	6,2	A	3TX7 004-3PG74	1	1 unit	101	0,033	
24 DC	≤ 30 DC	5	Without	12,5	▶	3TX7 004-3AC04	1	1 unit	101	0,052	
24 DC	≤ 30 DC	5	With	12,5	B	3TX7 004-3AC14	1	1 unit	101	0,061	
24 DC	24 ... 250 AC	2	Without	12,5	▶	3TX7 004-3AC03	1	1 unit	101	0,060	


3TX7 004-3AB04

Input coupling links

110 ... 230 AC/DC	≤ 30 DC	0,1	Without	6,2	▶	3TX7 004-4PG24	1	1 unit	101	0,034
-------------------	---------	-----	---------	-----	---	-----------------------	---	--------	-----	-------

3TX7 005 semiconductor couplers with spring-type terminals

Output coupling links

						Spring-type terminals 					
24 DC	≤ 48 DC	0,5	Without	6,2	▶	3TX7 005-3AB04	1	1 unit	101	0,031	
24 DC	11 ... 30 DC	1,5	Without	6,2	▶	3TX7 005-3PB54	1	1 unit	101	0,025	
24 DC	≤ 30 DC	3	Without	6,2	A	3TX7 005-3PB74	1	1 unit	101	0,027	
110 ... 230 AC/DC			Without	6,2	A	3TX7 005-3PG74	1	1 unit	101	0,027	
24 DC	≤ 30 DC	5	Without	12,5	▶	3TX7 005-3AC04	1	1 unit	101	0,047	
24 DC			With	12,5	C	3TX7 005-3AC14	1	1 unit	101	0,051	
24 DC	24 ... 250 AC	2	Without	12,5	C	3TX7 005-3AC03	1	1 unit	101	0,056	

Input coupling links

110 ... 230 AC/DC	≤ 30 DC	0,1	Without	6,2	▶	3TX7 005-4PG24	1	1 unit	101	0,031
-------------------	---------	-----	---------	-----	---	-----------------------	---	--------	-----	-------

Note:

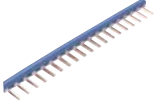

For replacement products, see 3RS18 coupling links with industrial housing or other 3TX7 0 products. For coil voltages which are not listed, see SITOP power DC Power Supplies, e. g. 6EP1 331-2BA10 and 6EP1 731-2BA00, in "Power Supplies".

3TX7, 3RS18 Coupling Relays

3TX7 Coupling Relays, Narrow Design

Semiconductor couplers

Accessories

For coupling links	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Type									
Connecting comb, blue									
	3TX7 004		For linking the same potentials ▶	3TX7 004-8AA00		1	1 unit	101	0,017
3TX7 004-8AA00			24 terminals, current carrying capacity for infeed max. 26 A Width 6,2 mm						
Connecting cable, blue									
	3TX7 002 and 3TX7 004 with screw terminals 3TX7 003 and 3TX7 005 with spring-type terminals	With infeed, blue	A	3TX7 004-8BA00		1	1 unit	101	0,040
3TX7 004-8BA00		24 terminals, current carrying capacity for infeed max. 12 A length of cable between 2 terminals approx. 11 cm in each case							

3

* You can order this quantity or a multiple thereof.

3TX7, 3RS18 Coupling Relays

3RS18 Coupling Relays with Industrial Housing

Relay couplers

Overview




The new 3RS18 coupling relays are couplers in the well-proven standard 22.5 mm timing relay enclosure. The series comprises relays with 1, 2 and 3 changeover contacts with screw and spring-type connections for combined voltages and wide voltage ranges.

The relay coils are protected internally with noise suppression diodes.

Benefits

- Wide voltage range: One product for all voltages
- The industrial housing supports the same connection methods as the timing relay including spring-type connections, 2 wires can be clamped
- Versions with solid-state compatible outputs (hard gold-plating)
- Up to 3 changeover contacts with only 22.5 mm width.

Selection and ordering data

Rated control supply voltage U_s at AC 50/60 Hz	Contacts Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
V	CO							kg
Coupling relays with industrial housing with screw terminals, 22.5 mm								
Wide voltage range			Screw terminals 					
 3RS18 00-1....	24 ... 240 AC/DC	2	A	3RS18 00-1BW00	1	1 unit	101	0,143
		3	A	3RS18 00-1HW00	1	1 unit	101	0,168
		3 ¹⁾	A	3RS18 00-1HW01	1	1 unit	101	0,168
Combination voltage								
24 AC/DC and 110 ... 120 AC	1	A	3RS18 00-1AQ00	1	1 unit	101	0,116	
	2	A	3RS18 00-1BQ00	1	1 unit	101	0,142	
	3	C	3RS18 00-1HQ00	1	1 unit	101	0,173	
	3 ¹⁾	C	3RS18 00-1HQ01	1	1 unit	101	0,173	
24 AC/DC and 220 ... 240 AC	1	A	3RS18 00-1AP00	1	1 unit	101	0,112	
	2	A	3RS18 00-1BP00	1	1 unit	101	0,142	
	3	A	3RS18 00-1HP00	1	1 unit	101	0,166	
	3 ¹⁾	A	3RS18 00-1HP01	1	1 unit	101	0,170	
Coupling relays with industrial housing with spring-type terminals, 22.5 mm								
Wide voltage range			Spring-type terminals 					
24 ... 240 AC/DC	2	A	3RS18 00-2BW00	1	1 unit	101	0,128	
	3	A	3RS18 00-2HW00	1	1 unit	101	0,144	
	3 ¹⁾	C	3RS18 00-2HW01	1	1 unit	101	0,145	
Combination voltage								
24 AC/DC and 110 ... 120 AC	1	C	3RS18 00-2AQ00	1	1 unit	101	0,104	
	2	C	3RS18 00-2BQ00	1	1 unit	101	0,120	
	3	C	3RS18 00-2HQ00	1	1 unit	101	0,147	
	3 ¹⁾	C	3RS18 00-2HQ01	1	1 unit	101	0,147	
24 AC/DC and 220 ... 240 AC	1	A	3RS18 00-2AP00	1	1 unit	101	0,104	
	2	A	3RS18 00-2BP00	1	1 unit	101	0,122	
	3	A	3RS18 00-2HP00	1	1 unit	101	0,143	
	3 ¹⁾	C	3RS18 00-2HP01	1	1 unit	101	0,147	

¹⁾ Hard gold-plated contacts.

Overview

The LZX complete units and accessory parts previously available are no longer listed in this catalog. In their place you will now find the new LZS types. LZS complete units are fully compatible with their predecessors, the LZX complete units. The LZX plug-in relays have not been changed and are used accordingly in both the LZS and the LZX series.

Due to differences in geometry the LED modules, plug-in bases, retaining brackets and labels can be combined and/or used in only the respective series, LZS or LZX.

List for converting from LZX to LZS plug-in relay couplers:

Complete units	
Previous Order No.	New Order No.
LZX:PT3A5L24	LZS:PT3A5L24
LZX:PT3A5R24	LZS:PT3A5R24
LZX:PT3A5S15	LZS:PT3A5S15
LZX:PT3A5T30	LZS:PT3A5T30
LZX:PT5A5L24	LZS:PT5A5L24
LZX:PT5A5R24	LZS:PT5A5R24
LZX:PT5A5S15	LZS:PT5A5S15
LZX:PT5A5T30	LZS:PT5A5T30
LZX:PT5B5L24	LZS:PT5B5L24
LZX:PT5B5R24	LZS:PT5B5R24
LZX:PT5B5S15	LZS:PT5B5S15
LZX:PT5B5T30	LZS:PT5B5T30
LZX:RT3A4L24	LZS:RT3A4L24
LZX:RT3A4R24	LZS:RT3A4R24
LZX:RT3A4S15	LZS:RT3A4S15
LZX:RT3A4T30	LZS:RT3A4T30
LZX:RT3B4L24	LZS:RT3B4L24
LZX:RT3B4R24	LZS:RT3B4R24
LZX:RT3B4S15	LZS:RT3B4S15
LZX:RT3B4T30	LZS:RT3B4T30
LZX:RT4A4L24	LZS:RT4A4L24
LZX:RT4A4R24	LZS:RT4A4R24
LZX:RT4A4S15	LZS:RT4A4S15
LZX:RT4A4T30	LZS:RT4A4T30
LZX:RT4B4L24	LZS:RT4B4L24
LZX:RT4B4R24	LZS:RT4B4R24
LZX:RT4B4S15	LZS:RT4B4S15
LZX:RT4B4T30	LZS:RT4B4T30

Prices for the new LZS series are lower than for the previous LZX series.

Note:

In addition the LZS series offers not only service-proven screw connections but also versions with plug-in terminals.

The following conversion list will help you to change over from the LZX types previously sold to the new LZS types. Please contact your regional adviser if you have any questions.

List for converting from LZX to LZS accessories for individual modules:

Accessories for individual modules	
Previous Order No.	New Order No.
LZX:MT28800	LZS:MT28800
LZX:MT78750	LZS:MT78750
LZX:PT16016	LZS:PT17024 ¹⁾ LZS:PT17021 ²⁾
LZX:PT16040	LZS:PT17040
LZX:PT78702	LZS:PT78720
LZX:PT78703	LZS:PT78730
LZX:PT78704	LZS:PT78740
LZX:PT78802	LZS:PT78722
LZX:PT78804	LZS:PT78742
LZX:RPMG0024	LZS:PTMG0024
LZX:RPMG0524	LZS:PTMG0524
LZX:RPMG0730	LZS:PTMG0730
LZX:RPML0024	LZS:PTML0024
LZX:RPML0524	LZS:PTML0524
LZX:RPML0730	LZS:PTML0730
LZX:RPMT00A0	LZS:PTMT00A0
LZX:RPMU0548	LZS:PTMU0524
LZX:RPMU0730	LZS:PTMU0730
LZX:RT16016	LZS:RT17016
LZX:RT78625	LZS:RT78725
LZX:RT78626	LZS:RT78726
LZX:RY16040	LZS:RT17040





¹⁾ LZS:PT17024 for PT standard base: Without logical separation, screw terminals.

²⁾ LZS:PT17021 for PT base with logical separation, screw terminals and plug-in terminals.

Coupling Relays with LZS, LZX Plug-in Relays

Plug-in relay couplers

Selection and ordering data

Version	Rated control supply voltage U_s at AC 50/60 Hz	Contacts, number of CO contacts	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	V		mm							kg	
Complete units, 11- and 14-pole, PT series											
 LZS:PT3A5L24	Complete units with plug-in base for snap-on mounting onto TH 35 standard mounting rail comprising:				Screw terminals 						
	<ul style="list-style-type: none"> Coupling relays with plug-in relays Standard plug-in base with screw terminals LED module (version 24 V DC: LED module with freewheel diode) Fixing/ejection brackets Labels 										
	3 CO	24 DC	3	28	A	LZS:PT3A5L24		1 5 units	101	0.085	
		24 AC			A	LZS:PT3A5R24		1 5 units	101	0.085	
		115 AC			A	LZS:PT3A5S15		1 5 units	101	0.085	
		230 AC			A	LZS:PT3A5T30		1 5 units	101	0.085	
	4 CO	24 DC	4	28	A	LZS:PT5A5L24		1 5 units	101	0.090	
		24 AC			A	LZS:PT5A5R24		1 5 units	101	0.090	
		115 AC			A	LZS:PT5A5S15		1 5 units	101	0.090	
		230 AC			A	LZS:PT5A5T30		1 5 units	101	0.090	
Complete units with plug-in base with logical separation¹⁾ for snap-on mounting onto TH 35 standard mounting rail comprising:											
<ul style="list-style-type: none"> Coupling relays with plug-in relays Plug-in base with logical separation and screw terminals LED module (version 24 V DC: LED module with freewheel diode) Fixing/ejection brackets Labels 											
4 CO	24 DC	4	28	A	LZS:PT5B5L24		1 5 units	101	0.095		
	24 AC			A	LZS:PT5B5R24		1 5 units	101	0.095		
	115 AC			A	LZS:PT5B5S15		1 5 units	101	0.095		
	230 AC			A	LZS:PT5B5T30		1 5 units	101	0.095		
Complete units, 11- and 14-pole, PT series											
 LZS:PT5D5L24	Complete units with plug-in base with logical separation¹⁾ for snap-on mounting onto TH 35 standard mounting rail comprising:				Plug-in terminals 						
	<ul style="list-style-type: none"> Coupling relays with plug-in relays Plug-in base with logical separation and plug-in terminals LED module (version 24 V DC: LED module with freewheel diode) Fixing/ejection brackets Labels 										
	4 CO	24 DC	4	28	A	LZS:PT5D5L24		1 5 units	101	0.098	
		24 AC			A	LZS:PT5D5R24		1 5 units	101	0.098	
		115 AC			A	LZS:PT5D5S15		1 5 units	101	0.098	
		230 AC			A	LZS:PT5D5T30		1 5 units	101	0.098	

1) **Note:**

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e. g. above for contacts and below for the coil. Logical separation is not necessarily protective separation (see note on Technical Information on page 3/1).

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (EN 61140).

Coupling Relays with LZS, LZX Plug-in Relays

Plug-in relay couplers

Version	Rated control supply voltage U_s at AC 50/60 Hz	Contacts, number of CO contacts	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	V		mm							kg

Individual modules for customer assembly, PT series

Industrial relays, 8-, 11-, and 14-pole

Mini industrial relays

- With test bracket and mechanical switch position indicator, without LED¹⁾



LZX:PT370024

24 DC	2	22.5	▶	LZX:PT270024	1	1 unit	101	0.030
				LZX:PT370024	1	1 unit	101	0.031
				LZX:PT570024	1	1 unit	101	0.031
24 AC	2	22.5	C	LZX:PT270524	1	1 unit	101	0.030
				LZX:PT370524	1	1 unit	101	0.031
				LZX:PT570524	1	1 unit	101	0.031
115 AC	2	22.5	C	LZX:PT270615	1	1 unit	101	0.028
				LZX:PT370615	1	1 unit	101	0.030
				LZX:PT570615	1	1 unit	101	0.030
230 AC	2	22.5	▶	LZX:PT270730	1	1 unit	101	0.029
				LZX:PT370730	1	1 unit	101	0.030
				LZX:PT570730	1	1 unit	101	0.030
24 DC	4	22.5	▶	LZX:PT580024	1	1 unit	101	0.031
				LZX:PT580730	1	1 unit	101	0.031
230 AC	4	22.5	C	LZX:PT520024	1	1 unit	101	0.031
				LZX:PT520730	1	1 unit	101	0.031

- With hard gold-plating

- Without test bracket

Plug-in bases for PT relays

Standard plug-in bases

for mounting onto TH 35 standard mounting rail



LZS:PT78740

				Screw terminals					
--	2	28	▶	LZS:PT78720	1	1 unit	101	0.045	
				LZS:PT78730	1	1 unit	101	0.048	
				LZS:PT78740	1	1 unit	101	0.050	

Plug-in bases with logical separation²⁾

for mounting onto TH 35 standard mounting rail



LZS:PT78722

--	2	28	▶	LZS:PT78722	1	1 unit	101	0.048
				LZS:PT78742	1	1 unit	101	0.050

Plug-in bases with logical separation²⁾

for mounting onto TH 35 standard mounting rail



LZS:PT7874P

				Plug-in terminals					
--	2	28	▶	LZS:PT7872P	1	1 unit	101	0.045	
				LZS:PT7874P	1	1 unit	101	0.050	

¹⁾ The test bracket is designed to be non-latching. If the test bracket is pressed further until 90° has been reached, two small lugs break off and the test bracket can be latched in position.

²⁾ Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e. g. above for contacts and below for the coil. Logical separation is not necessarily protective separation (see note on Technical Information on page 3/1).

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (EN 61140).

Coupling Relays with LZS, LZX Plug-in Relays

Plug-in relay couplers

Version	Rated control supply voltage U_s at AC 50/60 Hz	Contacts, number of CO contacts	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	V		mm							kg
Individual modules for customer assembly, PT series										
<i>More individual modules</i>										
LED modules										
• Red										
 LZS:PTML0024	With freewheel diode	24 DC	--	12.5	▶	LZS:PTML0024	1	1 unit	101	0.004
	Without freewheel diode	24 AC/DC			▶	LZS:PTML0524	1	1 unit	101	0.004
		110 ... 230 AC/DC				▶	LZS:PTML0730	1	1 unit	101
• Green										
 LZS:PTMG0024	With freewheel diode	24 DC	--	12.5	▶	LZS:PTMG0024	1	1 unit	101	0.004
	Without freewheel diode	24 AC			▶	LZS:PTMG0524	1	1 unit	101	0.004
		110 ... 230 AC/DC				▶	LZS:PTMG0730	1	1 unit	101
Fixing/ejection brackets for PT base with logical separation¹⁾										
 LZS:PT17021	Screw terminals and plug-in terminals		--	26	▶	LZS:PT17021	100	10 units	101	0.300
Fixing/ejection brackets for standard plug-in base without logical separation										
 LZS:PT17024	Screw terminals		--	26	▶	LZS:PT17024	100	10 units	101	0.300
Labels										
 LZS:PT17040		--	--	26	▶	LZS:PT17040	100	10 units	101	0.200
RC elements										
 LZS:PTMU0524		6 ... 60 AC	--	26	▶	LZS:PTMU0524	1	1 unit	101	0.004
		110 ... 230 AC			▶	LZS:PTMU0730	1	1 unit	101	0.004
Freewheel diodes with connection to A1										
 LZS:PTMT00A0		6 ... 230 DC	--	26	▶	LZS:PTMT00A0	1	1 unit	101	0.004
Connecting cable, 24-pole										
 3TX7 004-8BA00		Current carrying capacity 12 A, with supply, blue			A	3TX7 004-8BA00	1	1 unit	101	0.040
Connecting combs for PT screw base										
 3TX7 004-8BA00		6-pole, 10 A current carrying capacity, natural-colored				LZS:PT170R6	1	10 units	101	0.002
Connecting brackets for PT push-in base										
 LZS:PT170P1		2-pole, 10 A current carrying capacity, natural-colored				LZS:PT170P1	1	10 units	101	0.002
Individual modules for customer assembly, MT series										
<i>Industrial relays, 11-pole</i>										
Industrial relays with test bracket										
 LZX:MT326024	Without LED	24 DC	3	35.5	A	LZX:MT321024	1	1 unit	101	0.088
	With LED				▶	LZX:MT323024	1	1 unit	101	0.088
	Without LED	24 AC	3	35.5	A	LZX:MT326024	1	1 unit	101	0.089
	With LED				C	LZX:MT328024	1	1 unit	101	0.089
	Without LED	115 AC	3	35.5	C	LZX:MT326115	1	1 unit	101	0.087
	With LED				C	LZX:MT328115	1	1 unit	101	0.088
 LZX:MT326230	Without LED	230 AC	3	35.5	A	LZX:MT326230	1	1 unit	101	0.089
	With LED				A	LZX:MT328230	1	1 unit	101	0.089
Plug-in bases										
 LZS:MT78750	for mounting onto TH 35 standard mounting rail					Screw terminals 				
			--	38	▶	LZS:MT78750	1	1 unit	101	0.050
Retaining brackets										
 LZS:MT28800		--	--	38	▶	LZS:MT28800	1	1 unit	101	0.003

Note:






For coil voltages which are not listed, see SITOP power DC Power Supplies, e. g. 6EP1 331-2AB10 and 6EP1 731-2AB00, in "Power Supplies".

¹⁾ **Note:**

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e. g. above for contacts and below for the coil. Logical separation is not necessarily protective separation (see note on Technical Information on page 3/1).
Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (EN 61140).

Coupling Relays with LZS, LZX Plug-in Relays

Plug-in relay couplers

Version	Rated control supply voltage U_s at AC 50/60 Hz	Contacts, number of CO contacts	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
	V		mm							kg		
Complete units, 8-pole, 5 mm pinning, RT series												
 LZS:RT4A4T30	Complete units with standard plug-in base for snap-on mounting onto TH 35 standard mounting rail comprising:				Screw terminals 							
	<ul style="list-style-type: none"> Coupling relays with plug-in relays Standard plug-in base with screw terminals LED module (version 24 V DC: LED module with freewheel diode) Fixing/ejection brackets Labels 											
	1 CO	24 DC 24 AC 115 AC 230 AC	1	15.5	A A A A	LZS:RT3A4L24 LZS:RT3A4R24 LZS:RT3A4S15 LZS:RT3A4T30		1 5 units 1 5 units 1 5 units 1 5 units	101 101 101 101	0.052 0.052 0.052 0.052		
	2 CO	24 DC 24 AC 115 AC 230 AC	2	15.5	A A A A	LZS:RT4A4L24 LZS:RT4A4R24 LZS:RT4A4S15 LZS:RT4A4T30		1 5 units 1 5 units 1 5 units 1 5 units	101 101 101 101	0.052 0.052 0.052 0.052		
	Complete units with plug-in base with logical separation for snap-on mounting onto TH 35 standard mounting rail comprising:											
	<ul style="list-style-type: none"> Coupling relays with plug-in relays Plug-in base with logical separation and screw terminals LED module (version 24 V DC: LED module with freewheel diode) Fixing/ejection brackets Labels 											
 LZS:RT4B4T30	1 CO	24 DC 24 AC 115 AC 230 AC	1	15.5	A A A A	LZS:RT3B4L24 LZS:RT3B4R24 LZS:RT3B4S15 LZS:RT3B4T30		1 5 units 1 5 units 1 5 units 1 5 units	101 101 101 101	0.055 0.055 0.055 0.055		
	2 CO	24 DC 24 AC 115 AC 230 AC	2	15.5	A A A A	LZS:RT4B4L24 LZS:RT4B4R24 LZS:RT4B4S15 LZS:RT4B4T30		1 5 units 1 5 units 1 5 units 1 5 units	101 101 101 101	0.055 0.055 0.055 0.055		
	Complete units, 8-pole, 5 mm pinning, RT series											
	 LZS:RT3D4L24	Complete units with plug-in base with logical separation for snap-on mounting onto TH 35 standard mounting rail comprising:				Plug-in terminals 						
		<ul style="list-style-type: none"> Coupling relays with plug-in relays Plug-in base with logical separation and plug-in terminals LED module (version 24 V DC: LED module with freewheel diode) Fixing/ejection brackets Labels 										
		1 CO	24 DC 24 AC 115 AC 230 AC	1	15.5	A A A A	LZS:RT3D4L24 LZS:RT3D4R24 LZS:RT3D4S15 LZS:RT3D4T30		1 5 units 1 5 units 1 5 units 1 5 units	101 101 101 101	0.065 0.065 0.065 0.065	
2 CO		24 DC 24 AC 115 AC 230 AC	2	15.5	A A A A	LZS:RT4D4L24 LZS:RT4D4R24 LZS:RT4D4S15 LZS:RT4D4T30		1 5 units 1 5 units 1 5 units 1 5 units	101 101 101 101	0.065 0.065 0.065 0.065		
Complete units with plug-in base with logical separation for snap-on mounting onto TH 35 standard mounting rail comprising:												
<ul style="list-style-type: none"> Coupling relays with plug-in relays Plug-in base with logical separation and plug-in terminals LED module (version 24 V DC: LED module with freewheel diode) Fixing/ejection brackets Labels 												

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e. g. above for contacts and below for the coil. Logical separation is not necessarily protective separation (see note on Technical Information on page 3/1).

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (EN 61140).

Coupling Relays with LZS, LZX Plug-in Relays

Plug-in relay couplers

Version	Rated control supply voltage U_s at AC 50/60 Hz	Contacts, number of CO contacts	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	V		mm							kg
Individual modules for customer assembly, RT series										
<i>Print relays, 8-pole, 5 mm pinning</i>										
Print relays with hard gold-plating Version with 1 CO contact										
	24 DC	1	12.7	C	LZX:RT315024		1	1 unit	101	0.016
	230 AC			C	LZX:RT315730		1	1 unit	101	0.015
Print relays Version with 1 CO contact										
	24 DC	1	12.7	▶	LZX:RT314024		1	1 unit	101	0.016
	24 AC			C	LZX:RT314524		1	1 unit	101	0.007
	115 AC			C	LZX:RT314615		1	1 unit	101	0.013
	230 AC			▶	LZX:RT314730		1	1 unit	101	0.007
Print relays Version with 2 CO contacts										
	12 DC	2	12.7	C	LZX:RT424012		1	1 unit	101	0.015
	24 DC			▶	LZX:RT424024		1	1 unit	101	0.015
	24 AC			▶	LZX:RT424524		1	1 unit	101	0.014
	115 AC			▶	LZX:RT424615		1	1 unit	101	0.012
	230 AC			▶	LZX:RT424730		1	1 unit	101	0.010
	Standard plug-in bases for mounting onto TH 35 standard mounting rail									
	--	--	15.5	▶	LZS:RT78725		1	1 unit	101	0.035
Plug-in bases with logical separation for mounting onto TH 35 standard mounting rail										
	--	--	15.5	▶	LZS:RT78726		1	1 unit	101	0.037
Plug-in bases with logical separation for mounting onto TH 35 standard mounting rail										
	--	--	15.5	▶	LZS:RT7872P		1	1 unit	101	0.035
LED modules										
• Red										
	With freewheel diode	24 DC	--	▶	LZS:PTML0024		1	1 unit	101	0.004
	Without freewheel diode	24 AC/DC	--	▶	LZS:PTML0524		1	1 unit	101	0.004
		110 ... 230	--		▶	LZS:PTML0730		1	1 unit	101
• Green										
	With freewheel diode	24 DC	--	▶	LZS:PTMG0024		1	1 unit	101	0.004
	Without freewheel diode	24 AC/DC	--	▶	LZS:PTMG0524		1	1 unit	101	0.004
		110 ... 230	--		▶	LZS:PTMG0730		1	1 unit	101
Fixing/ejection brackets for RT base										
	--	--	15.5	▶	LZS:RT17016		100	10 units	101	0.300
Labels										
	--	--	15.5	▶	LZS:RT17040		100	10 units	101	0.200
RC elements										
	6 ... 60 AC	--	15.5	▶	LZS:PTMU0524		1	1 unit	101	0.004
	110 ... 230 AC	--		▶	LZS:PTMU0730		1	1 unit	101	0.004
Freewheel diodes with connection to A1										
	6 ... 230	--	15.5	▶	LZS:PTMT00A0		1	1 unit	101	0.004
Connecting cable, 24-pole Current carrying capacity 12 A, with supply, blue										
				A	3TX7 004-8BA00		1	1 unit	101	0.040
Connecting combs for RT screw base										
	8-pole, 10 A current carrying capacity, natural-colored			▶	LZS:RT170R8		1	10 units	101	0.002
Connecting brackets for PT push-in base										
	2-pole, 10 A current carrying capacity, natural-colored			▶	LZS:RT170P1		100	10 units	101	0.200

Note:

For coil voltages which are not listed, see SITOP power DC Power Supplies, e. g. 6EP1 331-2BA10 and 6EP1 731-2BA00, in "Power Supplies".

* You can order this quantity or a multiple thereof.

Plug-in relay couplers

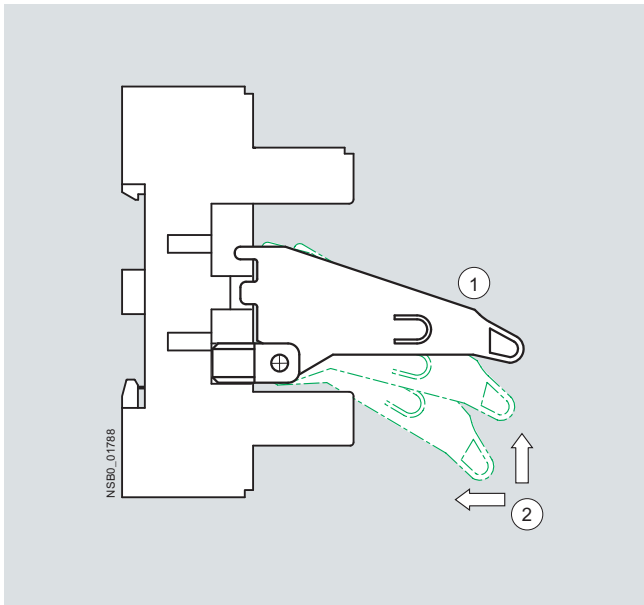
3

More information

Notes on configuration

PT series

Mounting the LZS:PT17024 fixing/ejection bracket on the LZS:PT787.0 standard plug-in base with screw terminals

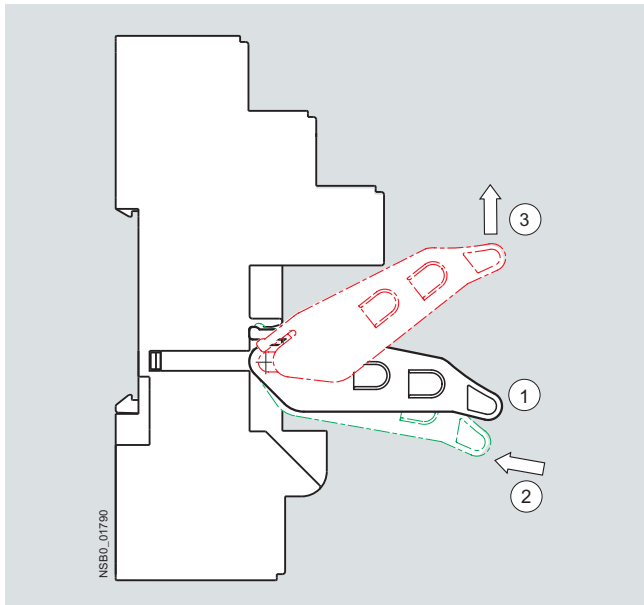


Legend:

- ① Locking position
- ② Mounting direction

RT series

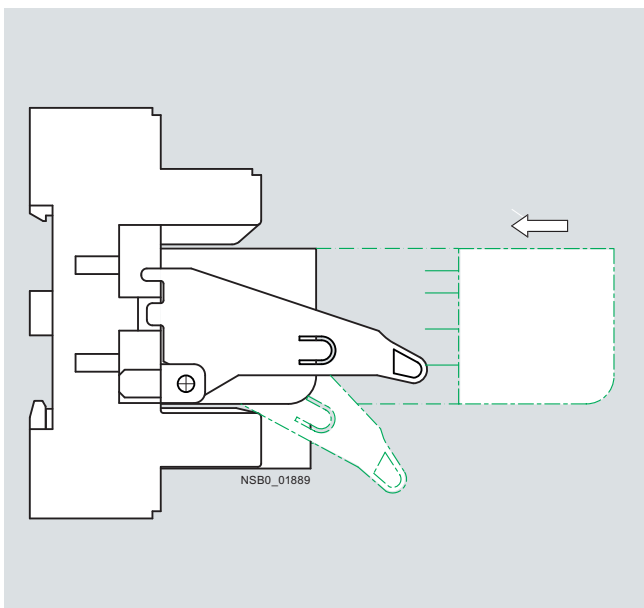
Mounting the LZS:RT17016 fixing/ejection bracket on the LZS:RT7872. plug-in base



Legend:

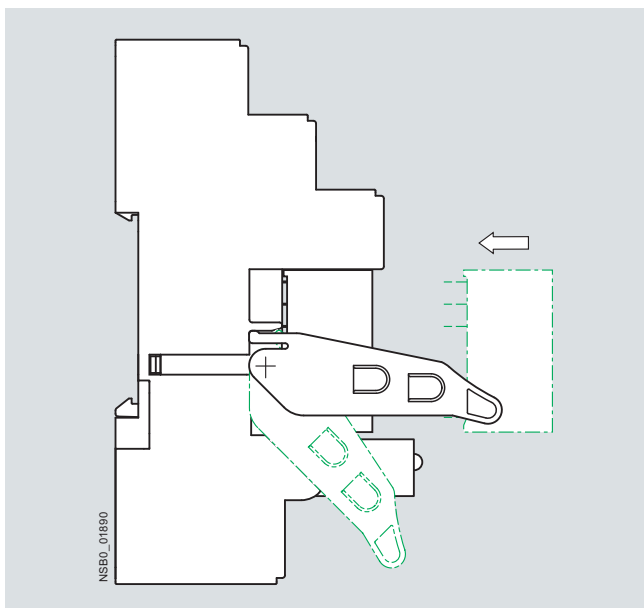
- ① Locking position
- ② Mounting direction
- ③ Demounting direction

Mounting the coupling relay with plug-in relay



Important:
The LZS:PT17021 and LZS:PT17024 ejection brackets of the coupling relays with plug-in relay are not status displays!

Mounting the coupling relay with plug-in relay



Important:
The LZS:RT17016 ejection brackets of the coupling relays with plug-in relay are not status displays!

3TG10 Power Relays/Miniature Contactors

4-pole, 4 kW

Overview

Version

The 3TG10 power relays/miniature contactors with 4 main contacts are available with screw terminals or 6.3 mm x 0.8 mm flat connectors. The versions with screw terminals are climate-proof and finger-safe according to EN 61140.

The 3TG10 power relays/miniature contactors are small. Their width is 36 mm.

Application

Because they are hum-free they are suitable for use in household appliances and distribution boards in office and residential areas. They can also be used for applications where there is little space such as air conditioners, heating systems, pumps and fans, i. e. for simple electrical controls.

AC and DC operation

EN 60947-1, EN 60947-4-1

Surge suppression

The 3TG10 power relays/miniature contactors have an integrated protective circuit against opening surges.

Overload and short-circuit protection

The 3UA7 overload relay can be used for overload protection. This applies to mounting onto contactors and to stand-alone installation.

Information about short-circuit protection for the contactors can be found in the "Technical specifications" (see note on Technical Information on page 3/1).

Selection and ordering data

Rated data		Main contacts	Rated control supply voltage U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Utilization category	Version									
AC-1 Switching of resistive loads at 55 °C	AC-2 and AC-3	Version NO NC V								kg
Operational current I_e up to 400 V	Power of AC loads at 50 Hz and 400 V									
A	kW	A	kW							

4-pole · Hum-free · With screw terminals For screw and snap-on mounting onto TH 35 standard mounting rail

AC operation, 45 ... 450 Hz								Screw terminals				
20	13	8.4	4	4	--	24 AC	▶	3TG10 10-0AC2	1	1 unit	101	0.157
						110 AC	▶	3TG10 10-0AG2	1	1 unit	101	0.158
						230 AC	▶	3TG10 10-0AL2	1	1 unit	101	0.156
				3	1	24 AC	▶	3TG10 01-0AC2	1	1 unit	101	0.157
						110 AC	▶	3TG10 01-0AG2	1	1 unit	101	0.158
						230 AC	▶	3TG10 01-0AL2	1	1 unit	101	0.157
DC operation												
20	13	8.4	4	4	--	24 DC	▶	3TG10 10-0BB4	1	1 unit	101	0.157
				3	1	24 DC	▶	3TG10 01-0BB4	1	1 unit	101	0.157

4-pole · Hum-free · With 6.3 mm x 0.8 mm flat connectors For screw and snap-on mounting onto TH 35 standard mounting rail

AC operation, 45 ... 450 Hz								Flat connectors				
16	10	8.4	4	4	--	24 AC	▶	3TG10 10-1AC2	1	1 unit	101	0.146
						110 AC	D	3TG10 10-1AG2	1	1 unit	101	0.146
						230 AC	▶	3TG10 10-1AL2	1	1 unit	101	0.145
				3	1	24 AC	D	3TG10 01-1AC2	1	1 unit	101	0.147
						110 AC	D	3TG10 01-1AG2	1	1 unit	101	0.146
						230 AC	▶	3TG10 01-1AL2	1	1 unit	101	0.144
DC operation												
16	10	8.4	4	4	--	24 DC	C	3TG10 10-1BB4	1	1 unit	101	0.146
		8.4	4	3	1	24 DC	D	3TG10 01-1BB4	1	1 unit	101	0.146

For accessories see page 3/123.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

3

Overview

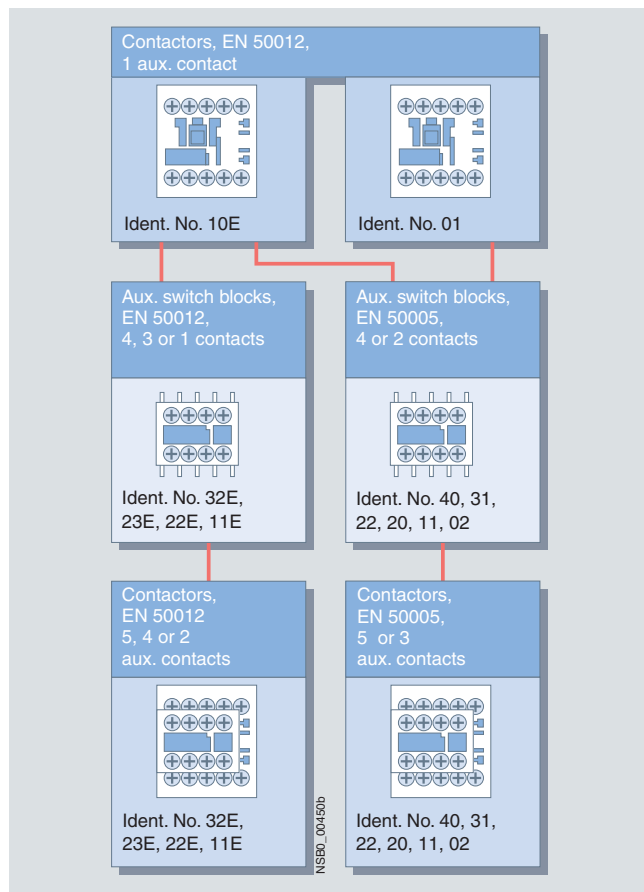
Snap-on auxiliary switch blocks

Various auxiliary switch blocks can be added to the 3RT1 basic units depending on the application:

[Size S00: Contactors 3RT1. 1.](#)

Terminal designations according to EN 50005 or EN 50012

Size S00 contactors have an auxiliary contact integrated in the basic unit.



4-pole auxiliary switch blocks 3RT1 (S00).

Contactors with a NO contact as auxiliary contact (screw or Cage Clamp terminals), identification number 10E, can be expanded into contactors with 2, 4 or 5 auxiliary contacts according to EN 50012 using auxiliary switch blocks. The identification numbers 11E, 22E, 23E and 32E on the auxiliary switch blocks apply to the complete contactors. These auxiliary switch blocks cannot be combined with contactors which have a NC contact in the basic unit (identification number 01) as they are coded.

All contactors of size S00 with one auxiliary contact (identification numbers 10E or 01) and the contactors with 4 main contacts can be expanded into contactors with 3 or 5 auxiliary contacts using auxiliary switch blocks with the identification numbers 40 to 02 (in the case of contactors with 4 main contacts: 2 or 4 auxiliary contacts) according to EN 50005.

The identification numbers on the auxiliary switch blocks apply only to the attached auxiliary switches.

Single- or 2-pole auxiliary switch blocks with only one connection option from above or below are provided for easy and clearly arranged wiring especially for the installation of network access junctions. These auxiliary switch blocks are offered only with screw terminals.

The solid-state compatible 3RH19 11-1NF.. auxiliary switch blocks for contactors of size S00 include 2 enclosed contacts. They are suitable in particular for switching small voltages and currents (hard gold-plated contacts) and for operation in dusty atmospheres. The NC auxiliary contacts are not mirror contacts.

All the previously mentioned auxiliary switch variants can be snap-fitted onto the front of the contactor. The auxiliary switch block has a centrally positioned release lever for disassembly.

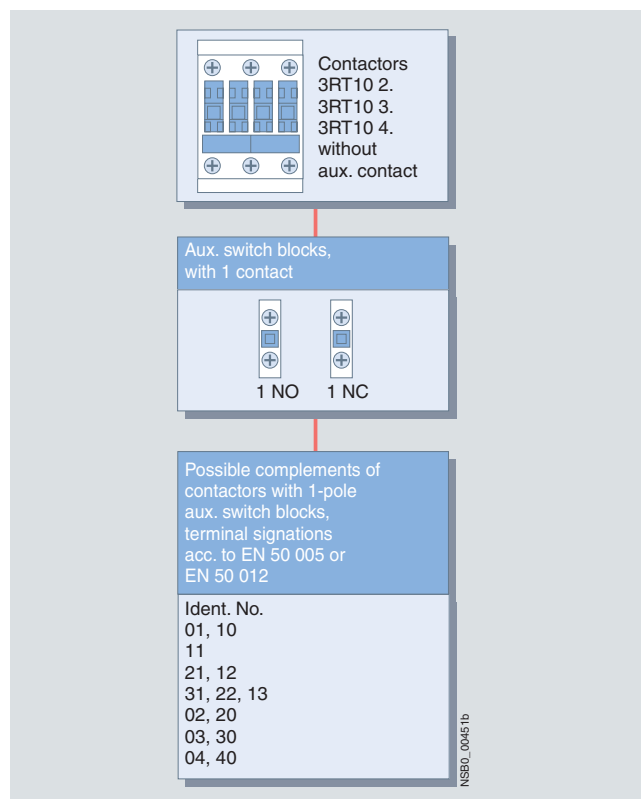
[Sizes S0 to S12: Contactors 3RT1. 2. to 3RT1. 7.](#)

Terminal designations according to EN 50005 or EN 50012

One 4-pole or up to four single-pole auxiliary switch blocks (screw or Cage Clamp terminals) can be snapped on. When the contactors are switched on, the NC contacts are opened first and then the NO contacts are closed.

Also available are 2-pole auxiliary switch blocks (screw terminals) for cable entry from above or below in the design of a quad block (feeder auxiliary switch).

If the installation space is limited in depth, 2-pole auxiliary switch blocks (screw or Cage Clamp terminals) can be attached laterally (on the left or on the right).

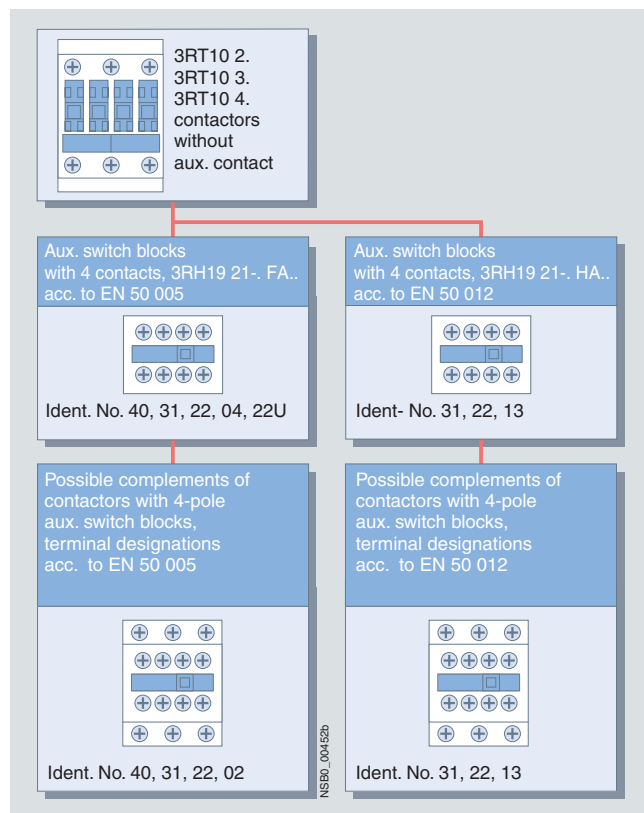


1-pole auxiliary switch blocks for 3RT1 contactors

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays



4-pole auxiliary switch blocks for 3RT1 contactors

The terminal designations of the single-pole auxiliary switch locks are comprised of identification numbers (location identifiers) on the basic unit and of function digits on the auxiliary switch blocks.

The terminal designation of the individual auxiliary switch blocks corresponds to EN 50005 or EN 50012, that of the complete contactor with auxiliary switch block 2 NO + 2 NC corresponds to EN 50012.

The auxiliary switch blocks attached to the front can be disassembled with the help of a centrally arranged release lever; the laterally attached auxiliary switch blocks are easy to remove by pressing on the checkered surfaces.

The laterally mountable auxiliary switch blocks according to EN 50012 can be used only when no 4-pole auxiliary switch blocks are snapped onto the front. If single-pole auxiliary switch blocks are used in addition, the location identifiers on the contactor must be noted.

Two enclosed and 2 standard contacts are available with the 3RH19 21-.FE22 solid-state compatible auxiliary switch block, which can be attached to the front. The 3RH19 21-2DE11 laterally mountable switch block contains 2 enclosed contacts (1 NO + 1 NC). The enclosed contacts are suitable in particular for switching small voltages and currents (hard gold-plated contacts) and for operation in dusty atmospheres. The NC auxiliary contacts are mirror contacts.

Sizes S0 and S2

A maximum of 4 auxiliary contacts can be attached; the auxiliary switch blocks used can be of any version. For reasons of symmetry, when two 2-pole laterally mountable auxiliary switch blocks are used, one block must be attached on the right and one on the left.

More auxiliary contacts are permissible with size S2 under certain conditions (please ask).

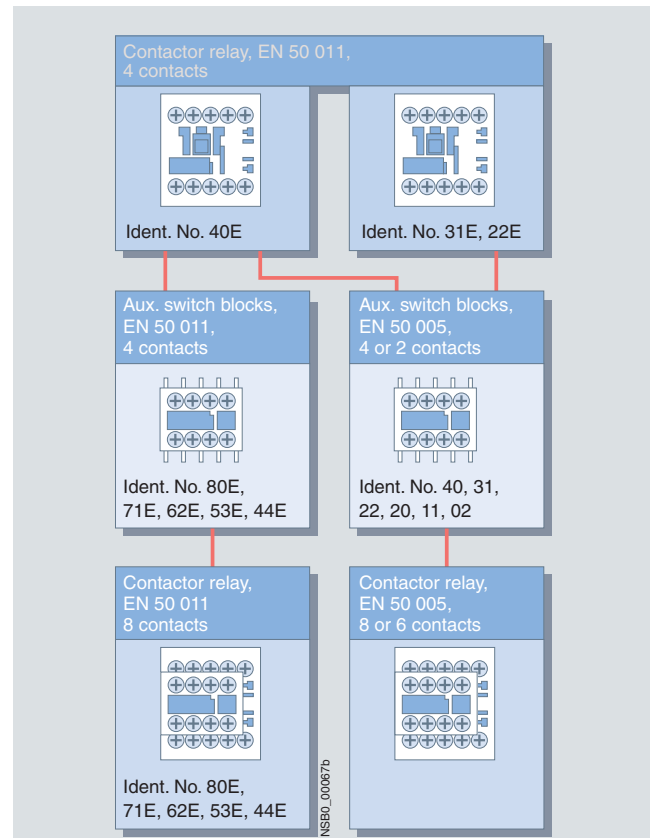
Size S3 to S12

A maximum of 8 auxiliary contacts can be attached; please note the following:

- Of these 8 auxiliary contacts, there must be no more than 4 NC contacts
- Ensure the symmetry of laterally mounted auxiliary switch blocks

3RH1 contactor relays

The 3RH1 contactor relays can be expanded by up to four contacts by the addition of snap-on auxiliary switch blocks.



4-pole auxiliary switch blocks for 3RH1 contactor relays

The contactor relays with 4 contacts according to EN 50011, with the identification number 40E, can be extended with 80E to 44E auxiliary switch blocks to obtain contactor relays with 8 contacts according to EN 50011. The identification numbers 80E to 44E on the auxiliary switch blocks apply to the complete contactors. These auxiliary switch blocks (3RH19 11-1GA..) cannot be combined with contactor relays with identification numbers 31E and 22E; they are coded.

All contactor relays with 4 contacts according to EN 50011, identification numbers 40E to 22E, can be extended with auxiliary switch blocks 40 to 02 to obtain contactor relays with 6 or 8 contacts in accordance with EN 50005. The identification numbers on the auxiliary switch blocks apply only to the attached auxiliary switch blocks.

In addition, fully mounted 3RH12 8-pole contactor relays are available; the mounted 4-pole auxiliary switch block in the 2nd tier is not removable. The terminal designations are according to EN 50011.

These 8-pole versions are built according to special Swiss regulations "SUVA" and are distinguished externally by a red labeling plate.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

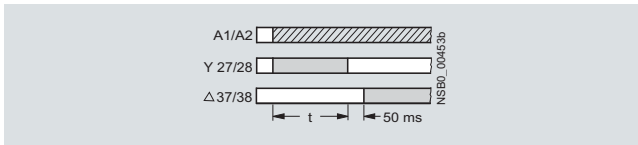
Solid-state time-delay auxiliary switch blocks

The timer module, which is available in the "ON-DELAY" and "OFF-DELAY" versions, allows time-delayed functions up to 100 s (3 distinct delay ranges).

It contains a relay with one NO contact and one NC contact; depending on the version, the relay is switched either after an ON-delay or after an OFF-delay.

The timer module with "WYE-DELTA FUNCTION" is equipped with one delayed and one instantaneous NO contact, with a dead time of 50 ms between the two. The delay time of the NO contact can be adjusted between 1.5 s and 30 s.

Wye-delta function:



The contactor on which the solid-state time-delay auxiliary switch block is mounted operates without a delay.

Size S00

The solid-state time-delay auxiliary switch block is fitted onto the front side of the contactor. The timer module is supplied with power directly by plug-in contacts through the coil terminals of the contactor, in parallel with A1/A2. The timing function is activated by closing the contactor on which the auxiliary switch block is mounted. The OFF-delay version operates without an auxiliary voltage; minimum ON period: 200 ms.

A varistor is integrated in the timer module in order to damp opening surges in the contactor coil.

The solid-state time-delay auxiliary switch block cannot be mounted on size S00 coupling relays.

Sizes S0 to S12

The solid-state time-delay auxiliary switch block is fitted onto the front side of the contactor.

The timer module is supplied with power through two terminals (A1/A2); the time delay of the auxiliary switch block can be activated either by a parallel link to any contactor coil or by any power source.

The OFF-delay version operates without an auxiliary voltage; minimum ON period: 200 ms.

A single-pole auxiliary switch block can be snapped onto the front of the contactor in addition to the timer module.

The timer module has no integrated components for overvoltage damping.

Solid-state time-delay blocks with semiconductor output

The timer module in the "ON-DELAY" and "OFF-DELAY with auxiliary voltage" versions allows time-delayed functions up to 100 s (3 distinct delay ranges). Contactors fitted with a timing relay block close or open after a delay according to the set time.

The ON-delay variant of the timing relay is connected in series with the contactor coil; terminal A1 of this coil must not be connected.

With the OFF-delay variant of the timing relay, the contactor coil is contacted directly through the relay; terminals A1 and A2 of the contactor coil must not be connected.

The timing relays are suitable for both AC and DC operation.

Size S00

The version for size S00 contactors is fitted onto the front of the contactor (with the control supply voltage switched off) and then slid into its latched position; at the same time, the timing relay is connected by means of plug-in contacts to coil terminals A1 and A2 of the contactor. Any contactor coil terminals which are not required are sealed off by means of covers on the enclosure of the timing relay block, to prevent them from being connected inadvertently.

A varistor is integrated in the timer module in order to damp opening surges in the contactor coil.

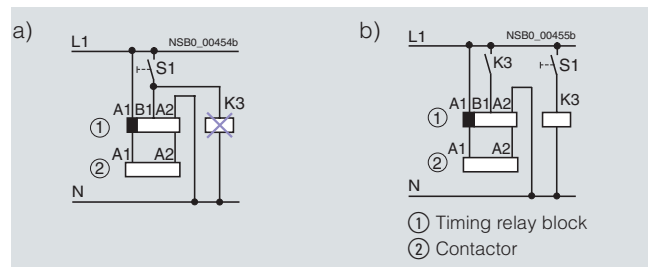
The solid-state, timing relay block cannot be mounted on size S00 coupling relays.

Sizes S0 to S3

The timing relay block for size S0 to S3 contactors is plugged into coil terminals A1 and A2 on top of each contactor; the timing relay is connected both electrically and mechanically by means of pins.

A varistor is integrated in the timer module in order to damp opening surges in the contactor coil.

Configuring note:



The activation of loads parallel to the start input is not permissible when using AC control voltage (see (a) in the circuit diagram).

The OFF-delay timing relay blocks 3RT19 16-2D... / 3RT19 26-2D... have a zero potential start input B1. This means that if there is a parallel load on terminal B1, activation can be simulated with AC voltage. In this case, the additional load (e. g. contactor K3) must be wired according to (b).

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

OFF-delay device for size S00 to S3 contactors

AC and DC operation

IEC 60947, EN 60947.

For screw and snap-on mounting onto 35 mm standard mounting rail. The OFF-delay devices have screw terminals.

The OFF-delay device prevents a contactor from dropping out unintentionally when there is a short-time voltage dip or voltage failure. It supplies a downstream, DC-operated contactor with the necessary energy during a voltage dip, ensuring that the contactor does not trip. The 3RT19 16 OFF-delay devices are specifically designed for operation with the 3RT contactors and 3RH contactor relays of the SIRIUS series.

The OFF-delay device operates without external voltage on a capacitive basis, and can be energized with either AC or DC (24 V version only for DC operation). Voltage matching, which is only necessary with AC operation, is performed using a rectifier bridge.

A contactor opens after a delay when the capacitors of the solenoid coil, built into the OFF-delay device, are switched in parallel. In the event of voltage failures, the capacitors are discharged via the solenoid coil and thereby delay the opening of the contactor.

If the command devices are upstream of the OFF-delay device in the circuit, the OFF-delay takes effect with every opening operation. If the opening operation is downstream of the OFF-delay device, an OFF-delay only applies in the event of failure of the mains voltage.

Operation

In the case of the versions for rated control supply voltages of 110 V and 230 V, either AC voltage or DC voltage can be applied on the line side, whereas the variant for 24 V is designed for DC operation only.

A DC-operated contactor is connected to the output in accordance with the input voltage that is applied.

The mean value of the OFF-delay is approximately 1.5 times the specified minimum time.

Surge suppressors

- Without LED (also for Cage Clamp terminals) size S00, S0, S2, S3, S6 to S12
- With LED (also for Cage Clamp terminals) size S00

All 3RT1 contactors and 3RH1 contactor relays can be retrofitted with RC elements or varistors for damping opening surges in the coil. Diodes or diode assemblies (comprising noise suppression diodes and Zener diodes for short break times) can be used.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch block.

With all size S0 to S3 contactors, varistors, RC elements and diode assemblies can be plugged on directly at the coil terminals, either on the top or underneath.

The plug-in direction of the diodes and diode assemblies is determined by a coding device.

Coupling relays are supplied either without overvoltage damping or with a varistor or diode connected as standard, according to the version.

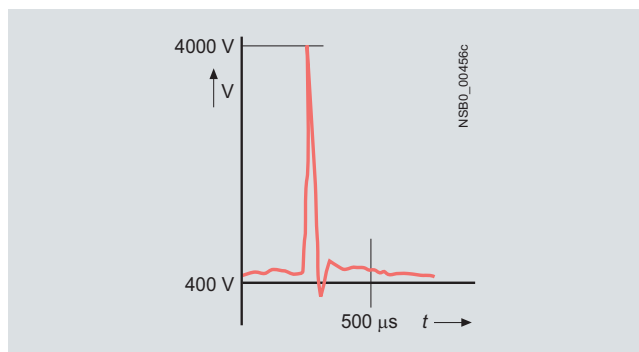
Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assemblies 2 to 6 times, varistor +2 to 5 ms).

Electromagnetic interference suppression module, three-phase for size S00 contactors



A so-called counter-e.m.f. (electromotive force) is produced when motors or various inductive loads are turned off. Voltage peaks of up to 4000 V may occur as a result, with a frequency spectrum from 1 kHz to 10 MHz and a rate of voltage variation from 0.1 to 20 V/ns.



Capacitive input to various analog and digital signals makes it necessary to suppress interference in the load circuit.

Reducing contact arcing

The connection between the main current path and the EMC interference suppression module enables contact arcing, which is responsible for contact erosion and the majority of clicking noises, to be reduced; this in turn is conducive to an electromagnetically compatible design.

Higher operational reliability

Since the EMC suppression module achieves a significant reduction in radio-frequency components and the voltage level in three phases, the contact endurance is also improved considerably. This makes an important contribution towards enhancing the reliability and availability of the system as a whole.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

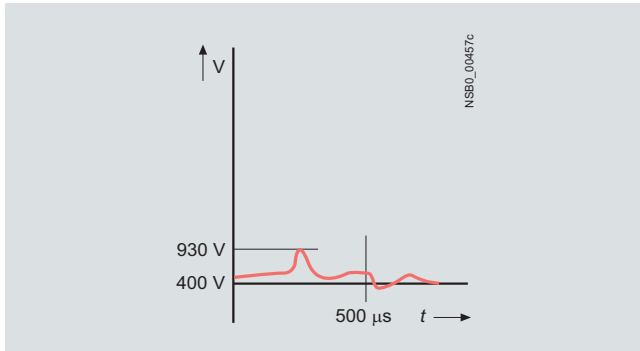
Accessories for 3RT contactors and 3RH contactor relays

Dispensing with fine graduations

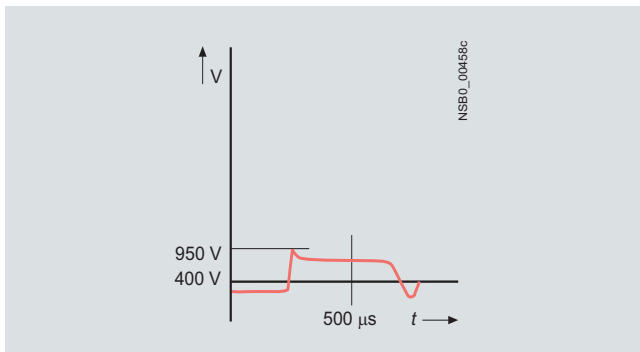
There is no need for fine graduations within each performance class, as smaller motors inherently have a higher inductance, so that one solution for all fixed-speed operating mechanisms up to 5.5 kW is adequate.

Two electrical versions are available:

- The advantages of the RC circuit lie mainly in the reduction in the rate of rise and in its RF damping ability. The selected values ensure effective interference suppression over a wide range.



- The varistor circuit can absorb a high energy level and can also be used for frequencies ranging from 10 to 400 Hz (closed-loop controlled operating mechanisms). There is no limiting below the knee-point voltage, however.



Additional load module

Size S00 for plugging onto the front of the contactors with and without auxiliary switch block

Coupling links for mounting on contactors of sizes S0 to S3

DC operation

IEC 60947 and EN 60947.

The coupling link is suitable for use in any climate. It is finger-safe according to EN 50274. The terminal designations comply with EN 50005.

System-compatible operation with 24 V DC, operating range 17 to 30 V.

Low power consumption in conformity with the technical specifications of the solid-state systems. An LED indicates the switching state.

Surge suppression

The 3RH19 24-1GP11 coupling link has an integrated surge suppressor (varistor) for the contactor coil being switched.

Mounting

The 3RH19 24-1GP11 coupling link is mounted directly on the contactor coil.

Solder pin adapters

The solder pin adapters for the size S00 contactors are available in two versions:

- Solder pin adapter for contactors with one integrated auxiliary contact
- Solder pin adapter for contactors with mounted 4-pole auxiliary switch block

Screw adapters

Plug-on adapters improve the accessibility of the screw connection for size S0 contactors. As a result it is possible to position the screwdriver vertically even when using insulated screwdrivers or power screwdrivers.

Optionally the adapters can be rotated through 90° before mounting.

Sealable covers for sizes S00 to S12

When contactors and contactor relays are used in safety-oriented applications, it must be ensured that it is impossible to operate the contactors manually.

For SIRIUS contactors there are sealable covers available for this purpose as accessories; these prevent accidental manual operation. These are transparent molded-plastic caps with a bracket that enables the contactor to be sealed.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

Selection and ordering data

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RH19 11-1HA..
3RH19 11-1FA..



3RH19 11-2HA..



3RH19 21-1HA..



3RH19 21-2HA..
3RH19 21-2FA..



3RH19 11-1AA..



3RH19 11-1LA..

For contactors	Auxiliary contacts	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
	Ident. No.	Version	Order No.	Price per PU		Order No.	Price per PU
Type	 NO NC NO NC			kg			kg

Auxiliary switch blocks for snapping onto the front according to EN 50012

Size S00

For assembling contactors with 2, 4 or 5 auxiliary contacts

3RT10 1.-1...1,	11 E	--	1	--	--	▶	3RH19 11-1HA01	0.060	▶	3RH19 11-2HA01	0.060
3RT10 1.-2...1	22 E	1	2	--	--	▶	3RH19 11-1HA12	0.060	▶	3RH19 11-2HA12	0.060
Ident. No. 10 E	23 E	1	3	--	--	▶	3RH19 11-1HA13	0.060	▶	3RH19 11-2HA13	0.060
	32 E	2	2	--	--	▶	3RH19 11-1HA22	0.060	▶	3RH19 11-2HA22	0.060

Sizes S0 ... S12¹⁾

4-pole

3RT10 2,	31	3	1	--	--	▶	3RH19 21-1HA31	0.075	▶	3RH19 21-2HA31	0.075
3RT1. 3 ... 3RT1. 7	22	2	2	--	--	▶	3RH19 21-1HA22	0.075	▶	3RH19 21-2HA22	0.075
	13	1	3	--	--	▶	3RH19 21-1HA13	0.075	▶	3RH19 21-2HA13	0.075
	22²⁾	2	2	--	--	B	3RH19 21-1XA22-0MA0	0.075	D	3RH19 21-2XA22-0MA0	0.075

Auxiliary switch blocks for snapping onto the front according to EN 50005

Size S00

2 or 4-pole auxiliary switch blocks for assembling contactors with 3 or 5 auxiliary contacts

3RT1. 1,	20	2	--	--	--	▶	3RH19 11-1FA20	0.050	▶	3RH19 11-2FA20	0.050
3RH11,	11	1	1	--	--	▶	3RH19 11-1FA11	0.050	▶	3RH19 11-2FA11	0.050
3RH14	02	--	2	--	--	▶	3RH19 11-1FA02	0.050	▶	3RH19 11-2FA02	0.050
	11 U	--	--	1	1	▶	3RH19 11-1FB11	0.050	A	3RH19 11-2FB11	0.050
	40	4	--	--	--	▶	3RH19 11-1FA40	0.060	▶	3RH19 11-2FA40	0.060
	31	3	1	--	--	▶	3RH19 11-1FA31	0.060	▶	3RH19 11-2FA31	0.060
	22	2	2	--	--	▶	3RH19 11-1FA22	0.060	▶	3RH19 11-2FA22	0.060
	22 U	--	--	2	2	▶	3RH19 11-1FC22	0.060	▶	3RH19 11-2FC22	0.060
	11, 11 U	1	1	1	1	▶	3RH19 11-1FB22	0.060	B	3RH19 11-2FB22	0.060

1- and 2-pole auxiliary switch blocks with cable entry from one side

• Cable entry from above

3RT1. 1,	--	1	--	--	--	▶	3RH19 11-1AA10	0.015	--		
3RH11,	--	--	1	--	--	▶	3RH19 11-1AA01	0.015	--		
3RH14	--	1	1	--	--	▶	3RH19 11-1LA11	0.045	--		
	--	2	--	--	--	▶	3RH19 11-1LA20	0.045	--		

• Cable entry from below

3RT1. 1,	--	1	--	--	--	▶	3RH19 11-1BA10	0.015	--		
3RH11,	--	--	1	--	--	▶	3RH19 11-1BA01	0.015	--		
3RH14	--	1	1	--	--	▶	3RH19 11-1MA11	0.045	--		
	--	2	--	--	--	▶	3RH19 11-1MA20	0.045	--		

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".

¹⁾ Exception: 3RT12, 3RT16.

²⁾ With identification numbers 5, 6, 7, 8.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RH19 21-1F..



2RH19 21-2F..



3RH19 21-1C..



3RH19 21-2C..



3RH19 21-1LA..



3RH19 21-1MA..

For contactors	Auxiliary contacts	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
	Ident. No.	Version	Order No.	Price per PU		Order No.	Price per PU
Type		NO NC NO NC			kg		kg

Auxiliary switch blocks for snapping onto the front according to EN 50005

Sizes S0 to S12¹⁾

		4-pole auxiliary switch blocks						3RH19 21-2FA40			
3RT10 2,	40	4	--	--	--	▶	3RH19 21-1FA40	0.075	▶	3RH19 21-2FA40	0.075
3RT1. 3	31	3	1	--	--	▶	3RH19 21-1FA31	0.075	▶	3RH19 21-2FA31	0.075
...	22	2	2	--	--	▶	3RH19 21-1FA22	0.075	▶	3RH19 21-2FA22	0.075
3RT1. 7	04	--	4	--	--	▶	3RH19 21-1FA04	0.075	A	3RH19 21-2FA04	0.075
	22 U	--	--	2	2	▶	3RH19 21-1FC22	0.075	A	3RH19 21-2FC22	0.075
		1-pole auxiliary switch blocks to EN 50005 and EN 50012						3RH19 21-2CA10			
3RT1. 2	--	1	--	--	--	▶	3RH19 21-1CA10	0.020	▶	3RH19 21-2CA10	0.020
...	--	--	1	--	--	▶	3RH19 21-1CA01	0.020	▶	3RH19 21-2CA01	0.020
3RT1. 7	--	--	--	1	--	▶	3RH19 21-1CD10	0.020	--	--	--
	--	--	--	--	1	▶	3RH19 21-1CD01	0.020	--	--	--
		2-pole auxiliary switch blocks with cable entry from one side						3RH19 21-1LA11			
		• Cable entry from above						3RH19 21-1LA20			
3RT1. 2,	--	1	1	--	--	▶	3RH19 21-1LA11	0.075	--	--	--
3RT1. 3	--	2	--	--	--	▶	3RH19 21-1LA20	0.075	--	--	--
...	--	--	2	--	--	▶	3RH19 21-1LA02	0.075	--	--	--
3RT1. 7	--	--	--	--	--	▶					
		• Cable entry from below						3RH19 21-1MA11			
3RT1. 2,	--	1	1	--	--	▶	3RH19 21-1MA11	0.075	--	--	--
3RT1. 3	--	2	--	--	--	▶	3RH19 21-1MA20	0.075	--	--	--
...	--	--	2	--	--	▶	3RH19 21-1MA02	0.075	--	--	--
3RT1. 7	--	--	--	--	--	▶					

¹⁾ Exception: 3RT16.



Accessories and Spare Parts

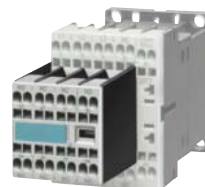
For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RH19 11-1GA..



3RH19 11-2GA..

For contactor relays		Contacts	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
	Ident. No.	Version		Order No.	Price per PU		Order No.	Price per PU
		NO NC			kg			kg

Auxiliary switch blocks for snapping onto the front according to EN 50011

For assembling contactor relays with 8 contacts				3RH19 11-1GA		3RH19 11-2GA	
3RH11 40,	80E	4	--	▶ 3RH19 11-1GA40	0.060	▶ 3RH19 11-2GA40	0.060
3RH14 40	71E	3	1	▶ 3RH19 11-1GA31	0.060	▶ 3RH19 11-2GA31	0.060
(Ident. No. 40E)	62E	2	2	▶ 3RH19 11-1GA22	0.060	▶ 3RH19 11-2GA22	0.060
	53E	1	3	▶ 3RH19 11-1GA13	0.060	▶ 3RH19 11-2GA13	0.060
	44E	--	4	▶ 3RH19 11-1GA04	0.060	▶ 3RH19 11-2GA04	0.060

For multi-unit packing and reusable packaging, see "Appendix" → "Ordering notes".



3RH19 21-1DA11
3RH19 21-1JA11



3RH19 21-1EA..
3RH19 21-1KA..



3RH19 21-2DA11
3RH19 21-2JA11



3RH19 21-2EA..
3RH19 21-2KA..

For contactors		Auxiliary contacts	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
	Version			Order No.	Price per PU		Order No.	Price per PU
Type		NO NC			kg			kg

Laterally mountable auxiliary switch blocks according to EN 50012

Sizes S0 ... S12

First laterally mountable auxiliary switch block (right or left), 2-pole				3RH19 21-1GA		3RH19 21-2GA		
3RT1.. 2 ... 3RT1.. 7	1	1	▶	3RH19 21-1DA11	0.050	▶	3RH19 21-2DA11	0.050

Sizes S3 ... S12

Second laterally mountable auxiliary switch block (right or left), 2-pole				3RH19 21-1GA		3RH19 21-2GA		
3RT1.. 4 ... 3RT1.. 7	1	1	▶	3RH19 21-1JA11	0.050	▶	3RH19 21-2JA11	0.050

Laterally mountable auxiliary switch blocks according to EN 50005

Sizes S0 ... S12

First laterally mountable auxiliary switch block (right or left), 2-pole				3RH19 21-1EA		3RH19 21-2EA		
3RT1.. 2 ... 3RT1.. 7	2	--	▶	3RH19 21-1EA20	0.050	▶	3RH19 21-2EA20	0.050
	1	1	▶	3RH19 21-1EA11	0.050		--	
	--	2	▶	3RH19 21-1EA02	0.050		3RH19 21-2EA02	0.050

Sizes S3 ... S12

Second laterally mountable auxiliary switch block (right or left), 2-pole				3RH19 21-1KA		3RH19 21-2KA		
3RT1.. 4 ... 3RT1.. 7	2	--	▶	3RH19 21-1KA20	0.050	D	3RH19 21-2KA20	0.050
	1	1	▶	3RH19 21-1KA11	0.050		--	
	--	2	▶	3RH19 21-1KA02	0.050	D	3RH19 21-2KA02	0.050

* You can order this quantity or a multiple thereof.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RH19 11-1NF. .



3RH19 11-2NF. .



3RH19 21-1FE22



3RH19 21-2JE22



3RH19 21-2DE11
3RH19 21-2JE11

For contactors	Version	Contacts				DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.
		Version	Order No.	Price per PU	kg		Order No.	Price per PU			kg		
		NO	NO ¹⁾	NC ¹⁾	NC								

Solid-state compatible auxiliary switch blocks for snapping onto the front, according to EN 50005

Size S00

3RT1. 1, 3RH11, 3RH14	For operation in dusty atmosphere and solid-state circuits with rated operational currents $I_e/AC-14$ and DC-13 from 1 mA to 300 mA at 3 V to 60 V. Hard gold-plated contacts. No mirror contacts.	1	--	--	1	▶	3RH19 11-1NF11 3RH19 11-1NF20 3RH19 11-1NF02	0.045 A 0.045 A 0.045 A	3RH19 11-2NF11 3RH19 11-2NF20 3RH19 11-2NF02	0.045 0.045 0.045
-----------------------	---	---	----	----	---	---	--	-------------------------------	--	-------------------------

Sizes S0 ... S12

3RT1. 2 ... 3RT1. 7	For operation in dusty atmosphere and solid-state circuits with rated operational currents $I_e/AC-14$ and DC-13 from 1 mA to 300 mA at 3 V to 60 V. Hard gold-plated contacts. Mirror contacts acc. to EN 60947-4-1, Appendix F	1	1	1	1	▶	3RH19 21-1FE22	0.070 B	3RH19 21-2FE22	0.070
---------------------	--	---	---	---	---	---	----------------	---------	----------------	-------

Solid-state compatible auxiliary switch blocks, laterally mountable, according to EN 50012

Sizes S0 ... S12

First laterally mountable auxiliary switch block (right or left), 2-pole

3RT1. 2 ... 3RT1. 7	1 NO + 1 NC solid-state compatible auxiliary switches For operation in dusty atmosphere and solid-state circuits with rated operational currents $I_e/AC-14$ and DC-13 from 1 mA to 300 mA at 3 V to 60 V. Hard gold-plated contacts. Mirror contacts acc. to EN 60947-4-1, Appendix F	1	--	--	1	▶	3RH19 21-2DE11	0.050
---------------------	---	---	----	----	---	---	----------------	-------

Sizes S3 ... S12

Second laterally mountable auxiliary switch block (right or left), 2-pole

3RT1. 4 ... 3RT1. 7	1 NO + 1 NC solid-state compatible auxiliary switches For operation in dusty atmosphere and solid-state circuits with rated operational currents $I_e/AC-14$ and DC-13 from 1 mA to 300 mA at 3 V to 60 V. Hard gold-plated contacts. Mirror contacts acc. to EN 60947-4-1, Appendix F	1	--	--	1	▶	3RH19 21-2JE11	0.050
---------------------	---	---	----	----	---	---	----------------	-------

¹⁾ 1 NO + 1 NC standard auxiliary switches: see explanations on pages 3/97 and 3/98.



Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

For contactors	Auxiliary contacts	Rated control supply voltage U_s ¹⁾	Time setting range t	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type		V	s							kg

Solid-state time-delay auxiliary switch blocks for snapping onto the front, terminal designations according to DIN 46199-5

Size S00



3RT19 16-2....

With ON-delay

3RT1. 1, 3RH11 ²⁾ 3RH14	1 NO + 1 NC	24 AC/DC ³⁾	0.05 ... 1	▶	3RT19 16-2EJ11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 16-2EJ21	1	1 unit	101	0.090
			5 ... 100	B	3RT19 16-2EJ31	1	1 unit	101	0.090
		100 ... 127 AC ³⁾	0.05 ... 1	C	3RT19 16-2EC11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 16-2EC21	1	1 unit	101	0.090
			5 ... 100	▶	3RT19 16-2EC31	1	1 unit	101	0.090
		200 ... 240 AC ³⁾	0.05 ... 1	D	3RT19 16-2ED11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 16-2ED21	1	1 unit	101	0.090
			5 ... 100	▶	3RT19 16-2ED31	1	1 unit	101	0.090

OFF-delay without auxiliary voltage⁴⁾

3RT1. 1, 3RH11 ²⁾ 3RH14	1 NO + 1 NC	24 AC/DC ³⁾	0.05 ... 1	▶	3RT19 16-2FJ11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 16-2FJ21	1	1 unit	101	0.090
			5 ... 100	▶	3RT19 16-2FJ31	1	1 unit	101	0.090
		100 ... 127 ³⁾	0.05 ... 1	C	3RT19 16-2FK11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 16-2FK21	1	1 unit	101	0.090
			5 ... 100	B	3RT19 16-2FK31	1	1 unit	101	0.090
		200 ... 240 ³⁾	0.05 ... 1	D	3RT19 16-2FL11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 16-2FL21	1	1 unit	101	0.090
			5 ... 100	▶	3RT19 16-2FL31	1	1 unit	101	0.090

OFF-delay with auxiliary voltage (varistor integrated)

3RT10 1 3RH11	1 CO	24 AC/DC	0.5 ... 10	B	3RT19 16-2LJ21	1	1 unit	101	0.090
		100 ... 127 AC	0.5 ... 10	B	3RT19 16-2LC21	1	1 unit	101	0.090
		200 ... 240 AC	0.5 ... 10	C	3RT19 16-2LD21	1	1 unit	101	0.090

Wye-delta function (varistor integrated)

3RT10 1 ²⁾	1 NO, delayed + 1 NO, instan- taneous, dead time 50 ms	24 AC/DC ³⁾	1.5 ... 30	▶	3RT19 16-2GJ51	1	1 unit	101	0.090	
			100 ... 127 AC ³⁾	1.5 ... 30	D	3RT19 16-2GC51	1	1 unit	101	0.090
			200 ... 240 AC ³⁾	1.5 ... 30	▶	3RT19 16-2GD51	1	1 unit	101	0.090

Sizes S0 ... S12



3RT19 26-2....

With ON-delay

3RT10, 3RT13, 3RT14, 3RT15	1 NO + 1 NC	24 AC/DC ⁵⁾	0.05 ... 1	D	3RT19 26-2EJ11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 26-2EJ21	1	1 unit	101	0.090
			5 ... 100	A	3RT19 26-2EJ31	1	1 unit	101	0.090
		100 ... 127 AC ⁵⁾	0.05 ... 1	C	3RT19 26-2EC11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 26-2EC21	1	1 unit	101	0.090
			5 ... 100	D	3RT19 26-2EC31	1	1 unit	101	0.090
		200 ... 240 AC ⁵⁾	0.05 ... 1	D	3RT19 26-2ED11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 26-2ED21	1	1 unit	101	0.090
			5 ... 100	B	3RT19 26-2ED31	1	1 unit	101	0.090

OFF-delay without auxiliary voltage⁴⁾

3RT10, 3RT13, 3RT14, 3RT15	1 NO + 1 NC	24 AC/DC ⁵⁾	0.05 ... 1	▶	3RT19 26-2FJ11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 26-2FJ21	1	1 unit	101	0.090
			5 ... 100	▶	3RT19 26-2FJ31	1	1 unit	101	0.090
		100 ... 127 ⁵⁾	0.05 ... 1	D	3RT19 26-2FK11	1	1 unit	101	0.090
			0.5 ... 10	▶	3RT19 26-2FK21	1	1 unit	101	0.090
			5 ... 100	C	3RT19 26-2FK31	1	1 unit	101	0.090
		200 ... 240 ⁵⁾	0.05 ... 1	D	3RT19 26-2FL11	1	1 unit	101	0.090
			0.5 ... 10	A	3RT19 26-2FL21	1	1 unit	101	0.090
			5 ... 100	A	3RT19 26-2FL31	1	1 unit	101	0.090

Wye-delta function (varistor integrated)

3RT10, 3RT13, 3RT14, 3RT15	1 NO, delayed + 1 NO, instan- taneous, dead time 50 ms	24 AC/DC ⁵⁾	1.5 ... 30	▶	3RT19 26-2GJ51	1	1 unit	101	0.090	
			100 ... 127 AC ⁵⁾	1.5 ... 30	▶	3RT19 26-2GC51	1	1 unit	101	0.090
			200 ... 240 AC ⁵⁾	1.5 ... 30	▶	3RT19 26-2GD51	1	1 unit	101	0.090

¹⁾ The AC voltages are valid for 50 Hz and 60 Hz.

²⁾ Cannot be fitted onto coupling relays.

³⁾ The terminals for the control supply voltage are connected to the contactor by the integrated spring contacts of the solid-state time-delay auxiliary switch above it when this switch is mounted.

⁴⁾ Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

⁵⁾ Terminals A1 and A2 for the control supply voltage of the solid-state time-delay auxiliary switch must be connected to the associated contactor by means of connecting cables.

Accessories and Spare Parts




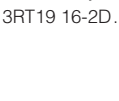
For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

For contactors	Rated control supply voltage U_s	Time setting range t	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	V	s							kg

Solid-state time-delay blocks with semiconductor output




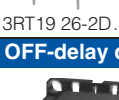
Size S00

For mounting onto the front of contactors									
• ON-delay (varistor integrated)									
	3RT1. 1, 3RH11 ¹⁾ 3RH14	24 ... 66	0.05 ... 1	B	3RT19 16-2CG11	1	1 unit	101	0.050
			0.5 ... 10	B	3RT19 16-2CG21	1	1 unit	101	0.050
			5 ... 100	B	3RT19 16-2CG31	1	1 unit	101	0.050
	3RT19 16-2C...	90 ... 240	0.05 ... 1	D	3RT19 16-2CH11	1	1 unit	101	0.050
			0.5 ... 10	D	3RT19 16-2CH21	1	1 unit	101	0.050
			5 ... 100	D	3RT19 16-2CH31	1	1 unit	101	0.050
• OFF-delay with auxiliary voltage (varistor integrated)									
	3RT1. 1, 3RH11 ¹⁾ 3RH14	24 ... 66	0.05 ... 1	C	3RT19 16-2DG11	1	1 unit	101	0.060
			0.5 ... 10	B	3RT19 16-2DG21	1	1 unit	101	0.060
			5 ... 100	B	3RT19 16-2DG31	1	1 unit	101	0.060
	3RT19 16-2D...	90 ... 240	0.05 ... 1	D	3RT19 16-2DH11	1	1 unit	101	0.060
			0.5 ... 10	D	3RT19 16-2DH21	1	1 unit	101	0.060
			5 ... 100	B	3RT19 16-2DH31	1	1 unit	101	0.060


Sizes S0 ... S3

For mounting onto coil terminals on top of the contactors,
only for devices with screw terminals


• ON-delay (varistor integrated)

	3RT10 2, 3RT10 3, 3RT10 4, 3RT13 ²⁾ 3RT15	24 ... 66	0.05 ... 1	D	3RT19 26-2CG11	1	1 unit	101	0.050
			0.5 ... 10	B	3RT19 26-2CG21	1	1 unit	101	0.050
			5 ... 100	D	3RT19 26-2CG31	1	1 unit	101	0.050
	3RT19 26-2C...	90 ... 240	0.05 ... 1	D	3RT19 26-2CH11	1	1 unit	101	0.050
			0.5 ... 10	D	3RT19 26-2CH21	1	1 unit	101	0.050
			5 ... 100	D	3RT19 26-2CH31	1	1 unit	101	0.050
• OFF-delay with auxiliary voltage (varistor integrated)									
	3RT10 2, 3RT10 3, 3RT10 4, 3RT13 ²⁾ 3RT15	24 ... 66	0.05 ... 1	D	3RT19 26-2DG11	1	1 unit	101	0.050
			0.5 ... 10	D	3RT19 26-2DG21	1	1 unit	101	0.050
			5 ... 100	D	3RT19 26-2DG31	1	1 unit	101	0.050
	3RT19 26-2D...	90 ... 240	0.05 ... 1	C	3RT19 26-2DH11	1	1 unit	101	0.050
			0.5 ... 10	D	3RT19 26-2DH21	1	1 unit	101	0.050
			5 ... 100	C	3RT19 26-2DH31	1	1 unit	101	0.050

OFF-delay devices


	3RT1. 1, 3RT1. 2, 3RH1. ...-1BF40	110 AC/DC	D	3RT19 16-2BK01	1	1 unit	101	0.150
		220/230 AC/DC	D	3RT19 16-2BL01	1	1 unit	101	0.150
			3RT1. 1, 3RT1. 2, 3RH1. ...-1BM40	D	3RT19 16-2BE01	1	1 unit	101
3RT19 16-2B.01	3RT1. 1 ... 3RT1. 4, 3RH1. ...-1BB40	24 DC	D	3RT19 16-2BE01	1	1 unit	101	0.150

Pneumatic delay block, terminal designation according to EN 50005

	3RT1. 2	For mounting onto the front side of size S0 contactors ³⁾⁴⁾ Auxiliary contacts 1 NO and 1 NC							
		• With ON-delay							
		0.1 ... 30	C	3RT19 26-2PA01	1	1 unit	101	0.080	
3RT19 26-2P...		• OFF-delay							
		0.1 ... 30	C	3RT19 26-2PR01	1	1 unit	101	0.080	
		1 ... 60	C	3RT19 26-2PR11	1	1 unit	101	0.080	

Mechanical latching blocks

Sizes S0 and S2

	3RT1. 2, 3RT1. 3	For mounting on 1 contactor ⁵⁾ , contactor remains in the energized state even after a voltage failure							
		24 AC/DC	A	3RT19 26-3AB31	1	1 unit	101	0.130	
		110 AC/DC	B	3RT19 26-3AF31	1	1 unit	101	0.130	
3RT19 26-3A.31		230 AC/DC	B	3RT19 26-3AP31	1	1 unit	101	0.130	

1) Cannot be fitted onto coupling relays.

2) Not to be used for 3RT10 4. and 3RT13 4. contactors with $U_s \leq 42$ V.

3) In addition to these, no other auxiliary contacts are permitted.

4) Versions according to DIN VDE 0116 on request.

5) Two front-mounted auxiliary switch blocks can be mounted in addition.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

For contactors	Version	Rated control supply voltage $U_s^{1)}$		DT	Order No. ²⁾	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		AC operation	DC operation							
Type		V AC	V DC							kg

Surge suppressors without LED (also for Cage Clamp terminals)

Size S00



3RT19 16-1DG00

For plugging onto the front side of the contactors with and without auxiliary switch blocks

3RT1.., 3RH1	Varistors	24 ... 48	24 ... 70	▶	3RT19 16-1BB00	1	1 unit	101	0.010
		48 ... 127	70 ... 150	▶	3RT19 16-1BC00	1	1 unit	101	0.010
		127 ... 240	150 ... 250	A	3RT19 16-1BD00	1	1 unit	101	0.010
		240 ... 400	--	▶	3RT19 16-1BE00	1	1 unit	101	0.010
		400 ... 600	--	A	3RT19 16-1BF00	1	1 unit	101	0.010
3RT1.., 3RH1	RC elements	24 ... 48	24 ... 70	▶	3RT19 16-1CB00	1	1 unit	101	0.010
		48 ... 127	70 ... 150	▶	3RT19 16-1CC00	1	1 unit	101	0.010
		127 ... 240	150 ... 250	▶	3RT19 16-1CD00	1	1 unit	101	0.010
		240 ... 400	--	▶	3RT19 16-1CE00	1	1 unit	101	0.010
		400 ... 600	--	▶	3RT19 16-1CF00	1	1 unit	101	0.010
3RT1.., 3RH1	Noise suppression diodes	--	12 ... 250	▶	3RT19 16-1DG00	1	1 unit	101	0.010
3RT1.., 3RH1	Diode assemblies (diode and Zener diode) for DC operation	--	12 ... 250	▶	3RT19 16-1EH00	1	1 unit	101	0.010

Size S0



3RT19 26-1B.00

For fitting onto the coil terminals at top or bottom

3RT1.. 2	Varistors	24 ... 48	24 ... 70	▶	3RT19 26-1BB00	1	1 unit	101	0.025
		48 ... 127	70 ... 150	▶	3RT19 26-1BC00	1	1 unit	101	0.025
		127 ... 240	150 ... 250	▶	3RT19 26-1BD00	1	1 unit	101	0.025
		240 ... 400	--	▶	3RT19 26-1BE00	1	1 unit	101	0.025
		400 ... 600	--	B	3RT19 26-1BF00	1	1 unit	101	0.025
3RT1.. 2	RC elements	24 ... 48	24 ... 70	▶	3RT19 26-1CB00	1	1 unit	101	0.025
		48 ... 127	70 ... 150	▶	3RT19 26-1CC00	1	1 unit	101	0.025
		127 ... 240	150 ... 250	▶	3RT19 26-1CD00	1	1 unit	101	0.025
		240 ... 400	--	▶	3RT19 26-1CE00	1	1 unit	101	0.025
		400 ... 600	--	B	3RT19 26-1CF00	1	1 unit	101	0.025
3RT1.. 2	Diode assembly for DC operation								
	• Connectable at the top (e. g. for contactor with overload relay)	--	24	▶	3RT19 26-1ER00	1	1 unit	101	0.025
		--	30 ... 250	▶	3RT19 26-1ES00	1	1 unit	101	0.025
	• Connectable at the bottom (e. g. for fuseless load feeders)	--	24	▶	3RT19 26-1TR00	1	1 unit	101	0.025
		--	30 ... 250	A	3RT19 26-1TS00	1	1 unit	101	0.025

¹⁾ Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

²⁾ For packs of 10 units, the Order No. must be supplemented with "-Z" and the order code "X90".

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays



Accessories for 3RT contactors and 3RH contactor relays

For contactors	Version	Rated control supply voltage $U_s^{1)}$		DT	Order No. ²⁾	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		AC operation	DC operation							
Type		V AC	V DC							kg

Surge suppressors without LED (also for Cage Clamp terminals)


Sizes S2 and S3

For fitting onto the coil terminals at top or bottom

	3RT1. 3, 3RT1. 4	Varistors	24 ... 48	24 ... 70	▶	3RT19 26-1BB00	1	1 unit	101	0.025
			48 ... 127	70 ... 150	▶	3RT19 26-1BC00	1	1 unit	101	0.025
			127 ... 240	150 ... 250	▶	3RT19 26-1BD00	1	1 unit	101	0.025
			240 ... 400	--	▶	3RT19 26-1BE00	1	1 unit	101	0.025
			400 ... 600	--	B	3RT19 26-1BF00	1	1 unit	101	0.025
	3RT1. 3 ³⁾ , 3RT1. 4	RC elements	24 ... 48	24 ... 70	▶	3RT19 36-1CB00	1	1 unit	101	0.040
			48 ... 127	70 ... 150	▶	3RT19 36-1CC00	1	1 unit	101	0.040
			127 ... 240	150 ... 250	▶	3RT19 36-1CD00	1	1 unit	101	0.040
			240 ... 400	--	▶	3RT19 36-1CE00	1	1 unit	101	0.040
			400 ... 600	--	B	3RT19 36-1CF00	1	1 unit	101	0.040
3RT19 26-1B.00	3RT1. 3, 3RT1. 4	Diode assembly for DC operation	<ul style="list-style-type: none"> • Connectable at the top (e. g. for contactor with overload relay) • Connectable at the bottom (e. g. for fuseless load feeders) 	24	▶	3RT19 36-1ER00	1	1 unit	101	0.025
				30 ... 250	▶	3RT19 36-1ES00	1	1 unit	101	0.025
				24	▶	3RT19 36-1TR00	1	1 unit	101	0.025
				30 ... 250	B	3RT19 36-1TS00	1	1 unit	101	0.025

Sizes S6 ... S12

For connecting to withdrawable coil with screw terminals with contactors with
 • 3RT1. ...-A conventional operating mechanism
 • 3RT1. ...-N conventional operating mechanism

	3RT1. 5, 3RT1. 6, 3RT1. 7	RC elements	24 ... 48	24 ... 70	▶	3RT19 56-1CB00	1	1 unit	101	0.035
			48 ... 127	70 ... 150	▶	3RT19 56-1CC00	1	1 unit	101	0.035
			127 ... 240	150 ... 250	▶	3RT19 56-1CD00	1	1 unit	101	0.035
			240 ... 400	--	▶	3RT19 56-1CE00	1	1 unit	101	0.035
			400 ... 600	--	C	3RT19 56-1CF00	1	1 unit	101	0.035


- 1) Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.
 2) For packs of 10 or 5 units "-Z" and order code "X90" must be added to the Order No.
 3) Mountable only at the top for 3RT1. 3 with AC operation.

For contactors	Version	Rated control supply voltage $U_s^{1)}$		Power consumption of LED at U_s	DT	Order No. ²⁾	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		AC operation	DC operation								
Type		V AC	V DC								kg

Surge suppressors with LED (also for Cage Clamp terminals)

Size S00

For plugging onto the front side of the contactors with and without auxiliary switch blocks

	3RT1, 3RH1.	Varistors	24 ... 48	12 ... 24	10 ... 120	▶	3RT19 16-1JJ00	1	1 unit	101	0.010	
			48 ... 127	24 ... 70	20 ... 470	▶	3RT19 16-1JK00	1	1 unit	101	0.010	
			127 ... 240	70 ... 150	50 ... 700	▶	3RT19 16-1JL00	1	1 unit	101	0.010	
			--	150 ... 250	160 ... 950	A	3RT19 16-1JP00	1	1 unit	101	0.010	
	3RT1, 3RH1.	Noise suppression diodes	--	24 ... 70	20 ... 470	▶	3RT19 16-1LM00	1	1 unit	101	0.010	
			--	50 ... 150	50 ... 700	▶	3RT19 16-1LN00	1	1 unit	101	0.010	
			--	150 ... 250	160 ... 950	▶	3RT19 16-1LP00	1	1 unit	101	0.010	

- 1) Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.
 2) For packs of 10 or 5 units "-Z" and order code "X90" must be added to the Order No.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type								kg

EMC suppression modules; three-phase ≤ 5.5 kW

Size S00 (for contactors with AC or DC operation)¹⁾



3RT10 1	RC elements (3 x 220 Ω/0.22 μF) Up to 400 V Up to 575 V Up to 690 V	▶	3RT19 16-1PA1	1	1 unit	101	0.080
		A	3RT19 16-1PA2	1	1 unit	101	0.080
		C	3RT19 16-1PA3	1	1 unit	101	0.080
3RT10 1	Varistors Up to 400 V Up to 575 V Up to 690 V	A	3RT19 16-1PB1	1	1 unit	101	0.090
		B	3RT19 16-1PB2	1	1 unit	101	0.090
		D	3RT19 16-1PB3	1	1 unit	101	0.090

3RT19 16-1PA.

Main current path surge suppression modules for 3RT12 vacuum contactors

Size S10 and S12

3RT12	Rated operational voltage $U_e = 690$ V AC	C	3RT19 66-1PV3	1	1 unit	101	0.400
	Rated operational voltage $U_e = 1000$ V AC For damping overvoltages and protecting motor windings against multiple re-ignition when switching off induction motors. For connection on the contactor feeder side (2-T1/4-T2/6-T3). For separate installation.	C	3RT19 66-1PV4	1	1 unit	101	0.780

Additional load modules

Size S00 (also for Cage Clamp terminals)

3RT1. 1, 3RH1.	For plugging onto the front side of the contactors with and without auxiliary switch blocks²⁾ For increasing the permissible residual current and for limiting the residual voltage. Ensures safe opening of contactors with direct control via 230 V AC semiconductor outputs of SIMATIC controllers. Also performs the function of an overvoltage damping circuit. Rated voltage: AC 50/60 Hz, 180 V to 255 V. Operating range: 0.8 to 1.1 x U_s	▶	3RT19 16-1GA00	1	1 unit	101	0.010

3RT19 16-1GA00

Control kits

Size S00

3RT1. 1, 3RH1.	For manual operation of the contactor contacts for start-up and service ³⁾	A	3RK1 903-0CA00	1	1 unit	121	0.015
-------------------	---	---	-----------------------	---	--------	-----	-------

3RK1 903-0CA00

¹⁾ See also description on page 3/100.

²⁾ For packs of 10 units, the Order No. must be supplemented with "-Z" and the order code "X90".

³⁾ See "Load Feeders and Motor Starters" → "ET 200S, 3RK1 903-0CA00 Motor Starters".

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type								kg

Coupling links for control by PLC

Sizes S0 ... S3



3RH19 24-1GP11

3RT1. 2,
3RT1. 3,
3RT1. 4

For mounting onto the coil terminals of the contactors

Operating range 17 ... 30 V DC
Power consumption: 0.5 W at 24 V DC
Permissible residual current of the electronics (with 0 signal): 2.5 mA

Rated operational current I_e :
• AC-15/AC-14 at 230 V: 3 A
• DC-13 at 230 V: 0.1 A

With LED for indicating switching state.
With integrated varistor for damping opening surges.

▶ **3RH19 24-1GP11**

1 1 unit 101 0.060

LED modules for indicating the contactor function (also for Cage Clamp terminals)

Sizes S0 ... S12¹⁾

3RT19 26-1QT00
mounted to contactor

3RT1. 2,
3RT1. 3,
3RT1. 4

For snapping into the location hole of an inscription label on the front of a contactor either directly on the contactor or on the front auxiliary switch.

The LED module is connected to coil terminals A1 and A2 of the contactor and indicates its energized state. Yellow LED.

Rated voltage:
24 ... 240 V AC/DC polarized.
(1 pack = 5 units)

B **3RT19 26-1QT00**

1 5 units 101 0.010

Auxiliary terminals, 3-pole

Size S3



3RT19 46-4F

3RT10 4.

For connection of auxiliary and control cables (0.5 to 2.5 mm²) to the main conductor connections (for one side)

B **3RT19 46-4F**

1 1 unit 101 0.035

Connection modules for contactors with screw terminals

Size S00, S0



3RT19 26-4RD01

3RT1. 1,
3RT1. 2,
3RH1.

Adapters for contactors

Ambient temperature $T_{U,max}$ = 60 °C

Size S00,
rated operational current I_e
at AC-3/400 V: 20 A

Size S0,
rated operational current I_e
at AC-3/400 V: 25 A

Screw terminals



B **3RT19 16-4RD01**

1 1 unit 101 0.020

B **3RT19 26-4RD01**

1 1 unit 101 0.200



3RT19 00-4RE01

Plugs for contactors

Size S00, S0

B **3RT19 00-4RE01**

1 1 unit 101 0.025

Solder pin adapters for contactors

Size S00



3RT19 16-4KA1

3RT1. 1,
3RH11

Assembly kit for soldering contactors onto a printed circuit board.
For 1 contactor, 1 set is required.

3RT19 16-4KA1

1 4 units 101 0.030

¹⁾ For sizes S6 ... S12 the connecting leads have to be extended.

Accessories and Spare Parts

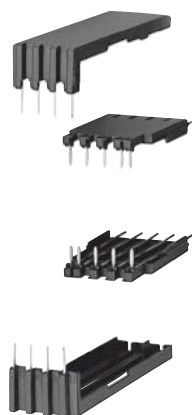
For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type								kg

Solder pin adapters for contactors with mounted 4-pole auxiliary switch block

Size S00



3RT1. 1,
3RH11

Assembly kit for soldering contactors with an auxiliary switch block onto a printed circuit board. For 1 contactor, 1 set is required.

B

3RT19 16-4KA2

1

4 units

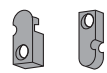
101

0.070

3RT19 16-4KA2

Screw adapters with screw or Cage Clamp terminals

Size S0



NSB0_01470
3RT19 26-4P

3RT1. 2

Screw adapters for easy screw fixing 2 units required per contactor (1 pack contains 10 sets for 10 contactors)

C

3RT19 26-4P

1

10 units

101

0.010



3RT19 16-4BB31

3RT19 16-4BB41

3RT19 36-4BB31

3RT19 56-4BA31

Size	For contactors	Max. conductor cross-sections	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type		mm ²							kg

Links for paralleling

	3-pole, with connection terminal ¹⁾²⁾								
S00	3RT10 1	25	▶	3RT19 16-4BB31		1	1 unit	101	0.015
S0	3RT10 2	35, stranded	▶	3RT19 26-4BB31		1	1 unit	101	0.020
S2	3RT10 3	95	▶	3RT19 36-4BB31		1	1 unit	101	0.100
	3-pole, with through-hole (star jumpers) ¹⁾²⁾								
S3	3RT10 4, 3RT14 4	185	▶	3RT19 46-4BB31		1	1 unit	101	0.200
S6	3RT1. 5	--	▶	3RT19 56-4BA31		1	1 unit	101	0.160
S10/S12	3RT1. 6, 3RT1. 7	--	▶	3RT19 66-4BA31		1	1 unit	101	0.500
	4-pole, with connection terminal ¹⁾²⁾								
S00	3RT1. 1	25	C	3RT19 16-4BB41		1	1 unit	101	0.015

1) The links for paralleling can be reduced by one pole.

2) Sizes S00 to S2: The links for paralleling are insulated.
Size S3: A cover plate is included for touch protection. (Can only be used when the box terminal is removed.)
Sizes S6 to S12: The 3RT19 56-4EA1 (for S6) or 3RT19 66-4EA1 (for S10 and S12) cover can be used for touch protection.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Size	Type							kg

Box terminal blocks



3RT19 5.-4G

		For round and ribbon cables ¹⁾							
S6	3RT1. 5 (3RB20 5)	Up to 70 mm ² 2)	▶	3RT19 55-4G	1	1 unit	101	0.230	
		Up to 120 mm ²	▶	3RT19 56-4G	1	1 unit	101	0.260	
		Auxiliary conductor connection for box terminals	B	3TX7 500-0A	1	1 unit	101	0.010	
S10/S12	3RT1. 6, 3RT1. 7 (3RB20 6, 3RB21 6)	Up to 240 mm ² With auxiliary conductor connection	▶	3RT19 66-4G	1	1 unit	101	0.676	

Covers



3RT19 36-4EA2

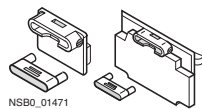
		Terminal covers for box terminals							
		Additional touch protection for fitting to box terminals (2 units per contactor required)							
S2	3RT10 3	--	▶	3RT19 36-4EA2	1	1 unit	101	0.020	
	3RT13 3, 3RT15 3	For 4-pole contactors	B	3RT19 36-4EA4	1	1 unit	101	0.020	
S3	3RT10 4, 3RT14 4	--	▶	3RT19 46-4EA2	1	1 unit	101	0.025	
	3RT13 4	For 4-pole contactors	B	3RT19 46-4EA4	1	1 unit	101	0.025	
S6	3RT1. 5	Length: 25 mm	▶	3RT19 56-4EA2	1	1 unit	101	0.030	
S10/S12	3RT1. 6, 3RT1. 7	Length: 30 mm	▶	3RT19 66-4EA2	1	1 unit	101	0.040	



3RT19 46-4EA1

		Terminal covers for cable lugs and busbar connection ³⁾							
		For complying with the phase clearances and as touch protection if box terminal is removed ⁴⁾ (2 units per contactor required)							
S3	3RT10 4, 3RT14 4	--	▶	3RT19 46-4EA1	1	1 unit	101	0.040	
	S6	3RT1. 5	Length: 100 mm	▶	3RT19 56-4EA1	1	1 unit	101	0.070
S10/S12	3RT1. 6, 3RT1. 7	Length: 120 mm	▶	3RT19 66-4EA1	1	1 unit	101	0.130	
		For busbar cover between contactor and 3RB2. overload relay or wiring module for contactor assemblies							
S6	3RT1. 5	Length: 27 mm	▶	3RT19 56-4EA3	1	1 unit	101	0.020	
	S10/S12⁵⁾	3RT1. 6, 3RT1. 7	Length: 42 mm	▶	3RT19 66-4EA3	1	1 unit	101	0.060
S6	3RT1. 5	Length: 38 mm	▶	3RT19 56-4EA4	1	1 unit	101	0.030	

Sealable covers



3RT19 .6-4MA10

S00	3RT1. 1, 3RH1. 6)	Sealable cover for preventing manual operation	A	3RT19 16-4MA10	1	5 units	101	0.010
S0 ... S12	3RT1. 2 ... 3RT1. 7 6)	1 unit required per contactor	B	3RT19 26-4MA10	1	5 units	101	0.010

¹⁾ Connectable cross-sections of the contactors can be found in the "Technical specifications" (see note on Technical Information on page 3/1).

²⁾ As standard for 3RT10 54-1 contactor (55 kW).

³⁾ Also fits on contactors S6 ... S12 with box terminals.

⁴⁾ Read the note on connectable cross-sections in the "Technical specifications" (see note on Technical Information on page 3/1).

⁵⁾ The 3RT19 66-4EA3 cover is required in addition for use in contactor assemblies (reversing/wye-delta).

⁶⁾ Exception: contactors and contactor relays auxiliary switch block mounted onto the front.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Accessories for 3RT contactors and 3RH contactor relays

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm² for contactors with Cage Clamp terminals



3RT19 16-4JA02

Insulation stop strip can be inserted in cable entry of Cage Clamp terminals (2 strips per contactor required, can be removed in pairs)

For all SIRIUS devices with Cage Clamp terminals, up to 2.5 mm² conductor cross-section.

B	3RT19 16-4JA02	1	20 units	101	0.010
---	-----------------------	---	----------	-----	-------

Tools for opening Cage Clamp terminals



8WA2 880

For all SIRIUS devices with Cage Clamp terminals, up to 2.5 mm² conductor cross-section.

Not suitable for devices with removable terminal

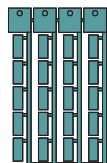
Length: approx. 175 mm; 3.5 x 0.5, green; partially insulated

C	8WA2 880	1	1 unit	041	0.034
---	-----------------	---	--------	-----	-------

Length: approx. 175 mm; 3.5 x 0.5; green

C	8WA2 803	1	1 unit	041	0.024
---	-----------------	---	--------	-----	-------

Blank labels



3RT19 00-1SB10

Unit labeling plates for "SIRIUS"

- 10 mm x 7 mm, pastel turquoise
- 20 mm x 7 mm, pastel turquoise

D	3RT19 00-1SB10	100	816 units	101	0.100
---	-----------------------	-----	-----------	-----	-------

C	3RT19 00-1SB20	100	340 units	101	0.200
---	-----------------------	-----	-----------	-----	-------

Labels for sticking for "SIRIUS"

- 19 mm x 6 mm, pastel turquoise
- 19 mm x 6 mm, zinc/yellow

D	3RT19 00-1SB60	100	3060 units	101	0.100
---	-----------------------	-----	------------	-----	-------

C	3RT19 00-1SD60	100	3060 units	101	0.100
---	-----------------------	-----	------------	-----	-------

Computer labeling system

For individual inscription of unit labeling plates

Obtainable from:

**murrplastik
Systemtechnik GmbH**

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Spare parts for
3RT contactors and 3RH contactor relays

Selection and ordering data

PU (UNIT, SET, M)= 1
PS* = 1 unit
PG = 101



3RT19 24-5A.01



3RT19 34-5A.01



3RT19 24-5A.02

For contactors		Rated control supply voltage U_s			DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
		50 Hz	50/60 Hz	60 Hz		⊕		⊖		
Order No.	Price per PU				Order No.	Price per PU	kg	Order No.	Price per PU	kg
Size	Type	V	V	V						
Solenoid coils · AC operation										
S0	3RT10 2., 3RT13 2., 3RT15 2.	24 42 48 110 230 400	-- -- -- -- -- --	-- -- -- -- -- --	▶ B A ▶	3RT19 24-5AB01 3RT19 24-5AD01 3RT19 24-5AH01 3RT19 24-5AF01	0.100 0.100 0.100 0.100	B C B B	3RT19 24-5AB02 3RT19 24-5AD02 3RT19 24-5AH02 3RT19 24-5AF02	0.100 0.100 0.100 0.100
		110 230 400	-- -- --	-- -- --	▶ ▶ ▶	3RT19 24-5AP01 3RT19 24-5AV01	0.100 0.100	B C	3RT19 24-5AP02 3RT19 24-5AV02	0.100 0.100
		-- -- -- --	24 42 48 110	-- -- -- --	▶ B B ▶	3RT19 24-5AC21 3RT19 24-5AD21 3RT19 24-5AH21 3RT19 24-5AG21	0.100 0.100 0.100 0.100	B C B B	3RT19 24-5AC22 3RT19 24-5AD22 3RT19 24-5AH22 3RT19 24-5AG22	0.100 0.100 0.100 0.100
		-- -- -- --	220 230	-- --	B B	3RT19 24-5AN21 3RT19 24-5AL21	0.100 0.100	B B	3RT19 24-5AN22 3RT19 24-5AL22	0.100 0.100
		110 220	-- --	120 240	B B	3RT19 24-5AK61 3RT19 24-5AP61	0.100 0.100	B C	3RT19 24-5AK62 3RT19 24-5AP62	0.100 0.100
		-- -- --	100 200 400	110 220 440	B B B	3RT19 24-5AG61 3RT19 24-5AN61 3RT19 24-5AR61	0.100 0.100 0.100	C C C	3RT19 24-5AG62 3RT19 24-5AN62 3RT19 24-5AR62	0.100 0.100 0.100
S2	3RT10 34	24 42 48 110 230 400	-- -- -- -- -- --	-- -- -- -- -- --	B B B B A C	3RT19 34-5AB01 3RT19 34-5AD01 3RT19 34-5AH01 3RT19 34-5AF01	0.120 0.120 0.120 0.120	B B B B	3RT19 34-5AB02 3RT19 34-5AD02 3RT19 34-5AH02 3RT19 34-5AF02	0.120 0.120 0.120 0.120
		110 230 400	-- -- --	120 240	B B C	3RT19 34-5AP01 3RT19 34-5AV01	0.120 0.120	B B	3RT19 34-5AP02 3RT19 34-5AV02	0.120 0.120
		-- -- -- --	24 42 48 110	-- -- -- --	B B B C	3RT19 34-5AC21 3RT19 34-5AD21 3RT19 34-5AH21 3RT19 34-5AG21	0.120 0.120 0.120 0.120	B B B B	3RT19 34-5AC22 3RT19 34-5AD22 3RT19 34-5AH22 3RT19 34-5AG22	0.120 0.120 0.120 0.120
		-- -- -- --	220 230	-- --	C C	3RT19 34-5AN21 3RT19 34-5AL21	0.120 0.120	B B	3RT19 34-5AN22 3RT19 34-5AL22	0.120 0.120
		110 220	-- --	120 240	B B	3RT19 34-5AK61 3RT19 34-5AP61	0.120 0.120	B B	3RT19 34-5AK62 3RT19 34-5AP62	0.120 0.120
		-- -- --	100 200 400	110 220 440	B B B	3RT19 34-5AG61 3RT19 34-5AN61 3RT19 34-5AR61	0.120 0.120 0.120	B B B	3RT19 34-5AG62 3RT19 34-5AN62 3RT19 34-5AR62	0.120 0.120 0.120
	3RT10 35, 3RT10 36, 3RT13 3., 3RT15 3.	24 42 48 110	-- -- -- --	-- -- -- --	B B B ▶	3RT19 35-5AB01 3RT19 35-5AD01 3RT19 35-5AH01 3RT19 35-5AF01	0.120 0.120 0.120 0.120	B B B B	3RT19 35-5AB02 3RT19 35-5AD02 3RT19 35-5AH02 3RT19 35-5AF02	0.120 0.120 0.120 0.120
		110 230 400	-- -- --	-- -- --	▶ ▶ C	3RT19 35-5AP01 3RT19 35-5AV01	0.120 0.120	B B	3RT19 35-5AP02 3RT19 35-5AV02	0.120 0.120
		-- -- -- --	24 42 48 110	-- -- -- --	B B B B	3RT19 35-5AC21 3RT19 35-5AD21 3RT19 35-5AH21 3RT19 35-5AG21	0.120 0.120 0.120 0.120	B B B B	3RT19 35-5AC22 3RT19 35-5AD22 3RT19 35-5AH22 3RT19 35-5AG22	0.120 0.120 0.120 0.120
		-- -- -- --	220 230	-- --	B B	3RT19 35-5AN21 3RT19 35-5AL21	0.120 0.120	B B	3RT19 35-5AN22 3RT19 35-5AL22	0.120 0.120
		110 220	-- --	120 240	B B	3RT19 35-5AK61 3RT19 35-5AP61	0.120 0.120	B B	3RT19 35-5AK62 3RT19 35-5AP62	0.120 0.120
		-- -- --	100 200 400	110 220 440	B B C	3RT19 35-5AG61 3RT19 35-5AN61 3RT19 35-5AR61	0.120 0.120 0.120	B B B	3RT19 35-5AG62 3RT19 35-5AN62 3RT19 35-5AR62	0.120 0.120 0.120

* You can order this quantity or a multiple thereof.

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Spare parts for 3RT contactors and 3RH contactor relays

PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101



3RT19 44-5A.01



3RT19 45-5A.01



3RT19 45-5A.02



3RT19 44-5B.42

For contactors		Rated control supply voltage U_s				DT	Screw terminals	⊕	Weight per PU approx.	DT	Cage Clamp terminals	⊕	Weight per PU approx.
Size	Type	AC			DC	Order No.	Price per PU	kg	Order No.	Price per PU	kg		
		50 Hz	50/60 Hz	60 Hz	V								
Solenoid coils · AC operation													
S3	3RT10 44	24	--	--	--	B	3RT19 44-5AB01	0.190	B	3RT19 44-5AB02	0.190		
		42	--	--	--	B	3RT19 44-5AD01	0.190	B	3RT19 44-5AD02	0.190		
		48	--	--	--	B	3RT19 44-5AH01	0.190	B	3RT19 44-5AH02	0.190		
		110	--	--	--	B	3RT19 44-5AF01	0.190	B	3RT19 44-5AF02	0.190		
		230	--	--	--	B	3RT19 44-5AP01	0.190	B	3RT19 44-5AP02	0.190		
		400	--	--	--	B	3RT19 44-5AV01	0.190	B	3RT19 44-5AV02	0.190		
		--	24	--	--	B	3RT19 44-5AC21	0.190	B	3RT19 44-5AC22	0.190		
		--	42	--	--	B	3RT19 44-5AD21	0.190	B	3RT19 44-5AD22	0.190		
		--	48	--	--	B	3RT19 44-5AH21	0.190	B	3RT19 44-5AH22	0.190		
		--	110	--	--	B	3RT19 44-5AG21	0.190	B	3RT19 44-5AG22	0.190		
		--	220	--	--	B	3RT19 44-5AN21	0.190	B	3RT19 44-5AN22	0.190		
		--	230	--	--	B	3RT19 44-5AL21	0.190	B	3RT19 44-5AL22	0.190		
	--	110	--	120	--	C	3RT19 44-5AK61	0.190	B	3RT19 44-5AK62	0.190		
	--	220	--	240	--	B	3RT19 44-5AP61	0.190	B	3RT19 44-5AP62	0.190		
	--	100	110	--	B	3RT19 44-5AG61	0.190	B	3RT19 44-5AG62	0.190			
	--	200	220	--	B	3RT19 44-5AN61	0.190	B	3RT19 44-5AN62	0.190			
	--	400	440	--	B	3RT19 44-5AR61	0.190	B	3RT19 44-5AR62	0.190			
	3RT10 45, 3RT10 46, 3RT13 4., 3RT14 46, 3RT15 4.	24	--	--	--	B	3RT19 45-5AB01	0.190	B	3RT19 45-5AB02	0.190		
		42	--	--	--	B	3RT19 45-5AD01	0.190	B	3RT19 45-5AD02	0.190		
		48	--	--	--	B	3RT19 45-5AH01	0.190	B	3RT19 45-5AH02	0.190		
		110	--	--	--	B	3RT19 45-5AF01	0.190	B	3RT19 45-5AF02	0.190		
		230	--	--	--	▶	3RT19 45-5AP01	0.190	B	3RT19 45-5AP02	0.190		
		400	--	--	--	C	3RT19 45-5AV01	0.190	B	3RT19 45-5AV02	0.190		
		--	24	--	--	B	3RT19 45-5AC21	0.190	B	3RT19 45-5AC22	0.190		
--		42	--	--	B	3RT19 45-5AD21	0.190	B	3RT19 45-5AD22	0.190			
--		48	--	--	B	3RT19 45-5AH21	0.190	B	3RT19 45-5AH22	0.190			
--		110	--	--	B	3RT19 45-5AG21	0.190	B	3RT19 45-5AG22	0.190			
--		220	--	--	B	3RT19 45-5AN21	0.190	B	3RT19 45-5AN22	0.190			
--		230	--	--	B	3RT19 45-5AL21	0.190	B	3RT19 45-5AL22	0.190			
--	110	--	120	--	B	3RT19 45-5AK61	0.190	B	3RT19 45-5AK62	0.190			
--	220	--	240	--	B	3RT19 45-5AP61	0.190	B	3RT19 45-5AP62	0.190			
--	100	110	--	B	3RT19 45-5AG61	0.190	B	3RT19 45-5AG62	0.190				
--	200	220	--	C	3RT19 45-5AN61	0.190	B	3RT19 45-5AN62	0.190				
--	400	440	--	B	3RT19 45-5AR61	0.190	B	3RT19 45-5AR62	0.190				
Solenoid coils · DC operation													
S2	3RT10 3., 3RT13 3., 3RT15 3.	--	--	--	24	B	3RT19 34-5BB41	0.650	B	3RT19 34-5BB42	0.650		
		--	--	--	42	B	3RT19 34-5BD41	0.650	C	3RT19 34-5BD42	0.650		
		--	--	--	48	B	3RT19 34-5BW41	0.650	B	3RT19 34-5BW42	0.650		
		--	--	--	60	B	3RT19 34-5BE41	0.650	B	3RT19 34-5BE42	0.650		
		--	--	--	110	B	3RT19 34-5BF41	0.650	B	3RT19 34-5BF42	0.650		
		--	--	--	125	B	3RT19 34-5BG41	0.650	C	3RT19 34-5BG42	0.650		
	3RT10 4., 3RT13 4., 3RT14 4., 3RT15 4.	--	--	--	220	B	3RT19 34-5BM41	0.650	B	3RT19 34-5BM42	0.650		
		--	--	--	230	B	3RT19 34-5BP41	0.650	B	3RT19 34-5BP42	0.650		
		--	--	--	24	B	3RT19 44-5BB41	1.000	B	3RT19 44-5BB42	1.000		
		--	--	--	42	C	3RT19 44-5BD41	1.000	B	3RT19 44-5BD42	1.000		
		--	--	--	48	B	3RT19 44-5BW41	1.000	B	3RT19 44-5BW42	1.000		
		--	--	--	60	B	3RT19 44-5BE41	1.000	B	3RT19 44-5BE42	1.000		
--	--	--	110	B	3RT19 44-5BF41	1.000	B	3RT19 44-5BF42	1.000				
--	--	--	125	B	3RT19 44-5BG41	1.000	B	3RT19 44-5BG42	1.000				
--	--	--	220	B	3RT19 44-5BM41	1.000	B	3RT19 44-5BM42	1.000				
--	--	--	230	B	3RT19 44-5BP41	1.000	B	3RT19 44-5BP42	1.000				

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Spare parts for
3RT contactors and 3RH contactor relays

PU (UNIT, SET, M)= 1
PS* = 1 unit
PG = 101



3RT19 55-5A...

For contactors		Rated control supply voltage $U_{s \text{ min}} \dots U_{s \text{ max}}$	DT	Screw terminals	⊕	Weight per PU approx.	DT	Cage Clamp terminals	⊖	Weight per PU approx.	
Size	Type	V AC/DC		Order No.	Price per PU	kg		Order No.	Price per PU	kg	
Withdrawable coils											
<i>Conventional operating mechanisms</i>											
S6	3RT10 5,	23 ... 26	B	3RT19 55-5AB31		0.650	B	3RT19 55-5AB32		0.650	
	3RT14 5	42 ... 48	B	3RT19 55-5AD31		0.650	B	3RT19 55-5AD32		0.650	
		110 ... 127	B	3RT19 55-5AF31		0.650	B	3RT19 55-5AF32		0.650	
		200 ... 220	B	3RT19 55-5AM31		0.650	B	3RT19 55-5AM32		0.650	
		220 ... 240	B	3RT19 55-5AP31		0.650	B	3RT19 55-5AP32		0.650	
		240 ... 277	B	3RT19 55-5AU31		0.650	B	3RT19 55-5AU32		0.650	
		380 ... 420	B	3RT19 55-5AV31		0.650	B	3RT19 55-5AV32		0.650	
		440 ... 480	B	3RT19 55-5AR31		0.650	B	3RT19 55-5AR32		0.650	
		500 ... 550	B	3RT19 55-5AS31		0.650	B	3RT19 55-5AS32		0.650	
		575 ... 600	B	3RT19 55-5AT31		0.650	B	3RT19 55-5AT32		0.650	
	S10	3RT10 6,	23 ... 26	B	3RT19 65-5AB31		0.850	B	3RT19 65-5AB32		0.850
		3RT14 6	42 ... 48	B	3RT19 65-5AD31		0.850	B	3RT19 65-5AD32		0.850
		110 ... 127	B	3RT19 65-5AF31		0.850	B	3RT19 65-5AF32		0.850	
		200 ... 220	C	3RT19 65-5AM31		0.850	B	3RT19 65-5AM32		0.850	
		220 ... 240	B	3RT19 65-5AP31		0.850	B	3RT19 65-5AP32		0.850	
		240 ... 277	B	3RT19 65-5AU31		0.850	B	3RT19 65-5AU32		0.850	
		380 ... 420	B	3RT19 65-5AV31		0.850	B	3RT19 65-5AV32		0.850	
		440 ... 480	B	3RT19 65-5AR31		0.850	B	3RT19 65-5AR32		0.850	
		500 ... 550	C	3RT19 65-5AS31		0.850	B	3RT19 65-5AS32		0.850	
		575 ... 600	C	3RT19 65-5AT31		0.850	B	3RT19 65-5AT32		0.850	
S10		3RT12 6	23 ... 26	B	3RT19 66-5AB31		1.000	--			
		vacuum con-	42 ... 48	B	3RT19 66-5AD31		1.000	--			
	tactors	110 ... 127	A	3RT19 66-5AF31		1.000	--				
		200 ... 220	C	3RT19 66-5AM31		1.000	--				
		220 ... 240	A	3RT19 66-5AP31		1.000	--				
		240 ... 277	C	3RT19 66-5AU31		1.000	--				
		380 ... 420	B	3RT19 66-5AV31		1.000	--				
		440 ... 480	C	3RT19 66-5AR31		1.000	--				
		500 ... 550	C	3RT19 66-5AS31		1.000	--				
		575 ... 600	C	3RT19 66-5AT31		1.000	--				
	S12	3RT10 7,	23 ... 26	B	3RT19 75-5AB31		1.300	B	3RT19 75-5AB32		1.300
		3RT14 7,	42 ... 48	B	3RT19 75-5AD31		1.300	B	3RT19 75-5AD32		1.300
3RT12 7		110 ... 127	B	3RT19 75-5AF31		1.300	B	3RT19 75-5AF32		1.300	
vacuum con-		200 ... 220	C	3RT19 75-5AM31		1.300	B	3RT19 75-5AM32		1.300	
tactors		220 ... 240	B	3RT19 75-5AP31		1.300	B	3RT19 75-5AP32		1.300	
		240 ... 277	B	3RT19 75-5AU31		1.300	B	3RT19 75-5AU32		1.300	
		380 ... 420	B	3RT19 75-5AV31		1.300	B	3RT19 75-5AV32		1.300	
		440 ... 480	B	3RT19 75-5AR31		1.300	B	3RT19 75-5AR32		1.300	
		500 ... 550	C	3RT19 75-5AS31		1.300	B	3RT19 75-5AS32		1.300	
		575 ... 600	C	3RT19 75-5AT31		1.300	B	3RT19 75-5AT32		1.300	

Accessories and Spare Parts



For 3RT, 3RH Contactors and Contactor Relays

Spare parts for 3RT contactors and 3RH contactor relays

PU (UNIT, SET, M)= 1
PS* = 1 unit
PG = 101



3RT19 55-5N...

For contactors		Rated control supply voltage U_s	DT	Screw terminals		Weight per PU approx.	DT	Cage Clamp terminals		Weight per PU approx.
Size	Type	V AC/DC		Order No.	Price per PU	kg		Order No.	Price per PU	kg
Withdrawable coils										
<i>Solid-state operating mechanism</i>										
For 24 V DC PLC output										
S6	3RT10 5,	21 ... 27.3	C	3RT19 55-5NB31		0.650	B	3RT19 55-5NB32		0.650
	3RT14 5	96 ... 127	B	3RT19 55-5NF31		0.650	B	3RT19 55-5NF32		0.650
		200 ... 277	B	3RT19 55-5NP31		0.650	B	3RT19 55-5NP32		0.650
S10	3RT10 6,	21 ... 27.3	B	3RT19 65-5NB31		0.900	B	3RT19 65-5NB32		0.900
	3RT14 6	96 ... 127	B	3RT19 65-5NF31		0.900	B	3RT19 65-5NF32		0.900
		200 ... 277	B	3RT19 65-5NP31		0.900	B	3RT19 65-5NP32		0.900
S12	3RT12 6	21 ... 27.3	B	3RT19 66-5NB31		0.650		--		
	vacuum con- tactors	96 ... 127	C	3RT19 66-5NF31		0.650		--		
		200 ... 277	C	3RT19 66-5NP31		0.650		--		
S12	3RT10 7,	21 ... 27.3	B	3RT19 75-5NB31		1.100	B	3RT19 75-5NB32		1.100
	3RT14 7,	96 ... 127	B	3RT19 75-5NF31		1.100	B	3RT19 75-5NF32		1.100
	3RT12 7	200 ... 277	B	3RT19 75-5NP31		1.100	B	3RT19 75-5NP32		1.100
	vacuum con- tactors									
For 24 V DC PLC output/PLC relay output, with remaining lifetime indicator (RLT) (Withdrawable coil with lateral solid-state module)										
S6	3RT10 5,	96 ... 127	B	3RT19 55-5PF31		0.650		--		
	3RT14 5	200 ... 277	B	3RT19 55-5PP31		0.650		--		
S10	3RT10 6,	96 ... 127	B	3RT19 65-5PF31		1.300		--		
	3RT14 6	200 ... 277	B	3RT19 65-5PP31		1.300		--		
S12	3RT10 7,	96 ... 127	B	3RT19 75-5PF31		1.300		--		
	3RT14 7	200 ... 277	B	3RT19 75-5PP31		1.300		--		
With AS-Interface and remaining lifetime indicator (RLT) (Withdrawable coil with lateral solid-state module)										
S6	3RT10 5,	96 ... 127	B	3RT19 55-5QF31		0.650		--		
	3RT14 5	200 ... 277	B	3RT19 55-5QP31		0.650		--		
S10	3RT10 6,	96 ... 127	B	3RT19 65-5QF31		1.300		--		
	3RT14 6	200 ... 277	B	3RT19 65-5QP31		1.300		--		
S12	3RT10 7,	96 ... 127	B	3RT19 75-5QF31		1.300		--		
	3RT14 7	200 ... 277	B	3RT19 75-5QP31		1.300		--		

Accessories and Spare Parts

For 3RT, 3RH Contactors and Contactor Relays

Spare parts for 3RT contactors and 3RH contactor relays

For contactors		Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Size	Type								
Arc chutes									
S2	3RT10 3.	Arc chutes, 3-pole	C	3RT19 36-7A		1	1 unit	101	0.110
S3	3RT10 4., 3RT14 46		C	3RT19 46-7A		1	1 unit	101	0.300
S6	3RT10 54 3RT10 55 3RT10 56		B B B	3RT19 54-7A 3RT19 55-7A 3RT19 56-7A		1 1 1	1 unit 1 unit 1 unit	101 101 101	0.760 0.760 0.760
S10	3RT10 64 3RT10 65 3RT10 66		B B B	3RT19 64-7A 3RT19 65-7A 3RT19 66-7A		1 1 1	1 unit 1 unit 1 unit	101 101 101	1.350 1.350 1.350
S12	3RT10 75 3RT10 76		B B	3RT19 75-7A 3RT19 76-7A		1 1	1 unit 1 unit	101 101	1.650 1.650
S6	3RT14 56		B	3RT19 56-7B		1	1 unit	101	0.720
S10	3RT14 66		B	3RT19 66-7B		1	1 unit	101	1.350
S12	3RT14 76		B	3RT19 76-7B		1	1 unit	101	1.400
Contacts with fixing parts									
<i>For contactors with 3 main contacts</i>									
S2	3RT10 34 3RT10 35 3RT10 36	Main contacts (3 NO contacts) for utilization category AC-3	▶	3RT19 34-6A		1	1 unit	101	0.050
			▶	3RT19 35-6A		1	1 unit	101	0.050
		(1 set = 3 movable and 6 fixed switching elements with fixing parts)	▶	3RT19 36-6A		1	1 unit	101	0.050
S3	3RT10 44 3RT10 45 3RT10 46		▶	3RT19 44-6A		1	1 unit	101	0.110
			▶	3RT19 45-6A		1	1 unit	101	0.110
			▶	3RT19 46-6A		1	1 unit	101	0.110
S6	3RT10 54 3RT10 55 3RT10 56		▶	3RT19 54-6A		1	1 unit	101	0.280
			▶	3RT19 55-6A		1	1 unit	101	0.280
			▶	3RT19 56-6A		1	1 unit	101	0.280
S10	3RT10 64 3RT10 65 3RT10 66		▶	3RT19 64-6A		1	1 unit	101	0.550
			▶	3RT19 65-6A		1	1 unit	101	0.550
			▶	3RT19 66-6A		1	1 unit	101	0.550
S12	3RT10 75 3RT10 76		▶	3RT19 75-6A		1	1 unit	101	0.900
			A	3RT19 76-6A		1	1 unit	101	0.100
S3	3RT14 46	Main contacts (3 NO contacts) for utilization category AC-1	B	3RT19 46-6D		1	1 unit	101	0.900
S6	3RT14 56		B	3RT19 56-6D		1	1 unit	101	0.280
S10	3RT14 66	(1 set = 3 movable and 6 fixed switching elements with fixing parts)	B	3RT19 66-6D		1	1 unit	101	0.550
S12	3RT14 76		A	3RT19 76-6D		1	1 unit	101	0.900
<i>For 3RT12 vacuum contactors</i>									
S10	3RT12 64 3RT12 65 3RT12 66	3 vacuum interrupters with fixing parts	B B B	3RT19 64-6V 3RT19 65-6V 3RT19 66-6V		1 1 1	1 unit 1 unit 1 unit	101 101 101	1.530 1.530 1.530
S12	3RT12 75 3RT12 76		B B	3RT19 75-6V 3RT19 76-6V		1 1	1 unit 1 unit	101 101	1.780 1.780
<i>For contactors with 4 main contacts</i>									
S2	3RT13 36	Main contacts (4 NO contacts) for utilization category AC-1	C	3RT19 36-6E		1	1 unit	101	0.060
S3	3RT13 44 3RT13 46	(1 set = 4 movable and 8 fixed switching elements with fixing parts)	C C	3RT19 44-6E 3RT19 46-6E		1 1	1 unit 1 unit	101 101	0.150 0.150




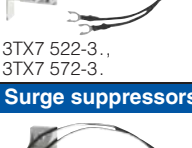

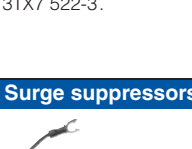

* You can order this quantity or a multiple thereof.

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Accessories for 3TB, 3TC, 3TF contactors

Selection and ordering data

For contactors		Version	Rated control supply voltage U_s		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.					
Size	Type		V AC	V DC							kg					
Surge suppressors¹⁾ · Varistors																
	2	3TC44 ²⁾	Varistors ³⁾ With line spacer, for mounting onto the coil terminal	24 ... 48	24 ... 70	A	3TX7 402-3G		1	1 unit	101	0.015				
				48 ... 127	70 ... 150	A	3TX7 402-3H		1	1 unit	101	0.015				
				127 ... 240	150 ... 250	A	3TX7 402-3J		1	1 unit	101	0.015				
				240 ... 400	--	C	3TX7 402-3K		1	1 unit	101	0.025				
				400 ... 600	--	C	3TX7 402-3L		1	1 unit	101	0.025				
	4 and 6	3TB50 and 3TC56	Varistors ³⁾ For sticking onto the contactor base or for mounting separately	24 ... 48	24 ... 70	D	3TX7 462-3G		1	1 unit	101	0.020				
				48 ... 127	70 ... 150	C	3TX7 462-3H		1	1 unit	101	0.020				
				127 ... 240	150 ... 250	B	3TX7 462-3J		1	1 unit	101	0.020				
				240 ... 400	--	A	3TX7 462-3K		1	1 unit	101	0.020				
				400 ... 600	--	C	3TX7 462-3L		1	1 unit	101	0.020				
	8 and 12	3TC52 and 3TC56	Varistors For sticking onto the contactor base or for mounting separately	24 ... 48	--	D	3TX7 462-3G		1	1 unit	101	0.020				
				48 ... 127	--	C	3TX7 462-3H		1	1 unit	101	0.020				
				127 ... 240	--	B	3TX7 462-3J		1	1 unit	101	0.020				
				240 ... 400	--	A	3TX7 462-3K		1	1 unit	101	0.020				
				400 ... 600	--	C	3TX7 462-3L		1	1 unit	101	0.020				
	8 ... 12	3TB52 ... 3TB56, 3TC52 and 3TC56	Varistors ³⁾ For separate screw connection or snapping onto 35 mm standard mounting rail	--	24 ... 70	B	3TX7 522-3G		1	1 unit	101	0.080				
				--	70 ... 150	B	3TX7 522-3H		1	1 unit	101	0.080				
				--	150 ... 250	B	3TX7 522-3J		1	1 unit	101	0.080				
					14	3TF68 and 3TF69	Varistors ³⁾ for DC economy circuit; for snapping onto the side of auxiliary switches	--	24 ... 48	C	3TX7 572-3G		1	1 unit	101	0.080
								--	48 ... 127	C	3TX7 572-3H		1	1 unit	101	0.080
--	127 ... 240	C	3TX7 572-3J						1	1 unit	101	0.080				
Surge suppressors · RC elements																
	4	3TC48	RC elements For lateral snapping onto auxiliary switch or TH 35 standard mounting rail					24 ... 48	--	C	3TX7 462-3R		1	1 unit	101	0.090
				--	24 ... 70	B	3TX7 522-3R		1	1 unit	101	0.090				
				48 ... 127	--	A	3TX7 462-3S		1	1 unit	101	0.090				
				--	70 ... 150	B	3TX7 522-3S		1	1 unit	101	0.090				
				127 ... 240	--	A	3TX7 462-3T		1	1 unit	101	0.090				
	6 ... 12	3TB50, 3TC52 and 3TC56	RC elements For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	24 ... 48	--	B	3TX7 522-3R		1	1 unit	101	0.090				
				48 ... 127	--	B	3TX7 522-3S		1	1 unit	101	0.090				
				127 ... 240	--	B	3TX7 522-3T		1	1 unit	101	0.090				
				240 ... 400	--	B	3TX7 522-3U		1	1 unit	101	0.090				
				400 ... 600	--	B	3TX7 522-3V		1	1 unit	101	0.090				
Surge suppressors⁴⁾ · Diodes																
	6 ... 12	3TB50 ... 3TB56, 3TC48 ... 3TC56	Diode assemblies (diode and Zener diode) For DC solenoid system, for sticking onto the contactor base or for mounting separately	--	24 ... 250	D	3TX7 462-3D		1	1 unit	101	0.015				

1) The surge suppressor is included in the scope of supply of the following contactors: 3TF68 and 3TF69 (AC operation): varistor circuit.




2) The connection piece for mounting the surge suppressor must be bent slightly.

3) Includes the peak value of the alternating voltage on the DC side.

4) Not for DC economy circuit.

Accessories and Spare Parts For 3T Contactors and Contactor Relays

Accessories for 3TB, 3TC, 3TF contactors

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Size	Type							kg		
Solid-state compatible auxiliary switch blocks with screw terminals										
 5TY7 561-1.	14	3TF68 and 3TF69	For mounting onto the side of contactors	▶	3TY7 561-1UA00	1	1 unit	101	0.060	
	2 and 4	3TC44 ... 3TC48	For use in dusty atmosphere and solid-state circuits with rated operational currents I_e AC-14 and DC-13 from 1 ... 300 mA at 3 ... 60 V DC With 1 changeover contact. 2nd auxiliary switch block, left or right (replacement for 3TY6 561-1U, 3TY6 561-1V)							
Coupling links for control by PLC										
	14	3TF68 and 3TF69	For snapping onto the side of auxiliary switch, with surge suppression. Operating range: 17 V to 30 V DC. Power consumption: 0.5 W at 24 V DC. Fitted with varistor. ¹⁾	▶	3TX7 090-0D	1	1 unit	101	0.080	
Terminal covers for protection against inadvertent contact with exposed busbar connections										
 3TX7 6.6-0A	14	3TF68 3TF69	For screwing onto free screw end on middle connecting bar. 2 units required per contactor. (1 set = 2 units)	B	3TX7 686-0A	1	1 unit	101	0.410	
				B	3TX7 696-0A	1	1 unit	101	0.410	
 3TX6 526-3B	6	3TB50, 3TC48	Can be screwed on free screw end. Covers one busbar connection (1 set = 6 units).	M6	B	3TX6 506-3B	1	1 unit	101	0.100
	8	3TB52		M8	B	3TX6 526-3B	1	1 unit	101	0.140
	SIRIUS S6	3RT1. 5								
	10 and 14	3TB54 ... 3TB56, 3TC52, 3TC56		M10	B	3TX6 546-3B	1	1 unit	101	0.260
	SIRIUS S10, S12	3RT1. 6, 3RT1. 7								
Links for paralleling (star jumpers) · 3-pole, without connection terminal²⁾										
	14	3TF68		C	3TX7 680-0D	1	1 unit	101	0.250	
Cover plates for links for paralleling										
	14	3TF68	A cover plate must be used in order to protect against inadvertent contact with exposed busbar connections (EN 50274).	C	3TX7 680-0E	1	1 unit	101	0.080	
Box terminals for laminated copper bars										
Without auxiliary conductor connection (1 set = 3 units)										
	14	3TF68	With single covers for protection against inadvertent contact (EN 50274)	C	3TX7 570-1E	1	1 unit	101	0.780	
With auxiliary conductor connection (1 set = 3 units)										
	14	3TF69	Conductor cross-sections for auxiliary conductors: • Solid wire 2 x (0.75 ... 2.5) mm ² • Finely stranded with end sleeve 2 x (0.5 ... 2.5) mm ² • Solid or stranded 2 x (18 ... 12) AWG • Tightening torque 0.8 ... 1.4 Nm (7 ... 12 lb.in)	C	3TX7 690-1F	1	1 unit	101	2.000	

¹⁾ More information can be found in the "Technical specifications" (see note on Technical Information on page 3/1).

²⁾ The link for paralleling can be reduced by one pole.


Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Accessories for 3TB, 3TC, 3TF contactors

For contactors		Remarks	Rated control supply voltage U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Size	Type		V DC							kg
Arc chutes										
2	3TC44 17-0L...	With cutout for mounting resistor		B	3TY2 442-0B		1	1 unit	101	0.160
Solenoid coils										
2	3TC44	With series resistor	24	C	3TY6 443-0LB4		1	1 unit	101	0.400
		Without Varistor	110	C	3TY6 443-0LF4		1	1 unit	101	0.400
4	3TC48		24	C	3TY6 483-0LB4		1	1 unit	101	1.100
			110	C	3TY6 483-0LF4		1	1 unit	101	1.100
6	3TB50		24	C	3TY6 503-0LB4		1	1 unit	101	1.100
			110	D	3TY6 503-0LF4		1	1 unit	101	1.100
8	3TB52 and 3TC52		24	D	3TY6 523-0LB4		1	1 unit	101	1.100
			110	D	3TY6 523-0LF4		1	1 unit	101	1.100
10	3TB54		24	C	3TY6 543-0LB4		1	1 unit	101	1.100
			110	C	3TY6 543-0LF4		1	1 unit	101	1.100
12	3TB56 and 3TC56		24	C	3TY6 563-0LB4		1	1 unit	101	1.100
			110	C	3TY6 563-0LF4		1	1 unit	101	1.100

All spare parts not mentioned above are identical to those for the standard contactors.

Auxiliary contacts	Rated operational current I_e /AC-15/AC-14 at			Auxiliary contacts		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Number	230/220 V	400/380 V	500 V	Ident. No.	Version							kg
A	A	A										
					NO NC NO NC							

Snap-on auxiliary switch blocks for 3TF2 contactors

With screw terminals



3TX4 4...A

For assembling contactors with several auxiliary contacts with 2, 4 and 5 auxiliary contacts according to DIN 50012 for 3TF2.10 contactors (auxiliary contact 1 NO = 10E)

1	4	3	2	11E	--	1	--	--	▶	3TX4 401-1A	1	1 unit	101	0.050
3	4	3	2	22E	1	2	--	--	▶	3TX4 412-1A	1	1 unit	101	0.050
4	4	3	2	23E	1	3	--	--	▶	3TX4 413-1A	1	1 unit	101	0.050
				32E	2	2	--	--	▶	3TX4 422-1A	1	1 unit	101	0.050

With 3 and 5 auxiliary contacts according to DIN 50005 for 3TF2 contactors

2	4	3	2	20	2	--	--	--	▶	3TX4 420-2A	1	1 unit	101	0.050
				11	1	1	--	--	▶	3TX4 411-2A	1	1 unit	101	0.050
				02	--	2	--	--	▶	3TX4 402-2A	1	1 unit	101	0.050
				11; U	--	--	1	1	D	3TX4 411-2G	1	1 unit	101	0.050
4	4	3	2	40	4	--	--	--	▶	3TX4 440-2A	1	1 unit	101	0.050
				31	3	1	--	--	▶	3TX4 431-2A	1	1 unit	101	0.050
				22	2	2	--	--	▶	3TX4 422-2A	1	1 unit	101	0.050
				22; 2 U	--	--	2	2	D	3TX4 422-2G	1	1 unit	101	0.050

For contactors	Rated control supply voltage U_s	Time setting range (minimum times)	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type									kg

OFF-delay devices for 3TF2 contactors

With screw terminals



3TX4 490-1H

For DC-operated contactors for bridging short-time power failures up to 0.8 s

3TF2...-0BB4	24 V DC	0.25 s or 0.5 s	A	3TX4 490-1H		1	1 unit	101	0.085
--------------	---------	-----------------	---	--------------------	--	---	--------	-----	-------

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Accessories for 3TB, 3TC, 3TF contactors

For contactors	Rated control supply voltage		Power consumption of LED at U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type	V AC								

Surge suppressors for 3TF2 contactors for plugging onto contactors with and without auxiliary switch blocks



3TX4 490-3A

Version without LED

RC elements

3TF2...-0...	24 ... 48	24 ... 70	--	B	3TX4 490-3R	1	1 unit	101	0.010
3TF2...-1...	48 ... 127	70 ... 150	--	B	3TX4 490-3S	1	1 unit	101	0.010
	127 ... 240	150 ... 250	--	B	3TX4 490-3T	1	1 unit	101	0.010
	240 ... 400	--	--	B	3TX4 490-3U	1	1 unit	101	0.015
	400 ... 600	--	--	B	3TX4 490-3V	1	1 unit	101	0.015

Varistors

3TF2...-0...	≤ 48	24 ... 70	--	B	3TX4 490-3G	1	1 unit	101	0.010
3TF2...-1...	48 ... 127	70 ... 150	--	B	3TX4 490-3H	1	1 unit	101	0.010
	127 ... 240	150 ... 250	--	B	3TX4 490-3J	1	1 unit	101	0.010
	240 ... 400	--	--	B	3TX4 490-3K	1	10 units	101	0.015
	400 ... 600	--	--	B	3TX4 490-3L	1	10 units	101	0.015

Noise suppression diodes

3TF2...-0...	--	12 ... 250	--	B	3TX4 490-3A	1	1 unit	101	0.010
3TF2...-1...									

Diode assemblies (diode and Zener diode)

For DC operation and short break times

3TF2...-0...	--	24 ... 250	--	B	3TX4 490-3B	1	1 unit	101	0.010
3TF2...-1...									

Version with LED

Varistors

3TF2...-0...	24 ... 48	12 ... 24	10 ... 120	B	3TX4 490-4G	1	1 unit	101	0.010
3TF2...-1...	48 ... 127	24 ... 70	20 ... 470	B	3TX4 490-4H	1	1 unit	101	0.010
	127 ... 240	70 ... 150	50 ... 700	B	3TX4 490-4J	1	1 unit	101	0.010
	--	150 ... 250	160 ... 950	B	3TX4 490-4K	1	1 unit	101	0.010

Noise suppression diodes

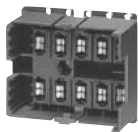
3TF2...-0...	--	24 ... 70	20 ... 470	B	3TX4 490-4A	1	1 unit	101	0.010
3TF2...-1...	--	70 ... 150	50 ... 700	B	3TX4 490-4B	1	1 unit	101	0.010
	--	150 ... 250	160 ... 950	B	3TX4 490-4C	1	1 unit	101	0.010

Additional load modules for 3TF2 contactors for plugging onto contactors with and without auxiliary switch blocks¹⁾

For increasing the permissible residual current and for limiting the residual voltage

3TF2...-0A...	230/220, 50 Hz	--	B	3TX4 490-1J	1	1 unit	101	0.010
3TF2...-1A...	230, 60 Hz							
	230, 50/60 Hz							
	Operating range 0.8 ... 1.1 x U_s							

Plug-in bases with solder pin connections for printed circuit boards, width 45 mm for 3TF2 contactors



3TX4 491-2A

For 3TF2 and 3TK2 contactors
With 6.3 mm x 0.8 mm flat connectors
Rated insulation voltage U_i : 400 V (at pollution degree 3);
Rated impulse withstand voltage U_{imp} : 6 kV;
rated operational current I_g : 6 A;
Ⓢ and Ⓜ rated data: max. 300 V, 6 A

3TF20...-3...			A	3TX4 491-2A	1	5 units	101	0.030
3TF20...-7...								

Release tools

3TF2...-7...	For releasing contactors from 3TX4 491-2A plug-in bases	D	3TX4 491-2K	1	1 unit	101	0.010
--------------	---	---	--------------------	---	--------	-----	-------

¹⁾ Dimensions as for 3TX4 490-3 surge suppressor.

Accessories and Spare Parts

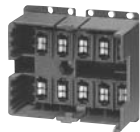
For 3T Contactors and Contactor Relays

Accessories for 3TK, 3TG contactors

Selection and ordering data

For contactors	Rated control supply voltage U_s		Power consumption of LED at U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	V AC	V DC	mW							kg

Plug-in bases with solder pin connections for printed circuit boards, width 45 mm for 3TK2 contactors



3TK4 491-2A

For 3TF2 and 3TK2 contactors
With 6.3 mm x 0.8 mm flat connectors
Rated insulation voltage U_i : 400 V
(at pollution degree 3);
Rated impulse withstand voltage U_{imp} : 6 kV;
rated operational current I_e : 6 A;
Ⓢ and Ⓜ rated data: max. 300 V, 6 A

3TK20 ...-3...
3TK20 ...-7...

A

3TX4 491-2A

1

5 units

101

0.030

Release tools

3TK20 ...-7...

For releasing contactors from 3TX4 491-2A plug-in bases

D

3TX4 491-2K

1

1 unit

101

0.010

For contactors	Max. rated operational currents $I_e/AC-1$ (at 55 °C) of the contactors	Max. conductor cross-sections	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	A	mm ²							kg

Links for paralleling (star jumpers)

3-pole, without connection terminals¹⁾²⁾

3TG10 16 star jumpers can be reduced by one pole

▶

3RT19 16-4BA31

1

1 unit

101

0.010

3-pole, with connection terminals¹⁾³⁾

3TG10 40

25

▶

3RT19 16-4BB31

1

1 unit

101

0.015

4-pole, with connection terminals¹⁾⁴⁾

3TG10 50

25

C

3RT19 16-4BB41

1

1 unit

101

0.015

¹⁾ The links for paralleling can be reduced by one pole. The rated operational currents apply to each pole. The links for paralleling are insulated.

²⁾ Replacement for 3TX4 490-2C.

³⁾ Replacement for 3TX4 490-2A.

⁴⁾ Replacement for 3TX4 490-2B.

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Accessories for 3TH contactor relays

Selection and ordering data

Version	Rated control supply voltage U_s		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	AC V	DC V							

Surge suppressors¹⁾ for 3TH4 contactor relays



3TX7 402-3.

Noise suppression diodes With line spacer, for mounting onto the coil terminal	--	24 ... 250	A	3TX7 402-3A		1	1 unit	101	0.015
Diode assemblies (diode and Zener diode) with line spacer, DC operation, for mounting onto the coil terminal	--	24 ... 250	A	3TX7 402-3D		1	1 unit	101	0.015
Varistors²⁾ With line spacer, for mounting onto the coil terminal	24 ... 48	24 ... 70	A	3TX7 402-3G		1	1 unit	101	0.015
	48 ... 127	70 ... 150	A	3TX7 402-3H		1	1 unit	101	0.015
	127 ... 240	150 ... 250	A	3TX7 402-3J		1	1 unit	101	0.015
	240 ... 400	--	C	3TX7 402-3K		1	1 unit	101	0.025
RC elements With line spacer, for mounting onto the coil terminal	400 ... 600	--	C	3TX7 402-3L		1	1 unit	101	0.025
	24 ... 48	24 ... 70	A	3TX7 402-3R		1	1 unit	101	0.025
	48 ... 127	70 ... 150	A	3TX7 402-3S		1	1 unit	101	0.025
	127 ... 240	150 ... 250	A	3TX7 402-3T		1	1 unit	101	0.025
	240 ... 400	--	C	3TX7 402-3U		1	1 unit	101	0.025
	400 ... 600	--	C	3TX7 402-3V		1	1 unit	101	0.025
Covers For switch position indicator	--	--	B	3TX4 210-0P		1	1 unit	101	0.010

Coupling links for control by PLC for 3TH4 contactor relays

3TX4 090
mounted to contactor

Operating range: 17 to 30 V DC Power consumption: 0.5 W at 24 V DC									
For mounting directly to contactor coil without surge suppressor			A	3TX4 090-0C		1	1 unit	101	0.060
For mounting directly to contactor coil with surge suppressor			A	3TX4 090-0D		1	1 unit	101	0.060

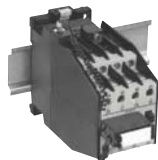
¹⁾ The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assemblies 2 to 6 times, varistor +2 to 5 ms).

²⁾ Includes the peak value of the alternating voltage on the DC side.

For contactors	Version	Rated control supply voltage U_s AC 50/60 Hz	Time setting range (minimum times)	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
----------------	---------	--	------------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Type		V	s							kg
------	--	---	---	--	--	--	--	--	--	----

ON-delay devices




3TX4 180-0A

3TH42/ 3TH43	NTC thermistors Time tolerance +100 %, -50 %	220 ... 230	0.1	B	3TX4 180-0A		1	1 unit	101	0.015
-----------------	---	-------------	-----	---	--------------------	--	---	--------	-----	-------

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Accessories for 3TH contactor relays

For contactors	Rated control supply voltage U_s		OFF-delay (minimum times)	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	AC 50/60 Hz	DC			Order No.	Price per PU			kg

OFF-delay devices for contactors with DC operation For bridging temporary voltage failures



Voltage failures up to 0.8 s										
3TH2...-0BB4	--		24	0.25 or 0.5	A	3TX4 490-1H	1	1 unit	101	0.085
3TH2...-0BF4	110	--		0.1 or 0.2	A	3TX4 490-1A	1	1 unit	101	0.085
3TH2...-0BM4, 3TH2...-0BP4	220	--		0.4 or 0.8						
Voltage failures up to 1.2 s										
3TH42...-0BF4 3TH43...-0BF4	110	--		0.15 or 0.3	A	3TX4 701-0AN1	1	1 unit	101	0.170
3TH42...-0BM4 3TH43...-0BM4	220	--		0.6 or 1.2	A	3TX4 701-0AN1	1	1 unit	101	0.170
3TH42...-0BP4 3TH43...-0BP4	230	--		0.6 or 1.2	A	3TX4 701-0AN1	1	1 unit	101	0.170
3TH42...-0BB4 3TH43...-0BB4	--		24	0.4 or 0.8	B	3TX4 701-0BB4	1	1 unit	101	0.170



3TX4 490-1A



3TX4 701-0AN1

Contacts	Rated operational current I_e /AC-15/AC-14 at				Contacts	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Number	A	A	A	A	Ident. No. acc. to EN 50011	Version 	Order No.	Price per PU			kg

Snap-on auxiliary switch blocks for 3TH20 contactor relays



3TX4 440-0A

With 8 contacts according to EN 50011, for snapping onto contactor relays with 4 NO, Ident. No. 40E (3TH20 40-0...)															
4	4	3	2	--	80E	4	--	--	--	▶	3TX4 440-0A	1	1 unit	101	0.050
					71E	3	1	--	--	▶	3TX4 431-0A	1	1 unit	101	0.050
					62E	2	2	--	--	▶	3TX4 422-0A	1	1 unit	101	0.050
					53E	1	3	--	--	▶	3TX4 413-0A	1	1 unit	101	0.050
					44E	--	4	--	--	▶	3TX4 404-0A	1	1 unit	101	0.050
With 6 and 8 contacts according to EN 50005															
4	4	3	2	--	40E	4	--	--	--	▶	3TX4 440-2A	1	1 unit	101	0.050
					31E	3	1	--	--	▶	3TX4 431-2A	1	1 unit	101	0.050
					22E	2	2	--	--	▶	3TX4 422-2A	1	1 unit	101	0.050
					22; 2U	--	--	2	2	D	3TX4 422-2G	1	1 unit	101	0.050
2	4	3	2	--	20E	2	--	--	--	▶	3TX4 420-2A	1	1 unit	101	0.050
					11E	1	1	--	--	▶	3TX4 411-2A	1	1 unit	101	0.050
					02E	--	2	--	--	▶	3TX4 402-2A	1	1 unit	101	0.050
					11; U	--	--	1	1	D	3TX4 411-2G	1	1 unit	101	0.050

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Accessories for 3TH contactor relays

For contactors	Rated control supply voltage U_s		Power consumption of LED at U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	V AC	V DC	mW							kg

Surge suppressors¹⁾ For plugging onto contactors with and without auxiliary switch blocks

Version without LED

RC elements

3TH2...-0...	24 ... 48	24 ... 70	--	B	3TX4 490-3R		1	1 unit	101	0.010
	48 ... 127	70 ... 150	--	B	3TX4 490-3S		1	1 unit	101	0.010
	127 ... 240	150 ... 250	--	B	3TX4 490-3T		1	1 unit	101	0.010
	240 ... 400	--	--	B	3TX4 490-3U		1	1 unit	101	0.015
	400 ... 600	--	--	B	3TX4 490-3V		1	1 unit	101	0.015

Varistors

3TH2...-0...	≤ 48	24 ... 70	--	B	3TX4 490-3G		1	1 unit	101	0.010
	48 ... 127	70 ... 150	--	B	3TX4 490-3H		1	1 unit	101	0.010
	127 ... 240	150 ... 250	--	B	3TX4 490-3J		1	1 unit	101	0.010
	240 ... 400	--	--	B	3TX4 490-3K		1	10 units	101	0.015
	400 ... 600	--	--	B	3TX4 490-3L		1	10 units	101	0.015

Noise suppression diodes

3TH2...-0...	--	12 ... 250	--	B	3TX4 490-3A		1	1 unit	101	0.010
--------------	----	------------	----	---	--------------------	--	---	--------	-----	-------

Diode assemblies (diode and Zener diode) For DC operation and short break times

3TH2...-0...	--	24 ... 250	--	B	3TX4 490-3B		1	1 unit	101	0.010
--------------	----	------------	----	---	--------------------	--	---	--------	-----	-------

Version with LED

Varistors

3TH2...-0...	24 ... 48	12 ... 24	10 ... 12	B	3TX4 490-4G		1	1 unit	101	0.010
	48 ... 27	24 ... 70	20 ... 470	B	3TX4 490-4H		1	1 unit	101	0.010
	127 ... 240	70 ... 150	50 ... 700	B	3TX4 490-4J		1	1 unit	101	0.010
	--	150 ... 250	160 ... 950	B	3TX4 490-4K		1	1 unit	101	0.010

Noise suppression diodes

3TH2...-0...	--	24 ... 70	20 ... 470	B	3TX4 490-4A		1	1 unit	101	0.010
	--	70 ... 150	50 ... 700	B	3TX4 490-4B		1	1 unit	101	0.010
	--	150 ... 250	160 ... 950	B	3TX4 490-4C		1	1 unit	101	0.010

Additional load modules (residual current) For plugging onto contactors without and with auxiliary switch blocks

For increasing the permissible residual current and for limiting the residual voltage of SIMATIC semiconductor outputs

3TH2...-0A...	230/220, 50 Hz	--		B	3TX4 490-1J		1	1 unit	101	0.010
	230, 60 Hz	--								
	230, 50/60 Hz	--								
	Operating range 0.8 ... 1.1 x U_s									

Plug-in bases with solder pin connections for printed circuit boards, width 45 mm

For 3TH2 contactor relays; with flat connectors 1 x 6.3 mm ... 0.8 mm

Rated insulation voltage U_i : 400 V (at pollution degree 3);
Rated impulse withstand voltage U_{imp} : 6 kV;
Rated operational current I_a : 6 A;
Ⓢ and ⓈA rated data: max. 300 V, 6 A

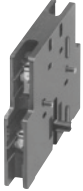



3TH20...-3...				A	3TX4 491-2A		1	5 units	101	0.030
3TH20...-7...										

¹⁾ The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assemblies 2 to 6 times, varistor +2 to 5 ms).

Accessories and Spare Parts For 3T Contactors and Contactor Relays

Spare parts for 3TB, 3TC, 3TF, 3TK contactors

Selection and ordering data

For contactors	Auxiliary contacts Version	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.			
Size	Type	NO	NC	NC					kg			
Auxiliary switch blocks												
	6	3TB50	1	1	--	Auxiliary switch block, left or right (replacement for 3TY6 501-1A/-1B)	▶	3TY6 501-1AA00	1	1 unit	101	0.055
			1	--	1	Auxiliary switch block, right	▶	3TY6 501-1E	1	1 unit	101	0.055
	8 ... 12	3TB52 ... 3TB56	1	1	--	Auxiliary switch block, left	▶	3TY6 561-1A	1	1 unit	101	0.075
			1	1	--	Auxiliary switch block, right	▶	3TY6 561-1B	1	1 unit	101	0.075
			1	--	1	Auxiliary switch block, right	▶	3TY6 561-1E	1	1 unit	101	0.075
Solenoid coils												
DC operation												
	6	3TB50					▶	3TY6 503-0B..				
	8	3TB52					▶	3TY6 523-0B..				
	10	3TB54					▶	3TY6 543-0B..				
	12	3TB56					▶	3TY6 563-0B..				
Arc chutes												
	6	3TB50	1 arc chute, 3-pole				▶	3TY6 502-0A	1	1 unit	101	0.750
	8	3TB52					▶	3TY6 522-0A	1	1 unit	101	1.200
	10	3TB54					▶	3TY6 542-0A	1	1 unit	101	1.500
	12	3TB56					▶	3TY6 562-0A	1	1 unit	101	1.600
Contacts with fixing parts												
In order to ensure reliable operation of the contactors, only original replacement contacts should be used.												
	6	3TB50	(1 set = 3 moving and 6 fixed switching elements)				B	3TY6 500-0A	1	1 unit	101	0.280
	8	3TB52					B	3TY6 520-0A	1	1 unit	101	0.360
	10	3TB54					B	3TY6 540-0A	1	1 unit	101	0.530
	12	3TB56					B	3TY6 560-0A	1	1 unit	101	0.760

For rated control supply voltages for solenoid coils, see page 3/132.

* You can order this quantity or a multiple thereof.

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Spare parts for 3TB, 3TC, 3TF, 3TK contactors

For contactors	Auxiliary con- tacts Version	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Size	Type	NO	NC						kg

Auxiliary switch blocks



3TY6 561-1A

2 and 4	3TC44, 3TC48	1	1	Auxiliary switch block, left or right (replacement for 3TY6 501-1A/-1B)	▶	3TY6 501-1AA00	1	1 unit	101	0.055
4	3TC48	1	1	2nd auxiliary switch block, left ¹⁾	▶	3TY6 501-1K	1	1 unit	101	0.055
				2nd auxiliary switch block, right ¹⁾	D	3TY6 501-1L	1	1 unit	101	0.055
8 and 12	3TC52, 3TC56	1	1	Auxiliary switch block, left	▶	3TY6 561-1A	1	1 unit	101	0.075
				Auxiliary switch block, right	▶	3TY6 561-1B	1	1 unit	101	0.075
				2nd auxiliary switch block, left ¹⁾	C	3TY6 561-1K	1	1 unit	101	0.075
				2nd auxiliary switch block, right ¹⁾	C	3TY6 561-1L	1	1 unit	101	0.075

Contacts with fixing parts



3TY2 520-0A

In order to ensure reliable operation of the contactors, only **original replacement contacts** should be used.

2	3TC44	(1 set = 2 moving and 4 fixed switch- ing elements)	B	3TY2 440-0A	1	1 unit	101	0.070
4	3TC48		B	3TY2 480-0A	1	1 unit	101	0.100
8	3TC52		B	3TY2 520-0A	1	1 unit	101	0.250
12	3TC56		C	3TY2 560-0A	1	1 unit	101	0.450

Arc chutes



3TC2 48

2	3TC44	Arc chutes, 2-pole	C	3TY2 442-0A	1	1 unit	101	0.170
4	3TC48		C	3TY2 482-0A	1	1 unit	101	0.500
8	3TC52		C	3TY2 522-0A	1	1 unit	101	1.200
12	3TC56		C	3TY2 562-0A	1	1 unit	101	2.130

Solenoid coils

DC operation

2	3TC44	3TY6 443-0B..
4	3TC48	3TY6 483-0B..
8	3TC52	3TY6 523-0B..
12	3TC56	3TY6 563-0B..

AC operation

2	3TC44	3TY7 403-0A..
4	3TC48	3TY6 483-0A..
8	3TC52	3TY6 523-0A..
12	3TC56	3TY6 566-0A..

For rated control supply voltages for solenoid coils, see page 3/132.

¹⁾ Can only be mounted on AC-operated contactors.

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Spare parts for 3TB, 3TC, 3TF, 3TK contactors

For contactors	Version	Rated control supply voltage U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	V AC/DC								kg

Varistors

3TC7	For sticking onto the contactor base	24 110	C	3TX2 746-2F		1	1 unit	101	0.150
			C	3TX2 746-2G		1	1 unit	101	0.150

Contacts with fixing parts

3TC7	Main contacts (1 set) 2 units required per contactor		C	3TY2 740-0E		1	1 unit	101	0.360
------	---	--	---	--------------------	--	---	--------	-----	-------

Auxiliary switch blocks

3TC74	4 NO + 4 NC			▶ 3TY2 741-2J		1	1 unit	101	0.270
3TC78	Auxiliary switch block left, with 2 NO + 2 NC			▶ 3TY2 781-2C		1	1 unit	101	0.190
			C	3TY2 781-2D		1	1 unit	101	0.190


Arc chutes

3TC7	For 3TC78: 2 units required per contactor		C	3TY2 742-0C		1	1 unit	101	3.900
------	---	--	---	--------------------	--	---	--------	-----	-------

For contactors	Auxiliary contacts Version	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Size	Type	NO NC NC							kg

Auxiliary switch blocks

With screw terminals

	14	3TF68 and 3TF69	1	1	--	1st auxiliary switch block, left or right (replacement for: 3TY7 561-1A/ -1B.)	▶ 3TY7 561-1AA00	1	1 unit	101	0.050
			1	--	1	Auxiliary switch blocks, left or right	▶ 3TY7 561-1EA00	1	1 unit	101	0.050
			1	1	--	2nd auxiliary switch block, left or right (replacement for: 3TY7 561-1K/ -1L.)	▶ 3TY7 561-1KA00	1	1 unit	101	0.050

3TY7 561-1.A00

For coil reconnection with DC economy circuit, with screw terminals

14	3TF68 and 3TF69	--	--	1	Auxiliary switch blocks	▶ 3TY7 681-1G	1	1 unit	101	0.050
----	-----------------	----	----	---	-------------------------	----------------------	---	--------	-----	-------

For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Size	Type							kg

Solenoid coils

AC operation

14	3TF68 3TF69	The solenoid coils are fitted as standard with varistors against overvoltage. The coil is supplied with switch-on electronics.		3TY7 683-0C.. 3TY7 693-0C..					
----	----------------	--	--	--	--	--	--	--	--

DC operation · DC economy circuit

14	3TF68 3TF69	Reversing contactors are required for size 14 contactors: Contactor type 3TF68 and 3TF69 Reversing contactor 3TC44 (70 mm wide, 85 mm high) The solenoid coils are supplied without reversing contactor.		3TY7 683-0D.. 3TY7 693-0D..					
----	----------------	---	--	--	--	--	--	--	--

3TY7 6.3-0...

Vacuum interrupters

In order to ensure reliable operation of the contactors, only **original replacement interrupters** should be used.

14	3TF68 3TF69	3 vacuum interrupters with components	B C	3TY7 680-0B 3TY7 690-0B		1 1	1 unit 1 unit	101 101	3.490 3.640
----	----------------	---------------------------------------	--------	--	--	--------	------------------	------------	----------------

For rated control supply voltages for solenoid coils, see page 3/132.

For solid-state compatible auxiliary switch blocks, see page 3/121.

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Spare parts for 3TB, 3TC, 3TF, 3TK contactors

Version	Rated control supply voltage U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
V AC								kg
Reversing contactors (3TC44)								
Complete with resistor and 1 m connecting cable and plug-in connector for 3TF68 ...-Q, 3TF69 ...-	110 ... 120 220 ... 240 380 ... 420	D D D	3TY7 684-0QG7 3TY7 684-0QL7 3TY7 684-0QV7		1 1 1	1 unit 1 unit 1 unit	101 101 101	1.000 1.000 1.000
Solenoid coils for main contactor, with rectifier bridge								
For 3TF68 ...-Q	110 ... 120 220 ... 240 380 ... 420	D D D	3TY7 683-0QG7 3TY7 683-0QL7 3TY7 683-0QV7		1 1 1	1 unit 1 unit 1 unit	101 101 101	2.700 1.500 1.460
For 3TF69 ...-Q	110 ... 120 220 ... 240 380 ... 420	D D D	3TY7 693-0QG7 3TY7 693-0QL7 3TY7 693-0QV7		1 1 1	1 unit 1 unit 1 unit	101 101 101	0.650 1.500 1.500

For rated control supply voltages for solenoid coils, see page 3/132.

For solid-state compatible auxiliary switch blocks, see page 3/121.

For contactors	Version	Rated control supply voltage U_s	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	V AC								kg
Surge suppressors · RC elements									
3TK10 to 3TK13		24 ... 48 110 ... 415	D B	3TK19 30-0A 3TK19 30-0B		1 1	1 unit 1 unit	101 101	0.050 0.050
3TK14 to 3TK17		48 ... 110 220 ... 600	C B	3TK19 34-0C 3TK19 34-0D		1 1	1 unit 1 unit	101 101	0.050 0.050
Terminal covers									
3TK10, 3TK11 3TK12, 3TK13 3TK14, 3TK15 3TK17	For mounting onto contactors		B B B B	3TK19 40-0A 3TK19 42-0A 3TK19 44-0A 3TK19 46-0A		1 1 1 1	2 units 2 units 2 units 2 units	101 101 101 101	0.150 0.150 0.200 0.200
Auxiliary switch blocks									
3TK1	1st auxiliary switch block, left or right 2nd auxiliary switch block, left or right	1 NO + 1 NC 1 NO + 1 NC	B B	3TK19 10-3A 3TK19 10-3B		1 1	1 unit 1 unit	101 101	0.050 0.050
Locking devices									
3TK10, 3TK11 3TK12, 3TK13	For mechanical interlocking of 2 identical contactors, auxiliary contacts 2 NC		B B	3TK19 20-0A 3TK19 22-0A		1 1	1 unit 1 unit	101 101	0.140 0.140
3TK14, 3TK15, 3TK17	Mechanical interlock, including mounting plate		B	3TK19 24-0A		1	1 unit	101	6.750
Arc chutes									
3TK10 3TK11 3TK12 3TK13 3TK14 3TK15 3TK17	1 arc chute, 4-pole		D D D D D D D	3TK19 50-0A 3TK19 51-0A 3TK19 52-0A 3TK19 53-0A 3TK19 54-0A 3TK19 55-0A 3TK19 57-0A		1 1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	101 101 101 101 101 101 101	0.650 0.650 1.250 1.250 3.700 3.700 3.700
Solenoid coils									
3TK10, 3TK11 3TK12, 3TK13 3TK14, 3TK15, 3TK17				3TK19 70-0A... 3TK19 72-0A... 3TK19 74-0A...					
Contacts with fixing parts									
3TK10 3TK11 3TK12 3TK13 3TK14 3TK15 3TK17	4 moving and 8 fixed contacts		D D D D D D D	3TK19 60-0A 3TK19 61-0A 3TK19 62-0A 3TK19 63-0A 3TK19 64-0A 3TK19 65-0A 3TK19 67-0A		1 1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	101 101 101 101 101 101 101	0.270 0.270 0.580 0.580 2.400 2.400 2.400

For rated control supply voltages for solenoid coils, see page 3/132.

Accessories and Spare Parts

For 3T Contactors and Contactor Relays

Spare parts for 3TB, 3TC, 3TF, 3TK contactors

Rated control supply voltages (the 10th and 11th position of the order number must be changed)

For contactor type	3TC44	3TC48	3TC5	3TF68/69	3TK10/11/12/13	3TK14/15/17
Solenoid coil type	3TY7 403-0A..	3TY6 483-0A..	3TY6 523-0A.. 3TY6 566-0A..	3TY7 683-0C.. 3TY7 693-0C..	3TK19 70-0A.. 3TK19 72-0A..	3TK19 74-0A..
Rated control supply voltage U_s						

AC operation

Solenoid coils for 50 Hz

24 V AC	B0	B0	--	--	B0 ³⁾	--
110 V AC	F0	F0	F0	--	F0 ³⁾	F0 ³⁾
230/220 V AC	P0 ¹⁾	P0 ¹⁾	P0 ¹⁾	--	P0 ³⁾	P0 ³⁾
240 V AC	U0	U0	--	--	U0 ³⁾	U0 ³⁾

AC operation

Solenoid coils for 50/60 Hz

24 V AC	C2	--	--	--	--	--
110 V AC	G2	--	--	--	--	--
120 V AC	K2	--	--	--	--	--
220 V AC	N2	--	--	--	--	--
230 V AC	L2	--	--	--	--	--
110 V ... 132 V AC	--	--	--	F7	--	--
200 V ... 240 V AC	--	--	--	M7	--	--
230 V ... 277 V AC	--	--	--	P7 ²⁾	--	--
380 V ... 460 V AC	--	--	--	Q7	--	--
500 V ... 600 V AC	--	--	--	S7	--	--

For contactor type	3TC4	3TB5, 3TC5	3TF68/69
Solenoid coil type	3TY6 443-0B.. 3TY6 483-0B..	3TY6 503-0B.. 3TY6 523-0B.. 3TY6 543-0B.. 3TY6 563-0B..	3TY7 683-0D.. 3TY7 693-0D..
Rated control supply voltage U_s			

DC operation

24 V DC	B4	B4	B4
48 V DC	W4	--	--
60 V DC	E4	--	--
110 V DC	F4	F4	F4
125 V DC	G4	--	G4
220 V DC	M4	M4	M4
230 V DC	P4	--	P4

- 1) Operating range at 220 V:
0.85 to 1.15 x U_s ;
lower operating range limit according to IEC 60947.
- 2) Lower operating range limit at 220 V:
0.85 x U_s according to IEC 60947.
- 3) Rated control supply voltage U_s :
50 Hz 60 Hz
B0: 24 V --
F0: 110 V 120 V
P0: 220 V to 230 V 240 V (only 3TK1 974)
U0: 230 V to 240 V --

Controls – Soft Starters and Solid-State Switching Devices

4



4/2	Introduction
	Soft Starters and Solid-State Switching Devices
4/4	General data
	SIRIUS 3RW Soft Starters
4/6	General data <u>3RW30, 3RW40 for Standard Applications</u>
4/8	3RW30
4/13	3RW40
4/24	<u>3RW44 for High-Feature Applications</u> 3RW44
	Solid-State Switching Devices for Resistive Loads
4/45	General data <u>Solid-State Relays</u>
4/48	General data
4/49	SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm
4/52	SIRIUS 3RF20 solid-state relays, single-phase, 45 mm
4/53	SIRIUS 3RF22 solid-state relays, three-phase, 45 mm
	<u>Solid-State Contactors</u>
4/54	General data
4/55	SIRIUS 3RF23 solid-state contactors, single-phase
4/61	SIRIUS 3RF24 solid-state contactors, three-phase
	<u>Function Modules</u>
4/63	General data
4/68	SIRIUS converters for 3RF
4/69	SIRIUS load monitoring for 3RF
4/70	SIRIUS heating current monitoring for 3RF
4/71	SIRIUS power controllers for 3RF
4/72	SIRIUS power regulators for 3RF
	Solid-State Switching Devices for Switching Motors
	<u>Solid-State Contactors</u>
4/73	General data
4/76	SIRIUS 3RF24 solid-state contactors, three-phase
4/77	SIRIUS 3RF24 solid-state reversing contactors, three-phase

Technical Information

can be found at
www.siemens.com/industrial-controls/support

under Product List
- Technical Specifications
under Entry List
- Updates
- Downloads
- FAQ
- Manuals/Operating instructions
- Characteristic curves
- Certificates

and at

www.siemens.com/industrial-controls/configurators

- Configurators

Introduction

Overview



3RW30



3RW40



3RW44

	Order No.	Page
--	-----------	------

3RW Soft Starters

3RW soft starters for standard applications

3RW30 soft starters

- SIRIUS 3RW30 soft starters for soft starting of three-phase asynchronous motors
- Performance range of up to 55 kW (at 400V)

3RW30

4/8

3RW40 soft starters

- SIRIUS 3RW40 soft starters with the integral functions
 - Solid-state motor overload and intrinsic device protection and
 - adjustable current limiting
- for the soft starting and stopping of three-phase asynchronous motors
- Performance range of up to 250 kW (at 400 V)

3RW40

4/13

3RW soft starters for high-feature applications

3RW44 soft starters

- In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements
- Performance range
 - Up to 710 kW (at 400 V) in inline circuit and
 - up to 1200 kW (at 400 V) in inside-delta circuit

3RW44

4/24



SIRIUS solid-state switching devices for switching resistive loads

Solid-State Relays

22.5 mm solid-state relays, 45 mm solid-state relays

- Widths of 22.5 mm and 45 mm
- Compact and space-saving design
- "Zero-point switching" version
- Mounting onto existing heat sinks

3RF21,	4/49
3RF20	4/52
3RF22	4/53

Solid-State Contactors

Solid-state contactors

- Complete units comprising a solid-state relay and an optimized heat sink, "ready to use"
- Compact and space-saving design
- Versions for resistive loads "zero-point switching" and inductive loads "instantaneous switching"
- Special versions "Low Noise" and "Short-Circuit Proof"

3RF23	4/55
3RF24	4/61

Function modules

For extending the functionality of the 3RF21 solid-state relays and the 3RF23 solid-state contactors for many different applications:

Converters

- For converting an analog input signal into an on/off ratio; can also be used on 3RF22 and 3RF24 three-phase switching devices

3RF29 00-0EA18	4/68
----------------	------

Load monitoring

- For load monitoring of one or more loads (partial loads)

3RF29 ...0FA08, 3RF29 .0-GA..	4/69
----------------------------------	------

Heating current monitoring

- For load monitoring of one or more loads (partial loads); remote teach

3RF29 ...0JA..	4/70
----------------	------

Power controllers

- For supplying the current by means of a solid-state switching device depending on a setpoint value. There is a choice of full-wave control and generalized phase control.

3RF29 ...0KA.	4/71
---------------	------

Power regulators

- For supplying the current by means of a solid-state switching device depending on a setpoint value. Closed-loop control: full-wave control or generalized phase control

3RF29 .0-0HA..	4/72
----------------	------

SIRIUS solid-state switching devices for switching motors

Solid-State Contactors

Solid-state contactors, solid-state reversing contactors

- Complete units in the insulated enclosure with integrated heat sink, "ready to use"
- Compact and space-saving design
- Version for motors, "instantaneous switching"

3RF24	4/76
-------	------

Soft Starters and Solid-State Switching Devices

General data

Overview

SIRIUS 3RW Soft Starters



SIRIUS 3RW soft starters permit soft starting and smooth ramp-down of three-phase asynchronous motors. Depending on the scope of functions required it is possible to choose between:

- Soft starters for Standard applications
- Soft starters for high-feature applications

SIRIUS 3RW – Service-proven in many applications

Functions of the SIRIUS soft starters include:

- Soft starting and smooth ramp-down
- Stepless starting
- Torque control and limitation

Cost-efficient operation

The advantages of SIRIUS soft starters at a glance:

- Reduction of current peaks
- Avoidance of mains voltage fluctuations during starting
- Reduced load on the power supply network
- Reduction of the mechanical load in the operating mechanism
- Considerable space savings and reduced wiring compared with conventional starters
- Maintenance-free switching
- Very easy handling
- Fits perfectly in the SIRIUS modular system

SIRIUS 3RF2 solid-state switching devices



The SIRIUS 3RF2 solid-state switching devices reliably switch a wide range of different loads with alternating voltages in 50 and 60 Hz systems.

Solid-state switching devices for resistive loads

- Solid-State Relays
- Solid-State Contactors
- Function modules

Solid-state switching devices for switching motors

- Solid-State Contactors
- Solid-state reversing contactors

SIRIUS 3RF2 – for almost unending activity

Conventional electromechanical controlgear is often overtaxed by the rise in the number of switching operations. A high switching frequency results in frequent failure and short replacement cycles. However, this does not have to be the case, because with the latest generation of our SIRIUS 3RF2 solid-state switching devices we provide you with solid-state relays and contactors with a particularly long endurance - for almost unending activity even under the toughest conditions and under high mechanical load, but also in noise-sensitive areas.

Proved time and again in service

SIRIUS 3RF2 solid-state switching devices have firmly established in industrial applications. They are used above all in applications where loads are switched frequently – mainly with resistive load controllers, with the control of electrical heat or the control of valves and motors in conveyor systems. In addition to its use in areas with high switching frequencies, their silent switching means that SIRIUS is also ideally suited for use in noise-sensitive areas, such as offices or hospitals.

The most reliable solution for any application

Compared to mechanical controlgear, our SIRIUS 3RF2 solid-state switching devices stand out due to their considerably longer service life. Thanks to the high product quality, their switching is extremely precise, reliable and, above all, insusceptible to faults. With its variable connection methods and a wide spread of control voltages, the SIRIUS 3RF2 family is universally applicable. Depending on the individual requirements of the application, our modular controlgear can also be quite easily expanded by the addition of standardized function modules.

General data

Ideal for operation with heating control systems

The 3RF2 solid-state switching devices can be used for example in the SIPLUS HCS300I heating control system. They are optimally connected to the digital output module of the HCS300I by means of preassembled cables. This saves considerable wiring outlay in the control circuit and shortens mounting time.



The HCS300I is a modular heating control system for the optimization of plastic processing machines. It enables individual solutions for many different heating control applications. With each basic unit it is possible to use up to four 6-channel digital outputs to control solid-state switching devices and four 4-channel temperature measuring modules. Current or current-and-voltage measuring modules can be used to monitor the loads. Communication with the higher-level control system is through Profibus DP.

See also www.siemens.de/heizungssteuerung

Also for switching motors

In order to achieve higher productivity, the switching frequency is continuously increased. It is no problem for our SIRIUS solid-state contactors to switch motors. With induction motors up to 7.5 kW, they can reliably withstand even the highest switching frequencies. Even a continuous change in the direction of rotation is possible with the solid-state reversing contactors. Both versions can be perfectly combined with components from the SIRIUS modular system. Connecting with SIRIUS motor starter protectors or SIRIUS overload relay can be implemented without any further steps.




Always on the sunny side with SIRIUS

Because SIRIUS 3RF2 offers even more:

- The space-saving and compact side-by-side mounting ensure reliable operation up to an ambient temperature of +60 °C.
- Thanks to fast configuration and the ease of mounting and start-up, you save not only time but also expenses.

Connection methods

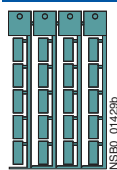
The devices are available with screw terminals (box terminals), spring-type terminals or ring terminal lugs.

-  Screw terminals
-  Spring-type terminals
-  Ring terminal lug connections

The terminals are indicated in the selection and ordering data by orange backgrounds.

Selection and ordering data*Inscription labels for all series*

Designation	Labeling area (W x H) mm x mm	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
-------------	-------------------------------------	-------	----	-----------	-----------------	-------------------------	-----	----	-----------------------------------

Blank labels

Unit labeling plates
(1 frame = 20 units)

Unit labeling plates for "SIRIUS"¹⁾	10 x 7	Pastel turquoise	D	3RT19 00-1SB10		100	816 units	101	0.100
	20 x 7	Pastel turquoise	C	3RT19 00-1SB20		100	340 units	101	0,200
Labels for sticking for SIRIUS	19 x 6	Pastel turquoise	D	3RT19 00-1SB60		100	3060 units	101	0.100
	19 x 6	Zinc yellow	C	3RT19 00-1SD60		100	3060 units	101	0.100

¹⁾ Computer labeling system for individual inscription of unit labeling plates available from:
murrplastik Systemtechnik GmbH, D-71570 Oppenweiler, Germany
www.murrplastik.de

SIRIUS 3RW Soft Starters

General data

Overview



		SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-feature applications
Rated current at 40 °C	A	3 ... 106	12.5 ... 432	29 ... 1214
Rated operational voltage	V	200 ... 480	200 ... 600	200 ... 690
Motor rating at 400 V				
• Inline circuit	kW	1.5 ... 55	5.5 ... 250	15 ... 710
• Inside-delta circuit	kW	--	--	22 ... 1200
Ambient temperature	°C	-25 ... +60	-25 ... +60	0 ... +60
Soft starting/ramp-down		✓ ¹⁾	✓	✓
Voltage ramp		✓	✓	✓
Starting/stopping voltage	%	40 ... 100	40 ... 100	20 ... 100
Starting and ramp-down time	s	0 ... 20	0 ... 20	1 ... 360
Torque control		--	--	✓
Starting/stopping torque	%	--	--	20 ... 100
Torque limit	%	--	--	20 ... 200
Ramp time	s	--	--	1 ... 360
Integral bypass contact system		✓	✓	✓
Intrinsic device protection		--	✓	✓
Motor overload protection		--	✓	✓
Thermistor motor protection		--	✓ ²⁾	✓
Integrated remote RESET		--	✓ ³⁾	✓
Adjustable current limiting		--	✓	✓
Inside-delta circuit		--	--	✓
Breakaway pulse		--	--	✓
Creep speed in both directions of rotation		--	--	✓
Pump ramp-down		--	--	✓ ⁴⁾
DC braking		--	--	✓ ^{4) 5)}
Combined braking		--	--	✓ ^{4) 5)}
Motor heating		--	--	✓
Communication		--	--	With PROFIBUS DP (optional)
External display and operator module		--	--	(optional)
Operating measured value display		--	--	✓
Error logbook		--	--	✓
Event list		--	--	✓
Slave pointer function		--	--	✓
Trace function		--	--	✓ ⁶⁾
Programmable control inputs and outputs		--	--	✓
Number of parameter sets		1	1	3
Parameterization software (Soft Starter ES)		--	--	✓
Power semiconductors (thyristors)		2 controlled phases	2 controlled phases	3 controlled phases
Screw terminals		✓	✓	✓
Spring-type terminals		✓	✓	✓
UL/CSA		✓	✓	✓
CE marking		✓	✓	✓
ATEX explosion protection		--	✓ ⁷⁾	--
Soft starting under heavy starting conditions		--	--	✓ ⁴⁾
Configuring support		Win-Soft Starter, electronic selection slider ruler, Technical Assistance +49 911 895 5900		

✓ Function is available; -- Function is not available.

¹⁾ Only soft starting available for 3RW30.

²⁾ Optional up to size S3 (device variant).

³⁾ Available for 3RW40 2.. to 3RW40 4.; optional for 3RW40 5.. and 3RW40 7..

⁴⁾ Calculate soft starter and motor with size allowance where required.

⁵⁾ Not possible in inside-delta circuit.

⁶⁾ Trace function with Soft Starter ES software.

⁷⁾ Use upstream disconnect mechanism

You can find further information on the Internet at:
www.siemens.com/softstarter

Selection aid for soft starters

Application	SIRIUS 3RW30 Standard applications	SIRIUS 3RW40 Standard applications	SIRIUS 3RW44 High-feature applications
Normal starting (CLASS 10)			
Pumps	●	●	●
Pumps with special pump ramp-down (to prevent water hammer)			●
Heat pumps	●	●	●
Hydraulic pumps	○	●	●
Presses	○	●	●
Conveyor belts	○	●	●
Roller conveyors	○	●	●
Screw conveyors	○	●	●
Escalators		●	●
Piston compressors		●	●
Screw compressors		●	●
Small fans ¹⁾		●	●
Centrifugal blowers		●	●
Bow thrusters		●	●
Heavy starting (CLASS 20)			
Stirrer		○	●
Extruders		○	●
Lathes		○	●
Milling machines		○	●
Very heavy starting (CLASS 30)			
Large fans ²⁾			●
Circular saws/bandsaws			●
Centrifuges			●
Mills			●
Breakers			●

● recommended soft starter, ○ possible soft starter

¹⁾ The mass inertia of the fan is <10 times the mass inertia of the motor

²⁾ The mass inertia of the fan is ≥ 10 times the mass inertia of the motor

Boundary conditions

Type	Maximum starting time s	Current limiting %	Starts per hour 1/h
Normal starting (CLASS 10)			
• 3RW30	3	300	20
• 3RW40/44	10	300	5
Heavy starting (CLASS 20)			
• 3RW40 2., 3RW40 3., 3RW40 4.	20	300	5
• 3RW40 5., 3RW40 7., 3RW44	40	350	1
Very heavy starting (CLASS 30)			
• 3RW44	60	350	1

The quoted motor ratings are only approximate values. The soft starter should always be designed on the basis of the motor current (rated operational current). In the event of deviating conditions, it may be necessary to choose a larger device.

Motor rating data are based on DIN 42973 (kW) and NEC 96/UL 508 (hp).

Benefits

- The advantages of the SIRIUS soft starters at a glance:
 - Soft starting and smooth ramp-down (only soft starting available for 3RW30)
 - Stepless starting
 - Reduction of current peaks
 - Avoidance of mains voltage fluctuations during starting
 - Reduced load on the power supply network

- Reduction of the mechanical load in the operating mechanism
- Considerable space savings and reduced wiring compared with conventional starters
- Maintenance-free switching
- Very easy handling
- Fits perfectly in the SIRIUS modular system

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW30

Overview

The SIRIUS 3RW30 soft starters reduce the motor voltage through variable phase control and increase it in ramp-like mode from a selectable starting voltage up to mains voltage. During starting, these devices limit the torque as well as the current and prevent the shocks which arise during direct starts or wye-delta starts. In this way, mechanical loads and mains voltage dips can be reliably reduced.

Soft starting reduces the stress on the connected equipment and results in lower wear and therefore longer periods of trouble-free production. The selectable start value means that the soft starters can be adjusted individually to the requirements of the application in question and unlike wye-delta starters are not restricted to two-stage starting with fixed voltage ratios.

The SIRIUS 3RW30 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

Various versions of the SIRIUS 3RW30 soft starters are available:

- Standard version for fixed-speed three-phase motors, sizes S00, S0, S2 and S3, with integrated bypass contact system
- Version for fixed-speed three-phase motors in a 22.5 mm enclosure without bypass

Soft starters rated up to 55 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple commissioning are just three of the many advantages of this soft starter.

Functionality

The space required by the compact SIRIUS 3RW30 soft starter is often only about one third of that required by a contactor assembly for wye-delta starting of comparable rating. This not only saves space in the control cabinet and on the standard mounting rail but also does away completely with the wiring work needed for wye-delta starters. This is notable in particular for higher motor ratings which are only rarely available as fully wired solutions.

At the same time the number of cables from the starter to the motor is reduced from six to three. Compact dimensions, short start-up times, easy wiring and fast commissioning make themselves felt as clear-cut cost advantages.

The bypass contacts of these soft starters are protected during operation by an integrated solid-state arc quenching system. This prevents damage to the bypass contacts in the event of a fault, e.g. brief disconnection of the control voltage, mechanical shocks or life-related component defects on the coil operating mechanism or main contact spring.

The new series of devices comes with the "polarity balancing" control method, which is designed to prevent direct current components in two-phase controlled soft starters. On two-phase controlled soft starters the current resulting from superimposition of the two controlled phases flows in the uncontrolled phase. This results for physical reasons in an asymmetric distribution of the three phase currents during the motor ramp-up. This phenomenon cannot be influenced, but in most applications it is non-critical.

Controlling the power semiconductors results not only in this asymmetry, however, but also in the previously mentioned direct current components which can cause severe noise generation on the motor at starting voltages of less than 50 %. The control method used for these soft starters eliminates these direct current components during the ramp-up phase and prevents the braking torque which they can cause.

It creates a motor ramp-up that is uniform in speed, torque and current rise, thus permitting a particularly gentle, two-phase starting of the motors. At the same time the acoustic quality of the starting operation comes close to the quality of a three-phase controlled soft starter. This is made possible by the on-going dynamic harmonizing and balancing of current half-waves of different polarity during the motor ramp-up. Hence the name "polarity balancing".

- Soft starting with voltage ramp; the starting voltage setting range U_s is 40 % to 100 % and the ramp time t_R can be set from 0 s to 20 s
- Integrated bypass contact system to minimize power loss
- Setting with two potentiometers
- Simple mounting and commissioning
- Mains voltages 50/60 Hz, 200 to 480 V
- Two control voltage versions 24 V AC/DC and 110 to 230 V AC/DC
- Wide temperature range from -25 °C to +60 °C
- The built-in auxiliary contact ensures user-friendly control and possible further processing within the system ([for status graphs see Page 4/12](#))

Application

The 3RW30 soft starters are suitable for soft starting of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time. Due to continuous voltage influencing, the current and torque peaks which are unavoidable in the case of wye-delta starters for instance do not occur.

Application areas

See "[Selection aid for soft starters](#)" on Page 4/7.

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW30



3RW30 18-1BB14



3RW30 28-1BB14



3RW30 38-1BB14



3RW30 47-1BB14



3RW30 03-2CB54

Ambient temperature 40 °C			Ambient temperature 50 °C				Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e			Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e									
A	230 V	400 V	500 V	A	200 V	230 V	460 V	575 V	hp	hp	hp	hp		

Rated operational voltage U_e 200 ... 480 V²⁾

• With screw terminals															
3.6	0.75	1.5	--	3	0.5	0.5	1.5	--	S00	▶	3RW30 13-1BB□4	1	1 unit	131	0.580
6.5	1.5	3	--	4.8	1	1	3	--	S00	▶	3RW30 14-1BB□4	1	1 unit	131	0.580
9	2.2	4	--	7.8	2	2	5	--	S00	▶	3RW30 16-1BB□4	1	1 unit	131	0.580
12.5	3	5.5	--	11	3	3	7.5	--	S00	▶	3RW30 17-1BB□4	1	1 unit	131	0.580
17.6	4	7.5	--	17	3	3	10	--	S00	▶	3RW30 18-1BB□4	1	1 unit	131	0.580
• With spring-type terminals															
3.6	0.75	1.5	--	3	0.5	0.5	1.5	--	S00	B	3RW30 13-2BB□4	1	1 unit	131	0.580
6.5	1.5	3	--	4.8	1	1	3	--	S00	B	3RW30 14-2BB□4	1	1 unit	131	0.580
9	2.2	4	--	7.8	2	2	5	--	S00	B	3RW30 16-2BB□4	1	1 unit	131	0.580
12.5	3	5.5	--	11	3	3	7.5	--	S00	B	3RW30 17-2BB□4	1	1 unit	131	0.580
17.6	4	7.5	--	17	3	3	10	--	S00	B	3RW30 18-2BB□4	1	1 unit	131	0.580
• With screw terminals															
25	5.5	11	--	23	5	5	15	--	S0	▶	3RW30 26-1BB□4	1	1 unit	131	0.690
32	7.5	15	--	29	7.5	7.5	20	--	S0	▶	3RW30 27-1BB□4	1	1 unit	131	0.690
38	11	18.5	--	34	10	10	25	--	S0	▶	3RW30 28-1BB□4	1	1 unit	131	0.690
• With spring-type terminals															
25	5.5	11	--	23	5	5	15	--	S0	B	3RW30 26-2BB□4	1	1 unit	131	0.690
32	7.5	15	--	29	7.5	7.5	20	--	S0	B	3RW30 27-2BB□4	1	1 unit	131	0.690
38	11	18.5	--	34	10	10	25	--	S0	B	3RW30 28-2BB□4	1	1 unit	131	0.690
• With screw or spring-type terminals															
45	11	22	--	42	10	15	30	--	S2	▶	3RW30 36-□BB□4	1	1 unit	131	1.200
63	18.5	30	--	58	15	20	40	--	S2	▶	3RW30 37-□BB□4	1	1 unit	131	1.200
72	22	37	--	62	20	20	40	--	S2	▶	3RW30 38-□BB□4	1	1 unit	131	1.200
• With screw or spring-type terminals															
80	22	45	--	73	20	25	50	--	S3	▶	3RW30 46-□BB□4	1	1 unit	131	1.710
106	30	55	--	98	30	30	75	--	S3	▶	3RW30 47-□BB□4	1	1 unit	131	1.710

Order No. supplement for connection types

- With screw terminals
- With spring-type terminals³⁾

1
2

Order No. supplement for rated control supply voltage U_s

- 24 V AC/DC
- 110 ... 230 V AC/DC

0
1

Soft starters for easy starting conditions and high switching frequency, rated operational voltage U_e 200 ... 400 V, Rated control supply voltage U_s 24 ... 230 V AC/DC

3	0.55	1.1	--	2.6	0.5	0.5	--	22.5 mm							
• With screw terminals															
▶ 3RW30 03-1CB54															
• With spring-type terminals															
A 3RW30 03-2CB54															
											1	1 unit	131	0.207	
											1	1 unit	131	0.188	

¹⁾ Stand-alone installation.

²⁾ Soft starter with screw terminals: delivery time class } (preferred type).

³⁾ Main circuit connection: screw terminals.

Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW30 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device.

Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW30

Accessories

Conductor cross-section			Tightening torque	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded									
mm ²	mm ²	AWG	Nm								kg

Three-phase feeder terminals



3RV19 25-5AB

2.5 ... 25	4 ... 16	12-4	4	S00 (3RW30 1.) S0 (3RW30 2.)	X	3RV29 25-5AB		1	1 unit	101	0.043
------------	----------	------	---	---------------------------------	---	---------------------	--	---	--------	-----	-------

For soft starters		Circuit breakers		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size	Size	Size							

Auxiliary terminals

Auxiliary terminals, 3-pole

3RW30 4.	S3				B	3RT19 46-4F		1	1 unit	101	0.035
----------	-----------	--	--	--	---	--------------------	--	---	--------	-----	-------

Covers for soft starters



Terminal covers for box terminals

Additional touch protection to be fitted at the box terminals (2 units required per device)

3RW30 3.	S2				▶	3RT19 36-4EA2		1	1 unit	101	0.020
3RW30 4.	S3				▶	3RT19 46-4EA2		1	1 unit	101	0.025

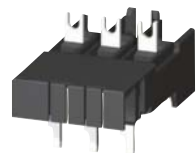


Terminal cover for cable lugs and busbar connections

For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)

3RW30 4.	S3				▶	3RT19 46-4EA1		1	1 unit	101	0.040
----------	-----------	--	--	--	---	----------------------	--	---	--------	-----	-------

Link modules to motor starter protectors¹⁾



• With screw terminals

3RW30 1.	S00	S00			A	3RA29 21-1BA00		1	1 unit	101	0.001
3RW30 2.	S0	S0			A	3RA29 21-1BA00		1	1 unit	101	0.001
3RW30 36.	S2	S2			▶	3RA19 31-1AA00		1	1 unit	101	0.042
3RW30 46., 3RW30 47.	S3	S3			▶	3RA19 41-1AA00		1	1 unit	101	0.090

• With spring-type terminals

3RW30 1.	S00	S00			A	3RA29 11-2GA00		1	1 unit	101	0.038
3RW30 2.	S0	S0			A	3RA29 21-2GA00		1	1 unit	101	0.072

Operating instructions²⁾

For soft starters

3RW30 1.	S00					3ZX10 12-0RW30-2DA1					
3RW30 2.	S0										
3RW30 3.	S2										
3RW30 4.	S3										

¹⁾ Can be used in size S0 up to maximum 32 A.

Can be used in size S00/S0 only for 3RV2 motor starter protectors.

²⁾ The operating instructions are included in the scope of supply.



SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW30


Version	Functionality Functions	Use	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	-------------------------	-----	----	-----------	--------------	-------------------	-----	----	-----------------------

Covers and push-in lugs (only for 3RW30 03)

 3RP1 902  3RP1 903	Sealable covers For securing against unauthorized adjustment of setting knobs	For devices with 1 or 2 CO contacts	▶	3RP1 902		1	5 units	101	0.004
	Push-in lugs for screw fixing	For devices with 1 or 2 CO contacts	▶	3RP1 903		1	10 units	101	0.002

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

Operating device for spring-type terminals for size S00 and S0

				Spring-type terminals 		1	1 unit	101	0.045
	A	3RA29 08-1A							

Screwdrivers
Also suitable for the TE terminals

4

* You can order this quantity or a multiple thereof.

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW30

More information

Application examples for normal starting (Class 10)

Normal starting Class 10 (up to 20 s with 300 % $I_{n, motor}$).

The soft starter rating can be selected to be as high as the rating of the motor used

Application	Conveyor belt	Roller conveyor	Compressor	Small fans ¹⁾	Pump	Hydraulic pump
Starting parameters						
• Voltage ramp and current limiting						
- Starting voltage	% 70	60	50	40	40	40
- Starting time	s 10	10	20	20	10	10

¹⁾ The mass inertia of the fan is <10 times the mass inertia of the motor

Note:

These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.

The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

Configuration

The 3RW solid-state motor controllers are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program.

If necessary, an overload relay for heavy starting must be selected where long starting times are involved. PTC sensors are recommended.

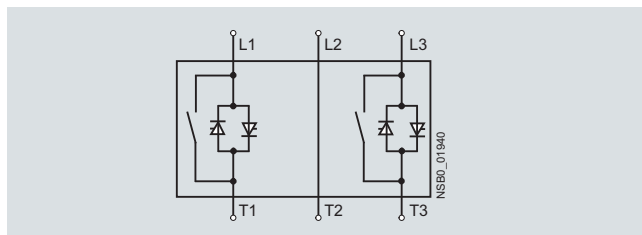
No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses, controls and overload relays) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

Note:

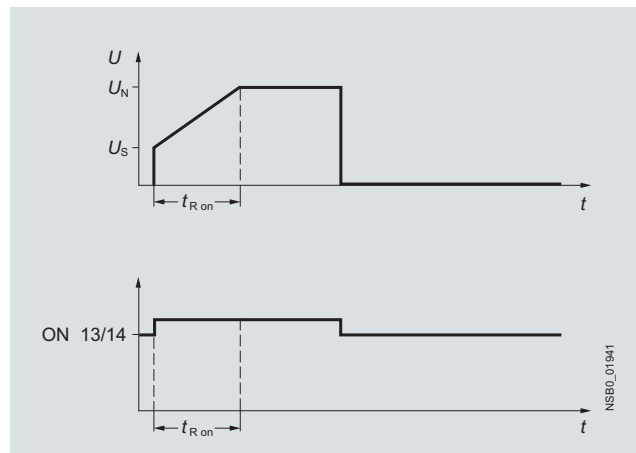
When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Power electronics schematic circuit diagram



A bypass contact system is already integrated in the 3RW30 soft starter and therefore does not have to be ordered separately.

Status graphs



Manual for SIRIUS 3RW30/40

Besides containing all important information on configuring, commissioning and servicing, the manual also contains example circuits and the technical specifications for all devices.

Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:

www.siemens.com/softstarter > Software

You can find more information about soft starters on the Internet likewise at:

www.siemens.com/softstarter

Training course for SIRIUS soft starters (SD-SIRIUSO)

Siemens offers a 2-day training course on the SIRIUS solid-state soft starters to keep customers and own personnel up-to-date on configuring, commissioning and maintenance issues.

Please direct enquiries and applications to:

Training Center for Automation and Industrial Solution
 Gleiwitzer Strasse 555
 D-90475 Nürnberg
 Telephone: +49 911 895 3202
 Telefax: +49 911 895 3275
 E-mail: ingeborg.hoier@siemens.com
www.siemens.com/sitrain-cd

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

Overview

SIRIUS 3RW40 soft starters have all the same advantages as the 3RW30 soft starters.

The SIRIUS 3RW40 soft starters are characterized above all by their small space requirements. Integrated bypass contacts mean that no power loss has to be taken into the bargain at the power semiconductors (thyristors) after the motor has started up. This cuts down on heat losses, enabling a more compact design and making external bypass circuits superfluous.

At the same time this soft starter comes with additional integrated functions such as adjustable current limiting, motor overload and intrinsic device protection, and optional thermistor motor protection. The higher the motor rating, the more important these functions because they make it unnecessary to purchase and install protection equipment such as overload relays.

Internal intrinsic device protection prevents the thermal overloading of the thyristors and the power section defects this can cause. As an option the thyristors can also be protected by semiconductor fuses from short-circuiting.

Thanks to integrated status monitoring and fault monitoring, this compact soft starter offers many different diagnostics options. Up to four LEDs and relay outputs permit differentiated monitoring and diagnostics of the operating mechanism by indicating the operating state as well as for example mains or phase failure, missing load, non-permissible tripping time/class setting, thermal overloading or device faults.

Soft starters rated up to 250 kW (at 400 V) for standard applications in three-phase networks are available. Extremely small sizes, low power losses and simple start-up are just three of the many advantages of the SIRIUS 3RW40 soft starters.

"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC

The 3RW40 soft starter sizes S0 to S12 are suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e.

See "Appendix" → "Standards and approvals" →

"Type overview of approved devices for potentially explosive areas (ATEX explosion protection)".

Functionality

The space required by the compact SIRIUS 3RW40 soft starter is often only about one third of that required by a contactor assembly for wye-delta starting of comparable rating. This not only saves space in the control cabinet and on the standard mounting rail but also does away completely with the wiring work needed for wye-delta starters. This is notable in particular for higher motor ratings which are only rarely available as fully wired solutions.

At the same time the number of cables from the starter to the motor is reduced from six to three. Compact dimensions, short start-up times, easy wiring and fast commissioning make themselves felt as clear-cut cost advantages.

The bypass contacts of these soft starters are protected during operation by an integrated solid-state arc quenching system. This prevents damage to the bypass contacts in the event of a fault, e.g. brief disconnection of the control voltage, mechanical shocks or life-related component defects on the coil operating mechanism or main contact spring.

The starting current of particularly powerful operating mechanisms can place an unjustifiable load on the local supply system. Soft starters reduce this starting current by means of their voltage ramp. Thanks to the adjustable current limiting, the SIRIUS 3RW40 soft starter takes even more pressure off the supply system. It leaves the set start ramp during the ramp-up – the ramp gradient is fixed by the starting voltage and the ramp time – as soon as the selected current limit is reached. From this moment the voltage of the soft starter is controlled so that the current supplied to the motor remains constant. This process is ended either by completion of the motor ramp-up or by tripping by the intrinsic

device protection or the motor overload protection. As the result of this function the actual motor ramp-up can well take longer than the ramp time selected on the soft starter.

Thanks to the integrated motor overload protection according to IEC 60947-4-2 there is no need of an additional overload relay on the new soft starters. The rated motor current, the setting of the overload tripping time (Class times) and the reset of the motor overload protection function can be adjusted easily and quickly. Using a 4-step rotary potentiometer it is possible to set different overload tripping times on the soft starter. In addition to Class 10, 15 and 20 it is also possible to switch off the motor overload protection if a different motor management control device is to be used for this function, e.g. with connection to PROFIBUS.

Device versions with thermistor motor protection evaluation are available up to a rating of 55 kW (at 400 V). A "Thermoclick" measuring probe can be connected directly, as can a PTC of type A. Thermal overloading of the motor, open-circuits and short-circuits in the sensor circuit all result in the direct disconnection of the soft starter. And if ever the soft starter trips, various reset options are available the same as with intrinsic device protection and motor load protection: manually with the reset button, automatically or remotely through brief disconnection of the control voltage.

The new series of devices comes with the "polarity balancing" control method, which is designed to prevent direct current components in two-phase controlled soft starters. On two-phase controlled soft starters the current resulting from superimposition of the two controlled phases flows in the uncontrolled phase. This results for physical reasons in an asymmetric distribution of the three phase currents during the motor ramp-up. This phenomenon cannot be influenced, but in most applications it is non-critical.

Controlling the power semiconductors results not only in this asymmetry, however, but also in the previously mentioned direct current components which can cause severe noise generation on the motor at starting voltages of less than 50 %.

The control method used for these soft starters eliminates these direct current components during the ramp-up phase and prevents the braking torque which they can cause. It creates a motor ramp-up that is uniform in speed, torque and current rise, thus permitting a particularly gentle, two-phase starting of the motors. At the same time the acoustic quality of the starting operation comes close to the quality of a three-phase controlled soft starter. This is made possible by the on-going dynamic harmonizing and balancing of current half-waves of different polarity during the motor ramp-up. Hence the name "polarity balancing".

Application

The SIRIUS 3RW40 solid-state soft starters are used for the soft starting and stopping of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire starting time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 250 kW (at 400 V) but also avoids the current and torque peaks which occur e. g. with wye-delta starters.

Application areas

See "Selection aid for soft starters" on Page 4/7.

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

Selection and ordering data

SIRIUS 3RW40 for normal starting (CLASS 10)



3RW40 28-1BB14



3RW40 38-1BB14



3RW40 47-1BB14

Ambient temperature 40 °C			Ambient temperature 50 °C				Size	DT	Normal starting (CLASS 10)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e			Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e										
	230 V	400 V	500 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU			kg		
A	kW	kW	kW	A	hp	hp	hp	hp							
Rated operational voltage U_e 200 ... 480 V²⁾															
• With screw terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	▶					
25	5.5	11	--	23	5	5	15	--	S0	▶	3RW40 24-1BB□4	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	▶	3RW40 26-1BB□4	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	▶	3RW40 27-1BB□4	1	1 unit	131	0.770
											3RW40 28-1BB□4	1	1 unit	131	0.770
• With spring-type terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	B	3RW40 24-2BB□4	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	S0	B	3RW40 26-2BB□4	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	B	3RW40 27-2BB□4	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	B	3RW40 28-2BB□4	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	11	22	--	42	10	15	30	--	S2	▶	3RW40 36-□BB□4	1	1 unit	131	1.350
63	18.5	30	--	58	15	20	40	--	S2	▶	3RW40 37-□BB□4	1	1 unit	131	1.350
72	22	37	--	62	20	20	40	--	S2	▶	3RW40 38-□BB□4	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	22	45	--	73	20	25	50	--	S3	▶	3RW40 46-□BB□4	1	1 unit	131	1.900
106	30	55	--	98	30	30	75	--	S3	▶	3RW40 47-□BB□4	1	1 unit	131	1.900
Rated operational voltage U_e 400 ... 600 V															
• With screw terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-1BB□5	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-1BB□5	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-1BB□5	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-1BB□5	1	1 unit	131	0.770
• With spring-type terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-2BB□5	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-2BB□5	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-2BB□5	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-2BB□5	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	--	22	30	42	--	--	30	40	S2	B	3RW40 36-□BB□5	1	1 unit	131	1.350
63	--	30	37	58	--	--	40	50	S2	B	3RW40 37-□BB□5	1	1 unit	131	1.350
72	--	37	45	62	--	--	40	60	S2	B	3RW40 38-□BB□5	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	--	45	55	73	--	--	50	60	S3	B	3RW40 46-□BB□5	1	1 unit	131	1.900
106	--	55	75	98	--	--	75	75	S3	B	3RW40 47-□BB□5	1	1 unit	131	1.900

Order No. supplement for connection types

- With screw terminals
- With spring-type terminals³⁾

Order No. supplement for rated control supply voltage U_s

- 24 V AC/DC
- 110 ... 230 V AC/DC

1) Stand-alone installation without auxiliary fan.

2) Soft starter with screw terminals: delivery time class ▶ (preferred type).

Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be

3) Main circuit connection: screw terminals.

necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

1
2

0
1

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40



3RW40 28-1TB04



3RW40 38-1TB04



3RW40 47-1TB04

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Normal starting (CLASS 10)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e			Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e									
	230 V	400 V	500 V		200 V	230 V	460 V	575 V	Order No.	Price per PU			kg	
A	kW	kW	kW	A	hp	hp	hp	hp						

Rated operational voltage U_e 200 ... 480 V²⁾, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC

• With screw terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	▶	3RW40 24-1TB04	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	S0	▶	3RW40 26-1TB04	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	▶	3RW40 27-1TB04	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	▶	3RW40 28-1TB04	1	1 unit	131	0.770
• With spring-type terminals															
12.5	3	5.5	--	11	3	3	7.5	--	S0	B	3RW40 24-2TB04	1	1 unit	131	0.770
25	5.5	11	--	23	5	5	15	--	S0	B	3RW40 26-2TB04	1	1 unit	131	0.770
32	7.5	15	--	29	7.5	7.5	20	--	S0	B	3RW40 27-2TB04	1	1 unit	131	0.770
38	11	18.5	--	34	10	10	25	--	S0	B	3RW40 28-2TB04	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	11	22	--	42	10	15	30	--	S2	▶	3RW40 36-□TB04	1	1 unit	131	1.350
63	18.5	30	--	58	15	20	40	--	S2	▶	3RW40 37-□TB04	1	1 unit	131	1.350
72	22	37	--	62	20	20	40	--	S2	▶	3RW40 38-□TB04	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	22	45	--	73	20	25	50	--	S3	▶	3RW40 46-□TB04	1	1 unit	131	1.900
106	30	55	--	98	30	30	75	--	S3	▶	3RW40 47-□TB04	1	1 unit	131	1.900

Rated operational voltage U_e 400 ... 600 V with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC

• With screw terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-1TB05	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-1TB05	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-1TB05	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-1TB05	1	1 unit	131	0.770
• With spring-type terminals															
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	B	3RW40 24-2TB05	1	1 unit	131	0.770
25	--	11	15	23	--	--	15	20	S0	B	3RW40 26-2TB05	1	1 unit	131	0.770
32	--	15	18.5	29	--	--	20	25	S0	B	3RW40 27-2TB05	1	1 unit	131	0.770
38	--	18.5	22	34	--	--	25	30	S0	B	3RW40 28-2TB05	1	1 unit	131	0.770
• With screw or spring-type terminals															
45	--	22	30	42	--	--	30	40	S2	B	3RW40 36-□TB05	1	1 unit	131	1.350
63	--	30	37	58	--	--	40	50	S2	B	3RW40 37-□TB05	1	1 unit	131	1.350
72	--	37	45	62	--	--	40	60	S2	B	3RW40 38-□TB05	1	1 unit	131	1.350
• With screw or spring-type terminals															
80	--	45	55	73	--	--	50	60	S3	B	3RW40 46-□TB05	1	1 unit	131	1.900
106	--	55	75	98	--	--	75	75	S3	B	3RW40 47-□TB05	1	1 unit	131	1.900

Order No. supplement for connection types

- With screw terminals
- With spring-type terminals³⁾

1) Stand-alone installation without auxiliary fan.

2) Soft starter with screw terminals: delivery time class ▶ (preferred type).

3) Main circuit connection: screw terminals.

Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the

use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40



3RW40 56-6BB4



3RW40 76-6BB4

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Normal starting (CLASS 10)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e			Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e										
	230 V	400 V	500 V		200 V	230 V	460 V	575 V		Order No.	Price per PU			kg	
A	kW	kW	kW	A	hp	hp	hp	hp							
Rated operational voltage U_e 200 ... 460 V²⁾															
• With screw or spring-type terminals															
134	37	75	--	117	30	40	75	--	S6	B	3RW40 55-□BB□4	1	1 unit	131	4.900
162	45	90	--	145	40	50	100	--		B	3RW40 56-□BB□4	1	1 unit	131	6.900
• With screw or spring-type terminals															
230	75	132	--	205	60	75	150	--	S12	B	3RW40 73-□BB□4	1	1 unit	131	8.900
280	90	160	--	248	75	100	200	--		B	3RW40 74-□BB□4	1	1 unit	131	8.900
356	110	200	--	315	100	125	250	--		B	3RW40 75-□BB□4	1	1 unit	131	8.900
432	132	250	--	385	125	150	300	--		B	3RW40 76-□BB□4	1	1 unit	131	8.900
Rated operational voltage U_e 400 ... 600 V³⁾															
• With screw or spring-type terminals															
134	--	75	90	117	--	--	75	100	S6	B	3RW40 55-□BB□5	1	1 unit	131	4.900
162	--	90	110	145	--	--	100	150		B	3RW40 56-□BB□5	1	1 unit	131	6.900
• With screw or spring-type terminals															
230	--	132	160	205	--	--	150	200	S12	B	3RW40 73-□BB□5	1	1 unit	131	8.900
280	--	160	200	248	--	--	200	250		B	3RW40 74-□BB□5	1	1 unit	131	8.900
356	--	200	250	315	--	--	250	300		B	3RW40 75-□BB□5	1	1 unit	131	8.900
432	--	250	315	385	--	--	300	400		B	3RW40 76-□BB□5	1	1 unit	131	8.900

Order No. supplement for connection types⁴⁾

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ⁵⁾

- 115 V AC
- 230 V AC

1) Stand-alone installation.

2) Soft starter with screw terminals: delivery time class ► (preferred type).

3) Soft starter with screw terminals: delivery time class A.

4) Main circuit connection: busbar connection.

5) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

SIRIUS 3RW40 for heavy starting (CLASS 20)



Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Heavy starting (CLASS 20)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Rated operational current I_e ¹⁾	Rated power of induction motors for rated operational voltage U_e			Rated operational current I_e ¹⁾	Rated power of induction motors for rated operational voltage U_e									
A	230 V	400 V	500 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU				

Rated operational voltage U_e 200 ... 480 V²⁾

• With screw or spring-type terminals										Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	230 V	400 V	500 V	A	200 V	230 V	460 V	575 V	Order No.						
12.5	3	5.5	--	11	3	3	7.5	--	S0	3RW40 26-□□B□4					
25	5.5	11	--	23	5	5	15	--	S0	3RW40 27-□□B□4					
32	7.5	15	--	29	7.5	7.5	20	--	S2	3RW40 36-□□B□4					
38	11	18.5	--	34	10	10	25	--	S2	3RW40 37-□□B□4					
45	11	22	--	42	10	15	30	--	S2	3RW40 37-□□B□4					
63	18.5	30	--	58	15	20	40	--	S3	3RW40 47-□□B□4					
72	22	37	--	62	20	20	40	--	S3	3RW40 47-□□B□4					

For DT etc. for the corresponding Order No. see Selection and ordering data for normal starting

Rated operational voltage U_e 400 ... 600 V

• With screw or spring-type terminals										Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	230 V	400 V	500 V	A	200 V	230 V	460 V	575 V	Order No.						
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	3RW40 26-□□B□5					
25	--	11	15	23	--	--	15	20	S0	3RW40 27-□□B□5					
32	--	15	18.5	29	--	--	20	25	S2	3RW40 36-□□B□5					
38	--	18.5	22	34	--	--	25	30	S2	3RW40 37-□□B□5					
45	--	22	30	42	--	--	30	40	S2	3RW40 37-□□B□5					
63	--	30	37	58	--	--	40	50	S3	3RW40 47-□□B□5					
72	--	37	45	62	--	--	40	60	S3	3RW40 47-□□B□5					

Order No. supplement for connection types

- With screw terminals
- With spring-type terminals³⁾

Order No. supplement for thermistor motor protection

- Standard function
- Thermistor motor protection only with rated control supply voltage U_s 24 V AC/DC

Order No. supplement for rated control supply voltage U_s

- 24 V AC/DC
- 110 ... 230 V AC/DC

1) Stand-alone installation without auxiliary fan.

2) Soft starter with screw terminals: delivery time class ▶ (preferred type).

3) Main circuit connection: screw terminals.

Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

1
2

B
T

0
1

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40



3RW40 56-6BB4



3RW40 76-6BB4

Ambient temperature 40 °C				Ambient temperature 50 °C				Size	DT	Heavy starting (CLASS 20)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Rated operational current $I_e^{(1)}$	Rated power of induction motors for rated operational voltage U_e			Rated operational current $I_e^{(1)}$	Rated power of induction motors for rated operational voltage U_e									
	230 V	400 V	500 V		200 V	230 V	460 V	575 V	Order No.	Price per PU				kg
A	kW	kW	kW	A	hp	hp	hp	hp						

Rated operational voltage U_e 200 ... 460 V²⁾

- With screw or spring-type terminals

80	22	45	--	73	20	25	50	--	S6	3RW40 55-□BB□4	For DT etc. for the corresponding Order No. see Selection and ordering data for normal starting
106	30	55	--	98	25	30	60	--	S6	3RW40 55-□BB□4	
134	37	75	--	117	30	40	75	--	S6	3RW40 56-□BB□4	
162	45	90	--	145	40	50	100	--	S12	3RW40 73-□BB□4	
230	75	132	--	205	60	75	150	--	S12	3RW40 74-□BB□4	
280	90	160	--	248	75	100	200	--	S12	3RW40 75-□BB□4	
356	110	200	--	315	100	125	250	--	S12	3RW40 76-□BB□4	

Rated operational voltage U_e 400 ... 600 V³⁾

- With screw or spring-type terminals

80	--	45	55	73	--	--	50	60	S6	3RW40 55-□BB□5
106	--	55	75	98	--	--	60	75	S6	3RW40 55-□BB□5
134	--	75	90	117	--	--	75	100	S6	3RW40 56-□BB□5
162	--	90	110	145	--	--	100	150	S12	3RW40 73-□BB□5
230	--	132	160	205	--	--	150	200	S12	3RW40 74-□BB□5
280	--	160	200	248	--	--	200	250	S12	3RW40 75-□BB□5
356	--	200	250	315	--	--	250	300	S12	3RW40 76-□BB□5

Order No. supplement for connection types⁴⁾

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ⁵⁾

- 115 V AC
- 230 V AC

1) Stand-alone installation.

2) Soft starter with screw terminals: delivery time class ► (preferred type).

3) Soft starter with screw terminals: delivery time class A.

4) Main circuit connection: busbar connection.

5) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Selection of the soft starter depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The SIRIUS 3RW40 solid-state soft starters are designed for easy starting conditions. $J_{Load} < 10 \times J_{Motor}$. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. Siemens recommends the use of the selection and simulation program Win-Soft Starter. For information about rated currents for ambient temperatures > 40 °C, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

Accessories

Conductor cross-section			Tightening torque	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded									
mm ²	mm ²	AWG	Nm								kg

Three-phase feeder terminals



3RV19 25-5AB

2.5 ... 25	4 ... 16	12-4	4	S00 (3RW30 1.) S0 (3RW30 2.)	X	3RV29 25-5AB		1	1 unit	101	0.043
------------	----------	------	---	---------------------------------	---	---------------------	--	---	--------	-----	-------

For soft starters		Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size								

Box terminal blocks for soft starters



For round and ribbon cables

3RW40 5.	S6	• Up to 70 mm ² • Up to 120 mm ²	▶	3RT19 55-4G	1	1 unit	101	0.230
			▶	3RT19 56-4G	1	1 unit	101	0.260
3RW40 7.	S12	• Up to 240 mm ²	▶	3RT19 66-4G	1	1 unit	101	0.676

Auxiliary terminals

Auxiliary terminals, 3-pole

3RW40 4.	S3		B	3RT19 46-4F	1	1 unit	101	0.035
----------	-----------	--	---	--------------------	---	--------	-----	-------

Covers for soft starters



Terminal covers for box terminals

Additional touch protection to be fitted at the box terminals (2 units required per device)

3RW40 3.	S2		▶	3RT19 36-4EA2	1	1 unit	101	0.020
3RW40 4.	S3		▶	3RT19 46-4EA2	1	1 unit	101	0.025
3RW40 5.	S6		▶	3RT19 56-4EA2	1	1 unit	101	0.030
3RW40 7.	S12		▶	3RT19 66-4EA2	1	1 unit	101	0.040



Terminal cover for cable lugs and busbar connections

3RW40 4.	S3	For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)	▶	3RT19 46-4EA1	1	1 unit	101	0.040
3RW40 5.	S6		▶	3RT19 56-4EA1	1	1 unit	101	0.070
3RW40 7.	S12		▶	3RT19 66-4EA1	1	1 unit	101	0.130






Sealing covers

3RW40 2. to 3RW40 4.	S0, S2, S3		▶	3RW49 00-0PB10	1	1 unit	131	0.005
3RW40 5. and 3RW40 7.	S6, S12		▶	3RW49 00-0PB00	1	1 unit	131	0.010



SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

For soft starters		Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size								kg
Modules for RESET¹⁾									
Modules for remote RESET, electrical									
Operating range 0.85 ... 1.1 x U _s , power consumption AC 80 VA, DC 70 W, ON period 0.2 s ... 4 s, switching frequency 60/h									
	3RW40 5. and 3RW40 7.	S6, S12		▶ 3RU19 00-2AB71 ▶ 3RU19 00-2AF71 ▶ 3RU19 00-2AM71		1 1 1	1 unit 1 unit 1 unit	101 101 101	0.066 0.067 0.066
<ul style="list-style-type: none"> • 24 ... 30 V AC/DC • 110 V ... 127 V AC/DC • 220 ... 250 V AC/DC 									
Mechanical RESET comprising									
	3RW40 5. and 3RW40 7.	S6, S12		▶ 3RU19 00-1A B 3SB30 00-0EA11 A 3SX13 35		1 1 1	1 unit 1 unit 1 unit	101 102 102	0.038 0.020 0.004
<ul style="list-style-type: none"> • Resetting plungers, holders and formers • Suitable pushbutton IP65, Ø 22 mm, 12 mm stroke • Extension plungers 									
Cable releases with holder for RESET									
For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm									
	3RW40 5. and 3RW40 7.	S6, S12		▶ 3RU19 00-1B ▶ 3RU19 00-1C		1 1	1 unit 1 unit	101 101	0.063 0.073
<ul style="list-style-type: none"> • Length 400 mm • Length 600 mm 									

¹⁾ Remote RESET already integrated in the 3RW40 2. to 3RW40 4. soft starters.

For soft starters		Circuit breakers	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size	Size							kg
Link modules to motor starter protectors¹⁾									
<ul style="list-style-type: none"> • With screw terminals 									
	3RW40 2.	S0 S0	A	3RA29 21-1BA00		1	1 unit	101	0.001
	3RW40 36.	S2 S2	▶	3RA19 31-1AA00		1	1 unit	101	0.042
	3RW40 46., 3RW40 47.	S3 S3	▶	3RA19 41-1AA00		1	1 unit	101	0.090
<ul style="list-style-type: none"> • With spring-type terminals 									
	3RW40 2.	S0 S0	A	3RA29 21-2GA00		1	1 unit	101	0.072
Fans (to increase switching frequency and for device mounting in positions different from the normal position)									
	3RW40 2.	S0	▶	3RW49 28-8VB00		1	1 unit	131	0.010
	3RW40 3., 3RW40 4.	S2, S3	▶	3RW49 47-8VB00		1	1 unit	131	0.020
Operating instructions²⁾									
For soft starters									
	3RW40 2.	S0		3ZX10 12-0RW40-1AA1					
	3RW40 3.	S2							
	3RW40 4.	S3							
	3RW40 5.	S6		3ZX10 12-0RW40-2DA1					
	3RW40 7.	S12							

¹⁾ Can be used in size S0 up to maximum 32 A.
Can be used in size S0 only for 3RV2 motor starter protectors.




²⁾ The operating instructions are included in the scope of supply.

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

Spare parts

For soft starters		Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	Size	Rated control supply voltage U_s							kg
Fans									
		Fans							
		3RW40 5.-.BB3. S6		▶ 3RW49 36-8VX30		1	1 unit	131	0.300
		3RW40 5.-.BB4. S6		▶ 3RW49 36-8VX40		1	1 unit	131	0.300
		3RW40 7.-.BB3. S12		▶ 3RW49 47-8VX30		1	1 unit	131	0.500
		3RW40 7.-.BB4. S12		▶ 3RW49 47-8VX40		1	1 unit	131	0.500
Operating device for spring-type terminals for size S00 and S0									
		Screwdrivers	A	3RA29 08-1A		1	1 unit	101	0.045
		Also suitable for the TE terminals							
				Spring-type terminals					

4

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

More information

Application examples for normal starting (Class 10)

Normal starting Class 10 (up to 20 s with 350 % $I_{n, motor}$).

The soft starter rating can be selected to be as high as the rating of the motor used.

Application		Conveyor belt	Roller conveyor	Compressor	Small fans ¹⁾	Pump	Hydraulic pump
Starting parameters							
• Voltage ramp and current limiting							
- Starting voltage	%	70	60	50	40	40	40
- Starting time	s	10	10	10	10	10	10
- Current limit value		$5 \times I_M$	$5 \times I_M$	$4 \times I_M$	$4 \times I_M$	$4 \times I_M$	$4 \times I_M$
Ramp-down time	s	5	5	0	0	10	0

¹⁾ The mass inertia of the fan is <10 times the mass inertia of the motor

Application examples for heavy starting (Class 20)

Heavy starting Class 20 (up to 40 s with 350 % $I_{n, motor}$).

The soft starter has to be selected at least one performance class higher than the motor used.

Application		Stirrer	Centrifuge
Starting parameters			
• Voltage ramp and current limiting			
- Starting voltage	%	40	40
- Starting time	s	20	20
- Current limit value		$4 \times I_M$	$4 \times I_M$
Ramp-down time		0	0

Note:

These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning. The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

SIRIUS 3RW Soft Starters

3RW30, 3RW40 for Standard Applications

3RW40

Configuration

The 3RW solid-state soft starters are designed for easy starting conditions. In the event of deviating conditions or increased switching frequency, it may be necessary to choose a larger device. For accurate dimensioning, use the Win-Soft Starter selection and simulation program.

Where long starting times are involved, the integrated solid-state overload relay for heavy starting should not be disconnected. PTC sensors are recommended. This also applies for the smooth ramp-down because during the ramp-down time an additional current loading applies in contrast to free ramp-down.

In the case of high switching frequencies in S4 mode, Siemens recommends the use of PTC sensors. For corresponding device versions with integrated thermistor motor protection or separate thermistor evaluation devices see Catalog LV 1.

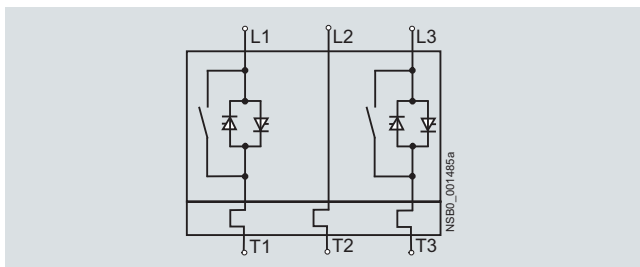
No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately. Please observe the maximum switching frequencies specified in the technical specifications.

Note:

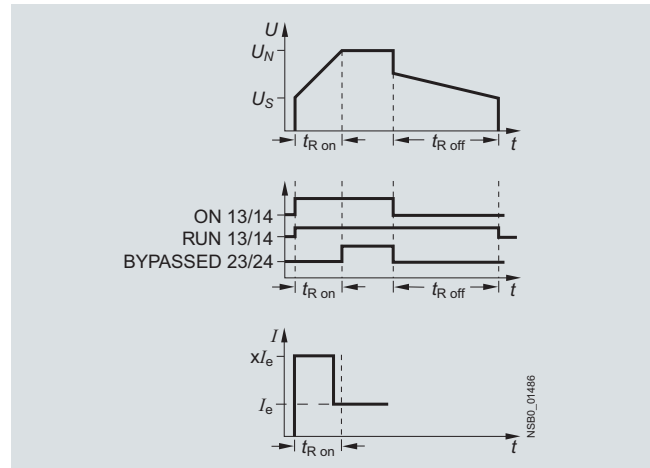
When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Power electronics schematic circuit diagram



A bypass contact system and solid-state overload relay are already integrated in the 3RW40 soft starter and therefore do not have to be ordered separately.

Status graphs



Manual for SIRIUS 3RW30/40

Besides containing all important information on configuring, commissioning and servicing, the manual also contains example circuits and the technical specifications for all devices.

Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:

<http://www.siemens.com/softstarter> > Software

More information can be found on the Internet at:

<http://www.siemens.com/softstarter>

Training course for SIRIUS soft starters (SD-SIRIUSO)

Siemens offers a 2-day training course on the SIRIUS solid-state soft starters to keep customers and own personnel up-to-date on configuring, commissioning and maintenance issues.

Please direct enquiries and applications to:

Training Center for Automation and Industrial Solution
Gleiwitzer Strasse 555

D-90475 Nürnberg
Telephone: +49 911 895 3202

Telefax: +49 911 895 3275

E-mail: ingeborg.hoier@siemens.com

www.siemens.com/sitrain-cd

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Overview

In addition to soft starting and soft ramp-down, the solid-state SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements. They cover a performance range up to 710 kW (at 400 V) in the inline circuit and up to 1200 kW (at 400 V) in the inside-delta circuit.

The SIRIUS 3RW44 soft starters are characterized by a compact design for space-saving and clearly arranged control cabinet layouts. For optimized motor starting and stopping the innovative SIRIUS 3RW44 soft starters are an attractive alternative with considerable savings potential compared to applications with a frequency converter. The new torque control and adjustable current limiting enable the High-Feature soft starters to be used in nearly every conceivable task. They guarantee the reliable avoidance of sudden torque applications and current peaks during motor starting and stopping. This creates savings potential when calculating the size of the switchgear and when servicing the machinery installed. Be it for inline circuits or inside-delta circuits – the SIRIUS 3RW44 soft starter offers savings especially in terms of size and equipment costs.

The bypass contacts already integrated in the soft starter bypass the thyristors after a motor ramp-up is detected. This results in a further great reduction in the heat loss occurring during operation of the soft starter at rated value.

Combinations of various starting, operating and ramp-down possibilities ensure an optimum adaptation to the application-specific requirements. Operation and commissioning can be performed with the menu-controlled keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected quickly, easily and reliably by means of just a few settings with a previously selected language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation.

Applicable standards

- IEC 60947-4-2
- UL/CSA

Functionality

Equipped with modern, ergonomic user prompting the SIRIUS 3RW44 soft starters can be commissioned quickly and easily using a keypad and a menu-prompted, multi-line graphic display with background lighting. The optimized motor ramp-up and ramp-down can be effected quickly, easily and reliably by means of just a few settings with a selectable language. Four-key operation and plain-text displays for each menu point guarantee full clarity at every moment of the parameterization and operation. During operation and when control voltage is applied, the display field continuously presents measured values and operating values as well as warnings and fault messages. An external display and operator module can be connected by means of a connection cable to the soft starter, thus enabling active indications and the like to be read directly from the control cabinet door.

The SIRIUS 3RW44 soft starters are equipped with optimum functionality. An integral bypass contact system reduces the power loss of the soft starter during operation. This reliably prevents heating of the switchgear environment. The SIRIUS 3RW44 soft starters have internal intrinsic device protection. This prevents thermal overloading of the power section's thyristors, e. g. due to unacceptably high closing operations.

Wiring outlay for installing an additional motor overload relay is no longer needed as the SIRIUS 3RW44 soft starters perform this function too. In addition they offer adjustable trip classes and a thermistor motor protection function. As an option the thyristors can also be protected by SITOR semiconductor fuses from short-circuiting so that the soft starter is still functional after a short-circuit (coordination type 2). And even inrush current peaks are reliably avoided thanks to adjustable current limiting.

As a further option the SIRIUS 3RW44 soft starters can be upgraded with a PROFIBUS DP module. Thanks to their communication capability and their programmable control inputs and relay outputs the SIRIUS 3RW44 soft starters can be very easily and quickly integrated in higher-level controllers.

In addition a creep speed function is available for positioning and setting jobs. With this function the motor can be controlled in both directions of rotation with reduced torque and an adjustable, low speed.

On the other hand the SIRIUS 3RW44 soft starters offer a new, combined DC braking function for the fast stopping of driving loads.

Highlights

- Soft starting with breakaway pulse, torque control or voltage ramp, adjustable torque or current limiting as well as any combination of these, depending on load type
- Integrated bypass contact system to minimize power loss
- Various setting options for the starting parameters such as starting torque, starting voltage, ramp-up and ramp-down time, and much more in three separate parameter sets
- Start-up detection
- Inside-delta circuit for savings in terms of size and equipment costs
- Various ramp-down modes selectable: free ramp-down, torque-controlled pump ramp-down, combined DC braking
- Solid-state motor overload and intrinsic device protection
- Thermistor motor protection
- Keypad with a menu-prompted, multi-line graphic display with background lighting
- Interface for communication with the PC for more accurate setting of the parameters as well as for control and monitoring
- Simple adaptation to the motor feeder
- Simple mounting and commissioning
- Display of operating states and fault messages
- Connection to PROFIBUS with optional PROFIBUS DP module
- External display and operator module
- Mains voltages from 200 to 690 V, 50 to 60 Hz
- Can be used up to 60 °C (derating from 40 °C).

Soft Starter ES parameterization software

Soft Starter ES software is used for the parameterization, monitoring and service diagnostics of SIRIUS 3RW44 High Feature soft starters.

See [Chapter "Planning and Configuration with SIRIUS"](#).

Application

The SIRIUS 3RW44 solid-state soft starters are suitable for the torque-controlled soft starting and smooth ramp-down as well as braking of three-phase asynchronous motors.

Application areas

See ["Selection aid for soft starters" on Page 4/7](#).

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Selection and ordering data

SIRIUS 3RW44 for normal starting (CLASS 10) in inline circuit



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e				Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e								
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp				

Inline circuit, rated operational voltage 200 ... 460 V¹⁾

29	5.5	15	--	--	--	26	7.5	7.5	15	--	▶	3RW44 22-□BC□4	1	1 unit	131	6.500
36	7.5	18.5	--	--	--	32	10	10	20	--	▶	3RW44 23-□BC□4	1	1 unit	131	6.500
47	11	22	--	--	--	42	10	15	25	--	▶	3RW44 24-□BC□4	1	1 unit	131	6.500
57	15	30	--	--	--	51	15	15	30	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
77	18.5	37	--	--	--	68	20	20	50	--	▶	3RW44 26-□BC□4	1	1 unit	131	6.500
93	22	45	--	--	--	82	25	25	60	--	▶	3RW44 27-□BC□4	1	1 unit	131	6.500

Order No. supplement for connection types

- With screw terminals
- With spring-type terminals

113	30	55	--	--	--	100	30	30	75	--	B	3RW44 34-□BC□4	1	1 unit	131	7.900
134	37	75	--	--	--	117	30	40	75	--	B	3RW44 35-□BC□4	1	1 unit	131	7.900
162	45	90	--	--	--	145	40	50	100	--	B	3RW44 36-□BC□4	1	1 unit	131	7.900
203	55	110	--	--	--	180	50	60	125	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500
250	75	132	--	--	--	215	60	75	150	--	B	3RW44 44-□BC□4	1	1 unit	131	11.500
313	90	160	--	--	--	280	75	100	200	--	B	3RW44 45-□BC□4	1	1 unit	131	11.500
356	110	200	--	--	--	315	100	125	250	--	B	3RW44 46-□BC□4	1	1 unit	131	11.500
432	132	250	--	--	--	385	125	150	300	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500
551	160	315	--	--	--	494	150	200	400	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
615	200	355	--	--	--	551	150	200	450	--	C	3RW44 54-□BC□4	1	1 unit	131	50.000
693	200	400	--	--	--	615	200	250	500	--	C	3RW44 55-□BC□4	1	1 unit	131	50.000
780	250	450	--	--	--	693	200	250	600	--	C	3RW44 56-□BC□4	1	1 unit	131	50.000
880	250	500	--	--	--	780	250	300	700	--	C	3RW44 57-□BC□4	1	1 unit	131	50.000
970	315	560	--	--	--	850	300	350	750	--	C	3RW44 58-□BC□4	1	1 unit	131	50.000
1076	355	630	--	--	--	970	350	400	850	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
1214	400	710	--	--	--	1076	350	450	950	--	C	3RW44 66-□BC□4	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ²⁾

- 115 V AC
- 230 V AC

¹⁾ 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).

²⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 °C$ and switching frequency, see "Technical specifications".

* You can order this quantity or a multiple thereof.

4

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e				Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU		kg		
	kW	kW	kW	kW	kW		hp	hp	hp	hp						
Inline circuit, rated operational voltage 400 ... 600 V¹⁾																
29	--	15	18.5	--	--	26	--	--	15	20	A	3RW44 22-□BC□5	1	1 unit	131	6.500
36	--	18.5	22	--	--	32	--	--	20	25	A	3RW44 23-□BC□5	1	1 unit	131	6.500
47	--	22	30	--	--	42	--	--	25	30	A	3RW44 24-□BC□5	1	1 unit	131	6.500
57	--	30	37	--	--	51	--	--	30	40	A	3RW44 25-□BC□5	1	1 unit	131	6.500
77	--	37	45	--	--	68	--	--	50	50	A	3RW44 26-□BC□5	1	1 unit	131	6.500
93	--	45	55	--	--	82	--	--	60	75	A	3RW44 27-□BC□5	1	1 unit	131	6.500
Order No. supplement for connection types																
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																
113	--	55	75	--	--	100	--	--	75	75	B	3RW44 34-□BC□5	1	1 unit	131	7.900
134	--	75	90	--	--	117	--	--	75	100	B	3RW44 35-□BC□5	1	1 unit	131	7.900
162	--	90	110	--	--	145	--	--	100	125	B	3RW44 36-□BC□5	1	1 unit	131	7.900
203	--	110	132	--	--	180	--	--	125	150	B	3RW44 43-□BC□5	1	1 unit	131	11.500
250	--	132	160	--	--	215	--	--	150	200	B	3RW44 44-□BC□5	1	1 unit	131	11.500
313	--	160	200	--	--	280	--	--	200	250	B	3RW44 45-□BC□5	1	1 unit	131	11.500
356	--	200	250	--	--	315	--	--	250	300	B	3RW44 46-□BC□5	1	1 unit	131	11.500
432	--	250	315	--	--	385	--	--	300	400	B	3RW44 47-□BC□5	1	1 unit	131	11.500
551	--	315	355	--	--	494	--	--	400	500	C	3RW44 53-□BC□5	1	1 unit	131	50.000
615	--	355	400	--	--	551	--	--	450	600	C	3RW44 54-□BC□5	1	1 unit	131	50.000
693	--	400	500	--	--	615	--	--	500	700	C	3RW44 55-□BC□5	1	1 unit	131	50.000
780	--	450	560	--	--	693	--	--	600	750	C	3RW44 56-□BC□5	1	1 unit	131	50.000
880	--	500	630	--	--	780	--	--	700	850	C	3RW44 57-□BC□5	1	1 unit	131	50.000
970	--	560	710	--	--	850	--	--	750	900	C	3RW44 58-□BC□5	1	1 unit	131	50.000
1076	--	630	800	--	--	970	--	--	850	1100	C	3RW44 65-□BC□5	1	1 unit	131	78.000
1214	--	710	900	--	--	1076	--	--	950	1200	C	3RW44 66-□BC□5	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ²⁾

- 115 V AC
- 230 V AC

¹⁾ Soft starter with screw terminals:
3RW44 2. ... 3RW44 4. Delivery time class A,
3RW44 5. ... 3RW44 6. Delivery time class B.

²⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 °C$ and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e									
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V	Order No.	Price per PU			kg	
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp						
Inline circuit, rated operational voltage 400 ... 690 V																
29	--	15	18.5	30	--	26	--	--	15	20	B	3RW44 22-□BC□6	1	1 unit	131	6.500
36	--	18.5	22	37	--	32	--	--	20	25	B	3RW44 23-□BC□6	1	1 unit	131	6.500
47	--	22	30	45	--	42	--	--	25	30	B	3RW44 24-□BC□6	1	1 unit	131	6.500
57	--	30	37	55	--	51	--	--	30	40	B	3RW44 25-□BC□6	1	1 unit	131	6.500
77	--	37	45	75	--	68	--	--	50	50	B	3RW44 26-□BC□6	1	1 unit	131	6.500
93	--	45	55	90	--	82	--	--	60	75	B	3RW44 27-□BC□6	1	1 unit	131	6.500
Order No. supplement for connection types																
• With screw terminals																
• With spring-type terminals																
113	--	55	75	110	--	100	--	--	75	75	B	3RW44 34-□BC□6	1	1 unit	131	7.900
134	--	75	90	132	--	117	--	--	75	100	B	3RW44 35-□BC□6	1	1 unit	131	7.900
162	--	90	110	160	--	145	--	--	100	125	B	3RW44 36-□BC□6	1	1 unit	131	7.900
203	--	110	132	200	--	180	--	--	125	150	B	3RW44 43-□BC□6	1	1 unit	131	11.500
250	--	132	160	250	--	215	--	--	150	200	B	3RW44 44-□BC□6	1	1 unit	131	11.500
313	--	160	200	315	--	280	--	--	200	250	B	3RW44 45-□BC□6	1	1 unit	131	11.500
356	--	200	250	355	--	315	--	--	250	300	B	3RW44 46-□BC□6	1	1 unit	131	11.500
432	--	250	315	400	--	385	--	--	300	400	B	3RW44 47-□BC□6	1	1 unit	131	11.500
551	--	315	355	560	--	494	--	--	400	500	C	3RW44 53-□BC□6	1	1 unit	131	50.000
615	--	355	400	630	--	551	--	--	450	600	C	3RW44 54-□BC□6	1	1 unit	131	50.000
693	--	400	500	710	--	615	--	--	500	700	C	3RW44 55-□BC□6	1	1 unit	131	50.000
780	--	450	560	800	--	693	--	--	600	750	C	3RW44 56-□BC□6	1	1 unit	131	50.000
880	--	500	630	900	--	780	--	--	700	850	C	3RW44 57-□BC□6	1	1 unit	131	50.000
970	--	560	710	1000	--	850	--	--	750	900	C	3RW44 58-□BC□6	1	1 unit	131	50.000
1076	--	630	800	1100	--	970	--	--	850	1100	C	3RW44 65-□BC□6	1	1 unit	131	78.000
1214	--	710	900	1200	--	1076	--	--	950	1200	C	3RW44 66-□BC□6	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ¹⁾

- 115 V AC
- 230 V AC

¹⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

SIRIUS 3RW44 for heavy starting (CLASS 20) in inline circuit



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C					Ambient temperature 50 °C					DT	Heavy starting (CLASS 20) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e								
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU			
	kW	kW	kW	kW	kW		hp	hp	hp	hp					

Inline circuit, rated operational voltage 200 ... 460 V¹⁾

29	5.5	15	--	--	--	26	7.5	7.5	15	--	▶	3RW44 22-□BC□4	1	1 unit	131	6.500
36	7.5	18.5	--	--	--	32	10	10	20	--	▶	3RW44 23-□BC□4	1	1 unit	131	6.500
47	11	22	--	--	--	42	10	15	25	--	▶	3RW44 24-□BC□4	1	1 unit	131	6.500
57	15	30	--	--	--	51	15	15	30	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
77	18.5	37	--	--	--	68	20	20	50	--	▶	3RW44 27-□BC□4	1	1 unit	131	6.500

Order No. supplement for connection types

- With screw terminals
- With spring-type terminals

93	22	45	--	--	--	82	25	25	60	--	B	3RW44 34-□BC□4	1	1 unit	131	7.900
113	30	55	--	--	--	100	30	30	75	--	B	3RW44 35-□BC□4	1	1 unit	131	7.900
134	37	75	--	--	--	117	30	40	75	--	B	3RW44 36-□BC□4	1	1 unit	131	7.900
162	45	90	--	--	--	145	40	50	100	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500
203	55	110	--	--	--	180	50	60	125	--	B	3RW44 45-□BC□4	1	1 unit	131	11.500
250	75	132	--	--	--	215	60	75	150	--	B	3RW44 46-□BC□4	1	1 unit	131	11.500
313	90	160	--	--	--	280	75	100	200	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500
356	110	200	--	--	--	315	100	125	250	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500
432	132	250	--	--	--	385	125	150	300	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
551	160	315	--	--	--	494	150	200	400	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
615	200	355	--	--	--	551	150	200	450	--	C	3RW44 55-□BC□4	1	1 unit	131	50.000
693	200	400	--	--	--	615	200	250	500	--	C	3RW44 57-□BC□4	1	1 unit	131	50.000
780	250	450	--	--	--	693	200	250	600	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
880	250	500	--	--	--	780	250	300	700	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
970	315	560	--	--	--	850	300	350	750	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ²⁾

- 115 V AC
- 230 V AC

¹⁾ 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).

²⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e				Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU			kg	
Inline circuit, rated operational voltage 400 ... 600 V¹⁾																
29	--	15	18.5	--	--	26	--	--	15	20	A	3RW44 22-□BC□5	1	1 unit	131	6.500
36	--	18.5	22	--	--	32	--	--	20	25	A	3RW44 23-□BC□5	1	1 unit	131	6.500
47	--	22	30	--	--	42	--	--	25	30	A	3RW44 24-□BC□5	1	1 unit	131	6.500
57	--	30	37	--	--	51	--	--	30	40	A	3RW44 25-□BC□5	1	1 unit	131	6.500
77	--	37	45	--	--	68	--	--	50	50	A	3RW44 27-□BC□5	1	1 unit	131	6.500
Order No. supplement for connection types																
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																
93	--	45	55	--	--	82	--	--	60	75	B	3RW44 34-□BC□5	1	1 unit	131	7.900
113	--	55	75	--	--	100	--	--	75	75	B	3RW44 35-□BC□5	1	1 unit	131	7.900
134	--	75	90	--	--	117	--	--	75	100	B	3RW44 36-□BC□5	1	1 unit	131	7.900
162	--	90	110	--	--	145	--	--	100	125	B	3RW44 43-□BC□5	1	1 unit	131	11.500
203	--	110	132	--	--	180	--	--	125	150	B	3RW44 45-□BC□5	1	1 unit	131	11.500
250	--	132	160	--	--	215	--	--	150	200	B	3RW44 46-□BC□5	1	1 unit	131	11.500
313	--	160	200	--	--	280	--	--	200	250	B	3RW44 47-□BC□5	1	1 unit	131	11.500
356	--	200	250	--	--	315	--	--	250	300	B	3RW44 47-□BC□5	1	1 unit	131	11.500
432	--	250	315	--	--	385	--	--	300	400	C	3RW44 53-□BC□5	1	1 unit	131	50.000
551	--	315	355	--	--	494	--	--	400	500	C	3RW44 53-□BC□5	1	1 unit	131	50.000
615	--	355	400	--	--	551	--	--	450	600	C	3RW44 54-□BC□5	1	1 unit	131	50.000
693	--	400	500	--	--	615	--	--	500	700	C	3RW44 57-□BC□5	1	1 unit	131	50.000
780	--	450	560	--	--	693	--	--	600	750	C	3RW44 65-□BC□5	1	1 unit	131	78.000
880	--	500	630	--	--	780	--	--	700	850	C	3RW44 65-□BC□5	1	1 unit	131	78.000
970	--	560	710	--	--	850	--	--	750	900	C	3RW44 65-□BC□5	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ²⁾

- 115 V AC
- 230 V AC

1) Soft starter with screw terminals:
 3RW44 2. ... 3RW44 4. Delivery time class A,
 3RW44 5. ... 3RW44 6. Delivery time class B.

2) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 °C$ and switching frequency, see "Technical specifications".



SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e				Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU			kg	
Inline circuit, rated operational voltage 400 ... 690 V																
29	--	15	18.5	30	--	26	--	--	15	20	B	3RW44 22-□BC□6	1	1 unit	131	6.500
36	--	18.5	22	37	--	32	--	--	20	25	B	3RW44 23-□BC□6	1	1 unit	131	6.500
47	--	22	30	45	--	42	--	--	25	30	B	3RW44 24-□BC□6	1	1 unit	131	6.500
57	--	30	37	55	--	51	--	--	30	40	B	3RW44 25-□BC□6	1	1 unit	131	6.500
77	--	37	45	75	--	68	--	--	50	50	B	3RW44 27-□BC□6	1	1 unit	131	6.500
Order No. supplement for connection types																
• With screw terminals																
• With spring-type terminals																
93	--	45	55	90	--	82	--	--	60	75	B	3RW44 34-□BC□6	1	1 unit	131	7.900
113	--	55	75	110	--	100	--	--	75	75	B	3RW44 35-□BC□6	1	1 unit	131	7.900
134	--	75	90	132	--	117	--	--	75	100	B	3RW44 36-□BC□6	1	1 unit	131	7.900
162	--	90	110	160	--	145	--	--	100	125	B	3RW44 43-□BC□6	1	1 unit	131	11.500
203	--	110	132	200	--	180	--	--	125	150	B	3RW44 45-□BC□6	1	1 unit	131	11.500
250	--	132	160	250	--	215	--	--	150	200	B	3RW44 46-□BC□6	1	1 unit	131	11.500
313	--	160	200	315	--	280	--	--	200	250	B	3RW44 47-□BC□6	1	1 unit	131	11.500
356	--	200	250	355	--	315	--	--	250	300	B	3RW44 47-□BC□6	1	1 unit	131	11.500
432	--	250	315	400	--	385	--	--	300	400	C	3RW44 53-□BC□6	1	1 unit	131	50.000
551	--	315	355	560	--	494	--	--	400	500	C	3RW44 53-□BC□6	1	1 unit	131	50.000
615	--	355	400	630	--	551	--	--	450	600	C	3RW44 55-□BC□6	1	1 unit	131	50.000
693	--	400	500	710	--	615	--	--	500	700	C	3RW44 57-□BC□6	1	1 unit	131	50.000
780	--	450	560	800	--	693	--	--	600	750	C	3RW44 65-□BC□6	1	1 unit	131	78.000
880	--	500	630	900	--	780	--	--	700	850	C	3RW44 65-□BC□6	1	1 unit	131	78.000
970	--	560	710	1000	--	850	--	--	750	900	C	3RW44 65-□BC□6	1	1 unit	131	78.000
Order No. supplement for connection types																
• With spring-type terminals																
• With screw terminals																
Order No. supplement for the rated control supply voltage U_s¹⁾																
• 115 V AC																
• 230 V AC																

¹⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 \text{ °C}$ and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

SIRIUS 3RW44 for very heavy starting (CLASS 30) in inline circuit



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C					Ambient temperature 50 °C					DT	Very heavy starting (CLASS 30) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU					
	kW	kW	kW	kW	kW		hp	hp	hp	hp							
Inline circuit, rated operational voltage 200 ... 460 V¹⁾																	
29	5.5	15	--	--	--	26	7.5	7.5	15	--	▶	3RW44 22-□BC□4		1	1 unit	131	6.500
36	7.5	18.5	--	--	--	32	10	10	20	--	▶	3RW44 24-□BC□4		1	1 unit	131	6.500
47	11	22	--	--	--	42	10	15	25	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
57	15	30	--	--	--	51	15	15	30	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
Order No. supplement for connection types																	
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																	
77	18.5	37	--	--	--	68	20	20	50	--	B	3RW44 34-□BC□4		1	1 unit	131	7.900
93	22	45	--	--	--	82	25	25	60	--	B	3RW44 35-□BC□4		1	1 unit	131	7.900
113	30	55	--	--	--	100	30	30	75	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
134	37	75	--	--	--	117	30	40	75	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
162	45	90	--	--	--	145	40	50	100	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
203	55	110	--	--	--	180	50	60	125	--	B	3RW44 46-□BC□4		1	1 unit	131	11.500
250	75	132	--	--	--	215	60	75	150	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
313	90	160	--	--	--	280	75	100	200	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
356	110	200	--	--	--	315	100	125	250	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
432	132	250	--	--	--	385	125	150	300	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
551	160	315	--	--	--	494	150	200	400	--	C	3RW44 55-□BC□4		1	1 unit	131	50.000
615	200	355	--	--	--	551	150	200	450	--	C	3RW44 58-□BC□4		1	1 unit	131	50.000
693	200	400	--	--	--	615	200	250	500	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
780	250	450	--	--	--	693	200	250	600	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
880	250	500	--	--	--	780	250	300	700	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
970	315	560	--	--	--	850	300	350	750	--	C	3RW44 66-□BC□4		1	1 unit	131	78.000
Order No. supplement for connection types																	
<ul style="list-style-type: none"> • With spring-type terminals • With screw terminals 																	
Order No. supplement for the rated control supply voltage U_s²⁾																	
<ul style="list-style-type: none"> • 115 V AC • 230 V AC 																	

¹⁾ 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).

²⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".



SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C					DT	Very heavy starting (CLASS 30) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated opera- tional current I_e	Rated power of induction motors for rated operational voltage U_e				Rated opera- tional current I_e	Rated power of induction motors for rated operational voltage U_e										
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU			kg	
Inline circuit, rated operational voltage 400 ... 600 V¹⁾																
29	--	15	18.5	--	--	26	--	--	15	20	A	3RW44 22-□BC□5	1	1 unit	131	6.500
36	--	18.5	22	--	--	32	--	--	20	25	A	3RW44 24-□BC□5	1	1 unit	131	6.500
47	--	22	30	--	--	42	--	--	25	30	A	3RW44 25-□BC□5	1	1 unit	131	6.500
57	--	30	37	--	--	51	--	--	30	40	A	3RW44 25-□BC□5	1	1 unit	131	6.500
Order No. supplement for connection types																
• With screw terminals																
• With spring-type terminals																
77	--	37	45	--	--	68	--	--	50	50	B	3RW44 34-□BC□5	1	1 unit	131	7.900
93	--	45	55	--	--	82	--	--	60	75	B	3RW44 35-□BC□5	1	1 unit	131	7.900
113	--	55	75	--	--	100	--	--	75	75	B	3RW44 43-□BC□5	1	1 unit	131	11.500
134	--	75	90	--	--	117	--	--	75	100	B	3RW44 43-□BC□5	1	1 unit	131	11.500
162	--	90	110	--	--	145	--	--	100	125	B	3RW44 43-□BC□5	1	1 unit	131	11.500
203	--	110	132	--	--	180	--	--	125	150	B	3RW44 46-□BC□5	1	1 unit	131	11.500
250	--	132	160	--	--	215	--	--	150	200	B	3RW44 47-□BC□5	1	1 unit	131	11.500
313	--	160	200	--	--	280	--	--	200	250	C	3RW44 53-□BC□5	1	1 unit	131	50.000
356	--	200	250	--	--	315	--	--	250	300	C	3RW44 53-□BC□5	1	1 unit	131	50.000
432	--	250	315	--	--	385	--	--	300	400	C	3RW44 53-□BC□5	1	1 unit	131	50.000
551	--	315	355	--	--	494	--	--	400	500	C	3RW44 55-□BC□5	1	1 unit	131	50.000
615	--	355	400	--	--	551	--	--	450	600	C	3RW44 58-□BC□5	1	1 unit	131	50.000
693	--	400	500	--	--	615	--	--	500	700	C	3RW44 65-□BC□5	1	1 unit	131	78.000
780	--	450	560	--	--	693	--	--	600	750	C	3RW44 65-□BC□5	1	1 unit	131	78.000
880	--	500	630	--	--	780	--	--	700	850	C	3RW44 65-□BC□5	1	1 unit	131	78.000
--	--	--	--	--	--	850	--	--	750	900	C	3RW44 66-□BC□5	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ²⁾

- 115 V AC
- 230 V AC

¹⁾ Soft starter with screw terminals:
3RW44 2... 3RW44 4. Delivery time class A,
3RW44 5... 3RW44 6. Delivery time class B.

²⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 \text{ °C}$ and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C					Ambient temperature 50 °C				DT	Very heavy starting (CLASS 30) in inline circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
Rated opera- tional current I_e	Rated power of induction motors for rated operational voltage U_e					Rated opera- tional current I_e	Rated power of induction motors for rated operational voltage U_e									
A	230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	A	200 V hp	230 V hp	460 V hp	575 V hp	Order No.	Price per PU		kg		
Inline circuit, rated operational voltage 400 ... 690 V																
29	--	15	18.5	30	--	26	--	--	15	20	B	3RW44 22-□BC□6	1	1 unit	131	6.500
36	--	18.5	22	37	--	32	--	--	20	25	B	3RW44 24-□BC□6	1	1 unit	131	6.500
47	--	22	30	45	--	42	--	--	25	30	B	3RW44 25-□BC□6	1	1 unit	131	6.500
57	--	30	37	55	--	51	--	--	30	40	B	3RW44 25-□BC□6	1	1 unit	131	6.500
Order No. supplement for connection types																
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																
77	--	37	45	75	--	68	--	--	50	50	B	3RW44 34-□BC□6	1	1 unit	131	7.900
93	--	45	55	90	--	82	--	--	60	75	B	3RW44 35-□BC□6	1	1 unit	131	7.900
113	--	55	75	110	--	100	--	--	75	75	B	3RW44 43-□BC□6	1	1 unit	131	11.500
134	--	75	90	132	--	117	--	--	75	100	B	3RW44 43-□BC□6	1	1 unit	131	11.500
162	--	90	110	160	--	145	--	--	100	125	B	3RW44 43-□BC□6	1	1 unit	131	11.500
203	--	110	132	200	--	180	--	--	125	150	B	3RW44 46-□BC□6	1	1 unit	131	11.500
250	--	132	160	250	--	215	--	--	150	200	B	3RW44 47-□BC□6	1	1 unit	131	11.500
313	--	160	200	315	--	280	--	--	200	250	C	3RW44 53-□BC□6	1	1 unit	131	50.000
356	--	200	250	355	--	315	--	--	250	300	C	3RW44 53-□BC□6	1	1 unit	131	50.000
432	--	250	315	400	--	385	--	--	300	400	C	3RW44 53-□BC□6	1	1 unit	131	50.000
551	--	315	355	560	--	494	--	--	400	500	C	3RW44 55-□BC□6	1	1 unit	131	50.000
615	--	355	400	630	--	551	--	--	450	600	C	3RW44 58-□BC□6	1	1 unit	131	50.000
693	--	400	500	710	--	615	--	--	500	700	C	3RW44 65-□BC□6	1	1 unit	131	78.000
780	--	450	560	800	--	693	--	--	600	750	C	3RW44 65-□BC□6	1	1 unit	131	78.000
880	--	500	630	900	--	780	--	--	700	850	C	3RW44 65-□BC□6	1	1 unit	131	78.000
--	--	--	--	--	--	850	--	--	750	900	C	3RW44 66-□BC□6	1	1 unit	131	78.000
Order No. supplement for connection types																
<ul style="list-style-type: none"> • With spring-type terminals • With screw terminals 																
Order No. supplement for the rated control supply voltage U_s¹⁾																
<ul style="list-style-type: none"> • 115 V AC • 230 V AC 																

¹⁾ Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 °C$ and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

SIRIUS 3RW44 for normal starting (CLASS 10) in inside-delta circuit



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e									Order No.
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V						
	kW	kW	kW	kW	kW		hp	hp	hp	hp						
Inside-delta circuit, rated operational voltage 200 ... 460 V²⁾																
50	15	22	--	--	--	45	10	15	30	--	▶	3RW44 22-□BC□4	1	1 unit	131	6.500
62	18.5	30	--	--	--	55	15	20	40	--	▶	3RW44 23-□BC□4	1	1 unit	131	6.500
81	22	45	--	--	--	73	20	25	50	--	▶	3RW44 24-□BC□4	1	1 unit	131	6.500
99	30	55	--	--	--	88	25	30	60	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
133	37	75	--	--	--	118	30	40	75	--	▶	3RW44 26-□BC□4	1	1 unit	131	6.500
161	45	90	--	--	--	142	40	50	100	--	▶	3RW44 27-□BC□4	1	1 unit	131	6.500
Order No. supplement for connection types																
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																
196	55	110	--	--	--	173	50	60	125	--	B	3RW44 34-□BC□4	1	1 unit	131	7.900
232	75	132	--	--	--	203	60	75	150	--	B	3RW44 35-□BC□4	1	1 unit	131	7.900
281	90	160	--	--	--	251	75	100	200	--	B	3RW44 36-□BC□4	1	1 unit	131	7.900
352	110	200	--	--	--	312	100	125	250	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500
433	132	250	--	--	--	372	125	150	300	--	B	3RW44 44-□BC□4	1	1 unit	131	11.500
542	160	315	--	--	--	485	150	200	400	--	B	3RW44 45-□BC□4	1	1 unit	131	11.500
617	200	355	--	--	--	546	150	200	450	--	B	3RW44 46-□BC□4	1	1 unit	131	11.500
748	250	400	--	--	--	667	200	250	600	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500
954	315	560	--	--	--	856	300	350	750	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000
1065	355	630	--	--	--	954	350	400	850	--	C	3RW44 54-□BC□4	1	1 unit	131	50.000
1200	400	710	--	--	--	1065	350	450	950	--	C	3RW44 55-□BC□4	1	1 unit	131	50.000
1351	450	800	--	--	--	1200	450	500	1050	--	C	3RW44 56-□BC□4	1	1 unit	131	50.000
1524	500	900	--	--	--	1351	450	600	1200	--	C	3RW44 57-□BC□4	1	1 unit	131	50.000
1680	560	1000	--	--	--	1472	550	650	1300	--	C	3RW44 58-□BC□4	1	1 unit	131	50.000
1864	630	1100	--	--	--	1680	650	750	1500	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000
2103	710	1200	--	--	--	1864	700	850	1700	--	C	3RW44 66-□BC□4	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage $U_s^{3)}$

- 115 V AC
- 230 V AC

1) In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures > 40 °C and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Normal starting (CLASS 10) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e									
		230 V	400 V	500 V	690 V		1000 V	A	200 V	230 V	460 V	575 V	Order No.	Price per PU		
	kW	kW	kW	kW	kW	A	hp	hp	hp	hp						
Inside-delta circuit, rated operational voltage 400 ... 600 V²⁾																
50	--	22	30	--	--	45	--	--	30	40	A	3RW44 22-□BC□5	1	1 unit	131	6.500
62	--	30	37	--	--	55	--	--	40	50	A	3RW44 23-□BC□5	1	1 unit	131	6.500
81	--	45	45	--	--	73	--	--	50	60	A	3RW44 24-□BC□5	1	1 unit	131	6.500
99	--	55	55	--	--	88	--	--	60	75	A	3RW44 25-□BC□5	1	1 unit	131	6.500
133	--	75	90	--	--	118	--	--	75	100	A	3RW44 26-□BC□5	1	1 unit	131	6.500
161	--	90	110	--	--	142	--	--	100	125	A	3RW44 27-□BC□5	1	1 unit	131	6.500
Order No. supplement for connection types																
• With screw terminals																
• With spring-type terminals																
196	--	110	132	--	--	173	--	--	125	150	B	3RW44 34-□BC□5	1	1 unit	131	7.900
232	--	132	160	--	--	203	--	--	150	200	B	3RW44 35-□BC□5	1	1 unit	131	7.900
281	--	160	200	--	--	251	--	--	200	250	B	3RW44 36-□BC□5	1	1 unit	131	7.900
352	--	200	250	--	--	312	--	--	250	300	B	3RW44 43-□BC□5	1	1 unit	131	11.500
433	--	250	315	--	--	372	--	--	300	350	B	3RW44 44-□BC□5	1	1 unit	131	11.500
542	--	315	355	--	--	485	--	--	400	500	B	3RW44 45-□BC□5	1	1 unit	131	11.500
617	--	355	450	--	--	546	--	--	450	600	B	3RW44 46-□BC□5	1	1 unit	131	11.500
748	--	400	500	--	--	667	--	--	600	750	B	3RW44 47-□BC□5	1	1 unit	131	11.500
954	--	560	630	--	--	856	--	--	750	950	C	3RW44 53-□BC□5	1	1 unit	131	50.000
1065	--	630	710	--	--	954	--	--	850	1050	C	3RW44 54-□BC□5	1	1 unit	131	50.000
1200	--	710	800	--	--	1065	--	--	950	1200	C	3RW44 55-□BC□5	1	1 unit	131	50.000
1351	--	800	900	--	--	1200	--	--	1050	1350	C	3RW44 56-□BC□5	1	1 unit	131	50.000
1524	--	900	1000	--	--	1351	--	--	1200	1500	C	3RW44 57-□BC□5	1	1 unit	131	50.000
1680	--	1000	1200	--	--	1472	--	--	1300	1650	C	3RW44 58-□BC□5	1	1 unit	131	50.000
1864	--	1100	1350	--	--	1680	--	--	1500	1900	C	3RW44 65-□BC□5	1	1 unit	131	78.000
2103	--	1200	1500	--	--	1864	--	--	1700	2100	C	3RW44 66-□BC□5	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage U_s ³⁾

- 115 V AC
- 230 V AC

1) In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) Soft starter with screw terminals:
3RW44 2. ... 3RW44 4. Delivery time class A
3RW44 5. ... 3RW44 6. Delivery time class B.

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 °C$ and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

SIRIUS 3RW44 for heavy starting (CLASS 20) in inside-delta circuit



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C						Ambient temperature 50 °C					DT	Heavy starting (CLASS 20) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated operational current $I_e^{(1)}$	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e										Order No.
A	230 V	400 V	500 V	690 V	1000 V	A	200 V	230 V	460 V	575 V							
	kW	kW	kW	kW	kW		hp	hp	hp	hp							
Inside-delta circuit, rated operational voltage 200 ... 460 V²⁾																	
50	15	22	--	--	--	45	10	15	30	--	▶	3RW44 23-□BC□4		1	1 unit	131	6.500
62	18.5	30	--	--	--	55	15	20	40	--	▶	3RW44 24-□BC□4		1	1 unit	131	6.500
81	22	45	--	--	--	73	20	25	50	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
99	30	55	--	--	--	88	25	30	60	--	▶	3RW44 25-□BC□4		1	1 unit	131	6.500
133	37	75	--	--	--	118	30	40	75	--	▶	3RW44 27-□BC□4		1	1 unit	131	6.500
Order No. supplement for connection types																	
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																	
161	45	90	--	--	--	142	40	50	100	--	B	3RW44 34-□BC□4		1	1 unit	131	7.900
196	55	110	--	--	--	173	50	60	125	--	B	3RW44 35-□BC□4		1	1 unit	131	7.900
232	75	132	--	--	--	203	60	75	150	--	B	3RW44 36-□BC□4		1	1 unit	131	7.900
281	90	160	--	--	--	251	75	100	200	--	B	3RW44 43-□BC□4		1	1 unit	131	11.500
352	110	200	--	--	--	312	100	125	250	--	B	3RW44 44-□BC□4		1	1 unit	131	11.500
433	132	250	--	--	--	372	125	150	300	--	B	3RW44 45-□BC□4		1	1 unit	131	11.500
542	160	315	--	--	--	485	150	200	400	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
617	200	355	--	--	--	546	150	200	450	--	B	3RW44 47-□BC□4		1	1 unit	131	11.500
748	250	400	--	--	--	667	200	250	600	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
954	315	560	--	--	--	856	300	350	750	--	C	3RW44 53-□BC□4		1	1 unit	131	50.000
1065	355	630	--	--	--	954	350	400	850	--	C	3RW44 55-□BC□4		1	1 unit	131	50.000
1200	400	710	--	--	--	1065	350	450	950	--	C	3RW44 57-□BC□4		1	1 unit	131	50.000
1351	450	800	--	--	--	1200	450	500	1050	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
1524	500	900	--	--	--	1351	450	600	1200	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
1680	560	1000	--	--	--	1472	550	650	1300	--	C	3RW44 65-□BC□4		1	1 unit	131	78.000
--	--	--	--	--	--	1680	650	750	1500	--	C	3RW44 66-□BC□4		1	1 unit	131	78.000
Order No. supplement for connection types																	
<ul style="list-style-type: none"> • With spring-type terminals • With screw terminals 																	
Order No. supplement for the rated control supply voltage $U_s^{(3)}$																	
<ul style="list-style-type: none"> • 115 V AC • 230 V AC 																	

1) In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) 3RW44 2 soft starters. ... 3RW44 4, with screw terminals: delivery time class ▶ (preferred type).

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient tem-

peratures > 40 °C and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Heavy starting (CLASS 20) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e^{1)}$	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e	Rated power of induction motors for rated operational voltage U_e									
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V	Order No.	Price per PU	kg			
A	kW	kW	kW	kW	kW	A	hp	hp	hp	hp						
Inside-delta circuit, rated operational voltage 400 ... 600 V²⁾																
50	--	22	30	--	--	45	--	--	30	40	A	3RW44 23-□BC□5	1	1 unit	131	6.500
62	--	30	37	--	--	55	--	--	40	50	A	3RW44 24-□BC□5	1	1 unit	131	6.500
81	--	45	45	--	--	73	--	--	50	60	A	3RW44 25-□BC□5	1	1 unit	131	6.500
99	--	55	55	--	--	88	--	--	60	75	A	3RW44 25-□BC□5	1	1 unit	131	6.500
133	--	75	90	--	--	118	--	--	75	100	A	3RW44 27-□BC□5	1	1 unit	131	6.500
Order No. supplement for connection types																
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																
161	--	90	110	--	--	142	--	--	100	125	B	3RW44 34-□BC□5	1	1 unit	131	7.900
196	--	110	132	--	--	173	--	--	125	150	B	3RW44 35-□BC□5	1	1 unit	131	7.900
232	--	132	160	--	--	203	--	--	150	200	B	3RW44 36-□BC□5	1	1 unit	131	7.900
281	--	160	200	--	--	251	--	--	200	250	B	3RW44 43-□BC□5	1	1 unit	131	11.500
352	--	200	250	--	--	312	--	--	250	300	B	3RW44 44-□BC□5	1	1 unit	131	11.500
433	--	250	315	--	--	372	--	--	300	350	B	3RW44 45-□BC□5	1	1 unit	131	11.500
542	--	315	355	--	--	485	--	--	400	500	B	3RW44 47-□BC□5	1	1 unit	131	11.500
617	--	355	450	--	--	546	--	--	450	600	B	3RW44 47-□BC□5	1	1 unit	131	11.500
748	--	400	500	--	--	667	--	--	600	750	C	3RW44 53-□BC□5	1	1 unit	131	50.000
954	--	560	630	--	--	856	--	--	750	950	C	3RW44 53-□BC□5	1	1 unit	131	50.000
1065	--	630	710	--	--	954	--	--	850	1050	C	3RW44 55-□BC□5	1	1 unit	131	50.000
1200	--	710	800	--	--	1065	--	--	950	1200	C	3RW44 57-□BC□5	1	1 unit	131	50.000
1351	--	800	900	--	--	1200	--	--	1050	1350	C	3RW44 65-□BC□5	1	1 unit	131	78.000
1524	--	900	1000	--	--	1351	--	--	1200	1500	C	3RW44 65-□BC□5	1	1 unit	131	78.000
1680	--	1000	1200	--	--	1472	--	--	1300	1650	C	3RW44 65-□BC□5	1	1 unit	131	78.000
--	--	--	--	--	--	1680	--	--	1500	1900	C	3RW44 66-□BC□5	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage $U_s^{3)}$

- 115 V AC
- 230 V AC

1) In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) Soft starter with screw terminals:
 3RW44 2. ... 3RW44 4. Delivery time class A
 3RW44 5. ... 3RW44 6. Delivery time class B.

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 °C$ and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

SIRIUS 3RW44 for very heavy starting (CLASS 30) in inside-delta circuit



3RW44 27-1BC44

3RW44 36-6BC44

3RW44 47-6BC44

3RW44 58-6BC44

3RW44 66-6BC44

Ambient temperature 40 °C		Rated power of induction motors for rated operational voltage U_e				Ambient temperature 50 °C		Rated power of induction motors for rated operational voltage U_e				DT	Very heavy starting (CLASS 30) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Rated operational current $I_e^{(1)}$	A	230 V	400 V	500 V	690 V	1000 V	Rated operational current I_e	A	200 V	230 V	460 V							575 V
Inside-delta circuit, rated operational voltage 200 ... 460 V⁽²⁾																		
50	15	22	--	--	--	--	45	10	15	30	--	--	▶	3RW44 23-□BC□4	1	1 unit	131	6.500
62	18.5	30	--	--	--	--	55	15	20	40	--	--	▶	3RW44 24-□BC□4	1	1 unit	131	6.500
81	22	45	--	--	--	--	73	20	25	50	--	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
99	30	55	--	--	--	--	88	25	30	60	--	--	▶	3RW44 25-□BC□4	1	1 unit	131	6.500
133	37	75	--	--	--	--	118	30	40	75	--	--	▶	3RW44 27-□BC□4	1	1 unit	131	6.500
Order No. supplement for connection types																		
<ul style="list-style-type: none"> • With screw terminals • With spring-type terminals 																		
161	45	90	--	--	--	--	142	40	50	100	--	B	3RW44 35-□BC□4	1	1 unit	131	7.900	
196	55	110	--	--	--	--	173	50	60	125	--	B	3RW44 36-□BC□4	1	1 unit	131	7.900	
232	75	132	--	--	--	--	203	60	75	150	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500	
281	90	160	--	--	--	--	251	75	100	200	--	B	3RW44 43-□BC□4	1	1 unit	131	11.500	
352	110	200	--	--	--	--	312	100	125	250	--	B	3RW44 45-□BC□4	1	1 unit	131	11.500	
433	132	250	--	--	--	--	372	125	150	300	--	B	3RW44 47-□BC□4	1	1 unit	131	11.500	
542	160	315	--	--	--	--	485	150	200	400	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000	
617	200	355	--	--	--	--	546	150	200	450	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000	
748	250	400	--	--	--	--	667	200	250	600	--	C	3RW44 53-□BC□4	1	1 unit	131	50.000	
954	315	560	--	--	--	--	856	300	350	750	--	C	3RW44 55-□BC□4	1	1 unit	131	50.000	
1065	355	630	--	--	--	--	954	350	400	850	--	C	3RW44 58-□BC□4	1	1 unit	131	50.000	
1200	400	710	--	--	--	--	1065	350	450	950	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000	
1351	450	800	--	--	--	--	1200	450	500	1050	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000	
1524	500	900	--	--	--	--	1351	450	600	1200	--	C	3RW44 65-□BC□4	1	1 unit	131	78.000	
--	--	--	--	--	--	--	1472	550	650	1300	--	C	3RW44 66-□BC□4	1	1 unit	131	78.000	
Order No. supplement for connection types																		
<ul style="list-style-type: none"> • With spring-type terminals • With screw terminals 																		
Order No. supplement for the rated control supply voltage $U_s^{(3)}$																		
<ul style="list-style-type: none"> • 115 V AC • 230 V AC 																		

1) In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) 3RW44 2 soft starters. ... 3RW44 4. with screw terminals: delivery time class ▶ (preferred type).

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:
Soft starter selection depends on the rated motor current. Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient tem-

peratures > 40 °C and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Ambient temperature 40 °C						Ambient temperature 50 °C				DT	Very heavy starting (CLASS 30) in inside-delta circuit	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Rated operational current $I_e^{1)}$ A	Rated power of induction motors for rated operational voltage U_e					Rated operational current I_e A	Rated power of induction motors for rated operational voltage U_e									Order No.
	230 V	400 V	500 V	690 V	1000 V		200 V	230 V	460 V	575 V	hp	hp	hp	hp		
	kW	kW	kW	kW	kW		hp	hp	hp	hp						
Inside-delta circuit, rated operational voltage 400 ... 600 V²⁾																
50	--	22	30	--	--	45	--	--	30	40	A	3RW44 23-□BC□5	1	1 unit	131	6.500
62	--	30	37	--	--	55	--	--	40	50	A	3RW44 24-□BC□5	1	1 unit	131	6.500
81	--	45	45	--	--	73	--	--	50	60	A	3RW44 25-□BC□5	1	1 unit	131	6.500
99	--	55	55	--	--	88	--	--	60	75	A	3RW44 25-□BC□5	1	1 unit	131	6.500
133	--	75	90	--	--	118	--	--	75	100	A	3RW44 27-□BC□5	1	1 unit	131	6.500
Order No. supplement for connection types																
• With screw terminals																
• With spring-type terminals																
161	--	90	110	--	--	142	--	--	100	125	B	3RW44 35-□BC□5	1	1 unit	131	7.900
196	--	110	132	--	--	173	--	--	125	150	B	3RW44 36-□BC□5	1	1 unit	131	7.900
232	--	132	160	--	--	203	--	--	150	200	B	3RW44 43-□BC□5	1	1 unit	131	11.500
281	--	160	200	--	--	251	--	--	200	250	B	3RW44 43-□BC□5	1	1 unit	131	11.500
352	--	200	250	--	--	312	--	--	250	300	B	3RW44 45-□BC□5	1	1 unit	131	11.500
433	--	250	315	--	--	372	--	--	300	350	B	3RW44 47-□BC□5	1	1 unit	131	11.500
542	--	315	355	--	--	485	--	--	400	500	C	3RW44 53-□BC□5	1	1 unit	131	50.000
617	--	355	450	--	--	546	--	--	450	600	C	3RW44 53-□BC□5	1	1 unit	131	50.000
748	--	400	500	--	--	667	--	--	600	750	C	3RW44 53-□BC□5	1	1 unit	131	50.000
954	--	560	630	--	--	856	--	--	750	950	C	3RW44 55-□BC□5	1	1 unit	131	50.000
1065	--	630	710	--	--	954	--	--	850	1050	C	3RW44 58-□BC□5	1	1 unit	131	50.000
1200	--	710	800	--	--	1065	--	--	950	1200	C	3RW44 65-□BC□5	1	1 unit	131	78.000
1351	--	800	900	--	--	1200	--	--	1050	1350	C	3RW44 65-□BC□5	1	1 unit	131	78.000
1524	--	900	1000	--	--	1351	--	--	1200	1500	C	3RW44 65-□BC□5	1	1 unit	131	78.000
--	--	--	--	--	--	1472	--	--	1300	1650	C	3RW44 66-□BC□5	1	1 unit	131	78.000

Order No. supplement for connection types

- With spring-type terminals
- With screw terminals

Order No. supplement for the rated control supply voltage $U_s^{3)}$

- 115 V AC
- 230 V AC

1) In the selection table, the unit rated current I_e refers to the induction motor's rated operational current in the inside-delta circuit. The actual current of the device is approx. 58 % of this value.

2) Soft starter with screw terminals:
3RW44 2. ... 3RW44 4. Delivery time class A
3RW44 5. ... 3RW44 6. Delivery time class B.

3) Control by way of the internal 24 V DC supply and direct control by means of PLC possible.

Note:

Soft starter selection depends on the rated motor current.

Please observe the notes for the selection of soft starters on Page 4/7.

The 3RW44 solid-state soft starters are designed for normal starting (Class 10). (Inertia load of the overall operating mechanism $J_{Load} < 10 \times J_{Motor}$; starting current $350 \% \times I_e$ for 20 s or similar load). For any other conditions of use, the devices should be selected using the Win-Soft Starter selection and simulation program. For information about rated currents for ambient temperatures $> 40 \text{ °C}$ and switching frequency, see "Technical specifications".

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Accessories

For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type								kg
Soft Starter ES 2007 PC communication program²⁾								
	Soft Starter ES 2007 Basic Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface • License key on USB stick, Class A, including CD	B	3ZS1 313-4CC10-0YA5		1	1 unit	131	0.230
	Soft Starter ES 2007 Standard Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface • License key on USB stick, Class A, including CD	B	3ZS1 313-5CC10-0YA5		1	1 unit	131	0.230
	Soft Starter ES 2007 Premium Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface or PROFIBUS • License key on USB stick, Class A, including CD	B	3ZS1 313-6CC10-0YA5		1	1 unit	131	0.230
PC cables								
	For PC/PG communication with SIRIUS 3RW44 soft starters through the system interface, for connecting to the serial interface of the PC/PG	A	3UF7 940-0AA00-0		1	1 unit	131	0.150
3UF7 940-0AA00-0								
USB/serial adapters								
	For connecting the PC cable to the USB interface of a PC We recommend, in conjunction with 3RW44 soft starter, using SIMOCODE pro 3UF7, 3RK3 modular safety system, ET 200S/ECOFAS/ET 200pro motor starters, AS-i safety monitor, AS-i analyzer	B	3UF7 946-0AA00-0		1	1 unit	131	0.150
PROFIBUS communication modules								
	Modules can be plugged into the soft starters for integrating the starters in the PROFIBUS network with DPV1 slave functionality. On Y-link the soft starter has only DPV0 slave functionality.	A	3RW49 00-0KC00		1	1 unit	131	0.320
3RW49 00-0KC00								
External display and operator module								
	For indicating and operating the functions provided by the soft starter using an externally mounted display and operator module in degree of protection IP54 (e. g. in the control cabinet door)	▶	3RW49 00-0AC00		1	1 unit	131	0.320
3RW49 00-0AC00								
Connection cable								
	From the device interface (serial) of the 3RW44 soft starter to the external display and operator module							
	• Length 0.5 m, flat	A	3UF7 932-0AA00-0		1	1 unit	131	0.020
	• Length 0.5 m, round	A	3UF7 932-0BA00-0		1	1 unit	131	0.050
	• Length 1.0 m, round	A	3UF7 937-0BA00-0		1	1 unit	131	0.100
	• Length 2.5 m, round	A	3UF7 933-0BA00-0		1	1 unit	131	0.150
Box terminal blocks for soft starters								
	Box terminal blocks 3RW44 2. Included in the scope of supply 3RW44 3. • Up to 70 mm ² • Up to 120 mm ² 3RW44 4. • Up to 240 mm ²							
3RT19			▶ 3RT19 55-4G ▶ 3RT19 56-4G ▶ 3RT19 66-4G		1	1 unit	101	0.230 0.260 0.676

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type								kg
Covers for soft starters								
Terminal covers for box terminals								
Additional touch protection to be fitted at the box terminals (2 units required per device)								
3RW44 2. and 3RW44 3.		▶	3RT19 56-4EA2		1	1 unit	101	0.030
3RW44 4.		▶	3RT19 66-4EA2		1	1 unit	101	0.040
Terminal covers for cable lugs and busbar connections								
3RW44 2. and 3RW44 3.		▶	3RT19 56-4EA1		1	1 unit	101	0.070
3RW44 4.		▶	3RT19 66-4EA1		1	1 unit	101	0.130



3RT19.6-4EA1

Operating instructions¹⁾

for 3RW44 soft starters

3ZX10 12-0RW44-1AA1¹⁾ The operating instructions are included in the scope of supply.²⁾ For more information on the Soft Starter ES software see Chapter "Planning and Configuration with SIRIUS"**Spare parts**

For soft starters	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type								kg
Fans								
3RW44 2. and 3RW44 3.	115 V AC 230 V AC	▶	3RW49 36-8VX30		1	1 unit	131	0.300
3RW44 4.	115 V AC 230 V AC	▶	3RW49 36-8VX40		1	1 unit	131	0.300
3RW44 5. and 3RW44 6 ¹⁾	115 V AC 230 V AC	▶	3RW49 47-8VX30		1	1 unit	131	0.500
3RW44 6. ²⁾	115 V AC 230 V AC	▶	3RW49 47-8VX40		1	1 unit	131	0.500
		▶	3RW49 57-8VX30		1	1 unit	131	0.800
		▶	3RW49 57-8VX40		1	1 unit	131	0.800
		▶	3RW49 66-8VX30		1	1 unit	131	0.300
		▶	3RW49 66-8VX40		1	1 unit	131	0.300

¹⁾ 3RW44 6. mounting on output side.²⁾ For mounting on front side.

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

More information

Application examples for normal starting (Class 10)

Normal starting Class 10 (up to 20 s with 350 % $I_{n \text{ motor}}$).

The soft starter rating can be selected to be as high as the rating of the motor used

Application	Conveyor belt	Roller conveyor	Compressor	Small fans ¹⁾	Pump	Hydraulic pump
Starting parameters						
• Voltage ramp and current limiting						
- Starting voltage	%	70	60	50	30	30
- Starting time	s	10	10	10	10	10
- Current limit value		Deactivated	Deactivated	$4 \times I_M$	$4 \times I_M$	Deactivated
• Torque ramp						
- Starting torque		60	50	40	20	10
- End torque		150	150	150	150	150
- Starting time		10	10	10	10	10
• Breakaway pulse						
		Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)	Deactivated (0 ms)
Ramp-down mode		Smooth ramp-down	Smooth ramp-down	Free ramp-down	Free ramp-down	Pump ramp-down
				Free ramp-down		Free ramp-down

Application examples for heavy starting (Class 20)

Heavy starting Class 20 (up to 40 s with 350 % $I_{n \text{ motor}}$).

The soft starter has to be selected one performance class higher than the motor used

Application	Stirrer	Centrifuge	Milling machine
Starting parameters			
• Voltage ramp and current limiting			
- Starting voltage	%	30	30
- Starting time	s	30	30
- Current limit value		$4 \times I_M$	$4 \times I_M$
• Torque ramp			
- Starting torque		30	30
- End torque		150	150
- Starting time		30	30
• Breakaway pulse			
		Deactivated (0 ms)	Deactivated (0 ms)
Ramp-down mode		Free ramp-down	Free ramp-down or DC braking

Application examples for very heavy starting (Class 30)

Very heavy starting Class 30 (up to 60 s with 350 % $I_{n \text{ motor}}$).

The soft starter has to be selected two performance classes higher than the motor used

Application	Large fans ²⁾	Mill	Breakers	Circular saw/bandsaw
Starting parameters				
• Voltage ramp and current limiting				
- Starting voltage	%	30	50	30
- Starting time	s	60	60	60
- Current limit value		$4 \times I_M$	$4 \times I_M$	$4 \times I_M$
• Torque ramp				
- Starting torque		20	50	20
- End torque		150	150	150
- Starting time		60	60	60
• Breakaway pulse				
		Deactivated (0 ms)	80 %; 300 ms	Deactivated (0 ms)
Ramp-down mode		Free ramp-down	Free ramp-down	Free ramp-down

¹⁾ The mass inertia of the fan is < 10 times the mass inertia of the motor

²⁾ The mass inertia of the fan is ≥ 10 times the mass inertia of the motor

Note:

These tables present sample set values and device sizes. They are intended only for the purposes of information and are not binding. The set values depend on the application in question and must be optimized during commissioning.

The soft starter dimensions should be checked where necessary with the Win-Soft Starter software or with the help of Technical Assistance.

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

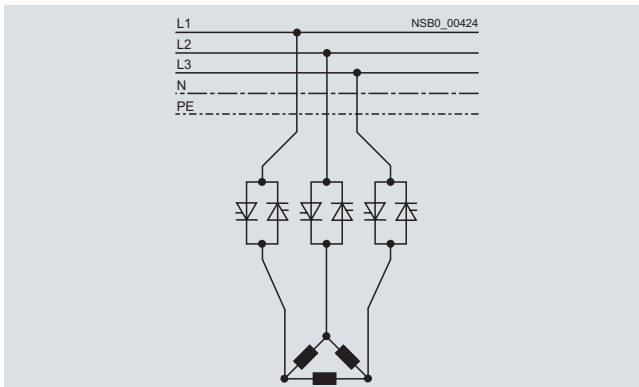
3RW44

Circuit concept

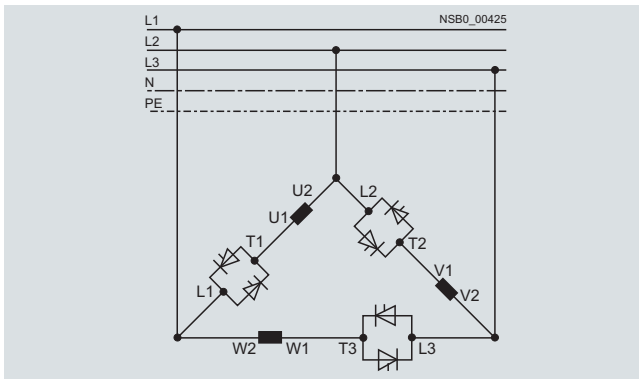
The SIRIUS 3RW44 soft starters can be operated in two different types of circuit.

- **Inline circuit**
The controls for isolating and protecting the motor are simply connected in series with the soft starter. The motor is connected to the soft starter with three cables.
- **Inside-delta circuit**
The wiring is similar to that of wye-delta starters. The phases of the soft starter are connected in series with the individual motor windings. The soft starter then only has to carry the phase current, amounting to about 58 % of the rated motor current (conductor current).

Comparison of the types of circuit



Inline circuit:
Rated current I_e corresponds to the rated motor current I_n ,
3 cables to the motor



Inside-delta circuit:
Rated current I_e corresponds to approx. 58 % of the rated motor current I_n ,
6 cables to the motor (as with wye-delta starters)

Which circuit?

Using the inline circuit involves the lowest wiring outlay. If the soft starter to motor connections are long, this circuit is preferable. With the inside-delta circuit there is double the wiring complexity but a smaller size of device can be used at the same rating.

Thanks to the choice of operating mode between the inline circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the inline circuit.

Configuration

The 3RW44 solid-state soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger device must be selected.

For long starting times it is recommended to have a PTC sensor in the motor. This also applies for the ramp-down modes smooth ramp-down, pump ramp-down and DC braking, because during the ramp-down time in these modes, an additional current loading applies in contrast to free ramp-down.

No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e. g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct starting, following the local short-circuit conditions. Fuses, controls and overload relays must be ordered separately.

A bypass contact system and solid-state overload relay are already integrated in the 3RW44 soft starter and therefore do not have to be ordered separately.

The harmonic component load for starting currents must be taken into consideration for the selection of motor starter protectors (selection of release).

Note:

When induction motors are switched on, voltage drops occur as a rule on starters of all types (direct starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

Device interface, PROFIBUS DP communication module, Soft Starter ES parameterizing and operating software

The 3RW44 electronic soft starters have a PC interface for communicating with the Soft Starter ES software or for connecting the external display and operator module. If the optional PROFIBUS communication module is used, the 3RW44 soft starter can be integrated in the PROFIBUS network and communicate using the GSD file or Soft Starter ES Premium software.

SIRIUS 3RW Soft Starters

3RW44 Soft Starters for High-Feature Applications

3RW44

Manual for SIRIUS 3RW44

Besides containing all important information on configuring, commissioning and servicing, the manual also contains example circuits and the technical specifications for all devices.

Win-Soft Starter selection and simulation program

With this software, you can simulate and select all Siemens soft starters, taking into account various parameters such as mains properties, motor and load data, and special application requirements.

The software is a valuable tool, which makes complicated, lengthy manual calculations for determining the required soft starters superfluous.

The Win-Soft Starter selection and simulation program can be downloaded from:

www.siemens.com/softstarter > Software

You can find more information about soft starters on the Internet likewise at:

www.siemens.com/softstarter

Training course for SIRIUS soft starters (SD-SIRIUSO)

Siemens offers a 2-day training course on the SIRIUS solid-state soft starters to keep customers and own personnel up-to-date on configuring, commissioning and maintenance issues.

Please direct enquiries and applications to:

Training Center for Automation and Industrial Solution
Gleiwitzer Strasse 555
D-90475 Nürnberg
Telephone: +49 911 895 3202
Telefax: +49 911 895 3275
E-mail: ingeborg.hoier@siemens.com
www.siemens.com/sitrain-cd

Overview

Type	Solid-State Relays			Solid-State Contactors		Function modules					
	Single-phase		Three-phase	Single-phase	Three-phase	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
	22.5 mm	45 mm	45 mm				Basic	Extended			
Usage											
Simple use of existing solid-state relays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--	--	--
Complete unit "Ready to use"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--	--	--
Space-saving	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--
Can be extended with modular function modules	<input checked="" type="checkbox"/>	--	1)	<input checked="" type="checkbox"/>	1)	--	--	--	--	--	--
Frequent switching and monitoring of loads and solid-state relays/solid-state contactors	--	--	--	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring of up to 6 partial loads	--	--	--	--	--	--	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--
Monitoring of more than 6 partial loads	--	--	--	--	--	--	--	<input checked="" type="checkbox"/>	--	--	--
Control of the heating power through an analog input	--	--	--	--	--	<input checked="" type="checkbox"/>	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Power control	--	--	--	--	--	--	--	--	--	--	<input checked="" type="checkbox"/>
Startup											
Easy setting of set-point values with "Teach" button	--	--	--	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
"Remote Teach" input for setting set-points	--	--	--	--	--	--	--	--	<input checked="" type="checkbox"/>	--	--
Mounting											
Mounting onto mounting rails or mounting plates	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--	--	--
Can be snapped directly onto a solid-state relay or contactor	--	--	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
For use with "Cool-plate" heat sink	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--	--	--	--	--
Wiring											
Connection of load circuit as for controlgear	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Connection of load circuit from above	--	<input checked="" type="checkbox"/>	--	--	--	--	--	--	--	--	--

✓ Function is available

☐ Function is possible

-- Function not available.

1) The converter can also be used with three-phase devices.

Benefits

Characteristics

- Considerable space savings thanks to a width of only 22.5 mm
- Variety of connection methods: Screw terminal, spring-type connection or ring terminal lug, there is no problem – they are all finger-safe
- Flexible for all applications with function modules for retrofitting
- Possibility of fuseless short-circuit proof design

Advantages

- Saves time and costs with fast mounting and commissioning, short start-up times and easy wiring
- Extremely long life, low maintenance, rugged and reliable
- Space-saving and safe thanks to side-by-side mounting up to an ambient temperature of +60 °C
- Modular design: Standardized function modules and heat sinks can be used in conjunction with solid-state relays to satisfy individual requirements
- Safety due to lifelong, vibration-resistant and shock-resistant spring-type terminal connection method even under tough conditions

Solid-State Switching Devices for Resistive Loads

General data

Application

Applications

Example: Plastics processing industry

Thanks to their high switching endurance, SIRIUS solid-state switching devices are ideally suited for use in the control of electrical heat. This is because the more precise the temperature regulation process has to be, the higher the switching frequency. The accurate regulation of electrical heat is used for example in many processes in the plastics processing industry:

- Band heaters heat the extrudate to the correct temperature in plastic extruders
- Heat emitters heat plastic blanks to the correct temperature
- Heat drums dry plastic granules
- Heating channels keep molds at the correct temperature in order to manufacture different plastic parts without defects

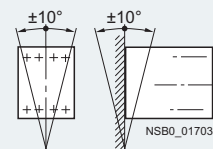
The powerful SIRIUS solid-state relays and contactors can be used to control several heating loads at the same time. By using a load monitoring module the individual partial loads can easily be monitored, and in the event of a failure a signal is generated to be sent to the controller.

Use in fuseless load feeders

Short-circuit protection and line protection with miniature circuit breakers is easy to achieve with SIRIUS solid-state relays and solid-state contactors in comparison with designing load feeders with fuses. A special version of the solid-state contactors can be protected against damage in the case of a short-circuit with a miniature circuit breaker with type B tripping characteristic. This allows the low-cost and simple design of fuseless load feeders with full protection of the switchgear.

More information

Specification

Type	3RF20, 3RF21, 3RF23 ...-A..., -B..., -D...	3RF23 ...-C...	3RF22, 3RF24
General data			
Ambient temperature			
• During operation, derating from 40 °C	°C	-25 ... + 60	
• During storage	°C	-55 ... + 80	
Installation altitude			
	m	0 ... 1000; derating from 1000 ¹⁾	
Shock resistance			
acc. to IEC 60068-2-27	g/ms	15/11	
Vibration resistance			
acc. to IEC 60068-2-6	g	2	
Degree of protection			
		IP20	
Insulation strength at 50/60 Hz			
(main/control circuit to floor)	V rms	4000	
Electromagnetic compatibility (EMC)			
• Emitted interference			
- Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications	Class A for industrial applications Class B for residential applications ²⁾
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3		Class A for industrial applications	Class A for industrial applications Class A for industrial applications
• Interference immunity			
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge: 4; Air discharge: 8; Behavior criterion 2	
- induced RF fields acc. to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBμV; behavior criterion 1	
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 1	
- Surge acc. to IEC 61000-4-5	kV	Conductor - Ground: 2; Conductor - Conductor: 1; Behavior criterion 2	
Permissible mounting positions			
			

¹⁾ Please contact Technical Assistance.

²⁾ "Low Noise" version for residential, business and commercial applications up to 16 A, AC-51.

³⁾ These products were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures.

Notes on integration in the load feeders

The SIRIUS solid-state switching devices are very easy to integrate into the load feeders thanks to their industrial connection method and design.

Particular attention must however be paid to the circumstances of the installation and ambient conditions, as the performance of the solid-state switching devices is largely dependent on these. Depending on the version, certain restrictions must be observed. Detailed information, for example in relation to solid-state contactors about the minimum spacing and to solid-state relays about the choice of heat sink, is given in the technical specifications ([see manual](#)) and the product data sheets.

For applications with a very large power requirement it is possible to use SIVOLT AC power controller. [More information on the product range can be found in the Catalog DA 68 or in our Mall.](#)

support.automation.siemens.com/WW/view/de/10862346

See ID: 10752358

Short-circuit and overload protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short-circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor protection fuses. These fuses also provide protection against destruction in the event of a short-circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly. The technical specifications and the product data sheets contain details both about the solid-state fuse protection itself and about use of the devices with conventional protection equipment.

Electromagnetic compatibility (EMC)

The solid-state switching devices are suitable for interference-free operation in industrial networks without further measures. If they are used in public networks, it may be necessary for conducted interference to be reduced by means of filters.

This does not include the solid-state contactors for resistive loads of the special type 3RF23...CA.. "Low Noise". These comply with the class B limit values up to a rated current of 16 A. If other versions are used, and at currents of over 16 A, standard filters can be used in order to comply with the limit values. The decisive factors when it comes to selecting the filters are essentially the current loading and the other parameters (operational voltage, design type, etc.) in the load feeder.

Suitable filters can be ordered from EPCOS AG. You can find more information on the Internet at:

www.epcos.com

Solid-State Switching Devices for Resistive Loads

Solid-State Relays

General data

Overview

Solid-State Relays

SIRIUS solid-state relays are suitable for surface mounting on existing cooling surfaces. Mounting is quick and easy, involving just two screws. The special technology of the power semiconductor ensures there is excellent thermal contact with the heat sink. Depending on the nature of the heat sink, the capacity reaches up to 88 A on resistive loads.

The solid-state relays are available in three different versions:

- 3RF21 single-phase solid-state relay with a width of 22.5 mm
- 3RF20 single-phase solid-state relay with a width of 45 mm
- 3RF22 three-phase solid-state relay with a width of 45 mm

The 3RF21 and 3RF22 solid-state relays can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads, "zero-point switching"

This standard version is often used for switching space heaters on and off.

Version for inductive loads, "instantaneous switching"

In this version the solid-state relay is specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "Low noise" version

Thanks to a special control circuit, this special version can be used in public networks up to 16 A without any additional measures, such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to EN 60947-4-3.

Single-phase solid-state relays with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which stays the same even at currents of up to 88 A, the 3RF21 solid-state relay offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

Single-phase solid-state relays with a width of 45 mm

The solid-state relays with a width of 45 mm provide for connection of the power supply lead and the load from above. This makes it easy to replace existing solid-state relays in existing arrangements. The connection of the control cable also saves space in much the same way as the 22.5 mm design, as it is simply plugged on.

Three-phase solid-state relays with a width of 45 mm

With its compact design and a width of just 45 mm, which stays the same even at currents of up to 55 A, the 3RF22 solid-state relay offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

The three-phase solid-state relays are available with

- two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- three-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched).

Selection notes

When selecting solid-state relays, in addition to information about the network, the load and the ambient conditions it is also necessary to know details of the planned design. The solid-state relays can only conform to their specific technical specifications if they are mounted with appropriate care on an adequately dimensioned heat sink.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select the relay design and choose a solid-state relay with higher rated current than the load
- Determine the thermal resistance of the proposed heat sink
- Check the correct relay size with the aid of the diagrams

You can find more information on the Internet at:


www.siemens.com/solid-state-switching-devices

Solid-State Switching Devices for Resistive Loads

Solid-State Relays

SIRIUS 3RF21 solid-state relays,
single-phase, 22.5 mm

Selection and ordering data

Type current ¹⁾	Rated control supply voltage U_s	DT	Screw terminals ²⁾	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.		Price per PU			kg
Zero-point switching Rated operational voltage U_e 24 ... 230 V								
	20	24 DC	A	3RF21 20-1AA02		1	1 unit	101 0.075
	30	acc. to EN 61131-2	A	3RF21 30-1AA02		1	1 unit	101 0.075
	50		A	3RF21 50-1AA02		1	1 unit	101 0.075
	70		A	3RF21 70-1AA02		1	1 unit	101 0.075
	90		A	3RF21 90-1AA02		1	1 unit	101 0.075
	20	110 ... 230 AC	A	3RF21 20-1AA22		1	1 unit	101 0.075
	30		A	3RF21 30-1AA22		1	1 unit	101 0.075
	50		A	3RF21 50-1AA22		1	1 unit	101 0.075
	70		A	3RF21 70-1AA22		1	1 unit	101 0.075
	90		B	3RF21 90-1AA22		1	1 unit	101 0.075
20	4 ... 30 DC	B	3RF21 20-1AA42		1	1 unit	101 0.075	
30		B	3RF21 30-1AA42		1	1 unit	101 0.075	
Zero-point switching Rated operational voltage U_e 48 ... 460 V								
20	24 DC	A	3RF21 20-1AA04		1	1 unit	101 0.075	
30	acc. to EN 61131-2	A	3RF21 30-1AA04		1	1 unit	101 0.075	
50		A	3RF21 50-1AA04		1	1 unit	101 0.075	
70		A	3RF21 70-1AA04		1	1 unit	101 0.075	
90		A	3RF21 90-1AA04		1	1 unit	101 0.075	
20	110 ... 230 AC	A	3RF21 20-1AA24		1	1 unit	101 0.075	
30		A	3RF21 30-1AA24		1	1 unit	101 0.075	
50		A	3RF21 50-1AA24		1	1 unit	101 0.075	
70		A	3RF21 70-1AA24		1	1 unit	101 0.075	
90		A	3RF21 90-1AA24		1	1 unit	101 0.075	
Zero-point switching Rated operational voltage U_e 48 ... 600 V								
70	24 DC Low Power	B	3RF21 70-1AA05-0KN0		1	1 unit	101 0.075	
20	4 ... 30 DC	B	3RF21 20-1AA45		1	1 unit	101 0.075	
30		B	3RF21 30-1AA45		1	1 unit	101 0.075	
50		B	3RF21 50-1AA45		1	1 unit	101 0.075	
70		B	3RF21 70-1AA45		1	1 unit	101 0.075	
90		B	3RF21 90-1AA45		1	1 unit	101 0.075	
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V								
30	24 DC	A	3RF21 30-1AA06		1	1 unit	101 0.075	
50	acc. to EN 61131-2	A	3RF21 50-1AA06		1	1 unit	101 0.075	
70		B	3RF21 70-1AA06		1	1 unit	101 0.075	
90		B	3RF21 90-1AA06		1	1 unit	101 0.075	
30	110 ... 230 AC	B	3RF21 30-1AA26		1	1 unit	101 0.075	
50		B	3RF21 50-1AA26		1	1 unit	101 0.075	
70		B	3RF21 70-1AA26		1	1 unit	101 0.075	
90		B	3RF21 90-1AA26		1	1 unit	101 0.075	
Instantaneous switching Rated operational voltage U_e 24 ... 230 V								
50	110 ... 230 AC	A	3RF21 50-1BA22		1	1 unit	101 0.075	
Instantaneous switching Rated operational voltage U_e 48 ... 460 V								
20	24 DC	B	3RF21 20-1BA04		1	1 unit	101 0.075	
30	acc. to EN 61131-2	B	3RF21 30-1BA04		1	1 unit	101 0.075	
50		B	3RF21 50-1BA04		1	1 unit	101 0.075	
70		A	3RF21 70-1BA04		1	1 unit	101 0.075	
90		B	3RF21 90-1BA04		1	1 unit	101 0.075	
Instantaneous switching · Blocking voltage 1600 V Rated operational voltage U_e 48 ... 600 V								
50	24 DC	B	3RF21 50-1BA06		1	1 unit	101 0.075	
70	acc. to EN 61131-2	B	3RF21 70-1CA04		1	1 unit	101 0.075	

Other rated control supply voltages on request.

¹⁾ The type current provides information about the performance capacity of the solid-state relay.
The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

²⁾ Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².



³⁾ See page 4/48.

* You can order this quantity or a multiple thereof.

Solid-State Switching Devices for Resistive Loads

Solid-State Relays

SIRIUS 3RF21 solid-state relays,
single-phase, 22.5 mm

Type current ¹⁾	Rated control supply voltage U_s	DT	Spring-type terminals ²⁾ 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg
Zero-point switching Rated operational voltage U_e 24 ... 230 V							
	20	24 DC	A	3RF21 20-2AA02	1	1 unit	101 0.075
	50	acc. to EN 61131-2	B	3RF21 50-2AA02	1	1 unit	101 0.075
	90		B	3RF21 90-2AA02	1	1 unit	101 0.075
	20	110 ... 230 AC	B	3RF21 20-2AA22	1	1 unit	101 0.075
	50		B	3RF21 50-2AA22	1	1 unit	101 0.075
	90		B	3RF21 90-2AA22	1	1 unit	101 0.075
20	4 ... 30 DC	B	3RF21 20-2AA42	1	1 unit	101 0.075	
Zero-point switching Rated operational voltage U_e 48 ... 460 V							
	20	24 DC	B	3RF21 20-2AA04	1	1 unit	101 0.075
	50	acc. to EN 61131-2	B	3RF21 50-2AA04	1	1 unit	101 0.075
	90		B	3RF21 90-2AA04	1	1 unit	101 0.075
50	24 AC/DC	B	3RF21 50-2AA14	1	1 unit	101 0.075	
	20	110 ... 230 AC	B	3RF21 20-2AA24	1	1 unit	101 0.075
	50		B	3RF21 50-2AA24	1	1 unit	101 0.075
	90		B	3RF21 90-2AA24	1	1 unit	101 0.075
Zero-point switching Rated operational voltage U_e 48 ... 600 V							
20	4 ... 30 DC	B	3RF21 20-2AA45	1	1 unit	101 0.075	
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V							
	50	24 DC	B	3RF21 50-2AA06	1	1 unit	101 0.075
	90	acc. to EN 61131-2	B	3RF21 90-2AA06	1	1 unit	101 0.075
	50	110 ... 230 AC	B	3RF21 50-2AA26	1	1 unit	101 0.075
	90		B	3RF21 90-2AA26	1	1 unit	101 0.075



Other rated control supply voltages on request.

- ¹⁾ The type current provides information about the performance capacity of the solid-state relay.
The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.
- ²⁾ Please note that the version with spring-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm². Higher currents are possible by connecting two conductors per terminal.

Solid-State Switching Devices for Resistive Loads


Solid-State Relays

SIRIUS 3RF21 solid-state relays,
single-phase, 22.5 mm

Type current ¹⁾	Rated control supply voltage U_s	DT	Ring terminal lug connection 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg
Zero-point switching Rated operational voltage U_e 24 ... 230 V							
	20	24 DC	A	3RF21 20-3AA02	1	1 unit	101 0.075
	50	acc. to EN 61131-2	B	3RF21 50-3AA02	1	1 unit	101 0.075
	90		B	3RF21 90-3AA02	1	1 unit	101 0.075
	20	110 ... 230 AC	B	3RF21 20-3AA22	1	1 unit	101 0.075
	50		B	3RF21 50-3AA22	1	1 unit	101 0.075
	90		B	3RF21 90-3AA22	1	1 unit	101 0.075
Zero-point switching Rated operational voltage U_e 48 ... 460 V							
20	24 DC	B	3RF21 20-3AA04	1	1 unit	101 0.075	
50	acc. to EN 61131-2	B	3RF21 50-3AA04	1	1 unit	101 0.075	
90		B	3RF21 90-3AA04	1	1 unit	101 0.075	
20	110 ... 230 AC	B	3RF21 20-3AA24	1	1 unit	101 0.075	
50		B	3RF21 50-3AA24	1	1 unit	101 0.075	
90		B	3RF21 90-3AA24	1	1 unit	101 0.075	
90	4 ... 30 DC	B	3RF21 90-3AA44	1	1 unit	101 0.075	
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V							
50	24 DC	B	3RF21 50-3AA06	1	1 unit	101 0.075	
90	acc. to EN 61131-2	B	3RF21 90-3AA06	1	1 unit	101 0.075	
50	110 ... 230 AC	B	3RF21 50-3AA26	1	1 unit	101 0.075	
90		B	3RF21 90-3AA26	1	1 unit	101 0.075	

Other rated control supply voltages on request.

¹⁾ The type current provides information about the performance capacity of the solid-state relay.
The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg
Optional accessories							
	Screwdrivers for opening spring-type terminals	C	8WA2 880	1	1 unit	041	0.034
	Terminal covers for 3RF21 solid-state relays and 3RF23 solid-state contactors in ring terminal lug connection (After simple adaptation, this terminal cover can also be used for screw connection).	A	3RF29 00-3PA88	1	10 units	101	0.004


3RF29 00-3PA88


Solid-State Switching Devices for Resistive Loads


Solid-State Relays


SIRIUS 3RF20 solid-state relays,
single-phase, 45 mm


Selection and ordering data


Type current ¹⁾	Rated control supply voltage U_s	DT	Screw terminals ²⁾	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg
Zero-point switching Rated operational voltage U_e 24 ... 230 V							
	20	24 DC	A	3RF20 20-1AA02	1	1 unit	101 0.085
	30	24 DC acc. to EN 61131-2	A	3RF20 30-1AA02	1	1 unit	101 0.085
	50		A	3RF20 50-1AA02	1	1 unit	101 0.085
	70		A	3RF20 70-1AA02	1	1 unit	101 0.085
	90		A	3RF20 90-1AA02	1	1 unit	101 0.085
3RF20 20-1AA02	20	110 ... 230 AC	A	3RF20 20-1AA22	1	1 unit	101 0.085
	30		A	3RF20 30-1AA22	1	1 unit	101 0.085
	50		A	3RF20 50-1AA22	1	1 unit	101 0.085
	70		A	3RF20 70-1AA22	1	1 unit	101 0.085
	90		A	3RF20 90-1AA22	1	1 unit	101 0.085
3RF20 20-1AA02	20	4 ... 30 DC	B	3RF20 20-1AA42	1	1 unit	101 0.085
	30		B	3RF20 30-1AA42	1	1 unit	101 0.085

Zero-point switching Rated operational voltage U_e 48 ... 460 V							
	20	24 DC	A	3RF20 20-1AA04	1	1 unit	101 0.085
	30	24 DC acc. to EN 61131-2	A	3RF20 30-1AA04	1	1 unit	101 0.085
	50		A	3RF20 50-1AA04	1	1 unit	101 0.085
	70		A	3RF20 70-1AA04	1	1 unit	101 0.085
	90		A	3RF20 90-1AA04	1	1 unit	101 0.085
3RF20 20-1AA02	20	110 ... 230 AC	A	3RF20 20-1AA24	1	1 unit	101 0.085
	30		A	3RF20 30-1AA24	1	1 unit	101 0.085
	50		A	3RF20 50-1AA24	1	1 unit	101 0.085
	70		A	3RF20 70-1AA24	1	1 unit	101 0.085
	90		A	3RF20 90-1AA24	1	1 unit	101 0.085
50	4 ... 30 DC	A	3RF20 50-1AA44	1	1 unit	101 0.085	

Zero-point switching Rated operational voltage U_e 48 ... 600 V							
	20	4 ... 30 DC	B	3RF20 20-1AA45	1	1 unit	101 0.085
	50		B	3RF20 50-1AA45	1	1 unit	101 0.085
	70		B	3RF20 70-1AA45	1	1 unit	101 0.085
	90		B	3RF20 90-1AA45	1	1 unit	101 0.085

Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V							
	30	24 DC	B	3RF20 30-1AA06	1	1 unit	101 0.085
	50	24 DC acc. to EN 61131-2	B	3RF20 50-1AA06	1	1 unit	101 0.085
	70		B	3RF20 70-1AA06	1	1 unit	101 0.085
	90		B	3RF20 90-1AA06	1	1 unit	101 0.085
3RF20 20-1AA02	30	110 ... 230 AC	B	3RF20 30-1AA26	1	1 unit	101 0.085
	50		B	3RF20 50-1AA26	1	1 unit	101 0.085
	70		B	3RF20 70-1AA26	1	1 unit	101 0.085
	90		B	3RF20 90-1AA26	1	1 unit	101 0.085

Instantaneous switching Rated operational voltage U_e 48 ... 460 V							
	30	24 DC acc. to EN 61131-2	B	3RF20 30-1BA04	1	1 unit	101 0.085

Type current ¹⁾	Rated control supply voltage U_s	DT	Screw terminals + spring-type terminals (control current side)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg
Zero-point switching Rated operational voltage U_e 24 ... 230 V							
	50	24 DC acc. to EN 61131-2	A	3RF20 50-4AA02	1	1 unit	101 0.085

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

²⁾ Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².

Solid-State Switching Devices for Resistive Loads

Solid-State Relays

SIRIUS 3RF22 solid-state relays,
three-phase, 45 mm

Selection and ordering data

Type current ¹⁾	Rated control supply voltage U_s	DT	Screw terminals ²⁾	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg

Zero-point switching
Rated operational voltage U_e 48 ... 600 V

3RF22 30-1AB45

Two-phase controlled

30	110 AC	B	3RF22 30-1AB35	1	1 unit	101	0.150
55		B	3RF22 55-1AB35	1	1 unit	101	0.150
30	4 ... 30 DC	B	3RF22 30-1AB45	1	1 unit	101	0.150
55		B	3RF22 55-1AB45	1	1 unit	101	0.150

Three-phase controlled

30	110 AC	B	3RF22 30-1AC35	1	1 unit	101	0.150
55		B	3RF22 55-1AC35	1	1 unit	101	0.150
30	4 ... 30 DC	A	3RF22 30-1AC45	1	1 unit	101	0.150
55		B	3RF22 55-1AC45	1	1 unit	101	0.150

Type current ¹⁾	Rated control supply voltage U_s	DT	Spring-type terminals ³⁾	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg

Zero-point switching
Rated operational voltage U_e 48 ... 600 V

3RF22 30-2AB45

Two-phase controlled

30	4 ... 30 DC	B	3RF22 30-2AB45	1	1 unit	101	0.150
55		B	3RF22 55-2AB45	1	1 unit	101	0.150

Three-phase controlled

30	4 ... 30 DC	B	3RF22 30-2AC45	1	1 unit	101	0.150
55		B	3RF22 55-2AC45	1	1 unit	101	0.150

Type current ¹⁾	Rated control supply voltage U_s	DT	Ring terminal lug connection	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg

Zero-point switching
Rated operational voltage U_e 48 ... 600 V

3RF22 30-3AB45

Two-phase controlled

30	4 ... 30 DC	B	3RF22 30-3AB45	1	1 unit	101	0.150
55		B	3RF22 55-3AB45	1	1 unit	101	0.150

Three-phase controlled

30	4 ... 30 DC	B	3RF22 30-3AC45	1	1 unit	101	0.150
55		B	3RF22 55-3AC45	1	1 unit	101	0.150

1) The type current provides information about the performance capacity of the solid-state relay.

The actual permitted rated operational current I_o can be smaller depending on the connection method and cooling conditions.

2) Please note that the version with an M4 screw connection can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².

3) Please note that the version with spring-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm². Higher currents are possible by connecting two conductors per terminal.

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

General data

Overview

Solid-State Contactors

The complete units consist of a solid-state relay plus optimized heat sink, and are therefore ready to use. They offer defined rated currents to make selection as easy as possible. Depending on the version, current strengths of up to 88 A are achieved. Like all of our solid-state switching devices, one of their particular advantages is their compact and space-saving design.

With their insulated mounting foot they can easily be snapped onto a standard mounting rail, or they can be mounted on support plates with fixing screws. This insulation enables them to be used in circuits with protective extra-low voltage (PELV) or safety extra-low voltage (SELV) in building management systems. For other applications, such as for extended personal safety, the heat sink can be grounded through a screw terminal.

The solid-state contactors are available in 2 different versions:

- 3RF23 single-phase solid-state contactors,
- 3RF24 three-phase solid-state contactors

Single-phase versions

The 3RF23 solid-state contactors can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads, "zero-point switching"

This standard version is often used for switching space heaters on and off.

Version for inductive loads, "instantaneous switching"

In this version the solid-state contactor is specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "Low noise" version

Thanks to a special control circuit, this special version can be used in public networks up to 16 A without any additional measures, such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to EN 60947-4-3.

Special "Short-circuit proof" version

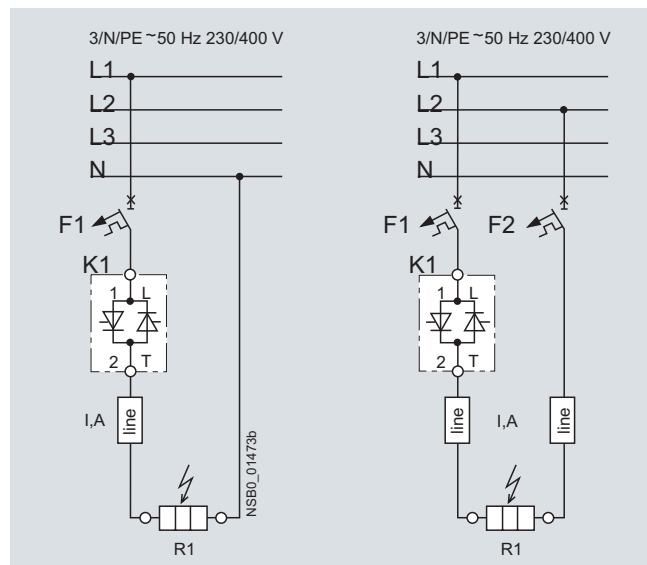
Skillful matching of the power semiconductor with the performance capacity of the solid-state contactor means that "short-circuit strength" can be achieved with a standard miniature circuit breaker. In combination with a B-type MCB or a conventional line protection fuse, the result is a short-circuit proof feeder.

In order to achieve problem-free short-circuit protection by means of miniature circuit breakers, however, certain boundary conditions must be observed. As the magnitude and duration of the short-circuit current are determined not only by the short-circuit breaking response of the miniature circuit breaker but also the properties of the wiring system, such as the internal resistance of the input to the network and damping by controls and cables, particular attention must also be paid to these parameters. The necessary cable lengths are therefore shown for the main factor, the line resistance, in the table below.

The following miniature circuit breakers with a B characteristic and 10 kA or 6 kA breaking capacity protect the 3RF23...DA.. solid-state contactors in the event of short-circuits on the load and the specified conductor cross-sections and lengths:

Rated current of the miniature circuit breaker	Example of type ¹⁾	Max. conductor cross-section	Minimum cable length from contactor to load
6 A	5SY4 106-6, 5SX2 106-6	1 mm ²	5 m
10 A	5SY4 110-6, 5SX2 110-6	1.5 mm ²	8 m
16 A	5SY4 116-6, 5SX2 116-6	1.5 mm ²	12 m
16 A	5SY4 116-6, 5SX2 116-6	2.5 mm ²	20 m
20 A	5SY4 120-6, 5SX2 120-6	2.5 mm ²	20 m
25 A	5SY4 125-6, 5SX2 125-6	2.5 mm ²	26 m

¹⁾ The miniature circuit breakers can be used up to a maximum rated voltage of 480 V!



The setup and installation above can also be used for the solid-state relays with a I^2t value of at least 6600 A²s.

Three-phase versions

The three-phase solid-state contactors for resistive loads up to 50 A are available with

- two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- three-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched).

The converter function module can be snapped onto both versions for the simple power control of AC loads by means of analog signals.

- Check the correct contactor size with the aid of the rated current diagram, taking account of the installation conditions

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase




Selection and ordering data

Selection notes

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions. As the solid-state contactors are already equipped with an optimally matched heat sink, the selection process is considerably simpler than that for solid-state relays.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load

	Type current ¹⁾ I_{max}	Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	A	V		Order No.					Price per PU
Zero-point switching									
Rated operational voltage U_e 24 ... 230 V									
 3RF23 10-1	10.5	24 DC	A	3RF23 10-1AA02	1	1 unit	101	0.165	
	20	acc. to EN 61131-2	A	3RF23 20-1AA02	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA02	1	1 unit	101	0.400	
	40		A	3RF23 40-1AA02	1	1 unit	101	0.550	
	50		A	3RF23 50-1AA02	1	1 unit	101	0.550	
	20	24 DC Low Power	A	3RF23 20-1AA02-0KN0	1	1 unit	101	0.240	
	10.5	24 AC/DC	A	3RF23 10-1AA12	1	1 unit	101	0.165	
	10.5	110 ... 230 AC	A	3RF23 10-1AA22	1	1 unit	101	0.165	
	20		A	3RF23 20-1AA22	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA22	1	1 unit	101	0.400	
	40		A	3RF23 40-1AA22	1	1 unit	101	0.550	
	50		A	3RF23 50-1AA22	1	1 unit	101	0.550	
	Zero-point switching								
	Rated operational voltage U_e 48 ... 460 V								
 3RF23 20-1	10.5	24 DC	A	3RF23 10-1AA04	1	1 unit	101	0.165	
	20	acc. to EN 61131-2	A	3RF23 20-1AA04	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA04	1	1 unit	101	0.400	
	40		A	3RF23 40-1AA04	1	1 unit	101	0.550	
	50		A	3RF23 50-1AA04	1	1 unit	101	0.550	
	10.5	24 DC Low Power	A	3RF23 10-1AA04-0KN0	1	1 unit	101	0.165	
	10.5	24 AC/DC	A	3RF23 10-1AA14	1	1 unit	101	0.165	
	20		B	3RF23 20-1AA14	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA14	1	1 unit	101	0.400	
	40		B	3RF23 40-1AA14	1	1 unit	101	0.550	
	50		B	3RF23 50-1AA14	1	1 unit	101	0.550	
	10.5	110 ... 230 AC	A	3RF23 10-1AA24	1	1 unit	101	0.165	
	20		A	3RF23 20-1AA24	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA24	1	1 unit	101	0.400	
	40		A	3RF23 40-1AA24	1	1 unit	101	0.550	
	50		A	3RF23 50-1AA24	1	1 unit	101	0.550	
	10.5	4 ... 30 DC	B	3RF23 10-1AA44	1	1 unit	101	0.165	
	20		A	3RF23 20-1AA44	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA44	1	1 unit	101	0.400	
	Zero-point switching								
Rated operational voltage U_e 48 ... 600 V									
	30	110 ... 230 AC	B	3RF23 30-1AA25	1	1 unit	101	0.400	
	10.5	4 ... 30 DC	B	3RF23 10-1AA45	1	1 unit	101	0.165	
	20		A	3RF23 20-1AA45	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA45	1	1 unit	101	0.400	
	40		A	3RF23 40-1AA45	1	1 unit	101	0.550	
	50		A	3RF23 50-1AA45	1	1 unit	101	0.550	
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V									
 3RF23 40-1	10.5	24 DC	B	3RF23 10-1AA06	1	1 unit	101	0.165	
	20	acc. to EN 61131-2	A	3RF23 20-1AA06	1	1 unit	101	0.240	
	30		A	3RF23 30-1AA06	1	1 unit	101	0.400	
	40		B	3RF23 40-1AA06	1	1 unit	101	0.550	
	50		B	3RF23 50-1AA06	1	1 unit	101	0.550	
	10.5	110 ... 230 AC	B	3RF23 10-1AA26	1	1 unit	101	0.165	
	20		B	3RF23 20-1AA26	1	1 unit	101	0.240	
	30		B	3RF23 30-1AA26	1	1 unit	101	0.400	
	40		B	3RF23 40-1AA26	1	1 unit	101	0.550	
	50		B	3RF23 50-1AA26	1	1 unit	101	0.550	



Other rated control supply voltages on request.

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type current ¹⁾ I_{max}	Operational current $I_e/AC-15^2)$	Rated control supply voltage U_s	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
										Order No.
A	A	V								
Instantaneous switching										
Rated operational voltage U_e 24 ... 230 V										
	10.5	6	24 DC	A	3RF23 10-1BA02	1	1 unit	101	0.165	
	20	12	acc. to EN 61131-2	A	3RF23 20-1BA02	1	1 unit	101	0.240	
	30	15		B	3RF23 30-1BA02	1	1 unit	101	0.400	
	40	20		B	3RF23 40-1BA02	1	1 unit	101	0.550	
	50	25		B	3RF23 50-1BA02	1	1 unit	101	0.550	
	50	27.5		B	3RF23 70-1BA02	1	1 unit	101	1.200	
	50	30		B	3RF23 90-1BA02	1	1 unit	101	2.900	
	10.5	6	110 ... 230 AC	B	3RF23 10-1BA22	1	1 unit	101	0.165	
	20	12		B	3RF23 20-1BA22	1	1 unit	101	0.240	
	30	15		B	3RF23 30-1BA22	1	1 unit	101	0.400	
	40	20		B	3RF23 40-1BA22	1	1 unit	101	0.550	
	50	25		B	3RF23 50-1BA22	1	1 unit	101	0.550	
	50	27.5		B	3RF23 70-1BA22	1	1 unit	101	1.200	
	50	30		B	3RF23 90-1BA22	1	1 unit	101	2.900	
Instantaneous switching										
Rated operational voltage U_e 48 ... 460 V										
	10.5	6	24 DC	A	3RF23 10-1BA04	1	1 unit	101	0.165	
	20	12	acc. to EN 61131-2	A	3RF23 20-1BA04	1	1 unit	101	0.240	
	30	15		A	3RF23 30-1BA04	1	1 unit	101	0.400	
	40	20		B	3RF23 40-1BA04	1	1 unit	101	0.550	
	50	25		B	3RF23 50-1BA04	1	1 unit	101	0.550	
	50	27.5		B	3RF23 70-1BA04	1	1 unit	101	1.200	
	50	30		B	3RF23 90-1BA04	1	1 unit	101	2.900	
	10.5	6	110 ... 230 AC	B	3RF23 10-1BA24	1	1 unit	101	0.165	
	20	12		B	3RF23 20-1BA24	1	1 unit	101	0.240	
	30	15		B	3RF23 30-1BA24	1	1 unit	101	0.400	
	40	20		B	3RF23 40-1BA24	1	1 unit	101	0.550	
	50	25		B	3RF23 50-1BA24	1	1 unit	101	0.550	
	50	27.5		B	3RF23 70-1BA24	1	1 unit	101	1.200	
	50	30		B	3RF23 90-1BA24	1	1 unit	101	2.900	
	20	12	4 ... 30 DC	B	3RF23 20-1BA44	1	1 unit	101	0.240	
	30	15		B	3RF23 30-1BA44	1	1 unit	101	0.400	
	50	25		B	3RF23 50-1BA44	1	1 unit	101	0.550	
	Instantaneous switching · Blocking voltage 1600 V									
	Rated operational voltage U_e 48 ... 600 V									
		10.5	6	24 DC	B	3RF23 10-1BA06	1	1 unit	101	0.165
		20	12	acc. to EN 61131-2	A	3RF23 20-1BA06	1	1 unit	101	0.240
		30	15		B	3RF23 30-1BA06	1	1 unit	101	0.400
40		20		B	3RF23 40-1BA06	1	1 unit	101	0.550	
50		25		B	3RF23 50-1BA06	1	1 unit	101	0.550	
50		27.5		B	3RF23 70-1BA06	1	1 unit	101	1.200	
50		30		B	3RF23 90-1BA06	1	1 unit	101	2.900	
10.5		6	110 ... 230 AC	B	3RF23 10-1BA26	1	1 unit	101	0.165	
20		12		B	3RF23 20-1BA26	1	1 unit	101	0.240	
30		15		B	3RF23 30-1BA26	1	1 unit	101	0.400	
40		20		B	3RF23 40-1BA26	1	1 unit	101	0.550	
50		25		B	3RF23 50-1BA26	1	1 unit	101	0.550	
50		27.5		B	3RF23 70-1BA26	1	1 unit	101	1.200	
50		30		B	3RF23 90-1BA26	1	1 unit	101	2.900	

Other rated control supply voltages on request.


1) The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".

2) Utilization category AC-15:
Electromagnetic loads, e. g. valves according to EN 60947-5.
Parameters: max. 1200 1/h, 50 % ON Period, 10-times inrush current for 60 ms.

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type current ¹⁾ I_{max}	Rated control supply voltage U_s	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg
Low noise²⁾ · Zero-point switching							
Rated operational voltage U_e 24 ... 230 V							
20	24 DC	B	3RF23 20-1CA02	1	1 unit	101	0.240
30	acc. to EN 61131-2	B	3RF23 30-1CA02	1	1 unit	101	0.400
20	110 ... 230 AC	B	3RF23 20-1CA22	1	1 unit	101	0.240
Low noise²⁾ · Zero-point switching							
Rated operational voltage U_e 48 ... 460 V							
20	24 DC	B	3RF23 20-1CA04	1	1 unit	101	0.240
	acc. to EN 61131-2						
20	110 ... 230 AC	B	3RF23 20-1CA24	1	1 unit	101	0.240
20	4 ... 30 DC	A	3RF23 20-1CA44	1	1 unit	101	0.240
Short-circuit proof with B-type MCB · Zero-point switching,							
rated operational voltage U_e 24 ... 230 V							
20	24 DC	A	3RF23 20-1DA02	1	1 unit	101	0.240
	acc. to EN 61131-2						
20	110 ... 230 AC	B	3RF23 20-1DA22	1	1 unit	101	0.240
Short-circuit proof with B-type MCB · Zero-point switching,							
rated operational voltage U_e 48 ... 460 V							
20	24 DC	A	3RF23 20-1DA04	1	1 unit	101	0.240
	acc. to EN 61131-2						
20	110 ... 230 AC	B	3RF23 20-1DA24	1	1 unit	101	0.240
20	4 ... 30 DC	A	3RF23 20-1DA44	1	1 unit	101	0.240
30		A	3RF23 30-1DA44	1	1 unit	101	0.240

3RF23 20-1



Other rated control supply voltages on request.


¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".

²⁾ See page 4/54.

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type current ¹⁾ I_{max}	Rated control supply voltage U_s	DT	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V						
Zero-point switching Rated operational voltage U_e 24 ... 230 V							
10.5 20	24 DC acc. to EN 61131-2	B	3RF23 10-2AA02	1	1 unit	101	0.166
		A	3RF23 20-2AA02	1	1 unit	101	0.240
10.5 20	110 ... 230 AC	B	3RF23 10-2AA22	1	1 unit	101	0.166
		B	3RF23 20-2AA22	1	1 unit	101	0.240
Zero-point switching Rated operational voltage U_e 48 ... 460 V							
10.5 20	24 DC acc. to EN 61131-2	A	3RF23 10-2AA04	1	1 unit	101	0.166
		A	3RF23 20-2AA04	1	1 unit	101	0.240
10.5 20	110 ... 230 AC	B	3RF23 10-2AA24	1	1 unit	101	0.166
		B	3RF23 20-2AA24	1	1 unit	101	0.240
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V							
10.5 20	24 DC acc. to EN 61131-2	B	3RF23 10-2AA06	1	1 unit	101	0.166
		A	3RF23 20-2AA06	1	1 unit	101	0.240
10.5 20	110 ... 230 AC	B	3RF23 10-2AA26	1	1 unit	101	0.166
		B	3RF23 20-2AA26	1	1 unit	101	0.240
Low noise²⁾ · Zero-point switching Rated operational voltage U_e 24 ... 230 V							
20	24 DC acc. to EN 61131-2	B	3RF23 20-2CA02	1	1 unit	101	0.240
		B	3RF23 20-2CA22	1	1 unit	101	0.240
Low noise²⁾ · Zero-point switching Rated operational voltage U_e 48 ... 460 V							
20	24 DC acc. to EN 61131-2	B	3RF23 20-2CA04	1	1 unit	101	0.240
		B	3RF23 20-2CA24	1	1 unit	101	0.240
Short-circuit proof with B-type MCB · Zero-point switching, rated operational voltage U_e 24 ... 230 V							
20	110 ... 230 AC	B	3RF23 20-2DA22	1	1 unit	101	0.240
Short-circuit proof with B-type MCB · Zero-point switching, rated operational voltage U_e 48 ... 460 V							
20	110 ... 230 AC	B	3RF23 20-2DA24	1	1 unit	101	0.240

Other rated control supply voltages on request.


¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".

²⁾ See page 4/54.

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type current ¹⁾ I_{max}	Rated control supply voltage U_s	DT	Ring terminal lug connection	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
A	V		Order No.	Price per PU			kg	
Zero-point switching								
Rated operational voltage U_e 24 ... 230 V								
	10.5	24 DC	B	3RF23 10-3AA02	1	1 unit	101	0.166
	20	acc. to EN 61131-2	B	3RF23 20-3AA02	1	1 unit	101	0.200
	30		B	3RF23 30-3AA02	1	1 unit	101	0.435
	40		B	3RF23 40-3AA02	1	1 unit	101	0.550
	50		B	3RF23 50-3AA02	1	1 unit	101	0.550
	70		A	3RF23 70-3AA02	1	1 unit	101	1.200
	88		B	3RF23 90-3AA02	1	1 unit	101	2.900
	10.5	110 ... 230 AC	B	3RF23 10-3AA22	1	1 unit	101	0.166
	20		B	3RF23 20-3AA22	1	1 unit	101	0.200
	30		B	3RF23 30-3AA22	1	1 unit	101	0.435
	40		B	3RF23 40-3AA22	1	1 unit	101	0.550
	50		B	3RF23 50-3AA22	1	1 unit	101	0.550
	70		B	3RF23 70-3AA22	1	1 unit	101	1.200
	88		B	3RF23 90-3AA22	1	1 unit	101	2.900
Zero-point switching								
Rated operational voltage U_e 48 ... 460 V								
10.5	24 DC	B	3RF23 10-3AA04	1	1 unit	101	0.166	
20	acc. to EN 61131-2	B	3RF23 20-3AA04	1	1 unit	101	0.200	
30		A	3RF23 30-3AA04	1	1 unit	101	0.435	
40		B	3RF23 40-3AA04	1	1 unit	101	0.550	
50		B	3RF23 50-3AA04	1	1 unit	101	0.550	
70		A	3RF23 70-3AA04	1	1 unit	101	1.200	
88		A	3RF23 90-3AA04	1	1 unit	101	2.900	
10.5	110 ... 230 AC	B	3RF23 10-3AA24	1	1 unit	101	0.166	
20		B	3RF23 20-3AA24	1	1 unit	101	0.200	
30		B	3RF23 30-3AA24	1	1 unit	101	0.435	
40		B	3RF23 40-3AA24	1	1 unit	101	0.550	
50		B	3RF23 50-3AA24	1	1 unit	101	0.550	
70		B	3RF23 70-3AA24	1	1 unit	101	1.200	
88		B	3RF23 90-3AA24	1	1 unit	101	2.900	
20	4 ... 30 DC	B	3RF23 20-3AA44	1	1 unit	101	0.200	
30		B	3RF23 30-3AA44	1	1 unit	101	0.435	
50		B	3RF23 50-3AA44	1	1 unit	101	0.550	
Zero-point switching								
Rated operational voltage U_e 48 ... 600 V								
40	4 ... 30 DC	B	3RF23 40-3AA45	1	1 unit	101	0.550	
70		A	3RF23 70-3AA45	1	1 unit	101	1.200	
88		B	3RF23 90-3AA45	1	1 unit	101	2.900	
Zero-point switching · Blocking voltage 1600 V, rated operational voltage U_e 48 ... 600 V								
10.5	24 DC	B	3RF23 10-3AA06	1	1 unit	101	0.166	
20	acc. to EN 61131-2	B	3RF23 20-3AA06	1	1 unit	101	0.200	
30		B	3RF23 30-3AA06	1	1 unit	101	0.435	
40		B	3RF23 40-3AA06	1	1 unit	101	0.550	
50		B	3RF23 50-3AA06	1	1 unit	101	0.550	
70		B	3RF23 70-3AA06	1	1 unit	101	1.200	
88		B	3RF23 90-3AA06	1	1 unit	101	2.900	
10.5	110 ... 230 AC	B	3RF23 10-3AA26	1	1 unit	101	0.166	
20		B	3RF23 20-3AA26	1	1 unit	101	0.200	
30		B	3RF23 30-3AA26	1	1 unit	101	0.435	
40		B	3RF23 40-3AA26	1	1 unit	101	0.550	
50		B	3RF23 50-3AA26	1	1 unit	101	0.550	
70		A	3RF23 70-3AA26	1	1 unit	101	1.200	
88		B	3RF23 90-3AA26	1	1 unit	101	2.900	

Other rated control supply voltages on request.

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors


SIRIUS 3RF23 solid-state contactors, single-phase

Type current ¹⁾ I_{max}	Operational current $I_e/AC-15^2)$	Rated control supply voltage U_s	DT	Ring terminal lug connection	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	A	V		Order No.	Price per PU			kg
Instantaneous switching								
Rated operational voltage U_e 24 ... 230 V								
70	27.5	24 DC	B	3RF23 70-3BA02	1	1 unit	101	1.200
88	30	acc. to EN 61131-2	B	3RF23 90-3BA02	1	1 unit	101	2.900
70	27.5	110 ... 230 AC	B	3RF23 70-3BA22	1	1 unit	101	1.200
88	30		B	3RF23 90-3BA22	1	1 unit	101	2.900
Instantaneous switching								
Rated operational voltage U_e 48 ... 460 V								
70	27.5	24 DC	B	3RF23 70-3BA04	1	1 unit	101	1.200
88	30	acc. to EN 61131-2	B	3RF23 90-3BA04	1	1 unit	101	2.900
70	27.5	110 ... 230 AC	B	3RF23 70-3BA24	1	1 unit	101	1.200
88	30		B	3RF23 90-3BA24	1	1 unit	101	2.900
Instantaneous switching · Blocking voltage 1600 V								
Rated operational voltage U_e 48 ... 600 V								
70	27.5	24 DC	B	3RF23 70-3BA06	1	1 unit	101	1.200
88	30	acc. to EN 61131-2	B	3RF23 90-3BA06	1	1 unit	101	2.900
70	27.5	110 ... 230 AC	B	3RF23 70-3BA26	1	1 unit	101	1.200
88	30		B	3RF23 90-3BA26	1	1 unit	101	2.900
Short-circuit proof with B-type MCB · Zero-point switching, rated operational voltage U_e 24 ... 230 V								
20	--	24 DC	B	3RF23 20-3DA02	1	1 unit	101	0.200
		acc. to EN 61131-2						
20	--	110 ... 230 AC	B	3RF23 20-3DA22	1	1 unit	101	0.200
Short-circuit proof with B-type MCB · Zero-point switching, rated operational voltage U_e 48 ... 460 V								
20	--	24 DC	B	3RF23 20-3DA04	1	1 unit	101	0.200
		acc. to EN 61131-2						
20	--	110 ... 230 AC	B	3RF23 20-3DA24	1	1 unit	101	0.200

Other rated control supply voltages on request.

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".

²⁾ Utilization category AC-15: Electromagnetic loads, e. g. valves according to EN 60947-5. Parameters: max. 1200 1/h, 50 % ON Period, 10-times inrush current for 60 ms.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg
Optional accessories							
	C	8WA2 880		1	1 unit	041	0.034
	A	3RF29 00-3PA88		1	10 units	101	0.004
Screwdrivers for opening spring-type terminals							
Terminal covers for 3RF21 solid-state relays and 3RF23 solid-state contactors in ring terminal lug connection (after simple adaptation, this terminal cover can also be used for screw connection)							

3RF29 00-3PA88

Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

**SIRIUS 3RF24 solid-state contactors,
three-phase**
Selection and ordering data

Type current ¹⁾ I_{max}	Rated control supply voltage U_s	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.					kg

Zero-point switching
Rated operational voltage U_e 48 ... 600 V


3RF24 20-1AB45

Two-phase controlled

10.5	4 ... 30 DC	A	3RF24 10-1AB45		1	1 unit	101	0.320
20		A	3RF24 20-1AB45		1	1 unit	101	0.400
30		A	3RF24 30-1AB45		1	1 unit	101	0.540
40		B	3RF24 40-1AB45		1	1 unit	101	0.800
50		A	3RF24 50-1AB45		1	1 unit	101	1.100
10.5	110 AC	B	3RF24 10-1AB35		1	1 unit	101	0.320
20		B	3RF24 20-1AB35		1	1 unit	101	0.400
30		B	3RF24 30-1AB35		1	1 unit	101	0.540
40		B	3RF24 40-1AB35		1	1 unit	101	0.800
50		B	3RF24 50-1AB35		1	1 unit	101	1.100
10.5	230 AC	B	3RF24 10-1AB55		1	1 unit	101	0.320
20		B	3RF24 20-1AB55		1	1 unit	101	0.400
30		B	3RF24 30-1AB55		1	1 unit	101	0.540
40		B	3RF24 40-1AB55		1	1 unit	101	0.800
50		B	3RF24 50-1AB55		1	1 unit	101	1.100



3RF24 10-1AC45

Three-phase controlled

10.5	4 ... 30 DC	A	3RF24 10-1AC45		1	1 unit	101	0.320
20		A	3RF24 20-1AC45		1	1 unit	101	0.540
30		A	3RF24 30-1AC45		1	1 unit	101	0.800
40		A	3RF24 40-1AC45		1	1 unit	101	1.100
50		A	3RF24 50-1AC45		1	1 unit	101	1.850
10.5	110 AC	B	3RF24 10-1AC35		1	1 unit	101	0.320
20		B	3RF24 20-1AC35		1	1 unit	101	0.540
30		B	3RF24 30-1AC35		1	1 unit	101	0.800
40		B	3RF24 40-1AC35		1	1 unit	101	1.100
50		B	3RF24 50-1AC35		1	1 unit	101	1.850
10.5	230 AC	B	3RF24 10-1AC55		1	1 unit	101	0.320
20		B	3RF24 20-1AC55		1	1 unit	101	0.540
30		B	3RF24 30-1AC55		1	1 unit	101	0.800
40		B	3RF24 40-1AC55		1	1 unit	101	1.100
50		B	3RF24 50-1AC55		1	1 unit	101	1.850

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".


Solid-State Switching Devices for Resistive Loads

Solid-State Contactors

SIRIUS 3RF24 solid-state contactors, three-phase



3RF24 10-2AB45

Type current ¹⁾ I_{max}	Rated control supply voltage U_s	DT	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg


Zero-point switching Rated operational voltage U_e 48 ... 600 V

Two-phase controlled

10	4 ... 30 DC	B	3RF24 10-2AB45	1	1 unit	101	0.320
20		B	3RF24 20-2AB45	1	1 unit	101	0.400
10	230 AC	B	3RF24 10-2AB55	1	1 unit	101	0.320
20		B	3RF24 20-2AB55	1	1 unit	101	0.400

Three-phase controlled

10	4 ... 30 DC	B	3RF24 10-2AC45	1	1 unit	101	0.320
20		B	3RF24 20-2AC45	1	1 unit	101	0.540
10	230 AC	B	3RF24 10-2AC55	1	1 unit	101	0.320
20		B	3RF24 20-2AC55	1	1 unit	101	0.540

Type current ¹⁾ I_{max}	Rated control supply voltage U_s	DT	Ring terminal lug connection 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V		Order No.	Price per PU			kg

Zero-point switching Rated operational voltage U_e 48 ... 600 V

Two-phase controlled

50	4 ... 30 DC	B	3RF24 50-3AB45	1	1 unit	101	1.100
50	230 AC	B	3RF24 50-3AB55	1	1 unit	101	1.100

Three-phase controlled

50	4 ... 30 DC	B	3RF24 50-3AC45	1	1 unit	101	1.850
50	230 AC	B	3RF24 50-3AC55	1	1 unit	101	1.850

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and start-up conditions. For derating see the manual, "Characteristic curves".

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

General data

Overview

Function modules for SIRIUS 3RF2 solid-state switching devices

A great variety of applications demand an expanded range of functionality. With our function modules, these requirements can be met really easily. The modules are mounted simply by clicking them into place; straight away the necessary connections are made with the solid-state relay or contactor. The plug-in connection to control the solid-state switching devices can simply remain in use.

The following function modules are available:

- Converters
- Load monitoring
- Heating current monitoring
- Power controllers
- Power regulators

With the exception of the converter, the function modules can be used only with single-phase solid-state switching devices.

Recommended assignment of the function modules to the 3RF21 single-phase solid-state relays

Order No.	Accessories					
	Converters	Load monitoring Basic	Extended	Heating current monitoring	Power controllers ¹⁾	Power regulators ¹⁾
Type current = 20 A						
3RF21 20-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF21 20-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF21 20-1A.22	--	--	3RF29 20-0GA33	--	--	--
3RF21 20-1A.24	--	--	3RF29 20-0GA36	--	--	--
3RF21 20-1A.42	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF21 20-1A.45	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF21 20-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF21 20-2A.02	3RF29 00-0EA18	--	--	--	--	--
3RF21 20-2A.04	3RF29 00-0EA18	--	--	--	--	--
3RF21 20-2A.22	--	--	--	--	--	--
3RF21 20-2A.24	--	--	--	--	--	--
3RF21 20-2A.42	3RF29 00-0EA18	--	--	--	--	--
3RF21 20-2A.45	3RF29 00-0EA18	--	--	--	--	--
3RF21 20-3A.02	3RF29 00-0EA18	--	3RF29 20-0GA13	--	--	3RF29 20-0HA13
3RF21 20-3A.04	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF21 20-3A.22	--	--	3RF29 20-0GA33	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF21 20-3A.24	--	--	3RF29 20-0GA36	--	3RF29 20-0KA16	3RF29 20-0HA16
Type current = 30 A						
3RF21 30-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF21 30-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 30-1A.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 30-1A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF21 30-1A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 30-1A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 30-1A.42	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF21 30-1A.45	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 30-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
Type current = 50 A						
3RF21 50-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF21 50-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 50-1A.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 50-1A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF21 50-1A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 50-1A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 50-1A.45	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 50-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 50-1B.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 50-1B.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF21 50-2A.02	3RF29 00-0EA18	--	--	--	--	--
3RF21 50-2A.04	3RF29 00-0EA18	--	--	--	--	--
3RF21 50-2A.06	3RF29 00-0EA18	--	--	--	--	--
3RF21 50-2A.14	3RF29 00-0EA18	--	--	--	--	--
3RF21 50-2A.22	--	--	--	--	--	--
3RF21 50-2A.24	--	--	--	--	--	--
3RF21 50-2A.26	--	--	--	--	--	--
3RF21 50-3A.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF21 50-3A.04	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 50-3A.06	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 50-3A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF21 50-3A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 50-3A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36

¹⁾ The use of power controllers/regulators is also possible on zero-point switching versions for full-wave control mode. The generalized phase control mode is recommended only for the combination with instantaneous switching versions.

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

General data

Order No.	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended			
Type current = 70 A						
3RF21 70-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF21 70-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 70-1A.05	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 70-1A.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 70-1A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF21 70-1A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 70-1A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 70-1A.45	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 70-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 70-1C.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
Type current = 90 A						
3RF21 90-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF21 90-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 90-1A.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 90-1A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF21 90-1A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 90-1A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF21 90-1A.45	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 90-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF21 90-2A.02	3RF29 00-0EA18	--	--	--	--	--
3RF21 90-2A.04	3RF29 00-0EA18	--	--	--	--	--
3RF21 90-2A.06	3RF29 00-0EA18	--	--	--	--	--
3RF21 90-2A.22	--	--	--	--	--	--
3RF21 90-2A.24	--	--	--	--	--	--
3RF21 90-2A.26	--	--	--	--	--	--
3RF21 90-3A.02	3RF29 00-0EA18	--	3RF29 90-0GA13	--	--	3RF29 90-0HA13
3RF21 90-3A.04	3RF29 00-0EA18	--	3RF29 90-0GA16	3RF29 32-0JA16	3RF29 90-0KA16	3RF29 90-0HA16
3RF21 90-3A.06	3RF29 00-0EA18	--	3RF29 90-0GA16	3RF29 32-0JA16	3RF29 90-0KA16	3RF29 90-0HA16
3RF21 90-3A.22	--	--	3RF29 90-0GA33	--	--	3RF29 90-0HA33
3RF21 90-3A.24	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF21 90-3A.26	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF21 90-3A.44	3RF29 00-0EA18	--	3RF29 90-0GA16	3RF29 32-0JA16	3RF29 90-0KA16	3RF29 90-0HA16

¹⁾ The use of power controllers/regulators is also possible on zero-point switching versions for full-wave control mode. The generalized phase control mode is recommended only for the combination with instantaneous switching versions.

Recommended assignment of the function modules to the 3RF22 three-phase solid-state relays

Order No.	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 55 A						
3RF22 ..-1A...	3RF29 00-0EA18	--	--	--	--	--
3RF22 ..-2A...	3RF29 00-0EA18	--	--	--	--	--
3RF22 ..-3A...	3RF29 00-0EA18	--	--	--	--	--

Recommended assignment of the function modules to the 3RF23 single-phase solid-state contactors

Order No.	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended			
Type current $I_e = 10.5$ A						
3RF23 10-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	3RF29 16-0JA13	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 10-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-1A.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-1A.12	3RF29 00-0EA18	--	3RF29 20-0GA13	3RF29 16-0JA13	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 10-1A.14	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-1A.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 10-1A.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 10-1A.26	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 10-1A.44	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-1A.45	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

General data

Order No.	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended			
Type current $I_e = 10.5 A$						
3RF23 10-1B.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	3RF29 16-0JA13	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 10-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-1B.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-1B.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 10-1B.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 10-1B.26	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 10-2A.02	3RF29 00-0EA18	--	--	--	--	--
3RF23 10-2A.04	3RF29 00-0EA18	--	--	--	--	--
3RF23 10-2A.06	3RF29 00-0EA18	--	--	--	--	--
3RF23 10-2A.22	--	--	--	--	--	--
3RF23 10-2A.24	--	--	--	--	--	--
3RF23 10-2A.26	--	--	--	--	--	--
3RF23 10-3A.02	3RF29 00-0EA18	--	3RF29 20-0GA13	3RF29 16-0JA13	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 10-3A.04	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-3A.06	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 10-3A.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 10-3A.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 10-3A.26	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
Type current $I_e = 20 A$						
3RF23 20-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 20-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1A.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1A.14	3RF29 00-0EA18	--	3RF29 20-0GA16	--	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1A.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 20-1A.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-1A.26	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-1A.44	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1A.45	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1B.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 20-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1B.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1B.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 20-1B.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-1B.26	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-1B.44	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1C.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 20-1C.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1C.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 20-1C.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-1C.44	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1D.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 20-1D.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-1D.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 20-1D.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-1D.44	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-2A.02	3RF29 00-0EA18	--	--	--	--	--
3RF23 20-2A.04	3RF29 00-0EA18	--	--	--	--	--
3RF23 20-2A.06	3RF29 00-0EA18	--	--	--	--	--
3RF23 20-2A.22	--	--	--	--	--	--
3RF23 20-2A.24	--	--	--	--	--	--
3RF23 20-2A.26	--	--	--	--	--	--
3RF23 20-2C.02	3RF29 00-0EA18	--	--	--	--	--
3RF23 20-2C.04	3RF29 00-0EA18	--	--	--	--	--
3RF23 20-2C.22	--	--	--	--	--	--
3RF23 20-2C.24	--	--	--	--	--	--
3RF23 20-2D.22	--	--	--	--	--	--
3RF23 20-2D.24	--	--	--	--	--	--
3RF23 20-3A.02	3RF29 00-0EA18	--	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 20-3A.04	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-3A.06	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-3A.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 20-3A.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-3A.26	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
3RF23 20-3A.44	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16

¹⁾ The use of power controllers/regulators is also possible on zero-point switching versions for full-wave control mode. The generalized phase control mode is recommended only for the combination with instantaneous switching versions.

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

General data

Order No.	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended			
Type current $I_e = 20\text{ A}$						
3RF23 20-3D.02	3RF29 00-0EA18	--	3RF29 20-0GA13	--	3RF29 20-0KA13	3RF29 20-0HA13
3RF23 20-3D.04	3RF29 00-0EA18	--	3RF29 20-0GA16	3RF29 32-0JA16	3RF29 20-0KA16	3RF29 20-0HA16
3RF23 20-3D.22	--	--	3RF29 20-0GA33	--	--	3RF29 20-0HA33
3RF23 20-3D.24	--	--	3RF29 20-0GA36	--	--	3RF29 20-0HA36
Type current $I_e = 30\text{ A}$						
3RF23 30-1A.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 30-1A.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1A.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1A.14	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 30-1A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 30-1A.25	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 30-1A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 30-1A.44	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1A.45	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1B.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 30-1B.04	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1B.06	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1B.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 30-1B.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 30-1B.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 30-1B.44	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-1C.02	3RF29 00-0EA18	3RF29 20-0FA08	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 30-1D.44	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-3A.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 30-3A.04	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-3A.06	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 30-3A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 30-3A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 30-3A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 30-3A.44	3RF29 00-0EA18	--	3RF29 50-0GA16	3RF29 32-0JA16	3RF29 50-0KA16	3RF29 50-0HA16
Type current $I_e = 40\text{ A}$						
3RF23 40-1A.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 40-1A.04	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-1A.06	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-1A.14	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-1A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 40-1A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 40-1A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 40-1A.45	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-1B.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 40-1B.04	3RF29 00-0EA18	--	3RF29 50-0GA13	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-1B.06	3RF29 00-0EA18	--	3RF29 50-0GA13	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-1B.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 40-1B.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 40-1B.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 40-3A.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 40-3A.04	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-3A.06	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 40-3A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 40-3A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 40-3A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 40-3A.45	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
Type current $I_e = 50\text{ A}$						
3RF23 50-1A.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 50-1A.04	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-1A.06	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-1A.14	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-1A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 50-1A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 50-1A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 50-1A.45	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16

¹⁾ The use of power controllers/regulators is also possible on zero-point switching versions for full-wave control mode. The generalized phase control mode is recommended only for the combination with instantaneous switching versions.

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

General data

Order No.	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended			
Type current $I_e = 50$ A						
3RF23 50-1B.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 50-1B.04	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-1B.06	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-1B.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 50-1B.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 50-1B.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 50-1B.44	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-3A.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 50-3A.04	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-3A.06	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 50-3A.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 50-3A.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 50-3A.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 50-3A.44	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
Type current $I_e = 70$ A						
3RF23 70-1B.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 70-1B.04	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 70-1B.06	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 70-1B.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 70-1B.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 70-1B.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 70-3A.02	3RF29 00-0EA18	--	3RF29 90-0GA13	--	--	3RF29 90-0HA13
3RF23 70-3A.04	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 70-3A.06	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 70-3A.22	--	--	3RF29 90-0GA33	--	--	3RF29 90-0HA33
3RF23 70-3A.24	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF23 70-3A.26	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF23 70-3A.45	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 70-3B.02	3RF29 00-0EA18	--	3RF29 90-0GA13	--	--	3RF29 90-0HA13
3RF23 70-3B.04	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 70-3B.06	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 70-3B.22	--	--	3RF29 90-0GA33	--	--	3RF29 90-0HA33
3RF23 70-3B.24	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF23 70-3B.26	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
Type current $I_e = 90$ A						
3RF23 90-1B.02	3RF29 00-0EA18	--	3RF29 50-0GA13	--	--	3RF29 50-0HA13
3RF23 90-1B.04	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 90-1B.06	3RF29 00-0EA18	--	3RF29 50-0GA16	--	3RF29 50-0KA16	3RF29 50-0HA16
3RF23 90-1B.22	--	--	3RF29 50-0GA33	--	--	3RF29 50-0HA33
3RF23 90-1B.24	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 90-1B.26	--	--	3RF29 50-0GA36	--	--	3RF29 50-0HA36
3RF23 90-3A.02	3RF29 00-0EA18	--	3RF29 90-0GA13	--	--	3RF29 90-0HA13
3RF23 90-3A.04	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 90-3A.06	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 90-3A.22	--	--	3RF29 90-0GA33	--	--	3RF29 90-0HA33
3RF23 90-3A.24	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF23 90-3A.26	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF23 90-3A.45	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 90-3B.02	3RF29 00-0EA18	--	3RF29 90-0GA13	--	--	3RF29 90-0HA13
3RF23 90-3B.04	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 90-3B.06	3RF29 00-0EA18	--	3RF29 90-0GA16	--	3RF29 90-0KA16	3RF29 90-0HA16
3RF23 90-3B.22	--	--	3RF29 90-0GA33	--	--	3RF29 90-0HA33
3RF23 90-3B.24	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36
3RF23 90-3B.26	--	--	3RF29 90-0GA36	--	--	3RF29 90-0HA36

¹⁾ The use of power controllers/regulators is also possible on zero-point switching versions for full-wave control mode. The generalized phase control mode is recommended only for the combination with instantaneous switching versions.

Recommended assignment of the function modules to the 3RF24 three-phase solid-state contactors

Order No.	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 50 A						
3RF24 ..-1..4.	3RF29 00-0EA18	--	--	--	--	--
3RF24 ..-2..4.	--	--	--	--	--	--
3RF24 ..-3..4.	3RF29 00-0EA18	--	--	--	--	--
3RF24 ..-4..5.	--	--	--	--	--	--

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

SIRIUS converters for 3RF

Overview

Converters for 3RF2 solid-state switching devices

These modules are used to convert analog control signals, such as those output from many temperature controllers for example, into a pulse-width-modulated digital signal. The connected solid-state contactors and relays can therefore regulate the output of a load as a percentage.

Application

This function module is used for conversion from an analog input signal to an on/off ratio. The module can only be used in conjunction with 3RF21 and 3RF23 single-phase solid-state switching devices or 3RF22 and 3RF24 three-phase devices. It can be used on versions with 24 V DC and 24 V AC/DC control supply voltage.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	V							

Converters



Rated control supply voltage 24 V AC/DC		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
--	--	A	3RF29 00-0EA18		1	1 unit	101	0.041

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

SIRIUS load monitoring for 3RF

Overview

Load monitoring for 3RF2 single-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of load elements (up to 6 in the basic version or up to 12 in the extended version), alloyed power semiconductors, a lack of voltage or a break in a load circuit. A fault is indicated by one or more LEDs and reported to the controller by way of a PLC-compatible output.

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during start-up by the simple press of a button. In order to detect the failure of one of several loads, the current difference must be 1/6 (in the basic version) or 1/12 (in the extended version) of the reference value. In the event of a fault, an output is actuated and one or more LEDs indicate the fault.

Application

The device is used for monitoring one or more loads (partial loads). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type connections in the load circuit are not suitable.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------------------------------	---------------------------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Basic load monitoring



Rated control supply voltage 24 V DC

6	--	A	3RF29 06-0FA08		1	1 unit	101	0.068
20	--	A	3RF29 20-0FA08		1	1 unit	101	0.068
• With mounted 3RF29 00-0RA88 cover								
6	--	A	3RF29 06-0FA08-0KH0		1	1 unit	101	0.068
20	--	A	3RF29 20-0FA08-0KH0		1	1 unit	101	0.068

Extended load monitoring



Rated control supply voltage 24 V AC/DC

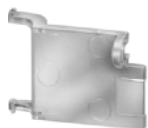
20	110 ... 230	A	3RF29 20-0GA13		1	1 unit	101	0.175
20	400 ... 600	A	3RF29 20-0GA16		1	1 unit	101	0.175
50	110 ... 230	A	3RF29 50-0GA13		1	1 unit	101	0.175
50	400 ... 600	A	3RF29 50-0GA16		1	1 unit	101	0.175
90	110 ... 230	A	3RF29 90-0GA13		1	1 unit	101	0.175
90	400 ... 600	A	3RF29 90-0GA16		1	1 unit	101	0.175

Rated control supply voltage 110 V AC

20	110 ... 230	A	3RF29 20-0GA33		1	1 unit	101	0.175
20	400 ... 600	A	3RF29 20-0GA36		1	1 unit	101	0.175
50	110 ... 230	A	3RF29 50-0GA33		1	1 unit	101	0.175
50	400 ... 600	A	3RF29 50-0GA36		1	1 unit	101	0.175
90	110 ... 230	A	3RF29 90-0GA33		1	1 unit	101	0.175
90	400 ... 600	A	3RF29 90-0GA36		1	1 unit	101	0.175

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Optional accessories



3RF29 00-0RA88

Sealable covers for function modules (not for converters)

B	3RF29 00-0RA88		1	10 units	101	0.001
---	-----------------------	--	---	----------	-----	-------

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

SIRIUS heating current monitoring for 3RF

Overview

Heating current monitoring for 3RF2 single-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of up to 6 load elements, alloyed power semiconductors, a lack of voltage or a break in a load circuit. A fault is indicated by LEDs and reported to the controller by way of a relay output (NC contact).

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during start-up. In order to detect the failure of one of several loads, the current difference must be 1/6 of the reference value. In the event of a fault, an output is actuated and the LEDs indicate the fault.

The heating current monitoring has a teach input and therefore differs from the load monitoring. This remote teaching function enables simple adjustment to changing loads without manual intervention.

Special versions: deviations from the standard version

3RF29 ...0JA1.-1KK0

If the current is below 50% of the lower teach current during the teach routine, the device will go into "Standby" mode; the LOAD LED will flicker. The device thus detects a non-connected load, e. g. channels not required for tool heaters, and does not signal a fault. This mode can be reset by re-teaching.

Application

The device is used for monitoring one or more loads (partial loads). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type connections in the load circuit are not suitable.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V							kg

Heating current monitoring¹⁾



Rated control supply voltage 24 V AC/DC

16	110 ... 230	A	3RF29 16-0JA13		1	1 unit	101	0.175
16	110 ... 230	A	3RF29 16-0JA13-1KK0		1	1 unit	101	0.175
16	400 ... 600	A	3RF29 16-0JA16-1KK0		1	1 unit	101	0.175
32	110 ... 230	A	3RF29 32-0JA13-1KK0		1	1 unit	101	0.175
32	400 ... 600	A	3RF29 32-0JA16		1	1 unit	101	0.175
32	400 ... 600	A	3RF29 32-0JA16-1KK0		1	1 unit	101	0.175

¹⁾ Supplied without control connector. The control connector can be purchased from Phoenix Contact by quoting Order No. 1982 790 (2.5 HC/6-ST-5.08).

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

Optional accessories



3RF29 00-ORA88

Sealable covers for function modules (not for converters)

B	3RF29 00-ORA88		1	10 units	101	0.001
---	-----------------------	--	---	----------	-----	-------

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

SIRIUS power controllers for 3RF

Overview

Power controllers for 3RF2 single-phase solid-state switching devices

The power controller is a function module for the autonomous power control of complex heating systems and inductive loads.

The following functions have been integrated:

- **Power controller** for adjusting the power of the connected load. Here, the setpoint value is set with a rotary knob on the module as a percentage with reference to the 100 % power stored as a setpoint value.
- **Inrush current limitation:** With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps or infrared lamps which have an inrush transient current.
- **Load circuit monitoring** for detecting load failure, partial load faults, alloyed power semiconductors, lack of voltage or a break in the load circuit.

Note:

With the phase control operating mode, a partial load fault is detected by cyclic "scanning" of the load; the exact mode of operation is described in the data sheets!

Special versions: deviations from the standard version

3RF29 04-0KA13-0KCO

During the teaching process the connected solid-state relay or contactor is not activated; i. e. no current flow takes place. No current reference value is stored. No part-load monitoring!

3RF29 ...0KA1.-0KTO

No part-load monitoring!

Application

The power controller can be used for:

- Complex heating systems
- Inductive loads
- Loads with temperature-dependent resistor
- Loads with ageing after long-time service
- Simple indirect control of temperature

The power controller can be used on the instantaneously switching 3RF21 and 3RF23 solid-state switching devices (single-phase). If only the full-wave operating mode is used, the power controller can also be used on the "zero-point switching" solid-state relays and contactors.

Power control

The power controller adjusts the power in the connected load by means of a solid-state switching device depending on the setpoint selection. It does not compensate for changes in the mains voltage or load resistance. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_P), the control is carried out according to the principle of full-wave control or generalized phase control.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value changing the on-to-off period. The period duration is predefined at one second.

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, the load circuit must include a reactor with a rating of at least 200 μ H.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	V							kg

Power controllers



Rated control supply voltage 24 V AC/DC

4	110 ... 230	A	3RF29 04-0KA13-0KCO		1	1 unit	101	0.175
4		A	3RF29 04-0KA13-0KTO		1	1 unit	101	0.175
20		A	3RF29 20-0KA13		1	1 unit	101	0.175
50		A	3RF29 50-0KA13		1	1 unit	101	0.175
90		A	3RF29 90-0KA13		1	1 unit	101	0.175
20	400 ... 600	A	3RF29 20-0KA16		1	1 unit	101	0.175
50		A	3RF29 50-0KA16		1	1 unit	101	0.175
50		A	3RF29 50-0KA16-0KTO		1	1 unit	101	0.175
90		A	3RF29 90-0KA16		1	1 unit	101	0.175

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

Optional accessories



3RF29 00-ORA88

Sealable covers for function modules (not for converters)

B	3RF29 00-ORA88		1	10 units	101	0.001
---	-----------------------	--	---	----------	-----	-------

* You can order this quantity or a multiple thereof.

Solid-State Switching Devices for Resistive Loads

3RF29 Function Modules

SIRIUS power regulators for 3RF

Overview

Power regulators for 3RF2 single-phase solid-state switching devices

The power regulator is a function module for the autonomous power control of complex heating systems.

The following functions have been integrated:

- **Power controller with proportional-action control** for adjusting the power of the connected load. Here, the setpoint value is set with a rotary knob on the module as a percentage with reference to the 100 % power stored as a setpoint value. Changes in the mains voltage or in the load resistance are compensated in this case.
- **Inrush current limitation:** With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps which have an inrush transient current.
- **Load circuit monitoring** for detecting load failure, alloyed power semiconductors, lack of voltage or a break in the load circuit. Part-load monitoring is not possible. Load fluctuations are compensated.

Application

The power regulator can be used for:

- Complex heating systems
- Heating elements with temperature-dependent resistor
- Heating elements with ageing after long-time service
- Simple indirect control of temperature

The power regulator can be used on the instantaneously switching 3RF21 and 3RF23 solid-state switching devices (single-phase). If only the full-wave operating mode is used, the power regulator can also be used on the zero-point switching solid-state relays and contactors.

Power control

The power regulator adjusts the power in the connected load by means of a solid-state switching device depending on the taught power and the selected setpoint. Changes in the mains voltage or in the load resistance are thus compensated by the power regulator. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_B), the adjustment is carried out according to the principle of full-wave control or generalized phase control.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value changing the on-to-off period. The period duration is predefined at one second.

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, the load circuit must include a reactor with a rating of at least 200 μ H.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	V							

Power regulators



Rated control supply voltage 24 V AC/DC

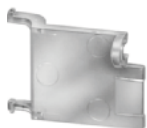
20	110 ... 230	A	3RF29 20-0HA13		1	1 unit	101	0.175
20	400 ... 600	A	3RF29 20-0HA16		1	1 unit	101	0.175
50	110 ... 230	A	3RF29 50-0HA13		1	1 unit	101	0.175
50	400 ... 600	A	3RF29 50-0HA16		1	1 unit	101	0.175
90	110 ... 230	A	3RF29 90-0HA13		1	1 unit	101	0.175
90	400 ... 600	A	3RF29 90-0HA16		1	1 unit	101	0.175

Rated control supply voltage 110 V AC

20	110 ... 230	A	3RF29 20-0HA33		1	1 unit	101	0.175
20	400 ... 600	A	3RF29 20-0HA36		1	1 unit	101	0.175
50	110 ... 230	A	3RF29 50-0HA33		1	1 unit	101	0.175
50	400 ... 600	A	3RF29 50-0HA36		1	1 unit	101	0.175
90	110 ... 230	A	3RF29 90-0HA33		1	1 unit	101	0.175
90	400 ... 600	A	3RF29 90-0HA36		1	1 unit	101	0.175

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

Optional accessories



3RF29 00-0RA88

Sealable covers for function modules (not for converters)

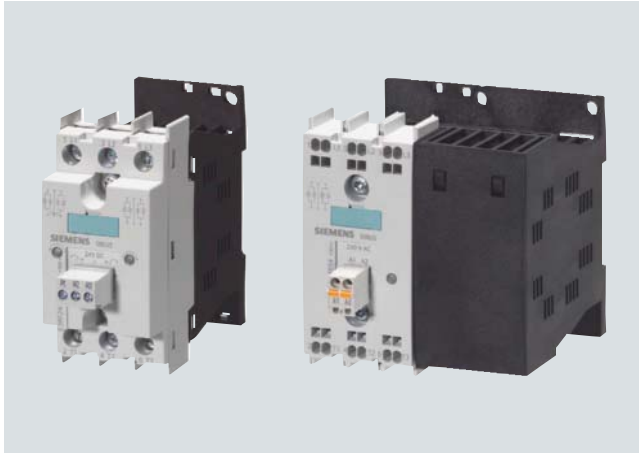
B	3RF29 00-0RA88			1	10 units	101	0.001
---	-----------------------	--	--	---	----------	-----	-------

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

General data

Overview



Solid-state contactors for switching motors

The solid-state contactors for switching motors are intended for frequently switching on and off three-phase current operating mechanisms up to 7.5 kW and reversing up to 3.0 kW. The devices are constructed with complete insulation and can be mounted directly on circuit breakers and SIRIUS overload relays, resulting in a very simple integration into motor feeders.

These three-phase solid-state contactors are equipped with a two-phase control which is particularly suitable for typical motor current circuits without connecting to the neutral conductor.

Important features

- Insulated enclosure with integrated heat sink
- Degree of protection IP20
- Integrated mounting foot to snap on a standard mounting rail or for assembly onto a support plate
- Variety of connection methods
- Plug-in control connection
- Display via LEDs

Switching functions

The solid-state contactors to switch motors are "instantaneous switching" because this method is particularly suited for inductive loads. By distributing the ON point over the entire sine curve of the mains voltage, disturbances are reduced to a minimum.

Selecting solid-state contactors

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions. As the solid-state contactors are already equipped with an optimally matched heat sink, the selection process is considerably simpler than that for solid-state relays.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load
- Testing the maximum permissible switching frequency based on the characteristic curves ([see manual](#)). To do this, the starting current, the starting time and the motor loaded in in the operating phase must be known.
- If the permissible switching frequency is under the desired frequency, it is possible to achieve an increase by overdimensioning the motor!

Alternatively the correct device size can be determined on the Internet by entering the network and motor data along with the application and ambient conditions in the tool for the selection of solid-state contactors for switching motors. You will find the tool at:

www.siemens.com/solid-state-switching-devices

Benefits

- Units with integrated heat sink, "ready to use"
- Compact and space-saving design
- Reversing contactors with integrated interlocking

Application

There is no typical design of a load feeder with solid-state relays or solid-state contactors; instead, the great variety of connection methods and control voltages offers universal application opportunities. SIRIUS solid-state relays and solid-state contactors can be installed in fuseless or fused feeders, as required. There are special versions with which it is even possible to achieve short-circuit strength in a fuseless design.

Standards and approvals

- IEC 60947-4-3
- UL 508, CSA for North America¹⁾
- CE marking for Europe
- C-Tick approval for Australia

¹⁾ Please note: Use overvoltage protection device; max. cut-off-voltage 6000 V; min. energy handling capability 100 J.

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

General data

More information

Connection methods

You can choose between the following connection methods for the solid-state contactors for switching motors:

Screw connection

The screw connection system is the standard among industrial controls. Open terminals and a plus-minus screw are just two features of this technology. Two conductors of up to 6 mm² can be connected in just one terminal. As a result, loads of up to 50 A can be connected.

Spring-type terminal connection system

This innovative technology manages without any screw connection. This means that very high vibration resistance is achieved. Two conductors of up to 2.5 mm² can be connected to each terminal. As a result, loads of up to 20 A can be dealt with.

Specification

Order No.	3RF24 ...-BB.., 3RF24 ...-BD..	
General data		
Ambient temperature		
• During operation, derating from 40 °C	°C	-25 ... +60
• During storage	°C	-55 ... +80
Installation altitude	m	0 ... 1000; derating over 1000 m upon request
Shock resistance acc. to IEC 60068-2-27	g/rms	15/11
Vibration resistance acc. to IEC 60068-2-6	g	2
Degree of protection		IP20
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4000
Electromagnetic compatibility (EMC)		
• Emitted interference acc. to IEC 60947-4-3		Class A for industrial applications ¹⁾ Class A for industrial applications
- Conducted interference voltage		
- Emitted, high-frequency interference voltage		
• Interference immunity		
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge: 4; Air discharge: 8; Behavior criterion 2
- Induced RF fields acc. to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; Behavior criterion 1
- Burst acc. to IEC 61000-4-4	kV	2/5 kHz; behavior criterion 1
- Surge acc. to IEC 61000-4-5	kV	Conductor - Ground: 2; Conductor - Conductor: 1; Behavior criterion 2
Permissible mounting positions		

Short-circuit protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short-circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor fuses. These fuses also provide protection against destruction in the event of a short-circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly.

¹⁾ These products were built as Class A devices. The use of these devices in residential areas could result in lead in radio interference. In this case these may be required to introduce additional interference suppression measures.

Notes on integration in the load feeders

The SIRIUS solid-state switching devices are very easy to integrate into the load feeders thanks to their industrial connection method and design.

Particular attention must however be paid to the circumstances of the installation and ambient conditions, as the performance of the solid-state switching devices is largely dependent on these. Depending on the version, certain restrictions must be observed. Detailed information, for example in relation to solid-state contactors about the minimum spacing and to solid-state relays about the choice of heat sink, is given in the technical specifications ([see manual](#)) and the product data sheets.

For applications with a very large power requirement it is possible to use SIVOLT AC power controller. [More information on the product range can be found in the Catalog DA 68 or in our Mall.](#)

support.automation.siemens.com/WW/view/de/10862346

See ID: 10752358

Short-circuit and overload protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short-circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor protection fuses. These fuses also provide protection against destruction in the event of a short-circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly. The technical specifications and the product data sheets contain details both about the solid-state fuse protection itself and about use of the devices with conventional protection equipment.

Semiconductor motor and reversing contactors can be easily combined with the 3RV motor starter protectors and 3RB2 overload relay from the SIRIUS modular system. Thus, fuseless and fuse motor feeders can be designed easily and in a space-saving manner.

Electromagnetic compatibility (EMC)

The solid-state switching devices are suitable for interference-free operation in industrial networks without further measures. If they are used in public networks, it may be necessary for conducted interference to be reduced by means of filters.

Suitable filters can be ordered from EPCOS AG. You can find more information on the Internet at:

www.epcos.com

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

SIRIUS 3RF24 solid-state contactors, three-phase

Overview

These two-phase controlled, instantaneous switching solid-state contactors in the insulating enclosure are offered in 45 mm width to 5.2 A – and in 90 mm width to 16 A. This means that it is possible to operate motors up to 7.5 kW.

The devices with screw connection can use a link module¹⁾ to directly connect to a circuit breaker. Direct mounting on a 3RB20 electronic overload relay²⁾ is possible. Rapid-switching fuseless and fuse motor feeders can thereby be implemented in a time-saving manner.

Selection and ordering data

Motor contactors · Instantaneous switching · Two-phase controlled

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				
A	400 V kW	V							kg
Rated operational voltage U_e 48 ... 460 V									
5.2	2.2	24 DC	A	3RF24 05-1BB04		1	1 unit	101	0.250
9.2	4.0	acc. to EN 61131-2	B	3RF24 10-1BB04		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-1BB04		1	1 unit	101	0.380
16	7.5		B	3RF24 16-1BB04		1	1 unit	101	0.380
5.2	2.2	110 ... 230 AC	B	3RF24 05-1BB24		1	1 unit	101	0.250
9.2	4.0		B	3RF24 10-1BB24		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-1BB24		1	1 unit	101	0.380
16	7.5		B	3RF24 16-1BB24		1	1 unit	101	0.380
Rated operational voltage U_e 48 ... 600 V, blocking voltage 1600 V									
5.2	2.2	24 DC	B	3RF24 05-1BB06		1	1 unit	101	0.250
9.2	4.0	acc. to EN 61131-2	B	3RF24 10-1BB06		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-1BB06		1	1 unit	101	0.380
16	7.5		B	3RF24 16-1BB06		1	1 unit	101	0.380
5.2	2.2	110 ... 230 AC	B	3RF24 05-1BB26		1	1 unit	101	0.250
9.2	4.0		B	3RF24 10-1BB26		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-1BB26		1	1 unit	101	0.380
16	7.5		B	3RF24 16-1BB26		1	1 unit	101	0.380
Rated operational voltage U_e 48 ... 460 V									
5.2	2.2	24 DC	B	3RF24 05-2BB04		1	1 unit	101	0.250
9.2	4.0	acc. to EN 61131-2	B	3RF24 10-2BB04		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-2BB04		1	1 unit	101	0.380
16	7.5		B	3RF24 16-2BB04		1	1 unit	101	0.380
5.2	2.2	110 ... 230 AC	B	3RF24 05-2BB24		1	1 unit	101	0.250
9.2	4.0		B	3RF24 10-2BB24		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-2BB24		1	1 unit	101	0.380
16	7.5		B	3RF24 16-2BB24		1	1 unit	101	0.380
Rated operational voltage U_e 48 ... 600 V, blocking voltage 1600 V									
5.2	2.2	24 DC	B	3RF24 05-2BB06		1	1 unit	101	0.250
9.2	4.0	acc. to EN 61131-2	B	3RF24 10-2BB06		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-2BB06		1	1 unit	101	0.380
16	7.5		B	3RF24 16-2BB06		1	1 unit	101	0.380
5.2	2.2	110 ... 230 AC	B	3RF24 05-2BB26		1	1 unit	101	0.250
9.2	4.0		B	3RF24 10-2BB26		1	1 unit	101	0.380
12.5	5.5		B	3RF24 12-2BB26		1	1 unit	101	0.380
16	7.5		B	3RF24 16-2BB26		1	1 unit	101	0.380

¹⁾ For 3RA19 21-1AA00 link modules see next page.

²⁾ For 3RB20 overload relays see Chapter 5.

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

SIRIUS 3RF24 solid-state reversing contactors, three-phase




Overview

The integration of four conducting paths to a reverse switch, combined in one enclosure makes this device a particularly compact solution. Compared to conventional systems, for which two contactors are required, it is possible to save up to 50 % width with the three-phase reversing contactors. Devices with 45 mm width cover motors up to 2.2 kW – and those with 90 mm width up to 3 kW.

Due to the integration into the SIRIUS modular system, it is possible to make a connection to a SIRIUS motor starter protector using a link module or with a 3RB20¹⁾ solid-state overload relay without additional steps. It is possible to mount fuseless or fused motor feeders easily and quickly.

Selection and ordering data

Reversing contactors · Instantaneous switching · Two-phase controlled



Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	400 V kW	V		Order No.	Price per PU			kg
Rated operational voltage U_e 48 ... 460 V								
	3.8	1.5	24 DC	B	3RF24 03-1BD04	1	1 unit	101 0.280
	5.4	2.2	acc. to EN 61131-2	B	3RF24 05-1BD04	1	1 unit	101 0.280
	7.4	3.0		B	3RF24 10-1BD04	1	1 unit	101 0.410
	3.8	1.5	110 ... 230 AC	B	3RF24 03-1BD24	1	1 unit	101 0.280
	5.4	2.2		B	3RF24 05-1BD24	1	1 unit	101 0.280
	7.4	3.0		B	3RF24 10-1BD24	1	1 unit	101 0.410
								

3RF24 03-1BD

3RF24 10-1BD

¹⁾ For 3RB20 overload relays see Chapter 5.

Accessories

Version	Packing material	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg
Link modules							
	For mechanical and electrical connection between contactor and motor starter protector with screw terminals	Single-unit packaging	▶ 3RA19 21-1AA00	1	1 unit	101	0.037
		Multi-unit packaging	▶ 3RA19 21-1A	1	10 units	101	0.028

3RA19 21-1AA00

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

Notes

4

Protection Equipment



5/2 Introduction

SIRIUS 3RV Motor Starter Protectors/ Circuit Breakers up to 100 A

- 5/5 General data
Motor Starter Protectors
- 5/7 For motor protection
- 5/10 For motor protection with overload relay function
- 5/11 For starter combinations
- 5/12 For transformer protection
- 5/13 For fuse monitoring
- 5/16 For distance protection
Circuit Breakers
- 5/14 For system protection according to UL 489/CSA C22.2 No. 5-02
- 5/15 For transformer protection according to UL 489/CSA C22.2 No.5-02
Accessories
- 5/17 Mountable accessories
- 5/21 Busbar accessories
- 5/24 3RV19 infeed system
- 5/28 Rotary operating mechanisms
- 5/30 Mounting accessories
- 5/34 Enclosures and front plates

SIRIUS 3RV Molded Case Motor Starter Protectors up to 800 A

- 5/37 General data
- 5/38 For motor protection
- 5/39 For starter combinations
Accessories
- 5/40 Mountable accessories
- 5/41 Rotary operating mechanisms
Mounting accessories

Overload Relays

- 5/42 General data
SIRIUS 3RU1 Thermal Overload Relays
- 5/46 3RU11 for standard applications
- 5/50 Accessories
SIRIUS 3RB2 Solid-State Overload Relays
- 5/51 3RB20, 3RB21 for standard applications
- 5/56 3RB22, 3RB23 for high-feature applications
- 5/60 Accessories

Technical Information

can be found at
www.siemens.de/industrial-controls/support

under Product List:
- Technical Specifications

under Entry List:
- Updates
- Downloads
- FAQ
- Manuals
- Characteristic curves
- Certificates

and at
www.siemens.com/industrial-controls/configurators
- Configurators

Protection Equipment

Introduction

Overview



Type

3RV10

3RV11

3RV13

3RV14

3RV16

3RV16

3RV17

3RV18

SIRIUS 3RV1 motor starter protectors and circuit breakers up to 100 A

Applications

System protection	✓ ¹⁾	✓ ¹⁾	--	--	--	--	✓	✓
Motor protection	✓	--	--	--	--	--	--	--
Motor protection with overload relay function	--	✓	--	--	--	--	--	--
Starter combinations	--	--	✓	--	--	--	--	--
Transformer protection	--	--	--	✓	--	--	✓	✓
Fuse monitoring	--	--	--	--	✓	--	--	--
Voltage transformer circuit breakers for distance protection	--	--	--	--	--	✓	--	--

Size

S00, S0, S2, S3

S0, S2, S3

S0, S2, S3

S0, S2

S00

S00

S0, S3

S0

Rated current I_n

Size S00	A	to 12	--	--	--	0.2	to 3	--	--
Size S0	A	to 25	to 25	to 25	to 20	--	--	to 22	to 20
Size S2	A	to 50	to 50	to 50	to 40	--	--	--	--
Size S3	A	to 100	to 100	to 100	--	--	--	to 70	--

Rated operational voltage U_e acc. to IEC

V	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	400 AC	690 AC	690 AC
---	----------------------	----------------------	----------------------	----------------------	----------------------	--------	--------	--------

Rated frequency

Hz	50/60	50/60	50/60	50/60	50/60	16 ² /3 ... 60	50/60	50/60
----	-------	-------	-------	-------	-------	---------------------------	-------	-------

Trip class

	CLASS 10 CLASS 20	CLASS 10	--	CLASS 10	--	--	--	--
--	----------------------	----------	----	----------	----	----	----	----

Thermal overload releases

A	0.11 ... 0.16 to	0.11 ... 0.16 to	None ³⁾	0.11 ... 0.16 to	0.2	1.4 ... 3	0.16 ... 70 non-adjustable	0.16 ... 20 non-adjustable
A	80 ... 100	80 ... 100		28 ... 40				

Electronic releases

A multiple of the rated current	13 times	13 times	13 times	20 times	6 times	4 ... 7 times	13 times	20 times
---------------------------------	----------	----------	----------	----------	---------	---------------	----------	----------

Short-circuit breaking capacity I_{cu} at 400 V AC

kA	50/100	50/100	50/100	50/100	100	50	4) 4)	4) 4)
----	--------	--------	--------	--------	-----	----	----------	----------

Accessories

For sizes	S00 S0 S2 S3	S0 S2 S3	S0 S2 S3	S0 S2	S00	S00	S0, S3	S0
Auxiliary switches	✓ ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	✓ ⁵⁾	✓ ⁵⁾
Signaling switches	-- ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	--	--	--	--
Undervoltage releases	✓ ✓ ✓ ✓	-- -- --	✓ ✓ ✓	✓ ✓	✓	✓	✓	✓
Shunt releases	✓ ✓ ✓ ✓	-- -- --	✓ ✓ ✓	✓ ✓	✓	✓	✓	✓
Isolator modules	-- ✓ ✓ --	✓ ✓ --	✓ ✓ --	✓ ✓	--	--	--	--
Insulated three-phase busbar systems	✓ ✓ ✓ --	-- ✓ --	✓ ✓ --	✓ ✓	✓	✓	--	--
Busbar adapters	✓ ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	--	--
Door-coupling rotary operating mechanisms	-- ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	--	--	✓	✓
Remote motorized operating mechanisms	-- -- ✓ ✓	-- ✓ ✓	-- ✓ ✓	-- ✓	--	--	--	--
Link modules	✓ ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	--	--
Enclosures for surface mounting	✓ ✓ ✓ --	✓ ✓ --	✓ ✓ --	✓ ✓	✓	✓	--	--
Enclosures for flush mounting	✓ ✓ -- --	✓ -- --	✓ -- --	✓ --	✓	✓	--	--
Front plates	✓ ✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓	--	--
Infeed system	✓ ✓ -- --	-- -- --	✓ -- --	✓ --	--	--	--	--

¹⁾ For symmetrical loading of the three phases.

²⁾ 500 V AC with molded-plastic enclosure.

³⁾ For overload protection of the motors, appropriate overload relays must be used.

⁴⁾ According to UL 489
 - at AC 480 Y/277 V: for size S0 50 kA, for size S3 65 kA;
 - at 480 V AC: for size S3 (10 A to 30 A) 65 kA.

⁵⁾ Only lateral auxiliary switches can be fitted.

✓ = Has this function or can use this accessory

-- = Does not have this function or cannot use this accessory



Type	3RV10				3RV13					
SIRIUS 3RV1 molded case motor starter protectors up to 800 A										
Applications										
Motor protection	✓				--					
Starter combinations	--				✓					
Switching capacity	Standard switching capacity				Standard switching capacity					Increased switching capacity
Size	3RV10 63	3RV10 73	3RV10 83	3RV13 53	3RV13 63	3RV13 73	3RV13 83	3RV13 64	3RV13 74	
Rated current I_n	A 100, 160, 200	400	630	1 ... 32	100, 160, 250	400, 630	630, 800	100, 160, 250	400	
Rated operational voltage U_e according to IEC	690 AC				690 AC					
Rated frequency	Hz 50/60				50/60					
Trip class	CLASS 10A CLASS 10 CLASS 20 CLASS 30				-- ¹⁾					
Thermal overload releases	A 40 ... 100 to 252 ... 630				None ¹⁾					
Electronic releases	A multiple of the rated current				Adjustable, 6 ... 13 times		Non-adjustable 1 A ... 12.5 A: 13 times; adjustable 20 A, 32 A: 6 ... 12 times		1 ... 10 times	
Short-circuit breaking capacity I_{cu} at 400 V AC	kA 120	120	100	85	120	120	100	200	200	
Trip units	TU 4				TU 1: 1 A ... 12.5 A; TU 2: 20 A, 32 A		TU 3			

Accessories									
For molded case motor starter protectors	3RV10 63	3RV10 73	3RV10 83	3RV13 53	3RV13 63	3RV13 73	3RV13 83	3RV13 64	3RV13 74
Auxiliary switches	✓	✓	✓	✓	✓	✓	✓	✓	✓
Undervoltage releases	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shunt releases	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotary operating mechanisms	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection methods									
• Front-extended terminals	✓	✓	--	✓	✓	✓	--	✓	✓
• Front-accessible cable terminals	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Rear terminals	✓	✓	✓	✓	✓	✓	✓	✓	✓

¹⁾ For overload protection of the motors, appropriate overload relays must be used.

✓ = Has this function or can use this accessory

-- = Does not have this function or cannot use this accessory

Protection Equipment

Introduction



Type		3RU11	3RB20	3RB21	3RB22/3RB23
SIRIUS overload relays up to 630 A					
Applications					
System protection		✓ ¹⁾	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
Motor protection		✓	✓	✓	✓
Alternating current, three-phase		✓	✓	✓	✓
Alternating current, single-phase		✓	--	--	✓
Direct current		✓	--	--	--
Size of contactor		S00, S0, S2, S3	S00 ... S12	S00 ... S12	S00 ... S12
Rated operational current I_e					
Size S00	A	to 12	to 12	to 12	} to 25
Size S0	A	to 25	to 25	to 25	
Size S2	A	to 50	to 50	to 50	} to 100
Size S3	A	to 100	to 100	to 100	
Size S6	A	--	to 200	to 200	to 200
Size S10/S12, Size 14 (3TF6)	A	--	to 630	to 630	
Rated operational voltage U_e	V	690/1000 AC ²⁾	690/1000 AC ³⁾	690/1000 AC ³⁾	690/1000 AC ⁴⁾
Rated frequency	Hz	50/60	50/60	50/60	50/60
Trip class		CLASS 10	CLASS 10, CLASS 20	CLASS 5, 10, 20, 30 Adjustable	CLASS 5, 10, 20, 30 Adjustable
Thermal overload releases	A	0.11 ... 0.16 to 80 ... 100	--	--	--
	A	--	0.1 ... 0.4 to 160 ... 630	0.1 ... 0.4 to 160 ... 630	0.3 ... 3 to 63 ... 630
Rating for induction motor at 400 V AC	kW	0.04 to 45	0.04 ... 0.09 to 90 ... 450	0.04 ... 0.09 to 90 ... 450	0.09 ... 1.1 to 37 ... 450

Accessories																							
For sizes	S00	S0	S2	S3	S00	S0	S2	S3	S6	S10/ S12	S00	S0	S2	S3	S6	S10/ S12	S00	S0	S2	S3	S6	S10/ S12	
Terminal brackets for stand-alone installation	✓	✓	✓	✓	✓	✓	5)	5)	5)	5)	✓	✓	5)	5)	5)	5)	5)	5)	5)	5)	5)	5)	5)
Mechanical RESET	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	--
Cable releases for RESET	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	--
Electrical remote RESET	✓	✓	✓	✓	--	--	--	--	--	--	Integrated in the unit						Integrated in the unit						
Terminal covers	--	--	✓	✓	--	--	--	✓	✓	✓	--	--	--	✓	✓	✓	--	--	--	✓	✓	✓	✓
Sealable covers for setting knobs	Integrated in the unit				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

¹⁾ The units are responsible in the main circuit for overload protection of the assigned electrical loads (e. g. motors), feeder cable and other switching and protection devices in the respective load feeder.

²⁾ Size S3 up to 1000 V AC.

³⁾ Size S2 (only with straight-through transformer), S3, S6, S10, S12 up to 1000 V AC.

⁴⁾ With reference to the 3RB29 .6 current measuring modules.

⁵⁾ Stand-alone installation without accessories is possible.

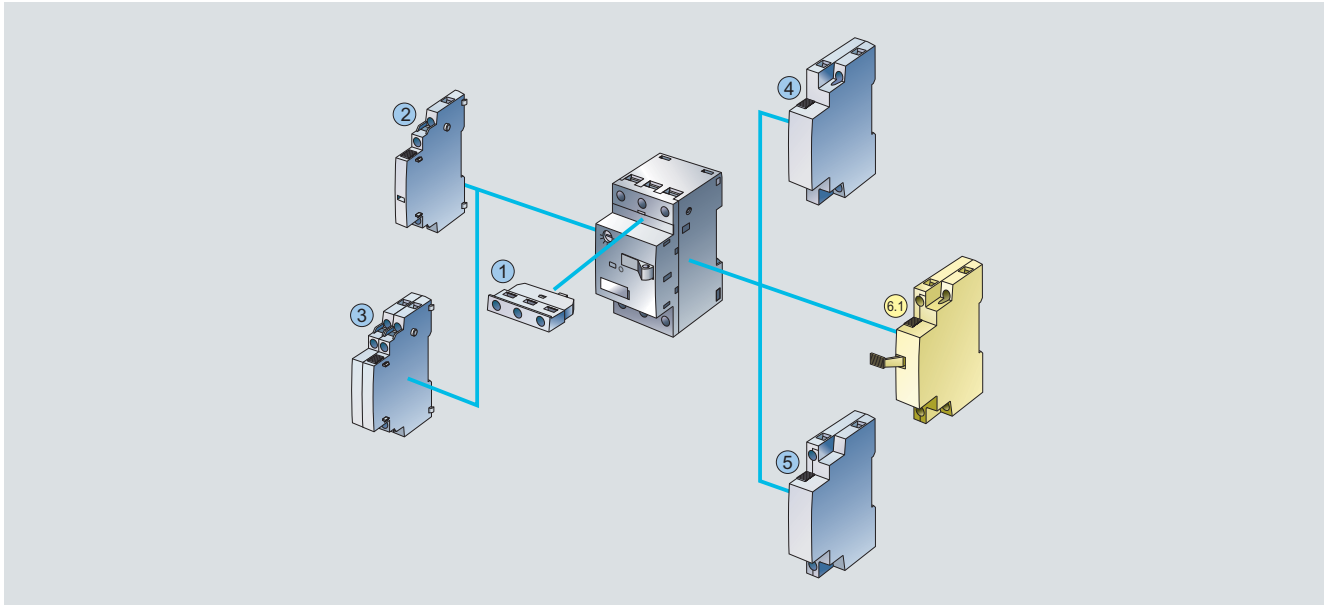
✓ = Has this function or can use this accessory

-- = Does not have this function or cannot use this accessory

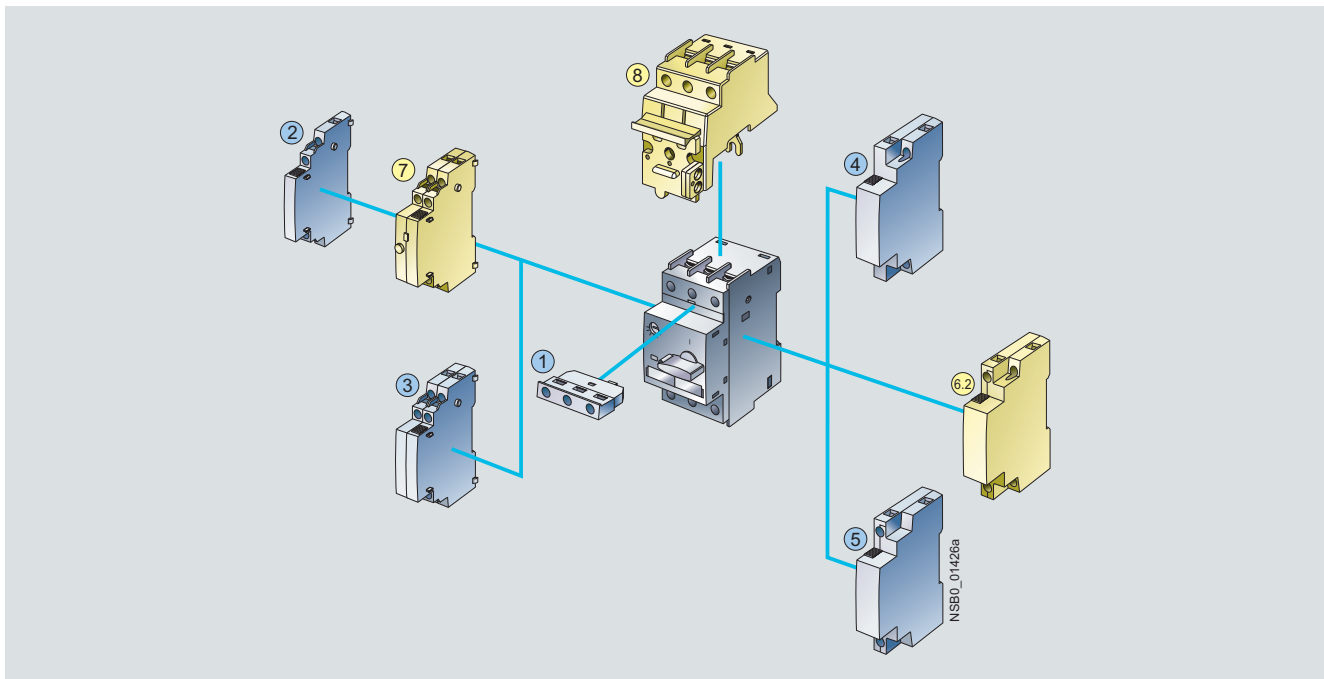
Overview

The following illustrations show our 3RV1 motor starter protectors/circuit breakers with the accessories which can be mounted for the various sizes, [see also "Introduction" --> "Overview"](#).

Motor starter protectors/circuit breakers, size S00, with mountable accessories



Motor starter protectors/circuit breakers, sizes S0, S2 or S3, with mountable accessories



Mountable accessories for all sizes S00 ... S3

- ① Transverse auxiliary switch (can not be used with 3RV17 and 3RV18 circuit breakers)
- ② Lateral auxiliary switch with 2 contacts
- ③ Lateral auxiliary switch with 4 contacts
- ④ Shunt release
- ⑤ Undervoltage release

Mountable accessories

- ⑥.1 Undervoltage release with leading auxiliary contacts
- ⑥.2 Undervoltage release with leading auxiliary contacts
- ⑦ Alarm switch
- ⑧ Isolator module

For sizes

- S00
- S0 ... S3
- S0 ... S3
- S0 and S2

For accessories see page 5/17 onwards.

SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

General data



Size S0 motor starter protector

3RV1 motor starter protectors are compact, current limiting motor starter protectors which are optimized for load feeders. The motor starter protectors are used for switching and protecting induction motors of up to 45 kW at 400 V AC and for other loads with rated currents of up to 100 A.

Type of construction

The motor starter protectors are available in four sizes:

- Size S00 - width 45 mm, max. rated current 12 A, at 400 V AC suitable for induction motors up to 5.5 kW.
- Size S0 – width 45 mm, max. rated current 25 A, at 400 V AC suitable for induction motors up to 11 kW.
- Size S2 – width 55 mm, max. rated current 50 A, at 400 V AC suitable for induction motors up to 22 kW.
- Size S3 – width 70 mm, max. rated current 100 A, at 400 V AC suitable for induction motors up to 45 kW.

Note



Screw terminals



Cage Clamp terminals

The terminals are indicated in the selection and ordering data by orange backgrounds.

"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC

The 3RV10 motor starter protectors are suitable for the overload protection of explosion-proof motors with "increased safety" type of protection EEx e; see Chapter 20 "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for explosion-protected areas (ATEX Explosion Protection)".

Application

Operating conditions

3RV1 motor starter protectors are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. When installed in dusty and damp areas, suitable enclosures must be provided.

3RV1 motor starter protectors can optionally be fed from the top or from below.

The permissible ambient temperatures, the maximum switching capacities, the tripping currents and other boundary conditions can be found in the technical specifications and tripping characteristics, see note on [Technical Information on page 5/1](#).

3RV1 motor starter protectors are suitable for operation in IT systems (IT networks). In this case, the different short-circuit breaking capacity in the IT system must be taken into account.

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and start-up data of the motor to be protected is always paramount to the choice of the most suitable motor starter protector. This also applies to motor starter protectors for transformer protection.

Possible uses

The 3RV1 motor starter protectors can be used:

- For short-circuit protection
- For motor protection (also with overload relay function)
- For system protection
- For short-circuit protection for starter combinations
- For transformer protection
- As main control and EMERGENCY-STOP switches
- For fuse monitoring
- For use in IT systems (IT networks)
- For switching of DC currents
- As voltage transformer circuit breakers
- In areas subject to explosion hazard (ATEX)

More information can be found in "Configuration", see note on [Technical Information on page 5/1](#).

SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

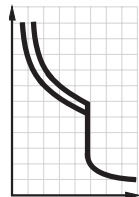
Motor Starter Protectors

For motor protection

Selection and ordering data

CLASS 10, without auxiliary switches

PU (UNIT, SET, M)=1
 PS* =1 unit
 PG =101



3RV10 11-0JA10



3RV10 21-0JA10



3RV10 11-1EA20

Rated current	Suitable for induction motors ¹⁾ with P	Setting range for thermal overload releases	Instantaneous over-current releases	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
I_n				I_{cu}		Order No.	Price per PU		Order No.	Price per PU
A	kW	A	A	kA			kg			kg
Size S00										
0.16	0.04	0.11 ... 0.16	2.1	100	▶	3RV10 11-0AA10	0.230	▶	3RV10 11-0AA20	0.233
0.2	0.06	0.14 ... 0.2	2.6	100	▶	3RV10 11-0BA10	0.231	▶	3RV10 11-0BA20	0.234
0.25	0.06	0.18 ... 0.25	3.3	100	▶	3RV10 11-0CA10	0.233	▶	3RV10 11-0CA20	0.234
0.32	0.09	0.22 ... 0.32	4.2	100	▶	3RV10 11-0DA10	0.233	▶	3RV10 11-0DA20	0.234
0.4	0.09	0.28 ... 0.4	5.2	100	▶	3RV10 11-0EA10	0.235	▶	3RV10 11-0EA20	0.236
0.5	0.12	0.35 ... 0.5	6.5	100	▶	3RV10 11-0FA10	0.232	▶	3RV10 11-0FA20	0.232
0.63	0.18	0.45 ... 0.63	8.2	100	▶	3RV10 11-0GA10	0.233	▶	3RV10 11-0GA20	0.234
0.8	0.18	0.55 ... 0.8	10	100	▶	3RV10 11-0HA10	0.235	▶	3RV10 11-0HA20	0.237
1	0.25	0.7 ... 1	13	100	▶	3RV10 11-0JA10	0.233	▶	3RV10 11-0JA20	0.235
1.25	0.37	0.9 ... 1.25	16	100	▶	3RV10 11-0KA10	0.279	▶	3RV10 11-0KA20	0.281
1.6	0.55	1.1 ... 1.6	21	100	▶	3RV10 11-1AA10	0.281	▶	3RV10 11-1AA20	0.283
2	0.75	1.4 ... 2	26	100	▶	3RV10 11-1BA10	0.280	▶	3RV10 11-1BA20	0.282
2.5	0.75	1.8 ... 2.5	33	100	▶	3RV10 11-1CA10	0.281	▶	3RV10 11-1CA20	0.284
3.2	1.1	2.2 ... 3.2	42	100	▶	3RV10 11-1DA10	0.283	▶	3RV10 11-1DA20	0.285
4	1.5	2.8 ... 4	52	100	▶	3RV10 11-1EA10	0.281	▶	3RV10 11-1EA20	0.284
5	1.5	3.5 ... 5	65	100	▶	3RV10 11-1FA10	0.285	▶	3RV10 11-1FA20	0.286
6.3	2.2	4.5 ... 6.3	82	100	▶	3RV10 11-1GA10	0.288	▶	3RV10 11-1GA20	0.288
8	3	5.5 ... 8	104	50	▶	3RV10 11-1HA10	0.289	▶	3RV10 11-1HA20	0.290
10	4	7 ... 10	130	50	▶	3RV10 11-1JA10	0.284	▶	3RV10 11-1JA20	0.286
12	5.5	9 ... 12	156	50	▶	3RV10 11-1KA10	0.280	▶	3RV10 11-1KA20	0.282
Size S0										
0.16	0.04	0.11 ... 0.16	2.1	100	▶	3RV10 21-0AA10	0.286	--		
0.2	0.06	0.14 ... 0.2	2.6	100	▶	3RV10 21-0BA10	0.288	--		
0.25	0.06	0.18 ... 0.25	3.3	100	▶	3RV10 21-0CA10	0.287	--		
0.32	0.09	0.22 ... 0.32	4.2	100	▶	3RV10 21-0DA10	0.286	--		
0.4	0.09	0.28 ... 0.4	5.2	100	▶	3RV10 21-0EA10	0.288	--		
0.5	0.12	0.35 ... 0.5	6.5	100	▶	3RV10 21-0FA10	0.287	--		
0.63	0.18	0.45 ... 0.63	8.2	100	▶	3RV10 21-0GA10	0.289	--		
0.8	0.18	0.55 ... 0.8	10	100	▶	3RV10 21-0HA10	0.287	--		
1	0.25	0.7 ... 1	13	100	▶	3RV10 21-0JA10	0.350	--		
1.25	0.37	0.9 ... 1.25	16	100	▶	3RV10 21-0KA10	0.353	--		
1.6	0.55	1.1 ... 1.6	21	100	▶	3RV10 21-1AA10	0.357	--		
2	0.75	1.4 ... 2	26	100	▶	3RV10 21-1BA10	0.356	--		
2.5	0.75	1.8 ... 2.5	33	100	▶	3RV10 21-1CA10	0.357	--		
3.2	1.1	2.2 ... 3.2	42	100	▶	3RV10 21-1DA10	0.356	--		
4	1.5	2.8 ... 4	52	100	▶	3RV10 21-1EA10	0.354	--		
5	1.5	3.5 ... 5	65	100	▶	3RV10 21-1FA10	0.358	--		
6.3	2.2	4.5 ... 6.3	82	100	▶	3RV10 21-1GA10	0.357	--		
8	3	5.5 ... 8	104	100	▶	3RV10 21-1HA10	0.356	--		
10	4	7 ... 10	130	100	▶	3RV10 21-1JA10	0.361	--		
12.5	5.5	9 ... 12.5	163	100	▶	3RV10 21-1KA10	0.358	--		
16	7.5	11 ... 16	208	50	▶	3RV10 21-4AA10	0.366	--		
20	7.5	14 ... 20	260	50	▶	3RV10 21-4BA10	0.363	--		
22	11	17 ... 22	286	50	▶	3RV10 21-4CA10	0.361	--		
25	11	20 ... 25	325	50	▶	3RV10 21-4DA10	0.364	--		

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Auxiliary switches can be ordered separately (see "Mountable accessories").

For multi-unit packing and reusable packaging, see Chapter 20 "Appendix" --> "Ordering notes".

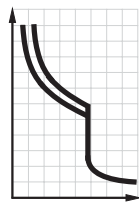
SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

Motor Starter Protectors

For motor protection

CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)

PU (UNIT, SET, M)=1
PS* =1 unit
PG =101



3RV10 11-0KA15
with integrated transverse auxiliary switch



3RV10 21-1GA15
with integrated transverse auxiliary switch



3RV10 11-0GA25
with integrated transverse auxiliary switch

Rated current	Suitable for induction motors ¹⁾ with P	Setting range for thermal overload releases	Instantaneous over-current releases	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	Weight per PU approx.	DT	Cage Clamp terminals	Weight per PU approx.
I_n				I_{cu}		Order No.	Price per PU		Order No.	Price per PU
A	kW	A	A	kA			kg			kg
Size S00										
0.16	0.04	0.11 ... 0.16	2.1	100	▶	3RV10 11-0AA15	0.245 B		3RV10 11-0AA25	0.245
0.2	0.06	0.14 ... 0.2	2.6	100	▶	3RV10 11-0BA15	0.246 B		3RV10 11-0BA25	0.245
0.25	0.06	0.18 ... 0.25	3.3	100	▶	3RV10 11-0CA15	0.246 B		3RV10 11-0CA25	0.246
0.32	0.09	0.22 ... 0.32	4.2	100	▶	3RV10 11-0DA15	0.247 B		3RV10 11-0DA25	0.246
0.4	0.09	0.28 ... 0.4	5.2	100	▶	3RV10 11-0EA15	0.250 B		3RV10 11-0EA25	0.250
0.5	0.12	0.35 ... 0.5	6.5	100	▶	3RV10 11-0FA15	0.247 B		3RV10 11-0FA25	0.247
0.63	0.18	0.45 ... 0.63	8.2	100	▶	3RV10 11-0GA15	0.249 B		3RV10 11-0GA25	0.252
0.8	0.18	0.55 ... 0.8	10	100	▶	3RV10 11-0HA15	0.250 B		3RV10 11-0HA25	0.250
1	0.25	0.7 ... 1	13	100	▶	3RV10 11-0JA15	0.249 B		3RV10 11-0JA25	0.249
1.25	0.37	0.9 ... 1.25	16	100	▶	3RV10 11-0KA15	0.297 B		3RV10 11-0KA25	0.297
1.6	0.55	1.1 ... 1.6	21	100	▶	3RV10 11-1AA15	0.298 B		3RV10 11-1AA25	0.298
2	0.75	1.4 ... 2	26	100	▶	3RV10 11-1BA15	0.297 B		3RV10 11-1BA25	0.297
2.5	0.75	1.8 ... 2.5	33	100	▶	3RV10 11-1CA15	0.298 B		3RV10 11-1CA25	0.298
3.2	1.1	2.2 ... 3.2	42	100	▶	3RV10 11-1DA15	0.299 B		3RV10 11-1DA25	0.300
4	1.5	2.8 ... 4	52	100	▶	3RV10 11-1EA15	0.296 B		3RV10 11-1EA25	0.298
5	1.5	3.5 ... 5	65	100	▶	3RV10 11-1FA15	0.301 B		3RV10 11-1FA25	0.303
6.3	2.2	4.5 ... 6.3	82	100	▶	3RV10 11-1GA15	0.303 B		3RV10 11-1GA25	0.303
8	3	5.5 ... 8	104	50	▶	3RV10 11-1HA15	0.304 B		3RV10 11-1HA25	0.304
10	4	7 ... 10	130	50	▶	3RV10 11-1JA15	0.300 B		3RV10 11-1JA25	0.300
12	5.5	9 ... 12	156	50	▶	3RV10 11-1KA15	0.297 B		3RV10 11-1KA25	0.298
Size S0										
0.16	0.04	0.11 ... 0.16	2.1	100	▶	3RV10 21-0AA15	0.300	--		
0.2	0.06	0.14 ... 0.2	2.6	100	▶	3RV10 21-0BA15	0.304	--		
0.25	0.06	0.18 ... 0.25	3.3	100	▶	3RV10 21-0CA15	0.302	--		
0.32	0.09	0.22 ... 0.32	4.2	100	▶	3RV10 21-0DA15	0.303	--		
0.4	0.09	0.28 ... 0.4	5.2	100	▶	3RV10 21-0EA15	0.303	--		
0.5	0.12	0.35 ... 0.5	6.5	100	▶	3RV10 21-0FA15	0.304	--		
0.63	0.18	0.45 ... 0.63	8.2	100	▶	3RV10 21-0GA15	0.305	--		
0.8	0.18	0.55 ... 0.8	10	100	▶	3RV10 21-0HA15	0.370	--		
1	0.25	0.7 ... 1	13	100	▶	3RV10 21-0JA15	0.368	--		
1.25	0.37	0.9 ... 1.25	16	100	▶	3RV10 21-0KA15	0.369	--		
1.6	0.55	1.1 ... 1.6	21	100	▶	3RV10 21-1AA15	0.371	--		
2	0.75	1.4 ... 2	26	100	▶	3RV10 21-1BA15	0.371	--		
2.5	0.75	1.8 ... 2.5	33	100	▶	3RV10 21-1CA15	0.372	--		
3.2	1.1	2.2 ... 3.2	42	100	▶	3RV10 21-1DA15	0.375	--		
4	1.5	2.8 ... 4	52	100	▶	3RV10 21-1EA15	0.370	--		
5	1.5	3.5 ... 5	65	100	▶	3RV10 21-1FA15	0.376	--		
6.3	2.2	4.5 ... 6.3	82	100	▶	3RV10 21-1GA15	0.374	--		
8	3	5.5 ... 8	104	100	▶	3RV10 21-1HA15	0.374	--		
10	4	7 ... 10	130	100	▶	3RV10 21-1JA15	0.375	--		
12.5	5.5	9 ... 12.5	163	100	▶	3RV10 21-1KA15	0.374	--		
16	7.5	11 ... 16	208	50	▶	3RV10 21-4AA15	0.382	--		
20	7.5	14 ... 20	260	50	▶	3RV10 21-4BA15	0.376	--		
22	11	17 ... 22	286	50	▶	3RV10 21-4CA15	0.378	--		
25	11	20 ... 25	325	50	▶	3RV10 21-4DA15	0.382	--		

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Auxiliary switches can be ordered separately (see "Mountable accessories").

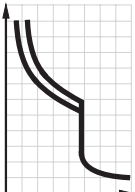
For multi-unit packing and reusable packaging, see Chapter 20 "Appendix" --> "Ordering notes".


SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

Motor Starter Protectors

For motor protection

CLASS 10, without auxiliary switches



Rated current	Suitable for induction motors ¹⁾ with P	Setting range for thermal overload releases	Instantaneous over-current releases	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
I_n			$I >$	I_{cu}		Order No.	Price per PU			kg
A	kW	A	A	kA						

Size S2



3RV10 31-4HA10

16	7.5	11 ... 16	208	50	▶	3RV10 31-4AA10	1	1 unit	101	1.046
20	7.5	14 ... 20	260	50	▶▶	3RV10 31-4BA10	1	1 unit	101	1.043
25	11	18 ... 25	325	50	▶▶	3RV10 31-4DA10	1	1 unit	101	1.031
32	15	22 ... 32	416	50	▶▶	3RV10 31-4EA10	1	1 unit	101	1.028
40	18.5	28 ... 40	520	50	▶	3RV10 31-4FA10	1	1 unit	101	1.047
45	22	36 ... 45	585	50	▶▶	3RV10 31-4GA10	1	1 unit	101	1.039
50	22	40 ... 50	650	50	▶▶	3RV10 31-4HA10	1	1 unit	101	1.027

Size S3



3RV10 41-4LA10

40	18.5	28 ... 40	520	50	▶	3RV10 41-4FA10	1	1 unit	101	2.219
50	22	36 ... 50	650	50	▶▶	3RV10 41-4HA10	1	1 unit	101	2.240
63	30	45 ... 63	819	50	▶▶	3RV10 41-4JA10	1	1 unit	101	2.247
75	37	57 ... 75	975	50	▶▶	3RV10 41-4KA10	1	1 unit	101	2.253
90	45	70 ... 90	1170	50	▶▶	3RV10 41-4LA10	1	1 unit	101	2.280
100	45	80 ... 100	1235	50	▶▶	3RV10 41-4MA10	1	1 unit	101	2.295

Size S3, with increased switching capacity



3RV10 42-4JA10

16	7.5	11 ... 16	208	100	▶▶	3RV10 42-4AA10	1	1 unit	101	2.174
20	7.5	14 ... 20	260	100	▶▶▶	3RV10 42-4BA10	1	1 unit	101	2.185
25	11	18 ... 25	325	100	▶▶▶	3RV10 42-4DA10	1	1 unit	101	2.211
32	15	22 ... 32	416	100	▶▶▶	3RV10 42-4EA10	1	1 unit	101	2.222
40	18.5	28 ... 40	520	100	▶▶	3RV10 42-4FA10	1	1 unit	101	2.203
50	22	36 ... 50	650	100	▶▶▶	3RV10 42-4HA10	1	1 unit	101	2.230
63	30	45 ... 63	819	100	▶▶▶	3RV10 42-4JA10	1	1 unit	101	2.255
75	37	57 ... 75	975	100	▶▶▶	3RV10 42-4KA10	1	1 unit	101	2.266
90	45	70 ... 90	1170	100	▶▶▶	3RV10 42-4LA10	1	1 unit	101	2.268
100	45	80 ... 100	1235	100	▶▶▶	3RV10 42-4MA10	1	1 unit	101	2.275

CLASS 20, without auxiliary switches

Size S2



3RV10 31-4AB10

16	7.5	11 ... 16	208	50	A	3RV10 31-4AB10	1	1 unit	101	1.067
20	7.5	14 ... 20	260	50	A	3RV10 31-4BB10	1	1 unit	101	1.071
25	11	18 ... 25	325	50	A	3RV10 31-4DB10	1	1 unit	101	1.054
32	15	22 ... 32	416	50	A	3RV10 31-4EB10	1	1 unit	101	1.067
40	18.5	28 ... 40	520	50	A	3RV10 31-4FB10	1	1 unit	101	1.076
45	22	36 ... 45	585	50	A	3RV10 31-4GB10	1	1 unit	101	1.073
50	22	40 ... 50	650	50	A	3RV10 31-4HB10	1	1 unit	101	1.071

Size S3, with increased switching capacity



3RV10 42-4KB10

40	18.5	28 ... 40	520	100	A	3RV10 42-4FB10	1	1 unit	101	2.222
50	22	36 ... 50	650	100	A	3RV10 42-4HB10	1	1 unit	101	2.265
63	30	45 ... 63	819	100	A	3RV10 42-4JB10	1	1 unit	101	2.278
75	37	57 ... 75	975	100	A	3RV10 42-4KB10	1	1 unit	101	2.268
90	45	70 ... 90	1170	100	A	3RV10 42-4LB10	1	1 unit	101	2.313
100	45	80 ... 100	1235	100	A	3RV10 42-4MB10	1	1 unit	101	2.322

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Auxiliary switches can be ordered separately (see "Mountable accessories").

For multi-unit packing and reusable packaging, see Chapter 20 "Appendix" --> "Ordering notes".

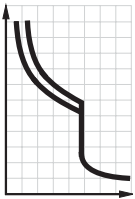






SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

Motor Starter Protectors

For motor protection with overload relay function

Selection and ordering data

CLASS 10, with overload relay function (automatic RESET), without auxiliary switches

	Rated current	Suitable for induction motors ¹⁾ with P	Setting range for thermal overload releases	Instantaneous over-current releases	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	I_n				I_{cu}	Order No.	Price per PU					
	A	kW	A	A	kA							kg
Size S0²⁾												
 3RV11 21-0KA10	0.16	0.04	0.11 ... 0.16	2.1	100	A	3RV11 21-0AA10		1	1 unit	101	0.354
	0.2	0.06	0.14 ... 0.2	2.6	100	A	3RV11 21-0BA10		1	1 unit	101	0.358
	0.25	0.06	0.18 ... 0.25	3.3	100	A	3RV11 21-0CA10		1	1 unit	101	0.352
	0.32	0.09	0.22 ... 0.32	4.2	100	A	3RV11 21-0DA10		1	1 unit	101	0.352
	0.4	0.09	0.28 ... 0.4	5.2	100	A	3RV11 21-0EA10		1	1 unit	101	0.355
	0.5	0.12	0.35 ... 0.5	6.5	100	A	3RV11 21-0FA10		1	1 unit	101	0.356
	0.63	0.18	0.45 ... 0.63	8.2	100	A	3RV11 21-0GA10		1	1 unit	101	0.358
	0.8	0.18	0.55 ... 0.8	10	100	A	3RV11 21-0HA10		1	1 unit	101	0.421
	1	0.25	0.7 ... 1	13	100	A	3RV11 21-0JA10		1	1 unit	101	0.416
	1.25	0.37	0.9 ... 1.25	16	100	A	3RV11 21-0KA10		1	1 unit	101	0.426
	1.6	0.55	1.1 ... 1.6	21	100	A	3RV11 21-1AA10		1	1 unit	101	0.422
	2	0.75	1.4 ... 2	26	100	A	3RV11 21-1BA10		1	1 unit	101	0.427
	2.5	0.75	1.8 ... 2.5	33	100	A	3RV11 21-1CA10		1	1 unit	101	0.422
	3.2	1.1	2.2 ... 3.2	42	100	A	3RV11 21-1DA10		1	1 unit	101	0.428
	4	1.5	2.8 ... 4	52	100	A	3RV11 21-1EA10		1	1 unit	101	0.420
	5	1.5	3.5 ... 5	65	100	A	3RV11 21-1FA10		1	1 unit	101	0.429
6.3	2.2	4.5 ... 6.3	82	100	A	3RV11 21-1GA10		1	1 unit	101	0.426	
8	3	5.5 ... 8	104	100	A	3RV11 21-1HA10		1	1 unit	101	0.425	
10	4	7 ... 10	130	100	A	3RV11 21-1JA10		1	1 unit	101	0.428	
12.5	5.5	9 ... 12.5	163	100	A	3RV11 21-1KA10		1	1 unit	101	0.426	
16	7.5	11 ... 16	208	50	A	3RV11 21-4AA10		1	1 unit	101	0.436	
20	7.5	14 ... 20	260	50	A	3RV11 21-4BA10		1	1 unit	101	0.430	
22	11	17 ... 22	286	50	A	3RV11 21-4CA10		1	1 unit	101	0.427	
25	11	20 ... 25	325	50	A	3RV11 21-4DA10		1	1 unit	101	0.432	
Size S2²⁾												
 3RV11 31-4EA10	16	7.5	11 ... 16	208	50	A	3RV11 31-4AA10		1	1 unit	101	1.123
	20	7.5	14 ... 20	260	50	A	3RV11 31-4BA10		1	1 unit	101	1.109
	25	11	18 ... 25	325	50	A	3RV11 31-4DA10		1	1 unit	101	1.114
	32	15	22 ... 32	416	50	A	3RV11 31-4EA10		1	1 unit	101	1.111
	40	18.5	28 ... 40	520	50	A	3RV11 31-4FA10		1	1 unit	101	1.123
	45	22	36 ... 45	585	50	A	3RV11 31-4GA10		1	1 unit	101	1.101
	50	22	40 ... 50	650	50	A	3RV11 31-4HA10		1	1 unit	101	1.106
	Size S3, with increased switching capacity²⁾											
 3RV11 42-4AA10	16	7.5	11 ... 16	208	100	A	3RV11 42-4AA10		1	1 unit	101	2.247
	20	7.5	14 ... 20	260	100	A	3RV11 42-4BA10		1	1 unit	101	2.255
	25	11	18 ... 25	325	100	A	3RV11 42-4DA10		1	1 unit	101	2.284
	32	15	22 ... 32	416	100	A	3RV11 42-4EA10		1	1 unit	101	2.295
	40	18.5	28 ... 40	520	100	A	3RV11 42-4FA10		1	1 unit	101	2.288
	50	22	36 ... 50	650	100	A	3RV11 42-4HA10		1	1 unit	101	2.320
	63	30	45 ... 63	819	100	A	3RV11 42-4JA10		1	1 unit	101	2.333
	75	37	57 ... 75	975	100	A	3RV11 42-4KA10		1	1 unit	101	2.368
	90	45	70 ... 90	1170	100	A	3RV11 42-4LA10		1	1 unit	101	2.353
	100	45	80 ... 100	1235	100	A	3RV11 42-4MA10		1	1 unit	101	2.346

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Accessories for mounting on the right (for sizes S0 to S3) and 3RV19 15 three-phase busbars (for size S0) cannot be used.

Auxiliary switches can be ordered separately (see "Mountable accessories").

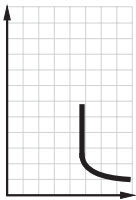
SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A







Motor Starter Protectors

For starter combinations

Selection and ordering data

Without auxiliary switches



	Rated current	Suitable for induction motors ¹⁾ with P	Thermal overload releases ²⁾	Instantaneous over-current releases	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	I_n				I_{cu}		Order No.	Price per PU			kg
	A	kW	A	A	kA						
Size S0											
 3RV13 21-0AC10	0.16	0.04	Without	2.1	100	A	3RV13 21-0AC10	1	1 unit	101	0.282
	0.2	0.06	Without	2.6	100	A	3RV13 21-0BC10	1	1 unit	101	0.284
	0.25	0.06	Without	3.3	100	A	3RV13 21-0CC10	1	1 unit	101	0.285
	0.32	0.09	Without	4.2	100	A	3RV13 21-0DC10	1	1 unit	101	0.282
	0.4	0.09	Without	5.2	100	A	3RV13 21-0EC10	1	1 unit	101	0.286
	0.5	0.12	Without	6.5	100	A	3RV13 21-0FC10	1	1 unit	101	0.283
	0.63	0.18	Without	8.2	100	A	3RV13 21-0GC10	1	1 unit	101	0.348
	0.8	0.18	Without	10	100	A	3RV13 21-0HC10	1	1 unit	101	0.283
	1	0.25	Without	13	100	A	3RV13 21-0JC10	1	1 unit	101	0.345
	1.25	0.37	Without	16	100	A	3RV13 21-0KC10	1	1 unit	101	0.351
	1.6	0.55	Without	21	100	A	3RV13 21-1AC10	1	1 unit	101	0.352
	2	0.75	Without	26	100	A	3RV13 21-1BC10	1	1 unit	101	0.352
	2.5	0.75	Without	33	100	A	3RV13 21-1CC10	1	1 unit	101	0.352
	3.2	1.1	Without	42	100	A	3RV13 21-1DC10	1	1 unit	101	0.353
	4	1.5	Without	52	100	A	3RV13 21-1EC10	1	1 unit	101	0.349
	5	1.5	Without	65	100	A	3RV13 21-1FC10	1	1 unit	101	0.354
6.3	2.2	Without	82	100	A	3RV13 21-1GC10	1	1 unit	101	0.355	
8	3	Without	104	100	A	3RV13 21-1HC10	1	1 unit	101	0.354	
10	4	Without	130	100	A	3RV13 21-1JC10	1	1 unit	101	0.357	
12.5	5.5	Without	163	100	A	3RV13 21-1KC10	1	1 unit	101	0.354	
16	7.5	Without	208	50	A	3RV13 21-4AC10	1	1 unit	101	0.362	
20	7.5	Without	260	50	A	3RV13 21-4BC10	1	1 unit	101	0.357	
22	11	Without	286	50	A	3RV13 21-4CC10	1	1 unit	101	0.358	
25	11	Without	325	50	A	3RV13 21-4DC10	1	1 unit	101	0.359	
Size S2											
 3RV13 31-4AC10	16	7.5	Without	208	50	A	3RV13 31-4AC10	1	1 unit	101	1.038
	20	7.5	Without	260	50	A	3RV13 31-4BC10	1	1 unit	101	1.037
	25	11	Without	325	50	A	3RV13 31-4DC10	1	1 unit	101	1.014
	32	15	Without	416	50	A	3RV13 31-4EC10	1	1 unit	101	1.018
	40	18.5	Without	520	50	A	3RV13 31-4FC10	1	1 unit	101	1.033
	45	22	Without	585	50	A	3RV13 31-4GC10	1	1 unit	101	1.040
50	22	Without	650	50	A	3RV13 31-4HC10	1	1 unit	101	1.019	
Size S3											
 3RV13 41-4JC10	40	18.5	Without	520	50	A	3RV13 41-4FC10	1	1 unit	101	2.197
	50	22	Without	650	50	A	3RV13 41-4HC10	1	1 unit	101	2.227
	63	30	Without	819	50	A	3RV13 41-4JC10	1	1 unit	101	2.244
	75	37	Without	975	50	A	3RV13 41-4KC10	1	1 unit	101	2.247
	90	45	Without	1170	50	A	3RV13 41-4LC10	1	1 unit	101	2.269
	100	45	Without	1235	50	A	3RV13 41-4MC10	1	1 unit	101	2.292
Size S3, with increased switching capacity											
 3RV13 42-4JC10	16	7.5	Without	208	100	A	3RV13 42-4AC10	1	1 unit	101	2.175
	20	7.5	Without	260	100	A	3RV13 42-4BC10	1	1 unit	101	2.188
	25	11	Without	325	100	A	3RV13 42-4DC10	1	1 unit	101	2.219
	32	15	Without	416	100	A	3RV13 42-4EC10	1	1 unit	101	2.208
	40	18.5	Without	520	100	A	3RV13 42-4FC10	1	1 unit	101	2.218
	50	22	Without	650	100	A	3RV13 42-4HC10	1	1 unit	101	2.218
	63	30	Without	819	100	A	3RV13 42-4JC10	1	1 unit	101	2.248
	75	37	Without	975	100	A	3RV13 42-4KC10	1	1 unit	101	2.278
	90	45	Without	1170	100	A	3RV13 42-4LC10	1	1 unit	101	2.266
	100	45	Without	1235	100	A	3RV13 42-4MC10	1	1 unit	101	2.293

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

2) For overload protection of the motors, appropriate overload relays must be used.

Auxiliary switches can be ordered separately (see "Mountable accessories").

For multi-unit packing and reusable packaging, see Chapter 20 "Appendix" --> "Ordering notes".

SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

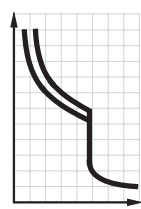
Motor Starter Protectors

For transformer protection

Selection and ordering data

CLASS 10, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current



Rated current	Setting range for thermal overload releases	Instantaneous over-current releases	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
I_n		$I >$	I_{cu}		Order No.	Price per PU			kg	
A	A	A	kA							
Size S0										
	0.16	0.11 ... 0.16	3.3	100	▶	3RV14 21-0AA10	1	1 unit	101	0.286
	0.2	0.14 ... 0.2	4.2	100	▶	3RV14 21-0BA10	1	1 unit	101	0.287
	0.25	0.18 ... 0.25	5.2	100	▶	3RV14 21-0CA10	1	1 unit	101	0.286
	0.32	0.22 ... 0.32	6.5	100	▶	3RV14 21-0DA10	1	1 unit	101	0.288
	0.4	0.28 ... 0.4	8.2	100	▶	3RV14 21-0EA10	1	1 unit	101	0.287
	0.5	0.35 ... 0.5	10	100	▶	3RV14 21-0FA10	1	1 unit	101	0.286
	0.63	0.45 ... 0.63	13	100	▶	3RV14 21-0GA10	1	1 unit	101	0.290
	0.8	0.55 ... 0.8	16	100	▶	3RV14 21-0HA10	1	1 unit	101	0.290
	1	0.7 ... 1	21	100	▶	3RV14 21-0JA10	1	1 unit	101	0.353
	1.25	0.9 ... 1.25	26	100	▶	3RV14 21-0KA10	1	1 unit	101	0.354
	1.6	1.1 ... 1.6	33	100	▶	3RV14 21-1AA10	1	1 unit	101	0.353
	2	1.4 ... 2	42	100	▶	3RV14 21-1BA10	1	1 unit	101	0.358
	2.5	1.8 ... 2.5	52	100	▶	3RV14 21-1CA10	1	1 unit	101	0.354
	3.2	2.2 ... 3.2	65	100	▶	3RV14 21-1DA10	1	1 unit	101	0.358
	4	2.8 ... 4	82	100	▶	3RV14 21-1EA10	1	1 unit	101	0.354
	5	3.5 ... 5	104	100	▶	3RV14 21-1FA10	1	1 unit	101	0.357
	6.3	4.5 ... 6.3	130	100	▶	3RV14 21-1GA10	1	1 unit	101	0.356
	8	5.5 ... 8	163	100	▶	3RV14 21-1HA10	1	1 unit	101	0.358
	10	7 ... 10	208	100	▶	3RV14 21-1JA10	1	1 unit	101	0.362
12.5	9 ... 12.5	260	100	▶	3RV14 21-1KA10	1	1 unit	101	0.360	
16	11 ... 16	286	50	▶	3RV14 21-4AA10	1	1 unit	101	0.365	
20	14 ... 20	325	50	▶	3RV14 21-4BA10	1	1 unit	101	0.365	
Size S2										
	16	11 ... 16	325	50	▶	3RV14 31-4AA10	1	1 unit	101	1.029
	20	14 ... 20	416	50	▶	3RV14 31-4BA10	1	1 unit	101	1.034
	25	18 ... 25	520	50	▶	3RV14 31-4DA10	1	1 unit	101	1.038
	32	22 ... 32	660	50	▶	3RV14 31-4EA10	1	1 unit	101	1.029
	40	28 ... 40	836	50	▶	3RV14 31-4FA10	1	1 unit	101	1.039



3RV14 31-4DA10

Auxiliary switches can be ordered separately (see "Mountable accessories").

For multi-unit packing and reusable packaging, see Chapter 20 "Appendix" --> "Ordering notes".

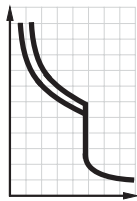
SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

Motor Starter Protectors

For fuse monitoring

Selection and ordering data

Without auxiliary switches



Rated current	Thermal overload releases	Instantaneous over-current releases	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
I_n			I_{cu}		Order No.	Price per PU			kg
A	A	A	kA						

Size S00



3RV16 11-0BD10

0.2	0.2	1.2	100	▶	3RV16 11-0BD10		1	1 unit	101	0.289
-----	-----	-----	-----	---	-----------------------	--	---	--------	-----	-------

Note:
The auxiliary switch required for signaling must be ordered separately.

For multi-unit packing and reusable packaging, see Chapter 20 "Appendix" --> "Ordering notes".

Accessories

Version	Contacts	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg

Mountable auxiliary switches (essential accessories)



3RV19 01-1E

Transverse auxiliary switches With screw terminals, mountable on front	1 NO + 1 NC	▶	3RV19 01-1E		1	1 unit	101	0.018
--	-------------	---	--------------------	--	---	--------	-----	-------



3RV19 01-1A

Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	▶	3RV19 01-1A		1	1 unit	101	0.045
--	-------------	---	--------------------	--	---	--------	-----	-------

Additional auxiliary switches and other accessories see "Mountable accessories".

SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

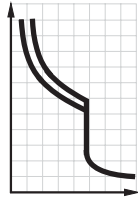
Circuit Breakers




For system protection
according to UL 489/CSA C22.2 No. 5-02

Selection and ordering data

Without auxiliary switches

Circuit breakers for system protection and non-motor loads according to UL/CSA



Rated current 1)	Thermal overload releases (non- adjustable)	Instanta- neous over- current releases	Short-circuit breaking capacity at		DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
			AC 480 Y/277 V ²⁾	480 V AC							
I_n ¹⁾		$I >$	I_{bc}	I_{bc}		Order No.	Price per PU			kg	
A	A	A	kA	kA							
Size S0											
 3RV17 21-0AD10	0.16	0.16	2.1	50	--	C	3RV17 21-0AD10	1	1 unit	101	0.460
	0.2	0.2	2.6	50	--	C	3RV17 21-0BD10	1	1 unit	101	0.460
	0.25	0.25	3.3	50	--	C	3RV17 21-0CD10	1	1 unit	101	0.460
	0.32	0.32	4.2	50	--	C	3RV17 21-0DD10	1	1 unit	101	0.460
	0.4	0.4	5.2	50	--	C	3RV17 21-0ED10	1	1 unit	101	0.460
	0.5	0.5	6.5	50	--	C	3RV17 21-0FD10	1	1 unit	101	0.460
	0.63	0.63	8.2	50	--	C	3RV17 21-0GD10	1	1 unit	101	0.460
	0.8	0.8	10	50	--	C	3RV17 21-0HD10	1	1 unit	101	0.530
	1	1	13	50	--	C	3RV17 21-0JD10	1	1 unit	101	0.530
	1.25	1.25	16	50	--	C	3RV17 21-0KD10	1	1 unit	101	0.530
	1.6	1.6	21	50	--	C	3RV17 21-1AD10	1	1 unit	101	0.530
	2	2	26	50	--	C	3RV17 21-1BD10	1	1 unit	101	0.530
	2.5	2.5	33	50	--	C	3RV17 21-1CD10	1	1 unit	101	0.530
	3.2	3.2	42	50	--	C	3RV17 21-1DD10	1	1 unit	101	0.530
	4	4	52	50	--	C	3RV17 21-1ED10	1	1 unit	101	0.530
	5	5	65	50	--	C	3RV17 21-1FD10	1	1 unit	101	0.530
	6.3	6.3	82	50	--	C	3RV17 21-1GD10	1	1 unit	101	0.530
	8	8	104	50	--	C	3RV17 21-1HD10	1	1 unit	101	0.530
	10	10	130	50	--	C	3RV17 21-1JD10	1	1 unit	101	0.530
12.5	12.5	163	50	--	C	3RV17 21-1KD10	1	1 unit	101	0.530	
15	15	208	50	--	C	3RV17 21-4AD10	1	1 unit	101	0.530	
20	20	260	50	--	C	3RV17 21-4BD10	1	1 unit	101	0.530	
22	22	286	50	--	C	3RV17 21-4CD10	1	1 unit	101	0.530	
Size S3											
 3RV17 42-5FD10	10	10	150	65	65	B	3RV17 42-5AD10	1	1 unit	101	0.460
	15	15	225	65	65	B	3RV17 42-5BD10	1	1 unit	101	0.460
	20	20	260	65	65	B	3RV17 42-5CD10	1	1 unit	101	0.460
	25	25	325	65	65	B	3RV17 42-5DD10	1	1 unit	101	0.460
	30	30	390	65	65	B	3RV17 42-5ED10	1	1 unit	101	0.460
	35	35	455	65	--	B	3RV17 42-5FD10	1	1 unit	101	0.460
	40	40	520	65	--	B	3RV17 42-5GD10	1	1 unit	101	0.460
	45	45	585	65	--	B	3RV17 42-5HD10	1	1 unit	101	0.460
	50	50	650	65	--	B	3RV17 42-5JD10	1	1 unit	101	0.460
	60	60	780	65	--	B	3RV17 42-5LD10	1	1 unit	101	0.460
	70	70	910	65	--	B	3RV17 42-5QD10	1	1 unit	101	0.460

1) Rated value 100 % according to UL 489 and IEC 60947-2 ("100 % rated breaker").

2) For values for AC 600 Y/347 V "Technical specifications" --> "Permissible rated data of devices approved for North America (UL/CSA)" --> "3RV17 and 3RV18 motor starter protectors as circuit breakers" see note on Technical Information on page 5/1.

Transverse auxiliary switches must not be mounted, lateral auxiliary switches can be ordered separately (see "Mountable accessories").

SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

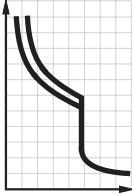
Circuit Breakers


For transformer protection
according to UL 489/CSA C22.2 No. 5-02

Selection and ordering data

Without auxiliary switches

Circuit breakers for system and transformer protection according to UL/CSA, specially designed for transformers with high inrush current



Rated current ¹⁾	Thermal overload releases (non-adjustable)	Instantaneous overcurrent releases	Short-circuit breaking capacity at AC 480 Y/277 V ²⁾	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
$I_n^{1)}$		$I >$	I_{bc}		Order No.	Price per PU			kg	
A	A	A	kA							
Size S0										
	0.16	0.16	3.3	50	C	3RV18 21-0AD10	1	1 unit	101	0.450
	0.2	0.2	4.2	50	C	3RV18 21-0BD10	1	1 unit	101	0.450
	0.25	0.25	5.2	50	C	3RV18 21-0CD10	1	1 unit	101	0.450
	0.32	0.32	6.5	50	C	3RV18 21-0DD10	1	1 unit	101	0.450
	0.4	0.4	8.2	50	C	3RV18 21-0ED10	1	1 unit	101	0.450
	0.5	0.5	10	50	C	3RV18 21-0FD10	1	1 unit	101	0.450
	0.63	0.63	13	50	C	3RV18 21-0GD10	1	1 unit	101	0.450
	0.8	0.8	16	50	C	3RV18 21-0HD10	1	1 unit	101	0.450
	1	1	21	50	C	3RV18 21-0JD10	1	1 unit	101	0.520
	1.25	1.25	26	50	C	3RV18 21-0KD10	1	1 unit	101	0.520
	1.6	1.6	33	50	C	3RV18 21-1AD10	1	1 unit	101	0.520
	2	2	42	50	C	3RV18 21-1BD10	1	1 unit	101	0.520
	2.5	2.5	52	50	C	3RV18 21-1CD10	1	1 unit	101	0.520
	3.2	3.2	65	50	C	3RV18 21-1DD10	1	1 unit	101	0.520
	4	4	82	50	C	3RV18 21-1ED10	1	1 unit	101	0.520
	5	5	104	50	C	3RV18 21-1FD10	1	1 unit	101	0.520
	6.3	6.3	130	50	C	3RV18 21-1GD10	1	1 unit	101	0.520
	8	8	163	50	C	3RV18 21-1HD10	1	1 unit	101	0.520
	10	10	208	50	C	3RV18 21-1JD10	1	1 unit	101	0.520
	12.5	12.5	260	50	C	3RV18 21-1KD10	1	1 unit	101	0.520
	15	15	286	50	C	3RV18 21-4AD10	1	1 unit	101	0.520
	20	20	325	50	C	3RV18 21-4BD10	1	1 unit	101	0.520

¹⁾ Rated value 100 % according to UL 489 and IEC 60947-2 ("100 % rated breaker").

²⁾ For values for AC 600 Y/347 V "Technical specifications" --> "Permissible rated data of devices approved for North America (UL/CSA)" --> "3RV17 and 3RV18 motor starter protectors as circuit breakers" see note on Technical Information on page 5/1.

Transverse auxiliary switches must not be mounted, lateral auxiliary switches can be ordered separately (see "Mountable accessories").

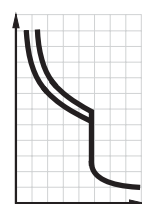
SIRIUS 3RV Motor Starter Protectors/Circuit Breakers up to 100 A

Motor Starter Protectors

For distance protection

Selection and ordering data

Voltage transformer circuit breakers with auxiliary switches (1 CO)



Rated current	Thermal overload releases	Instantaneous overcurrent releases	Auxiliary switch integrated in the MSP, transverse	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
I_n				I_{cu}						
A	A	A		kA						kg
						Order No.	Price per PU			

Size S00



3RV16 11-1.G14

1.4	1.4	6	1 CO	50	B	3RV16 11-1AG14	1	1 unit	101	0.314
2.5	2.5	10.5	1 CO	50	▶	3RV16 11-1CG14	1	1 unit	101	0.318
3	3	20	1 CO	50	▶	3RV16 11-1DG14	1	1 unit	101	0.315

Accessories

Version	Contacts	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			
							kg

Mountable auxiliary switches for other signaling purposes



3RV19 01-1A

Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	▶	3RV19 01-1A	1	1 unit	101	0.045
--	-------------	---	--------------------	---	--------	-----	-------

Additional auxiliary switches and other accessories see "Mountable accessories".

More information

Conversion of 3VU13 to 3RV1 voltage transformer circuit breakers

The 3VU13 voltage transformer circuit breakers previously available have been discontinued. The 3RV1 voltage transformer circuit breakers are offered as replacement types.

Previous type	Replacement type
3VU13 11-6HR00	3RV16 11-1CG14
3VU13 21-6HR00	3RV16 11-1CG14 + 3RV19 01-1A
3VU13 11-6JR00	3RV16 11-1DG14

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Mountable accessories

Overview

Mounting location and function

The 3RV1 motor starter protectors/circuit breakers have three main contact elements. In order to achieve maximum flexibility, auxiliary switches, signaling switches, auxiliary releases and isolator modules can be supplied separately.

These components can be fitted as required on the motor starter protectors without using tools.

For overview graphic see "General Data" --> "Overview".

Front side <u>Notes:</u> <ul style="list-style-type: none"> • A maximum of 4 auxiliary contacts with auxiliary switches can be attached to each motor starter protector. • Transverse auxiliary switches must not be used for the 3RV17 and 3RV18 circuit breakers. 	Transverse auxiliary switches 1 NO + 1 NC or 2 NO or 1 CO contact	An auxiliary switch block can be inserted transversely on the front. The overall width of the motor starter protectors remains unchanged.
Left-hand side <u>Notes:</u> <ul style="list-style-type: none"> • A maximum of 4 auxiliary contacts with auxiliary switches can be attached to each motor starter protector/circuit breaker. • Auxiliary switches (2 contacts) and signal switches can be mounted separately or together. • The signaling switch cannot be used for the 3RV17 and 3RV18 circuit breakers. 	Lateral auxiliary switches (2 contacts) 1 NO + 1 NC or 2 NO or 2 NC	One of the three auxiliary switches can be mounted laterally at the left side for each motor starter protector. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector. The overall width of the lateral auxiliary switch with 2 contacts is 9 mm.
	Lateral auxiliary switches (4 contacts) 2 NO + 2 NC	One auxiliary switch with 4 contacts can be mounted at left side laterally for each motor starter protector/circuit breaker. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector/circuit breaker. The overall width of the lateral auxiliary switch with 4 contacts is 18 mm.
	Signaling switches for sizes S0, S2 and S3 Tripping 1 NO + 1 NC Short-circuit 1 NO + 1 NC	One signaling switch can be mounted at the left side of each motor starter protector/circuit breaker with a rotary operating mechanism. The signaling switch has two contact systems. One contact system always signals tripping irrespective of whether this was caused by a short-circuit, an overload or an auxiliary release. The other contact system only switches in the event of a short-circuit. There is no signaling as a result of switching off with the handle. In order to be able to switch on the motor starter protector again after a short-circuit, the signaling switch must be reset manually after the error cause has been eliminated. The overall width of the signaling switch is 18 mm.
Right-hand side <u>Notes:</u> <ul style="list-style-type: none"> • One auxiliary release can be mounted per motor starter protector/circuit breaker. • Accessories cannot be mounted at the right-hand side of the 3RV11 motor starter protectors for motor protection with overload relay function. 	Auxiliary releases Shunt releases or Undervoltage releases or Undervoltage releases with leading auxiliary contacts (2 NO)	For remote-controlled tripping of the motor starter protector/circuit breaker. The release coil should only be energized for short periods (see schematics). Trips the motor starter protector/circuit breaker when the voltage is interrupted and prevents the motor from being restarted accidentally when the voltage is restored. Used for remote-controlled tripping of the motor starter protector. Particularly suitable for EMERGENCY-STOP disconnection by way of the corresponding EMERGENCY-STOP pushbutton according to EN 60204-1 (VDE 0113). Function and use as for the undervoltage release without leading auxiliary contacts, but with the following additional function: the auxiliary contacts will open in switch position OFF to deenergize the coil of the undervoltage release, thus interrupting energy consumption. In the "tripped" position, these auxiliary contacts are not guaranteed to open. The leading contacts permit the motor starter protector to reclose. The overall width of the auxiliary release is 18 mm.
Top <u>Notes:</u> <ul style="list-style-type: none"> • The isolator module cannot be used for the 3RV17 and 3RV18 circuit breakers. • The isolator module covers the terminal screws of the transverse auxiliary switch. If the isolator module is used, we therefore recommend that either the lateral auxiliary switches be fitted or that the isolator module not be mounted until the auxiliary switch has been wired. 	Isolator modules for sizes S0 and S2	Isolator modules can be mounted to the upper terminal end of motor starter protectors of sizes S0 and S2. The supply cable is connected to the motor starter protector through the isolator module. The plug can only be unplugged when the motor starter protector/circuit breaker is open and isolates all 3 poles of the motor starter protector from the network. The shock-protected isolation point is clearly visible and secured with a padlock to prevent reinsertion of the plug.









For a complete overview of which accessories can be used for the various motor starter protectors see "Introduction" --> "Overview" --> "Motor starter protectors".

SIRIUS 3RV Motor Starter Protectors up to 100 A






Accessories

Mountable accessories

Selection and ordering data

Version	Contacts	For motor starter protectors/ circuit breakers Size	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	
Auxiliary switches¹⁾								
 3RV19 01-1E	Transverse auxiliary switches With screw terminals, mountable on front	1 CO 1 NO + 1 NC 2 NO	S00, S0, S2, S3 ▶ ▶ ▶	3RV19 01-1D 3RV19 01-1E 3RV19 01-1F	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.015 0.018 0.018
 3RV19 01-1G	Solid-state compatible transverse auxiliary switches With screw terminals, front mountable, for operation in dusty atmosphere and in solid-state circuits with low operating currents	1 CO	S00, S0, S2, S3 A	3RV19 01-1G	1	1 unit	101	0.016
 3RV19 01-0H	Covers for transverse auxiliary switches	--	S00, S0, S2, S3 ▶	3RV19 01-0H	1	10 units	101	0.006
 3RV19 01-1A	Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	S00, S0, S2, S3 ▶	3RV19 01-1A	1	1 unit	101	0.045
 3RV19 01-1B		2 NO	▶	3RV19 01-1B	1	1 unit	101	0.045
 3RV19 01-1C		2 NC	▶	3RV19 01-1C	1	1 unit	101	0.045
 3RV19 01-1J		2 NO + 2 NC	A	3RV19 01-1J	1	1 unit	101	0.083

¹⁾ Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switch with 2 NO + 2 NC is used without a transverse auxiliary switch. Transverse auxiliary switches must not be used for the 3RV17 and 3RV18 circuit breakers.




Version	Contacts	For motor starter protectors/ circuit breakers Size	DT	Cage Clamp terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price € per PU		kg	
Auxiliary switches¹⁾								
 3RV19 01-2E	Transverse auxiliary switches With Cage Clamp terminals, mountable on front	1 NO + 1 NC 2 NO	S00, S0, S2, S3 ▶ ▶	3RV19 01-2E 3RV19 01-2F	1 1	1 unit 1 unit	101 101	0.017 0.018
 3RV19 01-2A	Lateral auxiliary switches With Cage Clamp terminals, mountable on left	1 NO + 1 NC	S00, S0, S2, S3 ▶	3RV19 01-2A	1	1 unit	101	0.040
 3RV19 01-2B		2 NO	▶	3RV19 01-2B	1	1 unit	101	0.040
 3RV19 01-2C		2 NC	▶	3RV19 01-2C	1	1 unit	101	0.040

¹⁾ Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. Transverse auxiliary switches must not be used for the 3RV17 and 3RV18 circuit breakers.

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Mountable accessories



Version	For motor starter protectors/ circuit breakers Size	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			
kg							
Signaling switches¹⁾							
	Signaling switches One signaling switch can be mounted on the left per motor starter protector.	Separate tripped and short-circuit alarms, 1 NO + 1 NC each	S0, S2, S3 ▶	3RV19 21-1M	1	1 unit	101 0.094
3RV19 21-1M							
Isolator modules¹⁾							
	Isolator modules	Visible isolating distance for isolating individual motor starter protectors from the network, lockable in disconnected position.	S0 ▶ S2 ▶	3RV19 28-1A 3RV19 38-1A	1 1	1 unit 1 unit	101 0.157 101 0.324
3RV19 38-1A with padlock							

¹⁾ This accessory cannot be used for the 3RV17 and 3RV18 circuit breakers.

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Mountable accessories

Rated control supply voltage U_s						For motor starter protectors/ circuit breakers Size	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
AC 50 Hz	AC 60 Hz	AC 50/60 Hz 100 % ON period ¹⁾	AC/DC 50/60 Hz, DC 5 s ON period ²⁾	DC	V								
V	V	V	V	V			Order No.		Price per PU				kg
Auxiliary releases³⁾													
Undervoltage releases													
													
					24	S00, S0, S2, S3	A	3RV19 02-1AB4		1	1 unit	101	0.138
					--	S00, S0, S2, S3	A	3RV19 02-1AB0		1	1 unit	101	0.134
	110	120	--	--	--	S00, S0, S2, S3	A	3RV19 02-1AF0		1	1 unit	101	0.134
	--	208	--	--	--	S00, S0, S2, S3	A	3RV19 02-1AM1		1	1 unit	101	0.128
	230	240	--	--	--	S00, S0, S2, S3	▶	3RV19 02-1AP0		1	1 unit	101	0.131
	400	440	--	--	--	S00, S0, S2, S3	▶	3RV19 02-1AV0		1	1 unit	101	0.127
	415	480	--	--	--	S00, S0, S2, S3	A	3RV19 02-1AV1		1	1 unit	101	0.129
	500	600	--	--	--	S00, S0, S2, S3	A	3RV19 02-1AS0		1	1 unit	101	0.127
													
Undervoltage releases with leading auxiliary contacts 2 NO													
	230	240	--	--	--	S00	A	3RV19 12-1CP0		1	1 unit	101	0.140
	400	440	--	--	--	S00	A	3RV19 12-1CV0		1	1 unit	101	0.137
	415	480	--	--	--	S00	A	3RV19 12-1CV1		1	1 unit	101	0.139
	230	240	--	--	--	S0, S2, S3	A	3RV19 22-1CP0		1	1 unit	101	0.139
	400	440	--	--	--	S0, S2, S3	A	3RV19 22-1CV0		1	1 unit	101	0.136
	415	480	--	--	--	S0, S2, S3	A	3RV19 22-1CV1		1	1 unit	101	0.138
Shunt releases													
	--	--	20 ... 24	20 ... 70	--	S00, S0, S2, S3	▶	3RV19 02-1DB0		1	1 unit	101	0.133
	--	--	90 ... 110	70 ... 190	--	S00, S0, S2, S3	A	3RV19 02-1DF0		1	1 unit	101	0.135
	--	--	210 ... 240	190 ... 330	--	S00, S0, S2, S3	▶	3RV19 02-1DP0		1	1 unit	101	0.130
	--	--	350 ... 415	330 ... 500	--	S00, S0, S2, S3	A	3RV19 02-1DV0		1	1 unit	101	0.129
	--	--	500	500	--	S00, S0, S2, S3	A	3RV19 02-1DS0		1	1 unit	101	0.126

¹⁾ The voltage range is valid for 100 % (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.

²⁾ The voltage range is valid for 5 s ON period at AC 50 Hz/60 Hz and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.

³⁾ One auxiliary release can be mounted on the right per motor starter protector (does not apply to 3RV11 motor starter protectors with overload relay function).

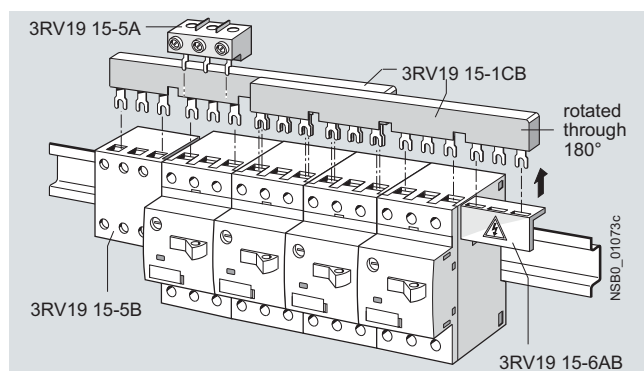
Overview

Insulated three-phase busbar systems

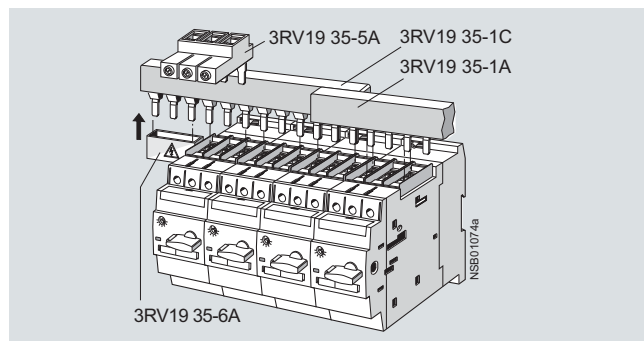
Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RV1 motor starter protectors with screw terminals. Different versions are available for sizes S00, S0 and S2 and can be used for the various different types of motor starter protectors. The 3RV19 15 three-phase busbar systems are not suitable for 3RV11 motor starter protectors with overload relay function. The three-phase busbars must not be used for 3RV17 and 3RV18 circuit breakers.

The busbars are suitable for between 2 and 5 circuit breakers/motor starter protectors. However, any kind of extension is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector.

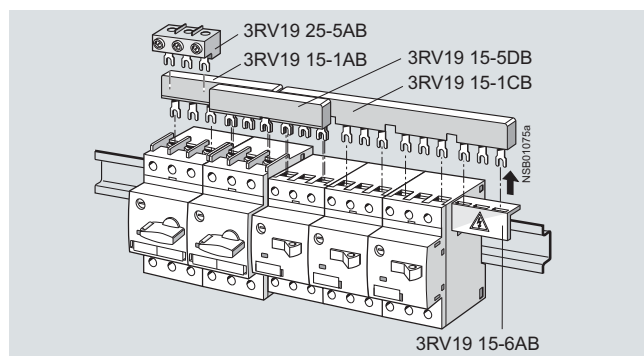
A combination of motor starter protectors of different sizes is possible only with sizes S00 and S0. Connecting pieces are available for this purpose. The motor starter protectors are supplied by appropriate feeder terminals.



Three-phase busbar system, size S00



Three-phase busbar system, size S2



Three-phase busbar system, with example for combining sizes S00 and S0

The three-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors.

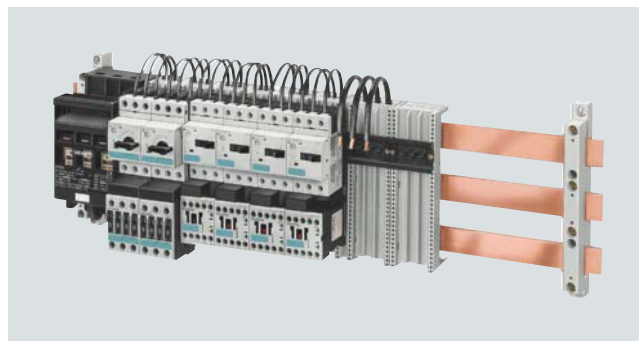
The three-phase busbar systems can also be used to construct "Type E Starters" of size S0 or S2 according to UL/CSA. **Special feeder terminals must be used for this purpose, however (see "Selection and ordering data").**

Busbar adapters for 40 mm and 60 mm systems

The motor starter protectors are mounted directly with the aid of busbar adapters on busbar systems with 40 mm and 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs. Busbar adapters for busbar systems with 40 mm center-to-center clearance are suitable for copper busbars with a width of 12 mm to 15 mm, while those with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 mm to 30 mm. The busbars can be 4 mm to 5 mm or 10 mm thick.

The motor starter protectors are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

Further busbar adapters for snap-mounting direct-on-line starters and reversing starters as well as additional accessories such as line terminals and outgoing terminals, flat copper profile, etc., can be found in Chapter 17 "SENTRON Switching and Protection Devices, Switch Disconnectors, 8US Busbar Systems" --> "SENTRON 8US Busbar Systems".



SIRIUS motor starter protectors and load feeders with busbar adapters snapped onto busbars

SIRIUS 3RV Motor Starter Protectors up to 100 A






Accessories

Busbar accessories

Selection and ordering data

Modular spacing	Number of motor starter protectors that can be connected			Rated current I_n at 690 V	For motor starter protector Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Without lateral accessories	Incl. lateral auxiliary switch	Incl. auxiliary trip unit									
mm				A								kg

Three-phase busbar systems

	For feeding several motor starter protectors with screw terminals, mounted side by side on standard mounting rails, insulated, with touch protection.													
	3RV19 15-1AB	45	2	--	--	63	S00, S0 ¹⁽²⁾	▶	3RV19 15-1AB	1	1 unit	101	0.044	
			3				S00, S0 ¹⁽²⁾	▶	3RV19 15-1BB	1	1 unit	101	0.071	
			4				S00, S0 ¹⁽²⁾	▶	3RV19 15-1CB	1	1 unit	101	0.099	
	3RV19 15-1BB	55	--	2	--	63	S00, S0 ¹⁽²⁾	▶	3RV19 15-2AB	1	1 unit	101	0.048	
				3			S00, S0 ¹⁽²⁾	▶	3RV19 15-2BB	1	1 unit	101	0.079	
				4			S00, S0 ¹⁽²⁾	▶	3RV19 15-2CB	1	1 unit	101	0.111	
				5			S00, S0 ¹⁽²⁾	▶	3RV19 15-2DB	1	1 unit	101	0.140	
	3RV19 15-1CB	63	--	--	2	63	S00, S0 ¹⁽²⁾	▶	3RV19 15-3AB	1	1 unit	101	0.052	
					4		S00, S0 ¹⁽²⁾	▶	3RV19 15-3CB	1	1 unit	101	0.120	
		3RV19 15-1DB	55	2	--	--	108	S2	▶	3RV19 35-1A	1	1 unit	101	0.150
				3				S2	▶	3RV19 35-1B	1	1 unit	101	0.214
			4				S2	▶	3RV19 35-1C	1	1 unit	101	0.295	
	3RV19 15-1DB	75	--	2	2	108	S2 ⁽³⁾	▶	3RV19 35-3A	1	1 unit	101	0.161	
				3	3		S2 ⁽³⁾	▶	3RV19 35-3B	1	1 unit	101	0.262	
				4	4		S2 ⁽³⁾	▶	3RV19 35-3C	1	1 unit	101	0.369	

1) Not suitable for 3RV11 motor starter protectors for motor protection with overload relay function. Common clamping of S00 and S0 motor starter protectors is not possible, due to the different modular spacings and terminal heights. The 3RV19 15-DB connecting piece is available for connecting busbars from size S0 to size S00.

2) Not suitable for 3RV17 and 3RV18 circuit breakers according to UL 489 / CSA C22.2 No.5-02.

3) Auxiliary releases and lateral auxiliary switches cannot be used in combination.



Version	Modular spacing	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm								kg

Connecting piece for three-phase busbars

	For connecting three-phase busbars for motor starter protectors of size S0 (left) to size S00 (right)											
	3RV19 15-5DB	45				S00, S0	▶	3RV19 15-5DB	1	1 unit	101	0.042

Conductor cross-section			Tightening torque	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded									
mm ²	mm ²	AWG	Nm								kg

Three-phase feeder terminals

	Connection from top											
	2.5 ... 25	4 ... 16	10-4	4	S00	▶	3RV19 15-5A	1	1 unit	101	0.040	
					S0	▶	3RV19 25-5AB	1	1 unit	101	0.041	
	Connection from below¹⁾											
3RV19 25-5AB	2.5 ... 25	4 ... 16	10-4		Input: 4, S00, S0 Output: 2 ... 2.5	▶	3RV19 15-5B	1	1 unit	101	0.110	
	Connection from top											
	2.5 ... 50	1.5 ... 35	14-0	4	S2	▶	3RV19 35-5A	1	1 unit	101	0.110	
3RV19 15-5B												

Three-phase feeder terminals for constructing "Type E Starters"

Connection from top											
2.5 ... 25	4 ... 16	10-4	2-4	S0	C	3RV19 25-5EB	1	1 unit	101	0.055	
10 ... 50	--	8-0	4.5-6	S2	A	3RV19 35-5E	1	1 unit	101	0.100	

1) This terminal is connected in place of a switch, please take the space requirement into account.

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Busbar accessories

Version	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-----------------------------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Covers for connection tags



3RV19 15-6AB

Touch protection for empty positions

S00, S0
S2

▶ **3RV19 15-6AB**

1 10 units

101

0.003

▶ **3RV19 35-6A**

1 5 units

101

0.006

Busbar adapters



8US10 61-5DJ07



8US12 51-5MD07

For motor starter protectors Size	Rated current A	Connecting cable AWG	Adapter length mm	Adapter width mm	Rated voltage V	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
-----------------------------------	-----------------	----------------------	-------------------	------------------	-----------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Busbar adapters for 40 mm systems

For flat copper profiles according to DIN 46433
Width: 12 and 15 mm
Thickness: 5 and 10 mm

S00, S0	25	12	121	45	690	▶	8US10 51-5DJ07		1	1 unit	143	0.106
S00, S0 + lateral auxiliary switch	25	12	121	55	690	▶	8US10 61-5DJ07		1	1 unit	143	0.119
S2	56	8	139	55	690	▶	8US10 61-5FK08		1	1 unit	143	0.231
S3	100	4	182	70	400 ¹⁾	▶	8US11 11-4SM00		1	1 unit	143	0.541
S3	100	4	182	72	415 ... 690 ²⁾	▶	8US10 11-4TM00		1	1 unit	143	0.478

Busbar adapters for 60 mm systems

For flat copper profiles according to DIN 46433
Width: 12 and 30 mm
Thickness: 5 and 10 mm
also for T and double-T special profiles

S00, S0	25	12	182	45	690	▶	8US12 51-5DM07		1	1 unit	143	0.183
S2	56	8		55	690	▶	8US12 61-5FM08		1	1 unit	143	0.263
S3	100	4		70	400 ¹⁾	▶	8US11 11-4SM00		1	1 unit	143	0.541
S3	100	4		72	415 ... 690 ²⁾	▶	8US12 11-4TM00		1	1 unit	143	0.498
S3 ³⁾	70 ⁴⁾	4	215	72	600 ⁴⁾	A	8US12 11-4TR00		1	1 unit	143	0.470

1) At rated voltage
≤ 400 V: short-circuit breaking capacity 50 kA,
> 400 to 460 V: short-circuit breaking capacity 25 kA.

2) Short-circuit breaking capacity 415/500/525 V AC:
- up to $I_n = 25$ A: max. 30 kA
- up to $I_n = 90$ A: max. 16 kA
- up to $I_n = 100$ A: max. 6 kA;
Short-circuit breaking capacity 690 V AC:
- max. 12 kA.

3) This busbar adapter is approved specially for 3RV17 42 circuit breakers for applications according to UL/CSA.

4) Values according to UL/CSA:
- Rated current: 70 A at 600 V AC;
- Short-circuit breaking capacity:
480 V AC: 65 kA, up to $I_n = 30$ A;
AC 480 Y/277 V: 65 kA;
AC 600 Y/347 V: 20 kA.

For additional busbar adapters see Chapter 17 "SENTRON Switching and Protection Devices, Switch Disconnectors, 8US Busbar Systems" --> "SENTRON 8US Busbar Systems".

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

3RV19 infeed system

Overview

The 3RV19 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with a screw or spring-type connection up to size S0 (exception: this system cannot be used for the 3RV11, 3RV16 to 3RV18 motor starter protectors/circuit breakers).

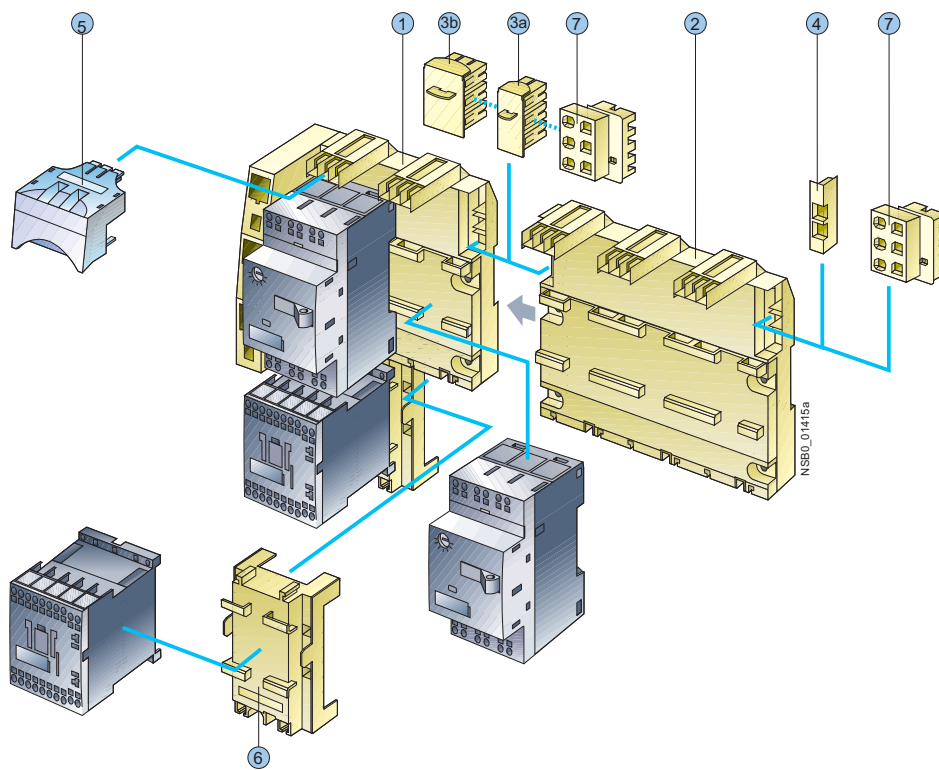
The devices with spring-type connections are available in the SIRIUS modular system up to 5.5 kW at 400 V AC. The motor starter protectors and load feeders with screw terminals for sizes S00 and S0 can also be integrated in the system at the same time.

The system is based on a basic module complete with a lateral incoming unit (three-phase busbar with infeed). This infeed with spring-type terminals is mounted on the right or left depending on the version and can be supplied with a maximum conductor cross-section of 25 mm² (with end sleeve). A basic module has two sockets onto each of which a motor starter protector can be snapped.

Expansion modules are available for extending the system (three-phase busbars for system expansion). The individual modules are connected through an expansion plug.

The electrical connection between the three-phase busbars and the motor starter protectors is implemented through plug-in connectors. The complete system can be mounted on a TH 35 standard mounting rail to EN 60715 and can be expanded as required up to a maximum current carrying capacity of 63 A.

The system is mounted extremely quickly and easily thanks to the simple plug-in technique. Thanks to the lateral infeed, the system also saves space in the control cabinet. The additional overall height required for the infeed unit is only 30 mm. The alternative infeed possibilities on each side offer a high degree of flexibility for configuring the control cabinet: Infeed on left-hand or right-hand side, ring infeed or infeed on one side and outfeed on the other side to supply further loads are all possible. A terminal block with spring-type connections in combination with a standard mounting rail enables the integration of not only SIRIUS motor starter protectors but also single-phase, two-phase and three-phase components such as 5SY miniature circuit breakers or SIRIUS relay components.



- ① 3-phase busbar with infeed
- ② 3-phase busbar for system expansion
- ③a Expansion plug
- ③b Extra-wide expansion plug
- ④ End cover
- ⑤ Plug-in connector
- ⑥ Contactor base
- ⑦ Terminal block

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

3RV19 infeed system

① Three-phase busbars with infeed

A three-phase busbar with infeed unit is required for connecting the incoming supply. This module comprises one infeed module and 2 sockets which each accept one motor starter protector. A choice of two versions with infeed on the left or right is available. The infeed is connected using spring-type terminals. The Cage Clamp springs permit conductor cross-sections of up to 25 mm² with end sleeves. An end cover is supplied with each module.

② Three-phase busbars for system expansion

The three-phase busbars for system expansion support expansion of the system. There is a choice of modules with 2 or 3 sockets. The system can be expanded as required up to a maximum current carrying capacity of 63 A. An expansion plug is supplied with each module.

③a Expansion plug

The expansion plug is used for electrical connection of adjacent three-phase busbars. The current carrying capacity of this plug equals 63 A. One expansion plug is supplied with each three-phase busbar for system expansion. Additional expansion plugs are therefore only required as spare parts.

③b Extra-wide expansion plug

The extra-wide expansion plug makes the electrical connection between two three-phase busbars, thus performing the same function as the 3RV19 17-5BA00 expansion plug; the electrical characteristics (e. g. a current carrying capacity of 63 A) are identical.

The 3RV19 17-5E expansion plug is 10 mm wider than the 3RV19 17-5BA00 expansion plug, hence in the plugged state there is a distance of 10 mm between the connected three-phase busbars. This distance can be used to lay the auxiliary current and control current wiring ("wiring duct"). The motor starter protector and contactor can be wired from underneath, which means that the complete cable duct above the system can be omitted.

④ End cover

The end cover is used to cover the three-phase busbar at the open end of the system. This cover is therefore only required once for each system. An end cover is supplied with each three-phase busbar system with infeed. Further end covers are therefore only required as spare parts.

⑤ Plug-in connector

The plug-in connector is used for the electrical connection between the three-phase busbar and the motor starter protector. These plug-in connectors are available in versions with screw terminals for sizes S00, S0 or with spring-type terminals for size S00.

⑥ Contactor base

Load feeders can be assembled in the system using the contactor base. The contactor bases are suitable for contactors of size S00 with spring-type terminals and are simply snapped onto the three-phase busbars. Direct-on-line starters and reversing starters are possible. One contactor base is required for direct-on-line starters and two are required for reversing starters. To assemble load feeders for reversing starters, the contactor bases can be arranged either below each other (45 mm overall width) or alongside each other (90 mm overall width). It is important to note that mechanical interlocking of the contactors is only possible when they are arranged vertically.

The infeed system is designed for mounting on a 35 mm standard mounting rail with 7.5 mm overall depth. This standard mounting rail gives the contactor base a stable mounting surface to sit on. If standard mounting rails with a depth of 15 mm are used, the spacer connected to the bottom of the contactor base must be knocked out and plugged into the mating piece that is also on the underside. Then the contactor base also has a stable mounting surface. When standard mounting rails with a depth of 7.5 mm are used, the spacer has no function and can be removed.

As an alternative to using a contactor base, the 3RA19 11-2E electrical link modules can also be used for direct start load feeders of size S00. Motor starter protector and contactor assemblies can then be directly snapped onto the sockets of the three-phase busbars. For feeders of size S00 and S0, the corresponding 3RA19 11-1.... or 3RA19 21-1... link modules should generally be used. For size S0, it is only possible integrate direct start load feeders and they must be integrated in the system as complete assemblies.

⑦ Terminal block





The 3RV19 17-5D terminal block enables the integration of not only SIRIUS motor starter protectors but also single-phase, two-phase and three-phase components in addition. Using the terminal block the 3 phases can be fed out of the system; single-phase loads can also be integrated in the system as the result. The terminal block is plugged into the slot of the expansion plug and thus enables outfeeding from the middle or end of the infeed system. The terminal block can be rotated through 180° and be locked to the support modules of the infeed system. The 3RV19 17-7B 45 mm standard mounting rail for screwing onto the support plate is available in addition in order to be able to plug the single-phase, two-phase and three-phase components onto the infeed system.

SIRIUS 3RV Motor Starter Protectors up to 100 A


Accessories

3RV19 infeed system

Selection and ordering data

Type	Version	For motor starter protectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Size							kg
Three-phase busbars with infeed									
	Three-phase busbars with infeed incl. 3RV19 17-6A end cover	For 2 motor starter protectors with infeed from the left	S00 (Cage Clamp) ¹⁾ , S00, S0 (screw)	A	3RV19 17-1A		1 unit	101	0.438
		For 2 motor starter protectors with infeed from the right	S00 (Cage Clamp) ¹⁾ , S00, S0 (screw)	A	3RV19 17-1E		1 unit	101	0.438
Three-phase busbars for system expansion									
	Three-phase busbars incl. 3RV19 17-5BA00 expansion plug	For 2 motor starter protectors	S00 (Cage Clamp) ¹⁾ , S00, S0 (screw)	A	3RV19 17-4A		1 unit	101	0.261
		For 3 motor starter protectors	S00 (Cage Clamp) ¹⁾ , S00, S0 (screw)	A	3RV19 17-4B		1 unit	101	0.364
Plug-in connectors									
	Plug-in connectors to make contact with the motor starter protectors	Single-unit packaging	S00 (Cage Clamp) ¹⁾	A	3RV19 17-5AA00		1 unit	101	0.053
		Multi-unit packaging	S00 (Cage Clamp) ¹⁾	A	3RV19 17-5A		10 units	101	0.048
		Single-unit packaging	S00 (screw)	A	3RV19 17-5CA00		1 unit	101	0.040
		Multi-unit packaging	S0 (screw)	A	3RV19 27-5AA00		1 unit	101	0.040
			S00 (screw)	A	3RV19 17-5C		10 units	101	0.036
			S0 (screw)	A	3RV19 27-5A		10 units	101	0.036

¹⁾ Compatible with the following motor starter protectors: 3RV10 11-...2. (size S00, Cage Clamp) product version E03 and upwards.

Type	Version	For contactors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Size							kg
Contactors bases									
	Contactors bases for mounting direct-on-line or reversing starters	Single-unit packaging	S00	A	3RV19 17-7AA00		1 unit	101	0.042
		Multi-unit packaging	S00	A	3RV19 17-7A		10 units	101	0.048

3RV19 17-7A

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

3RV19 infeed system

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal blocks								
	Terminal blocks For integration of single-phase, two-phase and three-phase components	Single-unit packaging	A	3RV19 17-5D	1	1 unit	101	0.050
45 mm standard mounting rails								
	45 mm standard mounting rails for mounting onto three-phase busbar	Single-unit packaging	A	3RV19 17-7B	1	1 unit	101	0.261
Extra-wide expansion plugs								
	Extra-wide expansion plugs As accessory	Single-unit packaging	A	3RV19 17-5E	1	1 unit	101	0.050
Expansion plug								
	Expansion plugs¹⁾ as spare part	Single-unit packaging	A	3RV19 17-5BA00	1	1 unit	101	0.035
End cover								
	End covers²⁾ as spare part	Multi-unit packaging	A	3RV19 17-6A	100	10 units	101	0.500

¹⁾ The expansion plug is included in the scope of supply of the 3RV19 17-4 three-phase busbars for system expansion.

²⁾ The end cover is included in the scope of supply of the 3RV19 17-1 three-phase busbars with infeed system.

SIRIUS 3RV Motor Starter Protectors up to 100 A

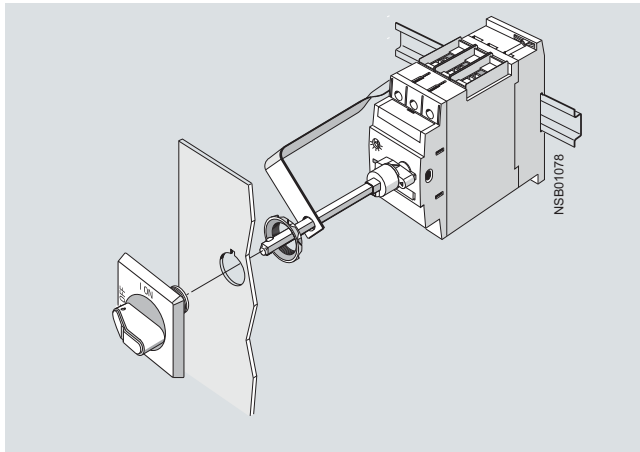
Accessories

Rotary operating mechanisms

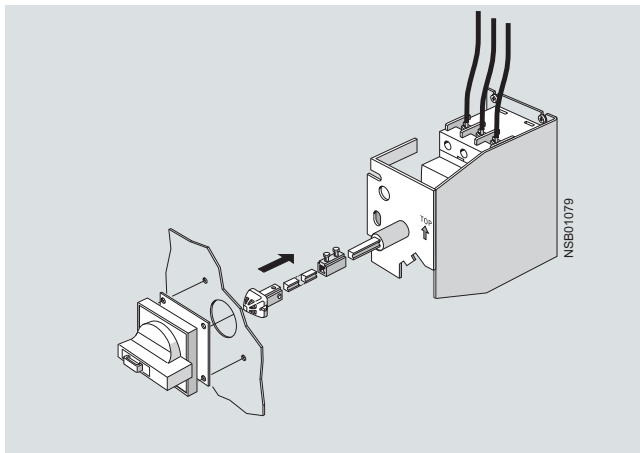
Overview

Door-coupling rotary operating mechanisms

Motor starter protectors with a rotary operating mechanism can be mounted in a control cabinet and operated externally by means of a door-coupling rotary operating mechanism. When the cabinet door with motor starter protector is closed, the operating mechanism is coupled. When the motor starter protector closes, the coupling is locked which prevents the door from being opened unintentionally. This interlock can be defeated by the maintenance personnel. In the open position, the rotary operating mechanism can be secured against reclosing with up to 3 padlocks. Inadvertent opening of the door is not possible in this case either.



3RV19 26-0K door-coupling rotary operating mechanism



3RV29 26-2B door-coupling rotary operating mechanism for arduous conditions

Remote motorized operating mechanisms

3RV1 motor starter protectors are manually operated controls. They automatically trip in case of an overload or short-circuit. Intentional remote-controlled tripping is possible by means of a shunt release or an undervoltage release. Reclosing is only possible directly at the motor starter protector.

The remote motorized operating mechanism allows the motor starter protectors to be opened and closed by electrical commands. This enables a load or an installation to be isolated from the network or reconnected to it from an operator panel.

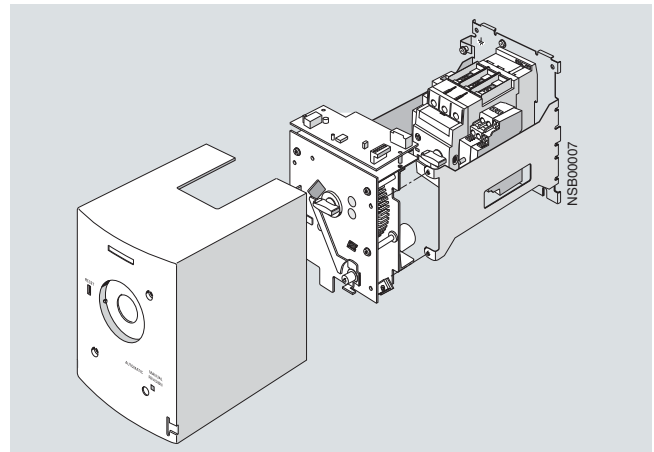
If the motor starter protector is tripped as a result of overload or short-circuit, it will be in tripped position. For reclosing, the remote motorized operating mechanism must first be set manually or electrically to the 0 position (electrically by means of the Open command). Then it can be reclosed.

The remote motorized operating mechanism is available for motor starter protectors of size S2 ($I_{n\max} = 50\text{ A}$) and S3 ($I_{n\max} = 100\text{ A}$) that are designed for control voltages of 230 V AC and 24 V DC. The motor starter protector is fitted into the remote motorized operating mechanism as shown in the drawing.

In the "MANUAL" position, the motor starter protector in the remote motorized operating mechanism can continue to be switched manually on site. In the "AUTOMATIC" position, the motor starter protector is switched by means of electrical commands. The switching command must be applied for a minimum of 100 ms. The remote motorized operating mechanism closes the motor starter protector after a maximum of 1 second. On voltage failure during the switching operation it is ensured that the motor starter protector remains in the OPEN or CLOSED position. In the "MANUAL" and "OFF" position, the remote motorized operating mechanism can be locked with a padlock.

RESET function

The RESET button on the motorized operating mechanism serves to reset any 3RV19 21-1M signaling switch that might be installed.



3RV19 .6-3A.. remote motorized operating mechanism

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Rotary operating mechanisms

Selection and ordering data

Version	Color of handle	Version of extension shaft mm	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-----------------	----------------------------------	--------------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------------

Door-coupling rotary operating mechanisms



3RV29 26-0B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and an extension shaft of 130/330 mm in length (6 mm x 6 mm).

The door-coupling rotary operating mechanisms are designed to degree of protection IP65. The door locking device prevents accidental opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.

Door-coupling rotary operating mechanisms	Black	130	S0, S2, S3	▶	3RV29 26-0B		1	1 unit	101	0.111
		330	S0, S2, S3	▶	3RV29 26-0K		1	1 unit	101	0.324
EMERGENCY-STOP door-coupling rotary operating mechanisms	Red/yel-low	130	S0, S2, S3	▶	3RV29 26-0C		1	1 unit	101	0.110
		330	S0, S2, S3	▶	3RV29 26-0L		1	1 unit	101	0.316

Door-coupling rotary operating mechanisms for arduous conditions



3RV29 36-2B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver, an extension shaft of 300 mm in length (8 mm x 8 mm), a spacer and two metal brackets, into which the motor starter protector is inserted.

The door-coupling rotary operating mechanisms are designed to degree of protection IP65. The door interlocking reliably prevents opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.

Laterally mountable auxiliary releases and two-pole auxiliary switches can be used.

The door-coupling rotary operating mechanisms thus meet the requirements for isolating functions according to IEC 60947-2.

Door-coupling rotary operating mechanisms	Gray	300	S0	▶	3RV29 26-2B		1	1 unit	101	1.180
			S2	▶	3RV29 36-2B		1	1 unit	101	1.570
			S3	▶	3RV29 46-2B		1	1 unit	101	1.722
EMERGENCY-STOP door-coupling rotary operating mechanisms	Red/yel-low	300	S0	▶	3RV29 26-2C		1	1 unit	101	1.188
			S2	▶	3RV29 36-2C		1	1 unit	101	1.486
			S3	▶	3RV29 46-2C		1	1 unit	101	1.732

Version	Rated control supply voltage U_s	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	------------------------------------	--------------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------------

Remote motorized operating mechanisms



3RV19 .6-3A..

Remote motorized operating mechanisms	50/60 Hz, 230 V AC	S2	B	3RV19 36-3AP0		1	1 unit	101	3.520
	24 V DC	S2	B	3RV19 36-3AB4		1	1 unit	101	3.420
	50/60 Hz, 230 V AC	S3	B	3RV19 46-3AP0		1	1 unit	101	3.441
	24 V DC	S3	B	3RV19 46-3AB4		1	1 unit	101	3.357

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

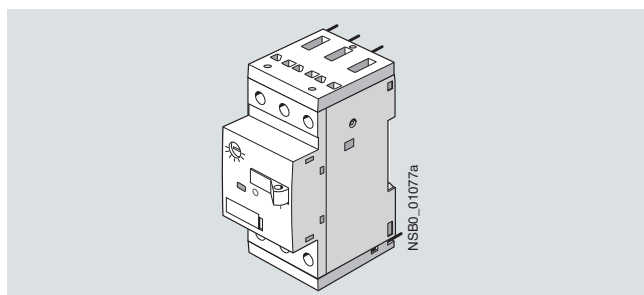
Mounting accessories

Overview

Solder pin connections

Solder pin connections are available for the main contacts and transverse auxiliary switches of size S00 motor starter protectors.

The prepared terminal parts are clamped to the upper and lower screw terminals of the motor starter protectors which allows them to be soldered into printed circuit boards.



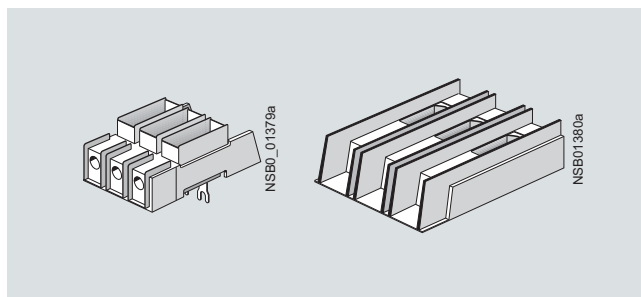
3RV19 18-5A

Terminals for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508

The 3RV10 motor starter protectors size S0 and higher are approved according to UL 508 as "Self-Protected Combination Motor Controllers (Type E)".

This requires increased clearance and creepage distances (1 inch and 2 inches respectively) at the input side of the device, which are achieved by mounting terminal blocks.

- Size S0: The 3RV19 28-1H terminal block is simply screwed onto the basic unit.
- Size S2: The basic unit is already compliant with the new clearance and creepage distance requirements.
- Size S3: The standard box terminal must be replaced by the 3RT19 46-4GA07 terminal block.



3RV19 28-1H (left), 3RT19 46-4GA07 (right)

According to CSA, these terminal blocks can be omitted when the device is used as a "Self-Protected Combination Motor Controller" (Type E).

Three-phase feeder terminals are required for constructing "Type E Starters" with an insulated busbar system (see [Busbar Accessories](#)).

Selection and ordering data

Version	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
								kg

Covers



3RV1 (size S3) with 3RT19 46-4EA1 (left)
3RV19 08-0P (right)

Terminal covers for box terminals	S2 S3	▶	3RT19 36-4EA2 3RT19 46-4EA2		1 1	1 unit 1 unit	101 101	0.020 0.025
Terminal covers Additional touch protection to be fitted at the box terminals (2 units mountable per device)								
Terminal covers For cable lug and busbar connection for maintaining the required voltage clearance and as touch protection if box terminal is removed (2 units can be mounted per motor starter protector)	S3	▶	3RT19 46-4EA1		1	1 unit	101	0.040
Scale covers Sealable, for covering the set current scale	S00, S0, S2, S3	▶	3RV19 08-0P		100	10 units	101	0.100

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Mounting accessories

Version	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	-----------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

Fixing accessories



3RB19 00-0B

Push-in lugs

For screwing the motor starter protector onto mounting plates.

For each motor starter protector, 2 units are required.

S00, S0

A

3RB19 00-0B

100

10 units

101

0.100

Solder pin connections



3RV19 18-5A with motor starter protector

For main contacts

For soldering the main conductor connections of a motor starter protector to a printed circuit board

(1 set = 2 units per motor starter protector)

S00

B

3RV19 18-5A

1

4 units

101

0.030

For main and auxiliary contacts

For soldering the main conductor connections and the auxiliary conductor connections of the transverse auxiliary switch 1 NO + 1 NC of a motor starter protector to a printed circuit board

(1 set = 3 units per motor starter protector)

S00

B

3RV19 18-5B

1

4 units

101

0.044

Version	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	-----------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

Terminals for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508



3RV19 28-1H

Note: UL 508 demands for "Combination Motor Controller Type E" 1-inch clearance and 2-inch creepage distance at line side. The following terminal blocks must be used in 3RV10 motor starter protectors of sizes S0 and S3.

The 3RV10 motor starter protector in size S2 conforms with the required clearance and creepage distances without a terminal block. Terminal blocks are not required for use according to CSA.



3RT19 46-4GA07

With size S0, these terminal blocks cannot be used in combination with 3RV19 .5 three-phase busbars and with size S3, they cannot be used with a transverse auxiliary switch.

For construction with three-phase busbars, see "Busbar accessories".

Terminal blocks type E

S0

▶

3RV19 28-1H

1

1 unit

101

0.083

For extended clearance and creepage distances (1 and 2 inch)

S3

A

3RT19 46-4GA07

1

1 unit

101

0.155

Version	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	-----------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

Auxiliary terminals, 3-pole



3RT19 46-4F

For connection of auxiliary and control cables to the main conductor connections (for one side)

S3

B

3RT19 46-4F

1

1 unit

101

0.035

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Mounting accessories

Version	Method of operation	Size	Circuit breakers	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Contactor			Order No.	Price per PU				kg

Link modules, single-unit packaging



3RA19 11-1AA00

For mechanical and electrical connection between contactor and motor starter protector with screw terminals

Method of operation	Size	Circuit breakers	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
AC/DC	S00	S00	▶	3RA19 11-1AA00		1	1 unit	101	0.027
	S00	S0	▶	3RA19 21-1DA00		1	1 unit	101	0.028
AC	S0	S0	▶	3RA19 21-1AA00		1	1 unit	101	0.037
	S2	S2	▶	3RA19 31-1AA00		1	1 unit	101	0.042
	S3	S3	▶	3RA19 41-1AA00		1	1 unit	101	0.090
DC	S0	S0	▶	3RA19 21-1BA00		1	1 unit	101	0.039
	S2	S2	▶	3RA19 31-1BA00		1	1 unit	101	0.043
	S3	S3	▶	3RA19 41-1BA00		1	1 unit	101	0.089

Link modules, multi-unit packaging



3RA19 31-1A

For mechanical and electrical connection between contactor and motor starter protector with screw terminals

Method of operation	Size	Circuit breakers	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
AC/DC	S00	S00	▶	3RA19 11-1A		1	10 units	101	0.019
	S00	S0	▶	3RA19 21-1D		1	10 units	101	0.021
AC	S0	S0	▶	3RA19 21-1A		1	10 units	101	0.028
	S2	S2	▶	3RA19 31-1A		1	5 units	101	0.033
	S3	S3	▶	3RA19 41-1A		1	5 units	101	0.072
DC	S0	S0	▶	3RA19 21-1B		1	10 units	101	0.030
	S2	S2	▶	3RA19 31-1B		1	5 units	101	0.034
	S3	S3	▶	3RA19 41-1B		1	5 units	101	0.073

Version	Method of operation	Size	Circuit breakers	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Contactor								kg

Hybrid link modules, single-unit packaging



3RA19 11-2FA00

Electrical and mechanical connection between motor starter protector with screw terminals and contactor with Cage Clamp terminals

Method of operation	Size	Circuit breakers	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
AC/DC	S00	S00	▶	3RA19 11-2FA00		1	1 unit	101	0.038
	S00	S0	▶	3RA19 21-2FA00		1	1 unit	101	0.028

Hybrid link modules, multi-unit packaging



3RA19 11-2F


Electrical and mechanical connection between motor starter protector with screw terminals and contactor with Cage Clamp terminals

Method of operation	Size	Circuit breakers	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
AC/DC	S00	S00	▶	3RA19 11-2F		1	10 units	101	0.031
	S00	S0	▶	3RA19 21-2F		1	10 units	101	0.030

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Mounting accessories


Version	Size	DT	Cage Clamp terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU				kg

Adapters and link modules for Cage Clamp terminals

3RA19 11-2A +
8US10 51-5CM47

3RA19 11-2E

Link modules, Cage Clamp Electrical connection between motor starter protector and contactor (busbar adapter not included in scope of supply)	S00	▶	3RA19 11-2A		1	10 units	101	0.016
Link modules, Cage Clamp with mechanical connections Mechanical and electrical connection between motor starter protector and contactor	S00	▶	3RA19 11-2E		1	10 units	101	0.028
Standard mounting rail adapters With 2 standard mounting rails 45 mm wide, one movable	S00	▶	3RA19 22-1L		1	5 units	101	0.413
Busbar adapters 45 mm wide, 182 mm long, adapted for Cage Clamp motor starter protectors. An additional standard mounting rail must be mounted for an additional contactor.	40 mm busbar system	▶	8US10 51-5CM47		1	1 unit	143	0.193
	60 mm busbar system	▶	8US12 51-5CM47		1	1 unit	143	0.190
35 mm standard mounting rails Plastic, including fixing screws	--	A	8US19 98-7CA15		1	10 units	143	0.009

Version	Size	DT	Cage Clamp terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU				kg

Tools for opening Cage Clamp terminals



8WA2 803

Screwdrivers For all SIRIUS devices with Cage Clamp terminals up to max. 2.5 mm ² conductor cross-section, length approx. 175 mm	Green, partially insulated	C	8WA2 880		1	1 unit	041	0.034
	Green	C	8WA2 803		1	1 unit	041	0.024

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Enclosures and front plates

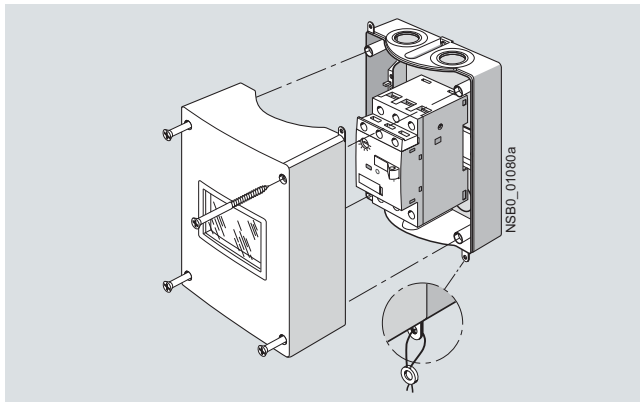
Overview

Enclosures

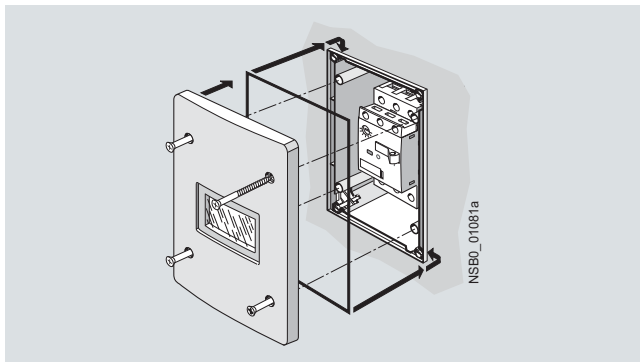
For stand-alone installation of motor starter protectors of sizes S00 ($I_{n\max} = 12\text{ A}$), S0 ($I_{n\max} = 25\text{ A}$) and S2 ($I_{n\max} = 50\text{ A}$), molded-plastic and cast-aluminum enclosures for surface mounting and molded-plastic enclosures for flush mounting are available in various dimensions.

When installed in a molded-plastic enclosure the motor starter protectors have a rated operational voltage U_e of 500 V.

The enclosures for surface mounting have the degree of protection IP55; the enclosures for flush mounting also comply with the degree of protection IP55 at the front (the flush-mounted section complies with IP20).



Enclosures for surface mounting



Enclosures for flush mounting

All enclosures are equipped with N and PE terminals. There are two knock-out cable entries for cable glands at the top and two at the bottom; also on the rear corresponding cable entries are scored. There is a knockout on the top of the enclosure for indicator lights that are available as accessories.

The narrow enclosure can accommodate a motor starter protector without accessories, with transverse and lateral auxiliary switch, whereas wide enclosures and enclosures for S2 motor starter protectors also provide space for a laterally mounted auxiliary release. There is no provision for installing a motor starter protector with a signaling switch.

With S00 motor starter protectors, the switch rocker is operated by means of the actuator diaphragm of the enclosure. A locking device, capable of holding up to three padlocks, can be fitted onto the actuator diaphragm to prevent the motor starter protector from closing during maintenance work, for example.

A mushroom-shaped EMERGENCY-STOP knob can be fitted in place of the locking device. If it is actuated abruptly, the motor starter protector opens and the mushroom-shaped knob latches. The knob can be unlatched again either by turning it or by using a special key. The motor starter protector can subsequently be switched on again.

The molded-plastic enclosures of the size S0 and S2 motor starter protectors are fitted with a rotary operating mechanism.

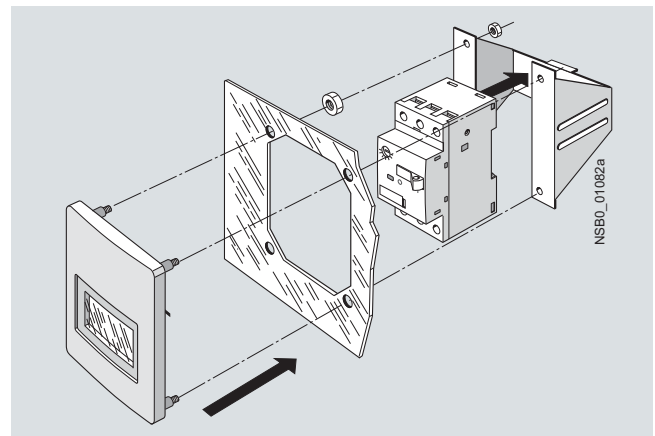
The enclosures can be supplied with either a black rotary operating mechanism or with an EMERGENCY-STOP rotary operating mechanism with a red/yellow knob.

All rotary operating mechanisms can be locked in the open position with up to 3 padlocks.

Front plates

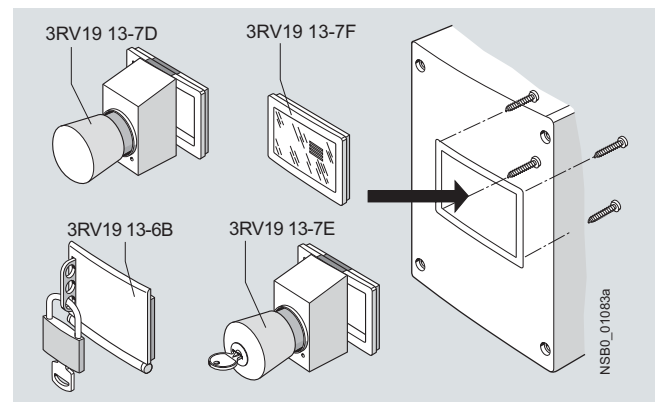
Motor starter protectors are frequently required to be actuated in any enclosure. Front plates equipped with an actuator diaphragm for size S00 motor starter protectors, or rotary operating mechanism for S0 to S3 motor starter protectors are available for this purpose.

The front plates for size S00 have a holder into which the motor starter protectors can be snapped. A holder for size S0 motor starter protectors is available for front plate sizes S0 to S3.



Front plate for size S00

Accessories for enclosures and front plates



Accessories for size S00

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Enclosures and front plates

Selection and ordering data

Version	Degree of protection	Integrated terminals	Overall width	For 3RV10 to 3RV16 motor starter protectors, size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
											kg
Molded-plastic enclosures for surface mounting											
 3RV19 13-1DA00	With actuator diaphragm	IP55	N and PE	54 mm (for switch + lateral auxiliary switch)	S00	▶	3RV19 13-1CA00	1	1 unit	101	0.296
				72 mm (for switch + lateral auxiliary switch + auxiliary release)	S00	▶					
 3RV19 23-1FA00	With rotary operating mechanism, lockable in 0 position	IP55	N and PE	54 mm (for switch + lateral auxiliary switch)	S0	▶	3RV19 23-1CA00	1	1 unit	101	0.332
				72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	▶	3RV19 23-1DA00	1	1 unit	101	0.381
				82 mm (for switch + lateral auxiliary switch + auxiliary release)	S2	A	3RV19 33-1DA00	1	1 unit	101	1.134
 3RV19 23-1GA00	With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position	IP55	N and PE	54 mm (for switch + lateral auxiliary switch)	S0	▶	3RV19 23-1FA00	1	1 unit	101	0.329
				72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	▶	3RV19 23-1GA00	1	1 unit	101	0.372
				82 mm (for switch + lateral auxiliary switch + auxiliary release)	S2	A	3RV19 33-1GA00	1	1 unit	101	1.136
Cast aluminum enclosures for surface mounting											
 3RV19 23-1DA01	With rotary operating mechanism, lockable in 0 position	IP65	PE ¹⁾	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	▶	3RV19 23-1DA01	1	1 unit	101	1.015
				With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position	S0	A					
Molded-plastic enclosure for flush mounting											
 3RV19 13-2DA00	With actuator diaphragm	IP55 (front side)	N and PE	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S00	A	3RV19 13-2DA00	1	1 unit	101	0.416
				With rotary operating mechanism, lockable in 0 position	S0	A					
 3RV19 23-2DA00	With EMERGENCY-STOP rotary operating mechanism, lockable in 0 position	IP55 (front side)	N and PE	72 mm (for switch + lateral auxiliary switch + auxiliary release)	S0	A	3RV19 23-2GA00	1	1 unit	101	0.417

¹⁾ If required, an additional N terminal can be mounted (e. g. 8WA1 011-1BG11).

SIRIUS 3RV Motor Starter Protectors up to 100 A

Accessories

Enclosures and front plates

Version	Degree of protection	For 3RV10 to 3RV16 motor starter protectors, size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----------------------	---	----	-----------	--------------	-------------------	-----	----	-----------------------------

Front plates



3RV19 13-4C

Molded-plastic front plates with actuator diaphragm

For actuating 3RV1 motor starter protectors in any enclosures, includes holder for motor starter protector.

IP55 (front side) S00 A

3RV19 13-4C

1 1 unit 101 0.216



3RV19 23-4B + 3RV19 23-4G

Molded-plastic front plates with rotary operating mechanism, lockable in 0 position

For actuation of 3RV1 motor starter protectors in any enclosure.

IP55 (front side) S0, S2, S3 ▶

3RV19 23-4B

1 1 unit 101 0.124

Molded-plastic front plates with EMERGENCY-STOP rotary operating mechanism, red/yellow, lockable in 0 position

EMERGENCY-STOP actuation of 3RV1 motor starter protectors in any enclosure.

IP55 (front side) S0, S2, S3 A

3RV19 23-4E

1 1 unit 101 0.124

Holders for front plates

Holder is mounted on front plate, motor starter protector with and without accessories is snapped in.

-- S0 ▶

3RV19 23-4G

1 1 unit 101 0.188

Accessories for enclosures



Molded-plastic enclosure for surface mounting with 3RV19 13-7D

EMERGENCY-STOP mushroom buttons, red/yellow

For 3RV19 13-... enclosures and front panels

Latching mushroom buttons, unlatch by turning

Cannot be used in combination with locking device

IP55 S00 ▶

3RV19 13-7D

1 1 unit 101 0.108

EMERGENCY-STOP mushroom buttons, red/yellow with lock

For 3RV19 13-... enclosures and front panels

RONIS lock, lock No. SB 30, supplied with 2 keys

Latching mushroom button, unlatch with key

Cannot be used in combination with locking device

IP55 S00 A

3RV19 13-7E

1 1 unit 101 0.144

Locking devices

For 3RV19 13-... enclosures and front plates

For 3 padlocks with max. 8 mm shackle diameter.

Cannot be used in combination with EMERGENCY-STOP mushroom button

IP55 S00 ▶

3RV19 13-6B

1 1 unit 101 0.074

Spare actuator diaphragms

Holders and screws are included in scope of supply

IP55 S00 A

3RV19 13-7F

1 1 unit 101 0.023

Version	Rated control supply voltage U_s V	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	---	-----------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------------

Indicator lights



3RV19 03-5B

Indicator lights

For all enclosures and front plates

With glow lamp and colored lenses red, green, yellow, orange and clear

110 ... 120	S00, S0, S2	C
220 ... 240		C
380 ... 415		C
480 ... 500		C

3RV19 03-5B	1	1 unit	101	0.027
3RV19 03-5C	1	1 unit	101	0.026
3RV19 03-5E	1	1 unit	101	0.026
3RV19 03-5G	1	1 unit	101	0.027

Overview



3RV10 63-7AL10 molded case motor starter protector

The 3RV10 and 3RV13 molded case motor starter protectors for up to 800 A are compact, current-limiting motor starter protectors which can be used above all in motor feeders for special voltages of 440 V, 480 V, 550 V and 690 V. They are used for switching and protecting induction motors and other loads with rated currents up to 800 A.

Note:

For motor feeders with more than 100 A at 400 V and 500 V it is necessary to use the SENTRON 3VL molded case motor starter protectors, see Chapter 16 "SENTRON Switching and protection Devices – Molded Case Motor Starter Protectors".

Type of construction

The molded case motor starter protectors are available in 4 widths:

- 3RV13 53 – width 90 mm, max. rated current 32 A, at 550 V AC suitable for induction motors up to 22 kW.
- 3RV1. 6. – width 105 mm, max. rated current 250 A, at 690 V AC suitable for induction motors up to 160 kW.
- 3RV1. 7. – width 140 mm, max. rated current 630 A, at 690 V AC suitable for induction motors up to 315 kW.
- 3RV1. 83 – width 210 mm, max. rated current 800 A, at 690 V AC suitable for induction motors up to 500 kW.

The 3RV1 molded case motor starter protectors for up to 800 A can be mounted in horizontal, vertical or lying arrangement directly on a mounting plate or mounting rail. Their rated data are adversely affected as the result.

The phase barriers for better insulation between the phases are included in the scope of supply.

The motor starter protectors can be supplied through top and bottom terminals without impairing their function, enabling them to be installed in any type of switchgear without any further steps.

Note

The 3RV1 molded case motor starter protectors for up to 800 A are suitable solely for screw connection. This is indicated in the selection and ordering data by orange backgrounds.

Benefits

- High short-circuit breaking capacity in the feeder
- Optimum usability in motor feeders for the special voltages 440 V, 480 V, 550 V and 690 V
- Compact design
- The releases are available both in purely magnetic (up to 32 A) and in electronic versions (100 A to 800 A).
- Available for motor or starter protection (short-circuit protection alone)

Application

Operating conditions

The 3RV1 molded case motor starter protectors up to 800 A can be operated at ambient temperatures between -25 °C and +70 °C. They can be used according to IEC 60721-2-1 in the most difficult environmental conditions with a hot and damp climate.

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and start-up data of the motor to be protected is always paramount to the choice of the most suitable molded case motor starter protectors.

Possible uses

The 3RV1 molded case motor starter protectors for up to 800 A are suitable as switching and protection devices for motors. The following versions are available:

- For motor protection; the overload and short-circuit releases are designed for optimized protection and direct-on-line starting of induction squirrel-cage motors. The motor starter protectors have an electronic release which not only provides short-circuit and overload protection but is also sensitive to phase failure and phase unbalance and offers protection in the event of rotor blockage.
- For starter combinations; these molded case motor starter protectors are used for short-circuit protection in combinations of circuit breaker, motor contactor and overload relay. They are equipped with a purely magnetic release (up to 32 A) or an electronic release (100 A to 800 A).

Standards and specifications

The electronic releases for motor protection comply with IEC 60947-4-1. Isolating features are also compliant with IEC 60947-2.

The 3RV1 molded case motor starter protectors comply in addition with IEC 60068-2-6 (shock and vibration strength) and are certified for the specifications of the most important marine classification societies:

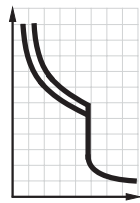
- RINA
- Det Norske Veritas
- Bureau Veritas
- Lloyds Register of Shipping
- Germanischer Lloyd
- American Bureau of Shipping

SIRIUS 3RV Molded Case Motor Starter Protectors up to 800 A

For motor protection

Selection and ordering data

CLASS 10A, CLASS 10, CLASS 20, CLASS 30, without auxiliary switches



Rated current	Current setting of the inverse-time delayed overload release "L" I_R	Operating current of the instantaneous short-circuit release "I" I_i	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
I_n			I_{cu}		Order No.	Price per PU			kg
A	A	A	kA						

With electronic releases



3RV10 .3-7.L10

TU = Trip unit

Standard switching capacity, adjustable short-circuit and overload release, TU 4

100	40 ... 100	600 ... 1 300	120	D	3RV10 63-7AL10	1	1 unit	101	2.350
160	64 ... 160	960 ... 2 080	120	D	3RV10 63-7CL10	1	1 unit	101	2.350
200	80 ... 200	1 200 ... 2 600	120	D	3RV10 63-7DL10	1	1 unit	101	2.350
400	160 ... 400	2 400 ... 5 200	120	D	3RV10 73-7GL10	1	1 unit	101	3.250
630	252 ... 630	3 780 ... 8 190	100	D	3RV10 83-7JL10	1	1 unit	101	9.500


Further accessories can be ordered separately (see "Mountable accessories").



SIRIUS 3RV Molded Case Motor Starter Protectors up to 800 A

For starter combinations

Selection and ordering data

Without auxiliary switches



Rated current	Inverse-time delayed overload release "L" I_R	Operating current of the instantaneous short-circuit release "I" I_i	Short-circuit breaking capacity at 400 V AC	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
I_n			I_{cu}		Order No.	Price per PU			kg
A	A	A	kA						

With magnetic releases



3RV13 53-6.P10

Standard switching capacity, non-adjustable short-circuit release, TU 1

1	Without	13	85	D	3RV13 53-6AP10	1	1 unit	101	1.100
1.6	Without	21	85	D	3RV13 53-6BP10	1	1 unit	101	1.100
2	Without	26	85	D	3RV13 53-6CP10	1	1 unit	101	1.100
3.2	Without	42	85	D	3RV13 53-6DP10	1	1 unit	101	1.100
4	Without	52	85	D	3RV13 53-6EP10	1	1 unit	101	1.100
5	Without	65	85	D	3RV13 53-6FP10	1	1 unit	101	1.100
6.5	Without	85	85	D	3RV13 53-6GP10	1	1 unit	101	1.100
8.5	Without	111	85	D	3RV13 53-6HP10	1	1 unit	101	1.100
12.5	Without	163	85	D	3RV13 53-6JP10	1	1 unit	101	1.100

Standard switching capacity, adjustable short-circuit release, TU 2

20	Without	120 ... 240	85	D	3RV13 53-6LM10	1	1 unit	101	1.100
32	Without	192 ... 384	85	D	3RV13 53-6MM10	1	1 unit	101	1.100

With electronic releases



3RV13 ...7.N10

Standard switching capacity, adjustable short-circuit release, TU 3

100	Without	100 ... 1 000	120	D	3RV13 63-7AN10	1	1 unit	101	2.350
160	Without	160 ... 1 600	120	D	3RV13 63-7CN10	1	1 unit	101	2.350
250	Without	250 ... 2 500	120	D	3RV13 63-7EN10	1	1 unit	101	2.350
400	Without	400 ... 4 000	120	D	3RV13 73-7GN10	1	1 unit	101	3.250
630	Without	630 ... 6 300	120	D	3RV13 73-7JN10	1	1 unit	101	3.250
630	Without	630 ... 6 300	100	D	3RV13 83-7JN10	1	1 unit	101	9.500
800	Without	800 ... 8 000	100	D	3RV13 83-7KN10	1	1 unit	101	9.500

Increased switching capacity, adjustable short-circuit release, TU 3

100	Without	100 ... 1 000	200	D	3RV13 64-7AN10	1	1 unit	101	2.350
160	Without	160 ... 1 600	200	D	3RV13 64-7CN10	1	1 unit	101	2.350
250	Without	250 ... 2 500	200	D	3RV13 64-7EN10	1	1 unit	101	2.350
400	Without	400 ... 4 000	200	D	3RV13 74-7GN10	1	1 unit	101	3.250

TU = Trip unit

Further accessories can be ordered separately (see "Mountable accessories").

More information

Brochure "SIRIUS Configuration"

More information and assignment tables can be found in the brochure "SIRIUS Modular System, SIRIUS Configuration", Order No. E86060-T1815-A101-A3-7600

or on the Internet at

www.siemens.com/industrial-controls/infomaterial


--> "Brochures" --> "SIRIUS Modular System".

SIRIUS 3RV Molded Case Motor Starter Protectors up to 800 A

Accessories

Mountable accessories

Selection and ordering data


Type	Version	For molded case motor starter protectors	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	

Auxiliary switches



3RV19 91-1AA0

Auxiliary switches For front mounting	1 signal switch Off-On + 1 "tripped" signal (250 V AC/DC)	3RV13 53, 3RV1. 6, ...	D	3RV19 91-1AA0	1	1 unit	101	0.040
	3 signal switches Off-On + 1 "tripped" signal (250 V AC/DC)	3RV1. 83	D	3RV19 91-1BA0	1	1 unit	101	0.040
	3 signal switches Off-On + 1 "tripped" signal (24 V DC)		D	3RV19 91-1CA0	1	1 unit	101	0.040
Connection cables for auxiliary switches	Length 2 m, 6-pole	3RV13 53, 3RV1. 6, ... 3RV1. 83	D	3RV19 91-1FA0	1	1 unit	101	0.090

Type	Rated control supply voltage U_s		For molded case motor starter protectors	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
AC 50/60 Hz		DC			Order No.	Price per PU		kg	
V		V							

Auxiliary releases



3RV19 52-1AA0

Undervoltage releases For front mounting	24 ... 30	24 ... 30	3RV13 53	D	3RV19 52-1AA0	1	1 unit	101	0.120
	110 ... 127	110 ... 125		D	3RV19 52-1AD0	1	1 unit	101	0.120
	220 ... 240	220 ... 250		D	3RV19 52-1AE0	1	1 unit	101	0.120
	24 ... 30	24 ... 30	3RV1. 6,	D	3RV19 82-1AA0	1	1 unit	101	0.170
	110 ... 127	110 ... 125	...	D	3RV19 82-1AD0	1	1 unit	101	0.170
	220 ... 240	220 ... 250	3RV1. 83	D	3RV19 82-1AF0	1	1 unit	101	0.170
Shunt releases For front mounting	24 ... 30	24 ... 30	3RV13 53	D	3RV19 52-1EA0	1	1 unit	101	0.120
	110 ... 127	110 ... 125		D	3RV19 52-1ED0	1	1 unit	101	0.120
	220 ... 240	220 ... 250		D	3RV19 52-1EF0	1	1 unit	101	0.120
	24 ... 30	24 ... 30	3RV1. 6,	D	3RV19 82-1EA0	1	1 unit	101	0.170
	110 ... 127	110 ... 125	...	D	3RV19 82-1ED0	1	1 unit	101	0.170
	220 ... 240	220 ... 250	3RV1. 83	D	3RV19 82-1EF0	1	1 unit	101	0.170
Connection cables for undervoltage and shunt releases	Length 2 m, 6-pole	3RV13 53, 3RV1. 6, ... 3RV1. 83	D	3RV19 92-1FA0	1	1 unit	101	0.030	


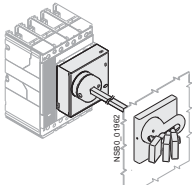
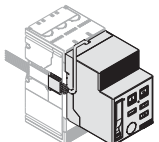



3RV19 52-1EA0

SIRIUS 3RV Molded Case Motor Starter Protectors up to 800 A

Accessories

Rotary operating mechanisms
Mounting accessories

Selection and ordering data

Version	For molded case motor starter protectors	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
			Order No.	Price per PU				kg	
Rotary operating mechanisms									
 3RV19 .6-0BA0	Lever-type rotary operating mechanisms	With adjustable distance	3RV13 53	D	3RV19 56-0BA0	1	1 unit	101	0.400
		With lock/door interlocking (padlocks are not included in scope of supply)	3RV1. 6., 3RV1. 7.	D	3RV19 76-0BA0	1	1 unit	101	0.600
			3RV1. 83	D	3RV19 86-0BA0	1	1 unit	101	0.600
 3RV19 .6-3AP3	Motorized rotary operating mechanisms	With spring energy store, 220 ... 250 V AC/DC	3RV1. 6., 3RV1. 7.	D	3RV19 76-3AP3	1	1 unit	101	1.350
			3RV1. 83	D	3RV19 86-3AP3	1	1 unit	101	2.300
Connections									
 3RV19 75-1CA0	Terminals	Front-extended (1 set = 6 units)	3RV13 53	D	3RV19 55-1AA0	1	1 unit	101	0.300
			3RV1. 6.	D	3RV19 65-1BA0	1	1 unit	101	0.600
			3RV1. 7.	D	3RV19 75-1CA0	1	1 unit	101	0.900
			3RV1. 83-7J.10	D	3RV19 85-1DA0	1	1 unit	101	0.782
			3RV1. 83-7KN10	D	3RV19 85-1EA0	1	1 unit	101	1.015
 3RV19 55-3AA0		Rear (1 set = 3 units)	3RV13 53	D	3RV19 55-3AA0	1	1 unit	101	0.200
			3RV1. 6.	D	3RV19 65-3AA0	1	1 unit	101	0.300
			3RV1. 7.	D	3RV19 75-3AA0	1	1 unit	101	1.000
			3RV1. 83	D	3RV19 85-3AA0	1	1 unit	101	1.000
 3RV19 75-2AA0	Cable terminals	Front-extended (1 set = 6 units)	3RV13 53	D	3RV19 55-2AA0	1	1 unit	101	0.150
			3RV1. 6.	D	3RV19 65-2BA0	1	1 unit	101	0.300
			3RV1. 7.-7G.10	D	3RV19 75-2CA0	1	1 unit	101	0.730
			3RV1. 73-7JN10	D	3RV19 75-2DA0	1	1 unit	101	0.750

Overload Relays

General data

Overview



Features	Benefits	3RU11	3RB20/3RB21	3RB22/3RB23
General data				
Sizes	<ul style="list-style-type: none"> Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, ...) Permit the mounting of slim and compact load feeders in widths of 45 mm (S00), 45 mm (S0), 55 mm (S2), 70 mm (S3), 120 mm (S6) and 145 mm (S10/S12) Simplify configuration 	S00 ... S3	S00 ... S12	S00 ... S12
Seamless current range	<ul style="list-style-type: none"> Allows easy and consistent configuration with one series of overload relays (for small to large loads) 	0.11 ... 100 A	0.1 ... 630 A	0.3 ... 630 A (... 820 A) ¹⁾
Protection functions				
Tripping in the event of overload	<ul style="list-style-type: none"> Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload 	✓	✓	✓
Tripping in the event of phase unbalance	<ul style="list-style-type: none"> Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to phase unbalance 	(✓)	✓	✓
Tripping in the event of phase failure	<ul style="list-style-type: none"> Minimizes heating of induction motors during phase failure 	✓	✓	✓
Protection of single-phase loads	<ul style="list-style-type: none"> Enables the protection of single-phase loads 	✓	--	✓
Tripping in the event of overheating by integrated thermistor motor protection function	<ul style="list-style-type: none"> Provides optimum temperature-dependent protection of loads against excessive temperature rises, e. g. for stator-critical motors or in the event of insufficient coolant flow, contamination of the motor surface or for long starting or braking operations Eliminates the need for additional special equipment Saves space in the control cabinet Reduces wiring outlay and costs 	-- ²⁾	-- ²⁾	✓
Tripping in the event of a ground fault by internal ground-fault detection (activatable)	<ul style="list-style-type: none"> Provides optimum protection of loads against high-resistance short-circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc. Eliminates the need for additional special equipment Saves space in the control cabinet Reduces wiring outlay and costs 	--	✓ (only 3RB21)	✓
Features				
RESET function	<ul style="list-style-type: none"> Allows manual or automatic resetting of the relay 	✓	✓	✓
Remote RESET function	<ul style="list-style-type: none"> Allows the remote resetting of the relay 	✓ (by means of separate module)	✓ (only 3RB21 with 24 V DC)	✓
TEST function for auxiliary contacts	<ul style="list-style-type: none"> Allows easy checking of the function and wiring 	✓	✓	✓
TEST function for electronics	<ul style="list-style-type: none"> Allows checking of the electronics 	--	✓	✓
Status display	<ul style="list-style-type: none"> Displays the current operating state 	✓	✓	✓
Large current adjustment button	<ul style="list-style-type: none"> Makes it easier to set the relay exactly to the correct current value 	✓	✓	✓
Integrated auxiliary contacts (1 NO + 1 NC)	<ul style="list-style-type: none"> Allows the load to be switched off if necessary Can be used to output signals 	✓	✓	✓ (2 ×)

¹⁾ Motor currents up to 820 A can be recorded and evaluated by a current measuring module, e. g. 3RB29 06-2BG1 (0.3 ... 3 A), in combination with a 3UF18 68-3GA00 (820 A / 1 A) series transformer.
For 3UF18 transformers see Chapter 7, "Monitoring and Control Devices" --> "SIMOCODE 3UF Motor Management and Control Devices".

✓ = Available
-- = Not available

²⁾ The SIRIUS 3RN thermistor motor protection devices can be used to provide additional temperature-dependent protection.



Features	Benefits	3RU11	3RB20/3RB21	3RB22/3RB23
Design of load feeders				
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	<ul style="list-style-type: none"> Provides optimum protection of the loads and operating personnel in the event of short-circuits due to insulation faults or faulty switching operations 	✓	✓	✓
Electrical and mechanical matching to 3RT1 contactors	<ul style="list-style-type: none"> Simplifies configuration Reduces wiring outlay and costs Enables stand-alone installation as well as space-saving direct mounting 	✓	✓	✓ ¹⁾
Straight-through transformers for main circuit²⁾ (in this case the cables are routed through the feed-through openings of the overload relay and connected directly to the box terminals of the contactor)	<ul style="list-style-type: none"> Reduces the contact resistance (only one point of contact) Saves wiring costs (easy, no need for tools, and fast) Saves material costs Reduces installation costs 	--	✓ (S2 ... S6)	✓ (S00 ... S6)
Spring-type terminal connection system for main circuit²⁾	<ul style="list-style-type: none"> Enables fast connections Permits vibration-resistant connections Enables maintenance-free connections 	✓ (S00)	--	--
Spring-type terminal connection system for auxiliary circuits²⁾	<ul style="list-style-type: none"> Enables fast connections Permits vibration-resistant connections Enables maintenance-free connections 	✓	✓	✓
Other features				
Temperature compensation	<ul style="list-style-type: none"> Allows the use of the relays at high temperatures without derating Prevents premature tripping Allows compact installation of the control cabinet without distance between the devices/load feeders Simplifies configuration Enables space to be saved in the control cabinet 	✓	✓	✓
Very high long-term stability	<ul style="list-style-type: none"> Provides safe protection for the loads even after years of use in severe operating conditions 	(✓)	✓	✓
Wide setting ranges	<ul style="list-style-type: none"> Reduce the number of variants Minimize the engineering outlay and costs Minimize storage overhead, storage costs, tied-up capital 	--	✓ (1:4)	✓ (1:10)
Trip class CLASS 5	<ul style="list-style-type: none"> Enables solutions for very fast starting motors requiring special protection (e. g. Ex motors) 	--	✓ (only 3RB21)	✓
Trip classes > CLASS 10	<ul style="list-style-type: none"> Enables heavy starting solutions 	--	✓	✓
Low power loss	<ul style="list-style-type: none"> Reduces power consumption and energy costs (up 98 % less power is used than for thermal overload relays). Minimizes temperature rises of the contactor and control cabinet – in some cases this may eliminate the need for controlgear cabinet cooling. Direct mounting to contactor saves space, even for high motor currents (i. e. no heat decoupling is required). 	--	✓	✓

¹⁾ Exception: up to size S3, only stand-alone installation is possible.

✓ = Available

²⁾ Alternatively available for screw terminals.

-- = Not available

Overload Relays

General data



Features	Benefits	3RU11	3RB20/3RB21	3RB22/3RB23
Other features				
Internal power supply	<ul style="list-style-type: none"> Eliminates the need for configuration and connecting an additional control circuit 	-- ¹⁾	✓	--
Variable adjustment of the trip classes (The required trip class can be adjusted by means of a rotary switch depending on the current start-up condition.)	<ul style="list-style-type: none"> Reduces the number of variants Minimizes the configuring outlay and costs Minimizes storage overhead, storage costs, and tied-up capital 	--	✓ (only 3RB21)	✓
Overload warning	<ul style="list-style-type: none"> Indicates imminent tripping of the relay directly on the device due to overload, phase unbalance or phase failure Allows the imminent tripping of the relay to be signaled Allows measures to be taken in time in the event of continuous inverse-time delayed overloads Eliminates the need for an additional device Saves space in the control cabinet Reduces wiring outlay and costs 	--	--	✓
Analog output	<ul style="list-style-type: none"> Allows the output of an analog output signal for actuating moving-coil instruments, feeding programmable logic controllers or transfer to bus systems Eliminates the need for an additional measuring transducer and signal converter Saves space in the control cabinet Reduces wiring outlay and costs 	--	--	✓

¹⁾ The SIRIUS 3RU11 thermal overload relays use a bimetal contactor and therefore do not require a control supply voltage.

✓ = Available
 -- = Not available

5

General data

Overload relays	Current measurement	Current range	Contactors (type, size, rating in kW)								
			3RT10 1	3RT10 2	3RT10 3	3RT10 4	3RT10 5	3RT10 6	3RT10 7	3TF68/ 3TF69	
Type	Type	A	S00 3/4/5.5	S0 5.5/7.5/11	S2 15/18.5/22	S3 30/37/45	S6 55/75/90	S10 110/132/160	S12 200/250	Size 14 375/450	

SIRIUS 3RU11 thermal overload relays

3RU11 1	Integrated	0.11 ... 12	✓	--	--	--	--	--	--	--
3RU11 2	Integrated	1.8 ... 25	--	✓	--	--	--	--	--	--
3RU11 3	Integrated	5.5 ... 50	--	--	✓	--	--	--	--	--
3RU11 4	Integrated	18 ... 100	--	--	--	✓	--	--	--	--

SIRIUS 3RB20 solid-state overload relays¹⁾

3RB20 1	Integrated	0.1 ... 12	✓	--	--	--	--	--	--	--
3RB20 2	Integrated	0.1 ... 25	--	✓	--	--	--	--	--	--
3RB20 3	Integrated	6 ... 50	--	--	✓	--	--	--	--	--
3RB20 4	Integrated	12.5 ... 100	--	--	--	✓	--	--	--	--
3RB20 5	Integrated	50 ... 200	--	--	--	--	✓	--	--	--
3RB20 6	Integrated	55 ... 630	--	--	--	--	--	✓	✓	✓
3RB20 1 + 3UF18	Integrated	630 ... 820	--	--	--	--	--	--	--	✓

SIRIUS 3RB21 solid-state overload relays¹⁾

3RB21 1	Integrated	0.1 ... 12	✓	--	--	--	--	--	--	--
3RB21 2	Integrated	0.1 ... 25	--	✓	--	--	--	--	--	--
3RB21 3	Integrated	6 ... 50	--	--	✓	--	--	--	--	--
3RB21 4	Integrated	12.5 ... 100	--	--	--	✓	--	--	--	--
3RB21 5	Integrated	50 ... 200	--	--	--	--	✓	--	--	--
3RB21 6	Integrated	55 ... 630	--	--	--	--	--	✓	✓	✓
3RB21 1 + 3UF18	Integrated	630 ... 820	--	--	--	--	--	--	--	✓

SIRIUS 3RB22/3RB23 solid-state overload relays¹⁾

3RB22/3RB23 +	3RB29 0	0.3 ... 25	✓	✓	--	--	--	--	--	--
	3RB29 0	10 ... 100	--	--	✓	✓	--	--	--	--
	3RB29 5	20 ... 200	--	--	--	--	✓	--	--	--
	3RB29 6	63 ... 630	--	--	--	--	--	✓	✓	✓
	3RB29 0 + 3UF18	630 ... 820	--	--	--	--	--	--	--	✓

¹⁾ "Technical Specifications" for use of the overload relays with trip Class \geq CLASS 20 can be found under "Short-circuit protection with fuses for motor feeders", see the note on Technical Information on page 5/1; and in the project planning aid "Configuring SIRIUS Fuseless Load Feeders".

✓ = Can be used
-- = Cannot be used

Connection methods

The 3RB20 and 3RB21 relays are available with screw terminals (box terminals) or spring-type terminals on the auxiliary current side; the same applies for the evaluation modules of the 3RB22/3RB23 relays. The 3RU11 relays come with screw terminals.



Screw terminals



Spring-type terminals or Cage Clamp terminals

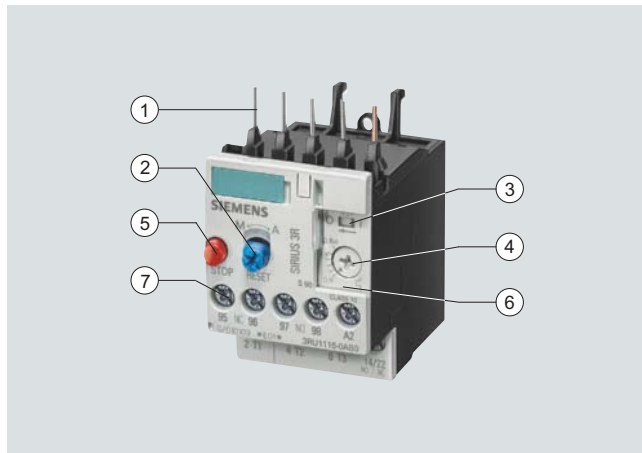
The terminals are indicated in the selection and ordering data by orange backgrounds.

Overload Relays

SIRIUS 3RU1 Thermal Overload Relays

3RU11 for standard applications

Overview



- ① Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors. Connecting pins can be used for direct mounting of the overload relays. Stand-alone installation is possible as an alternative (in some cases in conjunction with a stand-alone installation module).
- ② Selector switch for manual/automatic RESET and RESET button:
With this switch you can choose between manual and automatic RE-SET. A device set to manual RESET can be reset locally by pressing the RESET button. A remote RESET is possible using the RESET mod-ules (accessories), which are independent of size.
- ③ Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ④ Motor current setting:
Setting the device to the rated motor current is easy with the ro-tary knob.
- ⑤ STOP button:
If the STOP button is pressed, the NC contact is opened. This switches off the contactor downstream. The NC contact is closed again when the button is released.
- ⑥ Transparent, sealable cover:
Secures the motor current setting and the TEST function against ad-justment.
- ⑦ Supply terminals:
The generously sized terminals permit connection of two conductors with different cross-sections for the main and auxiliary circuits. The auxiliary circuit can be connected with screw terminals and alter-natively with spring-type terminals.

The 3RU11 thermal overload relays up to 100 A have been de-signed for inverse-time delayed protection of loads with normal starting (for "Function" see note on [Technical Information on page 5/1](#)) against excessive temperature rises due to overload or phase failure.

An overload or phase failure results in an increase of the motor current beyond the set rated motor current. Via heating ele-ments, this current rise heats up the bimetal strips inside the de-vice which then bend and as a result trigger the auxiliary con-tacts by means of a tripping mechanism. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and set cur-rent I_{tr} and is stored in the form of a long-term stable tripping characteristic (for "Characteristic Curves" see the note on [Tech-nical Information on page 5/1](#)).

The "tripped" status is signaled by means of a switch posi-tion indicator. Resetting takes place either manually or automati-cally after a recovery time has elapsed (for "Function" see note on [Technical Information on page 5/1](#)).

The devices are manufactured in accordance with environmen-tal guidelines and contain environmentally friendly and reusable materials.

They comply with all important worldwide standards and ap-provals.

"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC

The 3RU11 thermal overload relays are suitable for the overload protection of explosion-proof motors with "increased safety" type of protection EEx e. The relays meet the requirements of EN 60079-7 (Electrical apparatus for areas subject to explosion hazards – Increased safety "e");
see [Chapter 20 "Appendix" --> "Standards and approvals"](#)
--> "Type overview of approved devices for explosion-protected areas (ATEX Explosion Protection)".

EC type test certificate for Category (2) G/D exists. It has the number DMT 98 ATEX G 001.

Benefits

The most important features and benefits of the 3RU11 thermal overload relays are listed in the overview table (see ["General Data" on page 5/42](#)).

Application

Industries

The 3RU11 thermal overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e. g. motors) under normal starting conditions (CLASS 10).

Application

The 3RU11 thermal overload relays have been designed for the protection of three-phase and single-phase AC and DC motors.

If single-phase AC or DC loads are to be protected by the 3RU11 thermal overload relays, all three bimetal strips must be heated. For this purpose, all main current paths of the relay must be con-nected in series.

Ambient conditions

The 3RU11 thermal overload relays have temperature compen-sation in accordance with IEC 60947-4-1 for the temperature range of -20 °C to $+60\text{ °C}$. For temperatures from $+60\text{ °C}$ to $+80\text{ °C}$ the upper set value of the setting range must be reduced by the factor listed in the table below.

Ambient temperature in °C	Derating factor for the upper set value
+60	1.0
+65	0.94
+70	0.87
+75	0.81
+80	0.73

Accessories

The following optional accessories are available for the 3RU11 thermal overload relays:

- For the four overload relay sizes S00 to S3 one terminal bracket each for stand-alone installation
- One mechanical RESET module for all sizes
- One cable release for resetting devices which are difficult to access (for all sizes)
- One electrical remote RESET module in three voltage variants for all sizes
- Terminal covers

Overload Relays

SIRIUS 3RU1 Thermal Overload Relays

3RU11 for standard applications




Selection and ordering data

3RU11 thermal overload relays with screw terminals on the auxiliary current side for direct mounting¹⁾, CLASS 10

Features and technical specifications:

- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET

- Switch position indicator
- TEST function
- STOP button
- Integrated, sealable cover

Size of con- tactor ²⁾	Rating for induction motor rated value ³⁾	Current setting of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coord- ination 2, gL/gG opera- tional class ⁴⁾	DT	Screw terminals (on auxiliary current side)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
										Order No.
Size S00										
 3RU11 16-.B0	S00	0.04	0.11 ... 0.16	0.5	▶	3RU11 16-0AB0	1	1 unit	101	0.150
		0.06	0.14 ... 0.2	1	▶	3RU11 16-0BB0	1	1 unit	101	0.150
		0.06	0.18 ... 0.25	1	▶	3RU11 16-0CB0	1	1 unit	101	0.150
		0.09	0.22 ... 0.32	1.6	▶	3RU11 16-0DB0	1	1 unit	101	0.150
		0.09	0.28 ... 0.4	2	▶	3RU11 16-0EB0	1	1 unit	101	0.150
		0.12	0.35 ... 0.5	2	▶	3RU11 16-0FB0	1	1 unit	101	0.150
		0.18	0.45 ... 0.63	2	▶	3RU11 16-0GB0	1	1 unit	101	0.150
		0.18	0.55 ... 0.8	4	▶	3RU11 16-0HB0	1	1 unit	101	0.150
		0.25	0.7 ... 1	4	▶	3RU11 16-0JB0	1	1 unit	101	0.150
		0.37	0.9 ... 1.25	4	▶	3RU11 16-0KB0	1	1 unit	101	0.150
		0.55	1.1 ... 1.6	6	▶	3RU11 16-1AB0	1	1 unit	101	0.150
		0.75	1.4 ... 2	6	▶	3RU11 16-1BB0	1	1 unit	101	0.150
		0.75	1.8 ... 2.5	10	▶	3RU11 16-1CB0	1	1 unit	101	0.150
		1.1	2.2 ... 3.2	10	▶	3RU11 16-1DB0	1	1 unit	101	0.150
		1.5	2.8 ... 4	16	▶	3RU11 16-1EB0	1	1 unit	101	0.150
		1.5	3.5 ... 5	20	▶	3RU11 16-1FB0	1	1 unit	101	0.150
		2.2	4.5 ... 6.3	20	▶	3RU11 16-1GB0	1	1 unit	101	0.150
		3	5.5 ... 8	25	▶	3RU11 16-1HB0	1	1 unit	101	0.150
	4	7 ... 10	35	▶	3RU11 16-1JB0	1	1 unit	101	0.150	
	5.5	9 ... 12	35	▶	3RU11 16-1KB0	1	1 unit	101	0.150	
Size S0										
 3RU11 26-.B0	S0	0.75	1.8 ... 2.5	10	▶	3RU11 26-1CB0	1	1 unit	101	0.190
		1.1	2.2 ... 3.2	10	▶	3RU11 26-1DB0	1	1 unit	101	0.190
		1.5	2.8 ... 4	16	▶	3RU11 26-1EB0	1	1 unit	101	0.190
		1.5	3.5 ... 5	20	▶	3RU11 26-1FB0	1	1 unit	101	0.190
		2.2	4.5 ... 6.3	20	▶	3RU11 26-1GB0	1	1 unit	101	0.190
		3	5.5 ... 8	25	▶	3RU11 26-1HB0	1	1 unit	101	0.190
		4	7 ... 10	35	▶	3RU11 26-1JB0	1	1 unit	101	0.190
		5.5	9 ... 12.5	35	▶	3RU11 26-1KB0	1	1 unit	101	0.190
		7.5	11 ... 16	40	▶	3RU11 26-4AB0	1	1 unit	101	0.190
		7.5	14 ... 20	50	▶	3RU11 26-4BB0	1	1 unit	101	0.190
		11	17 ... 22	63	▶	3RU11 26-4CB0	1	1 unit	101	0.190
		11	20 ... 25	63	▶	3RU11 26-4DB0	1	1 unit	101	0.190
Size S2										
 3RU11 36-.B0	S2	3	5.5 ... 8	25	▶	3RU11 36-1HB0	1	1 unit	101	0.320
		4	7 ... 10	35	▶	3RU11 36-1JB0	1	1 unit	101	0.320
		5.5	9 ... 12.5	35	▶	3RU11 36-1KB0	1	1 unit	101	0.320
		7.5	11 ... 16	40	▶	3RU11 36-4AB0	1	1 unit	101	0.320
		7.5	14 ... 20	50	▶	3RU11 36-4BB0	1	1 unit	101	0.320
		11	18 ... 25	63	▶	3RU11 36-4DB0	1	1 unit	101	0.320
		15	22 ... 32	80	▶	3RU11 36-4EB0	1	1 unit	101	0.320
		18.5	28 ... 40	80	▶	3RU11 36-4FB0	1	1 unit	101	0.320
		22	36 ... 45	100	▶	3RU11 36-4GB0	1	1 unit	101	0.320
		22	40 ... 50	100	▶	3RU11 36-4HB0	1	1 unit	101	0.320
	Size S3									
	 3RU11 46-.B0	S3	11	18 ... 25	63	▶	3RU11 46-4DB0	1	1 unit	101
		15	22 ... 32	80	▶	3RU11 46-4EB0	1	1 unit	101	0.550
		18.5	28 ... 40	80	▶	3RU11 46-4FB0	1	1 unit	101	0.550
		22	36 ... 50	125	▶	3RU11 46-4HB0	1	1 unit	101	0.550
		30	45 ... 63	125	▶	3RU11 46-4JB0	1	1 unit	101	0.550
		37	57 ... 75	160	▶	3RU11 46-4KB0	1	1 unit	101	0.550
		45	70 ... 90	160	▶	3RU11 46-4LB0	1	1 unit	101	0.550
		45	80 ... 100 ⁵⁾	200	▶	3RU11 46-4MB0	1	1 unit	101	0.550

1) With the suitable terminal brackets (see "Accessories", page 5/50), the 3RU11 overload relays for direct mounting can also be installed as stand-alone units.

2) Observe maximum rated operational current of the devices.

3) Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

4) Maximum protection by fuse for overload relay, type of coordination 2.

For fuse values in conjunction with contactors, see "Technical specifications" -> "Short-circuit protection with fuses/motor starter protectors for motor feeders", see note on Technical Information on page 5/1.

5) For overload relays > 100 A, see 3RB2.

* You can order this quantity or a multiple thereof.

Overload Relays

SIRIUS 3RU1 Thermal Overload Relays





3RU11 for standard applications

3RU11 thermal overload relays with screw terminals on the auxiliary current side for stand-alone installation¹⁾, CLASS 10

Features and technical specifications:

- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET

- Switch position indicator
- TEST function
- STOP button
- Integrated, sealable cover

Size of con- tactor ²⁾	Rating for induction motor rated value ³⁾	Current setting of the inverse- time delayed overload release	Short-circuit protection with fuse, type of coord- ination 2, gL/gG opera- tional class ⁴⁾	DT	Screw terminals (on auxiliary current side)		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
					Order No.	Price per PU					
Size S00											
 3RU11 16-0AB1	S00	0.04	0.11 ... 0.16	0.5	B	3RU11 16-0AB1		1	1 unit	101	0.180
		0.06	0.14 ... 0.2	1	B	3RU11 16-0BB1		1	1 unit	101	0.180
		0.06	0.18 ... 0.25	1	B	3RU11 16-0CB1		1	1 unit	101	0.180
		0.09	0.22 ... 0.32	1.6	B	3RU11 16-0DB1		1	1 unit	101	0.180
	0.09	0.28 ... 0.4	2	▶	3RU11 16-0EB1		1	1 unit	101	0.180	
	0.12	0.35 ... 0.5	2	▶	3RU11 16-0FB1		1	1 unit	101	0.180	
	0.18	0.45 ... 0.63	2	▶	3RU11 16-0GB1		1	1 unit	101	0.180	
	0.18	0.55 ... 0.8	4	▶	3RU11 16-0HB1		1	1 unit	101	0.180	
	0.25	0.7 ... 1	4	▶	3RU11 16-0JB1		1	1 unit	101	0.180	
	0.37	0.9 ... 1.25	4	▶	3RU11 16-0KB1		1	1 unit	101	0.180	
	0.55	1.1 ... 1.6	6	▶	3RU11 16-1AB1		1	1 unit	101	0.180	
	0.75	1.4 ... 2	6	▶	3RU11 16-1BB1		1	1 unit	101	0.180	
	0.75	1.8 ... 2.5	10	▶	3RU11 16-1CB1		1	1 unit	101	0.180	
	1.1	2.2 ... 3.2	10	▶	3RU11 16-1DB1		1	1 unit	101	0.180	
	1.5	2.8 ... 4	16	▶	3RU11 16-1EB1		1	1 unit	101	0.180	
	1.5	3.5 ... 5	20	▶	3RU11 16-1FB1		1	1 unit	101	0.180	
	2.2	4.5 ... 6.3	20	▶	3RU11 16-1GB1		1	1 unit	101	0.180	
3	5.5 ... 8	25	▶	3RU11 16-1HB1		1	1 unit	101	0.180		
4	7 ... 10	35	▶	3RU11 16-1JB1		1	1 unit	101	0.180		
5.5	9 ... 12	35	▶	3RU11 16-1KB1		1	1 unit	101	0.180		
Size S0											
 3RU11 16-4AB1	S0	7.5	11 ... 16	40	▶	3RU11 26-4AB1		1	1 unit	101	0.240
		7.5	14 ... 20	50	▶	3RU11 26-4BB1		1	1 unit	101	0.240
		11	17 ... 22	63	▶	3RU11 26-4CB1		1	1 unit	101	0.240
		11	20 ... 25	63	▶	3RU11 26-4DB1		1	1 unit	101	0.240
Size S2											
 3RU11 16-4EB1	S2	15	22 ... 32	80	▶	3RU11 36-4EB1		1	1 unit	101	0.480
		18.5	28 ... 40	80	▶	3RU11 36-4FB1		1	1 unit	101	0.480
		22	36 ... 45	100	▶	3RU11 36-4GB1		1	1 unit	101	0.480
		22	40 ... 50	100	▶	3RU11 36-4HB1		1	1 unit	101	0.480
Size S3											
 3RU11 16-4JB1	S3	30	45 ... 63	125	▶	3RU11 46-4JB1		1	1 unit	101	0.810
		37	57 ... 75	160	▶	3RU11 46-4KB1		1	1 unit	101	0.810
		45	70 ... 90	160	▶	3RU11 46-4LB1		1	1 unit	101	0.810
		45	80 ... 100 ⁵⁾	200	▶	3RU11 46-4MB1		1	1 unit	101	0.810

¹⁾ Sizes S00 to S3 for screw and snap-on mounting onto TH 35 standard mounting rails, size S3 also for TH 75 standard mounting rails.

²⁾ Observe maximum rated operational current of the devices.

³⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

⁴⁾ Maximum protection by fuse for overload relay, type of coordination 2. For fuse values in conjunction with contactors, see "Technical specifications" -> "Short-circuit protection with fuses/motor starter protectors for motor feeders", see note on Technical Information on page 5/1.

⁵⁾ For overload relays > 100 A, see 3RB2.

Overload Relays

SIRIUS 3RU1 Thermal Overload Relays





3RU11 for standard applications

3RU11 thermal overload relays with Cage Clamp terminals for direct mounting¹⁾ and stand-alone installation²⁾, CLASS 10

Features and technical specifications:

- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET

- Switch position indicator
- TEST function
- STOP button
- Integrated, sealable cover

Size of con- tactor ³⁾	Rating for induction motor rated value ⁴⁾	Current setting of the inverse- time delayed overload release	Short-circuit protection with fuse, type of coordi- nation 2, g/L/gG opera- tional class ⁵⁾	DT	Cage Clamp terminals (on auxiliary current side) Order No.	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	kW	A	A		Price per PU				kg	
Size S00 for stand-alone installation⁶⁾										
 3RU11 16-..C1	S00	0.04	0.11 ... 0.16	0.5	B	3RU11 16-0AC1	1	1 unit	101	0.190
		0.06	0.14 ... 0.2	1	B	3RU11 16-0BC1	1	1 unit	101	0.190
		0.06	0.18 ... 0.25	1	B	3RU11 16-0CC1	1	1 unit	101	0.190
		0.09	0.22 ... 0.32	1.6	B	3RU11 16-0DC1	1	1 unit	101	0.190
		0.09	0.28 ... 0.4	2	B	3RU11 16-0EC1	1	1 unit	101	0.190
		0.12	0.35 ... 0.5	2	B	3RU11 16-0FC1	1	1 unit	101	0.190
		0.18	0.45 ... 0.63	2	▶	3RU11 16-0GC1	1	1 unit	101	0.190
		0.18	0.55 ... 0.8	4	▶	3RU11 16-0HC1	1	1 unit	101	0.190
		0.25	0.7 ... 1	4	▶	3RU11 16-0JC1	1	1 unit	101	0.190
		0.37	0.9 ... 1.25	4	▶	3RU11 16-0KC1	1	1 unit	101	0.190
		0.55	1.1 ... 1.6	6	▶	3RU11 16-1AC1	1	1 unit	101	0.190
		0.75	1.4 ... 2	6	▶	3RU11 16-1BC1	1	1 unit	101	0.190
		0.75	1.8 ... 2.5	10	C	3RU11 16-1CC1	1	1 unit	101	0.190
		1.1	2.2 ... 3.2	10	▶	3RU11 16-1DC1	1	1 unit	101	0.190
		1.5	2.8 ... 4	16	B	3RU11 16-1EC1	1	1 unit	101	0.190
		1.5	3.5 ... 5	20	▶	3RU11 16-1FC1	1	1 unit	101	0.190
	2.2	4.5 ... 6.3	20	▶	3RU11 16-1GC1	1	1 unit	101	0.190	
	3	5.5 ... 8	25	▶	3RU11 16-1HC1	1	1 unit	101	0.190	
	4	7 ... 10	35	▶	3RU11 16-1JC1	1	1 unit	101	0.190	
	5.5	9 ... 12	35	▶	3RU11 16-1KC1	1	1 unit	101	0.190	
Size S0 for direct mounting¹⁾⁷⁾										
 3RU11 16-..D0	S0	0.75	1.8 ... 2.5	10	B	3RU11 26-1CD0	1	1 unit	101	0.190
		1.1	2.2 ... 3.2	10	B	3RU11 26-1DD0	1	1 unit	101	0.190
		1.5	2.8 ... 4	16	B	3RU11 26-1ED0	1	1 unit	101	0.190
		1.5	3.5 ... 5	20	B	3RU11 26-1FD0	1	1 unit	101	0.190
		2.2	4.5 ... 6.3	20	B	3RU11 26-1GD0	1	1 unit	101	0.190
		3	5.5 ... 8	25	B	3RU11 26-1HD0	1	1 unit	101	0.190
		4	7 ... 10	35	B	3RU11 26-1JD0	1	1 unit	101	0.190
		5.5	9 ... 12.5	35	B	3RU11 26-1KD0	1	1 unit	101	0.190
		7.5	11 ... 16	40	▶	3RU11 26-4AD0	1	1 unit	101	0.190
		7.5	14 ... 20	50	▶	3RU11 26-4BD0	1	1 unit	101	0.190
		11	17 ... 22	63	▶	3RU11 26-4CD0	1	1 unit	101	0.190
		11	20 ... 25	63	▶	3RU11 26-4DD0	1	1 unit	101	0.190
Size S2 for direct mounting¹⁾⁷⁾										
 3RU11 36-..D0	S2	3	5.5 ... 8	25	B	3RU11 36-1HD0	1	1 unit	101	0.320
		4	7 ... 10	35	B	3RU11 36-1JD0	1	1 unit	101	0.320
		5.5	9 ... 12.5	35	B	3RU11 36-1KD0	1	1 unit	101	0.320
		7.5	11 ... 16	40	B	3RU11 36-4AD0	1	1 unit	101	0.320
		7.5	14 ... 20	50	B	3RU11 36-4BD0	1	1 unit	101	0.320
		11	18 ... 25	63	B	3RU11 36-4DD0	1	1 unit	101	0.320
		15	22 ... 32	80	▶	3RU11 36-4ED0	1	1 unit	101	0.320
		18.5	28 ... 40	80	▶	3RU11 36-4FD0	1	1 unit	101	0.320
		22	36 ... 45	100	▶	3RU11 36-4GD0	1	1 unit	101	0.320
		22	40 ... 50	100	▶	3RU11 36-4HD0	1	1 unit	101	0.320
Size S3 for direct mounting¹⁾⁷⁾										
 3RU11 46-..D0	S3	11	18 ... 25	63	B	3RU11 46-4DD0	1	1 unit	101	0.550
		15	22 ... 32	80	B	3RU11 46-4ED0	1	1 unit	101	0.550
		18.5	28 ... 40	80	B	3RU11 46-4FD0	1	1 unit	101	0.550
		22	36 ... 50	125	B	3RU11 46-4HD0	1	1 unit	101	0.550
		30	45 ... 63	125	▶	3RU11 46-4JD0	1	1 unit	101	0.550
		37	57 ... 75	160	▶	3RU11 46-4KD0	1	1 unit	101	0.550
		45	70 ... 90	160	▶	3RU11 46-4LD0	1	1 unit	101	0.550
		45	80 ... 100	200	▶	3RU11 46-4MD0	1	1 unit	101	0.550

¹⁾ With the suitable terminal brackets (see "Accessories", page 5/50), the 3RU11 overload relays for direct mounting can also be installed as stand-alone units.

²⁾ Size S00 for screw and snap-on mounting onto TH 35 standard mounting rail.

³⁾ Observe maximum rated operational current of the devices.

⁴⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

⁵⁾ Maximum protection by fuse for overload relay, type of coordination 2.

For fuse values in conjunction with contactors, see "Technical specifications" -> "Short-circuit protection with fuses/motor starter protectors for motor feeders", see note on Technical Information on page 5/1.

⁶⁾ Auxiliary and main conductor connections with Cage Clamp terminal.

⁷⁾ Auxiliary conductor connections with Cage Clamp terminals and main conductor connections with screw terminals.

Overload Relays

SIRIUS 3RU1 Thermal Overload Relays

Accessories

Overview

The following optional accessories are available for the 3RU11 thermal overload relays:

- For the four overload relay sizes S00 to S3 one terminal bracket each for stand-alone installation
- One mechanical RESET module for all sizes
- One cable release for resetting devices which are difficult to access (for all sizes)
- One electrical remote RESET module in three voltage variants for all sizes
- Terminal covers

Selection and ordering data

Version	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal brackets for stand-alone installation								
	For separate mounting of overload relays; screw and snap-on mounting onto TH 35 standard mounting rail; size S3 also for TH 75 standard mounting rail	S00	▶ 3RU19 16-3AA01		1	1 unit	101	0.060
		S0	▶ 3RU19 26-3AA01		1	1 unit	101	0.080
		S2	▶ 3RU19 36-3AA01		1	1 unit	101	0.180
		S3	▶ 3RU19 46-3AA01		1	1 unit	101	0.280
Mechanical RESET¹⁾								
	Resetting plungers, holders and formers	S00 ... S3	▶ 3RU19 00-1A		1	1 unit	101	0.038
	Pushbuttons with extended stroke (12 mm), IP65, Ø 22 mm		B ▶ 3SB30 00-0EA11		1	1 unit	102	0.020
	Extension plungers For compensation of the distance between the pushbutton and the unlatching button of the relay		A ▶ 3SX1 335		1	1 unit	102	0.004
Cable releases with holder for RESET¹⁾								
	For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm	S00 ... S3						
	<ul style="list-style-type: none"> • Length 400 mm • Length 600 mm 		▶ 3RU19 00-1B		1	1 unit	101	0.063
			▶ 3RU19 00-1C		1	1 unit	101	0.073
Modules for remote RESET, electrical								
	Operating range	24 ... 30 V	S00 ... S3	▶ 3RU19 00-2AB71	1	1 unit	101	0.066
	0.85 ... 1.1 x U _S , power consumption	110 ... 127 V		▶ 3RU19 00-2AF71	1	1 unit	101	0.067
	AC 80 VA, DC 70 W, ON period	220 ... 250 V		▶ 3RU19 00-2AM71	1	1 unit	101	0.066
	0.2 ... 4 s, switching frequency	60/h						
Terminal covers¹⁾								
Covers for cable lugs and busbar connections								
	• Length 55 mm	S3	▶ 3RT19 46-4EA1		1	1 unit	101	0.040
Covers for box terminals								
	• Length 20.6 mm	S2	▶ 3RT19 36-4EA2		1	1 unit	101	0.020
	• Length 20.8 mm	S3	▶ 3RT19 46-4EA2		1	1 unit	101	0.025

For more accessories (screwdrivers and labeling plates), see page 5/62.

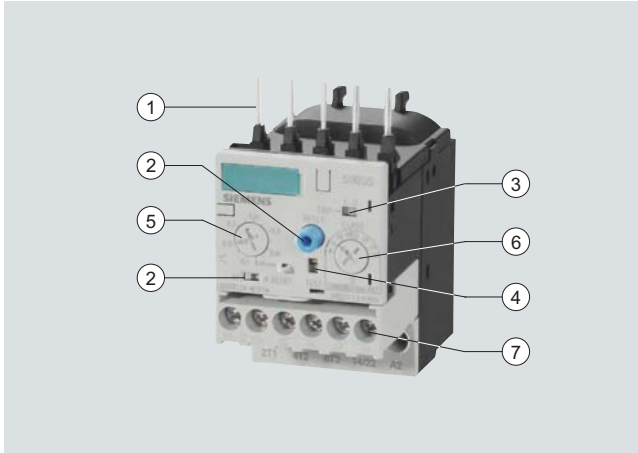
¹⁾ The accessories are identical to those of the 3RB2 solid-state overload relays.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB20, 3RB21 for standard applications

Overview



- ① Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors and soft starters. Connecting pins can be used for direct mounting of the overload relays. Stand-alone installation is possible as an alternative (in some cases in conjunction with a stand-alone installation module).
- ② Selector switch for manual/automatic RESET and RESET button:
With the slide switch you can choose between manual and automatic RESET. A device set to manual RESET can be reset locally by pressing the RESET button. On the 3RB21 a solid-state remote RESET is integrated.
- ③ Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ④ Solid-state test (device test):
Enables a test of all important device components and functions.
- ④ Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.
- ⑥ Trip class setting/internal ground-fault detection (only 3RB21):
Using the rotary switch you can set the required trip class and activate the internal ground-fault detection dependent on the start-up conditions.
- ⑦ Connecting terminals (removable joint block for auxiliary circuits):
The generously sized terminals permit connection of two conductors with different cross-sections for the main and auxiliary circuits. The auxiliary circuit can be connected with screw terminals and alternatively with spring-type terminals.

The 3RB20 and 3RB21 solid-state overload relays up to 630 A with internal power supply have been designed for inverse-time delayed protection of loads with normal and heavy starting (for "Function" see note on Technical Information on page 5/1) against excessive temperature rises due to overload, phase unbalance or phase failure.

An overload, phase unbalance or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding solid-state circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and set current I_e and is stored in the form of a long-term stable tripping characteristic (for "Characteristic Curves" see the note on Technical Information on page 5/1).

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase unbalance and phase failure, the 3RB21 solid-state overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for wye-delta starting). This provides protection of loads against high-resistance short-circuits due to damage to the insulation material, moisture, condensed water etc.

The "tripped" status is signaled by means of a switch position indicator. Resetting takes place either manually or automatically after a recovery time has elapsed (for "Function" see note on Technical Information on page 5/1).

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC

The 3RB20/3RB21 solid-state overload relays are suitable for the overload protection of explosion-proof motors with "increased safety" type of protection EEx e. The relays meet the requirements of EN 60079-7 (Electrical apparatus for areas subject to explosion hazards – Increased safety "e"); see Chapter 20 "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for explosion-protected areas (ATEX Explosion Protection)".

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 06 ATEX 3001.

Benefits

The most important features and benefits of the 3RB20/3RB21 solid-state overload relays are listed in the overview table (see "General Data" on page 5/42).

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB20, 3RB21 for standard applications

Application

Industries

The 3RB20/3RB21 solid-state overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e. g. motors) under normal and heavy starting conditions (CLASS 5 to CLASS 30), minimize project completion times, inventories and power consumption, and optimize plant availability and maintenance management.

Application

The 3RB20/3RB21 solid-state overload relays have been designed for the protection of induction motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU11 thermal overload relay or the 3RB22/3RB23 solid-state overload relay can be used for single-phase AC loads. For DC loads we recommend the 3RU11 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive environments, ageing and temperature fluctuation.

For the temperature range from -25 °C to $+60\text{ °C}$, the 3RB20/3RB21 solid-state overload relays compensate the temperature according to IEC 60947-4-1.

For the 3RB20/3RB21 solid-state overload relays with the sizes S6, S10 and S12, the upper set value of the setting range must be reduced for ambient temperatures $> 50\text{ °C}$ by a certain factor (see tables below).

Type	Setting range	Derating factor for the upper set value for stand-alone installation at ambient temperature	
		+50 °C	+60 °C
3RB20 56, 3RB21 56	50 ... 200 A	100 %	100 %
3RB20 66, 3RB21 66	55 ... 250 A	100 %	100 %
3RB20 66, 3RB21 66	160 ... 630 A	100 %	90 %

Type	Setting range	Derating factor for the upper set value for mounting onto contactor at ambient temperature	
		+50 °C	+60 °C
3RB20 56, 3RB21 56	50 ... 200 A	100 %	70 %
3RB20 66, 3RB21 66	55 ... 250 A	100 %	70 %
3RB20 66, 3RB21 66	160 ... 630 A	100 %	70 %

Accessories

The following optional accessories are available for the 3RB20/3RB21 solid-state overload relays:

- One terminal bracket each for the overload relays size S00 and S0 (sizes S2 to S12 can be installed as stand-alone installation without a terminal bracket)
- One mechanical remote RESET module for all sizes
- One cable release for resetting devices which are difficult to access (for all sizes)
- One sealable cover for all sizes
- Terminal covers for sizes S2 to S10/S12
- Box terminal blocks for sizes S6 and S10/S12

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB20, 3RB21 for standard applications
Selection and ordering data
3RB20 solid-state overload relays for direct mounting¹⁾²⁾ and stand-alone installation²⁾³⁾, CLASS 10

Features and technical specifications:

- Overload protection, phase failure protection and unbalance protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring

 PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101


Size of contactor ⁴⁾	Rating for induction motor Rated value ⁵⁾	Current setting of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination 2, gL/gG operational class ⁶⁾	DT	Screw terminals (on auxiliary current side)			Spring-type terminals (on auxiliary current side)		
					Order No.	Price per PU	Weight per PU approx.	Order No.	Price per PU	Weight per PU approx.
	kW	A	A				kg			kg
Size S00¹⁾										
S00	0.04 ... 0.09	0.1 ... 0.4	1	▶	3RB20 16-1RB0		0.200	A	3RB20 16-1RD0	0.200
	0.12 ... 0.37	0.32 ... 1.25	2	▶	3RB20 16-1NB0		0.200	A	3RB20 16-1ND0	0.200
	0.55 ... 1.5	1 ... 4	10	▶	3RB20 16-1PB0		0.200	A	3RB20 16-1PD0	0.200
	1.1 ... 5.5	3 ... 12	20	▶	3RB20 16-1SB0		0.200	A	3RB20 16-1SD0	0.200
Size S0¹⁾										
S0	0.04 ... 0.09	0.1 ... 0.4	1	▶	3RB20 26-1RB0		0.220	A	3RB20 26-1RD0	0.220
	0.12 ... 0.37	0.32 ... 1.25	2	▶	3RB20 26-1NB0		0.220	A	3RB20 26-1ND0	0.220
	0.55 ... 1.5	1 ... 4	10	▶	3RB20 26-1PB0		0.220	A	3RB20 26-1PD0	0.220
	1.1 ... 5.5	3 ... 12	20	▶	3RB20 26-1SB0		0.220	A	3RB20 26-1SD0	0.220
	3 ... 11	6 ... 25	35	▶	3RB20 26-1QB0		0.220	A	3RB20 26-1QD0	0.220
Size S2¹⁾³⁾⁷⁾										
S2	3 ... 11	6 ... 25	63	▶	3RB20 36-1QB0		0.360	A	3RB20 36-1QD0	0.360
				▶	3RB20 36-1QW1		0.230	A	3RB20 36-1QX1	0.230
	7.5 ... 22	12.5 ... 50	80	▶	3RB20 36-1UB0		0.360	A	3RB20 36-1UD0	0.360
				▶	3RB20 36-1UW1		0.230	A	3RB20 36-1UX1	0.230
Size S3¹⁾³⁾⁷⁾										
S3	7.5 ... 22	12.5 ... 50	160	▶	3RB20 46-1UB0		0.560	A	3RB20 46-1UD0	0.560
	11 ... 45	25 ... 100	315	▶	3RB20 46-1EB0		0.560	A	3RB20 46-1ED0	0.560
				▶	3RB20 46-1EW1		0.450	A	3RB20 46-1EX1	0.450
Size S6²⁾⁷⁾										
S6 with busbar connections	22 ... 90	50 ... 200	315	▶	3RB20 56-1FC2		1.030	A	3RB20 56-1FF2	1.030
S6 with box terminals				▶	3RB20 56-1FW2		0.690	A	3RB20 56-1FX2	0.690
Size S10/S12²⁾										
S10/S12 and size 14 (3TF68/ 3TF69)	22 ... 110	55 ... 250	400	▶	3RB20 66-1GC2		1.820	A	3RB20 66-1GF2	1.820
	90 ... 450	160 ... 630	800	▶	3RB20 66-1MC2		1.820	A	3RB20 66-1MF2	1.820

¹⁾ The relays with an Order No. ending with "0" are designed for direct mounting. With the matching terminal brackets (see "Accessories", page 5/60) the sizes S00 and S0 can also be installed as stand-alone units.

²⁾ The relays with an Order No. ending with "2" are designed for direct mounting and stand-alone installation. For 3TF68/3TF69 contactors, direct mounting is not possible.

³⁾ The relays with an Order No. ending with "1" are designed for stand-alone installation.

⁴⁾ Observe maximum rated operational current of the devices.

⁵⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

⁶⁾ Maximum protection by fuse for overload relay, type of coordination 2. For fuse values in conjunction with contactors, see "Technical specifications" --> "Short-circuit protection with fuses for motor feeders", see note on Technical Information on page 5/1.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB20, 3RB21 for standard applications

3RB20 solid-state overload relays for direct mounting¹⁾²⁾ and stand-alone installation²⁾³⁾, CLASS 20

Features and technical specifications:

- Overload protection, phase failure protection and unbalance protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M)= 1
PS* = 1 unit
PG = 101



3RB20 16-2RB0



3RB20 26-2QD0



3RB20 36-2UB0



3RB20 46-2ED0



3RB20 56-2FW2



3RB20 66-2MF2

Size of contactor ⁴⁾	Rating for induction motor Rated value ⁵⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination 2, gL/gG operational class ⁶⁾	DT	Screw terminals (on auxiliary current side)		Weight per PU approx.	DT	Spring-type terminals (on auxiliary current side)		Weight per PU approx.
					Order No.	Price per PU			Order No.	Price per PU	
	kW	A	A				kg			kg	
Size S00¹⁾											
S00	0.04 ... 0.09	0.1 ... 0.4	1	▶	3RB20 16-2RB0		0.200 A		3RB20 16-2RD0	0.200	
	0.12 ... 0.37	0.32 ... 1.25	2	▶	3RB20 16-2NB0		0.200 A		3RB20 16-2ND0	0.200	
	0.55 ... 1.5	1 ... 4	10	▶	3RB20 16-2PB0		0.200 A		3RB20 16-2PD0	0.200	
	1.1 ... 5.5	3 ... 12	20	▶	3RB20 16-2SB0		0.200 A		3RB20 16-2SD0	0.200	
Size S0¹⁾											
S0	0.04 ... 0.09	0.1 ... 0.4	1	▶	3RB20 26-2RB0		0.220 A		3RB20 26-2RD0	0.220	
	0.12 ... 0.37	0.32 ... 1.25	2	▶	3RB20 26-2NB0		0.220 A		3RB20 26-2ND0	0.220	
	0.55 ... 1.5	1 ... 4	10	▶	3RB20 26-2PB0		0.220 A		3RB20 26-2PD0	0.220	
	1.1 ... 5.5	3 ... 12	20	▶	3RB20 26-2SB0		0.220 A		3RB20 26-2SD0	0.220	
	3 ... 11	6 ... 25	35	▶	3RB20 26-2QB0		0.220 A		3RB20 26-2QD0	0.220	
Size S2¹⁾³⁾⁷⁾											
S2	3 ... 11	6 ... 25	63	▶	3RB20 36-2QB0		0.360 A		3RB20 36-2QD0	0.360	
				▶	3RB20 36-2QW1		0.230 A		3RB20 36-2QX1	0.230	
	7.5 ... 22	12.5 ... 50	80	▶	3RB20 36-2UB0		0.360 A		3RB20 36-2UD0	0.360	
				▶	3RB20 36-2UW1		0.230 A		3RB20 36-2UX1	0.230	
Size S3¹⁾³⁾⁷⁾											
S3	7.5 ... 22	12.5 ... 50	160	▶	3RB20 46-2UB0		0.560 A		3RB20 46-2UD0	0.560	
	11 ... 45	25 ... 100	315	▶	3RB20 46-2EB0		0.560 A		3RB20 46-2ED0	0.560	
				▶	3RB20 46-2EW1		0.450 A		3RB20 46-2EX1	0.450	
Size S6²⁾⁷⁾											
S6 with busbar connections	22 ... 90	50 ... 200	315	▶	3RB20 56-2FC2		1.030 A		3RB20 56-2FF2	1.030	
S6 with box terminals				▶	3RB20 56-2FW2		0.690 A		3RB20 56-2FX2	0.690	
Size S10/S12²⁾											
S10/S12 and size 14 (3TF68/ 3TF69)	22 ... 110	55 ... 250	400	▶	3RB20 66-2GC2		1.820 A		3RB20 66-2GF2	1.820	
	90 ... 450	160 ... 630	800	▶	3RB20 66-2MC2		1.820 A		3RB20 66-2MF2	1.820	

1) The relays with an Order No. ending with "0" are designed for direct mounting. With the matching terminal brackets (see "Accessories", page 5/60) the sizes S00 and S0 can also be installed as stand-alone units.

2) The relays with an Order No. ending with "2" are designed for direct mounting and stand-alone installation. For 3TF68/3TF69 contactors, direct mounting is not possible.

3) The relays with an Order No. ending with "1" are designed for stand-alone installation.

4) Observe maximum rated operational current of the devices.

5) Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

6) Maximum protection by fuse for overload relay, type of coordination 2. For fuse values in conjunction with contactors, see "Technical specifications" -> "Short-circuit protection with fuses for motor feeders", see note on Technical Information on page 5/1.

7) The relays with an Order No. with "W" or "X" in penultimate position are equipped with a straight-through transformer.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB20, 3RB21 for standard applications
3RB21 solid-state overload relays for direct mounting¹⁾²⁾ and stand-alone installation²⁾³⁾, CLASS 5, 10, 20 and 30 adjustable

Features and technical specifications:

- Overload protection, phase failure protection and unbalance protection
- Internal ground-fault detection (activatable)
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring

 PU (UNIT, SET, M)= 1
 PS* = 1 unit
 PG = 101


3RB21 13-4RB0



3RB21 23-4QD0



3RB21 33-4UB0



3RB21 43-4ED0



3RB21 53-4FX2



3RB21 63-4MC2

Size of contactor ⁴⁾	Rating for induction motor Rated value ⁵⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination 2, gL/gG operational class ⁶⁾	DT	Screw terminals (on auxiliary current side)		Weight per PU approx.	DT	Spring-type terminals (on auxiliary current side)		Weight per PU approx.
	kW	A	A		Order No.	Price per PU	kg		Order No.	Price per PU	kg
Size S00¹⁾											
S00	0.04 ... 0.09	0.1 ... 0.4	1	▶	3RB21 13-4RB0		0.200	A	3RB21 13-4RD0		0.200
	0.12 ... 0.37	0.32 ... 1.25	2	▶	3RB21 13-4NB0		0.200	A	3RB21 13-4ND0		0.200
	0.55 ... 1.5	1 ... 4	10	▶	3RB21 13-4PB0		0.200	A	3RB21 13-4PD0		0.200
	1.1 ... 5.5	3 ... 12	20	▶	3RB21 13-4SB0		0.200	A	3RB21 13-4SD0		0.200
Size S0¹⁾											
S0	0.04 ... 0.09	0.1 ... 0.4	1	▶	3RB21 23-4RB0		0.220	▶	3RB21 23-4RD0		0.220
	0.12 ... 0.37	0.32 ... 1.25	2	▶	3RB21 23-4NB0		0.220	▶	3RB21 23-4ND0		0.220
	0.55 ... 1.5	1 ... 4	10	▶	3RB21 23-4PB0		0.220	▶	3RB21 23-4PD0		0.220
	1.1 ... 5.5	3 ... 12	20	▶	3RB21 23-4SB0		0.220	A	3RB21 23-4SD0		0.220
	3 ... 11	6 ... 25	35	▶	3RB21 23-4QB0		0.220	A	3RB21 23-4QD0		0.220
Size S2¹⁾³⁾⁷⁾											
S2	3 ... 11	6 ... 25	63	▶	3RB21 33-4QB0		0.360	A	3RB21 33-4QD0		0.360
				▶	3RB21 33-4QW1		0.230	A	3RB21 33-4QX1		0.230
	7.5 ... 22	12.5 ... 50	80	▶	3RB21 33-4UB0		0.360	A	3RB21 33-4UD0		0.360
				▶	3RB21 33-4UW1		0.230	A	3RB21 33-4UX1		0.230
Size S3¹⁾³⁾⁷⁾											
S3	7.5 ... 22	12.5 ... 50	160	▶	3RB21 43-4UB0		0.560	A	3RB21 43-4UD0		0.560
	11 ... 45	25 ... 100	315	▶	3RB21 43-4EB0		0.560	A	3RB21 43-4ED0		0.560
				▶	3RB21 43-4EW1		0.450	A	3RB21 43-4EX1		0.450
Size S6²⁾⁷⁾											
S6 with busbar connections	22 ... 90	50 ... 200	315	▶	3RB21 53-4FC2		1.030	A	3RB21 53-4FF2		1.030
S6 with box terminals				▶	3RB21 53-4FW2		0.690	A	3RB21 53-4FX2		0.690
Size S10/S12²⁾											
S10/S12	22 ... 110	55 ... 250	400	▶	3RB21 63-4GC2		1.820	A	3RB21 63-4GF2		1.820
and size 14 (3TF68/ 3TF69)	90 ... 450	160 ... 630	800	▶	3RB21 63-4MC2		1.820	A	3RB21 63-4MF2		1.820

1) The relays with an Order No. ending with "0" are designed for direct mounting. With the matching terminal brackets (see "Accessories", page 5/60) the sizes S00 and S0 can also be installed as stand-alone units.

2) The relays with an Order No. ending with "2" are designed for direct mounting and stand-alone installation. For 3TF68/3TF69 contactors, direct mounting is not possible.

3) The relays with an Order No. ending with "1" are designed for stand-alone installation.

4) Observe maximum rated operational current of the devices.

5) Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

6) Maximum protection by fuse for overload relay, type of coordination 2. For fuse values in conjunction with contactors, see "Technical specifications" -> "Short-circuit protection with fuses for motor feeders", see note on Technical Information on page 5/1.

7) The relays with an Order No. with "W" or "X" in penultimate position are equipped with a straight-through transformer.

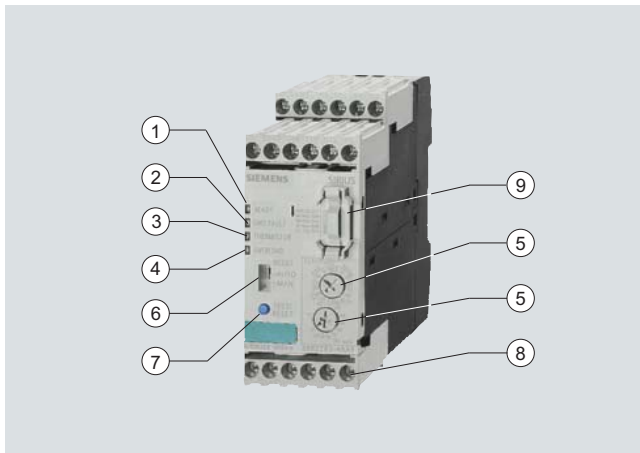
* You can order this quantity or a multiple thereof.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB22, 3RB23 for high-feature applications

Overview



3RB22/3RB23 evaluation module

- ① Green LED "READY":
A continuous green light signals that the device is working correctly.
- ② Red LED "GND FAULT":
A continuous red light signals a ground-fault tripping.
- ③ Red LED "THERMISTOR":
A continuous red light signals an active thermistor trip.
- ④ Red LED "OVERLOAD":
A continuous red light signals an active overload trip; a flickering red light signals an imminent trip (overload warning).
- ⑤ Motor current and trip class setting:
Setting the device to the motor current and to the required trip class dependent on the start-up conditions is easy with the two rotary switches.
- ⑥ Selector switch for manual/automatic RESET:
With this switch you can choose between manual and automatic RESET.
- ⑦ Test/RESET button:
Enables testing of all important device components and functions, plus resetting of the device after a trip when manual RESET is selected.
- ⑧ Connecting terminals (removable joint block):
The generously sized terminals permit connection of two conductors with different cross-sections for the auxiliary, control and sensor circuits. Connection is possible with screw connection and alternatively with spring-type connection.
- ⑨ 3RB29 85 function expansion module:
Enables more functions to be added, e. g. internal ground-fault detection and/or an analog output with corresponding signals.



3RB29 06 current measuring module

The modular, solid-state overload relays with external power supply type 3RB22 (with monostable auxiliary contacts) and type 3RB23 (with bistable auxiliary contacts) up to 630 A (up to 820 A possible with a series transformer) have been designed for inverse-time delayed protection of loads with normal and heavy starting (for "Function" see note on [Technical Information on page 5/1](#)) against excessive temperature rises due to overload, phase unbalance or phase failure. An overload, phase unbalance or phase failure result in an increase of the motor current beyond the set rated motor current.

This current rise is detected by means of a current measuring module and electronically evaluated by a special evaluation module which is connected to it. The evaluation electronics sends a signal to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and set current I_{e} and is stored in the form of a long-term stable tripping characteristic (for "Characteristic Curves" see the note on [Technical Information on page 5/1](#)). The "tripped" status is signaled by means of a continuous red "OVERLOAD" LED.

The LED indicates imminent tripping of the relay due to overload, phase unbalance or phase failure by flickering when the limit current has been violated. This warning can also be issued as a signal through auxiliary contacts.

In addition to the described inverse-time delayed protection of loads against excessive temperature rises, the 3RB22/3RB23 solid-state overload relays also allow direct temperature monitoring of the motor windings (full motor protection) by connection with broken-wire interlock of a PTC sensor circuit. With this temperature-dependent protection, the loads can be protected against overheating caused indirectly by reduced coolant flow, for example, which cannot be detected by means of the current alone. In the event of overheating, the devices switch off the contactor, and thus the load, by means of the auxiliary contacts. The "tripped" status is signaled by means of a continuously illuminated "THERMISTOR" LED.

To also protect the loads against high-resistance short-circuits due to damage to the insulation, humidity, condensed water, etc., the 3RB22/3RB23 solid-state overload relays offer the possibility of internal ground-fault detection in conjunction with a function expansion module (for details see ["Selection and ordering data"](#)); not possible in conjunction with contactor assembly for wye-delta starting. In the event of a ground fault the 3RB22/3RB23 relays trip instantaneously. The "tripped" status is signaled by means of a continuous red "Ground Fault" LED. Signaling through auxiliary contacts is also possible.

After tripping due to overload, phase unbalance, phase failure, thermistor or ground-fault tripping, the relay is reset manually or automatically after the recovery time has elapsed (for "Function" see note on [Technical Information on page 5/1](#)). In conjunction with a function expansion module the motor current measured by the microprocessor can be output in the form of an analog signal 4 ... 20 mA DC for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers. With an additional AS-Interface analog module the current values can also be transferred over the AS-i bus system.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials.

They comply with all important worldwide standards and approvals.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB22, 3RB23 for high-feature applications

"Increased safety" type of protection EEx e according to ATEX directive 94/9/EC

The 3RB22 (monostable) solid-state overload relays are suitable for the overload protection of explosion-proof motors with "increased safety" type of protection EEx e. The relays meet the requirements of EN 60079-7 (Electrical apparatus for areas subject to explosion hazards – Increased safety "e"); see [Chapter 20 "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for explosion-protected areas \(ATEX Explosion Protection\)"](#).

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 05 ATEX 3022.

Benefits

The most important features and benefits of the 3RB22/3RB23 solid-state overload relays are listed in the overview table (see ["General Data" on page 5/42](#)).

Application

Industries

The 3RB22/3RB23 solid-state overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed and temperature-dependent protection of their electrical loads (e. g. motors) under normal and heavy starting conditions (CLASS 5 to CLASS 30), minimize project completion times, inventories and power consumption, and optimize plant availability and maintenance management.

Application

The 3RB22/3RB23 solid-state overload relays have been designed for the protection of three-phase asynchronous and single-phase AC motors.

If single-phase AC motors are to be protected by the 3RB22/3RB23 solid-state overload relays, the main current paths of the current measuring modules must be series-connected (for ["Schematics" see note on Technical Information on page 5/1](#)).

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive environments, ageing and temperature fluctuation.

For the temperature range from -25 °C to $+60\text{ °C}$, the 3RB22/3RB23 solid-state overload relays compensate the temperature according to IEC 60947-4-1.

Configuration notes for use of the devices below -25 °C or above $+60\text{ °C}$ on request.

Accessories

The following optional accessories are available for the 3RB22/3RB23 solid-state overload relays:

- A sealable cover for the evaluation module
- Terminal covers for the current measuring modules size S6 and S10/S12
- Box terminal blocks for the current measuring modules size S6 and S10/S12
- Push-in lugs for screw fixing the 3RB22/3RB23 overload relays and the 3RB29 06 current measuring modules.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB22, 3RB23 for high-feature applications

Selection and ordering data

3RB22/3RB23 solid-state overload relays for full motor protection with screw terminals or spring-type terminals for stand-alone installation, CLASS 5, 10, 20 and 30 adjustable

Features and technical specifications:

- Overload protection, phase failure protection and unbalance protection
- External power supply 24 ... 240 V
- Auxiliary contacts 2 NO + 2 NC
- Manual and automatic RESET
- Electrical remote RESET integrated
- 4 LEDs for operating and status displays
- TEST function and self-monitoring
- Internal ground-fault detection with function expansion module
- Screw terminals or spring-type terminals for auxiliary, control and sensor circuits
- Input for PTC sensor circuit
- Analog output with function expansion module

Size of contactor	Version	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg

Evaluation modules



3RB2. 83-4AA1

S00 ... S12	Monostable	▶	3RB22 83-4AA1	1	1 unit	101	0.300
	Bistable	▶	3RB23 83-4AA1	1	1 unit	101	0.300

Size of contactor	Version	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg

Evaluation modules



3RB2. 83-4AC1

S00 ... S12	Monostable	A	3RB22 83-4AC1	1	1 unit	101	0.300
	Bistable	A	3RB23 83-4AC1	1	1 unit	101	0.300

Size of contactor	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
								kg

Function expansion modules



Size of contactor	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
S00 ... S12	For plugging into evaluation module (1 unit)							
	Analog Basic 1 modules¹⁾	▶	3RB29 85-2AA0	1	1 unit	101	0.030	
	Analog output DC 4 ... 20 mA, with overload warning							
	Analog Basic 1 modules¹⁾²⁾	▶	3RB29 85-2AA1	1	1 unit	101	0.030	
	Analog output DC 4 ... 20 mA, with internal ground-fault detection and overload warning							
	Analog Basic 2 modules¹⁾²⁾	▶	3RB29 85-2AB1	1	1 unit	101	0.030	
	Analog output DC 4 ... 20 mA, with internal ground-fault detection and ground-fault signaling							
	Basic 1 GF modules²⁾	▶	3RB29 85-2CA1	1	1 unit	101	0.030	
	with internal ground-fault detection and overload warning							
	Basic 2 GF modules²⁾	▶	3RB29 85-2CB1	1	1 unit	101	0.030	
	with internal ground-fault detection and ground-fault signaling							

Note:

Analog input modules, e. g. SM 331, must be configured for 4-wire measuring transducers. In this case the analog input module must not supply current to the analog output of the 3RB22/ 3RB23 relay.

¹⁾ The analog signal DC 4 ... 20 mA can be used for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

²⁾ The following information on ground-fault protection refers to sinusoidal residual currents at 50/60 Hz:





- With a motor current of between 0.3 and 2 times the set current I_e the unit will trip at a ground-fault current equal to 30 % of the set current.
- With a motor current of between 2 and 8 times the set current I_e the unit will trip at a ground-fault current equal to 15 % of the set current.
- The response delay amounts to between 0.5 and 1 second.

* You can order this quantity or a multiple thereof.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

3RB22, 3RB23 for high-feature applications
Current measuring modules for direct mounting¹⁾ and stand-alone installation¹⁾²⁾

Size of contactor ³⁾	Rating for induction motor rated value ⁴⁾	Current setting of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination 2, gL/gG operational class ⁵⁾	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	kW	A								kg
Size S00/S0²⁾⁶⁾										
	S00/S0	0.09 ... 1.1	0.3 ... 3	20	▶	3RB29 06-2BG1	1	1 unit	101	0.100
		1.1 ... 11	2.4 ... 25	63	▶					
Size S2/S3²⁾⁶⁾										
	S2/S3	5.5 ... 45	10 ... 100	315	▶	3RB29 06-2JG1	1	1 unit	101	0.350
Size S6¹⁾⁶⁾										
	S6 with busbar connection	11 ... 90	20 ... 200	315	▶	3RB29 56-2TH2	1	1 unit	101	1.000
		S6 with box terminals								
Size S10/S12¹⁾										
	S10/S12 and size 14 (3TF68/3TF69)	37 ... 450	63 ... 630	800	▶	3RB29 66-2WH2	1	1 unit	101	1.750

Note:

The connecting cable between the current measuring module and the evaluation module is not included in the scope of supply; please order separately.

1) The current measuring modules with an Order No. ending with "2" are designed for direct mounting and stand-alone installation. For 3TF68/3TF69 contactors, direct mounting is not possible.

2) The current measuring modules with an Order No. ending with "1" are designed for stand-alone installation.


3) Observe maximum rated operational current of the devices.

4) Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

5) Maximum protection by fuse for overload relay, type of coordination 2. For fuse values in conjunction with contactors, see "Technical specifications" --> "Short-circuit protection with fuses for motor feeders", see note on Technical Information on page 5/1.

6) The modules with an Order No. with "G" in penultimate position are equipped with a straight-through transformer.

Accessories

Size of contactor	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
								kg
Connecting cables (essential accessory)								
	S00 ... S3	For connection between evaluation module and current measuring module	▶	3RB29 87-2B	1	1 unit	101	0.010
	S00 ... S12	• Length 0.1 m (only for mounting of the evaluation module directly onto the current measuring module)	▶					

For more accessories, see page 5/60.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

Accessories

Overview

Overload relays for standard applications

The following optional accessories are available for the 3RB20/3RB21 solid-state overload relays:

- One terminal bracket each for the overload relays size S00 and S0 (sizes S2 to S12 can be installed as stand-alone installation without a terminal bracket)
- One mechanical remote RESET module for all sizes
- One cable release for resetting devices which are difficult to access (for all sizes)
- One sealable cover for all sizes
- Terminal covers for sizes S2 to S10/S12
- Box terminal blocks for sizes S6 and S10/S12

Overload relays for high-feature applications

The following optional accessories are available for the 3RB22/3RB23 solid-state overload relays:

- A sealable cover for the evaluation module
- Terminal covers for the current measuring modules size S6 and S10/S12
- Box terminal blocks for the current measuring modules size S6 and S10/S12
- Push-in lugs for screw fixing the 3RB22/3RB23 overload relays and the 3RB29 06 current measuring modules.

Selection and ordering data

Version	Size	DT	Order No.	Price €	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	------	----	-----------	---------	-------------------	-----	----	--------------------------

Terminal brackets for stand-alone installation¹⁾



3RB29 .3-0AA1

For separate mounting of the overload relays; screw and snap-on mounting onto TH 35 standard mounting rail

S00	▶	3RB29 13-0AA1	1	1 unit	101	0.060
S0	▶	3RB29 23-0AA1	1	1 unit	101	0.080

Mechanical RESET²⁾



3RU19 00-1A with pushbutton and extension plunger

Resetting plungers, holders and formers S00 ... S10/S12 ▶

		3RU19 00-1A	1	1 unit	101	0.038
--	--	--------------------	---	--------	-----	-------

Pushbuttons with extended stroke (12 mm), IP65, Ø 22 mm B

		3SB30 00-0EA11	1	1 unit	102	0.020
--	--	-----------------------	---	--------	-----	-------

Extension plungers A
For compensation of the distance between a pushbutton and the unlatching button of the relay

		3SX1 335	1	1 unit	102	0.004
--	--	-----------------	---	--------	-----	-------

Cable releases with holder for RESET²⁾



3RU19 00-1.

For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm S00 ... S10/S12

- Length 400 mm ▶
- Length 600 mm ▶

		3RU19 00-1B	1	1 unit	101	0.063
		3RU19 00-1C	1	1 unit	101	0.073

¹⁾ Only for 3RB20/3RB21.

²⁾ Only for 3RB20/3RB21. The accessories are identical to those of the 3RU11 thermal overload relays.

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

Accessories

Version	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Sealable covers								
	For covering the setting knobs							
	• For 3RB20/3RB21 for standard applications	S00 ... S10/S12	▶ 3RB29 84-0		1	10 units	101	0.020
	• For 3RB22/3RB23 for high-feature applications	--	▶ 3RB29 84-2		1	10 units	101	0.050
Terminal covers								
	Covers for cable lugs and busbar connections							
	• Length 55 mm ¹⁾	S3	▶ 3RT19 46-4EA1		1	1 unit	101	0.040
	• Length 100 mm	S6	▶ 3RT19 56-4EA1		1	1 unit	101	0.070
	• Length 120 mm	S10/S12	▶ 3RT19 66-4EA1		1	1 unit	101	0.130
	Covers for box terminals							
	• Length 20.6 mm ¹⁾	S2	▶ 3RT19 36-4EA2		1	1 unit	101	0.020
	• Length 20.8 mm ¹⁾	S3	▶ 3RT19 46-4EA2		1	1 unit	101	0.025
	• Length 25 mm	S6	▶ 3RT19 56-4EA2		1	1 unit	101	0.030
	• Length 30 mm	S10/S12	▶ 3RT19 66-4EA2		1	1 unit	101	0.040
	Covers for screw terminals							
	between contactor and overload relay, without box terminals (1 unit required per combination)	S6	▶ 3RT19 56-4EA3		1	1 unit	101	0.020
		S10/S12	▶ 3RT19 66-4EA3		1	1 unit	101	0.060
Box terminal blocks								
	For round and ribbon cables							
	• Up to 70 mm ²	S6 ²⁾	▶ 3RT19 55-4G		1	1 unit	101	0.230
	• Up to 120 mm ²	S6	▶ 3RT19 56-4G		1	1 unit	101	0.260
	• Up to 240 mm ²	S10/S12	▶ 3RT19 66-4G		1	1 unit	101	0.676
	For technical specifications for conductor cross-sections see note on Technical Information on page 5/1.							
Push-in lugs								
	For screw fixing of 3RB22/3RB23 overload relays	--	▶ 3RP19 03		1	10 units	101	0.002
	For screw fixing the 3RB29 06 current measuring modules (2 units are required per module)	S00 ... S3	A ▶ 3RB19 00-0B		100	10 units	101	0.100
Tools for opening spring-type terminals by hand								
	Screwdrivers, 2.5 mm x 0.4 mm, length approx. 160 mm; green, suitable for a max. conductor cross-section of 1.5 mm ²	Can be used for: Auxiliary circuit connections	C ▶ 8WH9 200-0AA00		1	10 units	044	0.032

¹⁾ Only for 3RB20/3RB21. The accessories are identical to those of the 3RU11 thermal overload relays.

²⁾ In the scope of supply for 3RT10 54-1 contactors (55 kW).

Overload Relays

SIRIUS 3RB2 Solid-State Overload Relays

Accessories

Version	Size/ Color	Use	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----------------	-----	----	-----------	-----------------	-------------------------	-----	----	-----------------------------------

Tools for opening Cage Clamp terminals



8WA2 803

Screwdrivers

3.5 mm x 0.5 mm,
length approx.
175 mm; suitable for a
max. conductor cross-
section of 2.5 mm²

Green, partially
insulated
Green

Main and
auxiliary cir-
cuit connec-
tions

C

8WA2 880

1

1 unit

041

0.034

C

8WA2 803

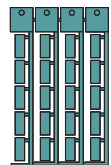
1

1 unit

041

0.024

Blank labels



3RT19 00-1SB10

Unit labeling plates for SIRIUS devices

20 mm x 7 mm,
pastel turquoise

C

3RT19 00-1SB20

100

340 units

101

0.200

Inscription labels for sticking

19 mm x 6 mm, 3RB2,
pastel turquoise 3RU11
For SIRIUS devices
19 mm x 6 mm,
zinc yellow

D

3RT19 00-1SB60

100

3060 units

101

15.000

C

3RT19 00-1SD60

100

3060 units

101

12.000

Computer labeling systems

For individual inscription of unit labeling
plates

Obtainable from:

murrplastik Systemtechnik GmbH

www.murrplastik.de

Load Feeders and Motor Starters



Technical Information

is available at
www.siemens.com/industrial-controls/support

under Product List:
 - Technical specifications

under Entry List:
 - Updates
 - Downloads
 - FAQ
 - Manuals
 - Characteristic curves
 - Certificates

and at
www.siemens.com/industrial-controls/configurators
 - Configurators

Note:
 For safety characteristics for motor starters see "Appendix"
 --> "Standards and approvals"
 --> "Overview"

6/2	Introduction		
	For Operation in the Control Cabinet		
	SIRIUS 3RA1 Load Feeders		
6/4	<u>General data</u>	6/119	SIRIUS M200D Motor Starters
6/5	<u>3RA11 Direct-on-Line Starters</u>	6/120	<u>General data</u>
6/5	for snapping onto standard mounting rails or for screw fixing	6/124	<u>M200D Motor Starters for AS-Interface</u>
6/9	for busbar systems	6/125	<u>M200D Basic motor starters</u>
6/13	<u>3RA12 Reversing Starters</u>	6/126	<u>M200D Standard motor starters</u>
6/13	for snapping onto standard mounting rails or for screw fixing	6/126	<u>M200D Motor Starters for PROFIBUS / PROFINET</u>
6/17	for busbar systems	6/130	<u>M200D communication modules for PROFIBUS</u>
6/21	<u>Accessories</u>	6/130	<u>M200D communication modules for PROFINET</u>
6/27	<u>3RV19 Infeed Systems</u>	6/130	<u>M200D motor starter modules</u>
6/27	<u>SENTRON 8US Busbar Systems</u>	6/131	<u>Accessories</u>
	SIRIUS 3RA6 Compact Feeders		Compact Starters for AS-Interface, 400 V AC
6/28	<u>General data</u>	6/136	<u>General data</u>
6/36	<u>3RA61, 3RA62 Compact Feeders</u>		ECOFAST Motor Starters
6/36	3RA61 direct-on-line starters	6/140	<u>General data</u>
6/37	3RA62 reversing starters		<u>Motor Starters for AS-Interface</u>
6/38	<u>3RA64, 3RA65 Compact Feeders for IO-Link</u>		<u>Motor Starters for PROFIBUS</u>
6/38	3RA64 direct-on-line starters		<u>Accessories</u>
6/39	3RA65 reversing starters		SIRIUS MCU Motor Starters
6/40	<u>Accessories</u>	6/143	<u>General data</u>
6/45	<u>Add-On Modules for AS-Interface</u>	6/147	<u>MCU Motor Starters, Locally Controlled</u>
6/46	<u>Infeed Systems for 3RA6</u>	6/147	Plastic enclosures, electromechanical switching
	ET 200S Motor Starters and Safety Motor Starters	6/148	<u>MCU Motor Starters, I/O-Controlled</u>
6/52	<u>General data</u>	6/148	Plastic enclosures, electromechanical switching
6/56	<u>Standard Motor Starters</u>	6/149	<u>MCU Motor Starters for AS-Interface</u>
6/57	<u>Standard Terminal Modules</u>	6/149	Plastic enclosures, electromechanical switching
6/59	<u>High-Feature Motor Starters</u>	6/150	Metal enclosures, electromechanical switching
6/60	<u>High-Feature Terminal Modules</u>	6/152	Metal enclosures, electronic switching
6/61	<u>Power Modules</u>	6/153	<u>Accessories</u>
6/62	<u>Power Module Terminal Modules</u>		SIRIUS 3RE Encapsulated Starters
6/63	<u>ET 200S Failsafe Motor Starters</u>	6/154	<u>General data</u>
6/65	<u>Failsafe Terminal Modules</u>	6/155	<u>3RE10 Direct-on-Line Starters</u>
6/66	<u>Safety Modules local and PROFIsafe</u>	6/155	<u>3RE13 Reversing Starters</u>
6/74	<u>Safety Modules local and PROFIsafe Terminal Modules</u>	6/155	<u>Accessories</u>
6/76	<u>Accessories</u>		Motor Starters for AS-Interface, 24 V DC
6/80	<u>Interface/Solid-State Modules</u>	6/156	<u>General data</u>
	For Operation in the Field, High Degree of Protection		Energy Communication Field Installation System
	ET 200pro Motor Starters		
6/99	<u>General data</u>	6/158	<u>General data</u>
6/100	<u>Motor Starters, Standard and High-Feature</u>	6/163	<u>Hybrid Field Bus Connections</u>
6/103	<u>ET 200pro Safety Motor Starter Solutions local</u>	6/164	<u>Connection Technology acc. to ISO 23570 and ECOFAST</u>
6/103	<u>Safety modules</u>	6/164	Power connection technology
6/106	<u>ET 200pro Isolator Modules</u>	6/167	Communication connection technology
6/107	<u>Accessories for ET 200pro Motor Starters</u>	6/173	Accessories: ECOFAST selection module
6/110	<u>Components for ET 200pro</u>	6/174	<u>Software</u>

Load Feeders and Motor Starters

Introduction

Overview



3RA11



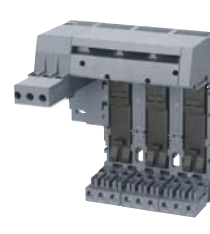
3RA12



3RA61



3RA62



3RA68



3RK1 301

Order No.	Page
-----------	------

For operation in the control cabinet

SIRIUS 3RA1 load feeders

	<ul style="list-style-type: none"> The 3RA1 fuseless load feeders consist of the 3RV1 motor starter protector and the 3RT1 contactor. The motor starter protector and contactor are prewired and mechanically connected in pre-assembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters). The motor starter protector and contactor are mechanically and electrically connected by means of the link module 4 sizes (S00, S0, S2, S3) Can be supplied for direct-on-line start or reversing duty as <ul style="list-style-type: none"> - complete unit or - single devices for self-assembly 		
3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing	<ul style="list-style-type: none"> Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 35 mm standard mounting rail or screw fixing 	3RA11	6/5
3RA11 direct-on-line starters for busbar systems	<ul style="list-style-type: none"> Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 40 mm and 60 mm busbar systems 	3RA11	6/9
3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing	<ul style="list-style-type: none"> Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 35 mm standard mounting rail or screw fixing 	3RA12	6/13
3RA12 reversing starters for busbar systems	<ul style="list-style-type: none"> Rated control supply voltage AC 50 Hz 230 V and 24 V DC for 40 mm and 60 mm busbar systems 	3RA12	6/17
3RV19 infeed systems	<ul style="list-style-type: none"> Convenient means of energy supply and distribution 	3RV19	6/21

SIRIUS 3RA6 compact feeders

	<ul style="list-style-type: none"> Integrated functionality of a circuit breaker, contactor and solid-state overload relay and various functions of optional mountable accessories Usable for direct starting of standard induction motors up to 32 A 		
3RA61 direct-on-line starters	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA61	6/36
3RA62 reversing starters	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA62	6/37
3RA64 direct-on-line starters for IO-Link	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA64	6/38
3RA65 reversing starters for IO-Link	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA65	6/39
Accessories for 3RA6 direct-on-line and reversing starters		3RA69	6/40
Add-on modules for AS-Interface		3RA69	6/45
Infeed systems for 3RA6	<ul style="list-style-type: none"> Modular expandability, up to 100 A, terminals up to 70 mm² 	3RA68	6/46

ET 200S motor starters and safety motor starters

ET 200S motor starters	<ul style="list-style-type: none"> Completely factory-wired motor starters for switching and protecting any AC loads, optionally as direct-on-line, reversing or soft starters 		6/52
<ul style="list-style-type: none"> Standard motor starters High-Feature motor starters 		3RK1 301	6/56
		3RK1 301	6/59
Power modules for ET 200S motor starters	<ul style="list-style-type: none"> For supplying and monitoring the auxiliary voltages for motor starters 	3RK1 903-0BA00	6/61
ET 200S Failsafe motor starters	<ul style="list-style-type: none"> High-Feature direct-on-line and reversing starters 	3RK1 301	6/63
Terminal modules for ET 200S motor starters	<ul style="list-style-type: none"> Mechanical modules in which the motor starter and expansion modules are inserted 	3RK1 903	
<ul style="list-style-type: none"> Standard terminal modules High-Feature terminal modules Failsafe terminal modules Power module terminal modules Safety modules local and PROFIsafe terminal modules 			6/57
			6/60
			6/65
			6/62
			6/74
Safety modules local	<ul style="list-style-type: none"> For safety category 4 acc. to EN 954-1 	3RK1 903	6/66
Safety modules PROFIsafe	<ul style="list-style-type: none"> Sensor and actuator assignment are freely configurable (distributed safety concept) 	3RK1 903	6/66
Interface/solid-state modules	<ul style="list-style-type: none"> Interface modules, power modules, reserve modules, digital/analog solid-state modules, F power and F solid-state modules, F terminal modules, 4 IQ-Sense sensor module, SSI module, 1 STEP step module, positioning modules, counter modules, terminal modules for power and solid-state modules 	6ES7 1	6/80



3RK1 304



3RK1 315



3RK1 322



3RK4 353



3RK4 320



3RE10

Order No.	Page
-----------	------

For operation in the field, high degree of protection

ET 200pro motor starters

ET 200pro motor starters	• Motor starters, Standard and High-Feature	3RK1 304	6/99
Safety modules	• Isolator module and 400 V disconnecting module	3RK1 304	6/103
ET 200pro isolator modules	• With switch disconnecter function for safe disconnection	3RK1 304	6/106
Accessories for ET 200pro motor starters	• Interface, expansion and power modules	6ES7 1	6/107

SIRIUS M200D motor starters

	• Distributed motor starters up to 5.5 kW		
M200D AS-i Basic motor starters		3RK1 315	6/124
M200D AS-i Standard motor starters		3RK1 325	6/125
M200D communication modules for PROFIBUS		3RK1 305	6/130
M200D communication modules for PROFINET		3RK1 335	6/130
M200D motor starter modules		3RK1 395	6/130
Accessories	• Energy supply, motor cables, control cables		6/131

Compact starters for AS-Interface, 400 V AC

	• Completely factory-wired load feeders with degree of protection IP65, designed for switching and protecting any type of AC loads, in particular standard induction motors in direct-on-line or reversing duty	3RK1 322	6/136
--	---	-----------------	-------

ECOFAS^T motor starters

3RK1 3 ECOFAST motor starters	• Distributed motor starters for PROFIBUS and AS-Interface • Reversing starters and soft starters	3RK1 303/323	6/140
--------------------------------------	--	---------------------	-------

SIRIUS MCU motor starters

MCU motor starters, locally controlled	• For autonomously controlled motors such as pumps, fans, etc.	3RK4 353	6/147
MCU motor starters, I/O-controlled	• Economical solution for controlling induction motors distributed in the field	3RK4 340	6/148
MCU motor starters for AS-Interface	• Controlling and scanning through the AS-i bus		
• Plastic enclosures, electromechanical		3RK4 320	6/149
• Metal enclosures, electromechanical		3RK4 320	6/150
• Metal enclosures, electronic		3RK4 320	6/152

3RE encapsulated starters

	• The 3RE1 encapsulated starters are used for switching and for the inverse-time delayed protection of load feeders up to 22 kW at 400 V AC • The starters are available as direct-on-line starters for motors with a single direction of rotation and as reversing starters for motors with two directions of rotation		
3RE10 direct-on-line starters	• Molded-plastic enclosures, degree of protection IP65, including contactor	3RE10	6/155
3RE13 reversing starters	• Molded-plastic enclosures, degree of protection IP65, including contactor assembly	3RE13	6/155
Accessories	• Molded-plastic enclosure, degree of protection IP65, for direct-on-line and reversing starters	3RE19	6/155

Motor starters for AS-Interface, 24 V DC

	• For the lowest performance range up to 70 W, 24 V DC motors and the associated sensor technology can also be directly and locally connected to AS-Interface quickly and easily. Three different versions are available: - Single direct-on-line starters - Double direct-on-line starters - Reversing starters	3RK1 400-1	6/156
--	---	-------------------	-------

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

General data

Overview

3RA1 fuseless load feeders

The 3RA1 fuseless load feeders consist of the 3RV1 motor starter protector and the 3RT1 contactor. Motor starter protectors and contactors are electrically and mechanically connected using pre-assembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters).

As the 3RA1 fuseless load feeders are constructed from 3RV1 motor starter protectors and 3RT1 contactors, the same accessories can be used for the 3RA fuseless load feeders as for these motor starter protectors and contactors.

Pre-assembled assembly kits are available as accessories for the power spectrum up to 45 kW. The desired fuseless load feeder can thus be assembled quickly and economically by the customer. A time saving is also achieved in connection with switchgear acceptances, as – unlike with conventional wiring systems – there is no need to rectify possible wiring errors.

The 3RV1 motor starter protector is responsible for overload and short-circuit protection in the fuseless load feeder. Back-up protective devices, such as melting fuses or limiters, are superfluous here, as the motor starter protector is capable of withstanding short-circuits of up to 50 or 100 kA at 400 V.

The 3RT1 contactor is particularly suitable for extremely complex switching tasks requiring the greatest endurance.

The permissible ambient temperature is 60 °C with butt-mounting and without derating (70 °C possible subject to certain restrictions).

3RA1 fuseless load feeders are available for motors up to 45 kW at AC-3 and 400 V (grounded network) and setting ranges from 0.14 A to 100 A.

3RA1 fuseless load feeders are supplied in four different sizes:

Size	Width mm	Max. rated current $I_n \text{ max}$ A	For induction motors up to kW
S00	45	12	5.5
S0	45	25	11
S2	55	50	22
S3	70	100	45

The SENTRON 3VL circuit breakers and the SIRIUS 3RT contactors can be used for fuseless load feeders >100 A. The corresponding distances from grounded or live parts, as detailed in the technical specifications, must be observed.

More information and assignment tables for self-assembly combinations for 400 V, 440 V, 480 V, 500 V, 550 V and 690 V can be found in the brochure "SIRIUS Configuration: Selection Data for Load Feeders in Fuseless Designs", Order No. E86060-T1815-A101-A2

or as a PDF file on the Internet at

www.siemens.com/industrial-controls/infomaterial

under the "Brochures" tab.

Operating conditions

3RA1 load feeders are climate-proof. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

Overload tripping times

All 3RA1 fuseless load feeders described here are designed for normal starting, in other words for overload tripping times of less than 10 s (CLASS 10). At rated-load operating temperature the tripping times are shorter, depending on the particular equipment and the setting range. The exact values can be derived from the tripping characteristics of the motor starter protectors.

Types of coordination

EN 60947-4-1 (VDE 0660 Part 102) and IEC 60947-4-1 make a distinction between two different types of coordination, which are designated type of coordination "1" and type of coordination "2". Any short-circuits that occur are cleared safely by both types of coordination. The only differences concern the extent of the damage caused to the device by a short-circuit.

Toc 1

Type of coordination "1"

The fuseless load feeder may be non-operational after a short-circuit has been cleared. Damage to the contactor or to the overload release is permissible. For 3RA1 load feeders, the motor starter protector itself always achieves type of coordination "2".

Toc 2

Type of coordination "2"

There must be no damage to the overload release or to any other components after a short-circuit has been cleared. The 3RA1 fuseless load feeder can resume operation without needing to be renewed. At most, it is permissible to weld the contactor contacts if they can be disconnected easily without any significant deformation.

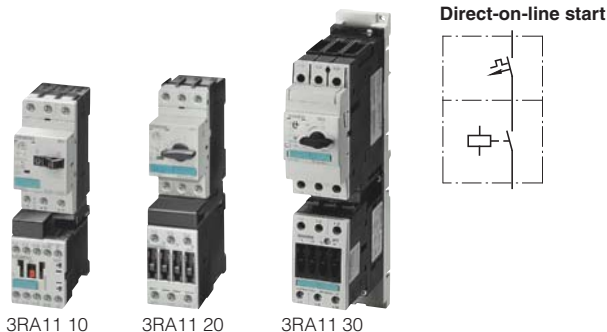
These types of coordination are indicated in the selection and ordering data by orange backgrounds.

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

Selection and ordering data



Rated control supply voltage 50 Hz 230 V AC¹⁾
for 35 mm standard mounting rail or screw fixing

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- As from size S2 with standard mounting rail adapter²⁾ for mechanical reinforcement
- Auxiliary switches³⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

Size	Standard induction motor 4-pole at 400 V AC ⁴⁾		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	TOC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter							
	kW	A	A										kg

Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")⁵⁾

	3RV10		3RT10		3RA19							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	11-1AA00 + ⁶⁾	A	3RA11 10-0BA15-1AP0	1	1 unit	101	0.454
	0.06	0.2	0.18 ... 0.25	11-0CA10			A	3RA11 10-0CA15-1AP0	1	1 unit	101	0.450
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	3RA11 10-0DA15-1AP0	1	1 unit	101	0.450
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA11 10-0EA15-1AP0	1	1 unit	101	0.452
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA11 10-0FA15-1AP0	1	1 unit	101	0.450
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA11 10-0GA15-1AP0	1	1 unit	101	0.448
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA11 10-0HA15-1AP0	1	1 unit	101	0.446
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA11 10-0JA15-1AP0	1	1 unit	101	0.451
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA11 10-0KA15-1AP0	1	1 unit	101	0.495
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA11 10-1AA15-1AP0	1	1 unit	101	0.502
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA11 10-1BA15-1AP0	1	1 unit	101	0.490
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00 + ⁶⁾	A	3RA11 20-1CA24-0AP0	1	1 unit	101	0.720
	1.1	2.7	2.2 ... 3.2	21-1DA10			A	3RA11 20-1DA24-0AP0	1	1 unit	101	0.720
	1.5	3.6	2.8 ... 4	21-1EA10			A	3RA11 20-1EA24-0AP0	1	1 unit	101	0.710
	1.5	3.6	3.5 ... 5	21-1FA10			A	3RA11 20-1FA24-0AP0	1	1 unit	101	0.723
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	3RA11 20-1GA24-0AP0	1	1 unit	101	0.717
	3	6.5	5.5 ... 8	21-1HA10			A	3RA11 20-1HA24-0AP0	1	1 unit	101	0.730
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	3RA11 20-1JA26-0AP0	1	1 unit	101	0.720
	5.5	11.5	9 ... 12.5	21-1KA10			A	3RA11 20-1KA26-0AP0	1	1 unit	101	0.725
	7.5	15.5	11 ... 16	21-4AA10			A	3RA11 20-4AA26-0AP0	1	1 unit	101	0.720
	7.5	15.5	14 ... 20	21-4BA10			A	3RA11 20-4BA26-0AP0	1	1 unit	101	0.722
S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00	A	3RA11 30-4DB34-0AP0	1	1 unit	101	2.070
	15	29	22 ... 32	31-4EA10		+	A	3RA11 30-4EB34-0AP0	1	1 unit	101	2.083
	18.5	35	28 ... 40	31-4FA10	35-1AP00	32-1AA00	A	3RA11 30-4FB35-0AP0	1	1 unit	101	2.126
	22	41	36 ... 45	31-4GA10	36-1AP00		A	3RA11 30-4GB36-0AP0	1	1 unit	101	2.130
	22	41	40 ... 50	31-4HA10			A	3RA11 30-4HB36-0AP0	1	1 unit	101	2.091
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00		Size S3 is only available for self-assembly.				
	37	66	57 ... 75	41-4KA10	45-1AP00	+						
	45	80	70 ... 90	41-4LA10	46-1AP00	42-1AA00						
	45	80	80 ... 100	41-4MA10								



1) Size S00 also suitable for 60 Hz.
 2) Standard mounting rail adapter is also suitable for screw fixing.
 3) For auxiliary switches, see Accessories for Direct-On-Line and Reversing Starters.
 4) Selection depends on the concrete startup and rated data of the protected motor.
 5) For load feeders with I_q ≥ 100 kA see note on Technical Information on page 6/1.
 6) Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

6

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release 	Consisting of the following single devices			DT	Fuseless load feeders 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter						
	kW	A	A									kg

**Type of coordination "1" at $I_q = 50$ kA at 400 V²⁾
(the motor starter protector is compatible with type of coordination "2")**

S00 0.75 1.9 1.4 ... 2

For load feeders for lower outputs, see the table above (type of coordination "2").

				3RV10	3RT10	3RA19						
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP01	11-1AA00 + ³⁾	A	3RA11 10-1CA15-1AP0	1	1 unit	101	0.497
	1.1	2.7	2.2 ... 3.2	11-1DA10			A	3RA11 10-1DA15-1AP0	1	1 unit	101	0.498
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA11 10-1EA15-1AP0	1	1 unit	101	0.500
	1.5	3.6	3.5 ... 5	11-1FA10			A	3RA11 10-1FA15-1AP0	1	1 unit	101	0.501
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	3RA11 10-1GA15-1AP0	1	1 unit	101	0.508
	3	6.5	5.5 ... 8	11-1HA10			A	3RA11 10-1HA15-1AP0	1	1 unit	101	0.508
	4	8.5	7 ... 10	11-1JA10	16-1AP01		A	3RA11 10-1JA16-1AP0	1	1 unit	101	0.493
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		A	3RA11 10-1KA17-1AP0	1	1 unit	101	0.500
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	21-1AA00 + ³⁾	A	3RA11 20-4AA25-0AP0	1	1 unit	101	0.729
	7.5	15.5	14 ... 20	21-4BA10			A	3RA11 20-4BA25-0AP0	1	1 unit	101	0.724
	11	22	17 ... 22	21-4CA10	26-1AP00		A	3RA11 20-4CA26-0AP0	1	1 unit	101	0.721
	11	22	18 ... 25	21-4DA10	26-1AP00		A	3RA11 20-4DA26-0AP0	1	1 unit	101	0.729
S2	15	29	22 ... 32									
	18.5	35	28 ... 40									
	22	41	36 ... 45									
			...									

For load feeders for higher outputs, see the table above (type of coordination "2").

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

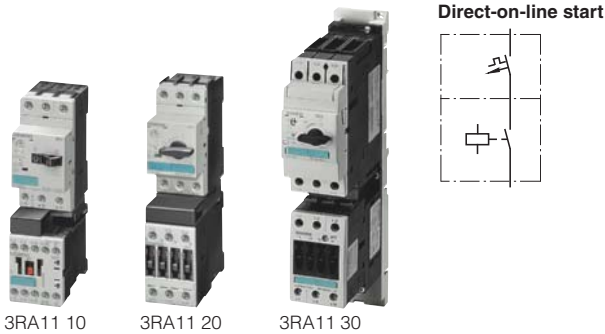
²⁾ For load feeders with $I_q \geq 100$ kA see note on Technical Information on page 6/1.

³⁾ Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing



Rated control supply voltage 24 V DC for 35 mm standard mounting rail or screw fixing

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- As from size S2 with standard mounting rail adapter¹⁾ for mechanical reinforcement
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders ^{TOC 2}	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter		Order No.	Price per PU			kg
	kW	A	A								

Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")⁴⁾

				3RV10	3RT10	3RA19						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	11-1AA00	A	3RA11 10-0BA15-1BB4	1	1 unit	101	0.510
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ ⁵⁾	A	3RA11 10-0CA15-1BB4	1	1 unit	101	0.512
	0.09	0.3	0.22 ... 0.32	11-0DA10			A	3RA11 10-0DA15-1BB4	1	1 unit	101	0.505
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA11 10-0EA15-1BB4	1	1 unit	101	0.508
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA11 10-0FA15-1BB4	1	1 unit	101	0.500
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA11 10-0GA15-1BB4	1	1 unit	101	0.505
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA11 10-0HA15-1BB4	1	1 unit	101	0.513
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA11 10-0JA15-1BB4	1	1 unit	101	0.508
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA11 10-0KA15-1BB4	1	1 unit	101	0.556
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA11 10-1AA15-1BB4	1	1 unit	101	0.553
0.75	1.9	1.4 ... 2	11-1BA10			A	3RA11 10-1BA15-1BB4	1	1 unit	101	0.554	
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	3RA11 20-1CA24-0BB4	1	1 unit	101	0.947
	1.1	2.7	2.2 ... 3.2	21-1DA10		+ ⁵⁾	A	3RA11 20-1DA24-0BB4	1	1 unit	101	0.940
	1.5	3.6	2.8 ... 4	21-1EA10			A	3RA11 20-1EA24-0BB4	1	1 unit	101	0.945
	1.5	3.6	3.5 ... 5	21-1FA10			A	3RA11 20-1FA24-0BB4	1	1 unit	101	0.951
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	3RA11 20-1GA24-0BB4	1	1 unit	101	0.948
	3	6.5	5.5 ... 8	21-1HA10			A	3RA11 20-1HA24-0BB4	1	1 unit	101	0.960
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	3RA11 20-1JA26-0BB4	1	1 unit	101	0.951
	5.5	11.5	9 ... 12.5	21-1KA10			A	3RA11 20-1KA26-0BB4	1	1 unit	101	0.940
	7.5	15.5	11 ... 16	21-4AA10			A	3RA11 20-4AA26-0BB4	1	1 unit	101	0.959
	7.5	15.5	14 ... 20	21-4BA10			A	3RA11 20-4BA26-0BB4	1	1 unit	101	0.950
S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00	A	3RA11 30-4DB34-0BB4	1	1 unit	101	2.700
	15	29	22 ... 32	31-4EA10		+	A	3RA11 30-4EB34-0BB4	1	1 unit	101	2.700
	18.5	35	28 ... 40	31-4FA10	35-1BB40	32-1AA00	A	3RA11 30-4FB35-0BB4	1	1 unit	101	2.730
	22	41	36 ... 45	31-4GA10	36-1BB40		A	3RA11 30-4GB36-0BB4	1	1 unit	101	2.699
	22	41	40 ... 50	31-4HA10			A	3RA11 30-4HB36-0BB4	1	1 unit	101	2.696
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00						
	37	66	57 ... 75	41-4KA10	45-1BB40	+						
	45	80	70 ... 90	41-4LA10	46-1BB40	42-1AA00						
	45	80	80 ... 100	41-4MA10								



Size S3 is only available for self-assembly.

1) Standard mounting rail adapter is also suitable for screw fixing.
 2) For auxiliary switches, see Accessories for Direct-On-Line and Reversing Starters.
 3) Selection depends on the concrete startup and rated data of the protected motor.
 4) For load feeders with I_q ≥ 100 kA see note on Technical Information on page 6/1.
 5) Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA11 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release 	Consisting of the following single devices			DT	Fuseless load feeders 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Standard mounting rail adapter						
	kW	A	A									kg

**Type of coordination "1" at $I_q = 50$ kA at 400 V²⁾
(the motor starter protector is compatible with type of coordination "2")**

S00 0.75 1.9 1.4 ... 2

For load feeders for lower outputs, see the table above (type of coordination "2").

				3RV10	3RT10	3RA19						
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB41	11-1AA00	A	3RA11 10-1CA15-1BB4	1	1 unit	101	0.563
	1.1	2.7	2.2 ... 3.2	11-1DA10		+ ³⁾	A	3RA11 10-1DA15-1BB4	1	1 unit	101	0.555
	1.5	3.6	2.8 ... 4	11-1EA10			A	3RA11 10-1EA15-1BB4	1	1 unit	101	0.555
	1.5	3.6	3.5 ... 5	11-1FA10			A	3RA11 10-1FA15-1BB4	1	1 unit	101	0.567
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	3RA11 10-1GA15-1BB4	1	1 unit	101	0.558
	3	6.5	5.5 ... 8	11-1HA10			A	3RA11 10-1HA15-1BB4	1	1 unit	101	0.560
	4	8.5	7 ... 10	11-1JA10	16-1BB41		A	3RA11 10-1JA16-1BB4	1	1 unit	101	0.555
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		A	3RA11 10-1KA17-1BB4	1	1 unit	101	0.560
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	21-1BA00	A	3RA11 20-4AA25-0BB4	1	1 unit	101	0.960
	7.5	15.5	14 ... 20	21-4BA10		+ ³⁾	A	3RA11 20-4BA25-0BB4	1	1 unit	101	0.952
	11	22	17 ... 22	21-4CA10	26-1BB40		A	3RA11 20-4CA26-0BB4	1	1 unit	101	0.961
	11	22	18 ... 25	21-4DA10			A	3RA11 20-4DA26-0BB4	1	1 unit	101	0.960
S2	15	29	22 ... 32									
	18.5	35	28 ... 40									
	22	41	36 ... 45									

For load feeders for higher outputs, see the table above (type of coordination "2").

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

²⁾ For load feeders with $I_q \geq 100$ kA see note on Technical Information on page 6/1.

³⁾ Screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

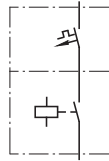
3RA11 direct-on-line starters for busbar systems

Selection and ordering data



3RA11 10 3RA11 20

Direct-on-line start



Rated control supply voltage 50 Hz 230 V AC¹⁾ for 40 and 60 mm busbar systems

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	TOC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Order No.	Price per PU				kg
	kW	A	A									

Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")

	3RV10		3RT10									
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	3RA19 11-1AA00	A	3RA11 10-0B □15-1AP0	1	1 unit	101	0.790
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	3RA11 10-0C □15-1AP0	1	1 unit	101	0.702
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	3RA11 10-0D □15-1AP0	1	1 unit	101	0.675
	0.09	0.3	0.28 ... 0.4	11-0EA10		8US10 51-5DM07	A	3RA11 10-0E □15-1AP0	1	1 unit	101	0.670
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	3RA11 10-0F □15-1AP0	1	1 unit	101	0.680
	0.18	0.6	0.45 ... 0.63	11-0GA10		8US12 51-5DM07	A	3RA11 10-0G □15-1AP0	1	1 unit	101	0.670
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA11 10-0H □15-1AP0	1	1 unit	101	0.670
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA11 10-0J □15-1AP0	1	1 unit	101	0.667
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA11 10-0K □15-1AP0	1	1 unit	101	0.715
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA11 10-1A □15-1AP0	1	1 unit	101	0.715
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA11 10-1B □15-1AP0	1	1 unit	101	0.715
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	3RA19 21-1AA00	A	3RA11 20-1C □24-0AP0	1	1 unit	101	0.939
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	3RA11 20-1D □24-0AP0	1	1 unit	101	0.940
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	3RA11 20-1E □24-0AP0	1	1 unit	101	0.940
	1.5	3.6	3.5 ... 5	21-1FA10		8US10 51-5DM07	A	3RA11 20-1F □24-0AP0	1	1 unit	101	0.927
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	3RA11 20-1G □24-0AP0	1	1 unit	101	0.927
	3	6.5	5.5 ... 8	21-1HA10		8US12 51-5DM07	A	3RA11 20-1H □24-0AP0	1	1 unit	101	0.931
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	3RA11 20-1J □26-0AP0	1	1 unit	101	0.935
	5.5	11.5	9 ... 12.5	21-1KA10			A	3RA11 20-1K □26-0AP0	1	1 unit	101	0.936
	7.5	15.5	11 ... 16	21-4AA10			A	3RA11 20-4A □26-0AP0	1	1 unit	101	0.940
	7.5	15.5	14 ... 20	21-4BA10			A	3RA11 20-4B □26-0AP0	1	1 unit	101	0.943
S2	11	22	18 ... 25	31-4DA10	34-1AP00	3RA19 31-1AA00		Size S2 is only available for self-assembly.				
	15	29	22 ... 32	31-4EA10		+						
	18.5	35	28 ... 40	31-4FA10	35-1AP00	40 mm						
	22	41	36 ... 45	31-4GA10	36-1AP00	8US10 61-5FP08						
	22	41	40 ... 50	31-4HA10		or 60 mm						
						8US12 61-5FP08						
S3	30	55	45 ... 63	41-4JA10	44-1AP00	3RA19 41-1AA00		For size S3, a busbar adapter is not necessary.				
	37	66	57 ... 75	41-4KA10	45-1AP00							
	45	80	70 ... 90	41-4LA10	46-1AP00							
	45	80	80 ... 100	41-4MA10								

Order No. supplement for busbar center-to-center clearance

- 40 mm
- 60 mm

¹⁾ Size S00 also suitable for 60 Hz.

²⁾ For auxiliary switches, see [Accessories for Direct-On-Line and Reversing Starters](#).

³⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA11 direct-on-line starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	Toc 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter							
	kW	A	A										kg

Type of coordination "1" at I_g = 50 kA at 400 V (the motor starter protector is compatible with type of coordination "2")

S00 0.75 1.9 1.4 ... 2 For load feeders for lower outputs, see the table above (type of coordination "2").

				3RV10	3RT10								
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP01	3RA19 11-1AA00	A	3RA11 10-1C □15-1AP0	1	1 unit	101	0.714	
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	3RA11 10-1D □15-1AP0	1	1 unit	101	0.716	
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A	3RA11 10-1E □15-1AP0	1	1 unit	101	0.715	
	1.5	3.6	3.5 ... 5	11-1FA10		8US10 51-5DM07	A	3RA11 10-1F □15-1AP0	1	1 unit	101	0.717	
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A	3RA11 10-1G □15-1AP0	1	1 unit	101	0.502	
	3	6.5	5.5 ... 8	11-1HA10		8US12 51-5DM07	A	3RA11 10-1H □15-1AP0	1	1 unit	101	0.695	
	4	8.5	7 ... 10	11-1JA10	16-1AP01		A	3RA11 10-1J □16-1AP0	1	1 unit	101	0.650	
	5.5	11.5	9 ... 12	11-1KA10	17-1AP01		A	3RA11 10-1K □17-1AP0	1	1 unit	101	0.717	
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	3RA19 21-1AA00	A	3RA11 20-4A □25-0AP0	1	1 unit	101	0.940	
	7.5	15.5	14 ... 20	21-4BA10		+	A	3RA11 20-4B □25-0AP0	1	1 unit	101	0.939	
	11	22	17 ... 22	21-4CA10	26-1AP00	40 mm	A	3RA11 20-4C □26-0AP0	1	1 unit	101	0.935	
	11	22	18 ... 25	21-4DA10		8US10 51-5DM07	A	3RA11 20-4D □26-0AP0	1	1 unit	101	0.937	
						or 60 mm							
						8US12 51-5DM07							

S2 15 29 22 ... 32 For load feeders for higher outputs, see the table above (type of coordination "2").
18,5 35 28 ... 40
22 41 36 ... 45
...

Order No. supplement for busbar center-to-center clearance

40 mm
60 mm

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

C
D

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

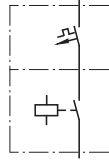
3RA11 direct-on-line starters for busbar systems



3RA11 10

3RA11 20

Direct-on-line start



Rated control supply voltage 24 V DC for 40 and 60 mm busbar systems

- Motor starter protector and contactor are linked electrically and mechanically by means of a link module
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system (on contactor size S00: 1 NO integrated)

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	TC ²	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P kW	Motor current I (guide value) A	Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Order No.	Price per PU				kg

Type of coordination "2" at $I_g = 50$ kA at 400 V (compatible with type of coordination "1")

	3RV10		3RT10										
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	3RA19 11-1AA00	A	3RA11 10-0B □15-1BB4		1	1 unit	101	0.730
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	3RA11 10-0C □15-1BB4		1	1 unit	101	0.720
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	3RA11 10-0D □15-1BB4		1	1 unit	101	0.711
	0.09	0.3	0.28 ... 0.4	11-0EA10		8US10 51-5DM07	A	3RA11 10-0E □15-1BB4		1	1 unit	101	0.716
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	3RA11 10-0F □15-1BB4		1	1 unit	101	0.720
	0.18	0.6	0.45 ... 0.63	11-0GA10		8US12 51-5DM07	A	3RA11 10-0G □15-1BB4		1	1 unit	101	0.728
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA11 10-0H □15-1BB4		1	1 unit	101	0.714
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA11 10-0J □15-1BB4		1	1 unit	101	0.724
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA11 10-0K □15-1BB4		1	1 unit	101	0.780
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA11 10-1A □15-1BB4		1	1 unit	101	0.767
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA11 10-1B □15-1BB4		1	1 unit	101	0.764
	S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	3RA19 21-1BA00	A	3RA11 20-1C □24-0BB4		1	1 unit	101
1.1		2.7	2.2 ... 3.2	21-1DA10		+	A	3RA11 20-1D □24-0BB4		1	1 unit	101	1.133
1.5		3.6	2.8 ... 4	21-1EA10		40 mm	A	3RA11 20-1E □24-0BB4		1	1 unit	101	1.132
1.5		3.6	3.5 ... 5	21-1FA10		8US10 51-5DM07	A	3RA11 20-1F □24-0BB4		1	1 unit	101	1.160
2.2		4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	3RA11 20-1G □24-0BB4		1	1 unit	101	1.165
3		6.5	5.5 ... 8	21-1HA10		8US12 51-5DM07	A	3RA11 20-1H □24-0BB4		1	1 unit	101	1.170
4		8.5	7 ... 10	21-1JA10	26-1BB40		A	3RA11 20-1J □26-0BB4		1	1 unit	101	1.167
5.5		11.5	9 ... 12.5	21-1KA10			A	3RA11 20-1K □26-0BB4		1	1 unit	101	1.163
7.5		15.5	11 ... 16	21-4AA10			A	3RA11 20-4A □26-0BB4		1	1 unit	101	1.172
7.5		15.5	14 ... 20	21-4BA10			A	3RA11 20-4B □26-0BB4		1	1 unit	101	1.168
S2	11	22	18 ... 25	31-4DA10	34-1BB40	3RA19 31-1BA00		Size S2 is only available for self-assembly.					
	15	29	22 ... 32	31-4EA10		+							
	18.5	35	28 ... 40	31-4FA10	35-1BB40	40 mm							
	22	41	36 ... 45	31-4GA10	36-1BB40	8US10 61-5FP08							
	22	41	40 ... 50	31-4HA10		or 60 mm							
S3	30	55	45 ... 63	41-4JA10	44-1BB40	3RA19 41-1BA00		For size S3, a busbar adapter is not necessary.					
	37	66	57 ... 75	41-4KA10	45-1BB40	+							
	45	80	70 ... 90	41-4LA10	46-1BB40	not available							
	45	80	80 ... 100	41-4MA10									

Order No. supplement for busbar center-to-center clearance

- 40 mm
- 60 mm

¹⁾ For auxiliary switches, see Accessories for Direct-On-Line and Reversing Starters.
²⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA11 direct-on-line starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	T _{OC} 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter							
	kW	A	A										kg

Type of coordination "1" at $I_g = 50$ kA at 400 V (the motor starter protector is compatible with type of coordination "2")

S00 0.75 1.9 1.4 ... 2

For load feeders for lower outputs, see the table above (type of coordination "2").

	3RV10			3RT10									
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB41	3RA19 11-1AA00	A	3RA11 10-1C □15-1BB4		1	1 unit	101	0.784
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	3RA11 10-1D □15-1BB4		1	1 unit	101	0.775
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A	3RA11 10-1E □15-1BB4		1	1 unit	101	0.781
	1.5	3.6	3.5 ... 5	11-1FA10		8US10 51-5DM07	A	3RA11 10-1F □15-1BB4		1	1 unit	101	0.782
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A	3RA11 10-1G □15-1BB4		1	1 unit	101	0.780
	3	6.5	5.5 ... 8	11-1HA10		8US12 51-5DM07	A	3RA11 10-1H □15-1BB4		1	1 unit	101	0.770
	4	8.5	7 ... 10	11-1JA10	16-1BB41		A	3RA11 10-1J □16-1BB4		1	1 unit	101	0.774
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		A	3RA11 10-1K □17-1BB4		1	1 unit	101	0.772
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	3RA19 21-1BA00	A	3RA11 20-4A □25-0BB4		1	1 unit	101	1.177
	7.5	15.5	14 ... 20	21-4BA10		+	A	3RA11 20-4B □25-0BB4		1	1 unit	101	1.163
	11	22	17 ... 22	21-4CA10	26-1BB40	40 mm	A	3RA11 20-4C □26-0BB4		1	1 unit	101	1.164
	11	22	18 ... 25	21-4DA10		8US10 51-5DM07	A	3RA11 20-4D □26-0BB4		1	1 unit	101	1.175
						or 60 mm							
						8US12 51-5DM07							
S2	15	29	22 ... 32										
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

For load feeders for higher outputs, see the table above (type of coordination "2").

Order No. supplement for busbar center-to-center clearance

40 mm
60 mm

C
D

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing

Selection and ordering data



3RA12 10

3RA12 20

Reversing duty

Rated control supply voltage 50 Hz 230 V AC¹⁾
for 35 mm standard mounting rail or screw fixing

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- As from size S0 with standard mounting rail adapter²⁾ for mechanical reinforcement
- Auxiliary switches³⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system
- Complete unit always with electrical and mechanical interlock

Size	Standard induction motor 4-pole at 400 V AC ⁴⁾		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	T _{OC} 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RH ²⁾⁵⁾							
	kW	A	A										kg

Type of coordination "2" at $I_q = 50 \text{ kA}/100 \text{ kA}$ at 400 V (compatible with type of coordination "1")⁶⁾

			3RV10	3RT10	3RA19									
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	11-1AA00	A	3RA12 10-0BA15-0AP0		1	1 unit	101	0.717	
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	3RA12 10-0CA15-0AP0		1	1 unit	101	0.700	
	0.09	0.3	0.22 ... 0.32	11-0DA10		13-2A ⁷⁾	A	3RA12 10-0DA15-0AP0		1	1 unit	101	0.700	
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA12 10-0EA15-0AP0		1	1 unit	101	0.720	
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA12 10-0FA15-0AP0		1	1 unit	101	0.708	
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA12 10-0GA15-0AP0		1	1 unit	101	0.717	
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA12 10-0HA15-0AP0		1	1 unit	101	0.710	
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA12 10-0JA15-0AP0		1	1 unit	101	0.710	
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA12 10-0KA15-0AP0		1	1 unit	101	0.755	
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA12 10-1AA15-0AP0		1	1 unit	101	0.765	
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA12 10-1BA15-0AP0		1	1 unit	101	0.765	
	S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00	A	3RA12 20-1CB24-0AP0		1	1 unit	101	1.400
		1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	3RA12 20-1DB24-0AP0		1	1 unit	101	1.394
1.5		3.6	2.8 ... 4	21-1EA10		23-1B ⁸⁾	A	3RA12 20-1EB24-0AP0		1	1 unit	101	1.385	
1.5		3.6	3.5 ... 5	21-1FA10			A	3RA12 20-1FB24-0AP0		1	1 unit	101	1.387	
2.2		4.9	4.5 ... 6.3	21-1GA10			A	3RA12 20-1GB24-0AP0		1	1 unit	101	1.390	
3		6.5	5.5 ... 8	21-1HA10			A	3RA12 20-1HB24-0AP0		1	1 unit	101	1.389	
4		8.5	7 ... 10	21-1JA10	26-1AP00		A	3RA12 20-1JB26-0AP0		1	1 unit	101	1.389	
5.5		11.5	9 ... 12.5	21-1KA10			A	3RA12 20-1KB26-0AP0		1	1 unit	101	1.386	
7.5		15.5	11 ... 16	21-4AA10			A	3RA12 20-4AB26-0AP0		1	1 unit	101	1.408	
7.5		15.5	14 ... 20	21-4BA10			A	3RA12 20-4BB26-0AP0		1	1 unit	101	1.400	
S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00								
	15	29	22 ... 32	31-4EA10		+								
	18.5	35	28 ... 40	31-4FA10	35-1AP00	33-1B ⁸⁾								
	22	41	36 ... 45	31-4GA10	36-1AP00									
22	41	40 ... 50	31-4HA10											
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00								
	37	66	57 ... 75	41-4KA10	45-1AP00	+								
	45	80	70 ... 90	41-4LA10	46-1AP00	43-1B ⁸⁾								
	45	80	80 ... 100	41-4MA10										

Size S2 is only available for self-assembly.

Size S3 is only available for self-assembly.

¹⁾ Size S00 also suitable for 60 Hz.

²⁾ Assembly kit for standard mounting rail adapter also suitable for screw fixing.

³⁾ For auxiliary switches, see Accessories for Direct-On-Line and Reversing Starters.

⁴⁾ Selection depends on the concrete startup and rated data of the protected motor.

⁵⁾ RH = Reversing duty for standard rail mounting.

⁶⁾ For load feeders with $I_q \geq 100 \text{ kA}$ see note on Technical Information on page 6/1.

⁷⁾ Wiring kit necessary: for screw fixing with 1 push-in lug each per load feeder, see "Accessories for Direct-On-Line and Reversing Starters".

⁸⁾ Mechanical locking device must be ordered separately (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	T _{OC} 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ link module + assembly kit RH ²⁾³⁾							
	kW	A	A										kg

Type of coordination "1" at $I_g = 50 \text{ kA}$ at 400 V⁴⁾
(the motor starter protector is compatible with type of coordination "2")

S00 0.75 1.9 1.4 ... 2

For load feeders for lower outputs, see the table above (type of coordination "2").

				3RV10	3RT10	3RA19							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP02	11-1AA00	A	3RA12 10-1CA15-0AP0		1	1 unit	101	0.755
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	3RA12 10-1DA15-0AP0		1	1 unit	101	0.760
	1.5	3.6	2.8 ... 4	11-1EA10		13-2A ⁵⁾	A	3RA12 10-1EA15-0AP0		1	1 unit	101	0.764
	1.5	3.6	3.5 ... 5	11-1FA10			A	3RA12 10-1FA15-0AP0		1	1 unit	101	0.766
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	3RA12 10-1GA15-0AP0		1	1 unit	101	0.760
	3	6.5	5.5 ... 8	11-1HA10			A	3RA12 10-1HA15-0AP0		1	1 unit	101	0.755
	4	8.5	7 ... 10	11-1JA10	16-1AP02		A	3RA12 10-1JA16-0AP0		1	1 unit	101	0.761
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		A	3RA12 10-1KA17-0AP0		1	1 unit	101	0.760
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	21-1AA00	A	3RA12 20-4AB25-0AP0		1	1 unit	101	1.397
	7.5	15.5	14 ... 20	21-4BA10		+	A	3RA12 20-4BB25-0AP0		1	1 unit	101	1.385
	11	22	17 ... 22	21-4CA10	26-1AP00	23-1B ⁶⁾	A	3RA12 20-4CB26-0AP0		1	1 unit	101	1.400
	11	22	20 ... 25	21-4DA10			A	3RA12 20-4DB26-0AP0		1	1 unit	101	1.420
S2	15	29	22 ... 32										
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

For load feeders for higher outputs, see the table above (type of coordination "2").

1) Selection depends on the concrete startup and rated data of the protected motor.

2) Assembly kit for standard mounting rail adapter also suitable for screw fixing.

3) RH = Reversing duty for standard rail mounting.

4) For load feeders with $I_g \geq 100 \text{ kA}$ see note on Technical Information on page 6/1.

5) Wiring kit necessary: for screw fixing with 1 push-in lug each per load feeder (see "Accessories for Direct-On-Line and Reversing Starters").

6) Mechanical locking device must be ordered separately (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing



Rated control supply voltage 24 V DC for 35 mm standard mounting rail or screw fixing

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- As from size S0 with standard mounting rail adapter¹⁾ for mechanical reinforcement
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system
- Complete unit always with electrical and mechanical interlock

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	TOC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾		Order No.	Price per PU				kg
	kW	A	A									

Type of coordination "2" at I_q = 50 kA/100 kA at 400 V (compatible with type of coordination "1")⁵⁾



	3RV10		3RT10		3RA19							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	11-1AA00	A	3RA12 10-0BA15-0BB4	1	1 unit	101	0.832
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	3RA12 10-0CA15-0BB4	1	1 unit	101	0.830
	0.09	0.3	0.22 ... 0.32	11-0DA10		13-2A ⁶⁾	A	3RA12 10-0DA15-0BB4	1	1 unit	101	0.826
	0.09	0.3	0.28 ... 0.4	11-0EA10			A	3RA12 10-0EA15-0BB4	1	1 unit	101	0.833
	0.12	0.4	0.35 ... 0.5	11-0FA10			A	3RA12 10-0FA15-0BB4	1	1 unit	101	0.824
	0.18	0.6	0.45 ... 0.63	11-0GA10			A	3RA12 10-0GA15-0BB4	1	1 unit	101	0.835
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA12 10-0HA15-0BB4	1	1 unit	101	0.830
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA12 10-0JA15-0BB4	1	1 unit	101	0.830
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA12 10-0KA15-0BB4	1	1 unit	101	0.878
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA12 10-1AA15-0BB4	1	1 unit	101	0.880
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA12 10-1BA15-0BB4	1	1 unit	101	0.875
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	3RA12 20-1CB24-0BB4	1	1 unit	101	1.847
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	3RA12 20-1DB24-0BB4	1	1 unit	101	1.855
	1.5	3.6	2.8 ... 4	21-1EA10		23-1B ⁷⁾	A	3RA12 20-1EB24-0BB4	1	1 unit	101	1.852
	1.5	3.6	3.5 ... 5	21-1FA10			A	3RA12 20-1FB24-0BB4	1	1 unit	101	1.856
	2.2	4.9	4.5 ... 6.3	21-1GA10			A	3RA12 20-1GB24-0BB4	1	1 unit	101	1.848
	3	6.5	5.5 ... 8	21-1HA10			A	3RA12 20-1HB24-0BB4	1	1 unit	101	1.851
	4	8.5	7 ... 10	21-1JA10	26-1BB40		A	3RA12 20-1JB26-0BB4	1	1 unit	101	1.854
	5.5	11.5	9 ... 12.5	21-1KA10			A	3RA12 20-1KB26-0BB4	1	1 unit	101	1.858
	7.5	15.5	11 ... 16	21-4AA10			A	3RA12 20-4AB26-0BB4	1	1 unit	101	1.863
	7.5	15.5	14 ... 20	21-4BA10			A	3RA12 20-4BB26-0BB4	1	1 unit	101	1.852
S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00		Size S2 is only available for self-assembly.				
	15	29	22 ... 32	31-4EA10		+						
	18.5	35	28 ... 40	31-4FA10	35-1BB40	33-1B ⁷⁾						
	22	41	36 ... 45	31-4GA10	36-1BB40							
	22	41	40 ... 50	31-4HA10								
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00		Size S3 is only available for self-assembly.				
	37	66	57 ... 75	41-4KA10	45-1BB40	+						
	45	80	70 ... 90	41-4LA10	46-1BB40	43-1B ⁷⁾						
	45	80	80 ... 100	41-4MA10								

1) Assembly kit for standard mounting rail adapter also suitable for screw fixing.
 2) For auxiliary switches, see [Accessories for Direct-On-Line and Reversing Starters](#).
 3) Selection depends on the concrete startup and rated data of the protected motor.
 4) RH = Reversing duty for standard rail mounting.
 5) For load feeders with I_q ≥ 100 kA see note on [Technical Information on page 6/1](#).
 6) Wiring kit necessary: screw fixing with 1 push-in lug each per load feeder is possible (see ["Accessories for Direct-On-Line and Reversing Starters"](#)).
 7) Mechanical locking device must be ordered separately (see ["Accessories for Direct-On-Line and Reversing Starters"](#)).

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for snapping onto standard mounting rails or for screw fixing

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release 	Consisting of the following single devices			DT	Fuseless load feeders 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH ²⁾³⁾						
	kW	A	A									kg

Type of coordination "1" at $I_g = 50$ kA at 400 V⁴⁾
(the motor starter protector is compatible with type of coordination "2")

S00 0.75 1.9 1.4 ... 2

For load feeders for lower outputs, see the table above (type of coordination "2").

			3RV10		3RT10		3RA19						
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB42	11-1AA00	A	3RA12 10-1CA15-0BB4	1	1 unit	101	0.883	
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	3RA12 10-1DA15-0BB4	1	1 unit	101	0.882	
	1.5	3.6	2.8 ... 4	11-1EA10		13-2A ⁵⁾	A	3RA12 10-1EA15-0BB4	1	1 unit	101	0.879	
	1.5	3.6	3.5 ... 5	11-1FA10			A	3RA12 10-1FA15-0BB4	1	1 unit	101	0.881	
	2.2	4.9	4.5 ... 6.3	11-1GA10			A	3RA12 10-1GA15-0BB4	1	1 unit	101	0.888	
	3	6.5	5.5 ... 8	11-1HA10			A	3RA12 10-1HA15-0BB4	1	1 unit	101	0.890	
	4	8.5	7 ... 10	11-1JA10	16-1BB42		A	3RA12 10-1JA16-0BB4	1	1 unit	101	0.882	
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		A	3RA12 10-1KA17-0BB4	1	1 unit	101	0.872	
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	21-1BA00	A	3RA12 20-4AB25-0BB4	1	1 unit	101	1.857	
	7.5	15.5	14 ... 20	21-4BA10		+	A	3RA12 20-4BB25-0BB4	1	1 unit	101	1.853	
	11	22	17 ... 22	21-4CA10	26-1BB40	23-1B ⁶⁾	A	3RA12 20-4CB26-0BB4	1	1 unit	101	1.858	
	11	22	20 ... 25	21-4DA10			A	3RA12 20-4DB26-0BB4	1	1 unit	101	1.860	
S2	15	29	22 ... 32										
	18.5	35	28 ... 40										
	22	41	36 ... 45										
			...										

For load feeders for higher outputs, see the table above (type of coordination "2").

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

²⁾ Assembly kit for standard mounting rail adapter also suitable for screw fixing.

³⁾ RH = Reversing duty for standard rail mounting.

⁴⁾ For load feeders with $I_g \geq 100$ kA see note on Technical Information on page 6/1.

⁵⁾ Wiring kit necessary: screw fixing with 1 push-in lug each per load feeder is possible (see "Accessories for Direct-On-Line and Reversing Starters").

⁶⁾ Mechanical locking device must be ordered separately (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for busbar systems

Selection and ordering data



3RA12 10 3RA12 20

Rated control supply voltage 50 Hz 230 V AC¹⁾ for 40 and 60 mm busbar systems

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system
- Complete unit always with electrical and mechanical interlock

Size	Standard induction motor 4-pole at 400 V AC ³⁾	Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders	T _{CC} 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ⁴⁾		Order No.	Price per PU				kg
	kW	A	A									

Type of coordination "2" at I_g = 50 kA at 400 V (compatible with type of coordination "1")

	3RV10		3RT10		3RA19							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	11-1AA00	A	3RA12 10-0B □15-0AP0	1	1 unit	101	1.080
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	3RA12 10-0C □15-0AP0	1	1 unit	101	1.100
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	3RA12 10-0D □15-0AP0	1	1 unit	101	1.100
	0.09	0.3	0.28 ... 0.4	11-0EA10		13-1C	A	3RA12 10-0E □15-0AP0	1	1 unit	101	1.123
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	3RA12 10-0F □15-0AP0	1	1 unit	101	1.050
	0.18	0.6	0.45 ... 0.63	11-0GA10		13-1D	A	3RA12 10-0G □15-0AP0	1	1 unit	101	1.070
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA12 10-0H □15-0AP0	1	1 unit	101	1.075
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA12 10-0J □15-0AP0	1	1 unit	101	1.058
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA12 10-0K □15-0AP0	1	1 unit	101	1.103
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA12 10-1A □15-0AP0	1	1 unit	101	1.104
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA12 10-1B □15-0AP0	1	1 unit	101	1.111
S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1AP00	21-1AA00	A	3RA12 20-1C □24-0AP0	1	1 unit	101	1.512
	1.1	2.7	2.2 ... 3.2	21-1DA10		+	A	3RA12 20-1D □24-0AP0	1	1 unit	101	1.548
	1.5	3.6	2.8 ... 4	21-1EA10		40 mm	A	3RA12 20-1E □24-0AP0	1	1 unit	101	1.532
	1.5	3.6	3.5 ... 5	21-1FA10		23-1C ⁵⁾	A	3RA12 20-1F □24-0AP0	1	1 unit	101	1.550
	2.2	4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	3RA12 20-1G □24-0AP0	1	1 unit	101	1.558
	3	6.5	5.5 ... 8	21-1HA10		23-1D ⁵⁾	A	3RA12 20-1H □24-0AP0	1	1 unit	101	1.545
	4	8.5	7 ... 10	21-1JA10	26-1AP00		A	3RA12 20-1J □26-0AP0	1	1 unit	101	1.557
	5.5	11.5	9 ... 12.5	21-1KA10			A	3RA12 20-1K □26-0AP0	1	1 unit	101	1.575
	7.5	15.5	11 ... 16	21-4AA10			A	3RA12 20-4A □26-0AP0	1	1 unit	101	1.549
	7.5	15.5	14 ... 20	21-4BA10			A	3RA12 20-4B □26-0AP0	1	1 unit	101	1.544
S2	11	22	18 ... 25	31-4DA10	34-1AP00	31-1AA00		Size S2 is only available for self-assembly.				
	15	29	22 ... 32	31-4EA10		+						
	18.5	35	28 ... 40	31-4FA10	35-1AP00	40 mm						
	22	41	36 ... 45	31-4GA10	36-1AP00	33-1C ⁵⁾						
	22	41	40 ... 50	31-4HA10		or 60 mm						
S3	30	55	45 ... 63	41-4JA10	44-1AP00	41-1AA00		For size S3, a busbar adapter is not necessary.				
	37	66	57 ... 75	41-4KA10	45-1AP00	+						
	45	80	70 ... 90	41-4LA10	46-1AP00	not available						
	45	80	80 ... 100	41-4MA10								

Order No. supplement for busbar center-to-center clearance

- 40 mm
- 60 mm


1) Size S00 also suitable for 60 Hz.
 2) For auxiliary switches, see [Accessories for Direct-On-Line and Reversing Starters](#).
 3) Selection depends on the concrete startup and rated data of the protected motor.
 4) RS = Reversing duty for busbar systems.
 5) Mechanical locking device must be ordered separately (see ["Accessories for Direct-On-Line and Reversing Starters"](#)).

6

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release 	Consisting of the following single devices			DT	Fuseless load feeders ToC 1	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ²⁾						
	kW	A	A									kg

Type of coordination "1" at I_g = 50 kA at 400 V (the motor starter protector is compatible with type of coordination "2")

S00 0.75 1.9 1.4 ... 2 For load feeders for lower outputs, see the table above (type of coordination "2").

				3RV10	3RT10	3RA19							
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1AP02	11-1AA00	A	3RA12 10-1C □15-0AP0	1	1 unit	101	1.115	
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A		3RA12 10-1D □15-0AP0	1	1 unit	101	1.105
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A		3RA12 10-1E □15-0AP0	1	1 unit	101	1.116
	1.5	3.6	3.5 ... 5	11-1FA10		13-1C	A		3RA12 10-1F □15-0AP0	1	1 unit	101	1.118
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A		3RA12 10-1G □15-0AP0	1	1 unit	101	1.129
	3	6.5	5.5 ... 8	11-1HA10		13-1D	A		3RA12 10-1H □15-0AP0	1	1 unit	101	1.122
	4	8.5	7 ... 10	11-1JA10	16-1AP02		A		3RA12 10-1J □16-0AP0	1	1 unit	101	1.108
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		A		3RA12 10-1K □17-0AP0	1	1 unit	101	1.100
S0	7.5	15.5	11 ... 16	21-4AA10	25-1AP00	21-1AA00	A	3RA12 20-4A □25-0AP0	1	1 unit	101	1.600	
	7.5	15.5	14 ... 20	21-4BA10		+	A		3RA12 20-4B □25-0AP0	1	1 unit	101	1.600
	11	22	17 ... 22	21-4CA10	26-1AP00	40 mm	A		3RA12 20-4C □26-0AP0	1	1 unit	101	1.570
	11	22	20 ... 25	21-4DA10		23-1C ³⁾ or 60 mm 23-1D ³⁾	A		3RA12 20-4D □26-0AP0	1	1 unit	101	1.557

S2 15 29 22 ... 32 For load feeders for higher outputs, see the table above (type of coordination "2").
18.5 35 28 ... 40
22 41 36 ... 45
...

Order No. supplement for busbar center-to-center clearance

40 mm
60 mm

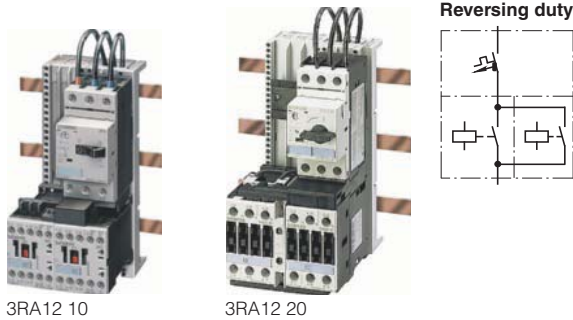
C
D

- 1) Selection depends on the concrete startup and rated data of the protected motor.
- 2) RS = Reversing duty for busbar systems.
- 3) Mechanical locking device must be ordered separately (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for busbar systems



Rated control supply voltage 24 V DC for 40 and 60 mm busbar systems

- The motor starter protector and contactor are mechanically and electrically connected by means of the link module
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted due to the modular system
- Complete unit always with electrical and mechanical interlock

Size	Standard induction motor 4-pole at 400 V AC ²⁾	Setting range for thermal overload release	Consisting of the following single devices	DT	Fuseless load feeders	TOC 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P kW	Motor current I (guide value) A	Motor starter protector		Order No.	Price per PU				kg

Type of coordination "2" at I_q = 50 kA at 400 V (compatible with type of coordination "1")

			3RV10	3RT10	3RA19							
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	11-1AA00	A	3RA12 10-0B □ 15-0BB4	1	1 unit	101	1.195
	0.06	0.2	0.18 ... 0.25	11-0CA10		+	A	3RA12 10-0C □ 15-0BB4	1	1 unit	101	1.234
	0.09	0.3	0.22 ... 0.32	11-0DA10		40 mm	A	3RA12 10-0D □ 15-0BB4	1	1 unit	101	1.223
	0.09	0.3	0.28 ... 0.4	11-0EA10		13-1C	A	3RA12 10-0E □ 15-0BB4	1	1 unit	101	1.185
	0.12	0.4	0.35 ... 0.5	11-0FA10		or 60 mm	A	3RA12 10-0F □ 15-0BB4	1	1 unit	101	1.190
	0.18	0.6	0.45 ... 0.63	11-0GA10		13-1D	A	3RA12 10-0G □ 15-0BB4	1	1 unit	101	1.195
	0.18	0.6	0.55 ... 0.8	11-0HA10			A	3RA12 10-0H □ 15-0BB4	1	1 unit	101	1.190
	0.25	0.85	0.7 ... 1	11-0JA10			A	3RA12 10-0J □ 15-0BB4	1	1 unit	101	1.197
	0.37	1.1	0.9 ... 1.25	11-0KA10			A	3RA12 10-0K □ 15-0BB4	1	1 unit	101	1.160
	0.55	1.5	1.1 ... 1.6	11-1AA10			A	3RA12 10-1A □ 15-0BB4	1	1 unit	101	1.246
	0.75	1.9	1.4 ... 2	11-1BA10			A	3RA12 10-1B □ 15-0BB4	1	1 unit	101	1.233
	S0	0.75	1.9	1.8 ... 2.5	21-1CA10	24-1BB40	21-1BA00	A	3RA12 20-1C □ 24-0BB4	1	1 unit	101
1.1		2.7	2.2 ... 3.2	21-1DA10		+	A	3RA12 20-1D □ 24-0BB4	1	1 unit	101	2.017
1.5		3.6	2.8 ... 4	21-1EA10		40 mm	A	3RA12 20-1E □ 24-0BB4	1	1 unit	101	1.998
1.5		3.6	3.5 ... 5	21-1FA10		23-1C ⁴⁾	A	3RA12 20-1F □ 24-0BB4	1	1 unit	101	2.013
2.2		4.9	4.5 ... 6.3	21-1GA10		or 60 mm	A	3RA12 20-1G □ 24-0BB4	1	1 unit	101	2.018
3		6.5	5.5 ... 8	21-1HA10		23-1D ⁴⁾	A	3RA12 20-1H □ 24-0BB4	1	1 unit	101	2.003
4		8.5	7 ... 10	21-1JA10	26-1BB40		A	3RA12 20-1J □ 26-0BB4	1	1 unit	101	2.013
5.5		11.5	9 ... 12.5	21-1KA10			A	3RA12 20-1K □ 26-0BB4	1	1 unit	101	2.017
7.5		15.5	11 ... 16	21-4AA10			A	3RA12 20-4A □ 26-0BB4	1	1 unit	101	2.010
7.5		15.5	14 ... 20	21-4BA10			A	3RA12 20-4B □ 26-0BB4	1	1 unit	101	2.002
S2	11	22	18 ... 25	31-4DA10	34-1BB40	31-1BA00		Size S2 is only available for self-assembly.				
	15	29	22 ... 32	31-4EA10		+						
	18.5	35	28 ... 40	31-4FA10	35-1BB40	40 mm						
	22	41	36 ... 45	31-4GA10	36-1BB40	33-1C ⁴⁾						
	22	41	40 ... 50	31-4HA10		or 60 mm 33-1D ⁴⁾						
S3	30	55	45 ... 63	41-4JA10	44-1BB40	41-1BA00		For size S3, a busbar adapter is not necessary.				
	37	66	57 ... 75	41-4KA10	45-1BB40	+						
	45	80	70 ... 90	41-4LA10	46-1BB40	not available						
	45	80	80 ... 100	41-4MA10								

Order No. supplement for busbar center-to-center clearance

- 40 mm
- 60 mm

- 1) For auxiliary switches, see [Accessories for Direct-On-Line and Reversing Starters](#).
- 2) Selection depends on the concrete startup and rated data of the protected motor.
- 3) RS = Reversing duty for busbar systems.
- 4) Mechanical locking device must be ordered separately (see ["Accessories for Direct-On-Line and Reversing Starters"](#)).

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RA12 reversing starters for busbar systems

Size	Standard induction motor 4-pole at 400 V AC ¹⁾		Setting range for thermal overload release	Consisting of the following single devices			DT	Fuseless load feeders		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Standard output P	Motor current I (guide value)		Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ²⁾		Order No.	Price per PU				
	kW	A	A										kg

Type of coordination "1" at I_g = 50 kA at 400 V (the motor starter protector is compatible with type of coordination "2")

S00 0.75 1.9 1.4 ... 2 For load feeders for lower outputs, see the table above (type of coordination "2").

			3RV10		3RT10		3RA19						
S00	0.75	1.9	1.8 ... 2.5	11-1CA10	15-1BB42	11-1AA00	A	3RA12 10-1C □15-0BB4	1	1 unit	101	1.233	
	1.1	2.7	2.2 ... 3.2	11-1DA10		+	A	3RA12 10-1D □15-0BB4	1	1 unit	101	1.240	
	1.5	3.6	2.8 ... 4	11-1EA10		40 mm	A	3RA12 10-1E □15-0BB4	1	1 unit	101	1.265	
	1.5	3.6	3.5 ... 5	11-1FA10		13-1C	A	3RA12 10-1F □15-0BB4	1	1 unit	101	1.245	
	2.2	4.9	4.5 ... 6.3	11-1GA10		or 60 mm	A	3RA12 10-1G □15-0BB4	1	1 unit	101	1.240	
	3	6.5	5.5 ... 8	11-1HA10		13-1D	A	3RA12 10-1H □15-0BB4	1	1 unit	101	1.233	
	4	8.5	7 ... 10	11-1JA10	16-1BB42		A	3RA12 10-1J □16-0BB4	1	1 unit	101	1.242	
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		A	3RA12 10-1K □17-0BB4	1	1 unit	101	1.210	
S0	7.5	15.5	11 ... 16	21-4AA10	25-1BB40	21-1BA00	A	3RA12 20-4A □25-0BB4	1	1 unit	101	2.100	
	7.5	15.5	14 ... 20	21-4BA10		+	A	3RA12 20-4B □25-0BB4	1	1 unit	101	2.100	
	11	22	17 ... 22	21-4CA10	26-1BB40	40 mm	A	3RA12 20-4C □26-0BB4	1	1 unit	101	2.023	
	11	22	20 ... 25	21-4DA10		23-1C ³⁾ or 60 mm 23-1D ³⁾	A	3RA12 20-4D □26-0BB4	1	1 unit	101	2.018	

S2 15 29 22 ... 32 For load feeders for higher outputs, see the table above (type of coordination "2").
18.5 35 28 ... 40
22 41 36 ... 45
...

Order No. supplement for busbar center-to-center clearance

- 40 mm
- 60 mm

C
D






- 1) Selection depends on the concrete startup and rated data of the protected motor.
- 2) RS = Reversing duty for busbar systems.
- 3) Mechanical locking device must be ordered separately (see "Accessories for Direct-On-Line and Reversing Starters").

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

Accessories
for 3RA1 direct-on-line and reversing starters

Selection and ordering data

For circuit breakers	For contactors	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Size	Size								kg	
Motor starter protectors¹⁾										
	S00 ...S3	--	Auxiliary switches							
			Transverse	1 CO	▶	3RV19 01-1D	1	1 unit	101	0.015
			Transverse	1 NO + 1 NC	▶	3RV19 01-1E	1	1 unit	101	0.018
	S00 ...S3	--	Laterally mountable	1 NO + 1 NC	▶	3RV19 01-1A	1	1 unit	101	0.045
	S00 ...S3	--	Undervoltage releases		▶	3RV19 02-1APO	1	1 unit	101	0.131
			AC 50 Hz 230 V							
	S00 ...S3	--	Shunt releases		▶	3RV19 02-1DPO	1	1 unit	101	0.130
			AC 50 Hz 230 V							
3RV19 02-1...										
Contactors²⁾										
Snap-on auxiliary switch blocks										
Connection from below										
	--	S00	1-pole	1 NO	▶	3RH19 11-1BA10	1	1 unit	101	0.015
				1 NC	▶	3RH19 11-1BA01	1	1 unit	101	0.015
	--	S00	2-pole	1 NO + 1 NC	▶	3RH19 11-1MA11	1	1 unit	101	0.045
				2 NO	▶	3RH19 11-1MA20	1	1 unit	101	0.045
3RH19 11-1BA..	--	S0 ... S3		1 NO + 1 NC	▶	3RH19 21-1MA11	1	1 unit	101	0.075
				2 NO	▶	3RH19 21-1MA20	1	1 unit	101	0.075
				2 NC	▶	3RH19 21-1MA02	1	1 unit	101	0.075
Connection from 2 sides										
	--	S00	4-pole	2 NO + 2 NC	▶	3RH19 11-1FA22	1	1 unit	101	0.060
	--	S0 ... S3	1-pole	1 NO	▶	3RH19 21-1CA10	1	1 unit	101	0.020
				1 NC	▶	3RH19 21-1CA01	1	1 unit	101	0.020
3RH19 11-1F..	--	S0 ... S3	4-pole	2 NO + 2 NC	▶	3RH19 21-1FA22	1	1 unit	101	0.075




¹⁾ See also "Protection Equipment: 3RV Motor Starter Protectors.

²⁾ See also "Controls: Contactors and Contactor Assemblies.

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

Accessories for 3RA1 direct-on-line and reversing starters

For con- tactors	Version	Rated control supply voltage U_s ¹⁾	DT	Order No. ²⁾	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Surge suppressors without LED									
Size S00									
 3RT19 16-1DG00	For plugging onto the front side of the con- tactors with and without auxiliary switch blocks								
	3RT1.	Varistors	24 ... 48 V AC 24 ... 70 V DC	▶	3RT19 16-1BB00	1	1 unit	101	0.010
			127 ... 240 V AC 150 ... 250 V DC	A	3RT19 16-1BD00	1	1 unit	101	0.010
	3RT1.	RC elements	24 ... 48 V AC 24 ... 70 V DC	▶	3RT19 16-1CB00	1	1 unit	101	0.010
			127 ... 240 V AC 150 ... 250 V DC	▶	3RT19 16-1CD00	1	1 unit	101	0.010
3RT1.	Noise suppression diodes	12 ... 250 V DC	▶	3RT19 16-1DG00	1	1 unit	101	0.010	
3RT1.	Diode assemblies (diode and Zener diode) for DC operation and short break times	12 ... 250 V DC	▶	3RT19 16-1EH00	1	1 unit	101	0.010	
Size S0									
 3RT19 26-1B.00	For fitting onto the coil terminals at top or bottom								
	3RT10 2	Varistors	24 ... 48 V AC 24 ... 70 V DC	▶	3RT19 26-1BB00	1	1 unit	101	0.025
			127 ... 240 V AC 150 ... 250 V DC	▶	3RT19 26-1BD00	1	1 unit	101	0.025
	3RT10 2	RC elements	24 ... 48 V AC 24 ... 70 V DC	▶	3RT19 26-1CB00	1	1 unit	101	0.025
			127 ... 240 V AC 150 ... 250 V DC	▶	3RT19 26-1CD00	1	1 unit	101	0.025
3RT10 2	Diode assemblies For DC operation and short break times								
	• Can be plugged in at bottom	24 V DC	▶	3RT19 26-1TR00	1	1 unit	101	0.025	
		30 ... 250 V DC	A	3RT19 26-1TS00	1	1 unit	101	0.025	
Sizes S2 and S3									
 3RT19 36-1C.00	For fitting onto the coil terminals at top or bottom								
	3RT10 3, 3RT10 4	Varistors	24 V ... 48 V AC 24 ... 70 V DC	▶	3RT19 26-1BB00	1	1 unit	101	0.025
			127 V ... 240 V AC 150 ... 250 V DC	▶	3RT19 26-1BD00	1	1 unit	101	0.025
	3RT10 3, 3RT10 4	RC elements	24 ... 48 V AC 24 ... 70 V DC	▶	3RT19 36-1CB00	1	1 unit	101	0.040
			127 ... 240 V AC 150 ... 250 V DC	▶	3RT19 36-1CD00	1	1 unit	101	0.040
3RT10 3, 3RT10 4	Diode assemblies For DC operation and short break times								
	• Can be plugged in at bottom	24 V DC	▶	3RT19 36-1TR00	1	1 unit	101	0.025	
		30 ... 250 V DC	B	3RT19 36-1TS00	1	1 unit	101	0.025	

¹⁾ Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

²⁾ For packs of 10 or 5 units "-Z" and order code "X90" must be added to the Order No.

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders






Accessories for 3RA1 direct-on-line and reversing starters

For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Link modules									
				Electrical and mechanical link between motor starter protector and contactor.					
3RA19 11-1A				Single-unit packaging					
				Actuating voltage of contactor					
	S00	S00	AC and DC	▶	3RA19 11-1AA00	1	1 unit	101	0.027
	S0	S00		▶	3RA19 21-1DA00	1	1 unit	101	0.028
	S0	S0	AC	▶	3RA19 21-1AA00	1	1 unit	101	0.037
	S2	S2		▶	3RA19 31-1AA00	1	1 unit	101	0.042
	S3	S3		▶	3RA19 41-1AA00	1	1 unit	101	0.090
	S0	S0	DC	▶	3RA19 21-1BA00	1	1 unit	101	0.039
	S2	S2		▶	3RA19 31-1BA00	1	1 unit	101	0.043
	S3	S3		▶	3RA19 41-1BA00	1	1 unit	101	0.089
				Multi-unit packaging					
3RA19 21-1A				Actuating voltage of contactor					
	S00	S00	AC and DC	▶	3RA19 11-1A	1	10 units	101	0.019
	S0	S00		▶	3RA19 21-1D	1	10 units	101	0.021
	S0	S0	AC	▶	3RA19 21-1A	1	10 units	101	0.028
	S2	S2		▶	3RA19 31-1A	1	5 units	101	0.033
	S3	S3		▶	3RA19 41-1A	1	5 units	101	0.072
	S0	S0	DC	▶	3RA19 21-1B	1	10 units	101	0.030
	S2	S2		▶	3RA19 31-1B	1	5 units	101	0.034
	S3	S3		▶	3RA19 41-1B	1	5 units	101	0.073
				Hybrid link modules					
3RA19 31-1A				Screw terminals Cage Clamp terminals Electrical and mechanical connection between motor starter protector with screw terminals and contactor with Cage Clamp terminals					
Single-unit packaging									
				Actuating voltage of contactor					
	S00	S00	AC and DC	▶	3RA19 11-2FA00	1	1 unit	101	0.038
	S0	S00		▶	3RA19 21-2FA00	1	1 unit	101	0.028
				Multi-unit packaging					
3RA19 21-2FA00				Actuating voltage of contactor					
	S00	S00	AC and DC	▶	3RA19 11-2F	1	10 units	101	0.031
	S0	S00		▶	3RA19 21-2F	1	10 units	101	0.030
Wiring kits									
	--	S00	Reversing duty	▶	3RA19 13-2A	1	1 unit	101	0.040
		S0	Electrical and mechanical link for reversing contactors.	▶	3RA19 23-2A	1	1 unit	101	0.060
		S2	Can be combined with link module.	▶	3RA19 33-2A	1	1 unit	101	0.120
		S3		▶	3RA19 43-2A	1	1 unit	101	0.300
3RA19 13-2A			For size S00: optionally with integrated electrical and mechanical locking. For sizes S0 to S3: mechanical locking device must be ordered separately.						
	--	S00	Wye-delta starting	▶	3RA19 13-2B	1	1 unit	101	0.050
		S0	Electrical and mechanical link for three contactors of same size	▶	3RA19 23-2B	1	1 unit	101	0.060
		S2		▶	3RA19 33-2B	1	1 unit	101	0.070
		S3		▶	3RA19 43-2B	1	1 unit	101	0.160
Connection modules for contactors with screw terminals									
<i>Size S00, S0</i>									
	--	S00	Adapters for contactors						
3RT19 26-4RD01			Ambient temperature $T_{U\max} = 60\text{ °C}$						
	--	S00	Size S00, rated operational current I_e at AC-3/400 V: 20 A	B	3RT19 16-4RD01	1	1 unit	101	0.020
	--	S0	Size S0, rated operational current I_e at AC-3/400 V: 25 A	B	3RT19 26-4RD01	1	1 unit	101	0.200
	--	S00, S0	Plugs for contactors						
3RT19 00-4RE01			Size S00, S0	B	3RT19 00-4RE01	1	1 unit	101	0.025

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders







Accessories for 3RA1 direct-on-line and reversing starters

	For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mechanical interlocks										
	--	S0, S2, S3	For reversing contactors, laterally mountable with 1 auxiliary contact (1 NC) each per contactor.	▶	3RA19 24-2B		1	1 unit	101	0.060
Coil repeat terminals										
	--	S0, S2, S3	For A1 and A2 of the reversing contactors (one set contains 10 x A1 and 5 x A2)	B	3RA19 23-3B		1	1 unit	101	0.080
Standard mounting rail adapters										
			<i>Single-unit packaging</i>							
	S00, S0	S00, S0	For mechanical fixing of motor starter protector and contactor; for snapping onto standard mounting rail or for screw fixing	▶	3RA19 22-1AA00		1	1 unit	101	0.104
	S2	S2		▶	3RA19 32-1AA00		1	1 unit	101	0.202
	S3	S3		▶	3RA19 42-1AA00		1	1 unit	101	0.264
			<i>Multi-unit packaging</i>							
	S00, S0	S00, S0	For mechanical fixing of motor starter protector and contactor; for snapping onto standard mounting rail or for screw fixing	▶	3RA19 22-1A		1	5 units	101	0.095
	S2	S2		▶	3RA19 32-1A		1	5 units	101	0.187
	S3	S3		▶	3RA19 42-1A		1	5 units	101	0.238
Side modules										
	S00 ...S3	S00 ...S3	For standard mounting rail adapters 10 mm wide, 96 mm long, for widening standard mounting rail adapters. For sizes S00 to S2: 2 units required. For size S3: 3 units required.	▶	3RA19 02-1B		1	10 units	101	0.009
Assembly kits (RH) for reversing duty for standard mounting rails										
	S0	S0	Also suitable for screw fixing. Consisting of: Wiring kit, standard mounting rail adapters, side modules. Link modules to be ordered separately. Mechanical locking device also to be ordered separately.	A	3RA19 23-1B		1	1 unit	101	0.288
	S2	S2		A	3RA19 33-1B		1	1 unit	101	0.557
	S3	S3		A	3RA19 43-1B		1	1 unit	101	0.818

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

Accessories for 3RA1 direct-on-line and reversing starters






For motor starter protectors	For contactors	Version	Busbar center-to-center clearance mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Size	Size									kg
Accessories, adapters and link modules for Cage Clamp terminals										
	S00	--	Link modules, Cage Clamp Electrical connection between motor starter protector and contactor (1 pack = 10 units)	--	▶ 3RA19 11-2A		1	10 units	101	0.016
	S00	--	Link modules, Cage Clamp with mechanical connections Mechanical and electrical connection between motor starter protector and contactor (1 pack = 10 units)	--	▶ 3RA19 11-2E		1	10 units	101	0.028
	--	--	Standard mounting rail adapters For Cage Clamp with 2 standard mounting rails, one is movable, 45 mm wide	--	▶ 3RA19 22-1L		1	5 units	101	0.413
	--	--	Busbar adapters 45 mm wide, 182 mm long, adapted for Cage Clamp motor starter protectors. If there is an additional contactor, a further standard mounting rail must be fitted.	40	▶ 8US10 51-5CM47		1	1 unit	143	0.193
	--	60		▶ 8US12 51-5CM47		1	1 unit	143	0.190	
	--	--	Standard mounting rails 35 mm Plastic incl. fixing screws (1 pack = 10 units)	--	A 8US19 98-7CA15		1	10 units	143	0.009
3RA19 11-2A + 8US10 51-5CM47										
	3RA19 11-2E									
Push-in lugs for screw fixing										
	S00, S0	--	For 3RV1 motor starter protectors: 2 units each required, for 3RA1 fuseless load feeders: 1 unit each required, for AS-Interface switching device holder: 2 units each required (1 pack = 10 units)	--	A 3RB19 00-0B		100	10 units	101	0.100
	3RB19 00-0B									
Busbar adapters										
	S00, S0	S00, S0	45 mm wide, 182 mm long for busbars	40	▶ 8US10 51-5DM07		1	1 unit	143	0.184
				60	▶ 8US12 51-5DM07		1	1 unit	143	0.183
	S2	S2	55 mm wide, 242 mm long including screw and spacer	40	▶ 8US10 61-5FP08		1	1 unit	143	0.308
				60	▶ 8US12 61-5FP08		1	1 unit	143	0.292
8US12 51-5DM07										
Device holders										
	S00, S0	S00, S0	With standard mounting rail, without connecting cables	40	▶ 8US10 50-5AM00		1	1 unit	143	0.182
			45 mm wide, 182 mm long for busbars	60	▶ 8US12 50-5AM00		1	1 unit	143	0.158
	S0	S0	55 mm wide, 182 mm long	40	▶ 8US10 60-5AM00		1	1 unit	143	0.197
				60	▶ 8US12 60-5AM00		1	1 unit	143	0.202
	S2	S2	55 mm wide, 242 mm long including screw and spacer	60	▶ 8US12 60-5AP00		1	1 unit	143	0.243
8US12 50-5AM00										

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

Accessories for 3RA1 direct-on-line and reversing starters

	For motor starter protectors Size	For contactors Size	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Side modules										
	--	--	Including connecting wedges for widening busbar adapters or switching device holders, 13.5 mm wide, 182 mm long	A	8US19 98-2BM00		1	4 units	143	0.036
Assembly kits (RS) for reversing duty for 40 mm and 60 mm busbar systems										
				Busbar center-to-center clearance mm						
	S00, S0	S00	Consisting of wiring kit, busbar adapter, device holder, and side module. Link modules and mechanical locking devices to be ordered separately. Only for size S00 is mechanical locking always included.	40	A	3RA19 13-1C	1	1 unit	101	0.433
	S0	S0		A	3RA19 23-1C	1	1 unit	101	0.472	
	S00, S0	S00		60	A	3RA19 13-1D	1	1 unit	101	0.431
	S0	S0		A	3RA19 23-1D	1	1 unit	101	0.475	
	S2	S2		A	3RA19 33-1D	1	1 unit	101	0.743	
Connecting wedges										
	--	--	For mechanical linking of busbar adapters and switching device holders or of standard mounting rail adapters (2 units per combination) (1 pack = 100 units)	▶	8US19 98-1AA00		100	100 units	143	0.100
Load-side terminal strips, separable										
	S00, S0	S00, S0	Light gray with carrier for mounting onto busbar adapter 45 mm wide, 91 mm long 3 x 2.5 mm ² plug-in terminals, 400 V 4 x 1.5 mm ² plug-in terminals, 250 V	A	8US19 98-8AM07		1	1 unit	143	0.061
Spacers										
	--	S00, S0	Fixes the load feeder onto the busbar adapter (1 pack = 100 units)	▶	8US19 98-1BA00		100	100 units	143	0.100
Screw holders										
	--	S00, S0	Allows additional fixing of the feeder with screws (1 pack = 20 units)	B	8US19 98-1CA00		100	20 units	143	0.100

For Operation in the Control Cabinet

SIRIUS 3RA1 Load Feeders

3RV19 infeed systems,
SENTRON 8US busbar systems

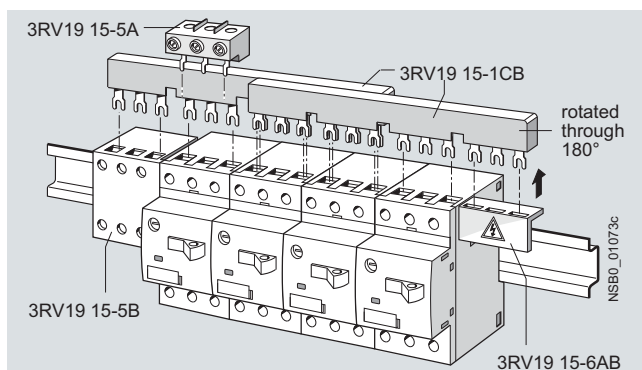
Overview

Insulated three-phase busbar systems

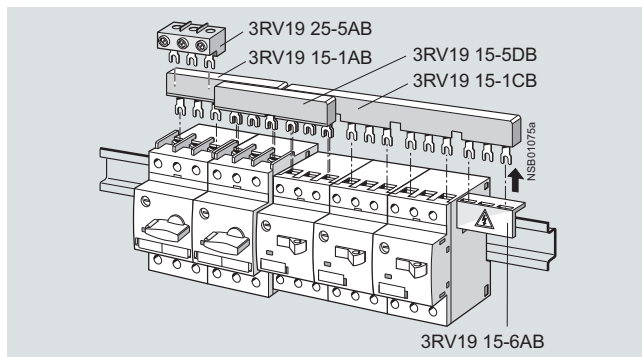
Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RA1 load feeders with screw terminals. Different versions are available for sizes S00, S0 and S2 and can also be used for the various different types of motor starter protectors.

The busbars are suitable for between 2 and 5 feeders. However, any kind of extension is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector.

A combination of feeders of different sizes is possible only with sizes S00 and S0. Connecting pieces are available for this purpose. The motor starter protectors are supplied by appropriate feeder terminals.



Three-phase busbar system, size S00



Three-phase busbar system, with example for combining sizes S00 and S0

The three-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors.

The three-phase busbar systems can also be used to construct "Type E Starters" of size S0 or S2 according to UL/CSA. Special feeder terminals must be used for this purpose however.

For selection and ordering data see Chapter 5 "Protection Equipment, 3RV Motor Starter Protectors up to 100 A, Busbar Accessories".

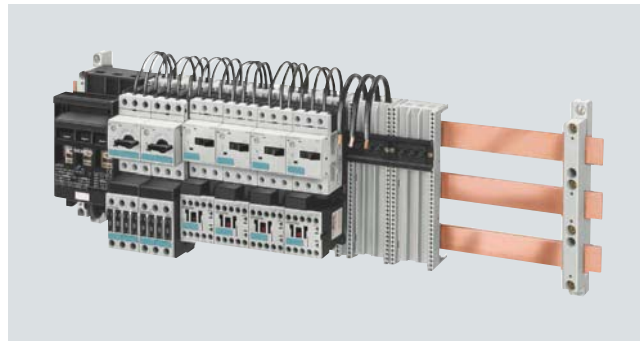
Busbar adapters for 40 mm and 60 mm systems

The load feeders are mounted directly with the aid of busbar adapters on busbar systems with 40 mm and 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs.

Busbar adapters for busbar systems with 40 mm center-to-center clearance are suitable for copper busbars with a width of 12 mm to 15 mm, while those with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 mm to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The feeders are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For selection and ordering data see Chapter 5 "Protection Equipment, 3RV Motor Starter Protectors up to 100 A, Busbar Accessories".



SIRIUS motor starter protectors and load feeders with busbar adapters snapped onto busbars

SIRIUS 3RV19 infeed systems

The 3RV19 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with a screw or spring-type connection up to size S0.

The system is based on a basic module complete with a lateral incoming unit (three-phase busbar with infeed) which has two slots.

Expansion modules are available for extending the system (three-phase busbars for system expansion).



SIRIUS 3RV19 infeed systems with three 3RA1110 load feeders and two 3RA1120 load feeders

For the 3RV19 infeed system see Chapter 5 "Protection Equipment"

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

Overview



3RA6 fuseless compact feeders and infeed system for 3RA6

Integrated functionality

The SIRIUS 3RA6 compact feeders are a generation of innovative load feeders with the integrated functionality of a motor starter protector, contactor and solid-state overload relay. In addition, various functions of optional mountable accessories (e. g. auxiliary switches, surge suppressors) are already integrated in the SIRIUS compact feeder.

Application

The SIRIUS compact feeders can be used wherever standard induction motors up to 32 A (approx. 15 kW/400 V) are directly started.

Approvals according to IEC, UL and CSA standards have been issued for the compact feeders.

Low equipment variance

Thanks to wide setting ranges for the rated current and wide voltage ranges, the equipment variance is greatly reduced compared to conventional load feeders.

Very high operational reliability

Through the high short-circuit breaking capacity and defined shut-down when the end of service life is reached means that the SIRIUS compact feeder achieves a very high level of operational reliability that would otherwise have only been possible with considerable additional outlay. This sets it apart from devices with similar functionality.

Safe disconnection

The auxiliary switches of the 3RA6 compact feeders are designed as mirror contacts. It is thus possible to use the devices for safe disconnection, e. g. emergency-stops, up to Category 2 (EN 954-1) and together with other redundancy switching devices up to Category 3 or 4.

Communications integration through AS-Interface

To enable communications integration through AS-Interface there is an AS-i add-on module available in several versions for mounting instead of the control circuit terminals on the SIRIUS compact feeder.

The design of the AS-i add-on module permits a group of up to 62 feeders with a total of four cables to be connected to the control system. This reduces wiring work considerably compared to the parallel wiring method.

Communications integration using IO-Link

Up to 4 compact feeders in IO-Link version (reversing and direct-on-line starters) can be connected together and conve-

niently linked to the IO-Link master through a standardized IO-Link connection.

The IO-Link connection enables a high density of information in the local range.

The diagnostics data of the process collected by the 3RA6 compact feeder, e. g. short-circuit, end of service life, limit position etc., are not only indicated on the compact feeder itself but also transmitted to the higher-level control system through IO-Link.

Thanks to the optionally available operator panel, which can be installed in the control cabinet door, it is easy to control the 3RA6 compact feeder with IO-Link from the control cabinet door.

Permanent wiring/easy replacement

Using the SIRIUS infeed system for 3RA6 it is possible to carry out the wiring in advance without a compact feeder needing to be connected.

A compact feeder is very easily replaced simply by pulling it out of the device without disconnecting the wiring.

Even with screw connections or mounting on a standard mounting rail there is no need to disconnect any wiring (on account of the removable main and control circuit terminals) in order to replace a compact feeder.

Consistent solution from the infeed to the motor feeder

The SIRIUS infeed system for 3RA6 with integrated PE bar is offered as a user-friendly possibility of feeding in summation currents up to 100 A with a maximum conductor cross-section of 70 mm² and connecting the motor cable directly without additional intermediate terminals.

Screw and spring-type connections

The SIRIUS compact feeders and the SIRIUS infeed system for 3RA6 are available with screw and spring-type connections.



Screw connection



Spring-type connection

The terminals are indicated in the selection and ordering data by orange backgrounds.

System configurator for engineering

A free system configurator is available to reduce further the amount of engineering work for selecting the required compact feeders and matching infeed.

Types of infeed for the 3RA6 fuseless compact feeders

On the whole four different infeed possibilities are available:

- Parallel wiring
- Use of three-phase busbars (combination with SIRIUS motor starter protectors and SIRIUS contactors possible)
- 8US busbar adapters
- SIRIUS infeed system for 3RA6

To comply with the clearance and creepage distances demanded according to UL508 there are the following infeed possibilities:

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

Type of infeed	Feeder terminal (acc. to UL 508, type E)	Order No.
Parallel wiring	Terminal for "Self-Protected Combination Motor Controller (Type E)"	3RV19 28-1H
Three-phase busbars	Three-phase infeed terminal for constructing "Type E Starters", UL 508	3RV19 25-5EB
Infeed systems for 3RA6	Infeed on left, 50/70 mm ² , screw terminal with 3 sockets, outgoing terminal with screw/spring-type connections, including PE bar	3RA68 13-8AB (screw terminals), 3RA68 13-8AC (spring-type terminals)

SIRIUS 3RA6 compact feeders

The SIRIUS 3RA6 compact feeders are universal motor feeders according to IEC/EN 60947-6-2. As control and protective switching devices (CPS) they can connect, convey and disconnect the thermal, dynamic and electrical loads from short-circuit currents up to $I_q = 53$ kA, i. e. they are practically weld-free. They combine the functions of a circuit breaker, a contactor and a solid-state overload relay in a single enclosure and can be used wherever standard induction motors up to 32 A (up to approx. 15 kW at 400 V AC) are started directly. Direct-on-line and reversing starters are available as variants.

The reversing starter version comes with not only an internal electrical interlock but also with a mechanical interlock to prevent simultaneous actuation of both directions of rotation.

3RA6 fuseless compact feeders are available with 5 current setting ranges and 3 control voltage ranges:

Width of direct-on-line starter	Width of reversing starter	Current setting range	At 400 V AC for induction motors up to
mm	mm	A	kW
45	90	0.1 ... 0.4	0.09
45	90	0.32 ... 1.25	0.37
45	90	1 ... 4	1.5
45	90	3 ... 12	5.5
45	90	8 ... 32	15

The 3 control voltage ranges are:

- 24 V AC/DC
- 42 ... 70 V AC/DC
- 110 ... 240 V AC/DC

Note:

The 3RA1 load feeders can be used for fuseless load feeders > 32 A up to 100 A.

The SENTRON 3VL circuit breakers and the SIRIUS 3RT contactors can be used for fuseless load feeders > 100 A.

Operating conditions

The SIRIUS 3RA6 compact feeders are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

The SIRIUS compact feeders are generally designed to degree of protection IP20. The permissible ambient temperature during operation is -20 ... +60 °C.

The limited short-circuit current based on IEC/EN 60947-6-2 is 53 kA at 400 V.

Note:

More technical specifications can be found in the system manual at

www.siemens.com/compactstarter

Overload tripping times

The overload tripping time can be set on the device to less than 10 s (CLASS 10) and less than 20 s (CLASS 20 for heavy starting). As the breaker mechanism still remains closed after an overload, resetting is possible by either local manual reset or auto reset after 3 minutes cooling time.

With autoreset there is no need to open the control cabinet.

Diagnostics options

The compact feeder provides the following diagnostics options:

- With LEDs:
 - Connection to the actuating voltage
 - Position of the main contacts
- With mechanical indication:
 - Tripping due to overload
 - Tripping due to short-circuit
 - Tripping due to malfunction (end of service life reached because of worn switching contacts or a worn switching mechanism or faults in the control electronics)

These states can be evaluated in addition in the higher-level control system by means of the integrated auxiliary switches and signaling switches of the compact feeder.

Four complement variants for 3RA6 compact feeders

- For standard mounting rail or screw fixing: basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals
- For standard mounting rail or screw fixing when using the AS-i add-on module: without control circuit terminals because the AS-i add-on module is plugged on instead
- For use with the infeed system for 3RA6: without main circuit terminals because they are supplied with the infeed system and the expansion modules
- For use with the infeed system for 3RA6 and AS-i add-on module: without terminal complement (also for reordering when replacing the compact feeder)

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

Benefits

The SIRIUS 3RA6 compact feeders offer a number of advantages, the most important being:

- Compact design saves space in the control cabinet
- Little planning and assembly work and far less wiring thanks to a single complete unit with one order number
- Little variance through 3 wide voltage ranges and 5 wide setting ranges for the rated current mean low stock levels
- High plant availability through integrated functionalities such as prevention of main contact welding and shut-down at end of service life
- Greater productivity through automatic device reset in case of overload and differentiated detection of overload and short-circuit
- Easy checking of the wiring and testing of the motor direction prior to start-up thanks to optional "control kits"
- Speedy replacement of devices thanks to removable terminals with spring-type and screw connections in the main and control circuit
- Efficient power distribution through the related SIRIUS infeed system for 3RA6
- Direct connection of the motor feeder cable to the SIRIUS infeed system for 3RA6 thanks to integrated PE bar
- Connecting and looping through incoming feeders up to a cross-section of 70 mm²
- When using the infeed system for 3RA6, possibility of directly connecting the motor cable without intermediate terminals
- Integration in Totally Integrated Automation thanks to the optional connection to AS-Interface or IO-Link

The SIRIUS 3RA6 compact feeders create the basis for high-availability and future-proof machine concepts.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

More information

Type			3RA61	3RA62	3RA64	3RA65
Size			S0			
Number of poles			3			
General data						
Device standard			IEC/EN 60947-6-2			
Max. rated current $I_{n \max}$ (= max. rated operational current I_e) for the respective setting range	0.1 ... 0.4 A	A	0.4			
	0.32 ... 1.25 A	A	1.25			
	1 ... 4 A	A	4			
	4 ... 12 A	A	12			
	8 ... 32 A	A	32			
Permissible ambient temperature						
• During operation	Acc. to IEC/EN 60721-3-3	°C	-20 ... +60, with restriction up to +70			
• For installation in SIRIUS infeed system for 3RA6		°C	-20 ... +40			
• During storage	IEC/EN 60732-3-1	°C	-55 ... +80			
• During transport	IEC/EN 60721-3-2	°C	-55 ... +80			
Permissible rated current of the compact feeder, when several compact feeders are mounted side-by-side on a vertical standard mounting rail or in the infeed system for 3RA6						
• For a control cabinet inside temperature of +40 °C		%	100			
• For a control cabinet inside temperature of +60 °C		%	80			
Relative air humidity						
		%	10 ... 90			
Installation altitude						
		m	Up to 2000 above sea level without restriction			
Rated frequency						
		Hz	50/60			
Rated insulation voltage U_i (pollution degree 3)						
		V	690			
Rated impulse withstand voltage U_{imp}						
		kV	6			
Trip class (CLASS)						
	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)		10/20			
Rated short-circuit current I_q at AC 50/60 Hz 400 V						
	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)	kA	53 kA			
Types of coordination						
	Acc. to IEC 60947-6-2, EN 60947-6-2 (VDE 0660 Part 102)		Continuously			
Power loss $P_{v \max}$ of all main current paths Dependent on the rated current I_n (upper setting range)						
	Up to 0.4 A	mW	2			
	0.32 ... 1.25 A	mW	19.1			
	1 ... 4 A	W	0.2			
	3 ... 12 A	W	0.7			
	8 ... 32 A	W	2.3			
Electrical endurance in operating cycles						
	At $I_e = 0.9 I_n$		1.520.000			
Max. switching frequency						
	AC-41	1/h	750			
	AC-43	1/h	250			
	AC-44	1/h	15			
Drive losses						
Active power						
	At 24 V					
	• Up to 12 A	W	2.7			
	• 8 ... 32 A	W	2.95			
	At 42 ... 70 V					
	• Up to 12 A	W	2.5			
	• 8 ... 32 A	W	3.0			
	At 110 ... 240 V					
	• Up to 12 A	W	3.4			
	• 8 ... 32 A	W	3.8			
Overload function						
	Ratio of lower to upper current mark		1:4			
Shock resistance (sine-wave pulse)						
			$a = 60 \text{ m/s}^2 = 6g$ with 10 ms; for every 3 shocks in all axes			
Vibratory load						
			$f = 1 \dots 6 \text{ Hz}$; $d = 15 \text{ mm}$ 10 cycles $f = 150 \text{ Hz}$; $a = 2 g$			
Degree of protection						
	Acc. to IEC 60947-1		IP20			
Touch protection						
	Acc. to DIN VDE 0106, Part 100		Finger-safe			
Isolating features of the compact feeder						
	Acc. to IEC/EN 60947-3		Yes			
Main and EMERGENCY-STOP switch characteristics of the compact feeder and accessories						
	Acc. to IEC/EN 60204		Yes			

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

Type		3RA61	3RA62	3RA64	3RA65
Size		S0			
Number of poles		3			
General data					
Protective separation	Acc. to IEC 60947-2				
Control circuit to auxiliary circuit					
• Horizontal standard mounting rail		V	Up to 400		
• Other mounting position		V	Up to 250		
Auxiliary circuit to auxiliary circuit					
• Horizontal standard mounting rail		V	Up to 400		
• Other mounting position		V	Up to 250		
Main circuit to auxiliary circuit					
• Any mounting position		V	Up to 400		
EMC interference immunity	Acc. to IEC 60947-1				Corresponds to degree of severity 3
Conductor-related interference	BURST acc. to IEC 61000-4-4	kV	4		
Conductor-related interference	SURGE acc. to IEC 61000-4-5				
• Conductor - Ground		kV	4		
• Conductor - Conductor		kV	1		
Electrostatic discharge	Acc. to IEC 61000-4-2	kV	8		
ESD		kV	6		
Field-related interference	Acc. to IEC 61000-4-3	V/m	10		
Auxiliary switches					
• Integrated					
- Position of the main contacts			1 NO + 1 NC	2 NO	1 NO + 1 NC
- Overload/short-circuit signal			1 CO/1 NO		2 NO
• Expandable					
- Position of the main contacts			2 NO, 2 NC, 1 NO + 1 NC		
Surge suppressor					Integrated (Varistor)
Pollution degree					3
Depth from standard mounting rail		mm	160		
Electromagnetic operating mechanisms					
Actuating voltage		V	24 AC/DC		
		V	42 ... 70 AC/DC		
		V	110 ... 240 AC/DC		
Frequency	At AC	Hz	50/60 (±5%)		
Operating range			0.7 ... 1.25 U_s		
No-load switching frequency		1/h	3600		
Make-time		ms	max. 70		
Break-time		ms	max. 120		
Max. pick-up current at 24 V DC	At 12 A	mA	250		
	At 32 A	mA	350		
Max. hold current at 24 V DC	At 12 A	mA	100		
	At 32 A	mA	150		
Max. pick-up power at 24 V DC	At 12 A	W	6.0		
	At 32 A	W	8.4		
Max. hold power at 24 V DC	At 12 A	W	2.4		
	At 32 A	W	3.6		
Hold current and hold power valid for 24 V operating range					
24 V, AC operation					
• Up to 12 A					
Hold current		mA	132		
Active power		W	2.7		
Apparent power		VA	3.15		
• 8 ... 32 A					
Hold current		mA	144		
Active power		W	3.0		
Apparent power		VA	3.45		
24 V, DC operation¹⁾					
• Up to 12 A					
Hold current		mA	100		
Active power		W	2.45		
Apparent power		VA	2.75		
• 8 ... 32 A					
Hold current		mA	116		
Active power		W	2.8		
Apparent power		VA	3.3		

¹⁾ Differences between active power and apparent power result from the clocked coil excitation (displacement reactive work).

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

Type		3RA61	3RA62	3RA64	3RA65
Size		S0			
Number of poles		3			
Electromagnetic operating mechanisms					
Hold current and hold power valid for operating range 42 V ... 70 V					
42 V, AC operation					
• Up to 12 A					
Hold current		mA	75		
Active power		W	2.35		
Apparent power		VA	3.2		
• 8 ... 32 A					
Hold current		mA	84		
Active power		W	2.7		
Apparent power		VA	3.6		
42 V, DC operation¹⁾					
• Up to 12 A					
Hold current		mA	55		
Active power		W	2.3		
Apparent power		VA	2.7		
• 8 ... 32 A					
Hold current		mA	63		
Active power		W	2.7		
Apparent power		VA	3.35		
70 V, AC operation					
• Up to 12 A					
Hold current		mA	54		
Active power		W	2.5		
Apparent power		VA	3.8		
• 8 ... 32 A					
Hold current		mA	58.5		
Active power		W	2.7		
Apparent power		VA	4		
70 V, DC operation¹⁾					
• Up to 12 A					
Hold current		mA	33		
Active power		W	2.35		
Apparent power		VA	2.9		
• 8 ... 32 A					
Hold current		mA	37		
Active power		W	2.6		
Apparent power		VA	3.0		
Hold current and hold power valid for operating range 110 ... 240 V					
110 V, AC operation					
• Up to 12 A					
Hold current		mA	38		
Active power		W	2.8		
Apparent power		VA	4.2		
• 8 ... 32 A					
Hold current		mA	42.5		
Active power		W	3.2		
Apparent power		VA	4.7		
110 V, DC operation¹⁾					
• Up to 12 A					
Hold current		mA	22.5		
Active power		W	2.5		
Apparent power		VA	3.75		
• 8 ... 32 A					
Hold current		mA	25.5		
Active power		W	2.9		
Apparent power		VA	4.65		
240 V, AC operation					
• Up to 12 A					
Hold current		mA	36		
Active power		W	3.6		
Apparent power		VA	8.8		
• 8 ... 32 A					
Hold current		mA	39		
Active power		W	3.9		
Apparent power		VA	9.3		
240 V, DC operation¹⁾					
• Up to 12 A					
Hold current		mA	12.5		
Active power		W	3.0		
Apparent power		VA	6.35		
• 8 ... 32 A					
Hold current		mA	14		
Active power		W	3.35		
Apparent power		VA	6.55		

¹⁾ Differences between active power and apparent power result from the clocked coil excitation (displacement reactive work).

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

Type		3RA61	3RA62	3RA64	3RA65	
Size		S0				
Number of poles		3				
Electromagnetic operating mechanisms						
Switching capacity 400 V	kA	53				
Switching capacity at 690 V	kA	3				
Line protection	At 10 kA	mm ²	2.5			
	At 50 kA	mm ²	4			
Shock resistance						
• Breaker mechanism OFF	g	25				
• Breaker mechanism ON	g	15				
Normal switching duty						
Making capacity		12 x I _n				
Breaking capacity		10 x I _n				
Switching capacity dependent on rated current	Up to 12 A	kW	5.5			
	Up to 32 A	kW	15			
Endurance in operating cycles						
• Mechanical endurance			10.000.000	2 x 10.000.000	3.000.000	
• Electrical endurance	At I _e = 0.9 x I _n		1.520.000	2 x 1.520.000	1.520.000	
Control circuit						
Rated operational voltage						
• External auxiliary switch block	V	400/690				
• Internal auxiliary switch	V	400/690				
• Short-circuit signaling switch	V	400				
• Overload signaling switch	V	400				
Switching capacity						
• External auxiliary switch block	AC-15					
	• At U _e = 230 V	A	6			
	• At U _e = 400 V	A	3			
	• At U _e = 289/500 V	A	2			
	• At U _e = 400/690 V	A	1			
	DC-13					
	• At U _e = 24 V	A	6			
	• At U _e = 60 V	A	0.9			
	• At U _e = 125 V	A	0.55			
	• At U _e = 250 V	A	0.27			
	• Internal auxiliary switch	AC-15				
		• At U _e = 230 V	A	6		
		• At U _e = 400 V	A	3		
• At U _e = 289/500 V		A	2			
• At U _e = 400/690 V		A	1			
DC-13						
• At U _e = 24 V		A	10			
• At U _e = 60 V		A	2			
• At U _e = 125 V		A	1			
• At U _e = 250 V		A	0.27			
• At U _e = 480 V		A	0.1			
• Signaling switches		AC-15				
		• At U _e = 230 V	A	3		
	• At U _e = 400 V	A	1			
	DC-13					
	• At U _e = 24 V	A	2			
	• At U _e = 250 V	A	0.11			

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

General data

Type			3RA61	3RA62	3RA64	3RA65
Size			S0			
Number of poles			3			
External auxiliary switch blocks, internal auxiliary switches						
Endurance in operating cycles						
• Mechanical endurance			10,000,000		3,000,000	
• Electrical endurance	AC-15, 230 V		200,000			
	• At 6 A		500,000			
	• At 3 A		2,000,000			
	• At 1 A		10,000,000			
	• At 0.3 A					
	DC-13, 24 V		30,000			
	• At 6 A		100,000			
	• At 3 A		2,000,000			
	• At 0.5 A		10,000,000			
	• At 0.2 A					
	DC-13, 110 V		40,000			
	• At 1 A		100,000			
	• At 0.55 A		300,000			
	• At 0.3 A		2,000,000			
	• At 0.1 A		10,000,000			
	• At 0.04 A					
	DC-13, 220 V		110,000			
	• At 0.3 A		650,000			
	• At 0.1 A		2,000,000			
	• At 0.05 A		10,000,000			
	• At 0.018 A					
Contact stability	At 17 V and 5 mA	Oper- ating cycles	1 incorrect switching operation per 100,000,000			
Short-circuit protection						
• Short-circuit current $I_K \leq 1.1$ kA	Fuse links gL/gG NEOZED 5SE, DIAZED 5SB, LV HRC 3NA	A	10			
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	10			
Signaling switches						
Endurance in operating cycles						
• Mechanical endurance			20,000			
• Electrical endurance AC-15	At 230 V and 3 A		6050			
Contact stability	At 17 V and 5 mA	Oper- ating cycles	1 incorrect switching operation per 100,000,000			
Short-circuit protection						
• Short-circuit current $I_K \leq 1.1$ kA	Fuse links gL/gG NEOZED 5SE, DIAZED 5SB, LV HRC 3NA	A	6			
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	6			
Overload (short-circuit current $I_K \leq 1.1$ kA)	Fuse links gL/gG NEOZED 5SE, DIAZED 5SB, LV HRC 3NA	A	4			

For Operation in the Control Cabinet

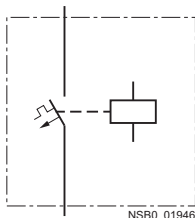
SIRIUS 3RA6 Compact Feeders

3RA61, 3RA62 compact feeders
3RA61 direct-on-line starters

Selection and ordering data



Direct-on-line start



A set of 3RA69 40-0A adapters is required for screw fixing.

3RA61 20-1CB32

3RA61 20-2EB32

Standard induction motor 4-pole at 400 V AC ¹⁾	Setting range for solid-state overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Standard output <i>P</i>								
kW	A							kg
3RA61 direct-on-line starters								
0.09	0.1 ... 0.4	C	3RA61 20-□A□3□		1	1 unit	121	1.355
0.37	0.32 ... 1.25	A	3RA61 20-□B□3□		1	1 unit	121	1.355
1.5	1 ... 4	A	3RA61 20-□C□3□		1	1 unit	121	1.355
5.5	3 ... 12	A	3RA61 20-□D□3□		1	1 unit	121	1.379
15	8 ... 32	A	3RA61 20-□E□3□		1	1 unit	121	1.396

Additional price/Price reduction

Order No. supplement for connection type

- Without terminals
for use with the infeed system for 3RA6 and the AS-i add-on module
- With screw terminals
- With spring-type terminals

0

0

Δ

1

None

2

x

Order No. supplement for rated control supply voltage

- 24 V AC/DC (for combining with AS-i add-on module)
- 42 ... 70 V AC/DC
- 110 ... 240 V AC/DC

B

None

E

None

P

None

Order No. supplement for complement variant

- For standard mounting rail or screw mounting:
Basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals
- For use with the infeed system for 3RA6
without main circuit terminals (with control circuit terminals)
- For standard mounting rail or screw mounting when using
the AS-i add-on module
without control circuit terminals (with main circuit terminals)

2

None

3

Δ For screw terminals
Δ For spring-type terminals

4

Δ For screw terminals
Δ For spring-type terminals

Δ = Price reduction

x = Additional price

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Operation in the Control Cabinet

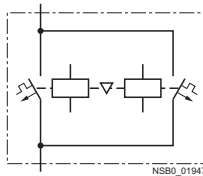
SIRIUS 3RA6 Compact Feeders

**3RA61, 3RA62 compact feeders
3RA62 reversing starters**

Selection and ordering data



Reversing duty



Two sets of 3RA69 40-0A adapters are required for screw fixing.

3RA62 50-1CP32

3RA62 50-2DP32

Standard induction motor 4-pole at 400 V AC ¹⁾	Setting range for solid-state overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Standard output <i>P</i>								
kW	A							kg
3RA62 reversing starters								
0.09	0.1 ... 0.4	C	3RA62 50-□A□3□		1	1 unit	121	2.341
0.37	0.32 ... 1.25	C	3RA62 50-□B□3□		1	1 unit	121	2.341
1.5	1 ... 4	A	3RA62 50-□C□3□		1	1 unit	121	2.341
5.5	3 ... 12	A	3RA62 50-□D□3□		1	1 unit	121	2.357
15	8 ... 32	C	3RA62 50-□E□3□		1	1 unit	121	2.405

Additional price/Price reduction

Order No. supplement for connection type

- Without terminals
for use with the infeed system for 3RA6 and the AS-i add-on module
- With screw terminals
- With spring-type terminals

0 0
1 1
2 2

Δ
None
x

Order No. supplement for rated control supply voltage

- 24 V AC/DC (for combining with AS-i add-on module)
- 42 ... 70 V AC/DC
- 110 ... 240 V AC/DC

B
E
P

None
None
None

Order No. supplement for complement variant

- For standard mounting rail or screw mounting:
Basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals
- For use with the infeed system for 3RA6
without main circuit terminals (with control circuit terminals)
- For standard mounting rail or screw mounting when using
the AS-i add-on module
without control circuit terminals (with main circuit terminals)

2
3
4

None
Δ For screw terminals
Δ For spring-type terminals
Δ For screw terminals
Δ For spring-type terminals

Δ = Price reduction

x = Additional price

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

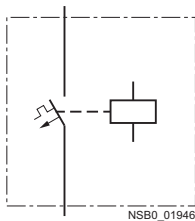
3RA64, 3RA65 compact feeders for IO-Link
3RA64 direct-on-line starters

Selection and ordering data



Direct-on-line start

A set of 3RA69 40-0A adapters is required for screw fixing.



3RA64, with 3RA6911-1A auxiliary switch block

Standard induction motor 4-pole at 400 V AC ¹⁾	Setting range for solid-state overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Standard output <i>P</i>								
kW	A							kg
3RA64 direct-on-line starters with IO-Link								
Rated control supply voltage 24 V DC								
0.09	0.1 ... 0.4	B	3RA64 00-□AB4□		1	1 unit	121	1.300
0.37	0.32 ... 1.25	B	3RA64 00-□BB4□		1	1 unit	121	1.300
1.5	1 ... 4	B	3RA64 00-□CB4□		1	1 unit	121	1.300
5.5	3 ... 12	B	3RA64 00-□DB4□		1	1 unit	121	1.300
15	8 ... 32	B	3RA64 00-□EB4□		1	1 unit	121	1.300

Additional price/Price reduction

Order No. supplement for connection type

- With screw terminals
- With spring-type terminals

1
2

None
x

Order No. supplement for complement variant

- For standard mounting rail or screw mounting:
Basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals
- For use with the infeed system for 3RA6 without main circuit terminals (with control circuit terminals)

2
3

None
Δ For screw terminals
Δ For spring-type terminals

Δ = Price reduction

x = Additional price

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

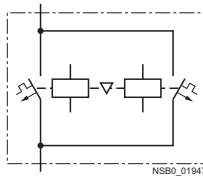
3RA64, 3RA65 compact feeders for IO-Link
3RA65 reversing starters

Selection and ordering data



3RA65, with 3RA6911-1A auxiliary switch block

Reversing duty



Two sets of 3RA69 40-0A adapters are required for screw fixing.

Standard induction motor 4-pole at 400 V AC ¹⁾	Setting range for solid-state overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Standard output <i>P</i>								
kW	A							kg
3RA65 reversing starters with IO-Link Rated control supply voltage 24 V DC								
0.09	0.1 ... 0.4	B	3RA65 00-□AB4□		1	1 unit	121	2.300
0.37	0.32 ... 1.25	B	3RA65 00-□BB4□		1	1 unit	121	2.300
1.5	1 ... 4	B	3RA65 00-□CB4□		1	1 unit	121	2.300
5.5	3 ... 12	B	3RA65 00-□DB4□		1	1 unit	121	2.300
15	8 ... 32	B	3RA65 00-□EB4□		1	1 unit	121	2.300

Additional price/Price reduction

Order No. supplement for connection type

- With screw terminals
- With spring-type terminals

1
2

None
x

Order No. supplement for complement variant

- For standard mounting rail or screw mounting:
Basic version including 1 pair of main circuit terminals and 1 pair of control circuit terminals
- For use with the infeed system for 3RA6
without main circuit terminals (with control circuit terminals)

2

None

3

Δ For screw terminals
Δ For spring-type terminals

Δ = Price reduction

x = Additional price

¹⁾ Selection depends on the concrete startup and rated data of the protected motor.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Accessories

Overview

Accessories for SIRIUS 3RA6 compact feeders

The following accessories are available specially for the 3RA6 compact feeders:

- AS-i add-on module: [see AS-Interface Add-On Modules for 3RA6](#)
- External auxiliary switch blocks: Snap-on auxiliary switch as versions 2 NO, 2 NC and 1 NO + 1 NC with screw or spring-type connections; the contacts of the auxiliary switch block open and close jointly with the main contacts of the compact feeder. The NC contacts are designed as mirror contacts.
- Control kit: aid for manually closing the main contacts in order to check the wiring and motor direction under conditions of short-circuit protection
- Adapter for screw fixing the compact feeder, including push-in lugs
- Main conductor terminal: available with screw and spring-type connection

Accessories for parallel wiring

The terminal block for "Self-Protected Combination Motor Controller", type E is available for complying with the clearance and creepage distances demanded according to UL 508.

Accessories for infeed using three-phase busbar systems

The three-phase busbars can be used as an easy, time-saving and clearly arranged means of feeding SIRIUS 3RA6 compact feeders with screw connection. Motor starter protector sizes S00 and S0 can also be integrated.

The busbars are suitable for between 2 and 5 devices. However, any kind of extension up to a maximum summation current of 63 A is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last circuit breaker.

A connecting piece is required for the combination with circuit breaker size S00. The motor starter protectors are supplied by appropriate feeder terminals. Special feeder terminals are required for constructing "Type E Starters" according to UL/CSA.

The three-phase busbar systems are finger-safe but empty connection tags must be fitted with covers. They are designed for any short-circuit stress which can occur at the output side of connected SIRIUS 3RA6 compact feeders or motor starter protectors.

Busbar adapters for 60 mm systems

The compact feeders are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs. These feeders are suitable for copper busbars with a width from 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The 8US busbar system can be loaded with a maximum summation current of 630 A.

The "reversing starter" version requires a device holder along side the busbar adapter for lateral mounting.

The compact feeders are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

[For more accessories such as incoming and outgoing terminals, flat copper profiles etc., see Chapter 17, "8US Busbar Systems --> 60 mm Busbar System".](#)

Accessories for operation with closed control cabinet doors

Door-coupling rotary operating mechanisms for standard and emergency-stop applications are available for operating the compact feeder with closed control cabinet doors.

Accessories for SIRIUS 3RA6 compact feeders in IO-Link version

The following accessories are available specially for the 3RA64, 3RA65 compact feeders:









- Additional connection cables for side-by-side mounting of up to 4 compact feeders
- Operator panel for local control and diagnostics of up to 4 compact feeders coupled to each other

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Accessories

Selection and ordering data

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories specially for 3RA6 compact feeders							
		Control kits For mechanical actuation of the compact feeder	A	3RA69 50-0A	1	1 unit	121 0.004
3RA69 50-0A		Adapters for screw fixing the compact feeder (set including push-in lugs) Direct-on-line starters require 1 set, reversing starters 2 sets.	A	3RA69 40-0A	1	1 unit	121 0.152
		3RA69 40-0A					
Screw terminals 							
Auxiliary switch blocks for compact feeders							
		• 2 NO	A	3RA69 11-1A	1	1 unit	121 0.018
3RA6911-1A		• 2 NC	A	3RA69 12-1A	1	1 unit	121 0.018
		• 1 NO + 1 NC	A	3RA69 13-1A	1	1 unit	121 0.018
		Main circuit terminals (incoming and outgoing side)	A	3RA69 20-1A	1	1 unit	121 0.038
3RA6920-1A							
Control circuit terminals							
		• For 3RA61	A	3RA69 20-1B	1	1 unit	121 0.042
		• For 3RA62	A	3RA69 20-1C	1	1 unit	121 0.042
		• For 3RA64	A	3RA69 20-1D	1	1 unit	121 0.021
		• For 3RA65	A	3RA69 20-1E	1	1 unit	121 0.042
Spring-type connection 							
Auxiliary switch blocks for compact feeders							
		• 2 NO	A	3RA69 11-2A	1	1 unit	121 0.018
3RA6911-2A		• 2 NC	A	3RA69 12-2A	1	1 unit	121 0.018
		• 1 NO + 1 NC	A	3RA69 13-2A	1	1 unit	121 0.018
		Main circuit terminals (incoming and outgoing side)	A	3RA69 20-2A	1	1 unit	121 0.049
3RA6920-2A							
Control circuit terminals							
		• For 3RA61	A	3RA69 20-2B	1	1 unit	121 0.036
		• For 3RA62	A	3RA69 20-2C	1	1 unit	121 0.036
		• For 3RA64	A	3RA69 20-2D	1	1 unit	121 0.018
		• For 3RA65	A	3RA69 20-2E	1	1 unit	121 0.036

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Accessories

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
------	----	-----------	--------------	-------------------	-----	----	--------------------------

Accessories especially for 3RA64, 3RA65 compact feeders with IO-Link



3RA69 31-0A

Additional connection cable (flat) for side-by-side mounting of up to 4 compact feeders
(5 units each per pack)

- 14-pole, 8 mm¹⁾
- 10-pole, 8 mm²⁾
- 10-pole, 200 mm²⁾
- 14-pole, 200 mm

A	3RA69 31-0A	1	5 units	121	0.007
A	3RA69 32-0A	1	5 units	121	0.007
A	3RA69 33-0B	1	5 units	121	0.012
A	3RA69 33-0C	1	5 units	121	0.014



3RA69 35-0A

Operator panel for compact feeder
(incl. enabling module and blanking cover)

A	3RA69 35-0A	1	1 unit	121	0.052
---	--------------------	---	--------	-----	-------

Enabling module

A	3RA69 36-0A	1	1 unit	121	0.002
---	--------------------	---	--------	-----	-------

Blanking covers (5 units each per pack)

A	3RA69 36-0B	1	5 units	121	0.001
---	--------------------	---	---------	-----	-------

Connection cable (round) for connecting the operator panel 10-pole, 2000 mm

A	3RA69 33-0A	1	1 unit	121	0.114
---	--------------------	---	--------	-----	-------

¹⁾ Is included in the scope of supply of the SIRIUS 3RA6 compact feeder in IO-Link version.

²⁾ 10-pole connection cables are required for EMERGENCY-STOP group concepts.

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
------	----	-----------	--------------	-------------------	-----	----	--------------------------

Terminals for "Self-Protected Combination Motor Controllers (Type E)" acc. to UL 508 for infeed through parallel wiring with compact feeders



3RV19 28-1H

Note: UL 508 demands 1-inch clearance and 2-inch creepage distance at line side for "Combination Motor Controller Type E". Terminal blocks are not required for use according to CSA. With size S0, these terminal blocks cannot be used in combination with 3RV19 .5 three-phase busbars.

Terminal blocks type E

▶	3RV19 28-1H	1	1 unit	101	0.083
---	--------------------	---	--------	-----	-------

For extended clearance and creepage distances (1 and 2 inch)

Number of compact feeders and motor starter protectors that can be connected Without lateral accessories	Modular spacing mm	Rated current I_n at 690 V A	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---	-----------------------	--------------------------------------	--------------------------------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Three-phase busbars for infeed with 3RA6



3RV19 15-1AB



3RV19 15-1BB



3RV19 15-1CB



3RV19 15-1DB

For feeding several compact feeders and/or motor starter protectors with screw terminals, mounted side by side on standard mounting rails, insulated, with touch protection.

2	45	63	S0 ¹⁾	▶	3RV19 15-1AB	1	1 unit	101	0.044
3	45	63	S0 ¹⁾	▶	3RV19 15-1BB	1	1 unit	101	0.071
4	45	63	S0 ¹⁾	▶	3RV19 15-1CB	1	1 unit	101	0.099
5	45	63	S0 ¹⁾	▶	3RV19 15-1DB	1	1 unit	101	0.124

¹⁾ Not suitable for 3RV11 motor starter protectors with overload relay function. Common clamping of S00 and S0 motor starter protectors is not possible, due to the different modular spacings and terminal heights. The 3RV19 15-5DB connecting piece is available for connecting the compact feeders to circuit breakers size S00.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Accessories

Version	Modular spacing	For motor starter protectors Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	-----------------	-----------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

mm

kg

Connecting piece for three-phase busbars



3RV19 15-5DB

For connecting compact feeders (left) and motor starter protectors size S00 (right)



3RV19 15-5DB

1

1 unit

101

0.042

Covers for connection tags of the three-phase busbars



3RV19 15-6AB

Touch protection for empty positions



3RV19 15-6AB

1

10 units

101

0.003

Conductor cross-section			For compact feeders and circuit breakers Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded								

mm²mm²

AWG

kg

Three-phase feeder terminals for three-phase busbars



3RV19 25-5AB

Connection from top

2.5 ... 25

4 ... 16

12-4

S0



3RV19 25-5AB

1

1 unit

101

0.041

Connection from below¹⁾

2.5 ... 25

4 ... 16

12-4

S00, S0



3RV19 15-5B

1

1 unit

101

0.110



3RV19 15-5B

Three-phase feeder terminals for constructing "Type E Starters" according to UL 508 for three-phase busbars

Connection from top

2.5 ... 25

4 ... 16

10-4

S0



3RV19 25-5EB

1

1 unit

101

0.055

¹⁾ This terminal is connected in place of a switch, please take the space requirement into account.

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

Busbar adapters for 60 mm systems



8US12 11-1NS10

For flat copper profiles according to DIN 46433
Width: 12 ... 30 mm
Thickness: 4 ... 5 mm or 10 mm



8US12 11-1NS10

1

1 unit

143

0.337

Device holders for lateral mounting along side the busbar adapter for 60 mm systems



8US12 50-1AA10

Required in addition to the busbar adapter for mounting a reversing starter



8US12 50-1AA10

1

1 unit

143

0.239

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Accessories

Type	Color of handle	Version of extension shaft mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
------	-----------------	----------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------------

Door-coupling rotary operating mechanisms for operating the compact feeder with closed control cabinet doors



3RV19 26-0B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and a 130/330 mm long extension shaft (5 mm x 5 mm). The door-coupling rotary operating mechanisms are designed to degree of protection IP65. The door interlocking prevents accidental opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.

Door-coupling rotary operating mechanisms	Black	130	▶	3RV19 26-0B		1	1 unit	101	0.111
EMERGENCY-STOP door-coupling rotary operating mechanisms	Red/yellow	130	▶	3RV19 26-0C		1	1 unit	101	0.110

Version	Size/Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	------------	----	-----------	--------------	-------------------	-----	----	-----------------------------

Tools for spring-type connections



8WA2 803

Screwdrivers

3.5 mm x 0.5 mm, suitable for a max. conductor cross-section of 2.5 mm²

Length approx. 175 mm; green

Spring-type connection



		C		8WA2 803		1	1 unit	041	0.024
--	--	---	--	-----------------	--	---	--------	-----	-------

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
------	----	-----------	--------------	-------------------	-----	----	-----------------------------

Documentation

System manual

- German: SIRIUS Kompaktabzweig und Zubehör
- English: SIRIUS Compact Starter and Accessories

X	3RA69 91-0A	1	1 unit	121	0.460
X	3RA69 92-0A	1	1 unit	121	0.460

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Add-on modules for AS-Interface

Overview



The following add-on modules are available for communication of the 3RA6 compact feeder with the control system using AS-Interface:

- AS-i add-on module
- AS-i add-on module with two local inputs
- AS-i add-on module with two free external inputs
- AS-i add-on module with one free external input and one free external output
- AS-i add-on module with two free external outputs

The AS-i add-on modules can be combined only in connection with compact feeders with a rated control supply voltage of 24 V AC/DC.

- Addressing unit for addressing the AS-i add-on module

Selection and ordering data

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-i add-on modules							
 <p>3RA69 70-3A</p>		AS-i add-on module	A	3RA69 70-3A	1	1 unit	121 0.045
		For communication of the compact feeder with the control system using AS-Interface					
		AS-i add-on module with two local inputs	A	3RA69 70-3B	1	1 unit	121 0.045
		For safe disconnection through local safety relays, e. g. cable-operated switches					
		AS-i add-on module with two free external inputs	A	3RA69 70-3C	1	1 unit	121 0.045
		Replaces the digital standard inputs "Motor On" and "Group warning"					
	AS-i add-on module with one free external input and one free external output	A	3RA69 70-3D	1	1 unit	121 0.045	
	Replaces the digital standard input "Group warning"						
	AS-i add-on module with two free external outputs	A	3RA69 70-3E	1	1 unit	121 0.045	
	Only for direct-on-line starters						
	Replaces the digital standard output "Motor left"						
 <p>3RK19 04-2AB01</p>		Addressing units for AS-i add-on modules	▶	3RK19 04-2AB01	1	1 unit	121 0.540
		<ul style="list-style-type: none"> • For active AS-Interface modules, intelligent sensors and actuators • Acc. to AS-Interface Version 2.1 • Including expanded addressing mode • Scope of supply <ul style="list-style-type: none"> - 1 addressing unit - 1 operating manual (German, English, French, Spanish, Italian) - 1 addressing cable (1.5 m, with jack plug) 					

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Infeed systems for 3RA6

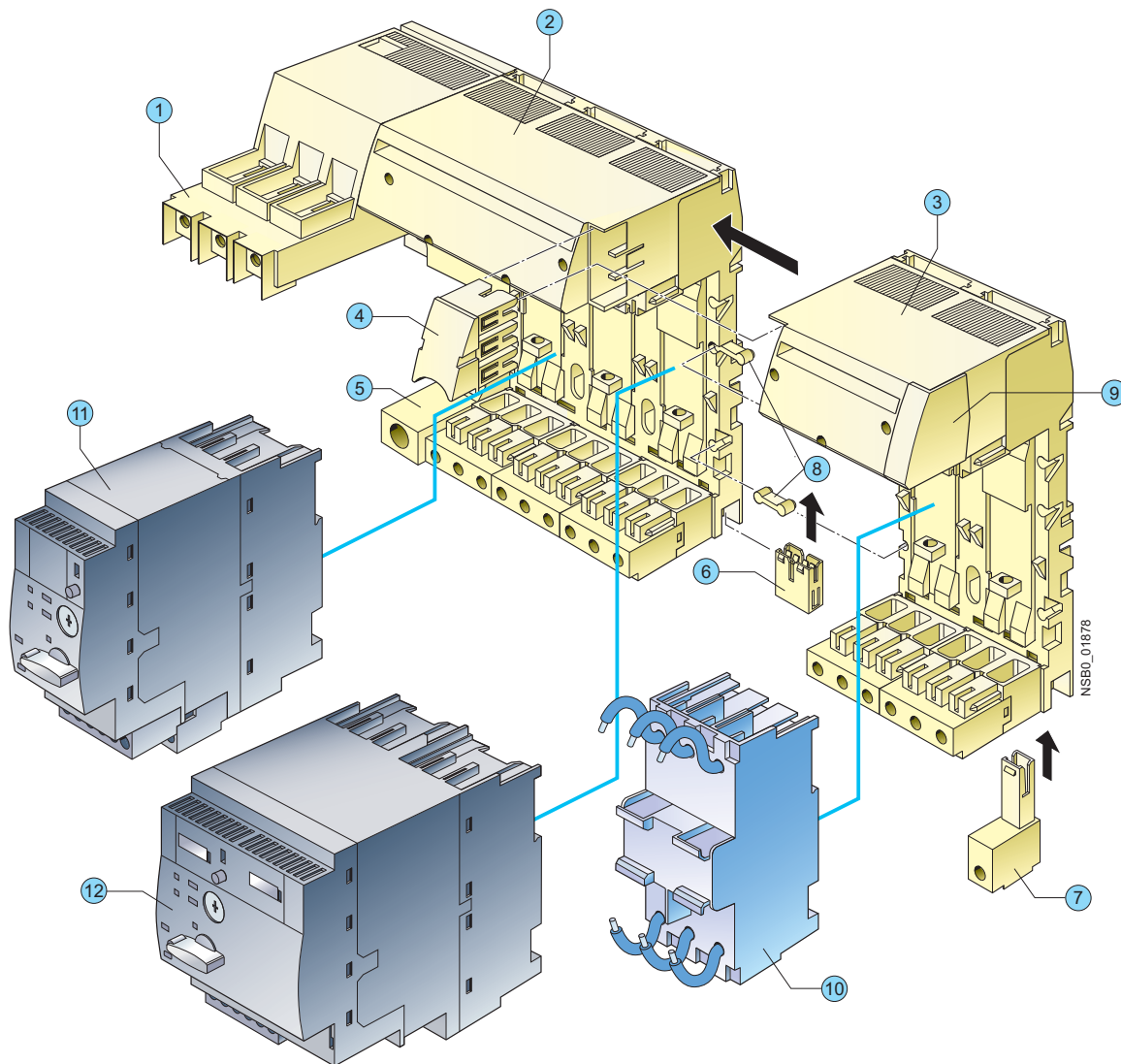
Overview

The infeed system for 3RA6 compact feeders enables far less wiring in the main circuit and, thanks to the easy exchangeability of the compact feeders, reduces the usual downtimes for maintenance work during the plant's operating phase.

The infeed system provides the possibility of completely rewiring the main circuit without a compact feeder needing to be connected at the same time. As the result of the removable terminals in the main circuit, compact feeders can be integrated in an in-feed system in easy manner (without the use of tools).

In addition, the integrated PE bar means it is optionally possible to connect the motor cable directly to the infeed system without additional intermediate terminals. The infeed system for 3RA6 compact feeders is designed for summation currents up to 100 A with a maximum conductor cross-section of up to 70 mm² on the feeder terminal block.

The infeed system can be mounted on a standard mounting rail or flat surfaces.



- ① Feeder terminal
- ② Three-socket expansion modules
- ③ Two-socket expansion modules
- ④ Expansion plug
- ⑤ PE infeeds
- ⑥ PE expansion plug

- ⑦ PE pick-off
- ⑧ Connecting wedges
- ⑨ End covers
- ⑩ 45 mm adapter for SIRIUS motor starter protector size S0
- ⑪ 3RA61 direct-on-line starter
- ⑫ 3RA62 reversing starter

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Infeed systems for 3RA6

① Infeed

The three-phase infeed is available with screw connection (25/35 mm² up to 63 A or 50/70 mm² up to 100 A) and spring-type connection (25/35 mm² up to 63 A).

The infeed with spring-type terminal can be fitted on the left as well on as the right to an expansion module.

The infeed with screw terminal is supplied only with a 3-socket expansion module and permanently fitted on the left side.

The infeeds with screw connection enable connection of the main conductors (L1, L2, L3) either from above or from below.

The infeed with screw connection is supplied complete with 1 end cover, the infeed with spring-type connection complete with 2 end covers.

② Three-socket expansion modules

The expansion module with 3 sockets for compact feeders is available with screw connection and with spring-type connection.

Expansion modules enable the infeed system to be expanded and can be fitted to each other in any number.

Two expansion modules are held together with the help of 2 connecting wedges and 1 expansion plug. These assembly parts are included in the scope of supply of the respective expansion module.

When the infeed system for 3RA6 is used, the compact feeders (plug-in modules) are easily mounted and removed even when live.

Optional possibilities:

- PE connection on motor outgoing side
- Outfeed for external auxiliary devices
- Connection to 3RV19 infeed system
- Integration of SIRIUS motor starter protectors size S00 and S0 (using 3RA68 90-0BA adapter)

③ Two-socket expansion modules

If only 2 instead of 3 additional sockets are required, then the 2-socket expansion module is the right choice. It has the same functionality as the 3-socket expansion module.

④ Expansion plug

Two expansion modules can be connected together using the expansion plug. Flexible expansion of the infeed system is thus possible.

⑤ PE infeeds

This module enables a PE cable to be connected.

The PE infeed can be ordered with screw connection and spring-type connection (35 mm²) and can be fitted on the right or left to the expansion block.

⑥ PE expansion plug

The PE expansion plug is inserted from below and enables two PE bars to be connected.

⑦ PE pick-off

The PE pick-off is available with screw connection and spring-type connection (6/10 mm²). It is snapped into the infeed system from below.

⑧ Connecting wedges

Two connecting wedges are used to hold together 2 expansion modules.

⑨ End covers

On the last expansion module of a row, the socket provided for the expansion plug can be covered by inserting the end cover.

⑩ 45 mm adapters for SIRIUS motor starter protectors

SIRIUS motor starter protectors size S0 with screw connection can be fitted to the adapter, enabling them to be plugged into the infeed system.

Terminal blocks

Using the terminal block the 3 phases can be fed out of the system; this means that single-phase, two-phase and three-phase components can also be integrated in the system.

After the end cover is pulled out, the terminal block can be plugged onto an expansion module.

Expansion plug for SIRIUS 3RV19 infeed systems

After the end cover is pulled out, the expansion plug for the SIRIUS 3RV19 infeed system can be plugged onto an expansion module. It connects the infeed system for 3RA6 with the SIRIUS 3RV19 infeed system.

Maximum rated operational current

The following maximum rated operational currents apply for the components of the infeed system for 3RA6:

Component	Maximum rated operational current
	A
Infeed with screw connection 50/70 mm ²	100
Infeed with screw connection 25/35 mm ²	63
Infeed with spring-type connection 25/35 mm ²	63
Expansion plug	63

In a row of several expansion modules, the maximum rated operational current from the 2nd expansion module to the end of the row is 63 A.

Proposal for upstream short-circuit protection devices

The following short-circuit data apply for the components of the infeed system for 3RA6:

Conductor cross-section	Inscriptions	Proposal for upstream short-circuit protection device
mm ²		
Short-circuit protection for infeed block (25 mm²/35 mm²) with screw connection		
2.5 ... 35	$I_{d,max} = 19 \text{ kA}$, $I^2t = 440 \text{ kA}^2\text{s}$	3RV10 41-4JA10
Short-circuit protection for infeed block (50 mm²/70 mm²) with screw connection		
2.5 ... 70	$I_{d,max} = \text{approx. } 22 \text{ kA}$	3RV10 41-4MA10
Short-circuit protection for infeed block with spring-type connection		
4	$I_{d,max} = 9.5 \text{ kA}$, $I^2t = 85 \text{ kA}^2\text{s}$	3RV10 21-4DA10
6	$I_{d,max} = 12.5 \text{ kA}$, $I^2t = 140 \text{ kA}^2\text{s}$	3RV10 31-4EA10
10	$I_{d,max} = 15 \text{ kA}$, $I^2t = 180 \text{ kA}^2\text{s}$	3RV10 31-4HA10
16 / 25	$I_{d,max} = 19 \text{ kA}$, $I^2t = 440 \text{ kA}^2\text{s}$	3RV10 41-4JA10
Short-circuit protection for terminal block		
1.5	$I_{d,max} = 7.5 \text{ kA}$	5SY...
2.5	$I_{d,max} = 9.5 \text{ kA}$	1)
4	$I_{d,max} = 9.5 \text{ kA}$	
6	$I_{d,max} = 12.5 \text{ kA}$	

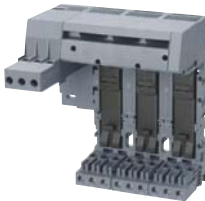
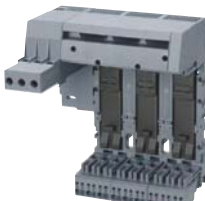
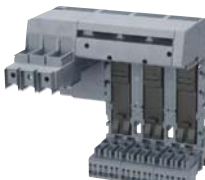

1) To prevent the possibility of short-circuits, the cables on the terminal block must be installed so that they are short-circuit proof according to EN 60439-1 Section 7.5.5.1.2.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Infeed systems for 3RA6

Selection and ordering data

Type	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Three-phase infeeds and expansion modules						
 <p>3RA68 12-8AB</p>	<p>Infeed with screw connection 25/35 mm² on left with permanently fitted 3-socket expansion module with screw connection on outgoing side and integrated PE bar Expansion module with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter</p>	A	3RA68 12-8AB	1	1 unit	121 0.957
 <p>3RA68 12-8AC</p>	<p>Infeed with screw connection 25/35 mm² on left with permanently fitted 3-socket expansion module with spring-type connection on outgoing side and integrated PE bar Expansion module with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter</p>	A	3RA68 12-8AC	1	1 unit	121 0.990
 <p>3RA68 13-8AB</p>	<p>Infeed with screw connection 50/70 mm² on left with permanently fitted 3-socket expansion module with screw connection on outgoing side and integrated PE bar Expansion module with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter suitable for UL duty according to UL 508 Type E</p>	A	3RA68 13-8AB	1	1 unit	121 1.146
 <p>3RA68 13-8AC</p>	<p>Infeed with screw connection 50/70 mm² on left with permanently fitted 3-socket expansion module with spring-type connection on outgoing side and integrated PE bar Expansion module with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter suitable for UL duty according to UL 508 Type E</p>	A	3RA68 13-8AC	1	1 unit	121 1.179
 <p>3RA68 30-5AC</p>	<p>Infeed with spring-type connection 25/35 mm² on left or on right up to 63 A</p>	A	3RA68 30-5AC	1	1 unit	121 0.283

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Infeed systems for 3RA6

Expansion modules

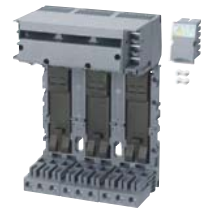
Type	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
------	-----------	--------------	-------------------	-----	----	--------------------------



3RA68 22-0AB

2-socket expansion modules with spring-loaded connection and integrated PE bar with 2 sockets for 2 direct-on-line starters or 1 reversing starter
Expansion plug and 2 connecting wedges are included in the scope of supply.

Screw terminals 						
A	<table border="1"> <tr> <td>3RA68 22-0AB</td> <td>1</td> <td>1 unit</td> <td>121</td> <td>0.505</td> </tr> </table>	3RA68 22-0AB	1	1 unit	121	0.505
3RA68 22-0AB	1	1 unit	121	0.505		



3RA68 23-0AB


3-socket expansion modules with screw connection and integrated PE bar with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter
Expansion plug and 2 connecting wedges are included in the scope of supply.

A	<table border="1"> <tr> <td>3RA68 23-0AB</td> <td>1</td> <td>1 unit</td> <td>121</td> <td>0.717</td> </tr> </table>	3RA68 23-0AB	1	1 unit	121	0.717
3RA68 23-0AB	1	1 unit	121	0.717		



3RA68 22-0AC

2-socket expansion modules with spring-type connection and integrated PE bar with 2 sockets for 2 direct-on-line starters or 1 reversing starter
Expansion plug and 2 connecting wedges are included in the scope of supply.

Spring-type connection 						
A	<table border="1"> <tr> <td>3RA68 22-0AC</td> <td>1</td> <td>1 unit</td> <td>121</td> <td>0.527</td> </tr> </table>	3RA68 22-0AC	1	1 unit	121	0.527
3RA68 22-0AC	1	1 unit	121	0.527		



3RA68 23-0AC

3-socket expansion modules with spring-type connection and integrated PE bar with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter
Expansion plug and 2 connecting wedges are included in the scope of supply.







A	<table border="1"> <tr> <td>3RA68 23-0AC</td> <td>1</td> <td>1 unit</td> <td>121</td> <td>0.750</td> </tr> </table>	3RA68 23-0AC	1	1 unit	121	0.750
3RA68 23-0AC	1	1 unit	121	0.750		

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders





Infeed systems for 3RA6

Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories for infeed systems for 3RA6							
		Screw terminals 					
PE infeeds 25/35 mm² with screw connection	A	3RA68 60-6AB		1	1 unit	121	0.060
3RA68 60-6AB							
		Spring-type connection 					
PE infeeds 25/35 mm² with spring-type connection	A	3RA68 60-5AC		1	1 unit	121	0.070
3RA68 60-5AC							
		Screw terminals 					
PE pick-offs 6/10 mm² with screw connection	A	3RA68 70-4AB		1	1 unit	121	0.019
3RA68 70-4AB							
		Spring-type connection 					
PE pick-offs 6/10 mm² with spring-type connection	A	3RA68 70-3AC		1	1 unit	121	0.017
3RA68 70-3AC							
PE expansion plugs	A	3RA68 90-0EA		1	1 unit	121	0.008
							
3RA68 90-0EA							
Expansion plugs between 2 expansion modules	A	3RA68 90-1AB		1	1 unit	121	0.029
		Is included in the scope of supply of the expansion modules.					
3RA68 90-1AB							
Expansion plugs for SIRIUS 3RV19 infeed system	A	3RA68 90-1AA		1	1 unit	121	0.079
		Connects infeed system for 3RA6 to 3RV19 infeed system					
3RA68 90-1AA							

For Operation in the Control Cabinet

SIRIUS 3RA6 Compact Feeders

Infeed systems for 3RA6



Type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 45 mm adapters for SIRIUS motor starter protectors Size S0 with screw connection	A	Screw terminals 					
		3RA68 90-0BA		1	1 unit	121	0.152
 Terminal blocks With spring-type connection for integration of single-phase, two-phase and three-phase external components	A	Spring-type connection 					
		3RV19 17-5D		1	1 unit	101	0.050

3RA68 90-0BA

3RV19 17-5D

Version	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	------	----	-----------	--------------	-------------------	-----	----	--------------------------

Tools for spring-type connections

 Screwdrivers 3.5 mm x 0.5 mm, suitable for a max. conductor cross-section of 2.5 mm ²	C	Spring-type connection 						
		8WA2 803		1	1 unit	041	0.024	

8WA2 803

Length approx. 175 mm; green

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

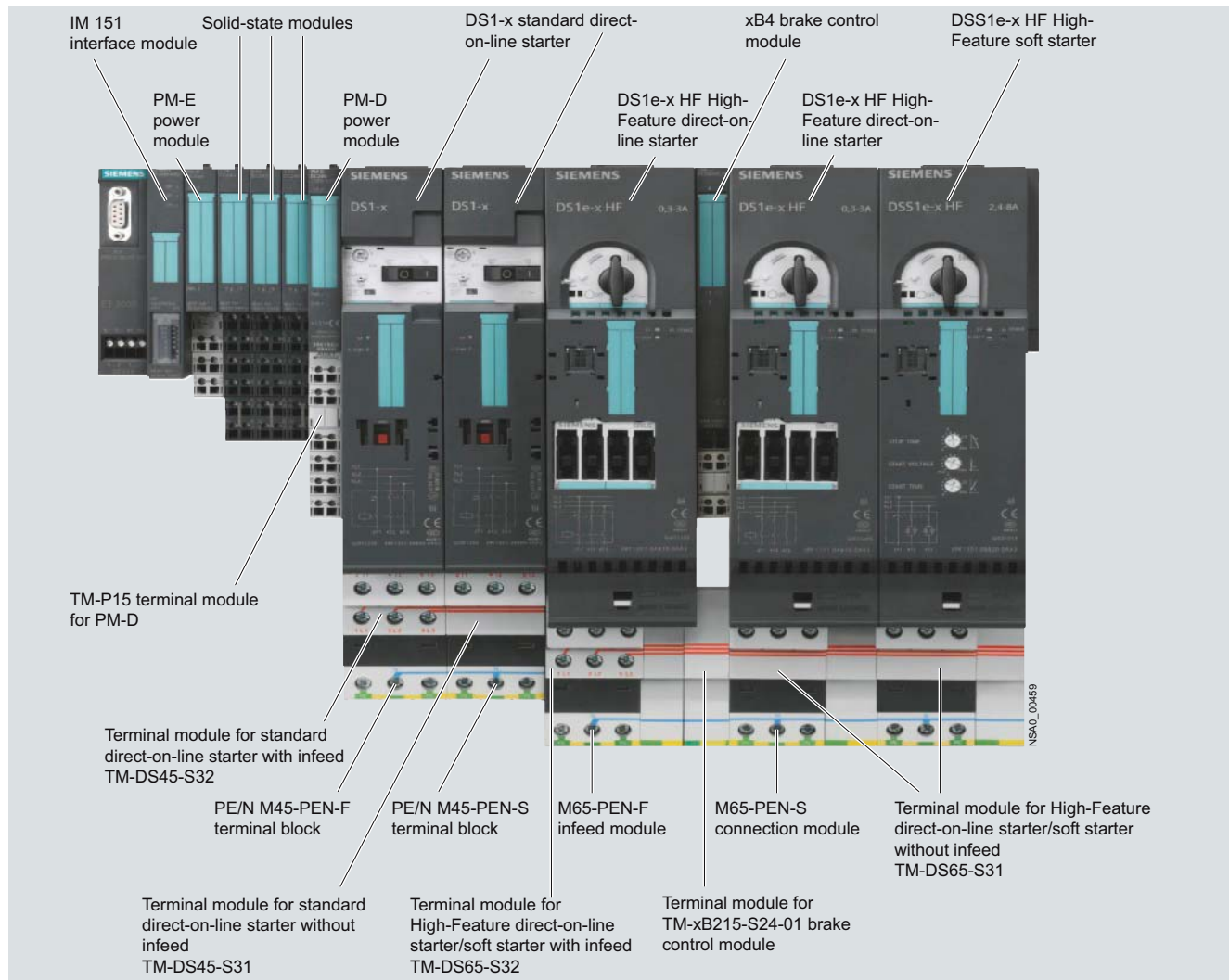
General data

Overview

ET 200S motor starters

- Completely factory-wired motor starters for switching and protecting any AC loads
- Can be used as a direct-on-line, reversing or soft starter
- Standard motor starter with motor starter protector and contactor assembly up to 5.5 kW
- High-Feature motor starter with a combination comprising a starter protector, solid-state overload protection and contactor or soft starter up to 7.5 kW
- With self-assembling 40/50 A power bus, i. e. the load voltage is only supplied once for a group of motor starters
- Hot swapping is permissible

- Inputs and outputs for activating and signaling the statistics have been integrated
- Diagnostics capability for active monitoring of the switching and protection functions
- Can be combined with expansion modules: Brake control module for controlling electromechanical brakes in induction motors and with two optional inputs for special functions (for quick stop with the Standard motor starter and for parameterizable special functions with the High-Feature motor starter)
- For combining with safety technology for use in safety-related system components (EN 954-1).



Interplay of ET 200S motor starter components

With the ET 200S motor starters, any AC loads can be protected and switched. The communications interface makes them ideal for operation in distributed control cabinets or control enclosures.

As the motor starters are completely factory-wired, power control cabinets can be assembled far more quickly and compactly. Configuration is made easier by the fine modular structure. When using the ET 200S motor starters, the list of parts per load feeder is reduced to two main items: The passive terminal module and the motor starter. This makes the ET 200S ideal for modular machine concepts as well.

All ET 200S motor starters are set up without fuses. Contactors and soft starters are activated through the integrated outputs. If a brake control module is arranged next to a motor starter, its solid-state brake switch is operated by an output of the motor starter. This module must always be arranged next to the motor starter on the right-hand side. The inputs of the motor starters evaluate the signal states of the protective devices (short-circuit or overload), the switching states of contactor(s) or soft starters, and system faults.

The motor starter protector signaling is freely programmable with regard to group fault signals (group fault at motor starter protector "Off" / group fault signal at motor starter protector "Off" only in case of "On" command from the motor starter).

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

General data

Expansions are easily possible through the subsequent adding of terminal modules. With their modular terminal design (10 mm²) the latter also do away with the distribution wiring otherwise required. Through the permanent wiring and the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary. The motor starters are therefore recommendable in particular for applications with special demands on availability.

The possibility of expanding the motor starters with brake control modules xB1-xB4 means that motors with 24 V DC brakes (xB1, xB3) as well as motors with 500 V DC brakes (xB2, xB4) can be controlled. The 24 V DC brakes have an external supply and can be vented independently of the switching state of the motor starter. By contrast the 500 V DC brakes mostly have a direct supply from the terminal board of the motor through a rectifier module and therefore cannot be vented when the motor starter is switched off. These brakes cannot be used in combination with the DSS1e-x motor starter (soft starter).

The outputs of the brake control modules can be used alternatively for other purposes, e. g. for controlling DC valves. With two locally acting inputs optionally available on the brake control modules (xB3, xB4) and another two on the control module of the High-Feature motor starter it is possible to realize autonomous special functions which work independently of the bus and the higher-level control system, e. g. as a quick stop on gate valve controls. In parallel with this, the states of these inputs are signaled to the control system.

As the result of the selective protection concept with solid-state overload evaluation and the use of SIRIUS switchgear size S0, additional advantages are realized on the High-Feature motor starters – advantages which soon make themselves positively felt particularly in manufacturing processes with high plant stoppage costs:

- Only two versions up to 7.5 kW
- All settings can be parameterized by bus
- Separate overload and short-circuit signals
- Overload can be acknowledged by remote reset
- Current unbalance monitoring
- Stall protection
- Emergency start function in the event of overload
- Current value transmission by bus
- Current limit monitoring
- Class 10 or 20 can be parameterized
- Type of coordination "2" (still functional after short-circuit with magnitude of 50 kA)
- Very high contact endurance

Power is supplied through the terminal modules for motor starters. While the auxiliary voltages must be fed in once through the PM-D or PM-DFx power module, which is to be plugged in on the left side of the first motor starter, the load voltage must be fed in at the first TM-xxxxS32 terminal module (on the left) of a motor starter. The other TM-xxxxS31 terminal modules are automatically supplied as well through the integrated power bus when they are mounted side by side.

If the power bus is utilized to its full capacity of 40 A (Standard motor starters) or 50 A (High-Feature motor starters), a new supply is fed in through an additional TM-xxxxS32 terminal module. This also applies when transferring from a Standard motor starter to a High-Feature motor starter and vice versa. In this case, however, no PM-D power module must be placed in between.

Terminal modules for motor starters

- Mechanical modules in which the motor starter and expansion modules are inserted
- For constructing the permanent wiring and self-assembling voltage bus
- For connecting the motor connection cables

- Positive-locking connection to ensure enhanced vibration resistance

Terminal modules are purely mechanical components for accommodating the ET 200S peripherals. The self-assembling voltage buses integrated in the terminal modules reduce wiring outlay to the single infeed. All modules following on the right are automatically supplied upon plugging the terminal modules together. The robust design and keyed connection technology enables use in harsh industrial conditions.

Terminal modules for TM-DS and TM-RS motor starters

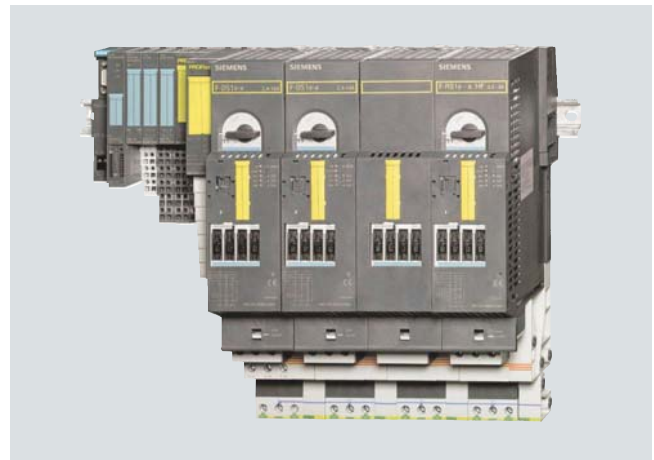
The TM-DS and TM-RS terminal modules are available in various versions for the Standard motor starters and the High-Feature motor starters. The terminal modules with the suffix "-S32" have connection terminals for feeding into the integrated 40 A/50 A power bus and connection terminals for the motor connection cable. They are mounted at the beginning (left) of a power bus segment.

The terminal modules with the suffix "-S31" have only connection terminals for the motor connection cable. These terminal modules follow on the right after a "-S32" terminal module. To configure a new load group, another "-S32" terminal module is plugged in. All connection terminals of the terminal modules for motor starters are equipped with strong 10 mm² terminals. The "-S32" terminal modules are supplied with three caps for closing the power bus contacts on the final terminal module of a segment.

Terminal module for power module

- Connection by means of screw terminals
- Light colored enclosure for visual distinction
- Always before the first TM-DS/TM-RS

ET 200S Safety motor starters Solutions local/PROFIsafe



The ET 200S Safety motor starter Solutions are preferred in all production and process automation fields in which the enhancement of plant availability and flexibility plays a key role.

- **Safety motor starters Solutions local** are preferred from the safety technology point of view for locally restricted safety applications. These motor starters are not dependent on a safe control system.
- **Safety motor starters Solutions PROFIsafe** are often found by contrast in safety applications of the more complex type that are interlinked. In this case a safe control system is used with the bus systems PROFINET or PROFIBUS with the PROFIsafe profile.

The ET 200S Safety motor starters Solutions comprise:

- Safety modules
- Standard motor starters
- High-Feature motor starters
- Failsafe motor starters

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

General data

With the ET 200S Safety motor starters Solutions there is no complicated and hence cost-intensive configuring and wiring outlay compared to the conventional safety technology. The ET 200S Safety motor starter Solutions are designed for Category 4 according to EN 954-1 or SIL 3 IEC 61508.

They enable the use of safety-oriented direct-on-line starters or reversing starters in the SIMATIC ET 200S distributed peripherals system on PROFINET or PROFIBUS. The fine modular architecture of the system permits optimum imaging of machine or plant applications.

Within an ET 200S station the Safety motor starter Solutions can also be combined with Standard motor starters or High-Feature motor starters without safety functions or the SIMATIC ET 200S FC frequency converter up to max. 4 kW up to Category 3 according to EN 954-1 or SIL 2 according to IEC 61508.

The "SIMATIC ET 200 Configurator" software can be found in Catalog CA 01 on CD or DVD. You can also download the "SIMATIC ET 200 Configurator" software from the Internet under:

www.siemens.com/sirius-starting

www.siemens.com/et200s-motorstarter

Note:

For safety characteristics for motor starters, see "Appendix" --> "Standards and Approvals" --> "Overview"

Motor Starter ES software

The Motor Starter ES software is used for parameterization, monitoring, diagnostics and testing of motor starters. See Chapter 12 "Planning, Configuration and Visualizing for SIRIUS".

More information

ET 200S motor starters

		Motor starters Standard DS1-x, RS1-x	Motor starters High-Feature DS1e-x, RS1e-x	Motor starters High-Feature DSS1e-x
Mechanics and environment				
Motor starters for connection to ET 200S, max.¹⁾		42	17	17
Mounting dimensions (W x H x D)				
• Direct-on-line starters	mm	45 x (265 + 45) x (120 + 27); (45: PE/N module; 27: Auxiliary switch contactor from F-Kit)	65 x (290 + 45) x (150 + 23); (45: PE/N module; 23: Control module)	
• Reversing starters	mm	90 x (265 + 45) x (120 + 27); (45: PE/N module; 27: Auxiliary switch contactor from F-Kit)	130 x (290 + 45) x (150 + 23); (45: PE/N module; 23: Control module)	
Permissible ambient temperature				
• During operation	°C	0 ... +60, from +40 with derating	0 ... +60 With horizontal mounting up to +40	
• During storage	°C	-40 ... +70	-40 ... +70	
• Permissible mounting position	°C	Vertical, horizontal With derating	Vertical, horizontal	
Vibration resistance acc. to IEC 60068, Part 2-6		g	2	
Shock resistance acc. to IEC 60068, Part 2-27		g/ms	Square 5/11	
Conductor cross-section				
• Solid	mm ²	2 x (1 ... 2.5) ² ; 2 x (2.5 ... 6) ² , acc. to IEC 60947: max. 1 x 10		
• Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ² ; 2 x (2.5 ... 6) ²		
• AWG cables, solid or stranded	AWG	2 x (14 ... 10)		
Degree of protection		IP20, finger-safe (this also applies to terminal modules on a dismantled motor starter)		
Mechanical endurance				
• Motor starter protector	Oper-	100000		
• Contactor	ating	30 million	10 million	--
• Contactor with safety functionality (F-Kit)	cycles	10 million	--	--

¹⁾ Additional limits: Process image, max. design width 2 m.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

General data

		Motor starters Standard DS1-x, RS1-x	Motor starters High-Feature DS1e-x, RS1e-x	Motor starters High-Feature DSS1e-x
Electrical specifications				
Power consumption				
• From auxiliary circuit L+/M (U_1)	mA	Approx. 20	Approx. 40	Approx. 40
• From auxiliary circuit A1/A2 (U_2)	mA	Approx. 100	Approx. 1700 (80 ms long) Approx. 350 (after 80 ms)	Approx. 30
Rated operational current for TM-D terminal modules I_e	A	40	50	50
Rated operational voltage U_e	V	400		
Approval to DIN VDE 0106 Part 101	V	Yes, up to 500	Yes, up to 500	Yes, up to 480
CSA approval and U_L	V	Yes, up to 600	Yes, up to 600	Yes, up to 480
Rated operational current I_e for motor starters				
• AC-1/2/3 at 60 °C				
- At 400 V	A	12	16	3 / 8 / 16
- At 500 V	A	9	11	--
• AC-4 at 60 °C				
- At 400 V	A	4.1	9	--
Rated short-circuit breaking capacity	kA	50 at 400 V		
Rating of induction motors at 500 V	kW	5.5	7.5	
Utilization categories		AC-1, AC-2, AC-3, AC-4		
Protective separation between main and auxiliary circuits	V	400, acc. to DIN VDE 0106, Part 101		
Positively-driven operation of contactor relay (NC)		Yes	Yes	--
Trip class		Class 10	Class 10/20, can be parameterized	0.3 ... 3 A: Class 10/10A, can be parameterized 2.4 ... 8 A: Class 10A 2.4 ... 16 A: Class 10A
Type of coordination		Up to 1.6 A: 2 Up to 12 A: 1	Up to 16 A: 2	Up to 16 A: 1
Electrical endurance				
• Motor starter protector	h	100000		
• Contactor		See manual	See manual	--
Permissible switching frequency with a starting time $t_A = 0.1$ s and a relative ON period $t_{OP} = 50$ %	1/h	< 80	See manual	
Induction protection		Already installed		
Device functions				
Stall protection		No	Yes, $8 \times I_e / 1$ s	
Motor starter protector signaling		Yes	Parameterizable: always / only in case of "On" commands	
Overload warning		No, only tripping	Yes	
Emergency start function		No	Yes	
Number of outputs		4	16	16
Number of inputs		4	16	16
Address area required per module				
• With summary	bit	4	--	--
• Without summary	byte	1	2	2
Diagnostics functions				
• Group fault "SF"		Red LED		
• Switching state "C-STAT"		Red/green/yellow LED		
• Device state "DEVICE"		--	Red/green/yellow LED	
Configurable through PROFIBUS DP		Yes		
Auxiliary switch for enabling circuit of the ET 200S safety technology already integrated (up to max. category 4 EN 954-1)		No, F-Kit required	Yes	No (max. Category 1 attainable)
Setting options for soft starters (locally on the device)				
• Starting time	s	--	--	0 ... 20
• Starting voltage	%	--	--	30 ... 100 of U_e
• Ramp-down time	s	--	--	0 ... 20
Process image		31/30	81/50 + 6l motor current	91/50 + 6l motor current
Diagnostics using PROFIBUS		Yes, see manual		

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Standard motor starters

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	----------------	-------------------	-----	----	--------------------------

Standard motor starters, with diagnostics, electromechanical, fuseless, expandable with brake control module



DS1-x

DS1-x direct-on-line starters

Motor rating of induction motor 4-pole at 400 V AC, standard output P

Setting range of the electronic release

kW	A						
< 0.06	0.14 ... 0.20	A	3RK1 301-0BB00-0AA2	1	1 unit	121	0.922
0.06	0.18 ... 0.25	A	3RK1 301-0CB00-0AA2	1	1 unit	121	0.923
0.09	0.22 ... 0.32	A	3RK1 301-0DB00-0AA2	1	1 unit	121	0.919
0.10	0.28 ... 0.40	A	3RK1 301-0EB00-0AA2	1	1 unit	121	0.925
0.12	0.35 ... 0.50	A	3RK1 301-0FB00-0AA2	1	1 unit	121	0.929
0.18	0.45 ... 0.63	A	3RK1 301-0GB00-0AA2	1	1 unit	121	0.922
0.21	0.55 ... 0.80	A	3RK1 301-0HB00-0AA2	1	1 unit	121	0.928
0.25	0.70 ... 1.00	A	3RK1 301-0JB00-0AA2	1	1 unit	121	0.923
0.37	0.90 ... 1.25	A	3RK1 301-0KB00-0AA2	1	1 unit	121	0.971
0.55	1.1 ... 1.6	A	3RK1 301-1AB00-0AA2	1	1 unit	121	0.970
0.75	1.4 ... 2.0	A	3RK1 301-1BB00-0AA2	1	1 unit	121	0.968
0.90	1.8 ... 2.5	A	3RK1 301-1CB00-0AA2	1	1 unit	121	0.972
1.1	2.2 ... 3.2	A	3RK1 301-1DB00-0AA2	1	1 unit	121	0.976
1.5	2.8 ... 4.0	A	3RK1 301-1EB00-0AA2	1	1 unit	121	0.974
1.9	3.5 ... 5.0	A	3RK1 301-1FB00-0AA2	1	1 unit	121	0.973
2.2	4.5 ... 6.3	A	3RK1 301-1GB00-0AA2	1	1 unit	121	0.989
3.0	5.5 ... 8.0	A	3RK1 301-1HB00-0AA2	1	1 unit	121	0.969
4.0	7 ... 10	A	3RK1 301-1JB00-0AA2	1	1 unit	121	0.971
5.5	9 ... 12	A	3RK1 301-1KB00-0AA2	1	1 unit	121	0.966



RS1-x

RS1-x reversing starters

kW	A						
< 0.06	0.14 ... 0.20	A	3RK1 301-0BB00-1AA2	1	1 unit	121	1.342
0.06	0.18 ... 0.25	A	3RK1 301-0CB00-1AA2	1	1 unit	121	1.360
0.09	0.22 ... 0.32	A	3RK1 301-0DB00-1AA2	1	1 unit	121	1.365
0.10	0.28 ... 0.40	A	3RK1 301-0EB00-1AA2	1	1 unit	121	1.320
0.12	0.35 ... 0.50	A	3RK1 301-0FB00-1AA2	1	1 unit	121	1.326
0.18	0.45 ... 0.63	A	3RK1 301-0GB00-1AA2	1	1 unit	121	1.318
0.21	0.55 ... 0.80	A	3RK1 301-0HB00-1AA2	1	1 unit	121	1.341
0.25	0.70 ... 1.00	A	3RK1 301-0JB00-1AA2	1	1 unit	121	1.336
0.37	0.90 ... 1.25	A	3RK1 301-0KB00-1AA2	1	1 unit	121	1.390
0.55	1.1 ... 1.6	A	3RK1 301-1AB00-1AA2	1	1 unit	121	1.390
0.75	1.4 ... 2.0	A	3RK1 301-1BB00-1AA2	1	1 unit	121	1.388
0.90	1.8 ... 2.5	A	3RK1 301-1CB00-1AA2	1	1 unit	121	1.370
1.1	2.2 ... 3.2	A	3RK1 301-1DB00-1AA2	1	1 unit	121	1.372
1.5	2.8 ... 4.0	A	3RK1 301-1EB00-1AA2	1	1 unit	121	1.384
1.9	3.5 ... 5.0	A	3RK1 301-1FB00-1AA2	1	1 unit	121	1.370
2.2	4.5 ... 6.3	A	3RK1 301-1GB00-1AA2	1	1 unit	121	1.394
3.0	5.5 ... 8.0	A	3RK1 301-1HB00-1AA2	1	1 unit	121	1.374
4.0	7 ... 10	A	3RK1 301-1JB00-1AA2	1	1 unit	121	1.370
5.5	9 ... 12	A	3RK1 301-1KB00-1AA2	1	1 unit	121	1.390

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters





Standard terminal modules

Overview

TM-DS, TM-RS

- "-S32" version with supply terminals: 2 x 3 x 10 mm² screw terminals for power bus and motor feeder
- "-S31" version without supply terminals: 1 x 3 x 10 mm² screw terminals for motor feeder
- Optionally expandable with PE/N modules (see [Accessories](#))
- Applies only to Standard motor starters: For applications with high motor currents (> 6.3 A) or high ambient temperatures (> 40 °C) it is recommended to use the DM-V15 distance module (see [Accessories](#)) between two DS1-x motor starters

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for Standard motor starters							
 3RK1 903-0AB00	A	3RK1 903-0AB00		1	1 unit	121	0.376
<ul style="list-style-type: none"> • TM-DS45-S32 for DS1-x direct-on-line starters with incoming power bus connection including three caps for terminating the power bus 							
 3RK1 903-0AB10	A	3RK1 903-0AB10		1	1 unit	121	0.374
<ul style="list-style-type: none"> • TM-DS45-S31 for DS1-x direct-on-line starters without incoming power bus connection 							
 3RK1 903-0AC00	A	3RK1 903-0AC00		1	1 unit	121	0.498
<ul style="list-style-type: none"> • TM-RS90-S32 for RS1-x reversing starters with incoming power bus connection including three caps for terminating the power bus 							
 3RK1 903-0AC10	A	3RK1 903-0AC10		1	1 unit	121	0.618
<ul style="list-style-type: none"> • TM-RS90-S31 for RS1-x reversing starters without incoming power bus connection 							

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Standard terminal modules

More information

TM-DS45 and TM-DS65/TM-FDS65 terminal module

		TM-DS45	TM-DS65/TM-FDS65
Dimensions			
• Mounting dimensions (W x H x D)	mm	45 x 264 x 100	65 x 290 x 100
• Height with PE/N terminal block	mm	306	332
• Depth with motor starter	mm	127	150
• Depth with motor starter and F-Kit (safety technology)	mm	152	--
• Depth with motor starter and 2DI control module	mm	--	173
Rated voltages, currents and frequencies for the power bus			
• Rated insulation voltage U_i	V	690	
• Rated operational voltage U_e	V	500 AC	
• Rated impulse withstand voltage U_{imp}	kV	6	
• Rated operational current I_e	A	40	50
• Rated frequency	Hz	50/60	
Conductor cross-sections			
• Solid	mm ²	2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾	
• Finely stranded with end sleeve	mm ²	1 x 10 or 2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾ acc. to IEC 60947	
• AWG cables, solid or stranded	AWG	2 x (14 ... 10)	
• With additional three-phase feeder terminal if required			
- Solid or stranded	mm ²	1 x 2.5 ... 25	
- Finely stranded with end sleeve	mm ²	1 x 2.5 ... 25	
- AWG cables, solid or stranded	AWG	1 x 12 ... 4	
Wiring			
• Required tool		Standard screwdriver size 2 and Pozidriv 2	
• Tightening torque	Nm	2.0 ... 2.5	

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

TM-RS90 and TM-RS130/TM-FRS130 terminal module

		TM-RS90	TM-RS130/TM-FRS130
Dimensions			
• Mounting dimensions (W x H x D)	mm	90 x 264 x 100	130 x 290 x 100
• Height with PE/N	mm	306	332
• Depth with motor starter	mm	127	150
• Depth with motor starter and F-Kit (safety technology)	mm	152	--
• Depth with motor starter and 2DI control module	mm	--	173
Rated voltages, currents and frequencies for the power bus			
• Rated insulation voltage U_i	V	690	
• Rated operational voltage U_e	V	500 AC	
• Rated impulse withstand voltage U_{imp}	kV	6	
• Rated operational current I_e	A	40	50
• Rated frequency	Hz	50/60	
Conductor cross-sections			
• Solid	mm ²	2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾	
• Finely stranded with end sleeve	mm ²	1 x 10 or 2 x (1 ... 2.5) ¹⁾ or 2 x (2.5 ... 6) ¹⁾ acc. to IEC 60947	
• AWG cables, solid or stranded	AWG	2 x (14 ... 10)	
• With additional three-phase feeder terminal if required			
- Solid or stranded	mm ²	1 x 2.5 ... 25	
- Finely stranded with end sleeve	mm ²	1 x 2.5 ... 25	
- AWG cables, solid or stranded	AWG	1 x 12 ... 4	
Wiring			
• Required tool		Standard screwdriver size 2 and Pozidriv 2	
• Tightening torque	Nm	2.0 ... 2.5	

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in the range specified. If identical cross-sections are used, this restriction does not apply.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

High-Feature motor starters

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
High-Feature motor starters, with diagnostics, solid-state overload protection, fuseless, expandable with brake control module							
DS1e-x direct-on-line starters with switch interface <i>Setting range of the electronic release in A</i>							
0.3 ... 3	A	3RK1 301-0AB10-0AA4		1	1 unit	121	1.340
2.4 ... 8	A	3RK1 301-0BB10-0AA4		1	1 unit	121	1.327
2.4 ... 16	A	3RK1 301-0CB10-0AA4		1	1 unit	121	1.330
RS1e-x reversing starters <i>Setting range of the electronic release in A</i>							
0.3 ... 3	A	3RK1 301-0AB10-1AA4		1	1 unit	121	1.950
2.4 ... 8	A	3RK1 301-0BB10-1AA4		1	1 unit	121	1.940
2.4 ... 16	A	3RK1 301-0CB10-1AA4		1	1 unit	121	1.943
DSS1e-x soft starters <i>Setting range of the electronic release in A</i>							
0.3 ... 3	A	3RK1 301-0AB20-0AA4		1	1 unit	121	1.168
2.4 ... 8	A	3RK1 301-0BB20-0AA4		1	1 unit	121	1.195
2.4 ... 16	A	3RK1 301-0CB20-0AA4		1	1 unit	121	1.198



DS1e-x

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters


High-Feature terminal modules

Overview

TM-DS, TM-RS

- "-S32" version with supply terminals: 2 x 3 x 10 mm² screw terminals for power bus and motor feeder
- "-S31" version without supply terminals: 1 x 3 x 10 mm² screw terminals for motor feeder
- Optionally expandable with PE/N modules (see [Accessories](#))

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for High-Feature motor starters							
 3RK1 903-0AK00	• TM-DS65-S32 for DS1e-x and DSS1e-x direct-on-line starters with incoming power bus connection including three caps for terminating the power bus	A	3RK1 903-0AK00		1	1 unit	121 0.473
	• TM-DS65-S31 for DS1e-x and DSS1e-x direct-on-line starters without incoming power bus connection	A	3RK1 903-0AK10		1	1 unit	121 0.472
	• TM-RS130-S32 for RS1e-x reversing starters with incoming power bus connection including three caps for terminating the power bus	A	3RK1 903-0AL00		1	1 unit	121 0.787
	• TM-RS130-S31 for RS1e-x reversing starters without incoming power bus connection	A	3RK1 903-0AL10		1	1 unit	121 0.847

More information

See "More Information" on "Standard Terminal Modules"

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Power Modules

Overview

- Disconnection of a complete group of motor starters is possible without any additional outlay (safety category 1 according to ISO 13849-1)
- PM-D power modules are plugged onto the TM-P15 terminal modules. (A PM-D power module must be followed by at least one motor starter or one frequency converter.)


Application

PM-D power modules are used for monitoring the two 24 V DC auxiliary voltages for the group of motor starters following on the right or for supplying power to the group of frequency converters following on the right. The voltage is fed in through TM-D terminal modules to the self-assembling potential bars.

A voltage failure is signaled through PROFIBUS diagnostics to the higher-level master. Additional LEDs inform locally about the status of the auxiliary voltages.

The separation of auxiliary voltages for signal checkback and power section actuation enables the entire group to be shut down while maintaining the diagnostics capability.

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Power Modules							
	PM-D power modules for 24 V DC with diagnostics	A	3RK1 903-0BA00	1	1 unit	121	0.071

More information

		PM-D power modules 3RK1 903-0BA00
Rated control supply voltage U_s up to 60 °C	V	20.4 ... 28
Rated operational current I_b		
• Recommended short-circuit protection	A	10
• Melting fuse	A	10
• Miniature circuit breakers	A	10, tripping characteristic B
Power consumption from the backplane bus	mA	≤ 10
Supplying		
• Motor starters		Yes
• Frequency converters		Yes
• Motor starters for safety technology		No
• Solid-state modules		No
• Ex(i) modules		No
Alarms		None
Diagnostics functions		Yes
• System fault/device fault		Red "SF" LED
• Monitoring the supply voltage for solid-state modules U_1		Green "PWR" LED
• Monitoring the supply voltage for contactors U_2		Green "CON" LED
• Diagnostics information can be read out		Yes
Conductor cross-sections		
• Flexible with end sleeve	mm ²	1.5
• Rigid	mm ²	2.5
Mounting dimensions (W x H x D)	mm	15 x 195.5 x 117.5

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters


Power module terminal modules

Overview

Terminal modules for power modules

For supplying load and sensor voltage to the self-assembling potential bars of the Standard motor starters, High-Feature motor starters and frequency converters. Power modules for voltage monitoring are plugged onto TM-P modules. TM-P modules can be used any number of times within the ET 200S. A power module must always be plugged upstream from the first motor starter/frequency converter.

Selection and ordering data

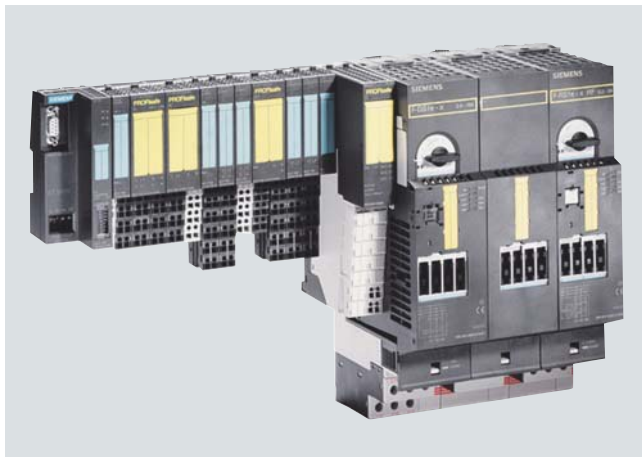
Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for power modules							
 3RK1 903-0AA00	A	3RK1 903-0AA00		1	1 unit	121	0.224
TM-P15 S27-01 terminal modules for PM-D power module							

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S Failsafe motor starters

Overview



The Failsafe motor starter has been developed on the basis of the High-Feature motor starter. It differs in that, in addition to a motor starter protector and contactor assembly, a safe solid-state evaluation circuit is installed for error detection purposes which makes the motor starter failsafe.

If the contactor to be switched fails in an EMERGENCY-STOP case, the evaluation electronics detects a fault and opens the motor starter protector in the motor starter through a shunt release in a failsafe manner. The second redundant shutdown component is therefore no longer a main contactor, as is generally the case, but the motor starter protector installed in the motor.

All functions of the High-Feature starters are already integrated.

The new failsafe motor starters are characterized by easy, space-saving assembly as well as minimal wiring outlay. Like the High-Feature starters, the Failsafe motor starters have a switching capacity of up to 7.5 kW (16 A) which is achieved with just two motor starter versions. Another important feature is the high availability due to the high short-circuit strength (type of coordination "2").

Benefits

Advantages over conventional safety technology

- Significant savings in components (less hardware)
- Less mounting and installation work
- Motor starters are failsafe and offer high availability

Application

Use

The Failsafe motor starter is predestined for use in combination with PROFIsafe (see figure *ET 200S Safety Motor Starter Solution PROFIsafe with Failsafe motor starters* on page 6/70). Another field of application is in combination with ASIsafe or safety relays (see example 2 on page 6/68 *Failsafe Motor Starters with ASIsafe and 3TK28*).

High degree of flexibility with safety technology

PROFIsafe solution with PM-D F PROFIsafe

In EMERGENCY-STOP applications, the Failsafe motor starters are selectively switched off through the upstream PM-D F PROFIsafe safety module. For each safety module, six switch-off groups can be formed. In the first delivery stage, the failsafe freely-programmable logic of the SIMATIC controller is used to interface with the relevant Failsafe sensor technology. The interface between PROFIsafe and installations that use conventional safety technologies is implemented through the F-CM Failsafe contact multiplier with four floating contacts.

Solution local with PM-D FX1

Failsafe motor starters with safety relay (Version 1) or ASIsafe (version 2, see example 2 on page 6/68):

Signals with relevance for safety can be input to ET 200S through a PM-D F X1 infeed terminal module through the enabling circuits of the AS-i Safety Monitor or the safety relay to control the Failsafe motor starters which then selectively switch off the downstream motors.

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

ET 200S Failsafe motor starters



F-DS1e-x direct-on-line starters

F-DS1e-x direct-on-line starters

Failsafe direct-on-line starters up to 7.5 kW at 400 V AC
Mechanically switching
Solid-state UE protection

- 0.3 ... 3 A
- 2.4 ... 8 A
- 2.4 ... 16 A

A
A
A

3RK1 301-0AB13-0AA4
3RK1 301-0BB13-0AA4
3RK1 301-0CB13-0AA4

1 1 unit 121 1.693
1 1 unit 121 1.717
1 1 unit 121 1.673

F-RS1e-x reversing starters

Failsafe reversing starters up to 7.5 kW at 400 V AC
Mechanically switching
Solid-state UE protection, fuseless

- 0.3 ... 3 A
- 2.4 ... 8 A
- 2.4 ... 16 A

A
A
A

3RK1 301-0AB13-1AA4
3RK1 301-0BB13-1AA4
3RK1 301-0CB13-1AA4

1 1 unit 121 2.517
1 1 unit 121 2.576
1 1 unit 121 2.513

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

ET 200S Failsafe motor starters

More information

F-DS1e-x direct-on-line starter/F-RS1e-x reversing starter

		Direct-on-line starters	Reversing starters
Dimensions			
Dimensions (W x H x D)	mm	65 x 290 x 150 (incl. terminal module)	130 x 290 x 150 (incl. terminal module)
Height with PE/N module	mm	332	
Depth with 2DI control module (not safe)	mm	173	
Module-specific specifications			
Type of coordination		Type 2 up to $I_e \leq 16$ A at 400 V	
Internal power supply		U1 (from PM-D F/PM-DF X1)	
Maximum achievable safety class		SIL 3 Shutdown class 6 (AK6) Category 4	
<ul style="list-style-type: none"> • Acc. to IEC 61508 • Acc. to DIN VDE 0801 • Acc. to ENh EN 954-1 			
Safety characteristics			
Low demand	PFD _{AVG} (10a)		
<ul style="list-style-type: none"> • Test interval 3 months • Test interval 6 months 		3.5×10^{-5} 8.0×10^{-5}	
High demand/continuous mode	PFH		
<ul style="list-style-type: none"> • Test interval 3 months • Test interval 6 months 	1/h	8.1×10^{-10}	
	1/h	1.8×10^{-9}	
Proof-test interval	Years	10	
Voltages, currents, potentials			
Switching capacity		Up to 7.5 kW at 400 V AC in three setting ranges:	
	A	0.3 ... 3	
	A	2.4 ... 8	
	A	2.4 ... 16	
Status, alarms, diagnostics			
Status display		SF, DEVICE and C-STAT, SG1 ... SG6	
Diagnostics functions			
Group fault display		Red LED (SF)	
Diagnostics information can be read out		Available	
Control circuit			
Rated operational voltage for electronics U_1	V	DC 24 (DC 20.4 ... 28.8)	DC 24 (DC 21.6 ... 26.4)
Reverse polarity protection for electronics U_1		Yes	
Rated operational voltage for contactor U_2	V	24 DC (20.4 ... 28.8 V DC)	
Reverse polarity protection for contactor U_2		Yes	
Power consumption			
<ul style="list-style-type: none"> • From electronics supply U_1 	mA	Approx. 40	Approx. 100
<ul style="list-style-type: none"> • From contactor supply U_2 - Pickup - Hold 	A mA	1.7 (for 80 ms) max. 350	-- --
<ul style="list-style-type: none"> • From SG1 up to 6 - Pickup - Hold 	mA mA	250 (for 200 ms) max. 55	
<ul style="list-style-type: none"> • Test function of the shunt release/starter protector (50 ms) from U_1 	A	Approx. 1.5	
<ul style="list-style-type: none"> • From the backplane bus 	mA	Approx. 20	
Main circuit			
Rated operational voltage U_e			
<ul style="list-style-type: none"> • Acc. to DIN VDE 0106, Part 1014, IEC 60947-1, EN 60947-1 • Protective separation between main and auxiliary circuits • UL, CSA 	V V V	500 AC 400 600 AC	
Rated insulation voltage U_i	V	500 AC	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated frequency	Hz	50/60	

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Failsafe terminal modules

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	-------------------	----------------------------	-----	----	-----------------------------------

Terminal modules for Failsafe motor starters

TM-FDS65-S32-01/S31-01 terminal modules

for F-DS1e-x direct-on-line starters
with coding

• With incoming power bus connection (TM-FDS65-S32-01)	A	3RK1 903-3AC00		1	1 unit	121	0.471
• Without incoming power bus connection (TM-FDS65-S31-01)	A	3RK1 903-3AC10		1	1 unit	121	0.473

TM-FRS130-S32-01/S31-01 terminal modules

for F-RS1e-x reversing starter
with coding

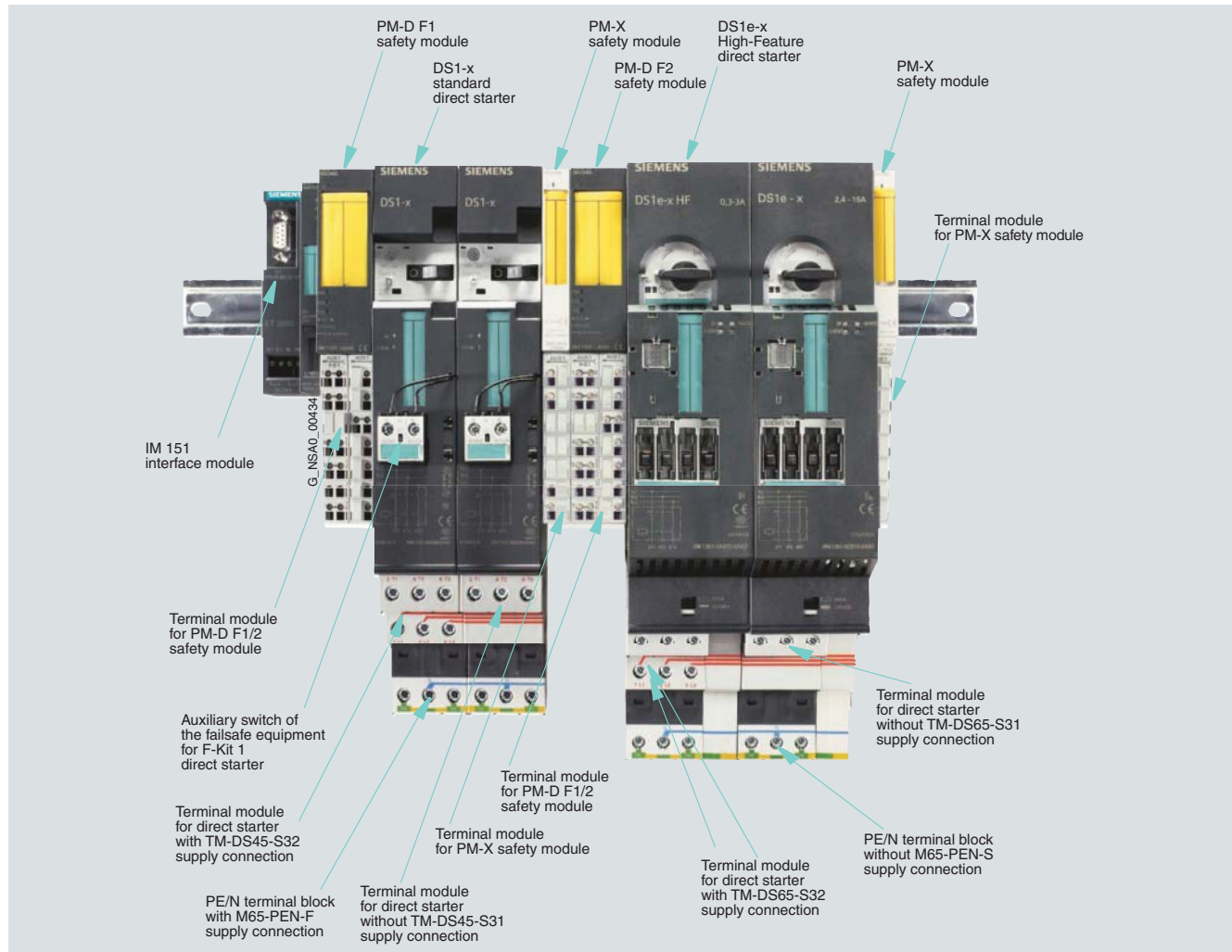
• With incoming power bus connection (TM-FRS130-S32-01)	A	3RK1 903-3AD00		1	1 unit	121	0.807
• Without incoming power bus connection (TM-FRS130-S31-01)	A	3RK1 903-3AD10		1	1 unit	121	0.848

For Operation in the Control Cabinet ET 200S Motor Starters and Safety Motor Starters

Safety Modules local and PROFIsafe

Overview

Safety modules local



Interplay of ET 200S Safety motor starters Solutions local components



PM-D F1 safety module

6

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety Modules local and PROFI-safe

Safety motor starters Solutions local

With the Safety motor starters Solutions local it is easy to configure several safety circuits. The safety sensors are connected directly and locally to the safety modules. These safety modules perform the work of the otherwise obligatory safety relays and safely shut down the downstream motor starters in accordance with the function selected. The crosslinks required for this are already integrated in the system and need no additional wiring. All signals from the safety modules are automatically relayed as diagnostic signals, e. g. in the event of crossover in the EMERGENCY-STOP circuit.

The highest safety category 4 according to EN 954-1 can be obtained with Safety motor starters Solutions local. They can thus be used for evaluation of EMERGENCY-STOP circuits or for monitoring protective doors and also for time-delayed disconnections. With the contact multiplier the safety-relevant signals can also be made available to external systems.

All standard safety applications can be covered through combination of different TM-PF30 terminal modules. Needless to say, ET 200S motor starters can also be used in conjunction with external safety relays or with ASIsafe.

Use of the PM-DFX1 safety module: The PM-DFX1 safety module is used for feeding in 1 to 6 switch-off groups. The infeed voltage can be switched using 1 to 6 external safety shutdown devices (either ASIsafe monitors or 3TK28 safety relays). This safety module is used in applications with external safety shutdown devices where there is a need for the fully selective safety shutdown of failsafe motor starters/frequency converters (see [example 2 on page 6/68](#)).

With the Safety motor starters Solutions local, up to 80 % of wiring is saved compared to conventional safety technology with local safety applications.

The safety module evaluates the signal state of the connected safety sensors and, using the integrated safety relays, shuts down the group(s) of downstream motor starters. The shutdown function is monitored by the module, and the auxiliary voltages likewise.

Safety-relevant system signals, e. g. due to an actuated EMERGENCY-STOP switch or a missing auxiliary voltage, are automatically generated and notified to the interface module. The latter assigns an unambiguous ID to the fault. Using the PROFIBUS DP diagnostics module, faults of this type can be identified and localized without a great deal of programming work.

- For use of Standard, High-Feature or Failsafe motor starters in systems with safety categories 2 to 4 (according to ISO 13849-1)
- No complex wiring for conventional safety technology
- Can also be used in combination with external safety relays
- Can also be used to activate external safety systems
- Safety module available for function-monitored and automatic starting
- Safety module available for stop category 0 and 1
- Safety module for monitoring the auxiliary voltages for motor starters
- Safety modules can be plugged into the TM-PF30 terminal modules

PM-D F1/F2/F3/F4/F5 safety modules

- PM-D F1/F2/F3/F4 safety modules monitor auxiliary voltages and contain the complete functionality of a safety relay:
 - PM-D F1
For evaluation of EMERGENCY-STOP circuits with the "monitored start" function.
 - PM-D F2
For monitoring of protective doors with the "automatic start" function.
 - PM-D F3
Expansion to PM-D F1/F2 for time-delayed disconnection.

- PM-D F4
For expansion of safety circuits with other ET 200S motor starters, e. g. in a different line.
- PM-D F5
Transmits the status from PM-D F1 ... 4 through four floating enabling circuits to external safety equipment (contact multiplier)
- The PM-D F1 and PM-D F2 modules can be combined with the PM-D F3 or PM-D F4 modules.
- A PM-D F5 can be positioned at any point between a PM-D F1 ... 4 and a PM-X.
- Safety modules monitor the U1 and U2 auxiliary voltages. A voltage failure is relayed as a diagnostic signal over the bus.
 - No additional PM-D safety module is required when the safety modules are used.
 - Each safety circuit, beginning with a PM-D F1 ... 4, must be terminated with one PM-X each.

Terminal modules for (TM-PF30) safety module

For supplying load and sensor voltage to the potential bars of the motor starters, and for connection of the 2-channel sensor circuit (e. g. EMERGENCY-STOP pushbutton) and a reset button. Different terminal modules are available for the configuring of separate safety circuits or for the cascading of safety circuits, and for applications with time-delayed disconnection.

Terminal modules for (TM-X) safety module

For connection of an external infeed contactor (2nd shutdown possibility). With terminals for contactor coil and feedback contact. Is always required to terminate a group of safety-oriented motor starters.

Failsafe Kit

The Failsafe Kit (F-Kit) must be added to each Standard motor starter in a safety segment in order to monitor the switching function.

F-Kit 1 supplements the DS1-x direct-on-line starter, F-Kit 2 the RS1-x reversing starter.

The F-Kits are comprised of:

- Contact supports for the terminal modules
- One or two auxiliary switch blocks for the contactor/contactors of the motor starter
- Connecting cables

High-Feature motor starters and their terminal modules come as standard with the functionality of the F-Kits integrated.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety Modules local and PROFIsafe

Components needed for applications with safety requirement

Components needed	Safety category acc. to EN 954-1			
	1	2	3	4
PM-D	X	--	--	--
PM-D F1/-F2/-F4	--	X	X	X
PM-D F3	--	X	X	--
F-Kit 1/2	--	X ¹⁾	X ¹⁾	X ¹⁾
PM-X	--	X	X	X
PM-DFX1	--	X	X	X
External infeed contactor	--	--	X	X

¹⁾ F-Kit needed only for Standard motor starter; already integrated in High-Feature motor starter.

Possible combinations of safety and terminal modules

Terminal modules	PM-D F1	PM-D F2	PM-D F3	PM-D F4	PM-D F5	PM-X	PM-DFX1	FCM
TM-PF30 S47-B0	X	X	--	--	--	--	--	--
TM-PF30 S47-B1	X	X	--	--	--	--	--	--
TM-PF30 S47-C0	--	--	X	X	--	--	--	--
TM-PF30 S47-C1	--	--	X	X	--	--	--	--
TM-PF30 S47-D0	--	--	--	--	X	--	--	--
TM-X15 S27-01	--	--	--	--	--	X	--	--
TM-PFX30 S47-G0	--	--	--	--	--	--	X	--
TM-PFX30 S47-G1	--	--	--	--	--	--	X	--
TM-FCM30 S47	--	--	--	--	--	--	--	X

Examples

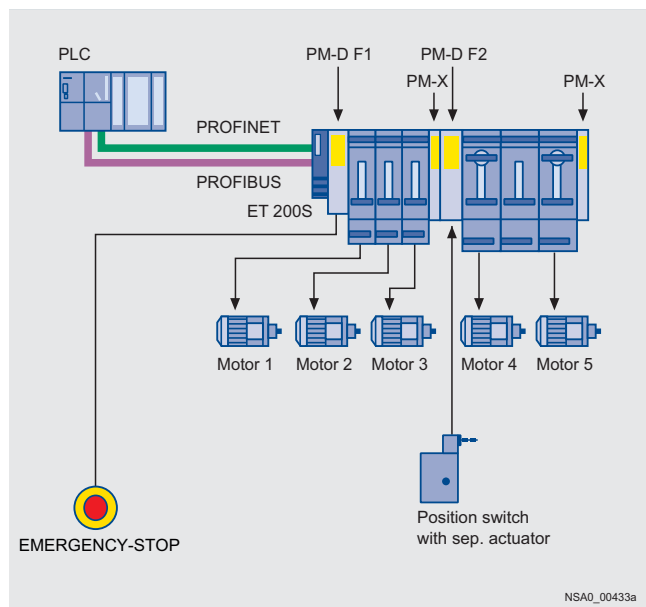
The diverse possible uses of the Safety motor starters Solutions local are presented in the manual SIMATIC ET 200S motor starters in the context of typical sample applications.

Safety functional examples for easy, quick and low-cost implementations of applications with Safety motor starters Solutions local are available on the Internet:

You can find more information on the Internet at:

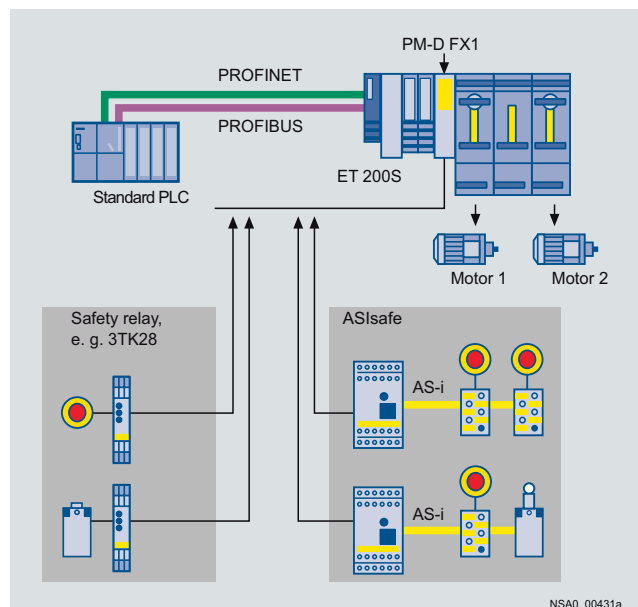
- www.siemens.com/sirius-starting
- www.siemens.com/et200s-motorstarter

Example 1:



ET 200S Safety motor starters Solutions local with 2 safety circuits (= switch-off groups), Standard motor starters and High-Feature motor starters.

Example 2:



ET 200S Safety motor starters Solutions local with 2 external safety combinations (= safety relays or ASIsafe monitors) and with Failsafe motor starters (PM-DFX1 application). 2 of the 6 available safe switch-off groups are used.

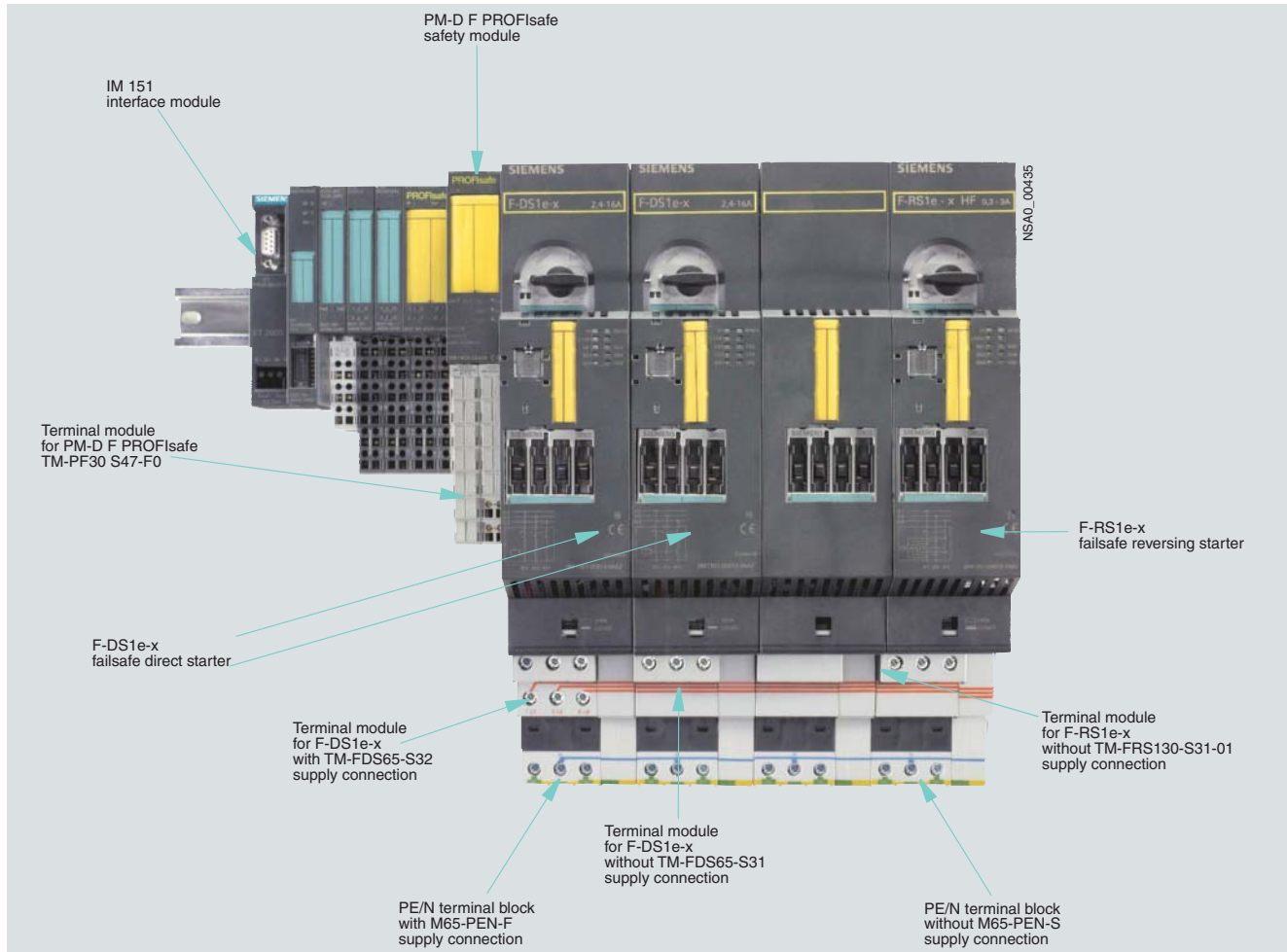
Signals with relevance for safety can be input to ET 200S through a PM-DFX1 infeed terminal module through the enabling circuits of the ASIsafe monitor or the safety relay to control the Failsafe motor starters which then selectively switch off the downstream motors.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

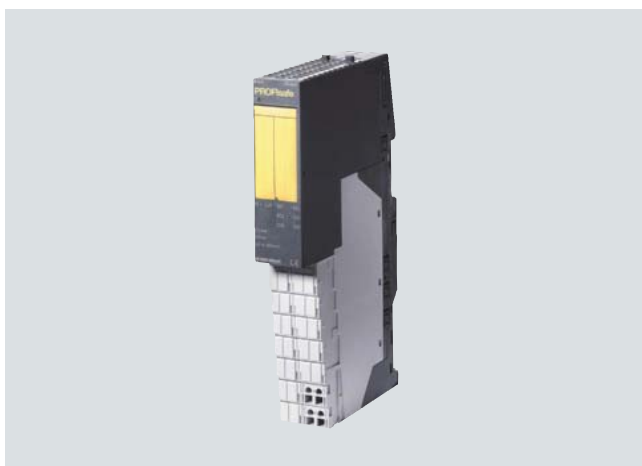
Safety Modules local and PROFI-safe

Safety modules PROFI-safe



Interplay of ET 200S Safety motor starter Solutions PROFI-safe components

Safety motor starters Solutions PROFI-safe



PM-D F PROFI-safe with TM-PF30 S47-F0 terminal module

Sensor and actuator assignment are freely configurable within the framework of the distributed safety concept:

The logic of the safety functions is implemented by software. Safety-oriented PROFI-safe communication and the use of a safety-oriented control system are required.

Integration of the safety technology in the standard automation is realized through a single bus system (see Advantages of PROFI-safe), using PROFIBUS as well as PROFINET.

- For the use of Failsafe motor starters in plants with safety category 2 to 4 according to EN 954-1 and SIL 2 and 3 according to IEC 61508. The use of Standard or High-Feature motor starters is also possible with certain assemblies
- High flexibility (any assignment of sensors to motor starters using the PLC)
- Full selectivity of disconnection of the Failsafe motor starters
- No complex wiring for conventional safety technology, e. g. no infeed contactors even in the highest safety category
- Can also be used to activate external safety systems through F-CM contact multipliers
- Safety module available for any safety function
- Safety module available for stop category 0 and 1
- Safety module for monitoring the auxiliary voltages for motor starters
- Safety modules can be plugged into the TM-PF30 terminal modules

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety Modules local and PROFIsafe

High degree of flexibility with safety technology

Failsafe motor starters for PROFIsafe:

In EMERGENCY-STOP applications, the Failsafe motor starters are selectively switched off through the upstream PM-D F PROFIsafe safety module. For each safety module, six switch-off groups can be formed. In the first delivery stage, the failsafe freely-programmable logic of the SIMATIC controller is used to interface with the relevant Failsafe sensor technology. The interface between PROFIsafe and installations that use conventional safety technologies is implemented through the F-CM Failsafe contact multiplier with four floating contacts.

Example:

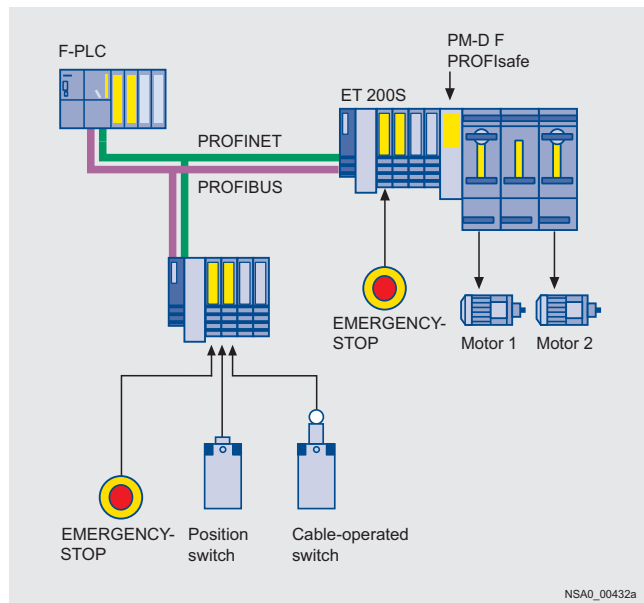
The diverse possible uses of the Safety motor starter Solutions PROFIsafe are presented in the manual SIMATIC ET 200S Motor Starters in the context of typical sample applications.

Safety functional examples for easy, quick and low-cost implementations of applications with Safety motor starters Solutions PROFIsafe are available on the Internet:

You can find more information on the Internet at:

www.siemens.com/sirius-starting

www.siemens.com/et200s-motorstarter



ET 200S Safety motor starters Solutions PROFIsafe with Failsafe motor starters and fully selective disconnection (PM-DF PROFIsafe application)

Within an ET 200S station the Failsafe motor starters are assigned to one of 6 safety segments. For plants with distributed configuration the shutdown signals of these safety segments are preferably issued by a higher-level, safety-oriented control system through PROFIsafe. This permits the greatest flexibility for assigning the motor starters to different safety circuits.

Alternatively, an ET 200S F-CPU can also be used for control purposes.

If a safety-oriented SIMATIC CPU is used, the ET 200S is available as a safety-oriented peripheral. Nevertheless, in such a station it is possible to configure conventional motor starters and input/output modules mixed with modules with safety functions.

Thanks to the PROFIsafe profile, the safety functions are available in the complete network, which means that the Safety motor starter Solutions PROFIsafe enable the selective disconnection of a Failsafe motor starters or the disconnection of a group of Standard and High-Feature motor starters regardless of where and on which peripheral station the safe control devices were connected. As such, this solution provides an unprecedented

level of flexibility and reduction of wiring for applications in wide-spread plants or with a sporadic demand for changes in the assignment of safety segments.

The Safety motor starter Solutions PROFIsafe are ideally suited for safety concepts with category 2 to 4 according to EN 954-1 or up to SIL 3 according to IEC 61508.

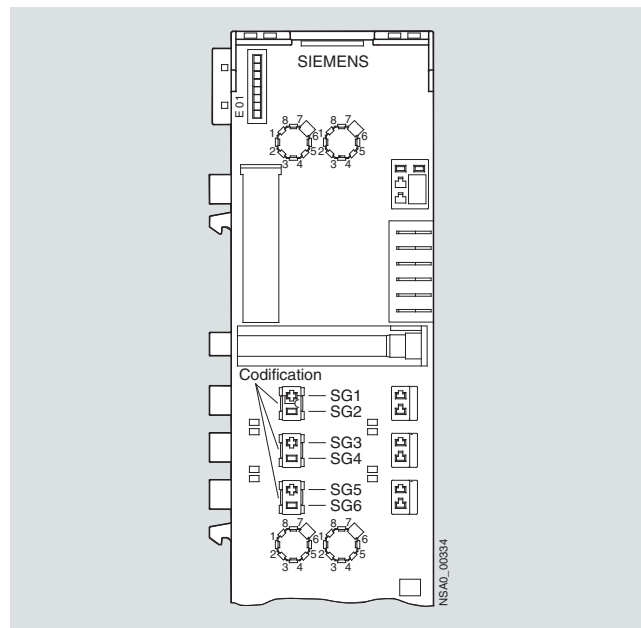
Each safety module switches up to 6 switch-off groups for Failsafe motor starters/frequency converters.

PM-D F PROFIsafe safety modules

The PM-D F PROFIsafe safety module receives the shutdown signal from the interface module of the ET 200S and safely switches off 1 to 6 switch-off groups. This safety module is used in PROFIsafe applications where there is a need for the selective safety shutdown of Failsafe motor starters/frequency converters.

The terminal assignment of the terminal modules for safe motor starters corresponds to the terminal assignment of the 45 and 65 mm terminal modules. The terminal modules for safe motor starters have a coding module in addition. This enables the safe motor starter to be assigned to one of the six switch-off groups.

The terminal module contains three coding elements which fully cover the three coding openings in the terminal module. The labeled coding element contains (in the chamber marked with the dash) the busbar tap; the non-labeled coding elements are used only to cover the coding openings. Switch-off group 1 (AG1 or SG1) is coded in the as-delivered state. The coding can be changed to switch-off group 2 by releasing the coding element and turning it through 180°. Changing the coding to switch-off group 3 is possible by exchanging the labeled and blank coding elements. In this case the dash on the labeled coding element must correlate with the dash of the required switch-off group (symbolized busbar).




The Failsafe motor starters are assigned to one of the six possible switch-off groups.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety Modules local and PROFI-safe
Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Safety modules local							
 3RK1 903-3DA00	PM-D F1 With diagnostics Safety module for EMERGENCY-STOP application Monitored start	A	3RK1 903-1BA00	1	1 unit	121	0.216
	PM-D F2 With diagnostics Safety module for protective door monitoring Automatic start	A	3RK1 903-1BB00	1	1 unit	121	0.218
	PM-D F3 With diagnostics Safety module for expanding PM-D F1/2 for another voltage group Time-delayed 0 to 15 s	A	3RK1 903-1BD00	1	1 unit	121	0.209
	PM-D F4 With diagnostics Safety module for expanding PM-D F1/2 for another voltage group	A	3RK1 903-1BC00	1	1 unit	121	0.225
	PM-D F5 With diagnostics Safety module for expanding PM-D F1 ... 4 with four floating enabling circuits Contact multipliers	A	3RK1 903-1BE00	1	1 unit	121	0.222
	PM-D FX1 With diagnostics Infeed terminal module for supply of 1 to 6 switch-off groups	A	3RK1 903-3DA00	1	1 unit	121	0.123
	FC-M contact multipliers With 4 safe floating contacts	A	3RK1 903-3CA00	1	1 unit	121	0.223
Safety modules PROFI-safe							
PM-D F PROFI-safe safety modules For PROFIBUS and PROFINET For Failsafe motor starters For Failsafe contact multipliers With six switch-off groups (SG1 to SG6)	A	3RK1 903-3BA01	1	1 unit	121	0.139	
F-CM contact multipliers With 4 safe floating contacts	A	3RK1 903-3CA00	1	1 unit	121	0.223	

More information

PM-D F1, F2, F3, F4 and F5 safety modules		
Mechanical endurance	Operating cycles	10 x 10 ⁶
Electrical endurance		200 000 with I_e
Utilization categories		DC-13
Control times		
• Minimum command duration	ms	200
• Recovery time	s	< 1
• Off-delay	ms	30
Control circuit U_1		
• Rated control supply voltage U_S	V	24 DC
• Operating range DC up to 60 °C		0.85 ... 1.2 x U_S
• Power consumption	W	2.4
• Recommended short-circuit protection		(gG) gL 2 A
• Output OUT+/OUT- for control of expansion modules		24 V DC / < 50 mA (PTC fuse)
Switched auxiliary circuit U_2		
• Rated control supply voltage U_S	V	24 DC
• Operating range DC up to 60 °C		0.85 ... 1.2 x U_S
• Rated operational current I_e (DC 13 ... 24 V)	A	4
• Uninterrupted thermal current I_{th}	A	5
Recommended short-circuit protection for enabling and signaling circuits		Fuse links: NH type 3NA, DIAZED type 5SB, NEOZED type 5SE Operational class (gG) gL 6 A
Supplying		
• Motor starters		Yes
• Solid-state modules		No
• Ex(i) modules		No
• BG certification		Yes
• UL-, CSA certification		Yes
Cable length for EMERGENCY-STOP and ON pushbuttons	m	max. 1000
Mounting dimensions (W x H x D)	mm	30 x 196.5 x 117.5 (incl. terminal module)
Enabling circuits with PM-D F5		4 (floating)

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety Modules local and PROFIsafe

PM-D FX1 safety module (infeed terminal module)		
Dimensions		
Mounting dimensions (W x H x D)	mm	30 x 196.5 x 117.5 (incl. terminal module)
Module-specific specifications		
Ambient temperature	°C	0 ... +60
Degree of protection		IP20
Maximum achievable safety classes		SIL 3
<ul style="list-style-type: none"> • IEC 62508 • DIN V 19250 • EN 954-1 		Shutdown class 5 and 6 Category 4
Safety characteristics		
Proof-test interval		10 years
Voltages, currents, potentials		
Rated control supply voltage U_s	V	21.6 ... 26.4 DC up to 60 °C
Rated operational current I_e	A	6
Recommended upstream short-circuit protection	A	Melting fuse gL/gG 6.3
Supplying		Yes
<ul style="list-style-type: none"> • Failsafe motor starters • Failsafe frequency converters • Solid-state modules • Ex[i] modules 		Yes Yes No No
Power consumption		
<ul style="list-style-type: none"> • From the backplane bus • From U_1 • From SGx 	mA	≤ 10 ≤ 35 ≤ 15
Status, alarms, diagnostics		
Alarms		None
Diagnostics functions		Red "SF" LED
<ul style="list-style-type: none"> • Group fault/device fault • Monitoring the control supply voltage for solid-state modules U1 (PWR) • Monitoring of six switch-off groups • Diagnostics information can be read out 		Green PWR LED Green LED SG1 ... SG6 Yes
Standards, approvals		Yes
<ul style="list-style-type: none"> • TÜV • UL-, CSA certification 		Yes
F-CM contact multipliers		
Dimensions		
Dimensions (W x H x D)	mm	30 x 196.5 x 117.5 (incl. terminal module)
Module-specific specifications		
Number of relay outputs		4 (4 x 1-channel or 2 x 2-channel safe coupling/contact multiplication)
Internal power supply for bar		U1 (from PM-D F/PM-D FX1)
Maximum achievable safety class		SIL3
<ul style="list-style-type: none"> • Acc. to IEC 61508 • Acc. to DIN VDE 0801 • Acc. to EN 954 		AK 6 Cat. 4
Voltages, currents, potentials		
Switching capacity of the relay outputs		Utilization category DC-13 (I_e/U_e): 1.5 A / 24 V
Electrical separation		Yes
<ul style="list-style-type: none"> • Between outputs and backplane bus • Between outputs and power supply • Between outputs • Between outputs/power supply and shield 		Yes Yes Yes Yes
Status, alarms, diagnostics		
Status display		PWR and STAT
Alarms: Diagnostics alarm		None
Diagnostics functions		Yes
<ul style="list-style-type: none"> • Group fault display • Diagnostics information can be read out • Monitoring the control supply voltage for solid-state modules U_1 (PWR) • Monitoring the switching state of the enabling circuit 		Red LED (SF) Available Green PWR LED Red/green STAT LED

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety Modules local and PROFIsafe

PM-D F PROFIsafe safety modules

Dimensions

Dimensions (W x H x D) mm 30 x 196.5 x 117.5 (incl. terminal module)

Module-specific specifications

Number of outputs, source input 6 switch-off groups (safety group 1 ... 6)

Internal power supply for bar U1

Assigned address range

- In PAE byte 5
- In PAA byte 5

Maximum achievable safety class

- Acc. to IEC 61508 SIL3
- Acc. to DIN VDE 0801 AK 6
- Acc. to EN 954 Cat. 4

Voltages, currents, potentials

Control supply voltage V 24 DC

Electrical separation

- Between outputs and backplane bus Yes
- Between outputs and power supply No
- Between outputs No
- Between outputs/power supply and shield Yes

Status, alarms, diagnostics

Status display Green LED per SG
Green LED for electronics supply
Green LED for load voltage

Alarms: Diagnostics alarm "TO"

Diagnostics functions

- Group fault display Red LED (SF)
- Diagnostics information can be read out Available

Settings

Module address Diverse:

1. Using a safety-oriented parameter in the parameterization message frame over the backplane bus
2. Using the 10-pole DIL switch (binary-coded) on the left side of the module

The received address is then compared with the DIL switch setting

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local and PROFIsafe terminal modules

Overview

Terminal modules for safety modules

For supplying load and sensor voltage to the self-assembling potential bars of the Standard motor starters, High-Feature motor starters and frequency converters. Safety modules for voltage monitoring are plugged onto TM-P modules. TM-P modules can be used any number of times within the ET 200S. A safety module must always be plugged upstream from the first motor starter.

Different safety circuits can be functionally separated or else cascaded using different terminal modules. Each group in such a case must be terminated with a PM-X connection module.

TM-PF30 S47-B1

The terminal module is always positioned at the beginning of a safety segment and accommodates the PM-DF1 safety module for EMERGENCY-STOP applications or the PM-DF2 safety module for protective door monitorings. The 24 V control supply voltages for the electronics (U1) and those for supplying the contactors (U2) of the motor starters must be connected along with the 2-channel connection of the safety sensors (e. g. EMERGENCY-STOP pushbuttons) to this terminal module. Connections for the ON button (enabling) and safe output of the safety module are available in addition.

TM-PF30 S47-B0

The terminal module is used to cascade lower level safety segments and accommodates the PM-DF1 safety module for EMERGENCY-STOP applications or the PM-DF2 safety module for protective door monitorings. No other auxiliary voltage has to be connected to this terminal module. The supply comes from the preceding PM-DF1 or PM-DF2 module over the potential bars of the terminal modules. Once the potential of the preceding safety module is disconnected, this sub-potential also has no voltage.

TM-PF30 S47-C1

The terminal module is always positioned at the beginning of a safety segment expansion in a new station, e. g. at an interlace point. It accommodates the PM-D F3 safety module for time-delayed shutdown or the PM-D F4 safety module for direct shutdown in separately located ET 200S stations. The 24 V control supply voltages for the electronics (U1) and those for supplying the contactors (U2) are fed in new.

The shutdown command from an upstream ET 200S station is received through a safe input. Separate terminals are available to connect the feedback circuit to the upstream ET 200S station. No safety sensors can be connected to this terminal module.

TM-PF30 S47-C0

The terminal module is used to cascade lower level safety segments and accommodates the PM-D F3 safety module for time-delayed shutdown or the PM-D F4 safety module. Only the U2 control supply voltage for the contactors must be connected to this terminal module. The U1 supply comes from the preceding safety module (sub-potential group) over the potential bars of the terminal modules. No safety sensors can be connected to this terminal module.

TM-PF30 S47-D0

The terminal module is used to accommodate the PM-D F5 safety module. On this terminal module, safe signals can be relayed to external systems through four groups, each with two safety relay contacts configured with redundancy. The terminal module must always be positioned between one of the above mentioned terminal modules and a terminal module for the TM-X connection module. No safety sensors can be connected to this terminal module.

Terminal modules for connection modules (TM-X)

For connection of an external infeed contactor (second shutdown option) for category 3 and 4. The connection module is plugged on the right alongside the last motor starter of a safety segment. On the TM-X terminal module there are the terminals for connecting the positively driven NC contact of the contactors as well as the terminals for connecting the contactor coil. If no contactor with redundant switching is required, e. g. for category 2 (EN 954-1), the feedback circuit has to be closed at these terminals with a jumper. In applications with external safety relays it is also used instead of the safety module as interface to the external safety relay.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Safety modules local
and PROFIsafe terminal modules

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	-------------------	----------------------------	-----	----	-----------------------------------

Terminal modules for Safety modules local



3RK1 903-1AA00

Terminal modules

TM-PF30 S47-B1 For PM-D F1/2 Safety Modules With infeed U1/U2 and sensor connection	A	3RK1 903-1AA00		1	1 unit	121	0.408
TM-PF30 S47-B0 For PM-D F1/2 Safety Modules With sensor connection	A	3RK1 903-1AA10		1	1 unit	121	0.393
TM-PF30 S47-C1 For PM-D F3/4 Safety Modules With infeed U1/U2 and control input IN+/IN-	A	3RK1 903-1AC00		1	1 unit	121	0.399
TM-PF30 S47-C0 For PM-D F3/4 Safety Modules With infeed U2	A	3RK1 903-1AC10		1	1 unit	121	0.378
TM-PF30 S47-D0 For PM-D F5 Safety Modules	A	3RK1 903-1AD10		1	1 unit	121	0.400
TM-X15 S27-01 For PM-X Safety Module	A	3RK1 903-1AB00		1	1 unit	121	0.201
TM-P15-S27-01 terminal modules For PM-D power module	A	3RK1 903-0AA00		1	1 unit	121	0.224
TM-PFX30 S47-G0/G1 terminal modules For PM-D F X1 Safety modules (infeed terminal modules)							
• Infeed left (TM-PFX30 S47-G0)	A	3RK1 903-3AE10		1	1 unit	121	0.408
• Infeed center (TM-PFX30 S47-G1)	A	3RK1 903-3AE00		1	1 unit	121	0.405
TM-FCM30 S47-F01 terminal modules For F-CM contact multipliers	A	3RK1 903-3AB10		1	1 unit	121	0.410

Terminal modules for Safety modules PROFIsafe

TM-PF30 S47-F0 terminal modules For PM-D F PROFIsafe safety modules	A	3RK1 903-3AA00		1	1 unit	121	0.360
TM-FCM30 S47-F01 terminal modules For F-CM contact multipliers	A	3RK1 903-3AB10		1	1 unit	121	0.410

More information

TM-PFX30 S47/TM-PF30 S47 terminal modules

Dimensions

Mounting dimensions (W x H x D)	mm	30 x 196.5 x 102
Depth with power module	mm	117.5

Insulation voltages and rated currents

Insulation voltage	V	500
Rated operational voltage	V	24 DC
Rated operational current	A	10

Conductor cross-sections

Solid	mm ²	1 x (0.14 ... 2.5) acc. to IEC 60947 1 x (2.5)
Finely stranded with end sleeve	mm ²	1 x (0.14 ... 1.5) acc. to IEC 60947
AWG cables, solid or stranded	AWG	1 x (18 ... 22)

Wiring

Required tool		Standard screwdriver size 1
Tightening torque	Nm	0.4 ... 0.7

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Accessories

Overview

Accessories for Standard motor starters

Control kits

The control kit for the Standard motor starter provides the possibility of testing the motor during start-up or service by actuating the motor starter protector. Using the control kit with the motor starter protector tripped, the contactor is mechanically locked in ON position.

Control unit

With the control unit the contactor coils of the Standard motor starter can be directly controlled using 24 V DC. The motor starter can thus be started as normal using a local control point without PLC or bus.

Note:

The control unit cannot be used in combination with the safety technology or a brake control module.

DM-V15 distance module

- Passive module without bus connection and terminals
- Does not need a separate terminal module
- Follows a TM-DS45 or TM-RS90 or TM-xB if required
- Does not need to be taken into account when configuring the GSD file

The distance module is available for applications with high motor currents or high ambient temperatures involving Standard motor starters. It can be used to the right and left of a DS1-x direct-on-line starter or to the right of an xB1-4 brake module in order to improve heat removal to the side. The distance module is a completely passive module and does not need to be taken into account with regard to the control system during configuration. Details of the distance module can be found in the manual "SIMATIC ET 200S". If you have any queries concerning the use of the distance module, contact Technical Support for Siemens Low-Voltage Controls and Distribution (Fax: +49(0)911/895-5907).

Accessories for High-Feature motor starters

2DI 24 V DC COM control module

The 2DI 24 V DC COM control module is plugged onto the interface on the front of the motor starter. The module provides two inputs which can receive signals from the process and be assigned directly to the starter.

The functionality can be selected from a list of various control functions as part of the PROFIBUS parameterization. Local control point, emergency start and quick stop, for example, are available as functions. The signal levels can also be parameterized (NO/NC). For more extensive control functions the two inputs of a xB3 or x4 brake control module, which is plugged in alongside on the right, can be integrated in addition. The signal states of all inputs are transmitted in parallel with the internal use to the higher-level control system.

When a motor starter is replaced, the parameterization is automatically transmitted by download to the new starter. The inputs on the motor starter ensure autonomous operation, e. g. in the event of PLC failure, on the one hand and short response times through direct processing in the starter on the other hand. Another advantage results from the direct assignment of functions to modular machine concepts.

The 2DI 24 V DC COM control module has in addition a PC interface for connecting the Switch ES Motor Starter parameterization and diagnostics software (Version 2.0 and higher). The module works solely on High-Feature motor starters with ES Motor Starter interface. The Logo!-PC cable is used as connecting ca-

ble between the 2DI 24 V DC COM control module and the High-Feature motor starter.

Accessories for Standard and High-Feature motor starters

PE/N bridge module

PE/N bridge modules are used to bridge gaps in the PE/N bus which are caused, for example, by using brake control modules, PM-D(F) power modules or PM-X connection modules. If a bridge module is used, the supply must not be fed in anew. They are available in widths of 15 and 30 mm.

L1/L2/L3 bridge module

The L1/L2/L3 bridge modules are used to bridge gaps in the power bus (see above). They are available in widths of 15 and 30 mm.

Brake control module

for motors with mechanical brake

Terminal modules for brake control modules

The TM-xB terminal modules are used to accommodate the xB1, xB2, xB3 and xB4 brake control modules. The TM-xB terminal module must always follow directly after a terminal module for Standard motor starters, High-Feature motor starters or frequency converters as control of the solid-state braking switch is provided through an output of the motor starter/frequency converter. The xB215 terminal modules for the brake control modules have not only the terminals for connecting the cable for the motor brake but also the terminals of the two local acting inputs. These local inputs are not evaluated by a frequency converter; for this reason the xB215 terminal module may be plugged in only downstream from a motor starter.

Accessories for Standard, High Feature, Failsafe motor starters

PE/N terminal blocks

The PE/N terminal block is required for direct connection of the protective conductor in the motor cable without intermediate terminals. It is plugged together with the terminal module for motor starters or frequency converters before the latter is mounted on the standard mounting rail. With two PE terminals and one N terminal the "-F" version is connected to the "-S32" terminal modules for motor starters or frequency converters. The "-S" version is combined with the "-S31" terminal module. The "F" terminal modules are delivered with two caps for closing the PE/N bus contacts on the final terminal block of a segment. The modules for the Standard motor starters have a width of 45 mm and the modules for the High-Feature motor starters and frequency converters have a width of 65 mm.

There is no electrical connection between the terminals of the PE/N terminal block and the integrated shielding of the frequency converter. The PE/N terminal block must therefore not be used for the shielding of the motor cable.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Accessories

Selection and ordering data


Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories for Standard motor starters							
 3RK1 903-0CA00	A	3RK1 903-0CA00		1	1 unit	121	0.015
Control kits for manually operating the contactor contacts during start-up and servicing (one set contains five control kits)							
 3RK1 903-0CG00	A	3RK1 903-0CG00		1	1 unit	121	0.038
Control units for direct contactor control (manual control) 24 V DC							
 3RK1 903-0CD00	A	3RK1 903-0CD00		1	1 unit	121	0.128
DM-V15 distance modules for DS1-x direct-on-line starters with high temperatures or high current loading 15 mm wide							
 3RK1 903-2AA00	A	3RK1 903-2AA00		1	1 unit	121	0.077
PE/N M45-PEN-F terminal blocks 45 mm wide including two caps in combination with TM-DS45-S32 / TM-RS90-S32							
 3RK1 903-2AA10	A	3RK1 903-2AA10		1	1 unit	121	0.087
PE/N M45-PEN-S terminal blocks 45 mm wide in combination with TM-DS45-S31 / TM-RS90-S31							
Accessories for High-Feature motor starters							
 3RK1 903-0CH20	A	3RK1 903-0CH20		1	1 unit	121	0.025
Control modules 2DI DC 24 V COM Digital input module with 2 inputs (cable length up to 100 m) for local motor starter functions for mounting onto the front of motor starters, operational voltage 24 V DC (supplied from U_1), short-circuit proof, floating contact with serial interface for connecting ES motor starters, connected using LOGO!-PC cable							
 3RK1 922-3BA00	A	6ED1 057-1AA00-0BA0		1	1 unit	200	0.168
LOGO! PC cables for connecting the High-Feature motor starter with ES interface switch to a PC							
	B	3RK1 922-3BA00		1	1 unit	121	0.130
Hand-held devices for ET 200S High-Feature motor starter, (also for ET 200pro and ECOFAST), for local operation. A serial interface cable must be ordered separately.							

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters






Accessories

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
M65-PEN-F terminal blocks 65 mm wide including two caps in combination with TM-DS65-S32 / TM-RS130-S32	A	3RK1 903-2AC00		1	1 unit	121	0.093	
M65-PEN-S terminal blocks 65 mm wide in combination with TM-DS65-S31 / TM-RS130-S31	A	3RK1 903-2AC10		1	1 unit	121	0.099	
Accessories for Standard / High-Feature motor starters								
 3RK1 903-0AH00	M15-PEN bridge modules 15 mm wide for bridging a 15 mm module	A	3RK1 903-0AH00		1	1 unit	121	0.019
 3RK1 903-0AJ00	M30-PEN bridge modules 30 mm wide for bridging a 30 mm module	A	3RK1 903-0AJ00		1	1 unit	121	0.032
 3RK1 903-0AE00	M15-L123 bridge modules 15 mm wide for bridging a 15 mm module	A	3RK1 903-0AE00		1	1 unit	121	0.027
 3RK1 903-0AF00	M30-L123 bridge modules 30 mm wide for bridging a 30 mm module	A	3RK1 903-0AF00		1	1 unit	121	0.046
 3RK1 903-0CB00	Brake control modules for motors with mechanical brakes							
	• xB1 for motor starters 24 V DC/4 A	A	3RK1 903-0CB00		1	1 unit	121	0.106
	• xB2 for motor starters 500 V D/0.7 A	A	3RK1 903-0CC00		1	1 unit	121	0.109
	• xB3 for motor starters 24 V DC / 4 A / 2 DI 24 V DC local control with diagnostics with two inputs	A	3RK1 903-0CE00		1	1 unit	121	0.110
	• xB4 for motor starters 500 V DC / 0.7 A / 2 DI 24 V DC local control with diagnostics with two inputs	A	3RK1 903-0CF00		1	1 unit	121	0.114
	Terminal modules for brake control modules							
	• TM-xB15 S24-01 for xB1 or xB2	A	3RK1 903-0AG00		1	1 unit	121	0.174
	• TM-xB215 S24-01 for xB3 or xB4	A	3RK1 903-0AG01		1	1 unit	121	0.188
Accessories for Failsafe motor starters								
PE/N M65-PEN-F terminal blocks With incoming connection, with caps	A	3RK1 903-2AC00		1	1 unit	121	0.093	
M65-PEN-S terminal blocks without incoming connection	A	3RK1 903-2AC10		1	1 unit	121	0.099	

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Accessories

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories for power modules							
Color coding plates 6 x 200 color coding plates for terminal modules One set contains 10 strips of 20 color coding plates per color							
• White	X	6ES7 193-4LA10-0AA0			1 unit	2FO	0.038
• Yellow	X	6ES7 193-4LB10-0AA0			1 unit	2FO	0.038
• Yellow and green	X	6ES7 193-4LC10-0AA0			1 unit	2FO	0.037
• Red	X	6ES7 193-4LD10-0AA0			1 unit	2FO	0.038
• Blue	X	6ES7 193-4LF10-0AA0			1 unit	2FO	0.038
• Brown	X	6ES7 193-4LG10-0AA0			1 unit	2FO	0.036
Accessories for Safety modules local							
	A	3RK1 903-1CB00		1	1 unit	121	0.068
PM-X safety modules With diagnostics Modules for connecting a safety group and for connecting an external infeed contactor or for connecting to an external safety circuit							
	A	3RK1 903-1CA00		1	1 unit	121	0.030
F-Kit 1 Failsafe equipment for DS1-x ¹⁾ Standard motor starters							
	A	3RK1 903-1CA01		1	1 unit	121	0.056
F-Kit 2 Failsafe equipment for RS1-x ¹⁾ Standard motor starters							
							
							
3RK1 903-1CA00							
3RK1 903-1CA01							

¹⁾ The function of the Failsafe-Kit is already integrated into High-Feature motor starters.

More information

ET 200S motor starters

		Brake control module XB1	Brake control module XB3	Brake control module XB2	Brake control module XB4
Dimensions (W x H x D)	mm	15 x 196.5 x 125.5 including terminal module on 7.5 mm standard mounting rail			
Number of assigned outputs for the (left-hand) motor starter		1			
Rated operational voltage	V	24 DC		500 DC (min. 100)	
Power supply		Externally through terminal module		From brake rectifier through terminal module	
Rated operational current	A	4		0.7	
Reverse polarity protection		No, in the event of polarity reversal the brake is released and the overload/short-circuit protection is not effective			
Overload/short-circuit protection		Yes, solid-state			
Conductor cross-section of the terminal module for the brake control module	mm ²	1 x 2.5 without end sleeve 1 x 1.5 with end sleeve			
Number of outputs		0	1 (used internally)	0	1 (used internally)
Number of inputs		0	2	0	2
Address area required per module					
• With summary		0	2 bits	0	2 bits
• Without summary		0	1 byte	0	1 byte
Diagnostics functions					
• Group fault "SF"		Red LED			
• Switching state for brake "STAT"		Yellow LED			
• Inputs 1 and 5		--	Green LED	--	Green LED
Parameters (default values underlined>)					
• Brake overload diagnostics		--	Disable/Enable	--	Disable/Enable
• Input delay	ms	--	0 / 0.1 / 0.5 / <u>3</u> / 15	--	0 / 0.1 / 0.5 / <u>3</u> / 15
Module width	mm	15			

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Selection and ordering data

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-1 interface modules							
IM 151-1 BASIC interface modules For ET 200S; transmission rates up to 12 Mbit/s; up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1CA00-0AB0		1	1 unit	250	0.169
IM 151-1 COMPACT 32 DI 24 V DC interface modules For ET 200S; transmission rates up to 12 Mbit/s; 32 digital inputs, up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1CA00-1BL0		1	1 unit	250	0.291
IM 151-1 COMPACT 16 DI DC 24 V / 16 DO 24 V/0.5 A interface modules For ET 200S; transmission rates up to 12 Mbit/s; 16 digital inputs and 16 digital outputs, up to 12 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1CA00-3BL0		1	1 unit	250	0.294
IM 151-1 STANDARD interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1AA05-0AB0		1	1 unit	250	0.172
IM 151-1 FO STANDARD interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 128 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus using integrated fiber-optic cable including bus termination module	A	6ES7151-1AB02-0AB0		1	1 unit	250	0.192
IM 151-1 HIGH FEATURE interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFI-safe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1BA02-0AB0		1	1 unit	250	0.172
Accessories							
TM-C120S terminal modules Terminal module for ET 200S COMPACT, screw terminals	A	6ES7 193-4DL10-0AA0		1	1 unit	250	0.492
TM-C120C terminal modules Terminal module for ET 200S COMPACT, spring-type terminals	A	6ES7 193-4DL00-0AA0		1	1 unit	250	0.390
TE-U120S4x10 additional terminals Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; screw terminals for 3-conductor connection; please order two for 4-conductor connection. Can also be plugged into TM-E/TM-P if the same height of the terminal modules exists over a width of at least 120 mm	A	6ES7 193-4FL10-0AA0		1	1 unit	250	0.205
TE-U120C4x10 additional terminals Additional terminal for TM-C120x terminal modules of ET 200S COMPACT; spring-type terminals for 3-conductor connection; please order two for 4-conductor connection. Can also be plugged into TM-E/TM-P if the same height of the terminal modules exists over a width of at least 120 mm	A	6ES7 193-4FL00-0AA0		1	1 unit	250	0.159
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu							
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	A	6ES7 998-8XC01-8YE0		1	1 unit	230	0.099
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230	0.400
PROFIBUS DP interface RS485 bus connectors With 90° cable feeder for FastConnect connections, max. transmission rate 12 Mbit/s							
• Without PG interface	A	6ES7 972-0BA52-0XA0		1	1 unit	250	0.044
• With PG interface	A	6ES7 972-0BB52-0XA0		1	1 unit	250	0.049
100 Simplex connectors For plastic fiber-optic cable including 5 polishing sets	A	6GK1 901-0FB00-0AA0		1	1 set	5K2	0.124
50 plug-in adapters each for 2 Simplex connectors	A	6ES7 195-1BE00-0XA0		1	1 unit	250	0.115
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-1 interface modules (continued)							
Inscription sheets in A4 format (10 units) Can be used for ET 200S COMPACT. Each sheet contains 10 labeling strips							
• Beige	A	6ES7 193-4BA10-0AA0		1	1 unit	250	0.234
• Yellow	A	6ES7 193-4BB10-0AA0		1	1 unit	250	0.229
• Red	A	6ES7 193-4BD10-0AA0		1	1 unit	250	0.228
• Petrol	A	6ES7 193-4BH10-0AA0		1	1 unit	250	0.232
Termination modules As spare part for ET 200S							
	A	6ES7 193-4JA00-0AA0		1	1 unit	250	0.026
Power supply plugs Spare parts; for connection to control supply voltage 24 V DC							
• With push-in terminals	A	6ES7 193-4JB00-0AA0		1	1 unit	250	0.045
• With screw terminals	A	6ES7 193-4JB50-0AA0		1	1 unit	250	0.027
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250	0.820
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250	1.930
SIPLUS IM 151-1 interface modules (extended temperature range)							
SIPLUS IM 151-1 STANDARD interface modules (extended temperature range and medial load) For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 power, solid-state and motor starter modules can be connected; connection to bus through 9-pole Sub-D including bus termination module							
	X	6AG1 151-1AA04-2AB0		1	1 unit	471	0.186
SIPLUS IM 151-1 HIGH FEATURE interface modules (extended temperature range and medial load) For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFI-safe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module							
	D	6AG1 151-1BA02-2AB0		1	1 unit	471	0.180
Accessories For ordering data see IM 151-1 interface modules							
IM 151-3 PN interface modules							
IM 151-3 PN interface modules For ET 200S; transmission rates up to 100 Mbit/s; data volume dependent on number of modules mounted, up to 63 modules can be connected, connection to bus through RJ45							
	A	6ES7 151-3AA23-0AB0		1	1 unit	250	0.199
IM 151-3 PN PROFINET High Feature interface modules For ET 200S; transmission rates up to 100 Mbit/s; up to 63 modules with max. width of 2 m can be connected, connection to bus through RJ45, including termination module							
	A	6ES7 151-3BA23-0AB0		1	1 unit	250	0.199
IM 151-3 FO interface modules For ET 200S; with 2 PROFINET fiberoptic interfaces and integrated 2-port switch, up to 63 modules up to 2 m wide can be connected, including bus termination module							
	A	6ES7 151-3BB23-0AB0		1	1 unit	250	0.241
Accessories							
Industrial Ethernet FC RJ45 Plug 90 RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder							
• 1 unit	A	6GK1 901-1BB20-2AA0		1	1 unit	5K2	0.030
• 10 units	A	6GK1 901-1BB20-2AB0		1	1 unit	5K2	0.300
• 50 units	A	6GK1 901-1BB20-2AE0		1	1 unit	5K2	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables	A	6XV1 840-2AH10		1	1 M	5K2	0.068
• Fast Connect trailing cables	A	6XV1 840-3AH10		1	1 M	5K2	0.055
• Fast Connect marine cables	A	6XV1 840-4AH10		1	1 M	5K2	0.055
Termination kits							
• SC RJ POF Plug Termination kit for local mounting of SC RJ connectors, comprising insulation stripping tool, kevlar shears, microscope, abrasive paper and support							
	A	6GK1 900-0ML00-0AA0		1	1 unit	5K2	3.400
• IE SC RJ POF Plug Threaded connectors for local mounting on POF fiber-optic cables (1 pack = 20 units)							
	A	6GK1 900-0MB00-0AC0		1	1 unit	5K2	0.320
• IE SC RJ Refill Set POF Refill set for SC RJ POF Plug termination kit, comprising abrasive paper and disk (set of 5)							
	A	6GK1 900-0MN00-0AA0		1	1 unit	5K2	0.150
• SC RJ PCF Plug Termination kit for local mounting of SC RJ connectors, comprising insulation stripping tool, buffer insulation stripping tool, kevlar shears, fiber cleaver, microscope							
	A	6GK1 900-0NL00-0AA0		1	1 unit	5K2	3.400
• Industrial Ethernet SC RJ PCF Plug Threaded connectors for local mounting on PCF fiber-optic cables (1 pack = 10 units)							
	A	6GK1 900-0NB00-0AC0		1	1 unit	5K2	0.200
Industrial Ethernet Fast Connect stripping tools							
	A	6GK1 901-1GA00		1	1 unit	5K2	0.100

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-3 PN interface modules (continued)							
MMC 64 Kbyte¹⁾ For storing the unit's name	A	6ES7 953-8LF20-0AA0		1	1 unit	230	0.012
MMC 128 Kbyte¹⁾ For storing the unit's name	A	6ES7 953-8LG11-0AA0		1	1 unit	230	0.012
MMC 512 Kbyte¹⁾ For storing the unit's name	A	6ES7 953-8LJ20-0AA0		1	1 unit	230	0.012
MMC 2 MByte¹⁾ For storing the unit's name and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230	0.012
MMC 4 MByte¹⁾ For storing the unit's name and/or the firmware update	A	6ES7 953-8LM20-0AA0		1	1 unit	230	0.012
MMC 8 MByte¹⁾ For storing the unit's name and/or the firmware update	A	6ES7 953-8LP20-0AA0		1	1 unit	230	0.013
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu							
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	A	6ES7 998-8XC01-8YE0		1	1 unit	230	0.099
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230	0.400
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250	0.026
Power supply plugs Spare parts; for connection to control supply voltage 24 V DC							
• With push-in terminals	A	6ES7 193-4JB00-0AA0		1	1 unit	250	0.045
• With screw terminals	A	6ES7 193-4JB50-0AA0		1	1 unit	250	0.027
35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250	0.820
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250	1.930
Industrial Ethernet switches Managed Industrial Ethernet switches; isochronous real-time, LED diagnostics, error signaling contacts with SET button, redundant power supply							
• SCALANCE X202-2P IRT 2 x 10/100 Mbit/s RJ45 ports, 2 x 100 Mbit/s POF/PCF SC RJ	D	6GK5 202-2BH00-2BA3		1	1 unit	5N2	1.007
• SCALANCE X201-3P IRT 1 x 10/100 Mbit/s RJ45 ports, 3 x 100 Mbit/s POF/PCF SC RJ	A	6GK5 201-3BH00-2BA3		1	1 unit	5N2	1.030
• SCALANCE X200-4P IRT 4 x 100 Mbit/s POF/PCF SC RJ	A	6GK5 200-4AH00-2BA3		1	1 unit	5N2	1.035
SIPLUS IM 151-3 PN interface modules (extended temperature range)							
SIPLUS IM 151-3 PN interface modules (extended temperature range and medial load) For ET 200S; transmission rates up to 100 Mbit/s; data volume dependent on number of modules mounted, up to 63 modules can be connected, connection to bus through RJ45	D	6AG1 151-3AA22-2AB0		1	1 unit	471	0.188

Accessories

For ordering data see IM 151-3PN interface modules

¹⁾ For operation of the IM 151-3, an MMC is essential.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-7 CPU interface modules							
IM 151-7 CPU FO (48 K) interface modules including termination module	A	6ES7 151-7AB00-0AB0		1	1 unit	250	0.252
IM 151-7 CPU (96 K) interface modules including termination module	A	6ES7 151-7AA20-0AB0		1	1 unit	250	0.242
Accessories							
MMC 64 Kbyte¹⁾ for program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230	0.012
MMC 128 Kbyte¹⁾ For program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230	0.012
MMC 512 Kbyte¹⁾ For program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230	0.012
MMC 2 MByte¹⁾ For program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230	0.012
MMC 4 MByte¹⁾ For program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230	0.012
MMC 8 MByte¹⁾ For program backups	A	6ES7 953-8LP20-0AA0		1	1 unit	230	0.013
External Prommer For e. g. MMC with USB interface	A	6ES7 792-0AA00-0XA0		1	1 unit	260	1.200
PG with integrated MMC interface		On req.					
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu							
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250	0.026
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250	0.820
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250	1.930
IM 151-8 PN/DP CPU interface modules							
IM 151-8 PN/DP CPU interface modules (128 K)	A	6ES7 151-8AB00-0AB0		1	1 unit	250	0.379
Accessories							
MMC 64 Kbyte¹⁾ For program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230	0.012
MMC 128 Kbyte¹⁾ For program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230	0.012
MMC 512 Kbyte¹⁾ For program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230	0.012
MMC 2 MByte¹⁾ For program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230	0.012
MMC 4 MByte¹⁾ For program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230	0.012
MMC 8 MByte¹⁾ For program backups	A	6ES7 953-8LP20-0AA0		1	1 unit	230	0.013
External Prommer For e. g. MMC with USB interface	A	6ES7 792-0AA00-0XA0		1	1 unit	260	1.200
PG with integrated MMC interface		On req.					
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Manuals for ET 200S distributed I/O system Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu							

¹⁾ For operation of the CPU, an MMC is essential.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-8 PN/DP CPU interface modules (continued)							
Termination modules							
As spare part for ET 200S							
	A	6ES7 193-4JA00-0AA0		1	1 unit	250	0.026
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets							
	A	6ES5 710-8MA11		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets							
	A	6ES5 710-8MA21		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets							
	A	6ES5 710-8MA31		1	1 unit	250	0.820
• Length 2 m							
	A	6ES5 710-8MA41		1	1 unit	250	1.930
Industrial Ethernet FC RJ45 Plug 180							
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder							
• 1 unit							
	A	6GK1 901-1BB10-2AA0		1	1 unit	5K2	0.030
• 10 units							
	A	6GK1 901-1BB10-2AB0		1	1 unit	5K2	0.300
• 50 units							
	A	6GK1 901-1BB10-2AE0		1	1 unit	5K2	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables							
	A	6XV1 840-2AH10		1	1 M	5K2	0.068
• Fast Connect trailing cables							
	A	6XV1 840-3AH10		1	1 M	5K2	0.055
• Fast Connect marine cables							
	A	6XV1 840-4AH10		1	1 M	5K2	0.055
Industrial Ethernet Fast Connect stripping tools							
	A	6GK1 901-1GA00		1	1 unit	5K2	0.100
Master interface modules for IM 151-7(8) CPU/ IM 151-7 F-CPU interface modules							
Master interface modules for IM 151-7 CPU/IM 151-7 F-CPU interface modules							
	A	6ES7 138-4HA00-0AB0		1	1 unit	250	0.122
Accessories							
Inscription sheets in A4 format (10 units)							
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol							
	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red							
	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow							
	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige							
	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Manuals for ET 200S distributed I/O system							
Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu							
IM 151-7 F-CPU interface modules							
IM 151-7 F-CPU interface modules							
For constructing a failsafe automation system							
	A	6ES7 151-7FA20-0AB0		1	1 unit	241	0.241
Accessories							
Distributed Safety V5.4 programming tools							
Task: Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S							
Requirements: STEP 7 V5.3 SP3 and higher							
• Floating license							
	A	6ES7 833-1FC02-0YA5		1	1 unit	241	0.257
• Software Update Service							
	B	6ES7 833-1FC00-0YX2		1	1 unit	241	0.300
Distributed Safety upgrade							
from V5.x to V5.3; floating license for 1 user							
	B	6ES7 833-1FC02-0YE5		1	1 unit	241	0.257
MMC 64 Kbyte							
For program backups							
	A	6ES7 953-8LF20-0AA0		1	1 unit	230	0.012
MMC 128 Kbyte							
For program backups							
	A	6ES7 953-8LG11-0AA0		1	1 unit	230	0.012
MMC 512 Kbyte							
For program backups							
	A	6ES7 953-8LJ20-0AA0		1	1 unit	230	0.012
MMC 2 MByte							
For program backups and/or the firmware update							
	A	6ES7 953-8LL20-0AA0		1	1 unit	230	0.012
MMC 4 MByte							
For program backups							
	A	6ES7 953-8LM20-0AA0		1	1 unit	230	0.012
External Prommer							
For MMC with USB interface							
	A	6ES7 792-0AA00-0XA0		1	1 unit	260	1.200
Termination modules							
As spare part for ET 200S							
	A	6ES7 193-4JA00-0AA0		1	1 unit	250	0.026
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets							
	A	6ES5 710-8MA11		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets							
	A	6ES5 710-8MA21		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets							
	A	6ES5 710-8MA31		1	1 unit	250	0.820
• Length 2 m							
	A	6ES5 710-8MA41		1	1 unit	250	1.930
SIPLUS IM 151-7 F-CPU interface modules (extended temperature range)							
SIPLUS IM 151-7 F-CPU interface modules							
For constructing a failsafe automation system (extended temperature range and medial load)							
	D	6AG1 151-7FA20-2AB0		1	1 unit	473	0.247
Accessories							

For ordering data see IM 151-7 F-CPU interface modules

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 151-8F PN/DP CPU interface modules							
IM 151-8F PN/DP CPU interface modules (192 K) including termination module	A	6ES7 151-8FB00-0AB0		1	1 unit	241	0.380
Accessories							
Distributed Safety V5.4 programming tools							
Task: Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S Requirements: STEP 7 V5.3 SP3 and higher							
• Floating license	A	6ES7 833-1FC02-0YA5		1	1 unit	241	0.257
• Software Update Service	B	6ES7 833-1FC00-0YX2		1	1 unit	241	0.300
Distributed Safety upgrade From V5.3 to V5.4; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241	0.257
MMC 64 Kbyte¹⁾ For program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230	0.012
MMC 128 Kbyte¹⁾ For program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230	0.012
MMC 512 Kbyte¹⁾ For program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230	0.012
MMC 2 MByte¹⁾ For program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230	0.012
MMC 4 MByte¹⁾ For program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230	0.012
MMC 8 MByte¹⁾ For program backups	A	6ES7 953-8LP20-0AA0		1	1 unit	230	0.013
External Prommer For e. g. MMC with USB interface	A	6ES7 792-0AA00-0XA0		1	1 unit	260	1.200
PG with integrated MMC interface		On req.					
Inscription sheets in A4 format (10 units)							
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Manuals for ET 200S distributed I/O system							
Can be downloaded as a PDF file from the Internet: www.siemens.com/simatic-docu							
Termination modules As spare part for ET 200S	A	6ES7 193-4JA00-0AA0		1	1 unit	250	0.026
SIMATIC S5, 35 mm standard mounting rails							
• 483 mm long for 19" cabinets	A	6ES5 710-8MA11		1	1 unit	250	0.440
• 530 mm long for 600 mm cabinets	A	6ES5 710-8MA21		1	1 unit	250	0.466
• 830 mm long for 900 mm cabinets	A	6ES5 710-8MA31		1	1 unit	250	0.820
• Length 2 m	A	6ES5 710-8MA41		1	1 unit	250	1.930
Industrial Ethernet FC RJ45 Plug 180							
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder							
• 1 unit	A	6GK1 901-1BB10-2AA0		1	1 unit	5K2	0.030
• 10 units	A	6GK1 901-1BB10-2AB0		1	1 unit	5K2	0.300
• 50 units	A	6GK1 901-1BB10-2AE0		1	1 unit	5K2	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables	A	6XV1 840-2AH10		1	1 M	5K2	0.068
• Fast Connect trailing cables	A	6XV1 840-3AH10		1	1 M	5K2	0.055
• Fast Connect marine cables	A	6XV1 840-4AH10		1	1 M	5K2	0.055
Industrial Ethernet Fast Connect stripping tools	A	6GK1 901-1GA00		1	1 unit	5K2	0.100

¹⁾ For operation of the CPU, an MMC is essential.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PM-E power modules for solid-state modules							
PM-E power modules 24 V DC ¹⁾ For solid-state modules, with diagnostics	A	6ES7 138-4CA01-0AA0		1	1 unit	250	0.040
PM-E power modules 24 to 48 V DC For solid-state modules, with diagnostics, with status bit "Load voltage available"	A	6ES7 138-4CA50-0AB0		1	1 unit	250	0.041
PM-E power modules 24 to 48 V DC, 42 to 230 V AC For solid-state modules, with diagnostics and fuse	A	6ES7 138-4CB11-0AB0		1	1 unit	250	0.043
Accessories							
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
SIPLUS PM-E power modules for solid-state modules (extended temperature range)							
SIPLUS PM-E power modules (extended temperature range and medial load)							
PM-E power modules 24 V DC ¹⁾ For solid-state modules, with diagnostics	D	6AG1 138-4CA01-2AA0		1	1 unit	471	0.040
PM-E power modules 24 to 48 V DC For solid-state modules, with diagnostics, with status bit "Load voltage available"	D	6AG1 138-4CA50-2AB0		1	1 unit	471	0.041
PM-E power modules 24 to 48 V DC, 24 to 230 V AC For solid-state modules, with diagnostics and fuse	C	6AG1 138-4CB11-2AB0		1	1 unit	471	0.045
Accessories							
For ordering data see power modules for PM-E solid-state modules							
Reserve modules							
Reserve modules for ET 200S For reserving space in unused slots							
• 15 mm width (5 units)	A	6ES7 138-4AA01-0AA0		1	1 unit	250	0.135
• 30 mm width (1 unit)	A	6ES7 138-4AA11-0AA0		1	1 unit	250	0.042
Potential distributor modules							
Potential distributor modules for ET 200S For supplying the load voltage to additional terminals, 15 mm wide, 1 unit	A	6ES7138-4FD00-0AA0		1	1 unit	250	0.039
Accessories for inscription							
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226

¹⁾ For all solid-state and technology modules except
2 DI 120 V AC/2 DI 230 V AC/2 DO 120/230 V AC.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Digital solid-state modules							
Digital input modules							
Order unit 5 units							
• 2 DI 24 V DC Standard	A	6ES7 131-4BB01-0AA0		1	1 unit	250	0.175
• 2 DI 24 V DC High Feature	A	6ES7 131-4BB01-0AB0		1	1 unit	250	0.177
• 4 DI 24 V DC Standard	A	6ES7 131-4BD01-0AA0		1	1 unit	250	0.176
• 4 DI 24 V DC High Feature	A	6ES7 131-4BD01-0AB0		1	1 unit	250	0.182
• 2 DI 120 V AC	A	6ES7 131-4EB00-0AB0		1	1 unit	250	0.175
• 2 DI 230 V AC	A	6ES7 131-4FB00-0AB0		1	1 unit	250	0.175
• 4 DI 24 ... 48 V	A	6ES7 131-4CD00-0AB0		1	1 unit	250	0.195
• 4 DI 24 V DC SOURCE INPUT	A	6ES7 131-4BD51-0AA0		1	1 unit	250	0.176
Order unit 1 unit							
• 4 DI 24 V DC NAMUR	A	6ES7 131-4RD00-0AB0		1	1 unit	250	0.045
• 8 DI 24 V DC Standard	A	6ES7 131-4BF00-0AA0		1	1 unit	250	0.042
• 8 DI 24 V DC Standard SOURCE INPUT	A	6ES7 131-4BF50-0AA0		1	1 unit	250	0.043
Digital output modules							
Order unit 5 units							
• 2 DO 24 V DC/0.5 A Standard	A	6ES7 132-4BB01-0AA0		1	1 unit	250	0.179
• 2 DO 24 V DC/0.5 A High Feature	A	6ES7 132-4BB01-0AB0		1	1 unit	250	0.182
• 2 DO 24 V DC/2 A Standard	A	6ES7 132-4BB31-0AA0		1	1 unit	250	0.183
• 2 DO 24 V DC/2 A High Feature	A	6ES7 132-4BB31-0AB0		1	1 unit	250	0.193
• 4 DO 24 V DC/0.5A Standard	A	6ES7 132-4BD02-0AA0		1	1 unit	250	0.181
• 4 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	6ES7 132-4BD50-0AA0		1	1 unit	250	0.185
• 4 DO 24 V DC/2 A Standard	A	6ES7 132-4BD32-0AA0		1	1 unit	250	0.186
• 2 DO 24 V to 230 V AC /1 A	A	6ES7 132-4FB01-0AB0		1	1 unit	250	0.199
• 2 DO 24 V DC to 230 V AC/5 A relay, NO contact	A	6ES7 132-4HB01-0AB0		1	1 unit	250	0.217
• 2 DO 24 ... 48 V DC to 230 V AC/5 A relays, CO	A	6ES7 132-4HB10-0AB0		1	1 unit	250	0.228
Order unit 1 unit							
• 8 DO 24 V DC/0.5 A Standard	A	6ES7 132-4BF00-0AA0		1	1 unit	250	0.044
• 8 DO 24 V DC/0.5 A Standard SOURCE OUTPUT	A	6ES7 132-4BF50-0AA0		1	1 unit	250	0.044
• 2 DO 24 ... 48 V/5 A, 24 ... 230 V AC/5 A relays, CO	A	6ES7 132-4HB50-0AB0		1	1 unit	250	0.055
Accessories							
Inscription sheets in A4 format (10 units)							
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
SIPLUS digital solid-state modules (extended temperature range)							
SIPLUS digital input modules							
(extended temperature range and medial load)							
Order unit 5 units							
• 4 DI 24 V DC Standard	D	6AG1 131-4BD01-2AA0		1	1 unit	471	0.180
• 8 DI 24 V DC Standard	D	6AG1 131-4BF00-7AA0		1	1 unit	471	0.042
SIPLUS digital output modules							
(extended temperature range and medial load)							
Order unit 5 units							
• 2 DO 24 V DC/0.5 A High-Feature	D	6AG1 132-4BB01-2AB0		1	1 unit	471	0.187
• 2 DO 24 V DC/2 A High Feature	D	6AG1 132-4BB31-7AB0		1	1 unit	471	0.198
• 4 DO 24 V DC/0.5 A Standard	X	6AG1 132-4BD01-2AA0		1	1 unit	473	0.187
• 4 DO 24 V DC/0.5 A Standard	D	6AG1 132-4BD02-7AA0		1	1 unit	471	0.184
• 4 DO 24 V DC/2 A Standard	D	6AG1 132-4BD32-2AA0		1	1 unit	471	0.189
• 2 DO 24 V DC to 230 V AC/5 A relay, NO	D	6AG1 132-4HB01-2AB0		1	1 unit	471	0.218
• 2 DO 24 ... V DC to 230 V AC/5 A relay, CO	D	6AG1 132-4HB10-2AB0		1	1 unit	471	0.200
Order unit 1 unit							
• 8 DO 24 V DC/5 A Standard		6AG1 132-4BF00-0AA0					
Accessories							
For ordering data see digital solid-state modules							

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Analog solid-state modules							
Analog input modules							
Order unit 1 unit							
• 2 AI U Standard	A	6ES7 134-4FB01-0AB0		1	1 unit	250	0.044
• 2 AI U High Speed	A	6ES7 134-4FB52-0AB0		1	1 unit	250	0.057
• 2 AI U High Feature	A	6ES7 134-4LB02-0AB0		1	1 unit	250	0.056
• 2 AI I Standard 2-wire	A	6ES7 134-4GB01-0AB0		1	1 unit	250	0.044
• 2 AI I High Speed 2-wire	A	6ES7 134-4GB52-0AB0		1	1 unit	250	0.057
• 2 AI I Standard 4-wire	A	6ES7 134-4GB11-0AB0		1	1 unit	250	0.044
• 2 AI High Speed 1-4 wire	A	6ES7 134-4GB62-0AB0		1	1 unit	250	0.057
• 2 AI I High Feature 2/4-wire (15 bits + sign)	A	6ES7 134-4MB02-0AB0		1	1 unit	250	0.046
• 2 AI RTD Standard	A	6ES7 134-4JB51-0AB0		1	1 unit	250	0.044
• 2 AI TC Standard	A	6ES7 134-4JB01-0AB0		1	1 unit	250	0.045
• 2 AI RTD High Feature	A	6ES7 134-4NB51-0AB0		1	1 unit	250	0.045
• 2 AI TC High Feature	A	6ES7 134-4NB01-0AB0		1	1 unit	250	0.046
• 4 AI Standard 2-wire	A	6ES7 134-4GD00-0AB0		1	1 unit	250	0.045
Analog output modules							
Order unit 1 unit							
• 2 AO U Standard	A	6ES7 135-4FB01-0AB0		1	1 unit	250	0.046
• 2 AO U High Speed	A	6ES7 135-4FB52-0AB0		1	1 unit	250	0.058
• 2 AO U High Feature	A	6ES7 135-4LB02-0AB0		1	1 unit	250	0.045
• 2 AO I Standard	A	6ES7 135-4GB01-0AB0		1	1 unit	250	0.045
• 2 AO I High Speed	A	6ES7 135-4GB52-0AB0		1	1 unit	250	0.059
• 2 AO I High Feature	A	6ES7 135-4MB02-0AB0		1	1 unit	250	0.045
Accessories for inscription							
Inscription sheets in A4 format (10 units)							
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Accessories for system-integrated shield connections							
Shield attachments							
Order unit 5 units							
For plugging into TM-E and TM-P							
Shield terminals							
Order unit 5 units							
For busbars 3 × 10 mm							
Ground connection terminals							
Order unit 1 unit							
For conductor cross-sections up to 25 mm ²							
Busbars 3 × 10 mm							
Order unit 1 unit							
SIPLUS analog solid-state modules (extended temperature range)							
SIPLUS analog input modules							
(extended temperature range and medial load)							
• 2 AI I Standard 2-wire	D	6AG1 134-4GB01-2AB0		1	1 unit	471	0.045
• 2 AI I Standard 4-wire	D	6AG1 134-4GB11-2AB0		1	1 unit	471	0.045
• 2 AI High Speed 2-wire	D	6AG1 134-4GB52-2AB0		1	1 unit	471	0.060
• 2 AI RTD Standard	D	6AG1 134-4JB50-2AB0		1	1 unit	471	0.047

Accessories

For ordering data see analog solid-state modules

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PM-E F PROFIsafe F power modules							
PM-E F pm PROFIsafe 24 V DC power modules For the safe disconnection of digital output modules	A	6ES7 138-4CF03-0AB0		1	1 unit	241	0.099
PM-E F pp PROFIsafe 24 V DC power modules For the safe disconnection of digital output modules	A	6ES7 138-4CF42-0AB0		1	1 unit	241	0.094
Accessories							
IM 151-1 HIGH FEATURE interface modules For ET 200S; transmission rates up to 12 Mbit/s; data volume of 244 bytes each for inputs and outputs; up to 63 modules can be connected; connection of PROFIsafe modules, isochrone mode (clocked operation); connection to bus through 9-pole Sub-D including bus termination module	A	6ES7151-1BA02-0AB0		1	1 unit	250	0.172
IM 151-3 PN HF interface modules For ET 200S; transmission rates up to 100 Mbit/s; up to 63 I/O modules up to 2 m width can be connected; 2 x connection to bus with RJ45 plug, including bus termination module	A	6ES7 151-3BA23-0AB0		1	1 unit	250	0.199
IM 151-3 PN FO interface modules For ET 200S; 2 PROFINET fiberoptic interfaces, integrated 2-port switch, up to 63 I/O modules up to 2 m wide can be connected, including bus termination module		6ES7151-1BB23-0AB0					
Terminal modules for power modules							
TM-P30S44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals for PM-E F PROFIsafe	A	6ES7 193-4CK20-0AA0		1	1 unit	241	0.131
TM-P30C44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals for PM-E F PROFIsafe	A	6ES7 193-4CK30-0AA0		1	1 unit	241	0.114
Distributed Safety V5.4 programming tools							
<i>Task:</i> Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S <i>Requirement:</i> STEP 7 V5.3 SP3 and higher							
• Floating license	A	6ES7 833-1FC02-0YA5		1	1 unit	241	0.257
• Software Update Service	B	6ES7 833-1FC00-0YX2		1	1 unit	241	0.300
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241	0.257
SIMATIC Manual Collection Manuals on DVD-ROM, five languages: S7-200/300/400, C7, LOGO!, SIMATIC DP, PC, PG, STEP 7, Engineering Software, Runtime Software, PCS 7, SIMATIC HMI, SIMATIC NET	A	6ES7 998-8XC01-8YE0		1	1 unit	230	0.099
SIMATIC Manual Collection update service for 1 year	C	6ES7 998-8XC01-8YE2		1	1 unit	230	0.400
F solid-state modules							
4/8 F-DI PROFIsafe 24 V DC solid-state modules 30 mm width, up to Category 4 (EN 954-1)	A	6ES7 138-4FA04-0AB0		1	1 unit	241	0.090
4 F-DO PROFIsafe 24 V DC/2 A solid-state modules 30 mm width, up to Category 4 (EN 954-1)	A	6ES7 138-4FB03-0AB0		1	1 unit	241	0.094
4 F-DI / 3 F-DO PROFIsafe 24 V DC/2 A solid-state modules 30 mm width, up to Category 3 (EN 954-1) / SIL 2 (IEC 62061)	A	6ES7 138-4FC01-0AB0		1	1 unit	241	0.083
Accessories							
Terminal modules for solid-state modules		See F terminal modules					
IM151-1 High-Feature interface modules For ET200S; transmission rates up to 12 Mbit/s; up to 63 modules can be connected, with isochrone mode, connection to bus through 9-pole Sub-D, including termination module	A	6ES7 151-1BA02-0AB0		1	1 unit	250	0.172
IM151-3 PN HF interface modules For ET 200S; transmission rates up to 100 Mbit/s; up to 63 I/O modules up to 2 m width can be connected; 2 x connection to bus with RJ45 plug, including bus termination module	A	6ES7 151-3BA23-0AB0		1	1 unit	250	0.199
IM151-3 PN FO interface modules For ET 200S; 2 PROFINET fiberoptic interfaces, integrated 2-port switch, up to 63 I/O modules up to 2 m wide can be connected, including bus termination module		6ES7 151-1BB23-0AB0					
Distributed Safety V5.4 programming tools							
<i>Task:</i> Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S <i>Requirement:</i> STEP 7 V5.3 SP3 and higher							
• Floating license	A	6ES7 833-1FC02-0YA5		1	1 unit	241	0.257
• Software Update Service	B	6ES7 833-1FC00-0YX2		1	1 unit	241	0.300
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241	0.257

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
F solid-state modules (continued)							
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	A	6ES7 998-8XC01-8YE0		1	1 unit	230	0.099
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230	0.400
SIPLUS F solid-state modules (extended temperature range)							
SIPLUS F solid-state modules (extended temperature range and medial load)							
4/8 F-DI PROFI-safe 24 V DC solid-state modules 30 mm width, up to Category 4 (EN 954-1)	X	6AG1 138-4FA03-2AB0		1	1 unit	471	0.090
4 F-DO PROFI-safe 24 V DC/2 A solid-state modules 30 mm width, up to Category 4 (EN 954-1)	X	6AG1 138-4FB02-2AB0		1	1 unit	471	0.100
Accessories		For ordering data see F solid-state modules					
RELAY F solid-state modules							
1 F-RO 24 V DC/5A 24 V..230 AC/5A solid-state modules	A	6ES7 138-4FR00-0AA0		1	1 unit	241	0.106
Accessories		See F terminal modules					
Terminal modules for solid-state modules							
IM151-1 High-Feature interface modules For ET200S; transmission rates up to 12 Mbit/s; up to 63 modules can be connected, with isochrone mode, connection to bus through 9-pole Sub-D, including termination module	A	6ES7 151-1BA02-0AB0		1	1 unit	250	0.172
IM151-3 PN HF interface modules For ET 200S; transmission rates up to 100 Mbit/s; up to 63 I/O modules up to 2 m width can be connected; 2 x connection to bus with RJ45 plug, including bus termination module	A	6ES7 151-3BA23-0AB0		1	1 unit	250	0.199
IM151-3 PN FO interface modules For ET 200S; 2 PROFINET fiberoptic interfaces, integrated 2-port switch, up to 63 I/O modules up to 2 m wide can be connected, including bus termination module		6ES7 151-1BB23-0AB0					
Distributed Safety V5.4 programming tools							
<i>Task:</i> Configuration software for configuring failsafe user programs for SIMATIC S7-300F, S7-400F and ET 200S							
<i>Requirement:</i> STEP 7 V5.3 SP3 and higher							
• Floating license	A	6ES7 833-1FC02-0YA5		1	1 unit	241	0.257
• Software Update Service	B	6ES7 833-1FC00-0YX2		1	1 unit	241	0.300
Distributed Safety upgrade from V5.x to V5.3; floating license for 1 user	B	6ES7 833-1FC02-0YE5		1	1 unit	241	0.257
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	A	6ES7 998-8XC01-8YE0		1	1 unit	230	0.099
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230	0.400
F terminal modules							
F terminal modules for power modules							
TM-P15S23-A1 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CC20-0AA0		1	1 unit	250	0.070
TM-P15C23-A1 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CC30-0AA0		1	1 unit	250	0.063
TM-P15N23-A1 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CC70-0AA0		1	1 unit	250	0.081

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
F terminal modules (continued)							
TM-P15S23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals	A	6ES7 193-4CD20-0AA0		1	1 unit	250	0.070
TM-P15C23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	A	6ES7 193-4CD30-0AA0		1	1 unit	250	0.063
TM-P15N23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 interrupted to the left, FastConnect	A	6ES7 193-4CD70-0AA0		1	1 unit	250	0.081
TM-P15S22-01 Order unit: 1 unit 2 x 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CE00-0AA0		1	1 unit	250	0.066
TM-P15C22-01 Order unit: 1 unit 2 x 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CE10-0AA0		1	1 unit	250	0.058
TM-P15N22-01 Order unit: 1 unit 2 x 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CE60-0AA0		1	1 unit	250	0.071
TM-P30S44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals for PM-E F PROFIsafe	A	6ES7 193-4CK20-0AA0		1	1 unit	241	0.131
TM-P30C44-A0 Order unit: 1 unit 7 x 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals for PM-E F PROFIsafe	A	6ES7 193-4CK30-0AA0		1	1 unit	241	0.114
F terminal modules for solid-state modules							
TM-E30S44-01 Order unit: 1 unit 4 x 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CG20-0AA0		1	1 unit	250	0.146
TM-E30C44-01 Order unit: 1 unit 4 x 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CG30-0AA0		1	1 unit	250	0.128
TM-E30S46-A1 Order unit: 1 unit 4 x 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CF40-0AA0		1	1 unit	250	0.185
TM-E30C46-A1 Order unit: 1 unit 4 x 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CF50-0AA0		1	1 unit	250	0.147
Accessories							
Color coding plates Order unit: 200 units for TM-P, TM-E							
• White	A	6ES7 193-4LA20-0AA0		1	1 unit	250	0.025
• Yellow	A	6ES7 193-4LB20-0AA0		1	1 unit	250	0.027
• Yellow and green	A	6ES7 193-4LC20-0AA0		1	1 unit	250	0.024
• Red	A	6ES7 193-4LD20-0AA0		1	1 unit	250	0.023
• Blue	A	6ES7 193-4LF20-0AA0		1	1 unit	250	0.025
• Brown	A	6ES7 193-4LG20-0AA0		1	1 unit	250	0.025
• Turquoise	A	6ES7 193-4LH20-0AA0		1	1 unit	250	0.026
Ground connection terminals Order unit 1 unit For conductor cross-sections up to 25 mm ²	C	8WA2 868		1	50 units	041	0.014
Busbars 3 x 10 mm Order unit 1 unit	A	8WA2 842		1	1 unit	041	0.267
Inscription labels, with inscription Order unit: 1 set							
• 200 units for slot numbering (1 to 20) 10 x	A	8WA8 861-0AB		100	200 units	041	0.080
• 200 units for slot numbering (1 to 40) 5 x	A	8WA8 861-0AC		100	200 units	041	0.080
• 200 units for slot numbering (1 to 64) 1 x, (1 to 68) 2 x	C	8WA8 861-0DA		100	200 units	041	0.080
Inscription labels, blank 200 units for slot numbering	A	8WA8 848-2AY		100	100 units	041	0.080

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
4 IQ-Sense and 8 IQ-Sense sensor modules							
4 IQ-Sense sensor modules	A	6ES7 138-4GA00-0AB0		1	1 unit	250	0.204
8 x IQ-Sense sensor modules	A	6ES7 338-7XF00-0AB0		1	1 unit	230	0.241
Sensors							
For connecting to the 4 IQ-Sense sensor module							
• Diffuse sensor, type C40 IQ-Sense	▶	3SF7 240-3JQ00		1	1 unit	574	0.170
• Diffuse sensor, type K80 IQ-Sense	▶	3SF7 210-3JQ00		1	1 unit	574	0.101
• Retroreflective sensor, type C40 IQ-Sense	▶	3SF7 241-3JQ00		1	1 unit	574	0.170
• Retroreflective sensor, type K80 IQ-Sense	▶	3SF7 211-3JQ00		1	1 unit	574	0.096
• Diffuse sensor with background suppression, type K80 IQ-Sense	A	3SF7 214-3JQ00		1	1 unit	574	0.101
• M18 IQ-Sense ultrasonic sensors Detection range 5 to 30 cm	C	3SF6 232-3JA00		1	1 unit	574	0.076
• M18 IQ-Sense ultrasonic sensors Detection range 15 to 100 cm	C	3SF6 233-3JA00		1	1 unit	574	0.075
SSI modules							
SSI modules	A	6ES7 138-4DB03-0AB0		1	1 unit	250	0.047
For the connection of absolute encoders with SSI interface							
Accessories							
Inscription sheets in A4 format (10 units)							
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Signal cables							
Assembled for SSI absolute encoders 6FX2001-5, without Sub-D connector, UL/DESINA							
	B	6FX5 002-2CC12-....		1	1 unit	701	0.460
2 PULSE pulse generators							
2PULSE pulse generators and timer modules	A	6ES7 138-4DD00-0AB0		1	1 unit	250	0.050
For ET 200S							
Accessories							
Inscription sheets in A4 format (10 units)							
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
1STEP step modules							
1STEP step modules	A	6ES7 138-4DC00-0AB0		1	1 unit	250	0.046
For simple positioning tasks with stepper motor axes							
Accessories							
Inscription sheets in A4 format (10 units)							
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
SIMOSTEP stepper motors							
see ST 70 Catalog							
Power sections for stepper motors FM STEPDRIVE							
see ST 70 Catalog							
1POS U positioning modules							
1POS U positioning modules	A	6ES7 138-4DL00-0AB0		1	1 unit	250	0.081
Single-channel positioning module for ET 200S for positioning of adjusting and operating axes							

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
1 COUNT 24 V/100 kHz counter modules							
1 COUNT 24 V/100 kHz counter modules For universal counting and measuring tasks with ET 200S	A	6ES7 138-4DA04-0AB0		1	1 unit	250	0.048
Accessories							
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Shield attachments For TM-P and TM-E terminal modules, as support for busbar 3 x 10 mm, 5 units	A	6ES7 193-4GA00-0AA0		1	1 unit	250	0.044
Shield terminals For connection of braided shields to busbars, 5 units	A	6ES7 193-4GB00-0AA0		1	1 unit	250	0.062
SIMODRIVE sensor incremental encoders Mountable sensor, optically incremental with HTL level, operational voltage 10 – 30 V		6FX2 001-4....					
Signal cables Assembled, for HTL and TTL sensors, without Sub-D connector, UL/DESINA	B	6FX5 002-2CA12-....		1	1 unit	701	0.110
1 COUNT 24 V/100 kHz counter modules (extended temperature range)							
1 COUNT 24 V/100 kHz counter modules For universal counting and measuring tasks with ET 200S	D	6AG1 138-4DA04-2AB0		1	1 unit	471	0.054
Accessories For ordering data see 1 COUNT 24 V/100 kHz counter module							
1 COUNT 5 V/500 kHz counter modules							
1 COUNT 5 V/500 kHz counter modules For universal counting and measuring tasks with ET 200S	A	6ES7 138-4DE02-0AB0		1	1 unit	250	0.078
Accessories							
Inscription sheets in A4 format (10 units) Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules.							
• Petrol	A	6ES7 193-4BH00-0AA0		1	1 unit	250	0.241
• Red	A	6ES7 193-4BD00-0AA0		1	1 unit	250	0.225
• Yellow	A	6ES7 193-4BB00-0AA0		1	1 unit	250	0.225
• Light beige	A	6ES7 193-4BA00-0AA0		1	1 unit	250	0.226
Shield attachments For TM-P and TM-E terminal modules, as support for busbar 3 x 10 mm, 5 units	A	6ES7 193-4GA00-0AA0		1	1 unit	250	0.044
Shield terminals For connection of braided shields to busbars, 5 units	A	6ES7 193-4GB00-0AA0		1	1 unit	250	0.062
SIMODRIVE incremental encoders With RS 422 (TTL), operational voltage 10 – 30 V		6FX2 001-2....					
Signal cables Assembled, for HTL and TTL sensors, without Sub-D connector, UL/DESINA	B	6FX5 002-2CA12-....		1	1 unit	701	0.110
1 SI interface modules							
1SI interface modules							
• ASCII and 3964(R) protocol	A	6ES7 138-4DF01-0AB0		1	1 unit	250	0.047
• Modbus and USS protocol	A	6ES7 138-4DF11-0AB0		1	1 unit	250	0.047
Accessories							
TM-E15S 26-A1 terminal modules Order unit 5 units	A	6ES7 193-4CA40-0AA0		1	1 unit	250	0.471
TM-E15C26-A1 terminal modules Order unit 5 units	A	6ES7 193-4CA50-0AA0		1	1 unit	250	0.397
TM-E15N24-A1 terminal modules Order unit 5 units	A	6ES7 193-4CA80-0AA0		1	1 unit	250	0.549
TM-E15S24-01 terminal modules Order unit 5 units	A	6ES7 193-4CB20-0AA0		1	1 unit	250	0.408
TM-E15C24-01 terminal modules Order unit 5 units	A	6ES7 193-4CB30-0AA0		1	1 unit	250	0.333
TM-E15N24-01 terminal modules Order unit 5 units	A	6ES7 193-4CB70-0AA0		1	1 unit	250	0.431

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIWAREX CS							
SIWAREX CS Weighing electronics for weighers in SIMATIC ET 200S	B	7MH4910-0AA01		1	1 unit	816	0.093
SIWAREX CS manuals • In various languages Free download from: www.siemens.com/weightingtechnology							
SIWAREX CS "Getting started" Sample software for a simple introduction to programming weighers in STEP 7. Free download from: www.siemens.com/weightingtechnology							
SIWAREX CS configuration package on CD-ROM for SIMATIC S7, Version V5.4 and higher • SIWATOOL CS software for weigher calibration (in various languages) • Manuals on CD (in various languages) • SIWAREX CD "Getting started"	C	7MH4910-0AK01		1	1 unit	816	0.216
SIWATOOL connection cables from SIWAREX U/CS with serial PC interface, for 9-pole PC interfaces (RS 232), length 3 m <i>Installation materials (essential)</i>	C	7MH4607-8CA		1	1 unit	815	0.250
Terminal modules TM-E 30 mm wide (required for each SIWAREX module)	A	6ES7193-4CG20-0AA0 or compatible		1	1 unit	250	0.146
Shield attachments Contents 5 units, sufficient for 5 cables	A	6ES7193-4GA00-0AA0		1	1 unit	250	0.044
Shield connection terminals Contents: 5 units, sufficient for 5 cables <i>Note:</i> One shield connection terminal is required for • Weigher connection and • The TTY interface or • RS 232 interface	A	6ES7193-4GB00-0AA0		1	1 unit	250	0.062
N busbars, galvanized 3 x 10 mm, 1 m long	A	8WA2 842		1	1 unit	041	0.267
Feeder terminals for N busbar Remote displays (optional) The digital remote displays can be connected directly through the TTY interface to the SIWAREX CS. Usable remote display: S102 Siebert Industrieelektronik GmbH Postfach 1180 D-66565 Eppelborn Tel.: +49(0)6806/980-0 Fax: +49(0)6806/980-999 Internet: www.siebert.de Detailed information is available from the manufacturer.	C	8WA2868		1	50 units	041	0.014
Accessories							
SIWAREX JB connection boxes, aluminium enclosure For parallel switching of up to 4 weigh-cells and for connecting several connection boxes	C	7MH4710-1BA		1	1 unit	815	1.520
SIWAREX JB connection boxes, high-grade steel enclosure For parallel switching of up to 4 weigh-cells	D	7MH4710-1EA		1	1 unit	815	1.203
Ex-Interface, type SIWAREX Pi with UL and FM approval, but without ATEX approval For the inherently safe connection of weigh-cells, Suitable for the weigher modules SIWAREX U, CS, MS, FTA, FTC and M. Use in the EU is not possible.	D	7MH4710-5AA		1	1 unit	815	2.850
SIWAREX Pi Ex-Interface manuals Ex-Interface, type SIWAREX IS with ATEX approval, but without UL and FM approval For the inherently safe connection of weigh-cells, including manual, Suitable for the weigher modules SIWAREX U, CS, MS, FTA, FTC, M and CF, use in the EU is possible. • With short-circuit current < DC 199 mA • With short-circuit current < DC 137 mA	X	C71000-T5974-C29		1	1 unit	815	0.058
	C	7MH4710-5BA		1	1 unit	815	0.500
	C	7MH4710-5CA		1	1 unit	815	0.500

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIWAREX CS (continued)							
<i>Cables (optional)</i>							
Cables Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) – CY, sheath color orange	C	7MH4702-8AG		1	1 M	815	0.142
For connecting SIWAREX U, CS, MS, FTA, FTC, M and CF to the connection and distribution box (JB), extension box (EB) or Ex-Interface (Ex-I) and between two JB's, for local laying, occasional bending is possible, 10.8 mm external diameter, for ambient temperature -40 to +80 °C							
Cables Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) – CY, sheath color blue	C	7MH4702-8AF		1	1 M	815	0.160
Connecting of connection and distribution box (JB) or extension box (EB) in hazardous areas and Ex-Interface (Ex-I), for local laying, occasional bending is possible, blue PVC insulating covering, approx. 10.8 mm external diameter, for ambient temperature -40 to +80 °C							
Cables LiYCY 4 x 2 x 0.25 mm²	C	7MH4407-8BD0		1	1 M	815	0.080
For TTY (switch 2 core pairs each in parallel), for connecting a remote indication							
SIWAREX CF							
SIWAREX CF	C	7MH4920-0AA01		1	1 unit	816	0.093
Force measuring module for DMS sensors in SIMATIC ET 200S (SIWAREX CF configuration package not required)							
SIWAREX CF manuals							
<ul style="list-style-type: none"> German, English Free download from: www.siemens.com/weighingtechnology 							
SIWAREX CF "Getting started"							
Sample software for a simple introduction to programming in STEP 7. Free download from: www.siemens.com/weighingtechnology							
<i>Installation materials (essential)</i>							
Terminal modules	A	6ES7193-4CG20-0AA0 or compatible		1	1 unit	250	0.146
TM-E 30 mm wide (required for each SIWAREX module)							
Shield attachments	A	6ES7193-4GA00-0AA0		1	1 unit	250	0.044
Contents 5 units, sufficient for 5 cables							
Shield connection terminals	A	6ES7193-4GB00-0AA0		1	1 unit	250	0.062
Contents: 5 units, sufficient for 5 cables One shield connection terminal is required for each sensor cable							
N busbars, galvanized	A	8WA2 842		1	1 unit	041	0.267
3 x 10 mm, 1.5 m long							
Feeder terminals for N busbar	C	8WA2868		1	50 units	041	0.014
<i>Accessories</i>							
SIWAREX EB extension boxes	C	7MH4710-2AA		1	1 unit	815	0.500
For extending sensor cables							
Ex-Interface, type SIWAREX IS							
with ATEX approval, but without UL and FM approval For the inherently safe connection of weigh-cells, including manual, Suitable for the weigher modules SIWAREX U, CS, MS, FTA, FTC, M and CF, use in the EU is possible.							
<ul style="list-style-type: none"> • With short-circuit current < DC 199 mA • With short-circuit current < DC 137 mA 							
	C	7MH4710-5BA		1	1 unit	815	0.500
	C	7MH4710-5CA		1	1 unit	815	0.500
<i>Cables (optional)</i>							
Cables Li2Y 1 x 2 x 0.75 ST + 2 x (2 x 0.34 ST) – CY, sheath color orange	C	7MH4702-8AG		1	1 M	815	0.142
For connecting SIWAREX U, CS, MS, FTA, FTC, M and CF to the connection and distribution box (JB), extension box (EB) or Ex-Interface (Ex-I) and between two JB's, for local laying, occasional bending is possible, 10.8 mm external diameter, for ambient temperature -40 to +80 °C							
Terminal modules for power- and solid-state modules							
<i>TM-P terminal modules for PM-E power modules</i>							
TM-P15S23-A1	A	6ES7 193-4CC20-0AA0		1	1 unit	250	0.070
Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals							
TM-P15C23-A1	A	6ES7 193-4CC30-0AA0		1	1 unit	250	0.063
Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals							
TM-P15N23-A1	A	6ES7 193-4CC70-0AA0		1	1 unit	250	0.081
Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect							

* You can order this quantity or a multiple thereof.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for power and solid-state modules (continued)							
TM-P15S23-A0 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals	A	6ES7 193-4CD20-0AA0		1	1 unit	250	0.070
TM-P15C23-A0 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	A	6ES7 193-4CD30-0AA0		1	1 unit	250	0.063
TM-P15N23-A0 Order unit: 1 unit 2 × 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, FastConnect	A	6ES7 193-4CD70-0AA0		1	1 unit	250	0.081
TM-P15S22-01 Order unit: 1 unit 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CE00-0AA0		1	1 unit	250	0.066
TM-P15C22-01 Order unit: 1 unit 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CE10-0AA0		1	1 unit	250	0.058
TM-P15N22-01 Order unit: 1 unit 2 × 2 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CE60-0AA0		1	1 unit	250	0.071
TM-P30S44-A0 Order unit: 1 unit 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals for PM-E F PROFIsafe	A	6ES7 193-4CK20-0AA0		1	1 unit	241	0.131
TM-P30C44-A0 Order unit: 1 unit 7 × 2 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals for PM-E F PROFIsafe	A	6ES7 193-4CK30-0AA0		1	1 unit	241	0.114
TM-E terminal modules for solid-state modules¹⁾							
TM-E15S24-A1 Order unit: 5 units 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CA20-0AA0		1	1 unit	250	0.381
TM-E15C24-A1 Order unit: 5 units 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CA30-0AA0		1	1 unit	250	0.324
TM-E15S24-01 Order unit: 5 units 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CB20-0AA0		1	1 unit	250	0.408
TM-E15C24-01 Order unit: 5 units 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CB30-0AA0		1	1 unit	250	0.333
TM-E15S23-01 Order unit: 5 units 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CB00-0AA0		1	1 unit	250	0.330
TM-E15C23-01 Order unit: 5 units 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CB10-0AA0		1	1 unit	250	0.290
TM-E15N23-01 Order unit: 5 units 2 × 3 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CB60-0AA0		1	1 unit	250	0.376
TM-E15N24-01 Order unit: 5 units 2 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CB70-0AA0		1	1 unit	250	0.431
TM-E15S26-A1 Order unit: 5 units 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CA40-0AA0		1	1 unit	250	0.471
TM-E15C26-A1 Order unit: 5 units 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CA50-0AA0		1	1 unit	250	0.397

¹⁾ Note for selecting suitable TM-E and TM-P configuration aids.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	-------------------	-------------------------	-----	----	-----------------------------------

Terminal modules for power and solid-state modules (continued)

TM-E terminal modules for solid-state modules¹⁾ (continued)

TM-E15N24-A1 Order unit: 5 units 2 × 4 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CA70-0AA0		1	1 unit	250	0.422
TM-E15N26-A1 Order unit: 5 units 2 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, FastConnect	A	6ES7 193-4CA80-0AA0		1	1 unit	250	0.549
TM-E30S44-01 Order unit: 1 unit 4 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CG20-0AA0		1	1 unit	250	0.146
TM-E30C44-01 Order unit: 1 unit 4 × 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CG30-0AA0		1	1 unit	250	0.128
TM-E30S46-A1 Order unit: 1 unit 4 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, screw terminals	A	6ES7 193-4CF40-0AA0		1	1 unit	250	0.185
TM-E30C46-A1 Order unit: 1 unit 4 × 6 terminals, termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	A	6ES7 193-4CF50-0AA0		1	1 unit	250	0.147
TM-E15S24-AT Order unit: 1 unit for internal temperature compensation for 2 AI TC High Feature, screw terminals	A	6ES7 193-4CL20-0AA0		1	1 unit	250	0.074
TM-E15C24-AT Order unit: 1 unit for internal temperature compensation for 2 AI TC High Feature, spring-type terminals	A	6ES7 193-4CL30-0AA0		1	1 unit	250	0.069

Accessories for shield connection

Shield attachments Order unit: 5 units, for plugging into TM-E and TM-P	A	6ES7 193-4GA00-0AA0		1	1 unit	250	0.044
Shield terminals Order unit: 5 units, for busbars 3 × 10 mm	A	6ES7 193-4GB00-0AA0		1	1 unit	250	0.062
Ground connection terminals Order unit: 1 unit, for conductor cross-sections up to 25 mm ²	C	8WA2 868		1	50 units	041	0.014
Busbars 3 × 10 mm Order unit 1 unit	A	8WA2 842		1	1 unit	041	0.267

Accessories for coding

Color coding plates Order unit: 200 units for TM-P, TM-E							
• White	A	6ES7 193-4LA20-0AA0		1	1 unit	250	0.025
• Yellow	A	6ES7 193-4LB20-0AA0		1	1 unit	250	0.027
• Yellow and green	A	6ES7 193-4LC20-0AA0		1	1 unit	250	0.024
• Red	A	6ES7 193-4LD20-0AA0		1	1 unit	250	0.023
• Blue	A	6ES7 193-4LF20-0AA0		1	1 unit	250	0.025
• Brown	A	6ES7 193-4LG20-0AA0		1	1 unit	250	0.025
• Turquoise	A	6ES7 193-4LH20-0AA0		1	1 unit	250	0.026
Inscription labels, with inscription Order unit: 1 set							
• 200 units for slot numbering (1 to 20) 10 ×	A	8WA8 861-0AB		100	200 units	041	0.080
• 200 units for slot numbering (1 to 40) 5 ×	A	8WA8 861-0AC		100	200 units	041	0.080
• 200 units for slot numbering (1 to 64) 1 ×, (1 to 68) 2 ×	C	8WA8 861-0DA		100	200 units	041	0.080
Inscription labels, blank 200 units for slot numbering	A	8WA8 848-2AY		100	100 units	041	0.080

¹⁾ Note for selecting suitable TM-E and TM-P configuration aids.

For Operation in the Control Cabinet

ET 200S Motor Starters and Safety Motor Starters

Interface/solid-state modules

Version	DT	Order No.	Price € per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Terminal modules for SIPLUS power and solid-state modules (extended temperature range)							
<i>TM-P terminal modules for PM-E power modules (extended temperature range and medial load)</i>							
TM-P15S23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, screw terminals	D	6AG1 193-4CD20-2AA0		1	1 unit	471	0.077
TM-P15C23-A0 Order unit: 1 unit 2 x 3 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	C	6AG1 193-4CD30-2AA0		1	1 unit	473	0.070
<i>TM-E terminal modules for solid-state modules (extended temperature range and medial load)</i>							
TM-E15C24-A1 Order unit: 5 units 2 x 4 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	D	6AG1 193-4CA30-2AA0		1	1 unit	473	0.060
TM-E15S26-A1 Order unit: 5 units 2 x 6 terminals, terminal connections with termination onto AUX1 rail, AUX1 connected through, screw terminals	D	6AG1 193-4CA40-2AA0		1	1 unit	471	0.480
TM-E15C26-A1 Order unit: 5 units 2 x 6 terminals, termination onto AUX1 rail, AUX1 disconnected through to the left, spring-type terminals	D	6AG1 193-4CA50-2AA0		1	1 unit	473	0.440
TM-E15C24-A1 Order unit: 5 units 2 x 4 terminals, terminal connections with termination onto AUX1 rail, AUX1 connected through, spring-type terminals	D	6AG1 193-4CB30-2AA0		1	1 unit	471	0.300
TM-E30C44-01 Order unit: 1 unit 4 x 4 terminals, no termination onto AUX1 rail, AUX1 connected through to the left, spring-type terminals	D	6AG1 193-4CG30-2AA0		1	1 unit	471	0.120
TM-E15C24-AT Order unit: 1 unit for internal temperature compensation for 2 AI TC High Feature, spring-type terminals	D	6AG1 193-4CL30-2AA0		1	1 unit	471	0.064

Accessories for shield connection

For ordering data see terminal modules for power and solid-state modules

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Overview



Motor starters

- Only two versions up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostic signals
- Overload can be acknowledged by remote reset
- Current unbalance monitoring
- Stall protection
- Emergency start function in the event of overload
- Current value transmission by bus
- Current limit monitoring
- Direct-on-line or reversing starters
- Power bus can be plugged in using the new HAN Q4/2 plug-in connectors
- Conductor cross-sections up to 6 x 4 mm²
- 25 A per segment (power looped through using jumper plug)
- In the Standard and High Feature versions (with 4 DI onBoard)
- Electromechanical switching and electronic switching
- Electronic starter for direct activation or with integrated smooth-starter function
- Supplied with 400 V AC brake contact as an option

Isolator modules

The isolator module with switch disconnecter function is used for safe disconnection of the 400 V operational voltage during repair work in the plant and provides an integrated group fusing function (i. e. additional group short-circuit protection for all subsequently supplied motor starters).

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

Safety applications

Safety local isolator module

With the Safety local modules

- Safety local isolator module and
 - 400 V disconnecting module
- it is possible to achieve safety category 4/SIL 3 with an appropriate connection.

Safety Solution PROFIsafe

With the Safety PROFIsafe modules

- F-Switch and
- 400 V disconnecting modules

it is also possible to achieve safety category 4/SIL 3 with an appropriate connection.

Motor Starter ES software

The Motor Starter ES software is used for parameterization, monitoring, diagnostics and testing of motor starters.

See Chapter "Planning and Configuration with SIRIUS".

Benefits

ET 200pro motor starters provide the following advantages:

- High flexibility thanks to a modular and compact design
- Little variance among all motor starter versions (2 units up to 5.5 kW)
- Extensive parameterization using STEP 7 HW-Config
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs for local control functions (High Feature)
- Cabinet-free construction thanks to high degree of protection IP65

Application

With the ET 200pro motor starters, any AC loads can be protected and switched. They are an integral part of ET 200pro and have the high degree of protection IP65. This makes them ideal for operation in modular, distributed peripherals without control cabinets or control enclosures.

The ET 200pro motor starters are available both with mechanical as well as electronic contacts.

The ET 200pro electromechanical starters are offered as direct (DSe/DSe) and reversing starters (RSe/RSe) in the High Feature version with the following equipment:

- 4 digital inputs
- Device versions with or without control for externally fed brakes with 400 V AC
- With expanded parameterization capabilities.

The ET 200pro electronic starters are offered as direct (DSe/DSe) and reversing starters (RSe/RSe) in the High-Feature version with the following equipment:

- 4 digital inputs
- With soft-start and smooth ramp-down function
- With the deactivated smooth start function as an electronic starter for applications with a high level of switching frequency
- Device versions with or without control for externally fed brakes with 400 V AC
- With expanded parameterization capabilities.

As the result of the protection concept with solid-state overload evaluation and the use of SIRIUS controls size S00, additional advantages are realized on the standard and High Feature motor starters - advantages which soon make themselves positively felt particularly in manufacturing processes with high plant stoppage costs:

- Configuration is made easier by the fine modular structure. When using the ET 200pro motor starters, the list of parts per load feeder is reduced to two main units: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveying systems and in machine-tool building.
- Expansions are easily possible through the subsequent adding of modules. The innovative plug-in technology also does away with the wiring needed up to now. Through the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary, without having to shut down the ET 200pro station and with it the process in the plant. The motor starters are therefore recommendable in particular for applications with special demands on availability. Storage costs are optimized in addition by the low level of variance (2 units up to 5.5 kW).

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Motor starters, Standard and High-Feature




The ordering option for motor starters with a 400 V AC brake output provides the possibility of controlling motors with 400 V AC brakes. With four locally acting inputs available on the High-Feature motor starter it is possible to realize autonomous special functions which work independently of the bus and the higher-level control system, e. g. as a quick stop on gate valve controls or limit position disconnectors. In parallel with this, the states of these inputs are signaled to the control system.

When using the optional isolator module with switch disconnecter and group fusing function for the ET 200pro, the 400 V supply of the motor starters can be switched on and off directly in the field, i. e. locally.

The Motor Starter ES software is available for the parameterization and diagnostics.

See Chapter "Planning and Configuration with SIRIUS".

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Standard motor starters, mechanical							
Motor protection: thermal model							
	DSe direct-on-line starters¹⁾						
	• Without brake output	A	3RK1 304-5□S40-4AA0		1	1 unit	121 1.728
	• With brake output 400 V AC	C	3RK1 304-5□S40-4AA3		1	1 unit	121 1.728
	RSe reversing starters¹⁾						
	• Without brake output	A	3RK1 304-5□S40-5AA0		1	1 unit	121 1.728
	• With brake output 400 V AC	A	3RK1 304-5□S40-5AA3		1	1 unit	121 1.728
DSe Standard							
High-Feature motor starters, mechanical							
Motor protection: thermal model							
	DSe direct-on-line starters¹⁾						
	• Without brake output and with 4 inputs	C	3RK1 304-5□S40-2AA0		1	1 unit	121 1.728
	• With brake output 400 V AC and 4 inputs	A	3RK1 304-5□S40-2AA3		1	1 unit	121 1.728
	RSe reversing starters¹⁾						
	• Without brake output and with 4 inputs	C	3RK1 304-5□S40-3AA0		1	1 unit	121 1.728
	• With brake output 400 V AC and 4 inputs	A	3RK1 304-5□S40-3AA3		1	1 unit	121 1.728
RSe High-Feature							
<i>Additional price</i>			<i>Additional price per PU</i>				
Setting range of rated operational current			K		None		
• 0.15 ... 2.0 A			L		x		
• 1.5 ... 12.0 A							
High-Feature motor starters³⁾, solid-state							
Full motor protection, comprising thermal motor protection and thermistor motor protection							
	sDSSt/sDSt direct-on-line starters¹⁾³⁾						
	• Without brake output and with 4 inputs	A	3RK1 304-5□S70-2AA0		1	1 unit	121 1.700
	• With brake output 400 V AC and 4 inputs	A	3RK1 304-5□S70-2AA3		1	1 unit	121 1.700
	sRSSt/sRSt reversing starters¹⁾³⁾						
	• Without brake output and with 4 inputs	A	3RK1 304-5□S70-3AA0		1	1 unit	121 1.875
	• With brake output 400 V AC and 4 inputs	A	3RK1 304-5□S70-3AA3		1	1 unit	121 1.875
sRSSt High-Feature							
<i>Additional price</i>			<i>Additional price per PU</i>				
Setting range of rated operational current			K		None		
• 0.15 ... 2.0 A			L		x		
• 1.5 ... 12.0 A							

x = Additional price

¹⁾ Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

²⁾ Delivery time class A for setting range of rated operational current 0.15 ... 2.0 A

³⁾ The solid-state motor starters can be used not only as solid-state motor starters with a high level of switching frequency but also as fully fledged soft starters for soft starting and smooth ramp-down. The changeover from motor starter to soft starter takes place through reparameterization in HW Config. Depending on the settings, this results in the following current ranges:
 - Parameterization as solid-state starter: 0.15 ... 2 A and 1.5 ... 9 A (4 kW)
 - Parameterization as soft starter: 0.15 ... 2 A and 1.5 ... 12 A (5.5 kW).

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Motor starters, Standard and High-Feature

More information

	Standard motor starters		High-Feature motor starters	
	Mechanically switching without inputs		Mechanically switching with inputs	Mechanically switching with inputs and soft starter function
Technology designation ⁴⁾	DSe, RSe		DSe, RSe	sDSSSte, sDSte, sRSSSte, sRSte
Mechanics and environment				
Motor starters that can be connected to ET 200pro or modules with width of 110 mm		max. 8		
Mounting dimensions (W x H x D)				
• Direct-on-line starter and reversing starter	mm	110 x 230 x 150		110 x 230 x 160
Permissible ambient temperature				
• During operation	°C	-25 ... +55, from +40 with derating		
• During storage	°C	-40 ... +70		
Permissible mounting positions		Vertical, horizontal		
Vibration resistance acc. to IEC 60068, Part 2-6		2 g		
Shock resistance acc. to IEC 60068, Part 2-27		Half-sine 15 g/11 ms		
Degree of protection		IP65		
Pollution degree		3, IEC 60664 (IEC 61131)		
Electrical specifications				
Power consumption at 24 V DC				
• From auxiliary circuit L+/M (U1)	mA	Approx. 40		
• From auxiliary circuit A1/A2 (U2)	mA	Approx. 200		
Rated operational current for power bus I_e	A	25		
Rated operational voltage U_e	V AC	400		
• Approval acc. to EN 60947-1, Appendix N	V AC	Up to 400		Up to 400
• Approval acc. to CSA and UL	V AC	Up to 600		Up to 480
Approval				
• DIN VDE 0106, Part 101	V	Up to 400		Up to 480
• CSA and UL approval	V	Up to 600		Up to 480
Conductor cross-sections				
• Incoming energy supply	mm ²	Max. 6 x 4		
Touch protection		Finger-safe		
Rated impulse withstand voltage U_{imp}	kV	6		
Rated insulation voltage U_i	V	400		
Rated operational current for starters I_e				
• AC-1/2/3 at 40 °C				
- at 400 V	A	0.15 ... 2.0/1.5 ... 12.0		0.15 ... 2.0/1.5 ... 12.0 ¹⁾
- at 500 V	A	0.15 ... 2.0/1.5 ... 9.0		
• AC-4 at 40 °C				
- at 400 V	A	0.15 ... 2.0/1.5 ... 4.0		
Rated short-circuit breaking capacity	kA	100 at 400 V		
Type of coordination acc. to IEC 60947-4-1		1		
Power of induction motors at 400 V	kW	max. 5.5		Max. 5.5/4 ²⁾
Utilization categories		AC-1, AC-2, AC-3, AC-4		AC-53a ³⁾ (max. 9 A with deactivated soft star function up to CLASS 10)
Protective separation between main and auxiliary circuits	V	400, acc. to EN 60947-1, Appendix N		
Endurance of contactor				
• Mechanical		30 million operating cycles		--
• Electrical		Up to 10 million operating cycles; dependent on the current loading (see Manual)		--
Reliable switching frequency		Dependent on the current loading, motor starting time and relative ON period (see Manual)		
Operating times at 0.85 ... 1.1 x U_e				
• Closing delay	ms	11 ... 50		--
• Opening delay	ms	5 ... 45		--

1) **Caution!**
With deactivated soft starter control function the the permissible rated operational current is reduced to 9 A up to CLASS 10.

2) With parameterization as electronic starter max. 4 kW.

3) 8-hour operation.

4) DS ... direct-on-line starter
RS ... Reversing starters
DSS . Direct-on-line soft starters
RSS . Reversing soft starters
e Motor protection (electronic)
te full motor protection (thermal + electronic)
s electronic switching with semiconductor

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Motor starters, Standard and High-Feature

	Standard motor starters		High-Feature motor starters	
	DSe, RSe		DSe, RSe	sDSSSte, sDStSte, sRSSSte, sRStSte
Device functions				
Parameterizable rated operational current		Yes		
Parameterizable current limit values		No	Yes, 2 limit values	
Parameterizable response in case of current limit violation		No	Yes	
Zero current monitoring		Yes		
Parameterizable response in case of zero current violation		Yes		
Parameterizable current unbalance limit		No, fixed limit value (30 % x I_e)	Yes, 30 % ... 60 % x I_e	
Parameterizable response in case of unbalance limit violation		Yes		
Motor blocking monitoring		No	Yes	
Parameterizable blocking current limit		No	Yes, 150 % ... 1000 % x I_e	
Parameterizable blocking time limit	s	No	Yes, 1 ... 5	
Current value transmission		Yes		
Group warning diagnostics		No	Yes, parameterizable	
Group diagnostics		Yes, parameterizable		
Emergency start		Yes		
Digital inputs		No	Yes, 4 inputs	
• Parameterizable input signal		No	Yes, latching/ non-latching	
• Parameterizable input level		No	Yes, NC contacts/NO contacts	
• Parameterizable input signal delay	ms	No	Yes, 10 ... 80	
• Parameterizable input signal extension	ms	No	Yes, 0 ... 200	
• Parameterizable input control actions		No	Yes, 12 different actions	
400 V brake output		Yes, ordering option		
Parameterizable brake enabling delay	s	Yes, -2.5 ... 2.5		
Parameterizable holding time of the brake during stopping	s	Yes, 0 ... 25		
Parameterizable start-up type		No		Yes
Parameterizable ramp-down time		No		Yes
Parameterizable starting voltage		No		Yes
Parameterizable stopping voltage		No		Yes
Local device interface		Yes		
Firmware update		Yes, by trained personnel		
Thermal motor model		Yes		
Parameterizable trip class		No, CLASS 10 fixed	Yes, CLASS 5, 10, 15, 20	
Parameterizable response in case of overload of thermal motor model		No	Yes, 3 possible states	
Advance warning limit for motor heating	%	No	Yes, parameterizable 0 ... 95	
Advance warning limit time-related trip reserve	s	No	Yes, parameterizable 0 ... 500	
Parameterizable recovery time	min	No	Yes, 1 ... 30	
Parameterizable protection against voltage failure		No, permanently integrated	Yes	
Reversing start function		Yes, ordering option		
Parameterizable interlock time for reversing starters		No, 150 ms fixed	Yes, 0 ... 60 s	
Integrated logbook functions		Yes, 3 device logbooks		
Integrated statistics data memory		Yes		
Parameterizable response in case of CPU / master stop		Yes		
Device indications				
• Group fault		SF LED (red)		
• Switching state		STATE LED (red, yellow, green)		
• Device status		DEVICE LED (red, yellow, green)		
• Digital inputs		No	IN 1 ... IN 4, LED	

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety motor starter Solutions local
Safety modules

Overview



Safety local isolator modules

The Safety local isolator module is a repair switch with integrated safety evaluation functions that can be parameterized using DIP switches.

It is used for:

- Connection of a 1 or 2-channel EMERGENCY-STOP circuit up to category 3-4/SIL 3 (protective door or EMERGENCY-STOP pushbuttons) and parameterizable start behavior
- Control of the 400 V disconnecting module by means of a safety rail signal

400 V disconnecting modules

The 400 V disconnecting module enables the safe disconnection of the operational voltage of 400 V up to Category 3-4/SIL 3. For operation in a Safety Solution local application it functions only in combination with the Safety local isolator module.

For operation in a Safety PROFIsafe application it functions only in combination with the F-Switch.

F-Switch

Fail-safe digital inputs/outputs in degree of protection IP65/66/67 for near-machine, cabinet-free use.

Fail-safe digital inputs

- For the failsafe reading in of sensor information (1-/2-channel)
- Including integrated evaluation for 2v2 signals
- Internal sensor supplies (incl. testing) available

Fail-safe digital outputs

- 3 failsafe PP-switching outputs for safe switching of the backplane bus bars

The F-Switch is certified up to Cat. 4 (EN 954-1) and up to SIL 3 (IEC 61508) and has detailed diagnostics.

It supports PROFIsafe in PROFIBUS configurations as well as in PROFINET configurations.

Note:

For safety characteristics for motor starters, see "Appendix" --> "Standards and Approvals" --> "Overview"

Application

Safety local isolator module

The Safety local isolator module features the same functions as a standard isolator module with an additional local safety function.

The Safety local isolator module contains a 3TK28 41 module and is equipped with M12 terminals for the connection of external safety components.

Terminals 1 and 2 can be used to connect either 1-channel or 2-channel EMERGENCY-STOP circuits or protective door circuits (IN 1, IN 2).

For monitored starts, an external START switch can be connected to terminal 3.

The required safety functions can be set using 2 slide switches located under the left M12 opening.

In the event of an EMERGENCY-STOP, the Safety local isolator module trips the downstream 400 V disconnecting module. This safely isolates the 400 V circuit up to Cat. 4/SIL 3.

In combination with the 400 V disconnecting module, the Safety local isolator module can be used for safety applications up to Cat. 4/SIL 3 according to EN 954-1.

400 V disconnecting modules

The 400 V disconnecting module can be used together with the Safety local isolator module for local safety applications and together with the F-Switch for PROFIsafe safety applications.

It contains two contactors connected in series for safety-oriented disconnection of the main circuit.

The auxiliary circuit supply of the device is over a safety power rail in the backplane bus module.

The 400 V disconnecting module can be used together with the Safety local isolator module or with the F-Switch for safety applications up to Cat. 4/SIL 3 according to EN 954-1.

F-Switch




The F-Switch is a failsafe solid-state module for PROFIsafe safety applications. It has two failsafe inputs and outputs for safe switching of the 24 V supply over backplane bus bars. In combination with the 400 V disconnecting module it can be used in PROFIsafe applications for the failsafe disconnection of ET 200pro motor starters up to Cat. 4/SIL 3.

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety motor starter Solutions local Safety modules

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
ET 200pro safety modules							
 3RK1 304-0HS00-7AA0		Safety local isolator modules¹⁾²⁾ Rated operational current 16 A	C	3RK1 304-0HS00-7AA0	1	1 unit	121 1.728
 3RK1 304-0HS00-8AA0		400 V disconnecting modules³⁾⁴⁾ Rated operational current 25 A	C	3RK1 304-0HS00-8AA0	1	1 unit	121 1.728
 6ES7 148-1FS00-0AB0		F-Switch PROFIsafe 24 V DC, including bus module Connection module to be ordered separately	A	6ES7 148-4FS00-0AB0	1	1 unit	241 0.200
		Connection modules for F-Switch 24 V DC	A	6ES7 194-4DA00-0AA0	1	1 unit	241 0.364

¹⁾ The Safety local isolator module only functions when used together with the 400 V disconnecting module.

²⁾ Only in combination with the special backplane bus module for the Safety local isolator module (see "Accessories for ET 200pro motor starters").

³⁾ The 400 V disconnecting module only functions when used together with the Safety local isolator module or with the F-Switch.

⁴⁾ Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety motor starter Solutions local
Safety modules

More information

General data		Safety local isolator modules	400 V disconnecting modules
Mounting dimensions (W x H x D) in mm • Direct-on-line starter and reversing starter	mm	110 x 230 x 170	110 x 230 x 150
Permissible ambient temperature • During operation • During storage	°C	-25 ... +55 -40 ... +70	
Permissible mounting positions		Any	
Vibration resistance to IEC 60068, Part 2-6		2 g	
Shock resistance to IEC 60068 Part 2-27		Half-sine 15 g/11 ms	
Power consumption • From auxiliary circuit L+/M (U1) • From auxiliary circuit A1/A2 (U2)	mA	Approx. 20 --	
Rated operational current for power bus I_e	A	25	
Rated operational voltage U_e	V	400	
Approval to DIN VDE 0106, Part 101	V	Up to 500	
CSA and UL approval	V	Up to 600	
Conductor cross-sections Incoming energy supply	mm ²	Max. 6 x 4	
Degree of protection		IP65	
Touch protection		Finger-safe	
Pollution degree		3, IEC 60664 (IEC 61131)	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated insulation voltage U_i	V	400	
Rated operational current for starter I_e • AC-1/2/3 at 40 °C - at 400 V - at 500 V	A	16 16	25 25
Rated short-circuit breaking capacity	kA	50 at 400 V	
Type of coordination to IEC 60947-4-1		2	
Protective separation between main and auxiliary circuits	V	400, acc. to DIN VDE 0106, Part 101	
Operating times at 0.85 ... 1.1 x U_e • Closing delay • Opening delay	ms	-- --	25 ... 100 7 ... 10
Device functions • Group diagnostics		Yes, parameterizable	
Device indications • Group fault		SF LED (red)	

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro isolator modules

Overview

The isolator module with integrated group fusing function (i. e. additional group short-circuit protection for all subsequently supplied motor starters) and switch disconnecter function is used for safe disconnection of the 400 V operational voltage in the plant.

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

The isolator module is available in addition in a safety version. See Safety local Isolator Modules.

Benefits

The following properties apply to the isolator module:

- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Cabinet-free construction thanks to high degree of protection IP65

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

ET 200pro isolator modules, mechanical



3RK1 304-OHS00-6AA0

Isolator modules¹⁾

Rated operational current 25 A

A

3RK1 304-OHS00-6AA0

1

1 unit

121

1.728



3RK1 304-OHS00-7AA0

Safety local isolator modules²⁾³⁾

Rated operational current 16 A

C

3RK1 304-OHS00-7AA0

1

1 unit

121

1.728

¹⁾ Only functions when used together with the corresponding backplane bus module 110 mm and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters").

²⁾ The Safety local isolator module only functions when used together with the 400 V disconnecting module.

³⁾ Only in combination with the special backplane bus module for the Safety local isolator module (see "Accessories for ET 200pro motor starters").

More information

		Isolator modules	
General data			
Mounting dimensions (W x H x D)		110 x 230 x 170	
• Direct-on-line starter and reversing starter	mm		
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Permissible mounting positions		Any	
Vibration resistance acc. to IEC 60068, Part 2-6		2 g	
Shock resistance acc. to IEC 60068, Part 2-27		Half-sine 15 g/11 ms	
Power consumption			
• From auxiliary circuit L+/M (U1)	mA	Approx. 20	
• From auxiliary circuit A1/A2 (U2)		--	
Rated operational current for power bus I_e	A	25	
Rated operational voltage U_e	V	400	
Approvals acc. to			
• DIN VDE 0106, Part 101	V	Up to 500	
• CSA and UL	V	Up to 600	
Conductor cross-sections			
• Incoming energy supply	mm ²	Max. 6 x 4	
Degree of protection		IP65	

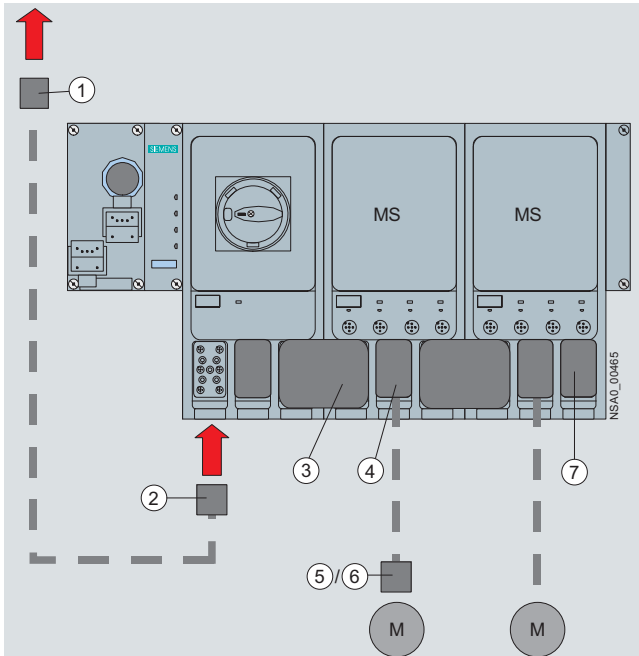
		Isolator modules	
Touch protection		Finger-safe	
Pollution degree		3, IEC 60664 (IEC 61131)	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated insulation voltage U_i	V	400	
Rated operational current for starters I_e			
• AC-1/2/3 at 40 °C			
- at 400 V	A	25	
- at 500 V	A	25	
Rated short-circuit breaking capacity	kA	50 at 400 V	
Type of coordination to IEC 60947-4-1		2	
Protective separation between main and auxiliary circuits	V	400, acc. to DIN VDE 0106, Part 101	
Device functions			
• Group diagnostics		Yes, parameterizable	
Device indications			
• Group fault		SF LED (red)	

For Operation in the Field, High Degree of Protection

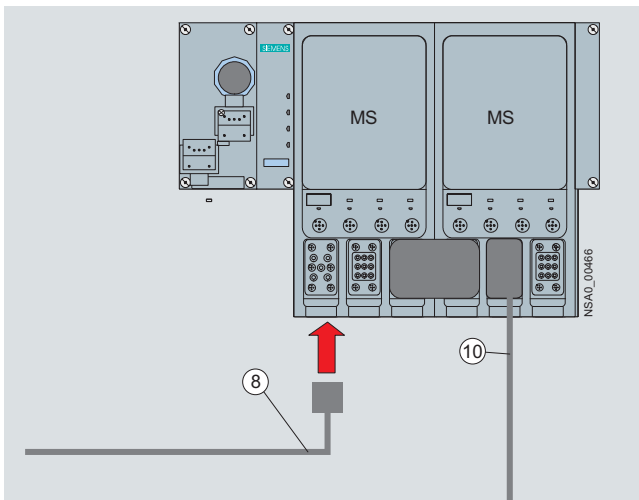
ET 200pro Motor Starters

Accessories for ET 200pro motor starters

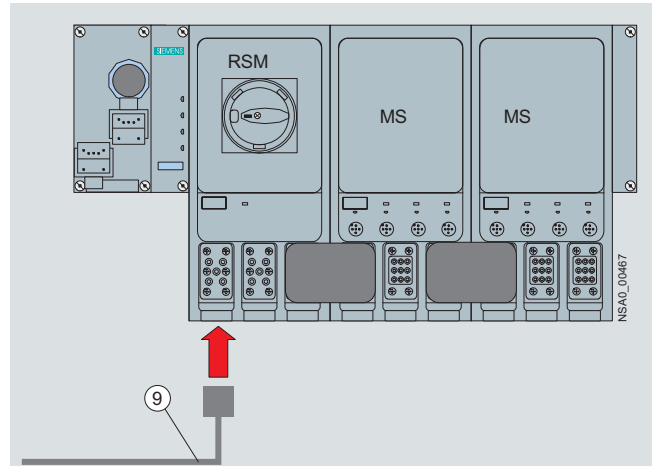
Overview



Basic design of an ET 200pro motor starter



Infeed on the ET 200pro motor starter



Infeed on the RSM isolator module

Legend:

- ① Power feeder plug (see page 6/108)
- ② Power connection plug (see page 6/108)
- ③ Power jumper plug (see page 6/108)
- ④ Motor connection plug (see page 6/108)
- ⑤ Motor plug (see page 6/108)
- ⑥ Motor plug with EMC suppressor circuit (see page 6/108)
- ⑦ Power loop-through plug (see page 6/108)
- ⑧ Power connection cable (see page 6/108)
- ⑨ Power connection cable for isolator modules (see page 6/108)
- ⑩ Motor cable (see page 6/109)

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Accessories for ET 200pro motor starters

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
ET 200pro accessories							
① Power feeder plugs							
Connector set for energy supply, e. g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland							
• 5 male contacts 2.5 mm ²	B	3RK1 911-2BS60		1	1 unit	121	0.100
• 5 male contacts 4 mm ²	B	3RK1 911-2BS20		1	1 unit	121	0.100
• 5 male contacts 6 mm ²	B	3RK1 911-2BS40		1	1 unit	121	0.100
② Power connection plugs							
Connector set for energy supply for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angled outgoing feeder, female insert for HAN Q4/2, incl. gland							
• 5 female contacts 2.5 mm ²	C	3RK1 911-2BE50		1	1 unit	121	0.200
• 5 female contacts 4 mm ²	B	3RK1 911-2BE10		1	1 unit	121	0.200
• 5 female contacts 6 mm ²	B	3RK1 911-2BE30		1	1 unit	121	0.200
③ Power jumper plugs							
	B	3RK1 922-2BQ00		1	1 unit	121	0.330
④ Motor connection plugs							
Connector set for motor cable for connection to ET 200pro motor starters, comprising a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q8/0, incl. gland							
• 8 male contacts 1.5 mm ²	B	3RK1 902-0CE00		1	1 unit	121	0.064
• 6 male contacts 2.5 mm ²	B	3RK1 902-0CC00		1	1 unit	121	0.059
⑤ Motor plugs							
Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland							
• 7 female contacts 1.5 mm ²	C	3RK1 911-2BM21		1	1 set	121	0.240
• 7 female contacts 2.5 mm ²	C	3RK1 911-2BM22		1	1 set	121	0.240
⑥ Motor plugs with EMC suppressor circuit							
Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e with EMC suppressor circuit, incl. star jumper, incl. gland							
• 7 female contacts 1.5 mm ²	C	3RK1 911-2BL21		1	1 set	121	0.270
• 7 female contacts 2.5 mm ²	C	3RK1 911-2BL22		1	1 set	121	0.270
⑦ Power loop-through plugs							
Connector set for power loop-through for connection to ET 200pro motor starters/ET 200pro isolator module, comprising a cable-end connector hood, angled outgoing feeder, pin insert for HAN Q4/2, incl. gland							
• 4 male contacts 2.5 mm ²	B	3RK1 911-2BF50		1	1 unit	121	0.110
• 4 male contacts 4 mm ²	B	3RK1 911-2BF10		1	1 unit	121	0.300
⑧ Power connection cables, assembled at one end							
Power connection cable for ET 200pro motor starters, ECOFAST, open at one end, for HAN Q4/2, angled, insert turned at isolator module end, 4 x 4 mm ²							
• Length 1.5 m	B	3RK1 911-0DB13		1	1 set	121	0.590
• Length 5.0 m	B	3RK1 911-0DB33		1	1 set	121	1.800
⑨ Power connection cables for isolator modules, assembled at one end							
Power connection cable for ET 200pro isolator modules, open at one end, for HAN Q4/2, angled, insert turned at isolator module end, 4 x 4 mm ²							
• Length 1.5 m	C	3RK1 911-0DF13		1	1 set	121	0.590
• Length 5.0 m	C	3RK1 911-0DF33		1	1 set	121	1.800

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Accessories for ET 200pro motor starters

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
⑩ Motor cables, assembled at one end open at one end, HAN Q8, angled, length 5 m							
• Motor cable for motor without brake, for ET 200pro, ET 200X, AS-i Compact, 4 x 1.5 mm ²	C	3RK1 911-0EB31		1	1 set	121	0.800
• Motor cable for motor with brake, for ET 200pro, 6 x 1.5 mm ²	C	3RK1 911-0ED31		1	1 set	121	1.150

Solution Partner

Automation

More connection technology products
can be found at our

"Siemens Solution Partners"

www.siemens.com/automation/partnerfinder

under "Distributed Field Installation System" technology

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Module racks, wide¹⁾							
• Length 500 mm	A	6ES7 194-4GB00-0AA0		1	1 unit	250	2.400
• Length 1000 mm	A	6ES7 194-4GB60-0AA0		1	1 unit	250	4.800
• Length 2000 mm	A	6ES7 194-4GB20-0AA0		1	1 unit	250	9.700
Module racks, wide, compact¹⁾							
• Length 500 mm	A	6ES7 194-4GD00-0AA0		1	1 unit	250	2.536
• Length 1000 mm	A	6ES7 194-4GD10-0AA0		1	1 unit	250	5.040
• Length 2000 mm	A	6ES7 194-4GD20-0AA0		1	1 unit	250	10.040
Backplane bus modules 110 mm²⁾							
	B	3RK1 922-2BA00		1	1 unit	121	0.330
Backplane bus modules for Safety local isolator modules							
	B	3RK1 922-2BA01		1	1 unit	121	0.330
RS 232 interface cables							
	B	3RK1 922-2BP00		1	1 unit	121	0.330
Hand-held devices for ET 200pro motor starter, (also for ET 200S High Feature and ECOFAST), for local operation. A serial interface cable must be ordered separately.							
	B	3RK1 922-3BA00		1	1 unit	121	0.130
Sealing caps (for power supply) (1 pack contains 10 units)							
	B	3RK1 902-0CJ00		1	10 units	121	0.093
Dismantling tools for HAN Q4/2							
	C	3RK1 902-0AB00		1	1 unit	121	0.024
Crimping tools for pins/sockets 4 mm² and 6 mm²							
	C	3RK1 902-0CW00		1	1 unit	121	0.620
Crimping tools for male contacts and sockets up to 4.0 mm² (HAN Q8/0)							
	B	3RK1 902-0CT00		1	1 unit	121	0.644
Dismantling tools for male contacts and sockets (HAN Q8/0)							
	B	3RK1 902-0AJ00		1	1 unit	121	0.047
M12 sealing caps For sealing unused input and output sockets (one set contains ten sealing caps)							
	▶	3RX9 802-0AA00		100	10 units	121	0.100



3RK1 922-3BA00

¹⁾ The wide module rack can accommodate all ET 200pro motor starters and any optional modules (isolator module, Safety local isolator module and 400 V disconnecting module).

²⁾ The backplane bus module is a prerequisite for operation of the ET 200pro motor starters and the optional modules.

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Interface modules IM 154-1 and IM 154-2							
IM154-1 interface modules For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP	A	6ES7 154-1AA00-0AB0		1	1 unit	250	0.411
IM154-2 High-Feature interface modules For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP; support of PROFI-safe	A	6ES7 154-2AA00-0AB0		1	1 unit	250	0.411
Accessories							
CM IM DP ECOFAST connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, two ECOFAST Cu connections	A	6ES7 194-4AA00-0AA0		1	1 unit	250	0.226
CM IM DP Direct connection modules For direct connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, up to six M20 screwed cable glands	A	6ES7 194-4AC00-0AA0		1	1 unit	250	0.338
CM IM DP M12 7/8" connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, 2 x M12 and 2 x 7/8"	A	6ES7 194-4AD00-0AA0		1	1 unit	250	0.461
Accessories for CM IM DP ECOFAST							
PROFIBUS ECOFAST hybrid cables, assembled With 2 ECOFAST connectors, trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²							
• Length 1.5 m	A	6XV1 830-7BH15		1	1 unit	5K2	0.400
• Length 3.0 m	A	6XV1 830-7BH30		1	1 unit	5K2	0.535
• Length 5.0 m	A	6XV1 830-7BH50		1	1 unit	5K2	0.880
• Length 10 m	A	6XV1 830-7BN10		1	1 unit	5K2	1.600
• Length 15 m	A	6XV1 830-7BN15		1	1 unit	5K2	2.155
• Length 20 m	A	6XV1 830-7BN20		1	1 unit	5K2	2.870
• Length 25 m	A	6XV1 830-7BN25		1	1 unit	5K2	3.640
• Length 30 m	A	6XV1 830-7BN30		1	1 unit	5K2	4.410
• Length 35 m	A	6XV1 830-7BN35		1	1 unit	5K2	5.180
• Length 40 m	A	6XV1 830-7BN40		1	1 unit	5K2	5.950
• Length 45 m	A	6XV1 830-7BN45		1	1 unit	5K2	6.720
• Length 50 m	A	6XV1 830-7BN50		1	1 unit	5K2	7.490
PROFIBUS ECOFAST GP hybrid cables, assembled With 2 ECOFAST connectors, trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²							
• Length 1.5 m	A	6XV1 860-3PH15		1	1 unit	5K2	0.400
• Length 3.0 m	A	6XV1 860-3PH30		1	1 unit	5K2	0.750
• Length 5.0 m	A	6XV1 860-3PH50		1	1 unit	5K2	0.870
• Length 10 m	A	6XV1 860-3PN10		1	1 unit	5K2	1.640
• Length 15 m	A	6XV1 860-3PN15		1	1 unit	5K2	2.410
• Length 20 m	A	6XV1 860-3PN20		1	1 unit	5K2	3.180
• Length 25 m	A	6XV1 860-3PN25		1	1 unit	5K2	3.950
• Length 30 m	A	6XV1 860-3PN30		1	1 unit	5K2	4.720
• Length 35 m	A	6XV1 860-3PN35		1	1 unit	5K2	5.490
• Length 40 m	A	6XV1 860-3PN40		1	1 unit	5K2	6.160
• Length 45 m	A	6XV1 860-3PN45		1	1 unit	5K2	6.930
• Length 50 m	A	6XV1 860-3PN50		1	1 unit	5K2	7.700
PROFIBUS ECOFAST hybrid cables, non-assembled Trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²							
• Length 50 m	A	6XV1 830-7AN50		1	1 unit	5K2	7.700
• Length 100 m	A	6XV1 830-7AT10		1	1 unit	5K2	15.400
PROFIBUS ECOFAST GP hybrid cables, non-assembled Trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ²							
• Length 50 m	B	6XV1 860-4PN50		1	1 unit	5K2	7.700
• Length 100 m	A	6XV1 860-4PT10		1	1 unit	5K2	15.400
PROFIBUS ECOFAST hybrid connectors 180 ECOFAST Cu, 2 x Cu, 4 x 1.5 mm ² , HANBRID connectors							
• With pin insert, pack of 5	A	6GK1 905-0CA00		1	1 unit	5K2	0.212
• With female insert, pack of 5	A	6GK1 905-0CB00		1	1 unit	5K2	0.215
PROFIBUS ECOFAST hybrid connectors, angled ECOFAST Cu, 2 x Cu, 4 x 1.5 mm ² , HANBRID connectors							
• With pin insert, pack of 5	A	6GK1 905-0CC00		1	1 unit	5K2	0.247
• With female insert, pack of 5	A	6GK1 905-0CD00		1	1 unit	5K2	0.247
ECOFAST covers for protection of unused bus connections on ET 200pro; pack of 10 units per packing unit	A	6ES7 194-1JB10-0XA0		1	1 unit	2F0	0.051

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-1 and IM 154-2 interface modules (continued)							
<i>Accessories for CM IM DP Direct</i>							
PROFIBUS trailing cables max. acceleration 4 m/s ² , at least 3000000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	6XV1 830-3EH10		1	1 M	5K2	0.072
PROFIBUS FC Food bus cables with PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	6XV1 830-0GH10		1	1 M	5K2	0.069
PROFIBUS FC Robust bus cables with PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	6XV1 830-0JH10		1	1 M	5K2	0.075
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	6XV1 830-8AH10		1	1 M	5K2	0.149
<i>Accessories for CM IM DP M12 7/8"</i>							
PROFIBUS M12 connecting cables Preassembled with two M12 plugs, 5-pole							
• Length 1.5 m	A	6XV1 830-3DH15		1	1 unit	5K2	0.150
• Length 2.0 m	A	6XV1 830-3DH20		1	1 unit	5K2	0.195
• Length 3.0 m	A	6XV1 830-3DH30		1	1 unit	5K2	0.294
• Length 5.0 m	A	6XV1 830-3DH50		1	1 unit	5K2	0.434
• Length 10 m	A	6XV1 830-3DN10		1	1 unit	5K2	0.837
• Length 15 m	A	6XV1 830-3DN15		1	1 unit	5K2	1.245
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole							
• Length 1.5 m	A	6XV1 822-5BH15		1	1 unit	5K2	0.328
• Length 2.0 m	A	6XV1 822-5BH20		1	1 unit	5K2	0.408
• Length 3.0 m	A	6XV1 822-5BH30		1	1 unit	5K2	0.570
• Length 5.0 m	A	6XV1 822-5BH50		1	1 unit	5K2	0.923
• Length 10 m	A	6XV1 822-5BN10		1	1 unit	5K2	1.769
• Length 15 m	A	6XV1 822-5BN15		1	1 unit	5K2	2.540
M12 connectors for ET 200eco, with axial cable feeder							
• With pin insert, pack of 5	A	6GK1 905-0EA00		1	1 unit	5K2	0.251
• With female insert, pack of 5	A	6GK1 905-0EB00		1	1 unit	5K2	0.268
7/8" connectors for ET 200eco, with axial cable feeder							
• With pin insert, pack of 5	A	6GK1 905-0FA00		1	1 unit	5K2	0.265
• With female insert, pack of 5	A	6GK1 905-0FB00		1	1 unit	5K2	0.250
M12 sealing caps for protection of unused M12 terminals on ET 200pro	▶	3RX9 802-0AA00		100	10 units	121	0.100
7/8" sealing caps for protection of unused 7/8" terminals on ET 200pro; pack of 10 units per packing unit	A	6ES7 194-3JA00-0AA0		1	1 unit	250	0.037
<i>General accessories</i>							
ET 200pro module carriers							
• Narrow, for interface, solid-state and power modules							
- 500 mm	A	6ES7 194-4GA00-0AA0		1	1 unit	250	1.578
- 1000 mm	A	6ES7 194-4GA60-0AA0		1	1 unit	250	3.160
- 2000 mm, can be cut to size	A	6ES7 194-4GA20-0AA0		1	1 unit	250	6.369
• Compact, for interface, solid-state and power modules							
- 500 mm	A	6ES7 194-4GC70-0AA0		1	1 unit	250	1.600
- 1000 mm	A	6ES7 194-4GC60-0AA0		1	1 unit	250	3.220
- 2000 mm, can be cut to size	A	6ES7 194-4GC20-0AA0		1	1 unit	250	6.580
• Wide, for interface, solid-state, power modules and motor starters							
- 500 mm	A	6ES7 194-4GB00-0AA0		1	1 unit	250	2.400
- 1000 mm	A	6ES7 194-4GB60-0AA0		1	1 unit	250	4.800
- 2000 mm, can be cut to size	A	6ES7 194-4GB20-0AA0		1	1 unit	250	9.700
• Wide, compact, for I/O modules and motor starters							
- 500 mm	A	6ES7 194-4GD00-0AA0		1	1 unit	250	2.536
- 1000 mm	A	6ES7 194-4GD10-0AA0		1	1 unit	250	5.040
- 2000 mm	A	6ES7 194-4GD20-0AA0		1	1 unit	250	10.040
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	6ES7 194-4HB00-0AA0		1	1 unit	250	0.012

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-1 and IM 154-2 interface modules (continued)							
<i>General accessories (continued)</i>							
Technical product specifications for CAX applications, one off license	A	6ES7 991-0CD01-0YX0		1	1 unit	266	0.200
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	A	6ES7 998-8XC01-8YE0		1	1 unit	230	0.099
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230	0.400
IM 154-4 PN interface modules							
IM 154-4 PN High-Feature interface modules for communication between ET 200pro and higher-level controller over PROFINET IO; support of PROFIsafe	A	6ES7 154-4AB10-0AB0		1	1 unit	250	0.539
<i>Accessories</i>							
CM IM PN M12 connection modules, 7/8" For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x M12 and 2 x 7/8"	A	6ES7 194-4AJ00-0AA0		1	1 unit	250	0.617
CM IM PN 2xRJ45 connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x RJ45 and 2 x push-pull power connectors	A	6ES7 194-4AF00-0AA0		1	1 unit	250	0.374
CM IM PN 2xSCRJ FO connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x SCRJ FO and 2 x push-pull power connectors	A	6ES7 194-4AG00-0AA0		1	1 unit	250	0.380
M12 sealing caps for protection of unused M12 terminals on ET 200pro	▶	3RX9 802-0AA00		100	10 units	121	0.100
IE M12 connecting cables Preassembled with two M12 plugs, up to max. 85 m							
• Length 0.3 m	A	6XV1 870-8AE30		1	1 unit	5K2	0.060
• Length 0.5 m	A	6XV1 870-8AE50		1	1 unit	5K2	0.065
• Length 1.0 m	A	6XV1 870-8AH10		1	1 unit	5K2	0.101
• Length 1.5 m	A	6XV1 870-8AH15		1	1 unit	5K2	0.150
• Length 2.0 m	A	6XV1 870-8AH20		1	1 unit	5K2	0.180
• Length 3.0 m	A	6XV1 870-8AH30		1	1 unit	5K2	0.250
• Length 5.0 m	A	6XV1 870-8AH50		1	1 unit	5K2	0.390
• Length 10 m	A	6XV1 870-8AN10		1	1 unit	5K2	0.740
• Length 15 m	A	6XV1 870-8AN15		1	1 unit	5K2	1.100
• For more special lengths with 90° or 180° cable feeder www.support.automation.siemens.com/WWW/view/en/26999294							
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole							
• Length 1.5 m	A	6XV1 822-5BH15		1	1 unit	5K2	0.328
• Length 2.0 m	A	6XV1 822-5BH20		1	1 unit	5K2	0.408
• Length 3.0 m	A	6XV1 822-5BH30		1	1 unit	5K2	0.570
• Length 5.0 m	A	6XV1 822-5BH50		1	1 unit	5K2	0.923
• Length 10 m	A	6XV1 822-5BN10		1	1 unit	5K2	1.769
• Length 15 m	A	6XV1 822-5BN15		1	1 unit	5K2	2.540
• For more special lengths with 90° or 180° cable feeder www.support.automation.siemens.com/WWW/view/en/26999294							
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	6XV1 830-8AH10		1	1 M	5K2	0.149
7/8" connectors for ET 200eco, with axial cable feeder							
• With pin insert, pack of 5	A	6GK1 905-0FA00		1	1 unit	5K2	0.265
• With female insert, pack of 5	A	6GK1 905-0FB00		1	1 unit	5K2	0.250
7/8" Power T-Tap Power T piece with two 7/8" female inserts and one 7/8" pin insert, pack of 5	A	6GK1 905-0FC00		1	1 unit	5K2	0.600

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-4 PN interface modules (continued)							
Industrial Ethernet Fast Connect installation cables							
<ul style="list-style-type: none"> • IE FC TP Standard Cable GP 2 x 2; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m 	A	6XV1 840-2AH10		1	1 M	5K2	0.068
<ul style="list-style-type: none"> • IE FC TP Trailing Cable 2 x 2; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m 	A	6XV1 840-3AH10		1	1 M	5K2	0.055
<ul style="list-style-type: none"> • IE FC TP Trailing Cable GP 2 x 2; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m 	A	6XV1 870-2D		1	1 M	5K2	0.068
<ul style="list-style-type: none"> • IE TP Torsion Cable GP 2 x 2; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m 	A	6XV1 870-2F		1	1 M	5K2	0.060
<ul style="list-style-type: none"> • IE FC TP Marine Cable 2 x 2; sold by the meter, delivery unit max. 1000 m, minimum order quantity 20 m 	A	6XV1 840-4AH10		1	1 M	5K2	0.055
IE RJ45 Plug PRO RJ45 plug-in connector for field assembly in degree of protection IP65/67, plastic enclosure, insulation displacement method, for SCALANCE X-200IRT PRO and ET200pro: 1 pack = 1 unit	A	6GK1 901-1BB10-6AA0		1	1 unit	5K2	0.037
IE SC RJ POF Plug PRO SC RJ- plug-in connector for field assembly for POF fibers in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO and ET200pro 1 pack = 1 unit	A	6GK1 900-0MB00-6AA0		1	1 unit	5K2	0.020
IE SC RJ PCF Plug PRO SC RJ- plug-in connector for field assembly for PCF fibers in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO 1 pack = 1 unit	A	6GK1 900-0NB00-6AA0		1	1 unit	5K2	0.020
Power Plug PRO 5-pole power plug-in connector for field assembly for 2 x 24 V power supply in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO and ET200 pro 1 pack = 1 unit	A	6GK1 907-0AB10-6AA0		1	1 unit	5K2	0.420
IE M12 Plug PRO M12 plug-in connector (D-coded) for field assembly, metal enclosure, quick-connect technology, for SCALANCE X208PRO and IM 154-4 PN							
<ul style="list-style-type: none"> • 1 unit 	A	6GK1 901-0DB10-6AA0		1	1 unit	5K2	0.030
<ul style="list-style-type: none"> • 8 units 	A	6GK1 901-0DB10-6AA8		1	1 unit	5K2	0.300
IE Panel Feedthrough Control cabinet gland for transition from M12 connection method (D-coded, IP65) to RJ45 connection method (IP20) 1 pack = 5 units	A	6GK1 901-0DM20-2AA5		1	1 unit	5K2	0.030
General accessories							
ET 200pro module carriers							
<ul style="list-style-type: none"> • Narrow, for interface, solid-state and power modules <ul style="list-style-type: none"> - 500 mm - 1000 mm - 2000 mm, can be cut to size 	A	6ES7 194-4GA00-0AA0		1	1 unit	250	1.578
	A	6ES7 194-4GA60-0AA0		1	1 unit	250	3.160
	A	6ES7 194-4GA20-0AA0		1	1 unit	250	6.369
<ul style="list-style-type: none"> • Compact, for interface, solid-state and power modules <ul style="list-style-type: none"> - 500 mm - 1000 mm - 2000 mm, can be cut to size 	A	6ES7 194-4GC70-0AA0		1	1 unit	250	1.600
	A	6ES7 194-4GC60-0AA0		1	1 unit	250	3.220
	A	6ES7 194-4GC20-0AA0		1	1 unit	250	6.580
<ul style="list-style-type: none"> • Wide, for interface, solid-state, power modules and motor starters <ul style="list-style-type: none"> - 500 mm - 1000 mm - 2000 mm, can be cut to size 	A	6ES7 194-4GB00-0AA0		1	1 unit	250	2.400
	A	6ES7 194-4GB60-0AA0		1	1 unit	250	4.800
	A	6ES7 194-4GB20-0AA0		1	1 unit	250	9.700
<ul style="list-style-type: none"> • Wide, for I/O modules and motor starters <ul style="list-style-type: none"> - 500 mm - 1000 mm - 2000 mm 	A	6ES7 194-4GD00-0AA0		1	1 unit	250	2.536
	A	6ES7 194-4GD10-0AA0		1	1 unit	250	5.040
	A	6ES7 194-4GD20-0AA0		1	1 unit	250	10.040
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	6ES7 194-4HB00-0AA0		1	1 unit	250	0.012
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	A	6ES7 998-8XC01-8YE0		1	1 unit	230	0.099
SIMATIC Manual Collection – Update service for 1 year Scope of supply: The current DVD S7 Manual Collection as well as the three subsequent updates	C	6ES7 998-8XC01-8YE2		1	1 unit	230	0.400

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-6 PN IWLAN interface modules							
IM 154-6 PN IWLAN interface modules For communication between ET 200pro and a higher-level PROFINET IO controller via Industrial Wireless LAN (IWLAN) networks for 2.4 GHz or 5 GHz with data rates up to 54 Mbit/s	A	6ES7154-6AB00-0AB0		1	1 unit	250	1.195
Accessories							
MMC 64 Kbyte¹⁾ for program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230	0.012
MMC 128 Kbyte¹⁾ for program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230	0.012
MMC 512 Kbyte¹⁾ for program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230	0.012
PROFINET IWLAN aerials for IM154-6 IWLAN With omnidirectional characteristic, R-SMA plugs, pack of 2	A	6ES7194-4MA00-0AA0		1	1 unit	250	0.050
IWLAN termination impedance TI 795-1R 50 ohm terminating resistor for 2nd R-SMA aerial socket when using a SCALANCE W-700 radio interface with only 1 aerial	A	6GK5795-1TR10-0AA6		1	1 unit	5W1	1.000
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	6XV1 830-8AH10		1	1 M	5K2	0.149
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole							
• Length 1.5 m	A	6XV1 822-5BH15		1	1 unit	5K2	0.328
• Length 2.0 m	A	6XV1 822-5BH20		1	1 unit	5K2	0.408
• Length 3.0 m	A	6XV1 822-5BH30		1	1 unit	5K2	0.570
• Length 5.0 m	A	6XV1 822-5BH50		1	1 unit	5K2	0.923
• Length 10 m	A	6XV1 822-5BN10		1	1 unit	5K2	1.769
• Length 15 m	A	6XV1 822-5BN15		1	1 unit	5K2	2.540
7/8" connectors with axial cable feeder to the ET200 field assembly Female inserts	A	6GK1905-0FB00		1	1 unit	5K2	0.250
Industrial Ethernet TP Cord RJ45/RJ45 TP cable 4x2 with two RJ45 plugs							
• Length 0.5 m	A	6XV1870-3QE50		1	1 unit	5K2	0.039
• Length 1 m	A	6XV1870-3QH10		1	1 unit	5K2	0.052
• Length 2 m	A	6XV1870-3QH20		1	1 unit	5K2	0.114
• Length 6 m	A	6XV1870-3QH60		1	1 unit	5K2	0.217
• Length 10 m	A	6XV1870-3QN10		1	1 unit	5K2	0.349
Industrial Ethernet TP XP Cord RJ45/RJ45 Crossed TP cable 4x2 with two RJ45 plugs							
• Length 0.5 m	A	6XV1870-3RE50		1	1 unit	5K2	0.048
• Length 1 m	A	6XV1870-3RH10		1	1 unit	5K2	0.056
• Length 2 m	A	6XV1870-3RH20		1	1 unit	5K2	0.093
• Length 6 m	A	6XV1870-3RH60		1	1 unit	5K2	0.225
• Length 10 m	A	6XV1870-3RN10		1	1 unit	5K2	0.357
Industrial Ethernet RJ45 Plug Pro Push-pull IP65 plug for local fitting to TP cables 2x2 (pack of 1 duplex plug)							
	A	6GK1901-1BB10-6AA0		1	1 unit	5K2	0.037
Labels 20 x 7, pastel turquoise, pack of 340							
	C	3RT1 900-1SB20		100	340 units	101	0.200
ET 200pro module carriers							
• Narrow, for interface, solid-state and power modules							
- 500 mm	A	6ES7 194-4GA00-0AA0		1	1 unit	250	1.578
- 1000 mm	A	6ES7 194-4GA60-0AA0		1	1 unit	250	3.160
- 2000 mm, can be cut to size	A	6ES7 194-4GA20-0AA0		1	1 unit	250	6.369
• Compact, for interface, solid-state and power modules							
- 500 mm	A	6ES7 194-4GC70-0AA0		1	1 unit	250	1.600
- 1000 mm	A	6ES7 194-4GC60-0AA0		1	1 unit	250	3.220
- 2000 mm, can be cut to size	A	6ES7 194-4GC20-0AA0		1	1 unit	250	6.580
• Wide, for interface, solid-state, power modules and motor starters							
- 500 mm	A	6ES7 194-4GB00-0AA0		1	1 unit	250	2.400
- 1000 mm	A	6ES7 194-4GB60-0AA0		1	1 unit	250	4.800
- 2000 mm, can be cut to size	A	6ES7 194-4GB20-0AA0		1	1 unit	250	9.700
• Wide, compact, for I/O modules and motor starters							
- 500 mm	A	6ES7 194-4GD00-0AA0		1	1 unit	250	2.536
- 1000 mm	A	6ES7 194-4GD10-0AA0		1	1 unit	250	5.040
- 2000 mm	A	6ES7 194-4GD20-0AA0		1	1 unit	250	10.040
Spare fuses, 12.5 A quick For interface and power modules (pack of 10)							
	A	6ES7 194-4HB00-0AA0		1	1 unit	250	0.012

¹⁾ A micro memory card is needed to operate the CPU.

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
IM 154-8 PN/DP CPU interface modules							
IM 154-8 PN/DP CPU interface modules PROFINET IO Controller for operating distributed I/Os on PROFINET, with integrated PLC functionality	A	6ES7 154-8AB00-0AB0		1	1 unit	250	0.602
Accessories							
MMC 64 Kbyte¹⁾ for program backups	A	6ES7 953-8LF20-0AA0		1	1 unit	230	0.012
MMC 128 Kbyte¹⁾ for program backups	A	6ES7 953-8LG11-0AA0		1	1 unit	230	0.012
MMC 512 Kbyte¹⁾ for program backups	A	6ES7 953-8LJ20-0AA0		1	1 unit	230	0.012
MMC 2 MByte¹⁾ for program backups and/or the firmware update	A	6ES7 953-8LL20-0AA0		1	1 unit	230	0.012
MMC 4 MByte¹⁾ for program backups	A	6ES7 953-8LM20-0AA0		1	1 unit	230	0.012
MMC 8 MByte¹⁾ for program backups	A	6ES7 953-8LP20-0AA0		1	1 unit	230	0.013
Connection modules for CPU IM154-8 PN/DP, with 4 x M12 and 2 x 7/8", for connection of PROFINET and PROFIBUS DP	A	6ES7 194-4AN00-0AA0		1	1 unit	250	0.622
SCALANCE X-200 Industrial Ethernet switches With integrated SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagnostics, SCALANCE X208PRO for configuring line, star and ring structures, in degree of protection IP65, with eight 10/100 Mbit/s M12 ports, including eleven M12 dust covers	A	6GK5 208-0HA00-2AA6		1	1 unit	5N2	1.281
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated cutting and clamping contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder							
• 1 unit	A	6GK1 901-1BB10-2AA0		1	1 unit	5K2	0.030
• 10 units	A	6GK1 901-1BB10-2AB0		1	1 unit	5K2	0.300
• 50 units	A	6GK1 901-1BB20-2AE0		1	1 unit	5K2	1.500
Industrial Ethernet Fast Connect installation cables							
• Fast Connect standard cables	A	6XV1 840-2AH10		1	1 M	5K2	0.068
• Fast Connect trailing cables	A	6XV1 840-3AH10		1	1 M	5K2	0.055
• Fast Connect marine cables	A	6XV1 840-4AH10		1	1 M	5K2	0.055
Industrial Ethernet Fast Connect Stripping tools	A	6GK1 901-1GA00		1	1 unit	5K2	0.100
IE connecting cables M12-180/M12-180 Factory-fitted IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67, length:							
• 0.3 m	A	6XV1 870-8AE30		1	1 unit	5K2	0.060
• 0.5 m	A	6XV1 870-8AE50		1	1 unit	5K2	0.065
• 1.0 m	A	6XV1 870-8AH10		1	1 unit	5K2	0.101
• 1.5 m	A	6XV1 870-8AH15		1	1 unit	5K2	0.150
• 2.0 m	A	6XV1 870-8AH20		1	1 unit	5K2	0.180
• 3.0 m	A	6XV1 870-8AH30		1	1 unit	5K2	0.250
• 5.0 m	A	6XV1 870-8AH50		1	1 unit	5K2	0.390
• 10 m	A	6XV1 870-8AN10		1	1 unit	5K2	0.740
• 15 m	A	6XV1 870-8AN15		1	1 unit	5K2	1.100
IE M12 Plug PRO M12 plug-in connector (D-coded) for field assembly, metal enclosure, quick-connect technology, for SCALANCE X208PRO and IM 154-4 PN							
• 1 unit	A	6GK1 901-0DB10-6AA0		1	1 unit	5K2	0.030
• 8 units	A	6GK1 901-0DB10-6AA8		1	1 unit	5K2	0.300
IE Panel Feedthrough Control cabinet gland for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units							
	A	6GK1 901-0DM20-2AA5		1	1 unit	5K2	0.030

¹⁾ For operation of the CPU, an MMC is essential.

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
EM 141 and EM 142 digital expansion modules							
8 DI digital input modules 24 V DC, with module diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 141-4BF00-0AA0		1	1 unit	250	0.175
8 DI High-Feature digital input modules 24 V DC, with channel diagnostics, including bus module Connection module to be ordered separately.	A	6ES7 141-4BF00-0AB0		1	1 unit	250	0.185
4 DO digital output modules 24 V DC, 2 A, with module diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 142-4BD00-0AA0		1	1 unit	250	0.177
4 DO High-Feature digital output modules 24 V DC, 2 A, with channel diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 142-4BD00-0AB0		1	1 unit	250	0.186
8 DO digital output modules 24 V DC, 0.5 A, with module diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 142-4BF00-0AA0		1	1 unit	250	0.181
Accessories							
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors of actuators to ET 200pro	A	6ES7 194-4CA00-0AA0		1	1 unit	250	0.351
CM IO 4 x M12 Invers connection modules 4 M12 sockets for connection of digital actuators to ET 200pro (4 DO and 4 DO HF); 2 x M12 with single assignment, 2 x M12 with double assignment	A	6ES7 194-4CA50-0AA0		1	1 unit	250	0.349
CM IO 8 x M12 connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	A	6ES7 194-4CB00-0AA0		1	1 unit	250	0.358
CM IO 8 x M8 connection modules 8 M8 sockets for connection of digital sensors or actuators to ET 200pro	A	6ES7 194-4EB00-0AA0		1	1 unit	250	0.363
CM IO 2 x M12 connection modules 2 M12 8-pole sockets; to be used with: EM 8DI 24 V DC and 8 DO 24 V DC/0.5 A	A	6ES7 194-4FB00-0AA0		1	1 unit	250	0.156
CM IO 1 x M23 connection modules 1 M23 socket, to be used with: EM 8 DI 24 V DC and 8 DO 24 V DC/0.5 A	A	6ES7 194-4FA00-0AA0		1	1 unit	250	0.198
Module labeling plates for color coding of CM IOs in the colors white, red, blue and green; pack of 100	A	6ES7 194-4HA00-0AA0		1	1 unit	250	0.088
M12 sealing caps for protection of unused M12 terminals on ET 200pro	▶	3RX9 802-0AA00		100	10 units	121	0.100
Labels 20 x 7, pastel turquoise, pack of 340	C	3RT1 900-1SB20		100	340 units	101	0.200
M12 plugs, for field assembly 5-pole, for connecting digital sensors and actuators	A	3RX8 000-0CD55		1	1 unit	574	0.023
M12 connecting cables With PUR sheath, for connecting digital sensors and actuators, preassembled, with box and plug at both ends							
• 3 x 0.34 mm ² , fixed lengths							
- 1 m	A	3RX8 000-0GF32-1AB0		1	1 unit	574	0.052
- 1.5 m	A	3RX8 000-0GF32-1AB5		1	1 unit	574	0.066
• 4 x 0.34 mm ² , fixed lengths							
- 0.6 m	A	3RX8 000-0GF42-1AB0		1	1 unit	574	0.060
- 1 m	A	3RX8 000-0CC44-1AF0		1	1 unit	574	0.172
- 1.5 m	A	3RX8 000-0GF42-1AB5		1	1 unit	574	0.078
EM 144 and EM 145 analog expansion modules							
4AI U analog input modules High-Feature, ±10 V; ±5 V; 0 to 10 V; 1 to 5 V, channel diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 144-4FF00-0AB0		1	1 unit	250	0.182
4AI I analog input modules High-Feature, ±20 mA; 0 to 20 mA; 4 to 20 mA, channel diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 144-4GF00-0AB0		1	1 unit	250	0.185
4AI RTD analog input modules High-Feature; resistors: 150, 300, 600 and 3000 Ohm; resistance thermometers: Pt100, 200, 500, 1000, Ni100, 120, 200, 500 and 1000; channel diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 144-4JF00-0AB0		1	1 unit	250	0.182
4AO U analog output modules High-Feature, ±10 V; 0 to 10 V; 1 to 5 V, channel diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 145-4FF00-0AB0		1	1 unit	250	0.188
4AO I analog output modules High-Feature, ±20 mA; 0 to 20 mA; 4 to 20 mA, channel diagnostics, including bus module. Connection module to be ordered separately.	A	6ES7 145-4GF00-0AB0		1	1 unit	250	0.188

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
EM 144 and EM 145 analog expansion modules (continued)							
Accessories							
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors of actuators to ET 200pro	A	6ES7 194-4CA00-0AA0		1	1 unit	250	0.351
Module labeling plates for color coding of CM IOs in the colors white, red, blue and green; pack of 100	A	6ES7 194-4HA00-0AA0		1	1 unit	250	0.088
M12 sealing caps for protection of unused M12 terminals on ET 200pro	▶	3RX9 802-0AA00		100	10 units	121	0.100
Failsafe digital expansion modules							
8/16 F-DI PROFIsafe failsafe digital input modules 24 V DC, including bus module. Connection module to be ordered separately.	A	6ES7 148-4FA00-0AB0		1	1 unit	241	0.311
4/8 F-DI, 4 F-DO 2 A failsafe digital input/output modules 24 V DC, including bus module. Connection module to be ordered separately.	A	6ES7 148-4FC00-0AB0		1	1 unit	241	0.319
F-Switch PROFIsafe Three failsafe PP-switching outputs for safe switching of the backplane bus bars (2L+, F0, F1); two fail-safe digital inputs, 45 mm; usable up to Cat. 4 (EN 954)/SIL3 (IEC 61508)	A	6ES7 148-4FS00-0AB0		1	1 unit	241	0.200
Accessories							
Connection modules for the 4/8 F-DI/4 -DO, 24 V DC/2 A failsafe solid-state module	A	6ES7 194-4DC00-0AA0		1	1 unit	241	0.597
Connection modules for the 8/16 F-DI, 24 V DC/2 A failsafe solid-state module	A	6ES7 194-4DD00-0AA0		1	1 unit	241	0.583
IM154-2 High-Feature interface modules for the ET 200pro, including termination module	A	6ES7 154-2AA00-0AB0		1	1 unit	250	0.411
PROFINET IM154-4 PN interface modules including termination module	A	6ES7 154-4AB00-0AB0		1	1 unit	2F0	0.590
M12 sealing caps for protection of unused M12 terminals on ET 200pro	▶	3RX9 802-0AA00		100	10 units	121	0.100
M12 plugs, for field assembly 5-pole, for connecting digital sensors and actuators	A	3RX8 000-0CD55		1	1 unit	574	0.023
M12 connecting cables With PUR sheath, for connecting digital sensors and actuators, preassembled, with box and plug at both ends							
• 3 x 0.34 mm ² , fixed lengths							
- 1 m	A	3RX8 000-0GF32-1AB0		1	1 unit	574	0.052
- 1.5 m	A	3RX8 000-0GF32-1AB5		1	1 unit	574	0.066
• 4 x 0.34 mm ² , fixed lengths							
- 0.6 m	A	3RX8 000-0GF42-1AB0		1	1 unit	574	0.060
- 1 m	A	3RX8 000-0CC44-1AF0		1	1 unit	574	0.172
- 1.5 m	A	3RX8 000-0GF42-1AB5		1	1 unit	574	0.078
PM-E power modules							
PM-E power modules 24 V DC for resupply and group formation of the 24 V DC load voltage for solid-state modules within an ET 200pro station.	A	6ES7148-4CA00-0AA0		1	1 unit	250	0.172
Accessories							
CM PM-E ECOFAST connection modules for resupply of 24 V load voltage, one ECOFAST Cu terminal	A	6ES7 194-4BA00-0AA0		1	1 unit	250	0.153
CM PM-E Direct connection modules for resupply of 24 V load voltage, up to two M20 screwed cable glands	A	6ES7 194-4BC00-0AA0		1	1 unit	250	0.196
CM PM-E 7/8" connection modules For resupply of 24 V load voltage, 1 x 7/8"	A	6ES7 194-4BD00-0AA0		1	1 unit	250	0.158
CM PM-E PP connection modules For resupply of 24 V load voltage, 2 x push-pull, with spare fuse	A	6ES7 194-4BE00-0AA0		1	1 unit	250	0.162
Spare fuses 12.5 A quick, for interface and power modules, pack of 10	A	6ES7 194-4HB00-0AA0		1	1 unit	250	0.012
PROFIBUS FC Food bus cables with PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, length of cable 1000 m	A	6XV1 830-0GH10		1	1 M	5K2	0.069
PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, length of cable 1000 m	A	6XV1 830-0JH10		1	1 M	5K2	0.075

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

ET 200pro Motor Starters

Components for ET 200pro

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PM-E power modules (continued)							
PROFIBUS FC trailing cables Minimum bending radius approx. 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, length of cable 1000 m	A	6XV1 830-3EH10		1	1 M	5K2	0.072
Accessories for CM PM-E Direct							
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m	A	6XV1 830-8AH10		1	1 M	5K2	0.149
Accessories for CM PM-E 7/8"							
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole							
• Length 1.5 m	A	6XV1 822-5BH15		1	1 unit	5K2	0.328
• Length 2.0 m	A	6XV1 822-5BH20		1	1 unit	5K2	0.408
• Length 3.0 m	A	6XV1 822-5BH30		1	1 unit	5K2	0.570
• Length 5.0 m	A	6XV1 822-5BH50		1	1 unit	5K2	0.923
• Length 10 m	A	6XV1 822-5BN10		1	1 unit	5K2	1.769
• Length 15 m	A	6XV1 822-5BN15		1	1 unit	5K2	2.540
7/8" connectors with axial cable feeder							
• With pin insert, pack of 5	A	6GK1 905-0FA00		1	1 unit	5K2	0.265
• With female insert, pack of 5	A	6GK1 905-0FB00		1	1 unit	5K2	0.250
PM-O power modules							
PM-O DC 2 x 24 V power modules For tapping the 24 V load voltage 2L+ and the solid-state/sensor supply voltage 1L+ within an ET 200pro station.	A	6ES7 148-4CA60-0AA0		1	1 unit	250	0.183
Accessories							
CM PM-O PP connection modules For tapping 24 V load voltage and solid-state/sensor supply voltage, 2 x push-pull plug-in connectors	A	6ES7 194-4BH00-0AA0		1	1 unit	250	0.148
ET 200pro pneumatic interfaces							
EM 148-P pneumatic interfaces							
• DO 16 x P/CPV 10 for direct connection of the FESTO valve terminals CPV 10 16 DO x P	A	6ES7 148-4EA00-0AA0		1	1 unit	250	0.481
• DO 16 x P/CPV 14 for direct connection of the FESTO valve terminals CPV 14 16 DO x P	A	6ES7 148-4EB00-0AA0		1	1 unit	250	0.642
• FESTO valve terminals CPV 10		Obtainable from: Festo (see Appendix -> External Partners)					
• FESTO valve terminals CPV 14		Obtainable from: Festo (see Appendix -> External Partners)					
ET 200pro FC frequency converters							
ET 200pro FC frequency converters 3 AC 380 ... 480 V, +10/-10 % 47 ... 63 Hz Overload: 150 %, 60 s, 200 %, 3 s Rating: 1.1 kW (0 °C ... 55 °C) 1.5 kW (0 °C ... 45 °C)							
• ET 200pro FC Standard frequency converters	A	6SL3235-0TE21-1RB0		1	1 unit	337	4.000
• ET 200pro FC frequency converters with integrated safety functions	A	6SL3235-0TE21-1SB0		1	1 unit	337	4.000
Accessories							
Backplane bus modules for accommodating the frequency converter	A	6SL3260-2TA00-0AA0		1	1 unit	337	0.450

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

General data

Overview



The intelligent, highly flexible SIRIUS M200D motor starters for distributed configurations are designed to start, monitor and protect motors and loads up to 5.5 kW.

They are available in four versions:

M200D AS-i Basic	M200D AS-i Standard	M200D PROFIBUS	M200D PROFINET
Motor control with AS-i Communication		PROFIBUS	PROFINET
Mechanical or electronic switching	✓	✓	✓
Electronic switching with soft starter functionality	--	✓	✓

Basic functionality

All M200D motor starter versions have the following functions:

- Available as direct-on-line and reversing starters in a rugged design
- Electromechanical or solid-state switching version
- Little variance – only 2 device versions up to 5.5 kW thanks to wide range setting
- All versions have the same enclosure dimensions
- Degree of protection IP65
- Quick and failsafe wiring of system and motor cables using ISO 23570 plug-in connector technology (Q4/2 and Q8/0)
- Robust and widely used M12 connection method for the digital inputs and outputs
- Integrated feeder connector monitoring
- Full motor protection through overload protection and a temperature sensor (PTC, TC)
- Short-circuit and overload protection integrated
- Integrated repair switch lockable with 3 locks (multi-level service)
- Uniform wiring to the G110D/G120D frequency converters and to the ET200pro distributed peripherals system
- Extensive diagnostics concept using LEDs
- Optional integrated manual on-site controller with key-operated switch (ordering option)
- Optional brake control with voltages of 180 V DC (no rectifier needed in the motor) or 230/400 V AC (ordering options)

Benefits

M200D motor starters provide the following advantages for customers:

- High plant availability through plug-in capability of the main circuit, communication and IOs – relevant for installing and replacing devices
- Cabinet-free construction and near-motor installation thanks to the high degree of protection IP65
- The motor starters record the actual current flow for the parameterizable electronic motor overload protection. Reliable messages concerning the overranging or underranging of setpoint values for comprehensive motor protection. All motor protection functions can be defined by simple parameterization
- Low stock levels and low order costs through a wide setting range for the electronic motor protection of 1:10 (only 2 device versions up to 5.5 kW)
- The integrated wide range for the current enables a single device to cover numerous standard motors of different sizes
- Comprehensive offering of accessories, including ready-assembled cables
- The M200D motor starters can be installed with a few manual steps The integrated plug-in technology enables far lower wiring outlay: preassembled cables can be plugged directly onto the motor starter module
- Easy and user-friendly installation because all versions have the same enclosure dimensions
- Fast and user-friendly commissioning using an optional manual on-site controller
- Increase of process speed through integrated functions such as "Quick-Stop" and "Disable Quick-Stop", e. g. at points and crossings
- Optional manual on-site controller with momentary-contact and latching operation for easier start-up and easier service

Application

The high degree of protection IP65 makes the M200D motor starters suitable in particular for use on extensive conveying systems such as are found in mail sorting centers, airports, automotive factories and the packing industry.

For simple operating mechanism tasks, particularly in conveyor applications, the new SINAMICS G110D frequency converter series with a performance range from 0.75 kW to 7.5 kW and degree of protection IP65 is the ideal partner for the M200D motor starters. The SINAMICS G110D frequency converters permit continuous speed control of three-phase asynchronous motors and meet the requirements of conveyor applications with frequency control ([for more information see Catalog D 11.1](#)).

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

Overview

For motor control using AS-Interface there are the following M200D motor starter versions: SIRIUS M200D AS-i Basic and SIRIUS M200D AS-i Standard. (For details of basic functionality see M200D Motor Starters, General Data.)

SIRIUS M200D AS-i Basic

Functionality

- Easy and fast on-site start-up through parameterization of local setting elements (DIP switches) and rotary coding switches for adjusting the rated operational current. The rotary coding switch has an OFF position for deactivating the overload protection with the help of the thermal motor model when using a temperature sensor.

Communication

- AS-i communication with A/B addressing according to Spec V2.1
- The AS-i bus is connected cost-effectively using an M12 connection on the device. Of the 4 digital inputs, 2 are contained in the process image and can therefore be used in the PLC program. The other 2 inputs are locally effective and permanently assigned with functions.
- The LEDs can provide comprehensive diagnostics of the device on the spot. In addition to diagnostics using the PAE process image, the device can create up to 15 different diagnostic signals per slave. The message with the highest priority can be read out through the AS-i communication. This is yet another new development which distinguishes the M200D AS-i Basic motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

SIRIUS M200D AS-i Standard

The intelligent, highly flexible M200D AS-i Standard motor starters in A/B technology are designed to start and protect motors and loads up to 5.5 kW. They are available in direct-on-line or reversing starter variants, in a mechanical version and also an electronic version (the latter with soft start function).

The M200D AS-i Standard motor starter is the most functional member of the SIRIUS motor starter family in the high degree of protection IP65 for AS-i Communication. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET200pro peripherals system is assured.

Functionality

- AS-i communication with A/B addressing according to Spec 3.0
- Electronic version also with soft start function
- AS-i slave profile 7.A.E / 7.A.5 with process image 6E/4A
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through AS-i, providing maximum flexibility and best adaptability to the application
- Additionally expanded diagnostics using data record through AS-i bus
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through AS-i bus with the help of data records or an expanded process image from the user program
- Control of the motor starter using a command data record from the user program
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Parameterization using Motor Starter ES at the local interface (ordering option for start-up software)
- Diagnostics with the help of Motor Starter ES (ordering option for start-up software)

Mounting and installation

The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay. Connecting cables can be plugged directly onto the motor starter module. Swapping of the connecting wires and malfunctions within the plant are prevented by preassembled cables. The AS-i bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

The particularly robust M200D AS-i Standard motor starter is characterized by numerous functions which can be flexibly parameterized. It enables highly flexible parameterization through the AS-i bus using data records from the user program as well as user-friendly local parameterization using the Motor Starter ES start-up software through the local point-to-point interface.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All motor protection functions, limit values and reactions can be defined by parameterization. The AS-i Standard is unique. In its 6E/4A process image the motor starter sends all 4 digital inputs and the digital output via the process image to the PLC in cyclic mode. System configuration and system documentation are facilitated not least by a number of CAX data.

Operation

The new motor starter generation is characterized by high functionality, maximum flexibility and the highest level of automation.

All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable messages concerning the overranging or underranging of setpoint values.

Diagnostics and maintenance

The M200D sets new standards for diagnostics. In addition to diagnostics using the PAE process image and diagnostics by "parameter echo" (up to 15 different diagnostic signals per slave can be read out via AS-i Communication), the possibility of reading out diagnostic data records is unique on the market.

The AS-i Standard is recommended in particular for expansive and highly automated plant parts because the possibility of monitoring devices and systems with data records (statistical data, measured values and device diagnostics) provides an in-depth view of the plant from the control room, guaranteeing the monitoring process and increasing plant availability.

The integrated maintenance timer can be used to implement preventative maintenance and avoid plant downtimes through look-ahead servicing.

Local on-site control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D AS-i Standard motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the plant.

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface


SIRIUS M200D
AS-i Basic
SIRIUS M200D
AS-i Standard
Device functions (software features)
Slave on the bus

Fieldbus	✓ AS-i	
Slave type	✓ A/B acc. to Spec 2.1	✓ A/B acc. to Spec 3.0
Profile	✓ 7.A.E	✓ 7.A.E & 7.A.5
Number of assigned AS-i addresses on the bus	✓ 1	✓ 2
Number of stations per AS-i master	✓ Maximum 62 devices	✓ Maximum 31 devices
AS-i master profile	✓ M3 and higher	✓ M4 and higher

Parameterization

DIP switches	✓	--
Potentiometer for rated operational current	✓	--
ES Motor Starter	--	✓
Data records through AS-i	--	✓

Diagnostics

Diagnostics through parameter channel	✓	
Acyclic through data records	--	✓
Expanded process image PAE 4 bytes	--	✓

Process image

Process image	✓ 4E/3A	✓ 6E/4A
---------------	---------	---------

Data channels

Local optical interface (manual on-site)	✓	
AS-i bus	✓	
Motor Starter ES through local interface	--	✓
Motor Starter ES through bus	--	

Data records¹⁾ (acyclic)

Parameterization	--	✓
Diagnostics	--	✓
Measured values	--	✓
Statistics	--	✓
Commands	--	✓

Inputs

Number	✓ 4	
• Of these in the process image	✓ 2 through AS-i	✓ 4 through AS-i
Input action	✓ Permanently assigned functions, see manual	✓ Parameterizable: Flexible
Quick-Stop	✓ Permanent function: latching, edge-triggered	✓ Parameterizable function: latching (edge-triggered), non-latching (level-triggered)

Outputs

Number	✓ 1	
Output action	✓ Permanent function: assigned with group fault	✓ Parameterizable: Function, see manual

Brake output

180 V DC / 230/400 V AC / none	✓	
--------------------------------	---	--

Motor protection

Overload protection	✓ Electronic, wide range 1:10	
Short-circuit protection	✓	
Full motor protection	✓	
Temperature sensor	✓ Parameterizable using DIP switches: PTC or Thermoclick or deactivated	✓ Parameterizable using ES Motor Starter, data record: PTC or Thermoclick or deactivated

✓ Function is available; -- Function is not available.

¹⁾ The data records are a reduced selection compared with PROFIBUS/PROFINET

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface



SIRIUS M200D
AS-i Basic

SIRIUS M200D
AS-i Standard

Device functions (software features)

Device functions

Repair switch	✓	
Current limit monitoring bottom	--	✓ Parameterizable
Current limit monitoring top	--	✓ Parameterizable
Zero current detection	✓ Permanent function: disconnection, less than 18.75 % of the rated operational current I_e	✓ Parameterizable
Blocking current	✓ Permanent function: Starting up of the motor: tripping limit at 800 % of the rated operational current I_e for 10 s Active operation: threshold for tripping "blocking current" at 400 % of the rated operational current I_e	✓ Parameterizable
Unbalance	✓ Permanent function: at 30 % of the rated operational current I_e (only mechanical MS)	✓ Parameterizable
Load type	✓ Permanent function: three-phase	✓ Parameterizable: single- and three-phase
Shutdown class	✓ Parameterizable using DIP switches: Class 10 / deactivated	Parameterizable using ES Motor Starter, data record: Class 5, 10, 15, 20
Protection against voltage failure	✓	✓ Parameterizable: Activated/deactivated
Soft starter control function		
Soft start function	--	✓
Bypass function	--	✓ Only electronic version

✓ Function is available; -- Function is not available.

6

Application

The M200D AS-i Standard is particularly suitable for highly automated conveyor applications which require the monitoring of devices and systems in order to prevent or limit plant downtimes. The functions of the motor starter or its interfaces can be parameterized, enabling fine-tuning of the motor starter in the application and therefore the greatest flexibility.

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

More information

Type	M200D Motor Starters				
	AS-i Basic electromechanical switching DSte / RSte	AS-i Basic electronic switching sDSte / sRSte	AS-i Standard electromechanical switching DSte / RSte	AS-i Standard electronic switching sDSte / sRSte	
Technology designation¹⁾					
Mechanics and environment					
Mounting dimensions (W x H x D)	mm	294 x 215 x 159			
Permissible ambient temperature					
• During operation	°C	-25 ... +55			
• During storage	°C	-40 ... +70			
Weight	g	2880 / 3130	3220 / 3420	2880 / 3130	3220 / 3420
Permissible mounting positions	Vertical, horizontal, lying				
Vibration resistance acc. to IEC 60068 Part 2-6	2 g				
Shock resistance					
• Acc. to IEC 60068 Part 2-27	12 g/11 ms half-sine				
• Without influencing the contact position	9.8 g/5 ms or 5.9 g/10 ms				
Degree of protection acc. to IEC 529	IP65				
Installation height					
• Up to 1000 m	No derating				
• Up to 2000 m	1 % per 100 m				
Cooling	Convection				
Protection class IEC 536 (VDE 0106-1)	1				
Electrical specifications					
Control circuit					
Operational voltage U_{AS-i}	V DC	26.5 ... 31.6			
Control supply voltage U_{aux}	V DC	20.4 ... 28.8			
Power consumption from AS-i (incl. 200 mA sensor supply)	mA	<300			
Power consumption from U_{aux} (without digital output)					
• Max.	mA	155	15 (direct-on-line)/175 (reversing)	155	15 (direct-on-line)/175 (reversing)
• Typ.	mA	75	10 (direct-on-line)/75 (reversing)	75	10 (direct-on-line)/75 (reversing)
Main circuit					
Maximum power of induction motors at 400 V AC	kW	5.5	4	5.5	5.5
Rated operational voltage U_g					
• Approval acc. to EN 60947-1	V AC	400 (50/60 Hz)			
• Approval acc. to UL and CSA	V AC	600 (50/60 Hz)			
• Rated operational current range	A	0.15 ... 2 / 1.5 ... 12	--	0.15 ... 2 / 1.5 ... 12	--
• Rated operational current range for soft start	A	--	0.15 - 2 / 1.5 - 9	--	0.15 ... 2 / 1.5 ... 12
• Rated operational current range for direct start	A	--	0.15 - 2 / 1.5 - 9	--	0.15 - 2 / 1.5 - 9
Rated operational current for starter I_g at 400 V AC					
• 400 V - AC-1 / 2 / 3	A	12	--	12	--
• 500 V - AC-1 / 2 / 3	A	9	--	9	--
• 400 V - AC-4	A	4	--	4	--
• 400 V AC53a	A	--	9	--	12 for soft starting 9 for direct-in-line starting
Mechanical endurance of contactor		30 million operating cycles	--	30 million operating cycles	--
Trip class		Class 10		CLASS 5, 10, 15, 20	
Type of coordination acc. to IEC 60947-4-1		1 (2 for device variant 2A)	1	1 (2 for device variant 2A)	1
Reliable switching frequency		See manual			
Rated ultimate short-circuit breaking capacity I_q					
• At 400 V AC	kA	50		50	
• At 500 V AC	kA	50 ²⁾	20 ²⁾	50	20 ²⁾
Short-circuit protection					
• At $I_{e,max} = 2$ A		Integrated, $2 \times 13 I_g = 26$ A			
• At $I_{e,max} = 9/12$ A		Integrated, $2 \times 13 I_g = 208$ A			
Brake version (option)					
Designation		400 V/230 V AC	180 V DC	400 V/230 V AC	180 V DC
Operational voltage	V	400 / 230 AC	DC 180	400 / 230 AC	DC 180
Uninterrupted current	A	< 0.5	< 0.8	< 0.5	< 0.8
Short-circuit protection		Yes, 1 A melting fuse			

1) DS ... direct-on-line starter
RS ... reversing starter
te full motor protection (thermal + electronic)
s electronic switching with semiconductor

2) Only systems with grounded neutral point permitted

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D motor starters for AS-Interface
M200D Basic motor starters

Selection and ordering data



M200D AS-i Basic without manual on-site operation



M200D AS-i Basic with manual on-site operation

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Electromechanical starters (with integrated protection)

C **3RK1 315-6□S41-□AA□** 1 1 unit 121 2.6 ... 3.1

Setting range for rated operational current / A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake control

- Without brake control
- Brake control (400 V AC)
- Brake control (180 V DC)

	Additional price
K	None
L	x
0	None
1	x
2	x
3	x
0	None
3	x
5	x

Electronic starters (with thyristors)

C **3RK1 315-6□S71-□AA□** 1 1 unit 121 2.6 ... 3.4

Setting range for rated operational current / A

- 0.15 ... 2
- 1.5 ... 9

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake control

- Without brake control
- Brake control (230/400 V AC)
- Brake control (180 V DC)

	Additional price
K	None
N	x
0	None
1	x
2	x
3	x
0	None
3	x
5	x

x = Additional price

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D motor starters for AS-Interface
M200D Standard motor starters

Selection and ordering data



M200D AS-i Standard

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Electromechanical starters (with integrated protection)

Setting range for rated operational current / A	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
<ul style="list-style-type: none"> • 0.15 ... 2 • 1.5 ... 12 	3RK1 325-6□S41-□AA□		1	1 unit	121 2.6 ... 3.1	
Direct-on-line starters/reversing starters						
• Direct-on-line starters	0	None				
• Reversing starters	1	x				
• Direct-on-line starters with manual local operation	2	x				
• Reversing starters with manual local operation	3	x				
Brake control						
• Without brake control	0	None				
• Brake control (400 V AC)	3	x				
• Brake control (180 V DC)	5	x				

Electronic starters (with thyristors)

Setting range for rated operational current / A	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
<ul style="list-style-type: none"> • 0.15 ... 2 • 1.5 ... 12 	3RK1 325-6□S71-□AA□		1	1 unit	121 2.6 ... 3.4	
Direct-on-line starters/reversing starters						
• Direct-on-line starters	0	None				
• Reversing starters	1	x				
• Direct-on-line starters with manual local operation	2	x				
• Reversing starters with manual local operation	3	x				
Brake control						
• Without brake control	0	None				
• Brake control (230/400 V AC)	3	x				
• Brake control (180 V DC)	5	x				

x = Additional price

* You can order this quantity or a multiple thereof.



For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D motor starters for PROFIBUS / PROFINET

Overview

The intelligent, highly flexible M200D PROFIBUS / PROFINET motor starters are the most functional motor starters of the SIRIUS motor starter family in the high degree of protection IP65 for PROFIBUS / PROFINET communication.

They start and protect motors and loads up to 5.5 kW. Direct-on-line and reversing starter variants are available, in a mechanical version and also an electronic version (the latter with soft start function).

The particularly robust M200D PROFIBUS / PROFINET motor starters are characterized by numerous functions which can be flexibly parameterized. Their modular design comprises a motor starter module and a communication module.

The M200D PROFINET motor starters enable TIA-integrated parameterization through PROFINET from STEP7 - in familiar, user-friendly manner with the same look-and-feel as PROFIBUS.

Functionality

- For basic functionality see M200D Motor Starters, General Data
- Electronic version also with soft start function
- Robust and widely used M12 connection method for the digital inputs and outputs and the PROFIBUS/PROFINET bus connection
- All four digital inputs and two digital outputs exist in the cyclic process image. This provides complete transparency of the process on the control level
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through the bus, providing maximum flexibility and best adaptability to the application
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Extensive diagnostics concept using LEDs and through the bus with the TIA-conform mechanisms
- Expanded diagnostics using data records
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through PROFIBUS / PROFINET bus with the help of data records from the user program
- Control of the motor starter using a command data record from the user program
- Removable modular control unit – fixed wiring on the control unit means faster replacement of devices and therefore lower costs because only one device needs to be replaced
- Parameterization in Step7 HW Config using Motor Starter ES (ordering option for start-up software)
- Start-up and diagnostics with the help of Motor Starter ES (ordering option for start-up software)
- Trace function through Motor Starter ES for optimized start-up and tracking of process and device values

Only with PROFINET IO:

- Just one bus system from the MES level to the devices - no routers
- More stations on the bus and possible configuration of flexible bus structures
- Automatic re-parameterization in case of device replacement thanks to proximity detection
- Wireless integration of plant segments in difficult environments using WLAN
- Easier expansion of the system thanks to a higher number of stations on the bus and elimination of terminating resistors



M200D motor starter modules for PROFIBUS / PROFINET (without communication module)



M200D communication modules for PROFIBUS



M200D communication modules for PROFINET

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D motor starters for PROFIBUS / PROFINET

Mounting and installation

The M200D PROFIBUS / PROFINET motor starter is comprised of a communication module and a motor starter module. Only the motor starter module has to be replaced therefore when replacing devices. This saves time and money. The communication module remains as an active station on the bus and all other system components continue running. This prevents downtimes.

The integrated plug-in technology enables far lower wiring outlay: Connecting cables can be plugged directly onto the motor starter module. The PROFINET bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

All motor protection functions, limit values and reactions can be defined by parameterization.

The user has several user-friendly options for the parameterization. In addition to parameterization directly from STEP 7, which also permits automatic re-parameterization in case of device replacement, it is possible to use the user-friendly Motor Starter ES start-up software. By connecting a programming device directly to PROFIBUS / PROFINET and the Motor Starter ES start-up software, the devices can also be conveniently programmed from a central point through the bus. Also, parameters can be changed during operation from the user program using the data record mechanism so that the function of the motor starter is adapted to the process when required. With the help of a PC and the Motor Starter ES software it is also possible to perform the parameterization through the local point-to-point interface on-site.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET200pro peripherals system is assured.

Only with the M200D PROFIBUS motor starter

Thanks to the integrated proximity detection, the device name does not need to be issued manually when a device is replaced. The name is issued automatically by the neighboring devices which note the "names" of the devices in their proximity. No additional start-up measures are required therefore when replacing a device.

The new motor starter generation is characterized by high functionality, maximum flexibility and the highest level of automation. The PROFINET is recommended in particular for expansive and highly automated system components because the possibility of monitoring devices and systems with data records (statistical data, measured values and device diagnostics) guarantees an in-depth view of the plant from the control room and therefore increases plant availability.

Operation

The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable messages concerning the overranging or underranging of setpoint values.

Diagnostics and maintenance

Diagnostics is provided through numerous mechanisms - and can be used as the customer prefers.

The motor starter has TIA diagnostics capability, i. e. detection of a fault automatically triggers a diagnostics alarm which in the case of a SIMATIC controller calls up the diagnostics OB. The fault can be evaluated as usual in the user program.

The M200D motor starter offers a large variety of diagnostics data through data records. Its functionality is without equal on

the market. There are extensive options for reading out data from the motor starter for monitoring devices, systems or processes.

The motor starter is equipped internally with 3 logbooks for device faults, motor starter trips and events, which are issued with a time stamp. These logbooks can be read out of the motor starter at any time in the form of data records and provide the plant operator with plenty of information about the state of his plant and process which he can use to carry out improvements.

With the slave pointer and statistical data functions it is possible to read out, for example, the maximum internal current values or the number of motor starter connection operations for plant monitoring purposes. This enables process deviations to be monitored or commissioning to be optimized. The user can draw conclusions about the actual load conditions of the devices in his process and on this basis can optimize his plant maintenance intervals.

The device diagnostics data record contains details of all the states of the motor starter, the device configuration and the communication as a basis for central device and plant monitoring.

Installation and maintenance functions (I&M) save information concerning the module used in the motor starter as well as data which the user can define during the configuration, e. g. position IDs. I&M functions are used to rectify faults or to locate hardware changes in a plant or to check the system configuration. Reordering a device is particularly easy as the result.

The integrated maintenance timer can be used to implement preventative maintenance and avoid plant downtimes through look-ahead servicing.

Another new feature is the integrated TRACE function with the Motor Starter ES software. It can be used to record measured values as a function of time following a trigger event. This enables process flows to be recorded and their timing optimized.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D PROFIBUS / PROFINET motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D motor starters for PROFIBUS / PROFINET



SIRIUS M200D
PROFIBUS

SIRIUS M200D
PROFINET

Device functions (software features)

Slave on the bus

Fieldbus	✓ PROFIBUS to M12	✓ PROFINET to M12
Adjustable number of stations	✓ 1 ... 125	✓ 1 ... 128 with CPU 315, 317 1 ... 256 with CPU 319

Parameterization

DIP switches	✓ For address setting and terminating resistor	--
ES Motor Starter	✓ Through bus, optical interface	
PROFIBUS / PROFINET data records	✓	
From STEP 7 / HW config	✓	

Diagnostics

Acyclic through data records	✓
Support of diagnostics alarm	✓

Process image

Process image	✓ 2Byte PAE/ 2Byte PAA
---------------	------------------------

Data channels

Local optical interface (manual on-site)	✓
Through Motor Starter ES local interface	✓
Using Motor Starter ES through bus	✓

Data records (acyclic)

Parameterization	✓ Using DS 131 (DS = data record)	
Diagnostics	✓ Device-specific DS 92	
Measured values	✓ Measured values DS 94	
Statistics	✓ Statistical data DS 95	
Commands	✓ Using DS 93	
Slave pointer	✓ Slave pointer DS 96	
Logbook	✓ Using Motor Starter ES and data records: Device faults DS 72, tripping operation DS 73, events DS 75	
Device identification	✓ Using DS 100	
I&M data	✓ Using DS 231 ... 234	✓ Using data records 0xAFF0 ... 0xAFF3

Inputs

Number	✓ 4
• Of these in the process image	✓ 4
Input action	✓ Parameterizable: Flexibly assignable action (see manual)
Quick-Stop	✓ Parameterizable: Latching, non-latching

Outputs

Number	✓ 2
• Of these in the process image	✓ 2
Output action	✓ Parameterizable: Flexibly assignable action (see manual)

Brake output

180 V DC / 230/400 V AC / none	✓
--------------------------------	---

Motor protection

Overload protection	✓ Electronic, wide range 1:10
Short-circuit protection	✓
Full motor protection	✓
Temperature sensor	✓ Parameterizable using ES Motor Starter, data record: PTC or Thermoclick or deactivated

✓ Function is available; -- Function is not available.

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D motor starters for PROFIBUS / PROFINET



SIRIUS M200D
PROFIBUS

SIRIUS M200D
PROFINET

Device functions (software features)

Device functions

Repair switch	✓
Current limit monitoring bottom	✓ Parameterizable
Current limit monitoring top	✓ Parameterizable
Zero current detection	✓ Parameterizable: tripping, warning
Blocking current	✓ Parameterizable
Unbalance	✓ Parameterizable
Load type	✓ Parameterizable: single- and three-phase
Shutdown class	✓ Parameterizable using ES Motor Starter, data record: Class 5, 10, 15, 20
Protection against voltage failure	✓ Parameterizable: Activated/deactivated

Soft starter control function

Soft start function	✓
Bypass function	✓ Only electronic version

✓ Function is available; -- Function is not available.

Application

The M200D PROFIBUS / PROFINET motor starters are particularly suitable for fully TIA-integrated, highly automated conveyor applications which meet all needs with regard to the monitoring of devices and systems and preventative maintenance. Adaptability of the motor starter functions and maximum flexibility of the device enable a broad range of application without any limits. The PROFINET-specific expansions are the best assurance of a future-proof investment.

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D motor starters for PROFIBUS/PROFINET
Communication modules, motor starter modules

Selection and ordering data



M200D PROFIBUS / PROFINET
without communication module



M200D PROFIBUS



M200D PROFINET

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
M200D communication modules for PROFIBUS							
Communication modules for PROFIBUS M12 termination 7/8 inch	C	3RK1 305-0AS01-0AA0		1	1 unit	121	0.300
M200D communication modules for PROFINET							
Communication modules for PROFINET M12 termination 7/8 inch	C	3RK1 335-0AS01-0AA0		1	1 unit	121	0.300
Electromechanical starters (with integrated protection)							
	C	3RK1 395-6□S41-□AD□		1	1 unit	121	2.3
Setting range for rated operational current / A							
• 0.15 ... 2		K					<i>Additional price</i> None
• 1.5 ... 12		L					On req.
Direct-on-line starters/reversing starters							
• Direct-on-line starters			0				None
• Reversing starters			1				On req.
• Direct-on-line starters with manual local operation			2				On req.
• Reversing starters with manual local operation			3				On req.
Brake control							
• Without brake control			0				None
• Brake control (400 V AC)			3				On req.
• Brake control (180 V DC)			5				On req.
Electronic starters (with thyristors)							
	C	3RK1 395-6□S71-□AD□		1	1 unit	121	2.3
Setting range for rated operational current / A							
• 0.15 ... 2			K				<i>Additional price</i> None
• 1.5 ... 12			L				On req.
Direct-on-line starters/reversing starters							
• Direct-on-line starters			0				None
• Reversing starters			1				On req.
• Direct-on-line starters with manual local operation			2				On req.
• Reversing starters with manual local operation			3				On req.
Brake control							
• Without brake control			0				None
• Brake control (230/400 V AC)			3				On req.
• Brake control (180 V DC)			5				On req.

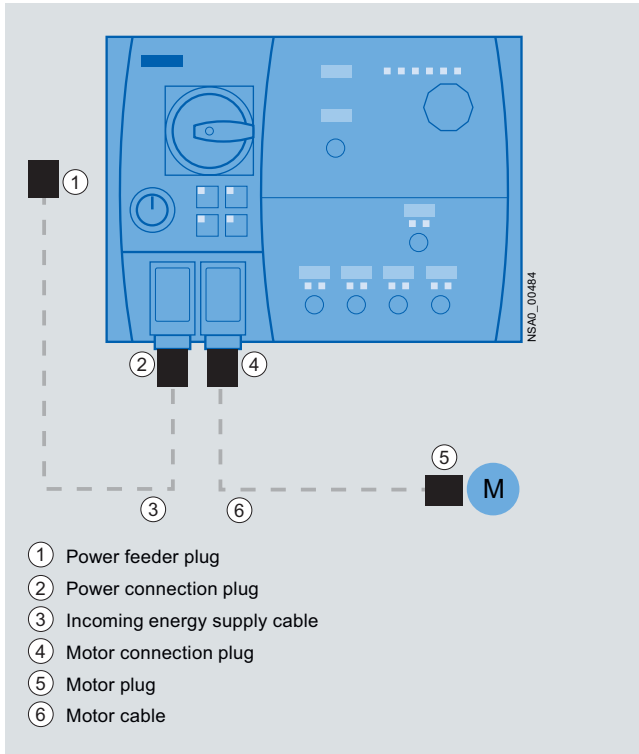
6

* You can order this quantity or a multiple thereof.

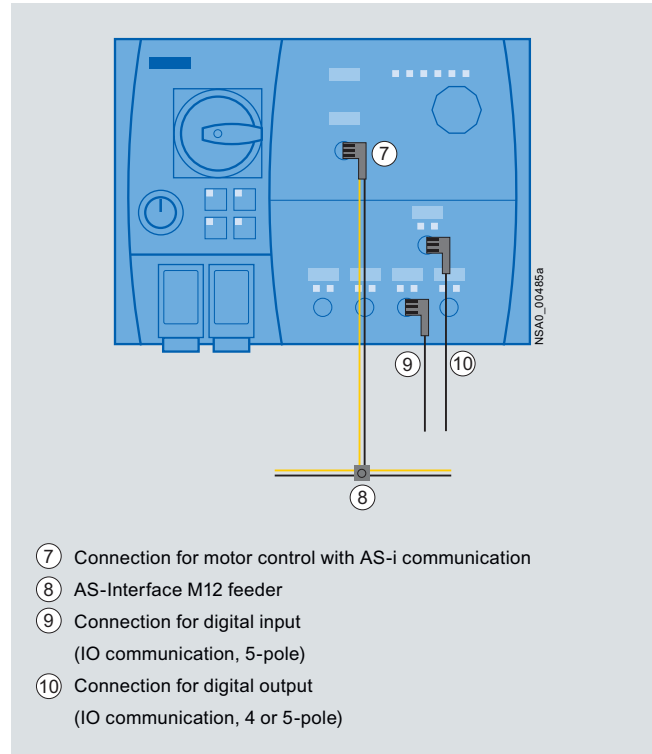
For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

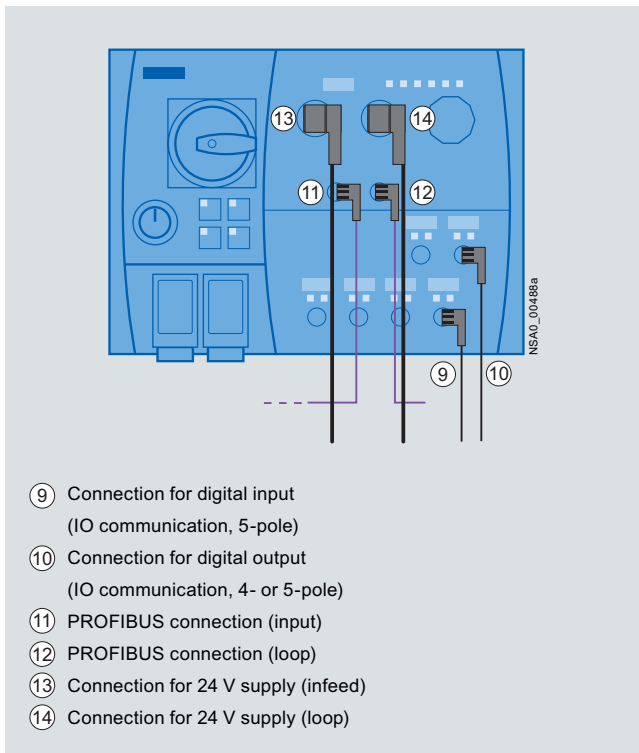
Overview



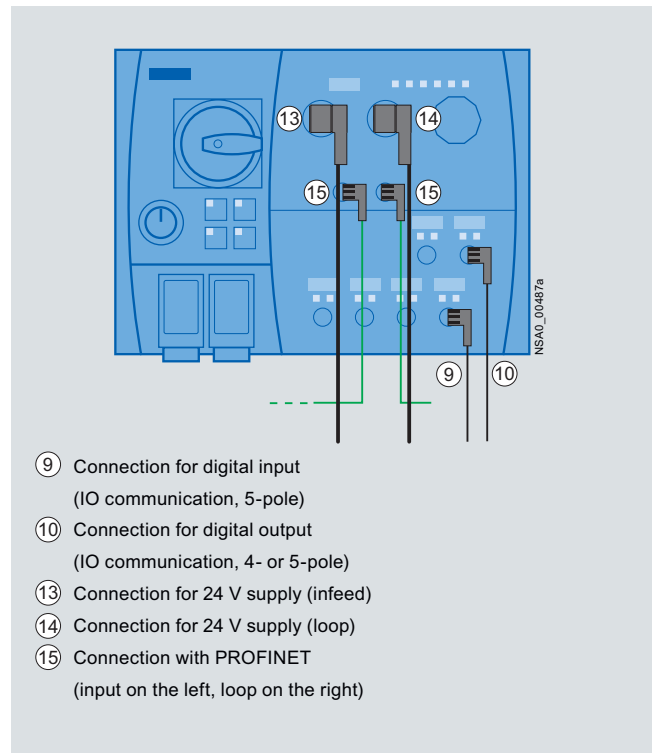
Power and motor connection on the M200D motor starter (in this example: M200D for AS-i)



Communication connection using AS-Interface and digital inputs and outputs



Communication connection using PROFIBUS and digital inputs and outputs



Communication connection using PROFINET and digital inputs and outputs

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

Selection and ordering data

The accessories listed below represent a basic selection.

More connection technology products can be found at our "Siemens Solution Partners" and in the catalogs IK PI and FS 10.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mountable accessories							
M200D protective brackets	B	3RK1 911-3BA00		1	1 unit	121	0.225
Incoming energy supply							
① Power feeder plugs							
Connector set for energy supply, e. g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. gland							
• 5 male contacts 2.5 mm ²	B	3RK1 911-2BS60		1	1 unit	121	0.100
• 5 male contacts 4 mm ²	B	3RK1 911-2BS20		1	1 unit	121	0.100
• 5 male contacts 6 mm ²	B	3RK1 911-2BS40		1	1 unit	121	0.100
② Power connection plugs							
Connector set for energy supply for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, female insert for HAN Q4/2, incl. gland							
• 5 female contacts 2.5 mm ²	C	3RK1 911-2BE50		1	1 unit	121	0.200
• 2 female contacts 0.5 mm ²							
• 5 female contacts 4 mm ²	B	3RK1 911-2BE10		1	1 unit	121	0.200
• 2 female contacts 0.5 mm ²							
• 5 female contacts 6 mm ²	B	3RK1 911-2BE30		1	1 unit	121	0.200
• 2 female contacts 0.5 mm ²							
② + ③ Power connection cable							
Assembled at one end with "N" and jumper pin 11 and 12 for plug monitoring, with HAN Q4/2, angular; open at one end; 5 x 4 mm ²							
• Length 1.5 m	B	3RK1 911-0DC13		1	1 set	121	0.590
• Length 5.0 m	X	3RK1 911-0DC33		1	1 set	121	0.590
Motor cables							
④ Motor connection plugs							
Connector set for motor cable for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q8/0, incl. gland							
• 8 male contacts 1.5 mm ²	B	3RK1 902-0CE00		1	1 unit	121	0.064
• 6 male contacts 2.5 mm ²	B	3RK1 902-0CC00		1	1 unit	121	0.059
⑤ Motor plugs							
Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, incl. gland							
• 7 female contacts 1.5 mm ²	C	3RK1 911-2BM21		1	1 set	121	0.240
• 7 female contacts 2.5 mm ²	C	3RK1 911-2BM22		1	1 set	121	0.240
④ + ⑥ Motor cables, assembled at one end							
Open at one end, HAN Q8/0, angled, length 5 m							
• Motor cables for motor without brake, for M200D, 4 x 1.5 mm ²	C	3RK1 911-0EB31		1	1 set	121	0.800
• Motor cables for motor with brake control 400 V AC or 180 V DC, 6 x 1.5 mm ²	C	3RK1 911-0ED31		1	1 set	121	1.150
• Motor cables for motor with brake control 230 V AC and thermistor, 8 x 1.5 mm ²	B	3RK1 911-0EE31		1	1 set	121	1.150

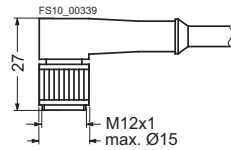
For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Motor control with AS-i communication¹⁾

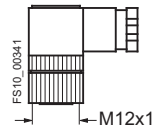


3RX8 000-0CC42-1AF0

⑦ **Control cables, assembled at one end**
Open at one end, angular M12 cable boxes for screw fixing, degree of protection IP67, 4-pole, 4 x 0.34 mm²

- Cable length 5 m

A	3RX8 000-0CC42-1AF0	1	1 unit	574	0.180
---	----------------------------	---	--------	-----	-------



3RX8 000-0CC45

⑦ **Coupling boxes with terminal compartment, can be pre-assembled**

Open at one end, angular M12 cable boxes for screw fixing, degree of protection IP67, 4-pole, 4 x 0.34 mm²

A	3RX8 000-0CC45	1	1 unit	574	0.015
---	-----------------------	---	--------	-----	-------



3RK1 901-1NR21

⑧ AS-Interface M12 feeder

For flat cable	For	Cable length	Cable end in feeder						
AS-i / U _{aux}	M12 socket	--	Not available	A	3RK1 901-1NR20	1	1 unit	121	0.060
AS-i / U _{aux}	M12 cable box	1 m	Not available	A	3RK1 901-1NR21	1	1 unit	121	0.070
AS-i / U _{aux}	M12 cable box	2 m	Not available	A	3RK1 901-1NR22	1	1 unit	121	0.100

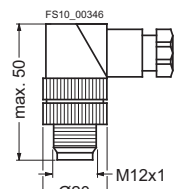
Cable terminating pieces
For sealing of open cable ends (shaped AS-Interface cable) in IP67

▶	3RK1 901-1MN00	1	10 units	121	0.085
---	-----------------------	---	----------	-----	-------



3RK1 901-1MN00

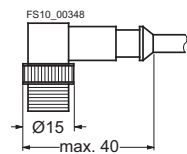
Motor control with IO communication¹⁾



3RX8 000-0CE55

⑩ **Angular M12 coupler plugs**
Degree of protection IP 67, 5-pole, for extension cable (metal screw cap) with terminal compartment, cable let-through max. 6 mm

A	3RX8 000-0CE55	1	1 unit	574	0.023
---	-----------------------	---	--------	-----	-------



3RX8 000-0CC42-1AF0

⑩ **Control cables, assembled at one end**
Angular M12 cable plugs, degree of protection IP67, 4 x 0.34 mm² (metal screw cap)

- Length 5 m
- Length 10 m

A	3RX8 000-0CE42-1AF0	1	1 unit	574	0.169
A	3RX8 000-0CE42-1AL0	1	1 unit	574	0.335

⑨, ⑩ Control cables, assembled at one end

Angular M12 cable plugs, 5-pole

- PUR cables 1.5 m
- PUR cables 5 m
- PUR cables 10 m

C	3RX8 000-1CE52-1AB5	1	1 unit	574	0.195
C	3RX8 000-1CE52-1AF0	1	1 unit	574	0.195
C	3RX8 000-1CE52-1AL0	1	1 unit	574	0.195

¹⁾ For more plug-in connections see Catalogs FS 10 and IK PI.

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Motor control with PROFIBUS							
Plugs M12 for screw fixing, angled, B coded, no terminating resistor							
• ⑪ 5 female contacts	C	3RK1 902-1DA00		1	1 unit	121	0.100
• ⑫ 5 male contacts	C	3RK1 902-1BA00		1	1 unit	121	0.100
Control cables, assembled at one end M12 for screw fixing, angled, B coded, no terminating resistor							
• ⑪ 5 female contacts, 3 m	B	3RK1 902-1GB30		1	1 unit	121	0.100
• ⑪ 5 female contacts, 5 m	B	3RK1 902-1GB50		1	1 unit	121	0.100
• ⑪ 5 female contacts, 10 m	B	3RK1 902-1GC10		1	1 unit	121	0.100
⑪ ⑫ Control cables, assembled at both ends M12 for screw fixing, angled, 5-pole, B coded, no terminating resistor							
• 3.0 m	B	3RK1 902-1NB30		1	1 unit	121	0.100
• 5.0 m	B	3RK1 902-1NB50		1	1 unit	121	0.100
• 10.0 m	B	3RK1 902-1NC10		1	1 unit	121	0.100
Motor control with PROFINET							
⑬ Plugs M12 for screw fixing, angled, D coded, • 4 male contacts							
	B	3RK1 902-2DA00		1	1 unit	121	0.100
⑬ Control cables, assembled at one end M12 for screw fixing, angled, D coded, • 4 male contacts, 3.0 m • 4 male contacts, 5.0 m • 4 male contacts, 10.0 m							
	B	3RK1 902-2HB30		1	1 unit	121	0.100
	B	3RK1 902-2HB50		1	1 unit	121	0.100
	B	3RK1 902-2HC10		1	1 unit	121	0.100
⑬ Control cables, assembled at both ends M12 for screw fixing, angled at both ends, 4-pole, D coded, male contacts at both ends • 3.0 m • 5.0 m • 10.0 m							
	B	3RK1 902-2NB30		1	1 unit	121	0.100
	B	3RK1 902-2NB50		1	1 unit	121	0.100
	B	3RK1 902-2NC10		1	1 unit	121	0.100
Connection for 24 V supply to M200D PROFIBUS / PROFINET							
Plugs On M200D, 7/8" for screw fixing, angled, 1.5 mm ²							
• ⑭ 5 female contacts	B	3RK1 902-3DA00		1	1 unit	121	0.100
• ⑮ 5 male contacts	B	3RK1 902-3BA00		1	1 unit	121	0.100
⑭ Supply lines, assembled at one end 7/8" for screw fixing, angled, 1.5 mm ² • 5 female contacts, 3.0 m • 5 female contacts, 5.0 m • 5 female contacts, 10.0 m							
	B	3RK1 902-3GB30		1	1 unit	121	0.100
	B	3RK1 902-3GB50		1	1 unit	121	0.100
	B	3RK1 902-3GC10		1	1 unit	121	0.100
⑭ ⑮ Supply lines, assembled at both ends 7/8" for screw fixing, angled at both ends, 5-pole, 1.5 mm ² • 3.0 m • 5.0 m • 10.0 m							
	B	3RK1 902-3NB30		1	1 unit	121	0.100
	B	3RK1 902-3NB50		1	1 unit	121	0.100
	B	3RK1 902-3NC10		1	1 unit	121	0.100
Further accessories							
PROFIBUS trailing cables Max. acceleration 4 m/s ² , at least 3000000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m							
	A	6XV1 830-3EH10		1	1 M	5K2	0.072
PROFIBUS FC Food bus cables With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m							
	A	6XV1 830-0GH10		1	1 M	5K2	0.069
PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m							
	A	6XV1 830-0JH10		1	1 M	5K2	0.075
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1000 m							
	A	6XV1 830-8AH10		1	1 M	5K2	0.149

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

More accessories (continued)

PROFINET IE FC TP Standard Cable GP 2 x 2 sold by the meter	A	6XV1 840-2AH10		1	1 M	5K2	0.068
PROFINET IE FC TP Trailing Cable 2 x 2 sold by the meter	A	6XV1 840-3AH10		1	1 M	5K2	0.055
PROFINET IE FC TP Trailing Cable GP 2 x 2 sold by the meter	A	6XV1 870-2D		1	1 M	5K2	0.068
PROFINET IE FC TP Torsion Cable 2 x 2 sold by the meter	A	6XV1 870-2F		1	1 M	5K2	0.060
PROFINET IE FC TP Marine Cable, 4-core sold by the meter	A	6XV1 840-4AH10		1	1 M	5K2	0.055

Solution Partner

Automation



More connection technology products can be found at our "Siemens Solution Partners" www.siemens.com/automation/partnerfinder under the technology heading "Distributed Field Installation System"

More accessories (continued)



3RK1 922-3BA00

Hand-held devices for ET 200pro motor starter, (also for M200D, ET 200S High Feature and ECOFAST), for local operation. A serial interface cable must be ordered separately.	B	3RK1 922-3BA00		1	1 unit	121	0.130
---	---	-----------------------	--	---	--------	-----	-------



3RK19 04-2AB01

Addressing units for AS-i add-on modules <ul style="list-style-type: none"> For active AS-Interface modules, intelligent sensors and actuators Acc. to AS-Interface Version 2.1 Including expanded addressing mode Scope of supply <ul style="list-style-type: none"> - 1 addressing unit - 1 operating manual (German, English, French, Spanish, Italian) - 1 addressing cable (1.5 m, with jack plug) 	▶	3RK19 04-2AB01		1	1 unit	121	0.540
---	---	-----------------------	--	---	--------	-----	-------



3RX8 000-0GF32-1AB5

M12 addressing cables to M12 <ul style="list-style-type: none"> Standard M12 cable for addressing slaves with M12 connection, e. g. K60R modules When using the current version of the 3RK1 904-2AB01 addressing unit 1.5 m 	A	3RX8 000-0GF32-1AB5		1	1 unit	574	0.066
--	---	----------------------------	--	---	--------	-----	-------

Dismantling tools for HAN Q4/2	C	3RK1 902-0AB00		1	1 unit	121	0.024
---------------------------------------	---	-----------------------	--	---	--------	-----	-------

Crimping tools for pins/sockets 4 mm² and 6 mm²	C	3RK1 902-0CW00		1	1 unit	121	0.620
--	---	-----------------------	--	---	--------	-----	-------

Crimping tools for male contacts and sockets up to 4.0 mm² (HAN Q8/0)	B	3RK1 902-0CT00		1	1 unit	121	0.644
---	---	-----------------------	--	---	--------	-----	-------

Dismantling tools for male contacts and sockets (HAN Q8/0)	B	3RK1 902-0AJ00		1	1 unit	121	0.047
---	---	-----------------------	--	---	--------	-----	-------

USB interface cables, 2.5 m	A	6SL3555-0PA00-2AA0		1	1 unit	346	0.150
------------------------------------	---	---------------------------	--	---	--------	-----	-------

7/8" Sealing caps	A	6ES7194-3JA00-0AA0		1	1 unit	250	0.037
--------------------------	---	---------------------------	--	---	--------	-----	-------

AS-Interface sealing caps M12 For sealing unused input and output sockets – not for M12-AS-i connections (one set contains 10 sealing caps)	▶	3RK1 901-1KA00		100	10 units	121	0.100
---	---	-----------------------	--	-----	----------	-----	-------



3RK1 901-1KA00

RS 232 interface cables	B	3RK1 922-2BP00		1	1 unit	121	0.330
--------------------------------	---	-----------------------	--	---	--------	-----	-------

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

Compact Starters for AS-Interface, 400 V AC

General data

Overview



The AS-Interface compact starter is a load feeder with degree of protection IP65, which is fully prewired inside, for switching and protecting any AC loads up to 5.5 kW at 400/500 V AC (electromechanical compact starter) or up to 2.2 kW (solid-state compact starter) – mostly standard induction motors in direct start and reversing duty. It consists either of an electromechanical controlgear assembly or a solid-state overload protection and motor starter protector switching unit. The overload or short-circuit protection is located below a sealable, transparent cover and is therefore available for diagnostics. Two LEDs are provided to the left of the cover for diagnostics purposes for the AS-Interface and the auxiliary power.

It is not possible for live parts to be touched even when the cover is open. The contacts are activated through the integrated outputs. The status of the device is scanned through the inputs, e. g. feedbacks from the auxiliary contacts of the motor starter protector and contactor(s). A further input is used to detect the operating mode of the optional hand-held device. The three power connectors are used to feed and loop through to the load supply voltage (power bus) and to connect to the load itself. Prefabricated power supply cables can be used to connect compact starters which are directly adjacent to each other. Prefabricated power supply lines can be used to connect compact starters which are directly adjacent to each other. The maximum number of starters that can be supplied with one power supply lead is limited by the maximum permissible summation current (up to max. 4 mm² corresponds to ~ 35 A).

DS/RS compact starters (electromechanical)

The electromechanical compact starters consist of a conventional controlgear assembly with a SIRIUS motor starter protector for protection against short-circuits and overloading and SIRIUS contactor(s) for normal switching. The advantages of the electromechanical starters are the reliable electrical protective separation during disconnection and tripping, the integrated fuseless protection against short-circuits and the favorable price. What is more, direct currents can also be switched with the electromechanical starters.

Configuring note:

In the case of temperature-critical applications, we recommend operation in the lower setting range of the motor starter protector.

EDS/ERS compact starters (solid-state)

The solid-state compact starters EDS (direct-on-line starter) and ERS (reversing starter) consist of a solid-state overload relay and a solid-state motor starter protector switching unit.

The advantages of these solid-state compact starters are the broad limits within which the overload protection can be adjusted (the performance range up to 2.2 kW at 400/500 V AC is covered with just 2 versions), the fact that the motor starter protector units are non-wearing, current measurement (used for monitoring the energy connector), emergency operation in the event of an overload as well as remote resetting via the AS-Interface after overload tripping.

The ERS compact starter is designed for direct start in reversing duty. The solid-state overload protection and the shutdown response in the event of overload can be adjusted directly at the device.

Version with brake contact

All compact starters are available optionally with a separately activated brake contact for electrically operated motor brakes. For externally fed motor brakes, 24 V DC is supplied jointly with the load voltage through the power connector on -X1. It is looped through via -X3 for supplying the next compact starter on -X1. The 24 V DC supply for the brakes is only linked in those devices equipped with a brake contact. At the project configuration stage, it is important to ensure that these starters are located alongside each other.

All compact starters can be ordered with a brake contact for 24 V DC, for 500 V DC, or for 400 V AC.

Hand-held device

The hand-held device enables the compact starter to be operated locally and autonomously, providing that the auxiliary voltage supply is connected. Thus, assuming that the automation level is functioning correctly, local switching operations can be carried out in addition to normal manual operations in the event of a programmable controller / bus system failure (emergency mode) or during test runs before commissioning, e. g. for testing the direction of rotation of the motor. The hand-held device can be connected to the compact starter by means of a connecting cable through a socket underneath the transparent cover.

Spare inputs

The compact starters are also equipped with two spare inputs.

The M12 socket is a "Y" connector. The signal inputs are applied to PIN 2 and 4. In this manner, it is possible, for example, to connect an optical proximity switch that supplies a signal and the "contamination" alarm.

A "T" adapter can be used to split the signal inputs onto two M12 sockets. Compact starters modified in this way offer additional advantages. At no extra cost, it is possible to save AS-i addresses, reduce the space requirement and to build up logical groupings.

ECOFAST specification

The compact starters are throughout with standardized interfaces for data and energy according to the ECOFAST specification:


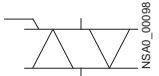


For ECOFAST, the field and power bus technology for distributed configurations in IP65, see "Energy Communication Field Installation System" on page 6/158.

For Operation in the Field, High Degree of Protection

Compact Starters for AS-Interface, 400 V AC

General data

Selection and ordering data




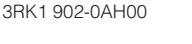
Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Compact starters							
 <p>3RK1 322</p> 		EDS compact starters solid-state direct-on-line starter with two spare digital inputs	B	3RK1 322-□□S12-0AA□	1	1 unit	121 1.690
		ERS compact starters solid-state reversing starter with two spare digital inputs	B	3RK1 322-□□S12-1AA□	1	1 unit	121 1.840
		Order No. supplement for <i>Induction motor</i> 4-pole at 400 V AC <i>Standard output P</i>					Additional price
		<i>Setting range of the electronic release</i>					
		<i>kW</i>	<i>A</i>				
		0.18 ... 0.8	0.6 ... 2.18	0A		None	
		0.75 ... 2.2	2.0 ... 5.95	0B		None	
 <p>3RK1 322</p>		DS compact starters electromechanical direct-on-line starter, with two spare digital inputs	B	3RK1 322-□□S02-0AA□	1	1 unit	121 1.807
		RS compact starters electromechanical reversing starter, with two spare digital inputs	B	3RK1 322-□□S02-1AA□	1	1 unit	121 2.067
		Order No. supplement for <i>Induction motor</i> 4-pole at 400 V AC <i>Standard output P</i>					Additional price
		<i>Setting range of the electronic release</i>					
		<i>kW</i>	<i>A</i>				
		<0.06	0.14 ... 0.20	0B		None	
		0.06	0.18 ... 0.25	0C		None	
		0.09	0.22 ... 0.32	0D		None	
		0.10	0.28 ... 0.40	0E		None	
		0.12	0.35 ... 0.50	0F		None	
		0.18	0.45 ... 0.63	0G		None	
		0.21	0.55 ... 0.80	0H		None	
		0.25	0.70 ... 1.0	0J		None	
		0.37	0.9 ... 1.25	0K		None	
		0.55	1.1 ... 1.6	1A		None	
		0.75	1.4 ... 2.0	1B		None	
		0.90	1.8 ... 2.5	1C		None	
		1.1	2.2 ... 3.2	1D		None	
		1.5	2.8 ... 4.0	1E		None	
		1.9	3.5 ... 5.0	1F		None	
		2.2	4.5 ... 6.3	1G		None	
		3.0	5.5 ... 8.0	1H		None	
		4.0	7.0 ... 10	1J		None	
		5.5	9.0 ... 12	1K		None	
		<i>Additional price</i>					
		Standard version		0		None	
		Version with brake contact for 24 V DC/3 A externally-fed brakes		1		x	
		Version with brake contact for 400 V AC/0.5 A infeed for brake rectifier		3		x	
		Version with brake contact for DC-side switching of the brakes with 500 V DC/0.2 A		4		x	
Accessories for 24 V DC, M12 plugs							
 <p>6ES7 194-1KA01-0XA0</p>		M12 coupler plugs for connecting actuators or sensors 5-pole	A	3RX8 000-0CD55	1	1 unit	574 0.023
		M12 angular coupler plugs for connecting actuators or sensors 5-pole	A	3RX8 000-0CE55	1	1 unit	574 0.023
		M12 Y-shaped coupler plugs for connecting two sensors with a single cable 5-pole	A	6ES7 194-1KA01-0XA0	1	1 unit	250 0.046
		M12 sealing caps for closing unused input or output sockets	▶	3RX9 802-0AA00	100	10 units	121 0.100

x = Additional price

For Operation in the Field, High Degree of Protection

Compact Starters for AS-Interface, 400 V AC

General data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Accessories for AS-Interface compact starters (Han Q 8/0)								
 3RK1 902-OCA00	Connector sets for energy supply, 9-pole Comprising 1 connector enclosure with Pg16 gland Female insert, 9-pole 6 female contacts • Suitable for cable 4 x 2.5 mm ² , 6 x 2.5 mm ² • Suitable for cable 4 x 4 mm ² /6 x 4 mm ²		B	3RK1 902-OCA00	1	1 unit	121	0.057
	B	3RK1 902-OCB00	1	1 unit	121	0.055		
 3RK1 902-OCC00	Connector sets for power loop-through connection, 9-pole comprising 1 connector enclosure with Pg16 gland 1 pin insert, 9-pole 6 male contacts • Suitable for cable 4 x 2.5 mm ² /6 x 2.5 mm ² • Suitable for cable 4 x 4 mm ² /6 x 4 mm ²		B	3RK1 902-OCC00	1	1 unit	121	0.059
	B	3RK1 902- OCD00	1	1 unit	121	0.055		
 3RK1 902-OCE00	Connector sets for motor connections, 1.5 mm², 9-pole comprising 1 connector enclosure with Pg16 gland 1 pin insert, 9-pole 8 male contacts 1.5 mm ²		B	3RK1 902-OCE00	1	1 unit	121	0.064
	Sealing caps for 9-pole power socket (-X3) • One set contains one unit • One set contains ten units		B	3RK1 902-OCK00	1	1 unit	121	0.012
 3RK1 902-OCJ00			B	3RK1 902-OCJ00	1	10 units	121	0.093
	Power supply cables 9-pole • 6 x 4 mm ² , 0.12 m long • 4 x 4 mm ² , 0.12 m long		B	3RK1 902-OCH00	1	1 unit	121	0.206
			B	3RK1 902-OCG00	1	1 unit	121	0.165
Motor connection cables, 4 x 1.5 mm² with power connector, 9-pole • Length: 3 m • Length: 5 m • Length: 10 m		B	3RK1 902-OCM00	1	1 unit	121	0.432	
			B	3RK1 902-OCP00	1	1 unit	121	0.620
			B	3RK1 902-OCQ00	1	1 unit	121	1.278
Motor connection cables, 6 x 1.5 mm² with power connector, 9-pole • Length: 3 m • Length: 5 m • Length: 10 m		B	3RK1 902-OCN00	1	1 unit	121	0.696	
			B	3RK1 902-OCR00	1	1 unit	121	1.110
			B	3RK1 902-OCS00	1	1 unit	121	1.840
Crimping tools • For male and female contacts 1.5 ... 2.5 mm ² • For male and female contacts 1.5 ... 4 mm ²		B	3RK1 902-0AH00	1	1 unit	121	0.576	
			B	3RK1 902-0CT00	1	1 unit	121	0.644
Dismantling tools for disassembling male and female contacts in 9-pole inserts		B	3RK1 902-0AJ00	1	1 unit	121	0.047	

Solution Partner

Automation

SIEMENS

More connection technology products

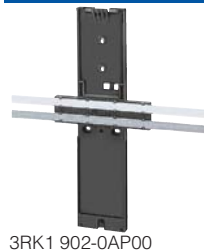
can be found at our

"Siemens Solution Partners"

www.siemens.com/automation/partnerfinder

under "Distributed Field Installation System" technology

Miscellaneous accessories



3RK1 902-0AP00

Manuals for AS-Interface compact starters

English, German

A

3RK1 702-2GB10-2AA0

1

1 unit

192

0.439

Mounting plates for compact starters

for accommodating the shaped cable for AS-Interface line and auxiliary supply

A

3RK1 902-0AP00

1

1 unit

121

0.119

Sealing sets for mounting plates

for sealing the enclosure at the end of a spur line

A

3RK1 902-0AR00

100

5 units

121

0.100

Hand-held devices for start-up

with 0.5 m connecting cable and plug

B

3RK1 902-0AM00

1

1 unit

121

0.217



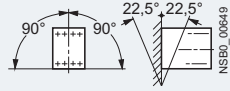
3RK1 902-0AM00

For Operation in the Field, High Degree of Protection

Compact Starters for AS-Interface, 400 V AC

General data

More information

	DS/RS	EDS/ERS
Degree of protection	IP65 (with closed connection elements and cover)	
Material	Thermoplast (glass-fiber reinforced)	
Color	Anthracite RAL 7016	
Cover	Latching, sealable	
Dimensions (W x H x D)	mm	120 x 265 x 134
Temperature range		
• Operating temperature	°C	-25 ... +55 (note derating: see manual)
• Storage temperature	°C	-40 ... +70
Permissible mounting positions	 <p>Important: Acc. to DIN 43602 Start command "I" at the right or top</p>	
Shock resistance		
Rectangular pulse	g/ms	2/unlimited, 10/5 or 5/10
Sine pulse	g/ms	2/unlimited, 8/10 or 15/5
External power supply		
For output supply (contactor control)	V DC	24 (PELV – must be grounded)
Rated operational voltage U_g		
For electronics and inputs (feedback of controlgear states) using AS-Interface data line	V DC	26.5 ... 31.6 (acc. to AS-Interface specification)
AS-Interface power consumption	mA	max. 100
Power consumption U_{aux}	mA	Approx. 170
Watchdog function (disconnects outputs in the event of AS-Interface fault)		Built-in
Diagnostics		
Using AS-Interface	Feedback from motor starter protectors and contactor(s) through positively driven auxiliary contacts and separate inputs	
Through LED on the enclosure	Auxiliary voltage applied AS-Interface communication OK AS-Interface communication faulty Station address = 0 (module not addressed)	
Through LED on the hand-held device	On or Clockwise or Counterclockwise	
Main circuit		
Rated operational voltage	V AC	500 acc. to DIN VDE 0106 Part 1014, 600 acc. to CSA and UL
Safe isolation between main and auxiliary circuits (acc. to DIN VDE 0106, Part 101)	V	Up to 400
Rated power	kW	5.5
Permissible operating modes		Uninterrupted duty, temporary duty, periodic duty, periodic intermittent duty (50 % relative ON period at 80 1/h at 5.5 A)
Permissible switching frequency with a starting time $t_A = 0.1$ s and a relative ON period $t_{OP} = 50$ %	1/h	≤ 80
Trip class		Class 10
Conductor cross-sections of power connector for infeed/feeder/9-pole loop	mm ²	≤ 4, AWG (15 ... 11)
Max. permissible current through power connector (dependent on cable cross-section)		
• $T_U = 60$ °C	A	30 (4 mm ²), AWG (11); 20 (2.5 mm ²), AWG (15); 12 (1.5 mm ²), AWG (13)
• $T_U = 40$ °C	A	35 (4 mm ²), AWG (11); 25 (2.5 mm ²), AWG (15); 15 (1.5 mm ²), AWG (13)
Short-circuit strength of the starter combination	kA	65 (acc. to type of coordination "1")
Electrical endurance of the motor starter protector element under load I_a (AC-3)	Operating cycles	See endurance characteristic curves of the 3RT10 contactors

For Operation in the Field, High Degree of Protection

ECOFAST motor starter

General data

Overview



Distributed motor starters are used for switching and protecting loads locally. Versions with graded functional scope and with different installation possibilities ensure that both the functional requirements of the process and the constructional boundary conditions of the machine or installation are taken into account.

The following are available

- Single devices for geographically distributed motors and
- Isolated solutions (ET 200pro) for operating mechanisms installed close together.

ECOFAST motor starters are available as reversing starters (mechanical switching) and reversing soft starters (electronic switching), in each case for PROFIBUS DP and AS-Interface.

The ECOFAST motor starters can be installed close to the motor or mounted on the motor.

Brake contacts are available as an option for the starters. Two or four integrated digital contacts enable sensors to be scanned locally.

All starters are equipped throughout with standardized interfaces for data and energy according to the ECOFAST specification:

- HanBrid for PROFIBUS DP and insulation piercing method for AS-Interface
- Han Q4/2 for the power supply
- Han 10 E for motor connection

The starters can be connected using T units for data and T terminal connectors for power to prevent interruption.

For ECOFAST, the field and power bus technology for distributed configurations in IP65, see "Energy Communication Field Installation System" on page 6/158.

The 3RK1 922-3BA00 hand-held device is available for local operation (see Accessories on page 6/76).

Detailed technical specifications of the ECOFAST motor starters can be found in the manual "ECOFAST Motor Starters".

Motor Starter ES software

The Motor Starter ES software is used for parameterization, monitoring, diagnostics and testing of motor starters. See Chapter "Planning and Configuration with SIRIUS".

Selection and ordering data

Fieldbus interface	Operating function	Motor protection	Setting range/performance range	Brake output	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
PROFIBUS DP	Mechanical	Thermistor	0.3 ... 9 A/4 kW ¹⁾	No	B	3RK1 303-2AS54-1AA0		1	1 unit	121	1.592		
				400 V AC B	3RK1 303-2AS54-1AA3		1	1 unit	121	1.580			
		Thermal motor model	0.3 ... 3 A/1.1 kW	No	B	3RK1 303-5BS44-3AA0		1	1 unit	121	1.635		
				400 V AC B	3RK1 303-5BS44-3AA3		1	1 unit	121	1.645			
			2.4 ... 9 A/4 kW	No	B	3RK1 303-5CS44-3AA0		1	1 unit	121	1.625		
				400 V AC B	3RK1 303-5CS44-3AA3		1	1 unit	121	1.647			
	Electronic, soft	Full motor protection	0.3 ... 3 A/1.1 kW	No	B	3RK1 303-6BS74-3AA0		1	1 unit	121	2.170		
				400 V AC B	3RK1 303-6BS74-3AA3		1	1 unit	121	2.225			
			2.4 ... 12 A/5.5 kW	No	B	3RK1 303-6DS74-3AA0		1	1 unit	121	2.245		
		400 V AC B		3RK1 303-6DS74-3AA3		1	1 unit	121	2.138				
		AS-Interface		Mechanical	Thermistor	0.3 ... 9 A/4 kW ¹⁾	No	B	3RK1 323-2AS54-1AA0		1	1 unit	121
			400 V AC B				3RK1 323-2AS54-1AA3		1	1 unit	121	1.560	
Thermal motor model	0.3 ... 3 A/1.1 kW		No		B	3RK1 323-5BS44-3AA0		1	1 unit	121	1.603		
			400 V AC B		3RK1 323-5BS44-3AA3		1	1 unit	121	1.633			
	2.4 ... 9 A/4 kW		No		B	3RK1 323-5CS44-3AA0		1	1 unit	121	1.607		
			400 V AC B		3RK1 323-5CS44-3AA3		1	1 unit	121	1.637			
Electronic, soft	Full motor protection	0.3 ... 3 A/1.1 kW	No	B	3RK1 323-6BS74-3AA0		1	1 unit	121	2.120			
			400 V AC B	3RK1 323-6BS74-3AA3		1	1 unit	121	2.185				
	2.4 ... 12 A/5.5 kW	No	B	3RK1 323-6DS74-3AA0		1	1 unit	121	2.119				
		400 V AC B	3RK1 323-6DS74-3AA3		1	1 unit	121	2.220					

¹⁾ The range from 0.3 ... 9 A is fixed and cannot be set or modified manually.

For Operation in the Field, High Degree of Protection

ECOFAST motor starter

General data

More information

		3RK1 3 ECOFAST motor starters	
General data			
Mounting dimensions (W x H x D)			
• Reversing starters	mm	130 x 250 x 91	
• Reversing soft starters	mm	130 x 250 x 107	
Location		On the plant Near the motor Motor plugged on	
• Wall mounting			
• Mounting directly on the motor			
Mounting position		Any	
Degree of protection		IP65	
Protection class		1, supply with protective extra-low voltage	
Acc. to IEC 536 (VDE 0106-1)			
Cooling		Convection, no addition cooling necessary	
Weight			
• Reversing starters	kg	1.4	
• Reversing soft starters	kg	1.9	
Permissible ambient temperature			
• Operation	°C	-20 ... +40; condensation not permitted!	
- Reversing and reversing soft starters up to max. +55 °C		Over 40 °C: Reduction of I_e by 1.5 %/K	
• Storage/transport	°C	-40 ... +80	
Relative air humidity	%	5 ... 95; condensation not permitted!	
Installation altitude, max.		2000 m; above 1000 m: Reduction of I_e by 1 %/100 m	
Vibratory load		f = 5 ... 26 Hz; d = 0.75 mm: 10 cycles f = 26 ... 150 Hz; a = 2 g	
Shock		a = 150 m/s ² (15 g) with 11 ms, for every 3 shocks in all axes (=18)	
ESD			
• Air discharge, acc. to IEC 1000-4-2, degree of severity 3	kV	8	
• Contact discharge	kV	6	
Electromagnetic fields			
IEC 1000-4-3, degree of severity 3	V/m	10	
BURST			
• Control supply voltage, IEC 1000-4-4, degree of severity 3	kV/kHz	2/5	
• Data lines	kV/kHz	1/5	
• Process lines	kV/kHz	2/5	
Emitted interference, acc. to EN 55011		Limit value class A	
		Unswitched voltage 24 V DC (AS-i)	Switched voltage 24 V DC (AUX PWR)
Auxiliary power			
External auxiliary power			
• PROFIBUS DP	V DC	20.4 ... 28.8 standard power supply unit acc. to DIN 19240	
• AS-Interface	V DC	23.0 ... 31.5 (AS-i)	20.4 ... 28.8 standard power supply unit acc. to DIN 19240 (PELV must be grounded)
Power consumption			
• Typical, inputs not connected	mA	80 (PROFIBUS DP)	--
	mA	60 (AS-Interface)	--
• Typical, switching element (contactor) activated	mA	--	75
• Typical, switching element (contactor) deactivated	mA	--	15
• Typical, with Duo reversing soft starters	mA	--	110
Pole reversal protection		Yes	
Short-circuit protection/overload protection		Yes Multifuse 0.5 A, self-restoring fuse Reset by Power-OFF	
Undervoltage detection (USP)	V DC	< 17	
Voltage failure bridging	ms	≤ 20, (device is not affected)	
Insulation voltage	V DC	500 between the auxiliary voltages and PE	

For Operation in the Field, High Degree of Protection

ECOFAST motor starter

General data

3RK1 3 ECOFAST motor starters		
Digital inputs		
Input voltage	V DC	20.4 ... 28.8
Power consumption		
• Typical, per input	mA	7
Sensor supply	mA	max. 200
Brake output 400 V AC		
Voltage range	V AC	200 ... 460
• Tolerance	%	± 10
Current carrying capacity		
• AC-15	mA	500
Short-circuit protection		
Melting fuse, $I_{Cu} = 1$ kA	A	aM 1/500 V AC
Primary power		
Rated operational voltage	V AC	400
Tripping times acc. to IEC 60947-4-1 at 7.2 times I_e		
• Class 10	s	8, acc. to standard 4 ... 10
• Class 20	s	16
• Class 30	s	24
Rated insulation voltage acc. to IEC 60947-1	V AC	500
Rated impulse voltage acc. to IEC 60947-1	kV	4
Safe isolation between auxiliary and primary power	V AC	300
Frequency	Hz	50 ... 60
• Tolerance	%	± 10
ON period	%	100
Utilization category		1 (device destroyed after short-circuit)

		3RK1 3 ECOFAST motor starters	
		Mechanical switching	Solid-state switching of reversing soft starters
Operational voltage	V AC	200 ... 460; three-phase	200 ... 460; three-phase
• Tolerance	%	±10	±10
Operational current			Performance class
			3
• Class 10	A	0.3 ... 9	0.3 ... 3
• Class 20	A	0.3 ... 7.3	2.4 ... 12
• Class 30	A	0.3 ... 6.7	0.3 ... 3
			2.4 ... 7.3
			0.3 ... 3
			2.4 ... 6.7
Switching capacity			
• AC-3	A	9.0	--
• AC-53	A	--	3 (0.3 ... 3)
• AC-4	A	6.5	3 (0.3 ... 3)
			12 (2.4 ... 12) ¹⁾
			12 (2.4 ... 12) ¹⁾
Switching load		Three-phase with contactor	Two-phase with thyristors
Max. heat sink temperature	°C	--	+80 ²⁾
Short-circuit protection			
Melting fuse	A	$I_{Cu} = 120$ kA aM 16/500 V AC	$I_{Cu} = 120$ kA aM 16/500 V AC
Endurance of the switching element		See manual	

¹⁾ Max. 9 A when soft starter control function is deactivated.

²⁾ The heat sink temperature is monitored; switch-off occurs if the maximum value is exceeded.

Overview



3RK43 53-3.R58-0BA0



3RK43 40-3.R51-.BA0



3RK43 20-3.R51-.BA0



3RK43 20-3.Q54-.BA.



3RK43 20-5.Q64-.BA.

Portfolio of the SIRIUS 3RK43 MCU motor starter family

The SIRIUS MCU motor starter family (MCU = Motor Control Unit) rounds off the bottom end of the SIRIUS motor starter range.

This series of motor starters in a high degree of protection is a system solution for the cabinet-free controlling of AC loads in the field.

The MCU product range extends from the I/O-controlled motor starter – controlled using inputs and outputs from a central sub-distribution board – in a plastic enclosure for simple applications to motor starters with AS-i communication in a rugged metal enclosure for demanding tasks.

The MCU motor starters are completely pre-wired inside, have a high degree of protection and are designed for switching and protecting any AC loads. They are mostly used on standard induction motors in direct or reversing duty up to 5.5 kW at 400/500 V AC (electromechanical switching) and 400/460 V AC (electronic switching).

The motor and short-circuit protection integrated in the MCUs consists either of an electromechanical controlgear assembly or solid-state overload protection and a motor starter protector unit for short-circuit protection.

MCUs with metal enclosure are designed for the switching of induction motors. Integrated control of the electrically operated motor brake with a braking voltage of 230 V AC or 400 V AC is a standard feature. The braking voltage is routed to the motor over the motor cable.

SIRIUS MCU motor starters have the following main features:

- Direct-on-line or reversing starters
- Up to 5.5 kW
- Plastic or metal enclosure
- Electromechanical or electronic switching
- With brake control 230 V AC or 400 V AC
- Integrated lockable repair switch
- Short-circuit protection with SIRIUS 3RV motor starter protector
- Overload protection with thermal release (bimetal) or solid-state overload relay with wide range setting
- Power and load connection by means of an M screw
- Main power loop possible (daisy chain; max. 2 x 6 mm²)
- Robust and widely used M12 connection method for the AS-i bus connection and the digital inputs and outputs (on the MCU with metal enclosure)
- The LEDs (for AS-i bus connection) can provide comprehensive diagnostics of the device on the spot.

Locally controlled MCU motor starters in a plastic enclosure

These motor starters are designed for the autonomous operation of any AC loads – preferably induction motors.

Only the infeed needs to be connected (no bus connection or any other connection to a controller).

The motor is protected against short-circuits (50 kA) and overloads (thermal overload release) by the integrated motor starter protector. Similarly, there are no additional measures needed for these functions (e. g. back-up fuses).

These motor starters have a key-operated switch "MAN-0-AUTO" for selecting Manual, 0 or Automatic mode and preventing unauthorized changes of operating mode.

In automatic mode the motor can be controlled automatically by connected sensors (level, temperature or pressure switches). The reversing starter is designed in addition with connections for 2 sensors so a reversal of direction is possible in accordance with these sensors. On the reversing starter the controls with interlock are pre-wired.

In manual mode a selector button is used by the operator for switching on, switching off and changing the direction of rotation.

I/O-controlled MCU motor starters in a plastic enclosure

These motor starters offer an economical solution for controlling induction motors distributed in the field.

The internal controls (contactors) are operated by external control with 24 V DC.

On the reversing starter the controls with interlock are pre-wired.

The status of the circuit breaker can be queried through its floating changeover contact. The status can adopt the following positions: activated - the contact is closed - and deactivated or tripped - the contact is open (I/O control).

MCU motor starters with AS-i bus connection in a plastic enclosure

This motor starter version offers an economical solution for controlling and monitoring conveyor belts, pumps, fans or compressors.

On this MCU the control commands and the status queries are sent over the AS-i bus. The yellow cable (bus) and the black AS-i cable for 24 V DC AUX are connected through an M12 plug.

The transparent enclosure top permits monitoring of the status LEDs. These MCUs come completely pre-wired inside.

MCU motor starters with AS-i bus connection in a metal enclosure for electromechanical or electronic switching

These MCUs with their rugged metal enclosure in degree of protection IP54 are ideal in particular for controlling and monitoring induction motors in harsh ambient conditions such as are often found in conveyor systems.

A special feature of this version is the manual local operation of the motor starter.

The key-operated switch "MAN-0-AUTO" for selecting Manual, 0 or Automatic mode prevents unauthorized changes of operating mode. In automatic mode the MCU is controlled through the AS-i bus.

For Operation in the Control Cabinet

SIRIUS MCU Motor Starters

General data

In manual mode a selector button is used for switching on, switching off and changing the direction of rotation.

The status/diagnostics LEDs fitted to the cover indicate the current operating state of the motor starter.

Unlike the electromechanical starter, the solid-state motor starter has wear-free solid-state switching devices which guarantee a high switching frequency.

Another highlight of the electronic switching version is the solid-state overload relay for motor protection, which has a wide setting range for the motor current.



3RK43 53-3.R58-0BA0



3RK43 40-3.R51-.BA0



3RK43 20-3.R51-.BA0



3RK43 20-3.Q54-.BA.



3RK43 20-5.Q64-.BA.

Type

SIRIUS MCU Motor Starters

Locally controlled
Plastic enclosures
Electromechanical
Switching

I/O-controlled
Plastic enclosures
Electromechanical
Switching

For AS-Interface
Plastic enclosures
Electromechanical
Switching

For AS-Interface
Metal enclosures
Electromechanical
Switching

For AS-Interface
Metal enclosures
Electronic
Switching

Device functions (software features)

Slave on the bus

Fieldbus	--		✓ AS-i	
Bus connection	--		✓ M12	
Slave type	--		✓ AS-i Spec 2.0	✓ A/B acc. to Spec 2.1
Profile	--		✓ 3.0.F	✓ 7.A.0
Number of assigned AS-i addresses on the bus	--		✓ 1	
Number of stations	--		✓ Max. 31 devices	✓ Max. 62 devices

Diagnostics

LEDs	--		✓	
------	----	--	---	--

Process image

Process image	--		✓ 2I/2O	✓ 4E/3A
---------------	----	--	---------	---------

Data channels

Manual local operation	✓	--		✓
------------------------	---	----	--	---

Inputs

Number	✓ 1 on the direct-on-line starter 2 on the reversing starter	--	✓ 1	✓ 2
• Of these in the process image	--		✓ DI1	✓ DI2 / DI3
Connection	✓ Screw terminal, internal	--	✓ Screw terminal, internal	✓ M12 - A coded
Input signal	✓ NO contact	--	✓ Switching contact or 2-wire Bero	✓ Switching contact or 2/3-wire Bero
Input level	✓ 230 V AC	--	✓ AS-i +	

Outputs

Number	--		✓ 1 on the direct-on-line starter 0 on the reversing starter	✓ 1
• Of these in the process image	--		✓ DO1	✓ DO2
Connection	--		✓ Screw terminal, internal	✓ M12 - A coded
Output level	--		✓ Relay contact, floating	✓ AUX-PWR+ (24 V DC)

Motor protection

Overload protection	✓ Thermal overload releases			✓ Electronic overload releases Wide range
Short-circuit protection	✓			
Auto reset	--			✓
Temperature sensor	--			✓ TC (Thermoclick)

Device functions

Response when repair switch is tripped	Floating contact		✓ Signal through AS-i	
Plug monitoring	--			Possible (with plug option)

✓ Function is available; -- Function is not available.

For Operation in the Control Cabinet

SIRIUS MCU Motor Starters

General data

Benefits

- High degree of protection, namely IP55 on MCU motor starters in a plastic enclosure and IP54 on motor starters in a metal enclosure, enables distributed configurations in the field and saves space in the control cabinet
- Comprehensive motor protection thanks to integrated overload and short-circuit protection with SIRIUS 3RV motor starter protectors or integrated solid-state overload relays (solid-state starters)
- Wide range version (motor current) through solid-state overload relay
- Controlled stopping through braking control for motor brake
- Cable connection by means of economical M screw (optionally with plug-in connection)
- Easy installation for AS-i and external auxiliary voltage (24 V DC)
- Status/diagnostics displays with built-in LEDs
- Manual operation: An integrated key-operated switch "MAN-O-AUTO" and a selector button for switching on, switching off and changing the direction of rotation for control purposes during commissioning or maintenance
- Easy and user-friendly control and monitoring through AS-Interface bus communication
- Robust and widely used M12 connection method for digital inputs and outputs to connect I/O stations and the AS-i bus connection increase flexibility and prevent errors in the system configuration.

Application

Main areas of use

Controlled by I/Os and AS-i bus:

- Airports
- Automotive industry
- Intralogistics

Locally controlled

- Industrial, commercial and agricultural applications (for autonomously controlled motors such as pumps, fans, etc.)

For Operation in the Control Cabinet

SIRIUS MCU Motor Starters

General data

More information

Type	SIRIUS MCU Motor Starters				
	Locally controlled Plastic enclosures Electromechanical Switching	I/O-controlled Plastic enclosures Electromechanical Switching	For AS-Interface Plastic enclosures Electromechanical Switching	For AS-Interface Metal enclosures Electromechanical Switching	For AS-Interface Metal enclosures Electronic Switching
Mechanics and environment					
Mounting dimensions (W x H x D)	mm	182 x 220 x 145		245 x 215 x 205	
Permissible ambient temperature • During operation	°C	-25 ... +35			-25 ... +50 max. +65 with reduction
Weight	g	1300	1200	1500 / 1800	5800 6400
Permissible mounting positions	°	On the wall 360, inclination ±30			On the wall 360, inclination ±20
Degree of protection acc. to IEC 529		IP54	IP55		IP54
Cooling		Convection			
Electrical specifications					
<i>Control circuit</i>					
Operational voltage U_{As-i}	V DC	--		26.5 ... 31.6	
Control supply voltage U_{aux}	V DC	--		20.4 ... 26.4	20.4 ... 28.8
Control supply voltage	V	AC 230, from inside	20.4 ... 26.4	--	
Power consumption from AS-i (incl. 200 mA sensor supply)	mA	--		≤ 250	≤ 270
<i>Main circuit</i>					
Rating for induction motor at 400 V, 50 Hz, AC-3		See "Selection and Ordering Data"			
Incoming energy supply		M screw			
Motor feeder		M screw			
Rated operational current for starter I_e at 400 V AC		See "Selection and Ordering Data"			
Trip class		Class 10			
Type of coordination acc. to IEC 60947-4-1		1			
Short-circuit breaking capacity I_{cu} at 400 V AC	kA	50			
Brake version					
Operational voltage	V AC	--		400 or 230	
Uninterrupted current		--		Max. 5 % of I_e	
Short-circuit protection		--		Integrated	

For Operation in the Control Cabinet

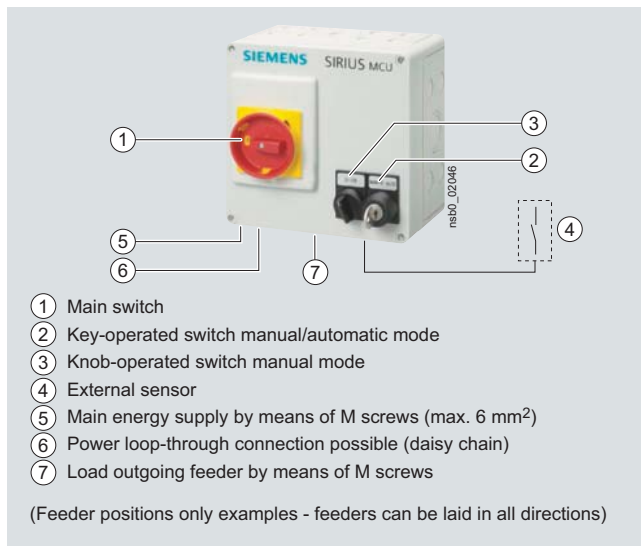
SIRIUS MCU Motor Starters

MCU motor starters, locally controlled
Plastic enclosures, electromechanical switching

Overview

MCU, locally controlled, plastic enclosure

- For manual and automatic mode
- Direct-on-line or reversing starters up to 12 A at 400 V AC (50/60 Hz)
- Main control switch (red/yellow)
- Lockable with padlocks (max. 3 units)
- Integrated overload and short-circuit protection with SIRIUS 3RV motor starter protectors Class 10 with short-circuit breaking capacity $I_{cu} = 50 \text{ kA}$ at 400 V AC
- Overload protection with thermal release (bimetal)
- Plastic enclosures
- Degree of protection IP54
- Cable connections by means of M screws
- Main power loop possible (daisy chain; max. $2 \times 6 \text{ mm}^2$)
- Key-operated switch for manual/automatic mode (MAN-0-AUTO)
- In manual mode the user can operate the motor with the knob-operated control switch using the ON function (0-ON) on the direct-on-line starter or the Forwards/Reverse function (Rev-0-For) on the reversing starter.
- Automatic mode: Through connection of one sensor on the direct-on-line starter or 2 sensors on the reversing starter for e. g. temperature, pressure, level etc., the motor can be controlled in automatic mode by the connected sensors.
- 4 x M20 glands enclosed



MCU, locally controlled, plastic enclosure, for manual and automatic mode

Selection and ordering data

Rated current I_e	Suitable for induction motors ¹⁾ with P	Setting range Thermal overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
										A
Direct-on-line starters										
<p>Direct-on-line start</p>	1	0.25	0.7 ... 1	C	3RK43 53-3CR58-0BA0		1	1 unit	121	1.300
	1.25	0.37	0.9 ... 1.25	C	3RK43 53-3DR58-0BA0		1	1 unit	121	1.300
	1.6	0.55	1.1 ... 1.6	C	3RK43 53-3ER58-0BA0		1	1 unit	121	1.300
	2	0.75	1.4 ... 2	C	3RK43 53-3FR58-0BA0		1	1 unit	121	1.300
	3.2	1.10	2.2 ... 3.2	C	3RK43 53-3HR58-0BA0		1	1 unit	121	1.300
	4	1.50	2.8 ... 4	C	3RK43 53-3JR58-0BA0		1	1 unit	121	1.300
	6.3	2.20	4.5 ... 6.3	C	3RK43 53-3LR58-0BA0		1	1 unit	121	1.300
	8	3.00	5.5 ... 8	C	3RK43 53-3MR58-0BA0		1	1 unit	121	1.300
	10	4.00	7 ... 10	C	3RK43 53-3NR58-0BA0		1	1 unit	121	1.300
12.5	5.50	9 ... 12.5	C	3RK43 53-3PR58-0BA0		1	1 unit	121	1.300	
Reversing starters										
<p>Reversing duty</p>	1	0.25	0.7 ... 1	C	3RK43 53-3CR58-1BA0		1	1 unit	121	1.300
	1.25	0.37	0.9 ... 1.25	C	3RK43 53-3DR58-1BA0		1	1 unit	121	1.300
	1.6	0.55	1.1 ... 1.6	C	3RK43 53-3ER58-1BA0		1	1 unit	121	1.300
	2	0.75	1.4 ... 2	C	3RK43 53-3FR58-1BA0		1	1 unit	121	1.300
	3.2	1.10	2.2 ... 3.2	C	3RK43 53-3HR58-1BA0		1	1 unit	121	1.300
	4	1.50	2.8 ... 4	C	3RK43 53-3JR58-1BA0		1	1 unit	121	1.300
	6.3	2.20	4.5 ... 6.3	C	3RK43 53-3LR58-1BA0		1	1 unit	121	1.300
	8	3.00	5.5 ... 8	C	3RK43 53-3MR58-1BA0		1	1 unit	121	1.300
	10	4.00	7 ... 10	C	3RK43 53-3NR58-1BA0		1	1 unit	121	1.300
12.5	5.50	9 ... 12.5	C	3RK43 53-3PR58-1BA0		1	1 unit	121	1.300	

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

6

For Operation in the Control Cabinet

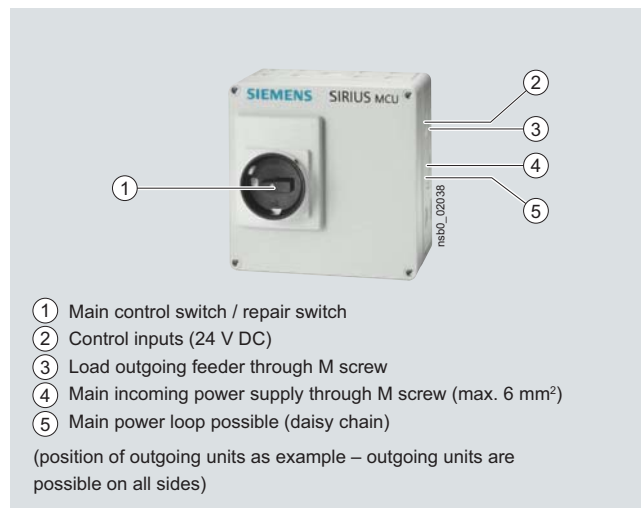
SIRIUS MCU Motor Starters

MCU motor starters, I/O-controlled
Plastic enclosures, electromechanical switching

Overview

MCU, I/O-controlled, plastic enclosure

- Direct-on-line or reversing starters up to 12 A at 400 V AC (50/60 Hz)
- Repair switches (black/gray) lockable with padlocks (max. 3 units)
- Integrated overload and short-circuit protection with SIRIUS 3RV motor starter protectors Class 10 with short-circuit breaking capacity $I_{cu} = 50 \text{ kA}$ at 400 V AC
- Overload protection with thermal release (bimetal)
- Plastic enclosures
- Degree of protection IP55
- Cable connections by means of M screws
- Main power loop possible (daisy chain; max. $2 \times 6 \text{ mm}^2$)
- Control circuit: I/O-wiring; control inputs 24 V DC
- 4 x M20 glands enclosed



MCU, I/O-controlled, plastic enclosure

Selection and ordering data

Rated current I_e	Suitable for induction motors ¹⁾ with P	Setting range Thermal overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
A	kW	A							kg	
Direct-on-line starters										
	0.63	0.18	0.45 ... 0.63	C	3RK43 40-3AR51-0BA0		1	1 unit	121	1.200
	0.8	0.18	0.55 ... 0.8	C	3RK43 40-3BR51-0BA0		1	1 unit	121	1.200
	1	0.25	0.7 ... 1	C	3RK43 40-3CR51-0BA0		1	1 unit	121	1.200
	1.25	0.37	0.9 ... 1.25	C	3RK43 40-3DR51-0BA0		1	1 unit	121	1.200
	1.6	0.55	1.1 ... 1.6	C	3RK43 40-3ER51-0BA0		1	1 unit	121	1.200
	2	0.75	1.4 ... 2	C	3RK43 40-3FR51-0BA0		1	1 unit	121	1.200
	2.5	0.75	1.8 ... 2.5	C	3RK43 40-3GR51-0BA0		1	1 unit	121	1.200
	3.2	1.10	2.2 ... 3.2	C	3RK43 40-3HR51-0BA0		1	1 unit	121	1.200
	4	1.50	2.8 ... 4	C	3RK43 40-3JR51-0BA0		1	1 unit	121	1.200
	5	1.50	3.5 ... 5	C	3RK43 40-3KR51-0BA0		1	1 unit	121	1.200
	6.3	2.20	4.5 ... 6.3	C	3RK43 40-3LR51-0BA0		1	1 unit	121	1.200
	8	3.00	5.5 ... 8	C	3RK43 40-3MR51-0BA0		1	1 unit	121	1.200
	10	4.00	7 ... 10	C	3RK43 40-3NR51-0BA0		1	1 unit	121	1.200
	12.5	5.50	9 ... 12.5	C	3RK43 40-3PR51-0BA0		1	1 unit	121	1.200
Reversing starters										
	0.63	0.18	0.45 ... 0.63	C	3RK43 40-3AR51-1BA0		1	1 unit	121	1.200
	0.8	0.18	0.55 ... 0.8	C	3RK43 40-3BR51-1BA0		1	1 unit	121	1.200
	1	0.25	0.7 ... 1	C	3RK43 40-3CR51-1BA0		1	1 unit	121	1.200
	1.25	0.37	0.9 ... 1.25	C	3RK43 40-3DR51-1BA0		1	1 unit	121	1.200
	1.6	0.55	1.1 ... 1.6	C	3RK43 40-3ER51-1BA0		1	1 unit	121	1.200
	2	0.75	1.4 ... 2	C	3RK43 40-3FR51-1BA0		1	1 unit	121	1.200
	2.5	0.75	1.8 ... 2.5	C	3RK43 40-3GR51-1BA0		1	1 unit	121	1.200
	3.2	1.10	2.2 ... 3.2	C	3RK43 40-3HR51-1BA0		1	1 unit	121	1.200
	4	1.50	2.8 ... 4	C	3RK43 40-3JR51-1BA0		1	1 unit	121	1.200
	5	1.50	3.5 ... 5	C	3RK43 40-3KR51-1BA0		1	1 unit	121	1.200
	6.3	2.20	4.5 ... 6.3	C	3RK43 40-3LR51-1BA0		1	1 unit	121	1.200
	8	3.00	5.5 ... 8	C	3RK43 40-3MR51-1BA0		1	1 unit	121	1.200
	10	4.00	7 ... 10	C	3RK43 40-3NR51-1BA0		1	1 unit	121	1.200
	12.5	5.50	9 ... 12.5	C	3RK43 40-3PR51-1BA0		1	1 unit	121	1.200

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

For Operation in the Control Cabinet

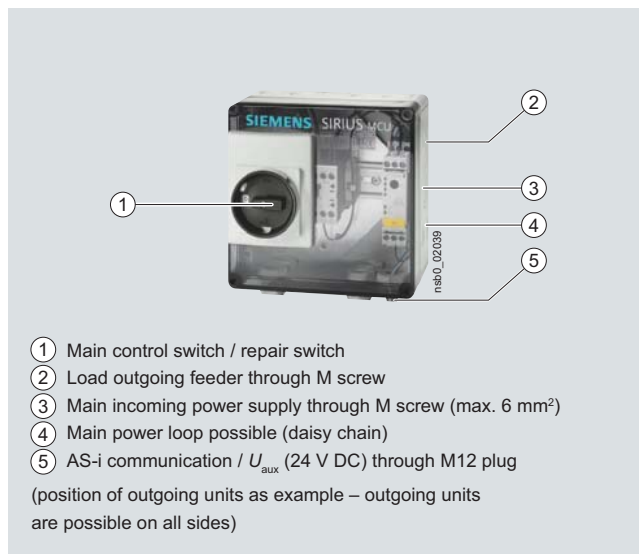
SIRIUS MCU Motor Starters

MCU motor starters for AS-Interface
Plastic enclosures, electromechanical switching

Overview

MCU for AS-i, plastic enclosure

- Direct-on-line or reversing starters up to 12 A at 400 V AC (50/60 Hz)
- Repair switches (black/gray) lockable with padlocks (max. 3 units)
- Integrated overload and short-circuit protection with SIRIUS 3RV motor starter protectors Class 10 with short-circuit breaking capacity $I_{cu} = 50 \text{ kA}$ at 400 V AC
- Overload protection with thermal release (bimetal)
- Transparent plastic enclosure with LED status displays for monitoring the AS-i status
- Degree of protection IP55
- Cable connections by means of M screws
- Main power loop possible (daisy chain; max. $2 \times 6 \text{ mm}^2$)
- AS-Interface through M12 plug-in terminal
- 4 x M20 glands enclosed
- Communication: AS-Interface 2I/2O (standard slaves)



MCU for AS-i, plastic enclosure

Selection and ordering data

	Rated current I_e	Suitable for induction motors ¹⁾ with P	Setting range Thermal overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	A	kW	A							kg
Direct-on-line starters										
	0.63	0.18	0.45 ... 0.63	C	3RK43 20-3AR51-0BA0		1	1 unit	121	1.500
	0.8	0.18	0.55 ... 0.8	C	3RK43 20-3BR51-0BA0		1	1 unit	121	1.500
	1	0.25	0.7 ... 1	C	3RK43 20-3CR51-0BA0		1	1 unit	121	1.500
	1.25	0.37	0.9 ... 1.25	C	3RK43 20-3DR51-0BA0		1	1 unit	121	1.500
	1.6	0.55	1.1 ... 1.6	C	3RK43 20-3ER51-0BA0		1	1 unit	121	1.500
	2	0.75	1.4 ... 2	C	3RK43 20-3FR51-0BA0		1	1 unit	121	1.500
	2.5	0.75	1.8 ... 2.5	C	3RK43 20-3GR51-0BA0		1	1 unit	121	1.500
	3.2	1.10	2.2 ... 3.2	C	3RK43 20-3HR51-0BA0		1	1 unit	121	1.500
	4	1.50	2.8 ... 4	C	3RK43 20-3JR51-0BA0		1	1 unit	121	1.500
	5	1.50	3.5 ... 5	C	3RK43 20-3KR51-0BA0		1	1 unit	121	1.500
	6.3	2.20	4.5 ... 6.3	C	3RK43 20-3LR51-0BA0		1	1 unit	121	1.500
	8	3.00	5.5 ... 8	C	3RK43 20-3MR51-0BA0		1	1 unit	121	1.500
10	4.00	7 ... 10	C	3RK43 20-3NR51-0BA0		1	1 unit	121	1.500	
12.5	5.50	9 ... 12.5	C	3RK43 20-3PR51-0BA0		1	1 unit	121	1.500	
Reversing starters										
	0.63	0.18	0.45 ... 0.63	C	3RK43 20-3AR51-1BA0		1	1 unit	121	1.800
	0.8	0.18	0.55 ... 0.8	C	3RK43 20-3BR51-1BA0		1	1 unit	121	1.800
	1	0.25	0.7 ... 1	C	3RK43 20-3CR51-1BA0		1	1 unit	121	1.800
	1.25	0.37	0.9 ... 1.25	C	3RK43 20-3DR51-1BA0		1	1 unit	121	1.800
	1.6	0.55	1.1 ... 1.6	C	3RK43 20-3ER51-1BA0		1	1 unit	121	1.800
	2	0.75	1.4 ... 2	C	3RK43 20-3FR51-1BA0		1	1 unit	121	1.800
	2.5	0.75	1.8 ... 2.5	C	3RK43 20-3GR51-1BA0		1	1 unit	121	1.800
	3.2	1.10	2.2 ... 3.2	C	3RK43 20-3HR51-1BA0		1	1 unit	121	1.800
	4	1.50	2.8 ... 4	C	3RK43 20-3JR51-1BA0		1	1 unit	121	1.800
	5	1.50	3.5 ... 5	C	3RK43 20-3KR51-1BA0		1	1 unit	121	1.800
	6.3	2.20	4.5 ... 6.3	C	3RK43 20-3LR51-1BA0		1	1 unit	121	1.800
	8	3.00	5.5 ... 8	C	3RK43 20-3MR51-1BA0		1	1 unit	121	1.800
10	4.00	7 ... 10	C	3RK43 20-3NR51-1BA0		1	1 unit	121	1.800	
12.5	5.50	9 ... 12.5	C	3RK43 20-3PR51-1BA0		1	1 unit	121	1.800	

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

For Operation in the Control Cabinet

SIRIUS MCU Motor Starters

MCU motor starters for AS-Interface
Metal enclosures, electromechanical switching

Overview

MCU for AS-i, metal enclosure, electromechanical

- Direct-on-line or reversing starters up to 12 A
- Repair switches (black/gray) lockable with padlocks (max. 3 units)
- Short-circuit protection with SIRIUS 3RV motor starter protectors Class 10 with short-circuit breaking capacity $I_{cu} = 50 \text{ kA}$ at 400 V AC
- Overload protection with thermal release (bimetal)
- Manual operation and key-operated switch for operating mode selection
- LED status display of the operating states
- Metal enclosures
- Degree of protection IP54
- Switched brake control 400 V or 230 V
- Cable connections by means of M screws
- Main power loop possible (daisy chain; max. $2 \times 6 \text{ mm}^2$)
- 2 x M25 glands
- 1 x M12 plug for AS-i/auxiliary voltage (24 V DC)
- 2 x M12 socket for connection of 2 sensors
- 1 x M12 socket for connection of one actuator
- Communication: AS-Interface 4I/3O (slaves in A/B technology can be addressed)



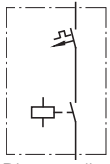
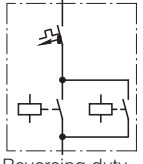
MCU for AS-i, metal enclosure, electromechanical switching

For Operation in the Control Cabinet

SIRIUS MCU Motor Starters

MCU motor starters for AS-Interface
Metal enclosures, electromechanical switching

Selection and ordering data

	Rated current I_e	Suitable for induction motors ¹⁾ with P	Setting range Thermal overload release	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	A	kW	A							kg
Direct-on-line starters										
 Direct-on-line start	0.63	0.18	0.45 ... 0.63	C	3RK43 20-3AQ54- 0BA□		1	1 unit	121	5.900
	0.8	0.18	0.55 ... 0.8	C	3RK43 20-3BQ54- 0BA□		1	1 unit	121	5.900
	1	0.25	0.7 ... 1	C	3RK43 20-3CQ54- 0BA□		1	1 unit	121	5.900
	1.25	0.37	0.9 ... 1.25	C	3RK43 20-3DQ54- 0BA□		1	1 unit	121	5.900
	1.6	0.55	1.1 ... 1.6	C	3RK43 20-3EQ54- 0BA□		1	1 unit	121	5.900
	2	0.75	1.4 ... 2	C	3RK43 20-3FQ54- 0BA□		1	1 unit	121	5.900
	2.5	0.75	1.8 ... 2.5	C	3RK43 20-3GQ54- 0BA□		1	1 unit	121	5.900
	3.2	1.10	2.2 ... 3.2	C	3RK43 20-3HQ54- 0BA□		1	1 unit	121	5.900
	4	1.50	2.8 ... 4	C	3RK43 20-3JQ54- 0BA□		1	1 unit	121	5.900
	5	1.50	3.5 ... 5	C	3RK43 20-3KQ54- 0BA□		1	1 unit	121	5.900
	6.3	2.20	4.5 ... 6.3	C	3RK43 20-3LQ54- 0BA□		1	1 unit	121	5.900
	8	3.00	5.5 ... 8	C	3RK43 20-3MQ54- 0BA□		1	1 unit	121	5.900
	10	4.00	7 ... 10	C	3RK43 20-3NQ54- 0BA□		1	1 unit	121	5.900
12.5	5.50	9 ... 12.5	C	3RK43 20-3PQ54- 0BA□		1	1 unit	121	5.900	
Brake control / V						Additional price				
• 230						2	None			
• 400						3	None			
Reversing starters										
 Reversing duty	0.63	0.18	0.45 ... 0.63	C	3RK43 20-3AQ54- 1BA□		1	1 unit	121	6.600
	0.8	0.18	0.55 ... 0.8	C	3RK43 20-3BQ54- 1BA□		1	1 unit	121	6.600
	1	0.25	0.7 ... 1	C	3RK43 20-3CQ54- 1BA□		1	1 unit	121	6.600
	1.25	0.37	0.9 ... 1.25	C	3RK43 20-3DQ54- 1BA□		1	1 unit	121	6.600
	1.6	0.55	1.1 ... 1.6	C	3RK43 20-3EQ54- 1BA□		1	1 unit	121	6.600
	2	0.75	1.4 ... 2	C	3RK43 20-3FQ54- 1BA□		1	1 unit	121	6.600
	2.5	0.75	1.8 ... 2.5	C	3RK43 20-3GQ54- 1BA□		1	1 unit	121	6.600
	3.2	1.10	2.2 ... 3.2	C	3RK43 20-3HQ54- 1BA□		1	1 unit	121	6.600
	4	1.50	2.8 ... 4	C	3RK43 20-3JQ54- 1BA□		1	1 unit	121	6.600
	5	1.50	3.5 ... 5	C	3RK43 20-3KQ54- 1BA□		1	1 unit	121	6.600
	6.3	2.20	4.5 ... 6.3	C	3RK43 20-3LQ54- 1BA□		1	1 unit	121	6.600
	8	3.00	5.5 ... 8	C	3RK43 20-3MQ54- 1BA□		1	1 unit	121	6.600
	10	4.00	7 ... 10	C	3RK43 20-3NQ54- 1BA□		1	1 unit	121	6.600
12.5	5.50	9 ... 12.5	C	3RK43 20-3PQ54- 1BA□		1	1 unit	121	6.600	
Brake control / V						Additional price				
• 230						2	None			
• 400						3	None			

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

For Operation in the Control Cabinet

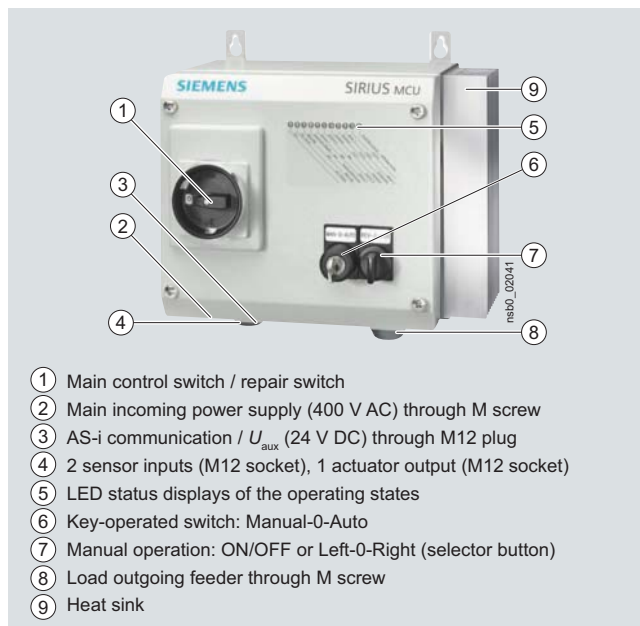
SIRIUS MCU Motor Starters

MCU motor starters for AS-Interface
Metal enclosures, electronic switching

Overview

MCU for AS-i, metal enclosure, electronic

- Direct-on-line or reversing starters up to 12 A
- Switching frequency up to 3600/h
- Repair switches (black/gray) lockable with padlocks (max. 3 units)
- Short-circuit protection with SIRIUS 3RV motor starter protector
- Overload protection with solid-state overload relay
- Manual operation and key-operated switch for operating mode selection
- LED status display of the operating states
- Metal enclosures
- Degree of protection IP54
- Switched brake control 400 V or 230 V
- Cable connections by means of M screws
- Main power loop possible (daisy chain; max. 2 x 6 mm²)
- 2 x M25 glands
- 1 x M12 plug for AS-i/auxiliary voltage (24 V DC)
- 2 x M12 plugs for connection of 2 sensors
- 1 x M12 socket for connection of one actuator
- Communication: AS-Interface 4I/3O (slaves in A/B technology can be addressed)

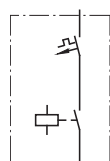


MCU for AS-i, metal enclosure, electronic switching

Selection and ordering data

Rating for induction motor Rated value ¹⁾	Set current value of the inverse-time delayed overload release <i>I_e</i>	Brake control	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kW	A	V							kg

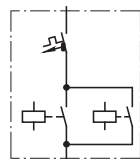
Direct-on-line starters



Direct-on-line start

0.12 ... 0.37	0.32 ... 1.25	230	C	3RK43 20-5DQ64-0BA2		1	1 unit	121	6.400
0.55 ... 1.5	1 ... 4	230	C	3RK43 20-5JQ64-0BA2		1	1 unit	121	6.400
1.1 ... 5.5	3 ... 12	230	C	3RK43 20-5PQ64-0BA2		1	1 unit	121	6.400
0.12 ... 0.37	0.32 ... 1.25	400	C	3RK43 20-5DQ64-0BA3		1	1 unit	121	6.600
0.55 ... 1.5	1 ... 4	400	C	3RK43 20-5JQ64-0BA3		1	1 unit	121	6.400
1.1 ... 5.5	3 ... 12	400	C	3RK43 20-5PQ64-0BA3		1	1 unit	121	6.400

Reversing starters



Reversing duty

0.12 ... 0.37	0.32 ... 1.25	230	C	3RK43 20-5DQ64-1BA2		1	1 unit	121	6.600
0.55 ... 1.5	1 ... 4	230	C	3RK43 20-5JQ64-1BA2		1	1 unit	121	6.600
1.1 ... 5.5	3 ... 12	230	C	3RK43 20-5PQ64-1BA2		1	1 unit	121	6.600
0.12 ... 0.37	0.32 ... 1.25	400	C	3RK43 20-5DQ64-1BA3		1	1 unit	121	6.600
0.55 ... 1.5	1 ... 4	400	C	3RK43 20-5JQ64-1BA3		1	1 unit	121	6.600
1.1 ... 5.5	3 ... 12	400	C	3RK43 20-5PQ64-1BA3		1	1 unit	121	6.600

¹⁾ Guide value for 4-pole standard motors at AC 50 Hz 400 V. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

For Operation in the Control Cabinet

SIRIUS MCU Motor Starters

Overview

The MCU motor starters are equipped with standardized interfaces for data and energy (option).

For field and power bus technology for distributed configurations in a high degree of protection, see also "Energy Communication Field Installation System" on page 6/158.

Solution Partner

Automation

SIEMENS

Connection technology products coordinated with the SIRIUS MCU motor starters can be found at our "Siemens Solution Partners" www.siemens.com/automation/partnerfinder under "Distributed Field Installation System" technology.

For Operation in the Field, High Degree of Protection

SIRIUS 3RE Encapsulated Starters

General data

Overview



The 3RE1 encapsulated starters are available as direct-on-line starters and as reversing starters.

Direct-on-line starters

The direct-on-line starters are available in three sizes:

- Size **S00** is suitable for induction motors up to 5.5 kW with 400 V AC and a maximum rated motor current of 12 A. The starters are available in the following two versions:
 - Molded-plastic enclosure for direct-on-line starters including contactor – in this case the overload relay must be selected and ordered according to the rated motor current.
 - Molded-plastic enclosure for direct-on-line starters (without contactor) – in this case the contactor and overload relay must be selected and ordered separately.
- Size **S0** is suitable for induction motors up to 11 kW with 400 V AC and a maximum rated motor current of 25 A. The starters are available in the following two versions:
 - Molded-plastic enclosure for direct-on-line starters including contactor – in this case the overload relay must be selected and ordered according to the rated motor current.
 - Molded-plastic enclosure for direct-on-line starters (without contactor) – in this case the contactor, auxiliary switch and overload relay must be selected and ordered separately.
- Size **S2** is suitable for induction motors up to 22 kW with 400 V AC and a maximum rated motor current of 50 A. The starters are available in the following versions:
 - Molded-plastic enclosure for direct-on-line starters (without contactor) – in this case the contactor, auxiliary switch and overload relay must be selected and ordered separately.

Reversing starters

The reversing starters are available in two sizes:

- Size **S00** is suitable for induction motors up to 5.5 kW with 400 V AC and a maximum rated motor current of 12 A. The starters are available in the following two versions:
 - Molded-plastic enclosure for reversing starters including contactor assembly – in this case the overload relay must be selected and ordered according to the rated motor current.
 - Molded-plastic enclosure for reversing starters (without contactor assembly) – in this case the contactor assembly, auxiliary switch and overload relay must be selected and ordered separately.
- Size **S0** is suitable for induction motors up to 11 kW with 400 V AC and a maximum rated motor current of 25 A. The starters are available in the following versions:
 - Molded-plastic enclosure for direct-on-line starters (without contactor assembly) – in this case the contactor assembly, auxiliary switch and overload relay must be selected and ordered separately.

Benefits

The 3RE1 encapsulated starters are enclosed with a high degree of protection (IP65) and are used for the switching and inverse-time delayed protection of loads. They are ideally suited for implementation directly at the machine.

Application

The 3RE1 encapsulated starters are used for switching and for the inverse-time delayed protection of load feeders up to 22 kW at 400 V AC.



The starters are available as direct-on-line starters for motors with a single direction of rotation and as reversing starters for motors with two directions of rotation.

For Operation in the Field, High Degree of Protection


SIRIUS 3RE Encapsulated Starters

3RE10 direct-on-line starters,
3RE13 reversing starters, accessories

Selection and ordering data


Size	Rated data		Rated control supply voltage U_s		DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	Utilization category AC-2/AC-3	T_U : up to + 35 °C									Order No.
	Operational current I_e at 400 V	Output of induction motors at 400 V/50 Hz	A	kW	V	At Hz				kg	
Direct-on-line starters including contactor											
	S00	12	5.5	230 AC	50 / 60	B	3RE10 10-8XC17-0AP0	1	1 unit	101	0.510
				400 AC	50 / 60	B					
	S0	17	7.5	230 AC	50	B	3RE10 20-8XC25-0AP0	1	1 unit	101	0.830
				400 AC	50	B					
	25	11	230 AC	50	B	3RE10 20-8XC26-0AP0	1	1 unit	101	0.830	
			400 AC	50	B						3RE10 20-8XC26-0AV0

3RE10 10


Reversing starters including contactor assembly											
Version	For contactor overload relays	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.			
	Size							kg			
	S00	12	5.5	230 AC	50 / 60	B	3RE13 10-8XC17-0AP0	1	1 unit	101	1.000
				400 AC	50 / 60	B					

3RE13 10

Version	For contactor overload relays	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Size							kg

Enclosures for direct-on-line starters										
Molded-plastic enclosures for surface mounting										
Degree of protection IP65, with actuators, with metric cable gland										
	• With PE terminal	S00	B	3RE19 13-1CB1	1	1 unit	101	0.320		
	• With N and PE terminals	S0	B	3RE19 23-1CB2	1	1 unit	101	0.450		
	• With N and PE terminals	S2	B	3RE19 33-1CB3	1	1 unit	101	1.000		

3RE19 23-1CB2

Enclosures for reversing starters										
Molded-plastic enclosures for surface mounting										
Degree of protection IP65, with actuators, with metric cable gland										
	• With N and PE terminals	S00/S0	B	3RE19 13-2CB3	1	1 unit	101	1.020		

3RE19 23-2CB3

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

Motor Starters for AS-Interface, 24 V DC

General data

Overview



Connection of an actuator roller with integrated DC motor to an AS-Interface 24 V DC motor starter

With the K60 AS-Interface 24 V DC motor starters for the low-end performance range up to 70 W, it is now possible to connect 24 V DC motors and the associated sensors directly to the AS-Interface quickly and easily.

Three different versions are available:

- Single direct-on-line starters (without brake and reversible quick-stop function)
- Double direct-on-line starters (with brake and reversible quick-stop function)
- Reversing starters (with brake and reversible quick-stop function)

DC motors are connected to the module using M12 plug-in connections. The sensors and the module electronics can be supplied from the yellow AS-Interface cable. An auxiliary voltage (24 V DC) is only required for supplying the outputs, which can be provided via the black AS-Interface cable.

Quick-stop function

All AS-Interface 24 V DC motor starters feature a quick-stop function which can be switched on and off as required using a switch integrated into the module. The quick-stop function allows a connected motor to be disconnected immediately using an applied sensor signal (High). The switch for the quick-stop function is located alongside the input sockets and is protected by an M12 sealing cap.

Brake

The double direct-on-line starter and the single reversing starter versions feature an integrated permanently set brake function, i. e. as soon as the output signal is set to "0", the motor is braked.

Start-up using integrated buttons

Buttons integrated into the module (below the output sockets) can be used to set the motor used. The buttons are protected by an M12 sealing cap.

Note:

Concerning double and reversing starters: *If an input with the quick-stop function receives a "High" signal, the corresponding output (e. g. quick-stop input 1 → output 1) is switched off within the device (the motor is braked). The manual key function (Key 1/2) for local operation is only permitted to be used during "CPU Stop" in the higher-level PLC.*

Note:

Concerning single direct-on-line starters: *If an input with the quick-stop function receives a "High" signal, the corresponding output (e. g. quick-stop input 1 → output 1) is switched off within the device (the motor runs down without being braked). The manual key function (Key 1) for local operation is only permitted to be used during "CPU Stop" in the higher-level PLC.*

For Operation in the Field, High Degree of Protection

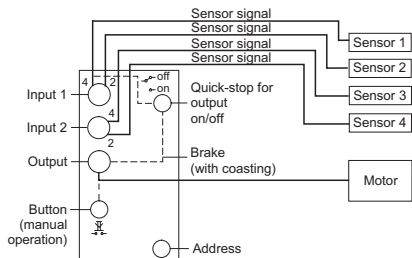
Motor Starters for AS-Interface, 24 V DC

General data

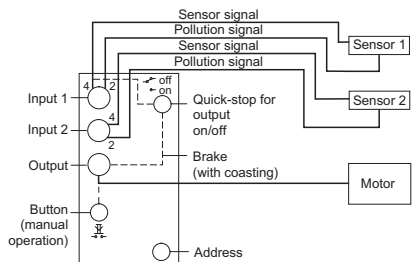
Applications

Single direct starter without brake (with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication

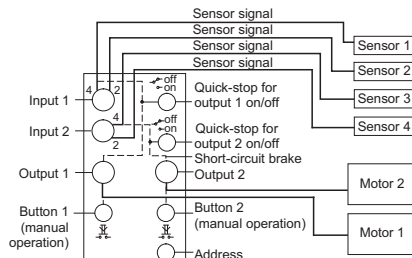


2nd possibility: Connection to a maximum of two sensors with pollution indication

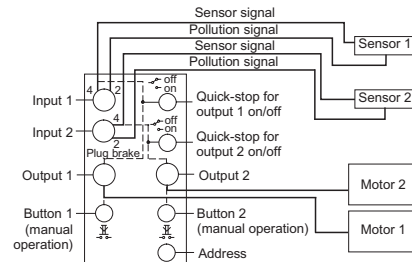


Double direct starter with brake (with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication

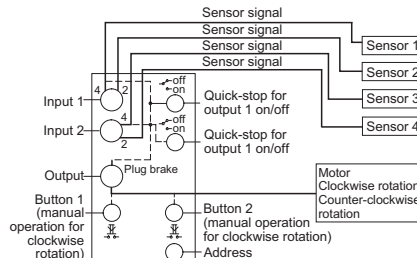


2nd possibility: Connection to a maximum of two sensors with pollution indication

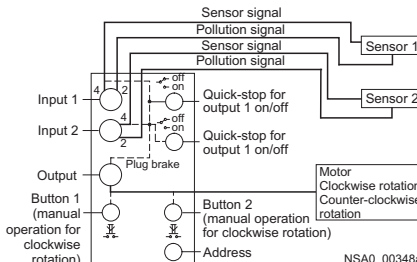


Single reversing starter with brake (with adjustable quick-stop function)

1st possibility: Connection to a maximum of four sensors without pollution indication



2nd possibility: Connection to a maximum of two sensors with pollution indication



NSA0_00348a

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

Motor starters



3RK1 400-1MQ01-0AA4

Single direct-on-line starters¹⁾ 4 inputs 1 output Quick-stop function	C	3RK1 400-1NQ01-0AA4		1	1 unit	121	0.205
Double direct-on-line starters¹⁾ 4 inputs 2 outputs Quick-stop function	B	3RK1 400-1MQ01-0AA4		1	1 unit	121	0.208
Single reversing starters¹⁾ 4 inputs 1 output Quick-stop function	C	3RK1 400-1MQ03-0AA4		1	1 unit	121	0.218

¹⁾ Modules supplied without mounting plate.

Accessories



3RK1 901-0CA00

K60 mounting plates Suitable for all K60 compact modules							
• Wall mounting	▶	3RK1 901-0CA00		1	1 unit	121	0.065
• Standard rail mounting	▶	3RK1 901-0CB01		1	1 unit	121	0.095



3RK1 901-1KA00

AS-Interface sealing caps M12 For free M12 sockets	▶	3RK1 901-1KA00		100	10 units	121	0.100
--	---	-----------------------	--	-----	----------	-----	-------



3RK1 901-1KA01

AS-Interface sealing caps M12, tamper-proof For free M12 sockets	A	3RK1 901-1KA01		100	10 units	121	0.100
--	---	-----------------------	--	-----	----------	-----	-------



3RK1 902-0AR00

Sealing sets	A	3RK1 902-0AR00		100	5 units	121	0.100
• For K60 mounting plate and standard distributor							
• Cannot be used for K45 mounting plate							
• Set contains one straight and one shaped seal							

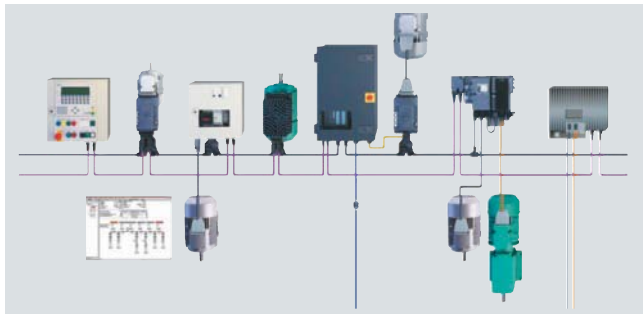
* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

Energy Communication Field Installation System

General data

Overview



Modern field and power bus technologies open up countless possibilities and unprecedented savings potential.

ECOFAST (Energy and Communication Field Installation System) connects the components of an automation system (such as switching and control devices, I/O stations, motors and geared motors) using a uniform, standardized connection method for data and power.

ECOFAST is a solution for decentralization outside the control cabinet, with standardized connection methods for all components on a distributed installation basis, consistent for PROFIBUS DP and AS-Interface. ECOFAST sets standards in equipping machines and plants for automation, low-voltage controlgear and drives. ECOFAST is centered on the extensive decentralization and modularization of installations, combined with comprehensive diagnostics down to the component level.

Modern field and power bus technologies open up new possibilities for machinery and plant engineering. Solutions of distributed design are flexible and can be adapted to the various requirements of industrial automation.

This gives rise to advantages in terms of overall process costs. The standardized distributed installation technology with a high degree of protection (IP65) produces savings during

- Configuration
- Wiring
- Mounting
- Start-up
- Operation

Features

- ECOFAST is a solution for a wide range of automation, drive and installation components with a high degree of protection.
- All interfaces on ECOFAST comply with the ISO 23570 standard.
- With ECOFAST, power and information are distributed and transmitted in a line.
- Parameters and control and diagnostics functionality are transmitted through PROFIBUS or AS-Interface for fast operation start-ups and troubleshooting.
- A configuring tool for the energy supply system improves the configuration appreciably.
- A parameterizing tool provides user-friendly support with entering all the motor starter data.
- ECOFAST connects the components of an automation system using a uniform, standardized connection method for data and power in accordance with ISO 23570.

Shorter time frames

With ECOFAST it is possible to shorten the time frames for the tendering, planning and configuring of machines and plants:

- Modular planning of machines and plants
- Compiling tenders from ready-made modules
- Faster construction and mounting

- Cabinet-free construction with a high degree of protection
- Use of prefabricated and tested function units
- Faster mounting on site
- Smaller plant footprints

Fast and smooth start-up

ECOFAST enables the fast and smooth start-up of automation and drive systems:

- Minimization of error sources through standardized interfaces and plug-in connectors
- Extensive diagnostics on the device and through the bus
- Improved EMC through direct coupling of switching unit and drive

High plant availability

ECOFAST maintains a high level of plant availability:

- Reduction of downtimes thanks to the speedy and safe exchange of devices
- No interruption of the power and field bus while devices are being exchanged
- Automatic parameterizing when devices are exchanged
- Extensive status and diagnostics information
- Transmission of operating parameters (e. g. current values or status messages)

Components connected by ECOFAST

- Switchgear and control devices (direct-on-line starters, reversing starters, soft starters, frequency converters)
 - For near-motor or motor-mounted installation
 - As a stand-alone device or as an island solution
- I/O stations
- Motors and geared motors

Effective connection is provided by:

- Installation components (cables, connectors etc. for communication and power)
- Configuration and parameterization software

Configuring tool ECOFAST ES and parameterizing tool Motor Starter ES

The two software tools, ECOFAST ES and Motor Starter ES, support configuration and parameterization in the ECOFAST system.

ECOFAST ES is a user-friendly and powerful configuring tool for configuring the supply system and for testing the plant.

Motor Starter ES is a tool for parameterizing and diagnosing the motor starters (stand-alone devices) in the ECOFAST system.

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

General data

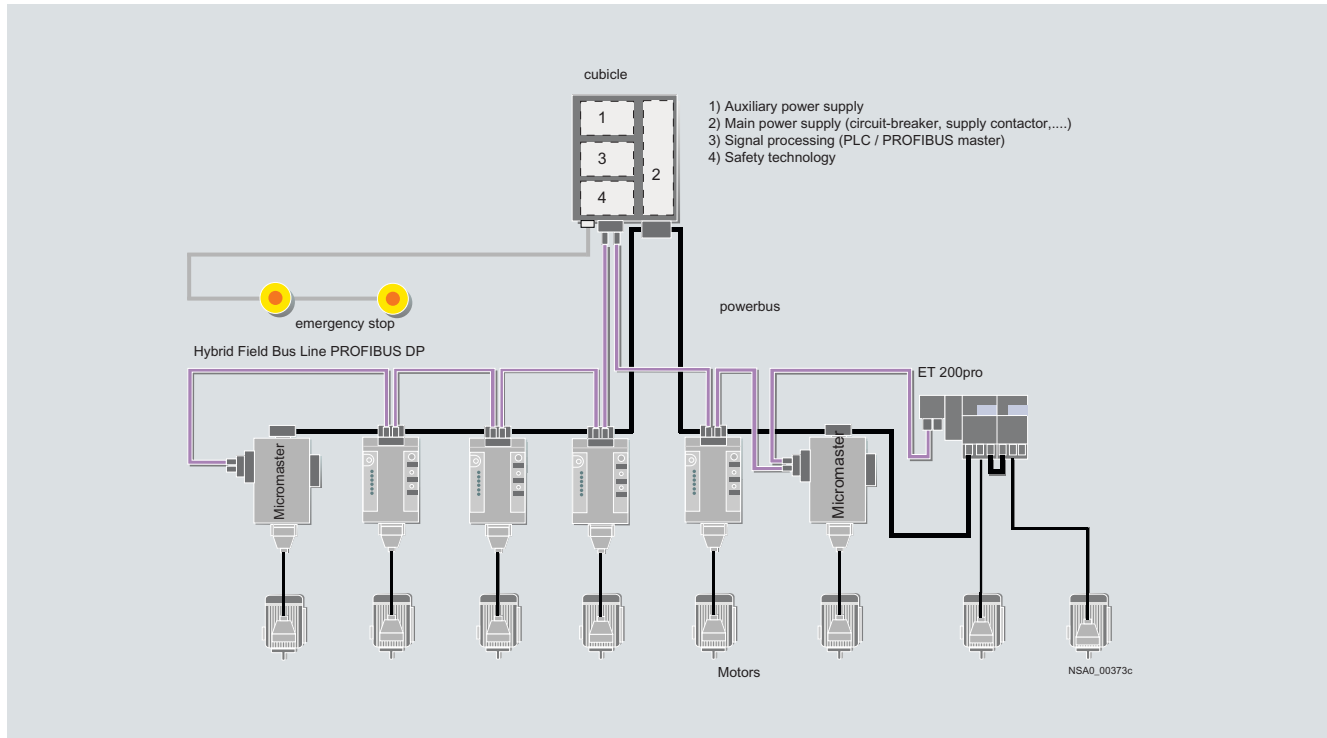
The ECOFAST network topology

The following network hardware is integrated:

- Power cable 2.5 mm² / 4 mm² / 6 mm² with/without Han Q4/2 power T / double-T clamping connector

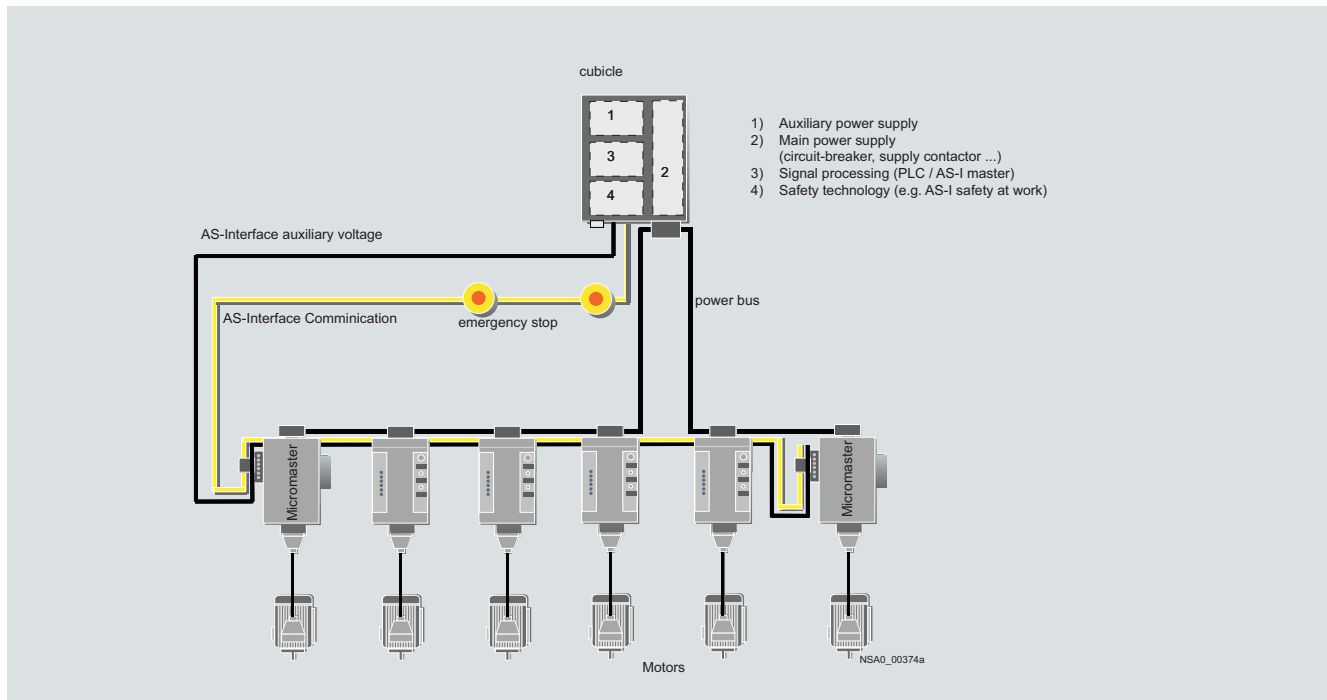
- Han-Brid data cable with integrated auxiliary voltage of 2 x 24 V and PROFIBUS DP protocol in copper and FO cable technology
- AS-Interface cable with insulation piercing method and integrated auxiliary voltage

PROFIBUS DP



PROFIBUS DP network topology

AS-Interface



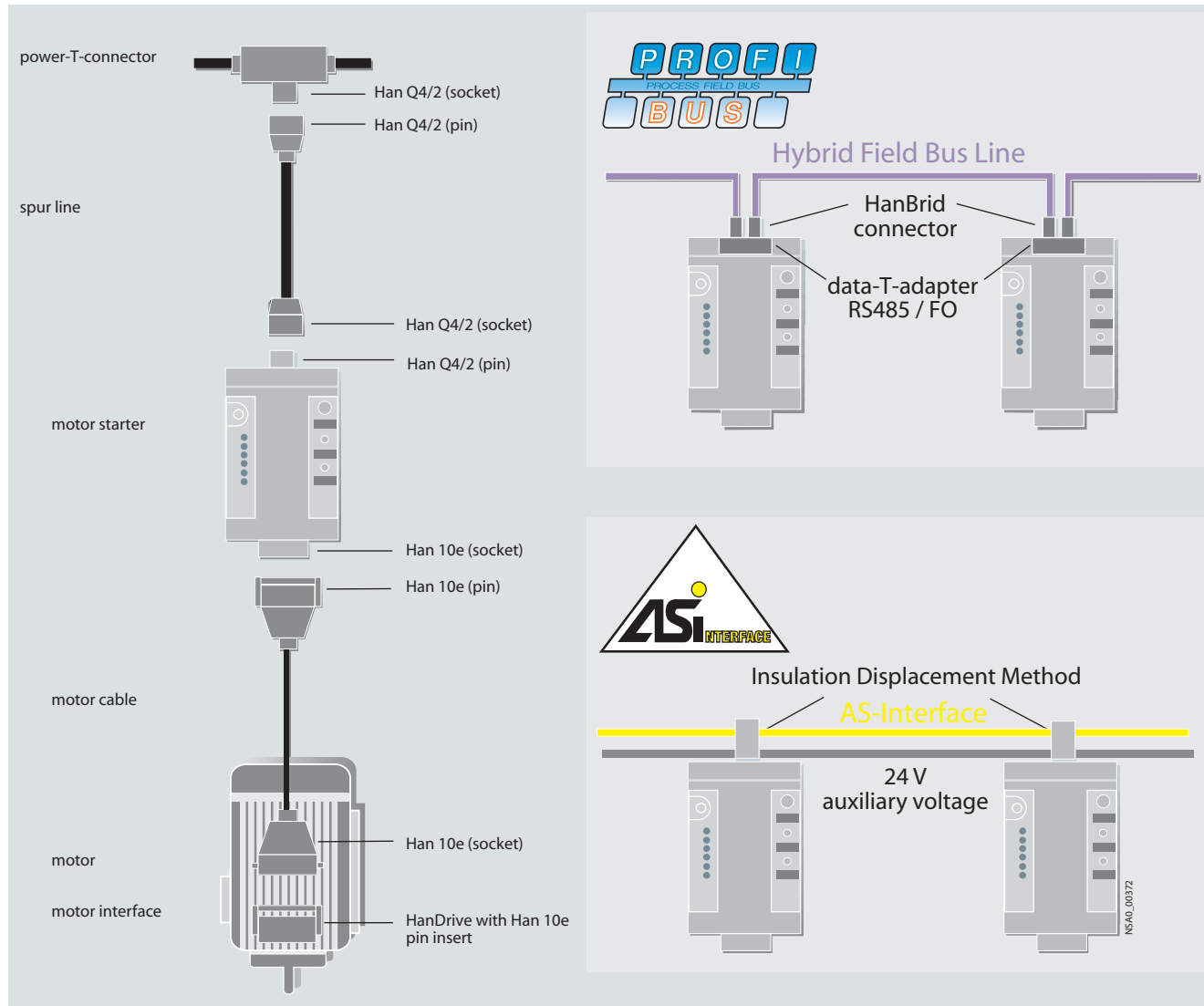
AS-Interface network topology

For Operation in the Field, High Degree of Protection

Energy Communication Field Installation System

General data

Interface overview



Schematic interface overview (power bus on left, communication bus on right)

All interfaces for communication and power are standardized and comply with the ISO 23570 standard.

Communication through PROFIBUS DP

- Hybrid cable for PROFIBUS DP (switched and non-switched auxiliary voltage)
- Connection through HanBrid plug-in connectors
- Transmission media: RS 485 or FO
- Data T piece for interruption-free operation (with RS 485)

Communication through AS-Interface

Connection by insulation piercing method

Power bus

- Shock-hazard-protected connection method
- Connection through HanQ4/2 connector
- Power T / double-T clamping connector for interruption-free operation

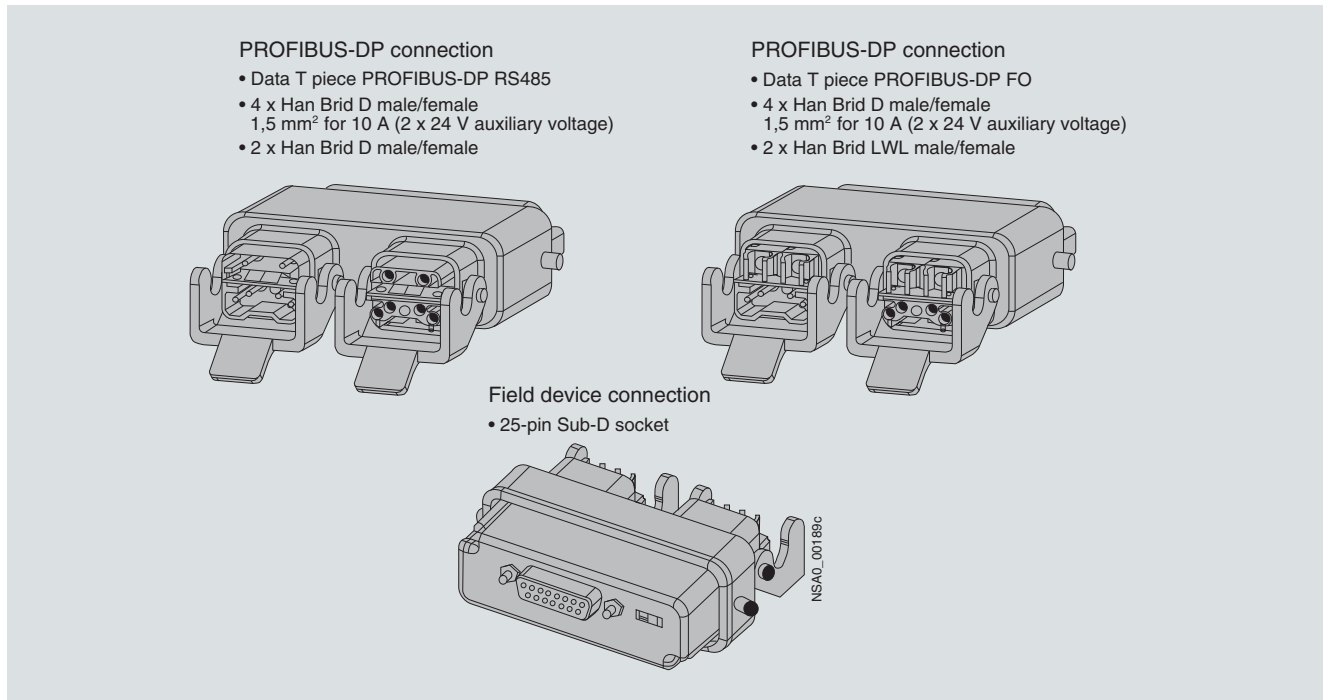
Motor connection

- Connection through Han10e plug-in connector on the switching device (for ET 200pro/M200D in Han Q8 version)
- Connection through HanDrive/10e connector on the motor
- Motor connection cable in shielded or non-shielded version: Use of a frequency converter requires EMC shielding

Actuators/sensors

Connection through M12 circular connectors

The data T pieces



Data T piece

Data T pieces connect individual field devices to PROFIBUS DP. The data T pieces define the transmission medium (FO or RS 485) for the field device. The field device itself is neutral with regard to the transmission method.

There are two T pieces in the ECOFAST system:

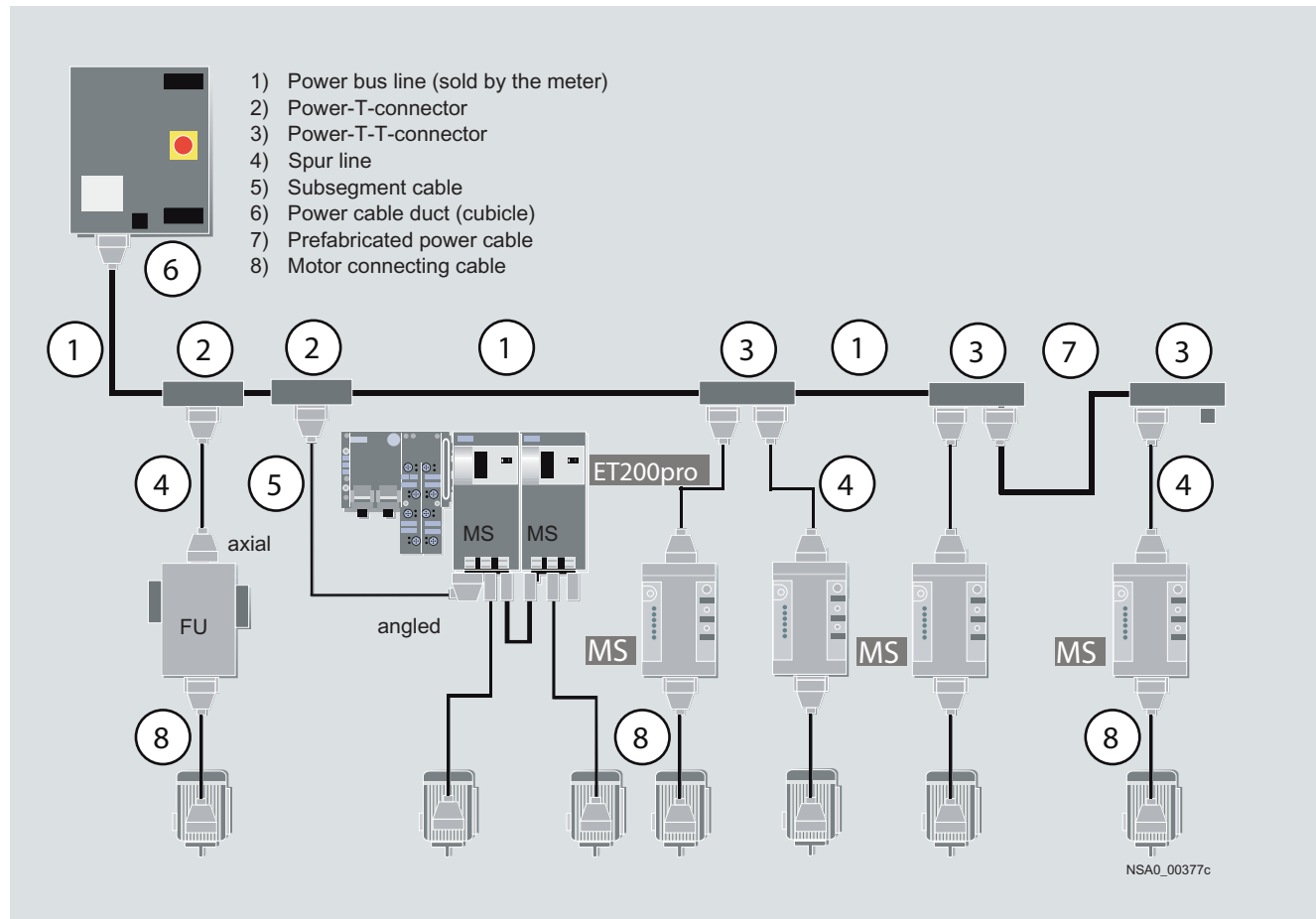
- Data T piece for PROFIBUS DP with cable cable (PROFIBUS DP RS 485) and 2 x 24 V auxiliary voltage (switched and non-switched)
- Data T piece for PROFIBUS DP with optical cable (PROFIBUS DP FO) and 2 x 24 V auxiliary voltage (switched and non-switched)

For Operation in the Field, High Degree of Protection

Energy Communication Field Installation System

General data

Power T / double-T clamping connector design variants



Power T / double-T clamping connector design variants

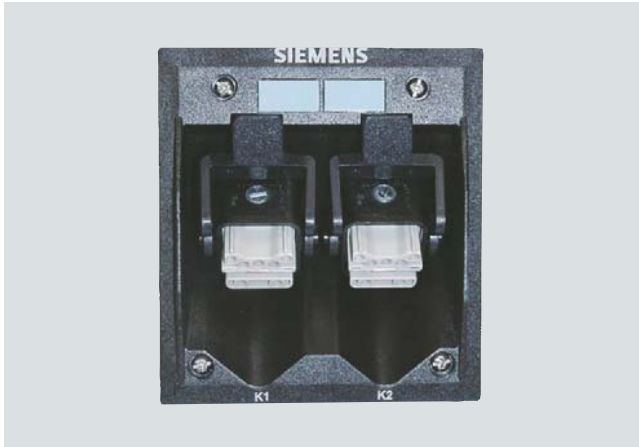
Power T / double-T clamping connectors connect the components of an automation system to the power bus. The power bus is not interrupted when the components are detached.

- ① Non-assembled power cables, see page 6/164
- ② Power T terminal connectors, see page 6/165
- ③ Power T-T terminal connectors, see page 6/165
- ④ Assembled power cables, see page 6/164
- ⑧ Motor connection cables, see page 6/166

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Hybrid field bus connections

Overview



Copper hybrid field bus connection (socket/socket) for the infeed

Hybrid field bus connections are designed as control cabinet glands. They are the interface between the control cabinet (IP20) and the field (IP65). They are also used to jointly route PROFIBUS DP and the auxiliary voltages into the hybrid field bus cable.

Hybrid field bus connections are available in different versions (active/passive):

- Glands for RS485 transmission systems
- Glands with RS485/FO converters

The field side is connected using HanBrid plug-in connectors. The two-channel version (2 HanBrid) enables the simple integration of IP20 devices in the control box or site box into the ECOFAST system.

The version with fast-connect connections for PROFIBUS in Cu/Cu technology shortens the mounting time appreciably.

Infeed:

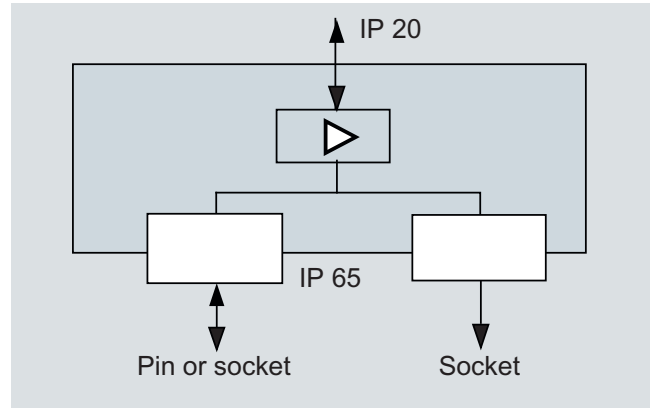
The auxiliary power is fed into the field from the IP20 side.

Looping:

The auxiliary power comes from the field (IP65).

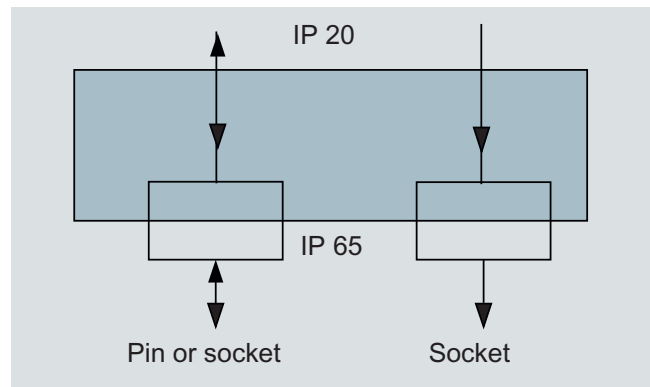
Characteristics of the active glands (with repeater function):

- Control cabinet gland from IP20 to IP65
- After switching on, the baud rate is detected automatically and is retained up to a voltage reset / LED yellow.
- Signal regeneration between segment 1 (IP20 side) and segment 2 (IP65 side):



Characteristics of the passive glands:

- Control cabinet gland from IP20 to IP65



Selection and ordering data

Link type / function	Connection IP65	Connection IP20 (PROFIBUS)	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
----------------------	-----------------	----------------------------	-----------	--------------	-------------------	-----	----	-----------------------

Hybrid field bus connections

Passive

• Cu/Cu, for feeding in (control cabinet, P&C module)	Socket/socket	Direct connection	B	3RK1 911-1AA22	1	1 unit	121	0.265
• Cu/Cu, for feeding in (control cabinet, P&C module)	Socket/socket	PROFIBUS Fast Connect bus connector	B	3RK1 911-1AF22	1	1 unit	121	0.270
• Cu/Cu, for looping through (local switchbox)	Pin/socket	Direct connection	B	3RK1 911-1AA32	1	1 unit	121	0.256
• Cu/Cu, for looping through (local switchbox)	Pin/socket	PROFIBUS Fast Connect bus connector	B	3RK1 911-1AF32	1	1 unit	121	0.270

Active (repeater)

• Cu/Cu, for feeding in (control cabinet, P&C module)	Socket/socket	9-pole Sub D socket	B	3RK1 911-1AH22	1	1 unit	121	0.270
• Cu/Cu, for looping through (local switchbox)	Pin/socket	9-pole Sub D socket	B	3RK1 911-1AH32	1	1 unit	121	0.270
• Cu/FOC, for feeding in (control cabinet, P&C module)	Socket/socket	9-pole Sub D socket	B	3RK1 911-1AG22	1	1 unit	121	0.270
• FOC/Cu, for looping through (local switchbox)	Pin/socket	9-pole Sub D socket	B	3RK1 911-1AG32	1	1 unit	121	0.270

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection

Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and ECOFAST, Power connection technology

Power cables

Overview

The power cables supply 400 V to 600 V AC to the switching devices and loads in the ECOFAST system. The power is distributed in a line like a power bus.

Power cables are available pre-assembled

- in various versions
- with different cross-sections and number of cores
- in various lengths

The power bus is routed with the spur lines to the switching device.

Selection and ordering data

Cross-section	Fixed length	Any length ¹⁾	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
mm ²	m	m							kg
① Power bus cables, non-assembled									
5 x 4	20	--	C	3RK1911-0AG60		1	1 unit	121	20.000
	50	--	C	3RK1911-0AG70		1	1 unit	121	40.000
	100	--	C	3RK1911-0AG80		1	1 unit	121	60.000
5 x 6	20	--	C	3RK1911-0AH60		1	1 unit	121	25.000
	50	--	C	3RK1911-0AH70		1	1 unit	121	50.000
	100	--	C	3RK1911-0AH80		1	1 unit	121	100.000
Power cables (new), preassembled									
④ Spur line/connection of switching devices/motor starters both ends with Han Q4/2 (pin/socket), axial cable routing									
5 x 4	--	< 3	C	3RK1 911-0CP21		1	1 unit	121	1.150
	--	> 3.1 to < 5	C	3RK1 911-0CP31		1	1 unit	121	1.500
	--	> 5.1 to < 10	C	3RK1 911-0CP41		1	1 unit	121	2.000
	--	> 10.1 to < 15	C	3RK1 911-0CP51		1	1 unit	121	0.300
5 x 6	--	< 3	C	3RK1 911-0CP22		1	1 unit	121	1.150
	--	> 3.1 to < 5	C	3RK1 911-0CP32		1	1 unit	121	1.500
	--	> 5.1 to < 10	C	3RK1 911-0CP42		1	1 unit	121	2.000
	--	> 10.1 to < 15	C	3RK1 911-0CP52		1	1 unit	121	2.000

¹⁾ When ordering, specify the length as well (example: length = 7.50 m). Orders possible for minimum 10 cm module widths.

Enclosures	Usage	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
									kg
Connector set for energy supply HAN Q4/2									
2.5 mm ² / 4 mm ² / 6 mm ² , comprising:									
• Angled, e. g. for energy supply on motor starter hood with PG 16									
One cable-end connector	One female insert	5 female contacts 2.5 mm ²	C	3RK1 911-2BE50		1	1 unit	121	0.200
One cable-end connector	One female insert	5 female contacts 4 mm ²	B	3RK1 911-2BE10		1	1 unit	121	0.200
One cable-end connector	One female insert	5 female contacts 6 mm ²	B	3RK1 911-2BE30		1	1 unit	121	0.200
• Straight e. g. for energy supply on motor starter hood with PG 16									
One cable-end connector	One female insert	5 female contacts 2.5 mm ²	B	3RK1 911-2BR50		1	1 unit	121	0.100
One cable-end connector	One female insert	5 female contacts 4 mm ²	B	3RK1 911-2BR10		1	1 unit	121	0.100
One cable-end connector	One female insert	5 female contacts 6 mm ²	B	3RK1 911-2BR30		1	1 unit	121	0.100
Connector set for power loop-through connection HanQ4/2									
2.5 mm ² / 4 mm ² / 6 mm ² , comprising:									
• Angled e. g. for connection P&CM PG 16									
One coupling enclosure with	One pin insert	5 male contacts 2.5 mm ²	C	3RK1 911-2BF60		1	1 unit	121	0.200
One coupling enclosure with	One pin insert	5 male contacts 4 mm ²	B	3RK1 911-2BF20		1	1 unit	121	0.300
One coupling enclosure with	One pin insert	5 male contacts 6 mm ²	B	3RK1 911-2BF40		1	1 unit	121	0.200
• Straight e. g. for connection on power T terminal connector PG 16									
One coupling enclosure with	One pin insert	5 male contacts 2.5 mm ²	B	3RK1 911-2BS60		1	1 unit	121	0.100
One coupling enclosure with	One pin insert	5 male contacts 4 mm ²	B	3RK1 911-2BS20		1	1 unit	121	0.100
One coupling enclosure with	One pin insert	5 male contacts 6 mm ²	B	3RK1 911-2BS40		1	1 unit	121	0.100
Control cabinet gland HanQ4/2									
e. g. for installation in control cabinets or local switchboxes									
			C	3RK1 911-1BF00		1	1 unit	121	2.000

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Power connection technology

Enclosures	Usage	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
② Power T terminal connectors									
For 400 V AC for connection of feeders (e. g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection Use of preassembled bus segments									
			B	3RK1 911-2BF01		1	1 unit	121	0.330
			B	3RK1 911-2BF02		1	1 unit	121	0.300
③ Power double-T terminal connectors									
For 400 V AC for connection of feeders (e. g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection • Use of preassembled bus segments • Connection of two motor starters possible									
			B	3RK1 911-2BG02		1	1 unit	121	0.300
Gasket set (comprising 2 seals)									
For power T / power double T terminal connector • For power cables with Ø 10 to 13 mm • For power cables with Ø 13 to 16 mm • For power cables with Ø 16 to 19 mm • For power cables with Ø 19 to 22 mm • Blanking plugs									
			B	3RK1 911-5BA00		1	1 unit	121	0.035
			B	3RK1 911-5BA10		1	1 unit	121	0.032
			B	3RK1 911-5BA20		1	1 unit	121	0.029
			B	3RK1 911-5BA30		1	1 unit	121	0.024
			B	3RK1 911-5BA50		1	1 unit	121	0.020

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Communication							
Data T piece For 2 x 24 V auxiliary voltage (switched and not switched) and PROFIBUS DP • For Cu RS485 • For FOC							
	B	3RK1 911-2AG00		1	1 unit	121	0.122
	B	3RK1 911-2AH00		1	1 unit	121	0.120
Addressing plugs For setting the PROFIBUS DP address							
	A	6ES7 194-1KB00-0XA0		1	1 unit	250	0.032
ECOFAST bus termination plug-in connectors For PROFIBUS DP • Pack of 1 • Pack of 5							
	A	6GK1 905-0DA10		1	1 unit	5K2	0.036
	A	6GK1 905-0DA00		1	1 unit	5K2	0.180
Mounting							
Mounting plate for ECOFAST Retaining bracket on the motor for fixing the mounted motor starter							
	B	3RK1 911-3AA00		1	1 unit	121	0.246
Miscellaneous accessories							
Crimping tools For male and female contacts • 1.5 and 2.5 mm ² • 1.5, 2.5 and 4 mm ²							
	B	3RK1 902-0AH00		1	1 unit	121	0.576
	B	3RK1 902-0CT00		1	1 unit	121	0.644
Dismantling tools For male and female contacts for 9-pole inserts (e. g. HAN Q8)							
	B	3RK1 902-0AJ00		1	1 unit	121	0.047
Sealing caps For power socket connectors • One unit per pack • Ten units per pack							
	B	3RK1 902-0CK00		1	1 unit	121	0.012
	B	3RK1 902-0CJ00		1	10 units	121	0.093
Interface cable For transmitting the configuration data on an ECOFAST starters with AS-Interface for connecting a programming device/PC with MOTORSTARTER ES to an ECOFAST starter							
	B	3RK1 911-0BN20		1	1 unit	121	0.162
Test plug set For testing the motor starters without communication connection (manual operation)							
	B	3RK1 911-2AM00		1	1 unit	121	0.044

Solution Partner

Automation

SIEMENS

More connection technology products can be found at our "Siemens Solution Partners" under the "Distributed Field Installation System" technology.

More information can be found on the Internet at
www.siemens.com/automation/partnerfinder

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and ECOFAST, Power connection technology

Motor connection cables

Overview

Motor connection cables provide connection of the motor with the equipment (ECOFAST starters / frequency converters / stand-alone devices). They are available pre-assembled

- in various versions,
- with different numbers of cores,
- in different lengths and
- in shielded and unshielded versions.

Selection and ordering data

Cross-section	Fixed length	Any length ¹⁾	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
mm ²	m	m							kg
Ⓢ Motor connection cables									
• Preassembled at both ends with Han 10e (pin/socket), unshielded									
11 x 1.5	1.5	--	C	3RK1 911-0BK10		1	1 unit	121	1.107
	--	< 2.9	C	3RK1 911-0CK20		1	1 unit	121	1.200
	3	--	C	3RK1 911-0BK20		1	1 unit	121	1.680
	--	> 3.1 to < 4.9	C	3RK1 911-0CK30		1	1 unit	121	1.200
	5	--	C	3RK1 911-0BK30		1	1 unit	121	2.204
7 x 1.5	1.5	--	C	3RK1 911-0BH10		1	1 unit	121	0.770
	--	< 2.9	C	3RK1 911-0CH20		1	1 unit	121	0.880
	3	--	C	3RK1 911-0BH20		1	1 unit	121	1.030
	--	> 3.1 to < 4.9	C	3RK1 911-0CH30		1	1 unit	121	1.200
	5	--	C	3RK1 911-0BH30		1	1 unit	121	2.204
• Preassembled at both ends with Han 10e (pin/socket), shielded									
4 x 2.5	1.5	--	B	3RK1 911-0BU10		1	1 unit	121	1.181
4 x 0.75	--	< 2.9	C	3RK1 911-0CU20		1	1 unit	121	1.200
<i>new</i>	3	--	B	3RK1 911-0BU20		1	1 unit	121	1.638
	--	> 3.1 to < 4.9	C	3RK1 911-0CU30		1	1 unit	121	1.200
	5	--	B	3RK1 911-0BU30		1	1 unit	121	2.266
• Preassembled at one end with Han 10e (pin), unshielded									
11 x 1.5	1.5	--	C	3RK1 911-0BJ10		1	1 unit	121	0.794
	--	< 2.9	C	3RK1 911-0CJ20		1	1 unit	121	1.200
	3	--	C	3RK1 911-0BJ20		1	1 unit	121	1.230
	--	> 3.1 to < 4.9	C	3RK1 911-0CJ30		1	1 unit	121	1.200
	5	--	C	3RK1 911-0BJ30		1	1 unit	121	1.730
7 x 1.5	1.5	--	C	3RK1 911-0BG10		1	1 unit	121	0.560
	--	< 2.9	C	3RK1 911-0CG20		1	1 unit	121	1.200
	3	--	C	3RK1 911-0BG20		1	1 unit	121	0.840
	--	> 3.1 to < 4.9	C	3RK1 911-0CG30		1	1 unit	121	1.200
	5	--	C	3RK1 911-0BG30		1	1 unit	121	1.219
• Preassembled at one end with Han 10e (pin), shielded									
4 x 2.5	1.5	--	B	3RK1 911-0BV10		1	1 unit	121	0.844
4 x 0.75	--	< 2.9	C	3RK1 911-0CV20		1	1 unit	121	1.200
	3	--	B	3RK1 911-0BV20		1	1 unit	121	1.320
	--	> 3.1 to < 4.9	C	3RK1 911-0CV30		1	1 unit	121	1.200
	5	--	B	3RK1 911-0BV30		1	1 unit	121	1.923
• Non-assembled									
4 x 2.5	20	--	B	3RK1 911-0BW60		1	1 unit	121	6.250
4 x 0.75	50	--	B	3RK1 911-0BW70		1	1 unit	121	15.500
	100	--	B	3RK1 911-0BW80		1	1 unit	121	31.500

¹⁾ When ordering, specify the length as well (example: length = 7.50 m).
Orders possible for minimum 10 cm module widths.

Enclosures	Usage	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
									kg
Connector set for motor connection Han 10e									
• Unshielded									
One coupling enclosure with PG 13, low	One pin insert	6 male contacts 1.5 mm ²	B	3RK1 911-2BK00		1	1 unit	121	0.236
One coupling enclosure with PG 21, high	One pin insert	6 male contacts 1.5 mm ²	B	3RK1 911-2BL00		1	1 unit	121	0.330
Connection on motor									
One cable-end connector hood with PG 16, low	One female insert	6 female contacts 1.5 mm ²	B	3RK1 911-2BM00		1	1 unit	121	0.225
One cable-end connector hood with PG 21, high	One female insert	6 female contacts 1.5 mm ²	B	3RK1 911-2BN00		1	1 unit	121	0.325
• Shielded									
Outgoing feeder on motor starter									
One coupling enclosure with M25	One pin insert	7 male contacts 3 × 2.5 mm ² + 4 × 0.75 mm ²	B	3RK1 911-2BL10		1	1 unit	121	0.337
Connection on motor including star bridge									
One cable-end connector hood with M25	One female insert	7 female contacts 3 × 2.5 mm ² + 4 × 0.75 mm ²	B	3RK1 911-2BN10		1	1 unit	121	0.300

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Communication connection technol.

ECOFAST bus cables

Overview



All equipment running in the ECOFAST system are connected to the PROFIBUS DP with the bus cables.

The bus cable is configured as a hybrid cable and contains:

- PROFIBUS DP in Cu-RS 485;
- Four additional copper cores for the transmission of the 24 V DC voltage:
 - 24 V DC, not switched (for electronics and inputs)
 - 24 V DC, switched (for outputs, can be switched off, e. g. on EMERGENCY-STOP)

The ECOFAST hybrid cables are available by the meter or in pre-assembled lengths with ECOFAST connectors (Han Brid) and sockets.

Benefits

- Savings in wiring, installation, commissioning and during operation through the standardized connection method (copper or FO) with a high degree of protection (IP65)
- With ECOFAST it is possible to shorten the time frames for the tendering, planning and configuring of machines and plants
- ECOFAST enables the fast and smooth start-up of automation and drive systems
- Minimization of error sources through standardized interfaces and plug-in connectors
- ECOFAST maintains a high level of plant availability: No interruption of the power and field bus while devices are being exchanged.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PROFIBUS ECOFAST Hybrid Cable – copper							
Trailing cable (PUR sheath) with two copper cables, shielded, for PROFIBUS DP and four copper cores with 1.5 mm ²							
Sold by the meter	A	6XV1 830-7AH10		1	1 M	5K2	0.141
Delivery unit max. 1000 m, minimum order quantity 20 m							
Non-assembled							
• 20 m	A	6XV1 830-7AN20		1	1 unit	5K2	3.080
• 50 m	A	6XV1 830-7AN50		1	1 unit	5K2	7.700
• 100 m	A	6XV1 830-7AT10		1	1 unit	5K2	15.400
Pre-assembled							
With ECOFAST connectors and socket, fixed length							
• 0.5 m	A	6XV1 830-7BH05		1	1 unit	5K2	0.250
• 1.0 m	A	6XV1 830-7BH10		1	1 unit	5K2	0.325
• 1.5 m	A	6XV1 830-7BH15		1	1 unit	5K2	0.400
• 3 m	A	6XV1 830-7BH30		1	1 unit	5K2	0.535
• 5 m	A	6XV1 830-7BH50		1	1 unit	5K2	0.880
• 10 m	A	6XV1 830-7BN10		1	1 unit	5K2	1.600
• 15 m	A	6XV1 830-7BN15		1	1 unit	5K2	2.155
• 20 m	A	6XV1 830-7BN20		1	1 unit	5K2	2.870
• 25 m	A	6XV1 830-7BN25		1	1 unit	5K2	3.640
• 30 m	A	6XV1 830-7BN30		1	1 unit	5K2	4.410
• 35 m	A	6XV1 830-7BN35		1	1 unit	5K2	5.180
• 40 m	A	6XV1 830-7BN40		1	1 unit	5K2	5.950
• 45 m	A	6XV1 830-7BN45		1	1 unit	5K2	6.720
• 50 m	A	6XV1 830-7BN50		1	1 unit	5K2	7.490
With two ECOFAST connectors, variable length ¹⁾							

¹⁾ Can be ordered from your local representative.

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Communication connection technol.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
PROFIBUS ECOFAST Hybrid Cable GP							
Trailing cable with 4 x Cu and 2 x Cu, shielded with UL approval							
Sold by the meter Delivery unit max. 1000 m, minimum order quantity 20 m	B	6XV1 860-2P		1	1 M	5K2	0.154
Non-assembled							
• 20 m	A	6XV1 860-4PN20		1	1 unit	5K2	3.080
• 50 m	B	6XV1 860-4PN50		1	1 unit	5K2	7.700
• 100 m	A	6XV1 860-4PT10		1	1 unit	5K2	15.400
Assembled							
With ECOFAST connector and socket							
• 0,5 m	A	6XV1 860-3PH05		1	1 unit	5K2	0.230
• 1 m	A	6XV1 860-3PH10		1	1 unit	5K2	0.290
• 1,5 m	A	6XV1 860-3PH15		1	1 unit	5K2	0.400
• 3 m	A	6XV1 860-3PH30		1	1 unit	5K2	0.750
• 5 m	A	6XV1 860-3PH50		1	1 unit	5K2	0.870
• 10 m	A	6XV1 860-3PN10		1	1 unit	5K2	1.640
• 15 m	A	6XV1 860-3PN15		1	1 unit	5K2	2.410
• 20 m	A	6XV1 860-3PN20		1	1 unit	5K2	3.180
• 25 m	A	6XV1 860-3PN25		1	1 unit	5K2	3.950
• 30 m	A	6XV1 860-3PN30		1	1 unit	5K2	4.720
• 35 m	A	6XV1 860-3PN35		1	1 unit	5K2	5.490
• 40 m	A	6XV1 860-3PN40		1	1 unit	5K2	6.160
• 45 m	A	6XV1 860-3PN45		1	1 unit	5K2	6.930
• 50 m	A	6XV1 860-3PN50		1	1 unit	5K2	7.700
Additional components							
PROFIBUS copper bus connector							
With 2 x Cu shielded and 4 x Cu 1.5 mm ² ; contact type: POF, Han D for 24 V; Tool: Crimping tool, polishing set; 5 units; with mounting instructions							
• With pin insert	A	6GK1 905-0CA00		1	1 unit	5K2	0.212
• With female insert	A	6GK1 905-0CB00		1	1 unit	5K2	0.215
PROFIBUS ECOFAST Hybrid Plug, angled;							
With 2 x Cu shielded and 4 x Cu 1.5 mm ² ; 5 units; with mounting instructions							
• Pin insert	A	6GK1 905-0CC00		1	1 unit	5K2	0.247
• Female inserts	A	6GK1 905-0CD00		1	1 unit	5K2	0.247
ECOFAST Terminating Plug							
Bus termination plug-in connector for PROFIBUS DP; with 2 x Cu and 4 x Cu 1.5 mm ² ; pin insert, integrated terminating resistors							
• Pack of 1	A	6GK1 905-0DA10		1	1 unit	5K2	0.036
• Pack of 5	A	6GK1 905-0DA00		1	1 unit	5K2	0.180
Data T piece							
For 2 x 24 V auxiliary voltage (switched and not switched) and PROFIBUS DP							
• For Cu RS485	B	3RK1 911-2AG00		1	1 unit	121	0.122
• For FOC	B	3RK1 911-2AH00		1	1 unit	121	0.120
Addressing plugs							
for setting the PROFIBUS DP address							
	A	6ES7 194-1KB00-0XA0		1	1 unit	250	0.032

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Communication connection technol.

More information

Order No.	6XV1 830-7AH10	6XV1 860-2P
Type	PROFIBUS ECOFAST hybrid cables – copper	PROFIBUS ECOFAST Hybrid Cable GP
Suitability for use	Connection for ECOFAST stations	Connection for ECOFAST stations
Cable designation	02Y (ST)C 1 x 2 x 0.65/2.56- 150 LI LIH-Z 11Y 4 x 1 x 1.5 VI FRNC	02Y (ST)C 1 x 2 x 0.65/2.56 -150 LI LIY-Z Y 4 x 1 x 1.5 VI
Electrical specifications		
Damping dimension per length		
• At 16 MHz	dB/km 49	49
• At 4 MHz	dB/km 25	25
• At 9.6 MHz	dB/km 3	3
Shaft resistance		
• At 9.6 kHz	Ω 270	270
• At 38.4 kHz	Ω 185	185
• At 3 MHz ... 20 MHz	Ω 150	150
• Rated value	Ω 150	150
Symmetrical tolerance of the shaft resistance		
• At 3 MHz ... 20 MHz	Ω +/- 15	+/- 15
• At 38.4 kHz	Ω +/- 18.5	+/- 18.5
• At 9.6 MHz	Ω +/- 27	+/- 27
Maximum loop resistance per length	Ω/km 138	138
Maximum shield resistance per length	Ω/km 15	15
Capacity per length at 1 kHz	nF/km 30	30
RMS value of operational voltage	V 100	100
Uninterrupted current of power cores	A 12	12
Mechanical specifications		
Cable sheath		
• Material	PUR	PVC
• External diameter	mm 11	11
• Color	Violet	Violet
Power core		
• Conductor cross-section	mm ² 1.5	1.5
• Color of core insulation	Black	Black
Ambient temperature		
• During mounting	°C -40 ... +60	-30 ... +80
• During operating phase	°C -40 ... +60	-30 ... +80
• During storage	°C -40 ... +60	-30 ... +80
• During transport	°C -40 ... +60	-30 ... +80
Bending radius		
• With single bend	mm 38	77
• With several bends	mm 85	110
Number of bending cycles	5000000	1000000 ¹⁾
Weight per length	kg/km 150	154
Fire behavior	IEC 60332-1	IEC 60332-3-24 Category C
Chemical resistance		
• To mineral oil	Conditionally resistant	Conditionally resistant
• to grease	Conditionally resistant	Conditionally resistant
Radiological resistance to UV radiation resistance	No	Yes
Product feature		
• Halogen-free	Yes	No
• Silicone-free	Yes	Yes
UL listing at 300 V rating	No	Yes / CM, CL3, SunRes, OilRes
UL style at 600 V rating	No	Yes

¹⁾ At bending radius 15 x D

Supplementary components for the SIMATIC NET cabling range can be ordered from your local representative.

Technical consulting is available at:

J. Hertlein

Tel.: +49 (0) 911/750 44 65

Fax: +49 (0) 911/750 99 91

E-mail: juergen.hertlein@siemens.com

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Communication connection technol.

ECOFAST Fiber Optic Hybrid Cable

Overview



- Electrical separation of DP units
- Protection of the transmission path against electromagnetic faults
- Up to 50 m cable length with plastic optical conductor
- Robust FOC, designed for industrial applications
- Hybrid cable for joint transmission of data and power supply

The robust and trailing hybrid cable contains two plastic optical conductor for data transmission and four copper leads (1.5 mm²) for the power supply of DESINA¹⁾ stations.

¹⁾ DESINA is the trademark for **DE**centralized (distributed) and **st**andardized **IN**stallation technology on machine tools. Sold by the meter without inner sheath; not suitable for assembly in the field.

Benefits



- Savings in wiring, installation, commissioning and during operation through the standardized connection method (copper or FO) with a high degree of protection (IP65)
- With ECOFAST it is possible to shorten the time frames for the tendering, planning and configuring of machines and plants:
- ECOFAST enables the fast and smooth start-up of automation and drive systems
- Minimization of error sources through standardized interfaces and plug-in connectors
- ECOFAST maintains a high level of plant availability: No interruption of the power and field bus while devices are being exchanged.

Application

The ECOFAST Fiber Optic Hybrid Cable from SIMATIC NET is used for setting up optical PROFIBUS DP networks indoors. It is particularly suitable for the connection of DESINA components installed near the machine and is easy to assemble on site. The maximum cable length between two DP units is 50 m.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
ECOFAST Fiber Optic Hybrid Cable (DESINA-compatible)							
Trailing cable with 2 plastic optical conductors and 4 copper cores, 1.5 mm ² only for operation in DESINA-compatible devices							
Sold by the meter	A	6XV1 830-6CH10		1	1 M	5K2	0.135
Delivery unit max. 1000 m, minimum order quantity 20 m							
Non-assembled							
• 20 m	A	6XV1 830-6CN20		1	1 unit	5K2	2.700
• 50 m	A	6XV1 830-6CN50		1	1 unit	5K2	6.750
• 100 m	A	6XV1 830-6CT10		1	1 unit	5K2	13.500
Pre-assembled							
With 2 DESINA connectors							
• 1.5 m	A	6XV1 830-6DH15		1	1 unit	5K2	0.400
• 3 m	A	6XV1 830-6DH30		1	1 unit	5K2	0.535
• 5 m	A	6XV1 830-6DH50		1	1 unit	5K2	0.805
• 10 m	A	6XV1 830-6DN10		1	1 unit	5K2	1.480
• 15 m	A	6XV1 830-6DN15		1	1 unit	5K2	2.155
ECOFAST Fiber Optic Hybrid Plug 180, DESINA-compatible (ECOFAST FOC)							
2 x FO; 4 x 1.5 mm ² Cu							
• With pin insert (Hanbrid connectors)	A	6GK1 905-0BA00		1	1 unit	5K2	0.181
• With female insert (Hanbrid connectors)	A	6GK1 905-0BB00		1	1 unit	5K2	0.182
Manual for PROFIBUS networks							
Paper version							
Network architecture, configuring, network components, mounting							
• German	C	6GK1 970-5CA20-0AA0		1	1 unit	5DK	1.188
• English	C	6GK1 970-5CA20-0AA1		1	1 unit	5DK	1.190
SIMATIC NET Manual Collection							
Electronic manuals for communication systems, protocols, products; on DVD; German/English							
	B	6GK1 975-1AA00-3AA0		1	1 unit	5DK	0.018

* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Communication connection technol.

More information

Order No.	6XV1 830-6CH10	
Type	ECOFAST Fiber Optic Hybrid Cable (DESINA-compatible)	
Suitability for use	DESINA-compatible devices, e. g. for ET 200X	
Cable designation of the ECOFAST Hybrid Cable	I-(ZN) J-V4Y 11Y2S 980/1000+4x1.5	
Version of the assembled FO cable	Sold by the meter, can be assembled locally with DESINA connectors or pre-assembled with two DESINA connectors	
Electrical specifications		
Damping dimension per length at 660 nm maximum	dB/km	280
Operational voltage rated value	V	300
Uninterrupted current of power cores	A	10
Mechanical specifications		
Number of electrical cores	4	
Number of conductors of the FO cable	2	
Version of the FO conductor fiber	Step index fiber	
Material		
• Of the FO fiber core	Polymethylmethacrylate (PMMA)	
• Of the FO fiber sheath	Fluorinated special polymer	
• Of the sheath of the FO cable	PUR	
• Of the sheath of the FO core	PA	
Color		
• Of the sheath of the FO core	Black, orange	
• Of core insulation of the power cores	Black	
• Of the sheath of the hybrid cable	Violet	
Diameter of the FO fiber core	µm	980
Conductor cross-section of the power cores	mm ²	1.5
External diameter		
• Of the FO fiber sheath	µm	1000 µm
• Of the sheath of the cable	mm	10.6
• Of the sheath of the FO core	mm	2.2
- Lower deviation	mm	2.19
- Upper deviation	mm	2.21
Weight per length	kg/km	146
Maximum permitted short-term tensile loading	N	60
Short-term shear force per length	N/m	1000
Bending radius with several bends with minimum permitted tensile loading	mm	110
Ambient temperature		
• During operating phase	°C	-20 ... +60
• During storage	°C	-20 ... +60
• During transport	°C	-20 ... +60
• During mounting	°C	-5 ... +50
• In the short-circuit on the conductor	°C	+160 (max. 5 seconds)
Chemical resistance		
• To ASTM oil 2	Conditionally resistant	
• To grease	Conditionally resistant	
• To water	Conditionally resistant	
Radiological resistance to UV radiation resistance	No	
Fire behavior	IEC 60332-1	
Verification of suitability UL approval	No	
Product feature		
• Halogen-free	No	
• Silicone-free	Yes	

Supplementary components for the SIMATIC NET cabling range can be ordered from your local representative.

Technical consulting is available at:

J. Hertlein

Tel.: +49 (0) 911/750 44 65

Fax: +49 (0) 911/750 99 91

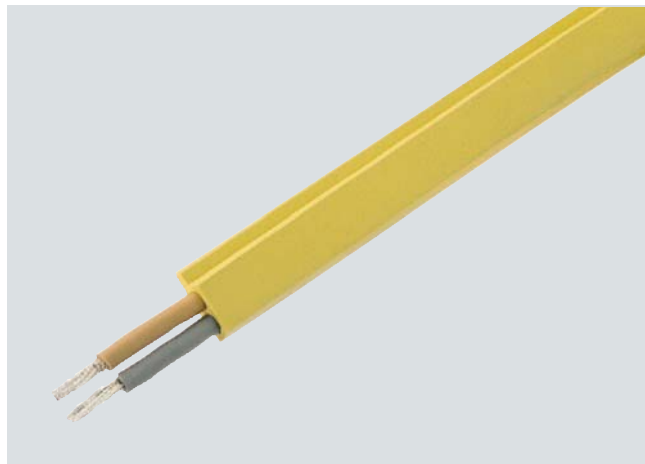
E-mail: juergen.hertlein@siemens.com

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Communication connection technol.

AS-Interface shaped cables

Overview



The actuator-sensor interface - the networking system used for the lowest field area - is characterized by very easy mounting and installation. A new connection method was developed specially for AS-Interface.

The stations are connected using the AS-Interface cable. This two-wire AS-Interface cable has a trapezoidal shape, thus ruling out polarity reversal.

Connection is effected by the insulation piercing method. In other words, male contacts pierce the shaped AS-Interface cable and make reliable contact with the two wires. Cutting to length and stripping are superfluous. Consequently, AS-Interface stations (e. g. I/O modules, intelligent devices) can be connected in the shortest possible time and exchanging devices is quick.

To enable use in the most varied ambient conditions (e. g. in an oily environment), the AS-Interface cable is available in different materials (rubber, TPE, PUR).

For special applications it is also possible to use an unshielded standard round cable H05VV-F 2x 1.5 mm² according to AS-i Specification. With AS-Interface, data and power for the sensors (e. g. BERO proximity switches) and actuators (e. g. indicator lights) are transmitted over the yellow AS-Interface cable.

The black cable must be used for actuators with a 24 V DC supply (e. g. solenoid valves) and a high power requirement.

Suitable for operation in tow chains

The use of the AS-Interface shaped cables with TPE and PUR outer sheath was checked in a tow chain test with the following conditions:

Chain length	m	6
Travel	m	10
Bending radius	mm	75
Travel speed	m/s	4
Acceleration	m/s ²	4
Number of cycles		10 million
Duration of test		approx. 3 years (11000 cycles per day)

After termination of the 10 million cycles only slight wear was visible due to the lugs of the tow chain. No damage to the cores and core insulation could be detected.

Note:

When using a tow chain the cables must be installed free from tensile forces. On no account may the cables be twisted, but must be routed flat through the tow chain.

Selection and ordering data

Material	Color	Quantity	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-Interface shaped cables									
Rubber	Yellow (AS-Interface)	100-m roll	▶	3RX9 010-0AA00		1	1 unit	121	7.148
		1-km drum	B	3RX9 012-0AA00		1	1 unit	121	80.000
	Black (24 V DC)	100-m roll	▶	3RX9 020-0AA00		1	1 unit	121	7.092
		1-km drum	B	3RX9 022-0AA00		1	1 unit	121	80.000
TPE	Yellow (AS-Interface)	100-m roll	▶	3RX9 013-0AA00		1	1 unit	121	6.627
		1-km drum	B	3RX9 014-0AA00		1	1 unit	121	78.000
	Black (24 V DC)	100-m roll	▶	3RX9 023-0AA00		1	1 unit	121	6.459
		1-km drum	B	3RX9 024-0AA00		1	1 unit	121	69.666
TPE special version ¹⁾	Yellow (AS-Interface)	100-m roll	C	3RX9 017-0AA00		1	1 unit	121	6.900
	Black (24 V DC)	100-m roll	C	3RX9 027-0AA00		1	1 unit	121	6.984
PUR	Yellow (AS-Interface)	100-m roll	▶	3RX9 015-0AA00		1	1 unit	121	6.131
		1-km drum	B	3RX9 016-0AA00		1	1 unit	121	69.100
	Black (24 V DC)	100-m roll	▶	3RX9 025-0AA00		1	1 unit	121	6.323
		1-km drum	B	3RX9 026-0AA00		1	1 unit	121	200.000

¹⁾ Special version acc. to UL Class

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Connection technology acc. to ISO 23570 and
ECOFAST, Accessories

ECOFAST selection module

Overview



The selection module enables the selective shutdown of feeders on the power bus, e. g. for servicing purposes. The module is equipped accordingly with a lockable switch (repair switch). In addition it provides line protection for cross sectional transitions on the power bus and can be used for increasing the size of the power bus segments.

Spectrum:

- Modules with 8, 16 and 25 A rated current
- With feedback contact through M12 plug
- Generally with 6 mm² wiring

Selection and ordering data

Connection value	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A							
Selection module							
For the selective switch-off of feeders with maintenance switching function for line protection for cross-sectional transitions and for increasing the segment size with feedback contact M12							
• 8	B	3RK1 911-4AB08		1	1 unit	121	1.700
• 16	B	3RK1 911-4AB16		1	1 unit	121	1.700
• 25	B	3RK1 911-4AB25		1	1 unit	121	1.700

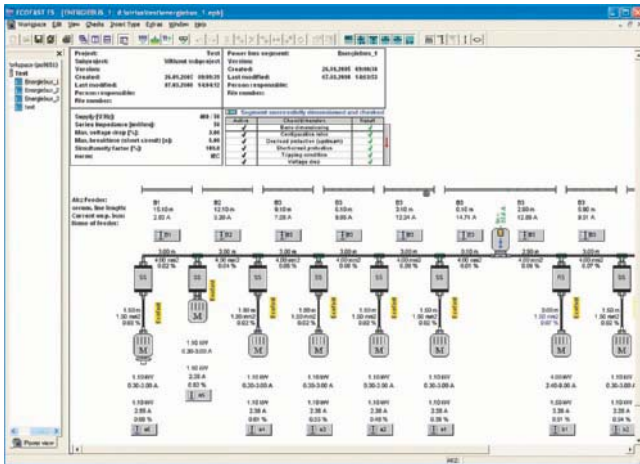
* You can order this quantity or a multiple thereof.

For Operation in the Field, High Degree of Protection Energy Communication Field Installation System

Software ECOFAST ES, Motor Starter ES

Overview

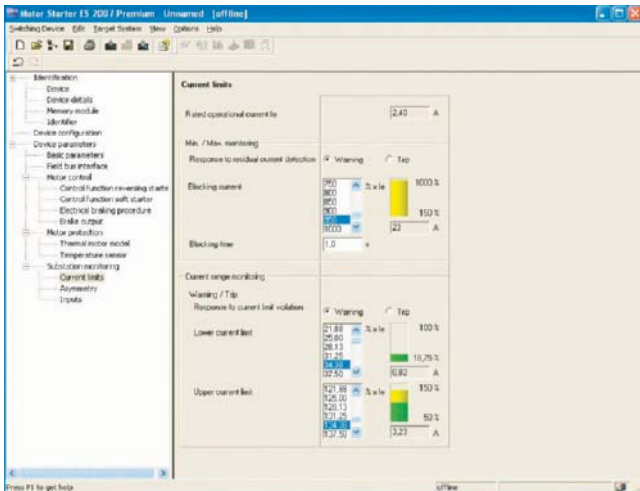
ECOFAST ES configuring tool



ECOFAST ES for configuring, calculating and documenting of applications

Detailed specifications of the ECOFAST ES configuring tool are available in Chapter 12 "Planning, Configuration and Visualizing for SIRIUS".

Motor Starter ES



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

Detailed specifications of the Motor Starter ES tool are available in Chapter 12 "Planning, Configuration and Visualizing for SIRIUS".

6

Monitoring and Control Devices

7



7/2	Introduction	
	SIMOCODE 3UF Motor Management and Control Devices	
	SIMOCODE pro 3UF7	
7/6	General data	
7/12	Basic units	
7/13	Expansion modules	
7/14	Accessories	
7/16	Software	
7/19	3UF18 current transformers for overload protection	
	LOGO! Logic Modules¹⁾	
7/20	General data	
7/21	LOGO! Modular basic versions	
7/22	LOGO! Modular pure versions	
7/23	LOGO! Modular expansion modules	
7/24	LOGO! CM EIB/KNX communication modules	
7/25	AS-Interface connections for LOGO!	
7/26	Accessories	
Ch. 11	LOGO! Power	
7/27	LOGO! Contact	
7/28	LOGO! Software	
	Timing relays	
7/29	General data	
7/35	SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm	
7/38	SIRIUS 3RP20 timing relays, 45 mm	
7/40	7PV15 timing relays in enclosure, 17.5 mm	
7/42	SIRIUS 3RT19 timing relays for mounting onto contactors	
7/44	Accessories	
	SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements	
	<u>SIRIUS 3UG Monitoring Relays for Stand-Alone Installation</u>	
7/45	Line monitoring	
7/47	Voltage monitoring	
7/48	Current monitoring	
7/49	Power factor and active current monitoring	
	Residual current monitoring	
7/50	- Residual current monitoring relays	
7/51	- Summation current transformers	
	Insulation monitoring	
7/52	- For ungrounded AC networks	
7/53	- For ungrounded DC networks	
	Level monitoring	
7/54	- Level monitoring relays	
7/55	- Level monitoring sensors	
7/56	Speed monitoring	
7/57	Accessories	
	SIRIUS 3RS10, 3RS11 Temperature Monitoring Relays	
7/58	Relays, analogically adjustable, for 1 sensor	
7/60	Relays, digitally adjustable, for 1 sensor	
7/62	Relays, digitally adjustable, for up to 3 sensors	
7/63	Accessories	
	SIRIUS 3RN1 Thermistor Motor Protection	
7/64	For PTC sensors	
	SIRIUS 3TK28 Safety Relays	
7/68	General data	
7/69	With relay enabling circuits	
7/72	With electronic enabling circuits	
7/74	With contactor relay enabling circuits	
7/76	With special functions	
7/77	Accessories	
	SIRIUS 3RK3 Modular Safety System	
7/78	General data	
7/79	3RK31 central modules	
7/79	3RK32, 3RK33 expansion modules	
7/79	3RK35 interface modules	
7/79	3RK36 operating and monitoring modules	
7/80	Accessories	
	Interface Converters	
7/81	SIRIUS 3RS17 interface converters	
	Technical Information	
	can be found at	
	www.siemens.de/industrial-controls/support	
	under Product List:	
	- Technical Specifications	
	under Entry List:	
	- Updates	
	- Downloads	
	- FAQ	
	- Manuals	
	- Characteristic curves	
	- Certificates	
	and at	
	www.siemens.com/industrial-controls/configurators	
	- Configurators	
	¹⁾ See Catalog ST 70 · 2009 "Products for Totally Integrated Automation and Micro Automation".	

Monitoring and Control Devices

Introduction

Overview

The advantages at a glance



3UF7



6ED1 052



3RP15

	Type	Page
SIMOCODE 3UF motor management and control devices		
SIMOCODE pro 3UF7	3UF7	7/6
	<ul style="list-style-type: none"> • Compact, modular design • Unique flexibility in terms of functionality and hardware configuration • Wide functional range from the distributed I/O system to the autonomous motor management system • All control functions from the direct-on-line starter to the pole-changing switch with reversing contactor • All motor sizes • Integration in all PROFIBUS-capable automation systems • Application in low-voltage controlgear for motor control centers in the process industry • Increases plant availability • Saves costs during construction, commissioning and operation of the plant • Extensive data of the motor feeder available everywhere on the PROFIBUS • All protection, monitoring and control functions for the motor feeder in a single system 	
3UF18 current transformers for overload protection	3UF18	7/19
	<ul style="list-style-type: none"> • Protection transformer for activating overload relays or for use with SIMOCODE 3UF • Ensures proportional current transfer up to a multiple of the primary rated current 	
LOGO! logic modules		
LOGO! logic modules		
	<ul style="list-style-type: none"> • Compact, user-friendly and low-cost solution for simple control tasks • Universal: <ul style="list-style-type: none"> - Building installation and wiring (lighting, shutters, awnings, doors, access control, barriers, ventilation systems ...) - Control cabinet installation - Machine and device construction (pumps, small presses, compressors, hydraulic lifts, conveyors ...) - Special controls for conservatories and greenhouses - Signal preprocessing for other controllers • Flexible expansion depending on the application 	
LOGO! Modular basic versions	6ED1 052-1	7/21
	<ul style="list-style-type: none"> • With display, pushbuttons and an interface for connecting expansion units 	
LOGO! Modular pure versions	6ED1 052-2	7/22
	<ul style="list-style-type: none"> • Without display and pushbuttons but with an interface for connecting expansion units 	
LOGO! Modular expansion modules	6ED1 055-1	7/23
	<ul style="list-style-type: none"> • For connection to LOGO! Modular basic versions with digital inputs and outputs or analog inputs and outputs 	
LOGO! Modular communication modules	6BK1 700, 3RK1 400	7/24, 7/25
	<ul style="list-style-type: none"> • For integrating LOGO! in an <i>instabus</i> KNX EIB system or as an AS-Interface slave 	
LOGO! Power	6EP1 3	Ch. 11
	<ul style="list-style-type: none"> • Power supply for converting the mains voltage of 100 ... 240 V AC into an operational voltage of 24 V DC or 12 V DC 	
LOGO! Contact	6ED1 057-4	7/27
	<ul style="list-style-type: none"> • Switching module for switching resistive loads and motors directly 	
LOGO! Software	6ED1 058	7/28
	<ul style="list-style-type: none"> • For switching program generation on the PC 	
Timing relays		
SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm	3RP15	7/35
	<ul style="list-style-type: none"> • Low-cost solution with monofunctions such as response delay, off-delay, clock-pulse, wye-delta function and multifunction • Wide voltage range versions 	
SIRIUS 3RP20 timing relays, 45 mm	3RP20	7/38
	<ul style="list-style-type: none"> • The solution for small mounting depths • The low mounting height reduces the tier spacing 	
7PV15 timing relays in enclosure, 17.5 mm	7PV15	7/40
	<ul style="list-style-type: none"> • The solution for industry and infrastructure • Ideal modules for heating, ventilation and air conditioning systems • Wide voltage range 12 ... 240 V AC/DC and multifunction for flexible applications 	
SIRIUS 3RT19 timing relays for mounting onto contactors	3RT1916, 3RT19 26	7/42
	<ul style="list-style-type: none"> • Saves space because the relay is mounted onto the contactor • Wiring advantages thanks to direct contacting to the contactor 	

The advantages at a glance



3UG45 11



3UG46 16



3UG46 33

	Type	Page
SIRIUS 3UG monitoring relays for electrical and additional measurements		
<i>Line monitoring</i>		
Phase sequence	• Low-cost solution for monitoring the phase sequence	3UG45 11 7/45
Phase sequence, phase failure, phase unbalance	• Wide voltage range from 160 ... 690 V	3UG45 12 7/45
Phase sequence, phase failure, phase unbalance and undervoltage	• Analogically adjustable	3UG45 13 7/45
	• Wide voltage range from 160 ... 690 V	
	• Digitally adjustable with LCD for indication of ACTUAL value and device status	3UG46 14 7/45
	• Wide voltage range from 160 ... 690 V	
Phase sequence, phase failure, phase unbalance over limit values, overvoltage and undervoltage	• Digitally adjustable with LCD for indication of ACTUAL value and device status	3UG46 15 7/45
	• Wide voltage range from 160 ... 690 V	
Phase sequence, phase and N conductor failure, phase unbalance over limit values, overvoltage and undervoltage		3UG46 16 7/45
Automatic correction of the direction of rotation in case of wrong phase sequence, phase failure, phase unbalance, overvoltage and undervoltage		3UG46 17 7/45
Automatic correction of the direction of rotation in case of wrong phase sequence, phase and N conductor failure, phase unbalance, overvoltage and undervoltage		3UG46 18 7/45
<i>Voltage monitoring</i>		
Voltage monitoring with internal power supply for overvoltage and undervoltage	• Digitally adjustable with LCD for indication of ACTUAL value and device status	3UG46 33 7/47
Voltage monitoring with auxiliary voltage for overvoltage and undervoltage	• Wide measuring ranges	3UG46 31, 3UG46 32 7/47
	• Version for wide voltage range	
<i>Current monitoring</i>		
Current monitoring with auxiliary voltage for overshoot and undershoot	• Digitally adjustable with LCD for indication of ACTUAL value and device status	3UG46 21, 3UG46 22 7/48
	• Wide measuring ranges	
	• Version for wide voltage range	
<i>Power factor and active current monitoring (motor load monitoring)</i>		
Power factor and active current monitoring with internal power supply for overshoot, undershoot or range monitoring	• For load monitoring over the entire torque range	3UG46 41 7/49
	• Digitally adjustable with LCD for indication of ACTUAL value and device status	
	• Wide voltage range from 90 ... 690 V	
<i>Residual current monitoring</i>		
Residual current monitoring relays	• Digitally adjustable with LCD for indication of ACTUAL value and device status	3UG46 24 7/50
	• Adjustable threshold values for warning and disconnection	
	• For plant monitoring	
	• Wide voltage range from 90 ... 690 V	
Summation current transformers	• For detection of fault currents in machines and plants	3UL22 7/51
<i>Insulation monitoring</i>		
Monitoring of the insulation resistance for ungrounded AC or DC networks from 1 to 110 kΩ	• Test button	3UG30 81, 3UG30 82 7/52, 7/53
	• With or without memory	
	• Switchable measuring range	
<i>Level monitoring</i>		
Fill level and resistance	• As single-step or two-step controls for inlet or outlet monitoring of conducting liquids or as resistance threshold switch	3UG45 01 7/54
	• Adjustable, wide range from 2 ... 200 kΩ	
	• UNDER/OVER adjustable	
Level monitoring sensors	• Wire, rod or bow electrodes	3UG32 7/55
<i>Speed monitoring</i>		
Speed monitoring for overshoot, undershoot or range monitoring	• Digitally adjustable with LCD for indication of ACTUAL value and device status	3UG46 51 7/56
	• Wide measuring ranges	
	• Version for wide voltage range	
	• Together with a sensor for monitoring continuous pulses	
	• With or without memory	
	• Adjustable delay times	

Monitoring and Control Devices

Introduction

The advantages at a glance



3RS10



3RN1



3TK28

	Type	Page
SIRIUS 3RS10, 3RS11 temperature monitoring relays		
<i>For monitoring the temperatures of solids, liquids, and gases</i>		
Relays, analog adjustable, for 1 sensor	<ul style="list-style-type: none"> Separate versions for overshoot and undershoot For simple monitoring tasks For PT100 or thermoelements J and K Variable hysteresis 	3RS10, 3RS11 7/58
Relays, digitally adjustable, for 1 sensor	<ul style="list-style-type: none"> For two- or three-point controls For monitoring heat generation plants For PT100/1000, KTY83/84, NTC or thermoelements type J, K, T, E, N, R, S, B 	3RS10, 3RS11, 3RS20, 3RS21 7/60
Relays, digitally adjustable for up to 3 sensors	<ul style="list-style-type: none"> For simultaneously monitoring several sensors Especially suited for monitoring motor winding temperatures For PT100/1000, KTY83/84, NTC 	3RS10 7/62
SIRIUS 3RN1 thermistor motor protection		
For PTC sensors	<ul style="list-style-type: none"> Relays for monitoring motor winding temperatures with type A PTC sensors Integrated with ATEX approval Closed-circuit principle Depending on the version: with short-circuit and open-circuit detection, protection against voltage failure, manual/auto/remote RESET, 1 CO, 1 NO + 1 NC, 2 CO, 1 NO + 1 CO or 2 CO hard gold-plating 	3RN1 7/64
SIRIUS 3TK28 safety relays		
With relay enabling circuits	<ul style="list-style-type: none"> Compact design Floating safe outputs Also suitable for press and punch controls Can be used up to an ambient temperature of max. 70 °C 	3TK28 2, 3TK28 3 7/69
With electronic enabling circuits	<ul style="list-style-type: none"> Permanent function checking No wear because switched electronically High switching frequency Long electrical endurance Evaluation of solid-state sensors Sensor lead up to max. 2000 m Cascading possible Insensitive to vibrations and dirt Compact design, low weight Approved for the world market 	3TK28 4 7/72
With contactor relay enabling circuits	<ul style="list-style-type: none"> Enabling circuits, floating AC-15/DC-13 switching capacity Protective separation Long mechanical and electrical endurance Certified as a complete unit Fault minimization and cost reduction through factory wiring Low installation costs 	3TK28 5 7/74
With special functions	<ul style="list-style-type: none"> Floating safe outputs Signaling outputs for status and diagnostic signals Safe standstill monitoring 	3TK28 1 7/76

The advantages at a glance



3RK3



3RS17

SIRIUS 3RK3 modular safety system**Freely configurable, modular safety relays**

- More functionality and flexibility through freely configurable safety logic
- For all safety applications thanks to compliance with the highest safety requirements (Category 4 according to EN 954-1, Performance Level e according to ISO 13849-1 or SIL3 according to IEC 62061)
- Can be used globally
- Modular hardware configuration
- Parameterization by means of software instead of wiring
- Removable terminals for greater plant availability

Type	Page
3RK3	7/78
3RS17	7/81

SIRIUS 3RS17 interface converters**Converters for standard signals and non-standard variables**

- All terminals protected against polarity reversing and over-voltage up to 30 V
- For electrical separation and conversion of analog signals
- Short-circuit proof outputs
- From 6.2 mm width
- Switchable multi-range converters
- Versions with manual/automatic switch for setpoint selection
- Versions for conversion of analog variables into frequency

Options

On the following pages you will find selection tables for monitoring and control devices.

 Screw terminals

 Spring-type terminals

The terminals are indicated in the selection and ordering data by orange backgrounds.

"Increased safety" type of protection EEx e/d according to ATEX directive 94/9/EC

The communication-capable, modularly designed SIMOCODE pro motor management system (SIRIUS Motor Management and Control Devices) protects motors of types of protection EEx e and EEx d in potentially explosive areas.

ATEX approval for operation in areas subject to explosion hazard

The SIRIUS 3RN1 thermistor motor protection relay for PTC sensors is certified according to ATEX Ex II (2) G and GD for gases and dust.

The SIRIUS SIMOCODE pro 3UF7 motor management system is certified for the protection of motors in areas subject to explosion hazard according to

- ATEX Ex I (M2); equipment group I, category M2 (mining)
- ATEX Ex II (2) GD; equipment group II, category 2 in area GD

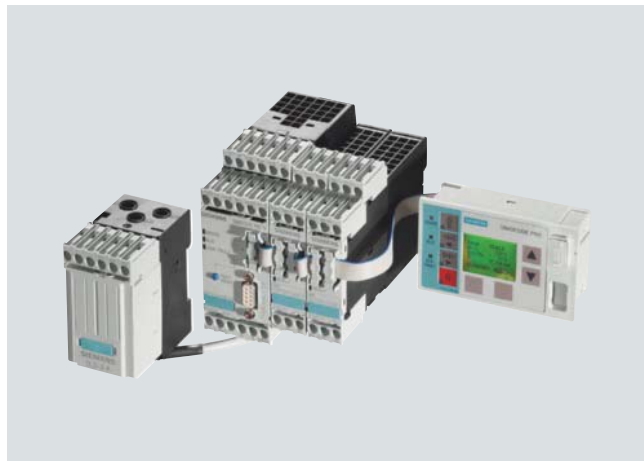
See Chapter 20 "Appendix" -> "Standards and approvals"-> "Type overview of approved devices for potentially explosive areas (ATEX explosion protection)".

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

General data

Overview



SIMOCODE pro V with current/voltage measuring module, expansion modules and operator panel with display

SIMOCODE pro is a flexible, modular motor management system for motors with constant speeds in the low-voltage performance range. It optimizes the connection between I&C and motor feeder, increases plant availability and allows significant savings to be made for startup, operation and maintenance of a system.

When SIMOCODE pro is installed in the low-voltage switchboard, it is the intelligent interface between the higher-level automation system and the motor feeder and includes the following:

- Multifunctional, solid-state full motor protection which is independent of the automation system
- Integrated control functions instead of hardware for the motor control
- Detailed operating, service and diagnostics data
- Open communication through PROFIBUS DP, the standard for fieldbus systems

SIMOCODE ES is the software package for SIMOCODE pro parameterization, start-up and diagnostics.

Two series

SIMOCODE pro is subdivided into two device series with different functional scopes:

- SIMOCODE pro C, as a compact system for direct-on-line starters and reversing starters or actuation of a motor starter protector or circuit breaker
- SIMOCODE pro V, as a variable system with all control functions and with the possibility of expanding the inputs, outputs and functions of the system at will using expansion modules.

Expansion possibilities	SIMOCODE pro C, Basic Unit 1	SIMOCODE pro V, Basic Unit 2 ¹⁾
Operator panels	✓	✓
Operator panels with display	--	✓
Current measuring modules	✓	✓
Current/voltage measuring modules	--	✓
Decoupling modules	--	✓
Expansion modules:		
• Digital modules (max. 2)	--	✓
• Analog module (max. 1)	--	✓
• Ground-fault module (max. 1)	--	✓
• Temperature module (max. 1)	--	✓

✓ Available -- Not available

¹⁾ Note: When an operator panel with display and/or a decoupling module is used, restrictions on the number of expansion modules connectable per basic unit must be observed, see page 7/9.

Per feeder each system always comprises one basic unit and one separate current measuring module. The two modules are connected together electrically through the system interface with a connection cable and can be mounted mechanically connected as a unit (one behind the other) or separately (side by side). The motor current to be monitored is decisive only for the choice of the current measuring module.

An operator panel for mounting in the control cabinet door is optionally connectable through a second system interface on the basic unit. Both the current measuring module and the operator panel are electrically supplied by the basic unit through the connection cable. More inputs, outputs and functions can be added to Basic Unit 2 (SIMOCODE pro V) by means of optional expansion modules, thus supplementing the inputs and outputs already existing on the basic unit.

All modules are connected by connection cables. The connection cables are available in various lengths. The maximum distance between the modules (e. g. between the basic unit and the current measuring module) must not exceed 2.5 m. The total length of all the connection cables in a single system must not be more than 3 m.

Benefits

General customer benefits

- Integrating the whole motor feeder into the process control by means of a bus significantly reduces the wiring outlay between the motor feeder and PLC
- Decentralization of the automated processes by means of configurable control and monitoring functions in the feeder saves resources in the automation system and ensures full functionality and protection of the feeder even if the I&C or bus system fails
- The acquisition and monitoring of operational, service and diagnostics data in the feeder and process control system increases plant availability as well as maintenance and service-friendliness
- The high degree of modularity allows users to perfectly implement their plant-specific requirements for each motor feeder
- The SIMOCODE pro system offers functionally graded and space-saving solutions for each customer application
- The replacement of the control circuit hardware with integrated control functions decreases the number of hardware components and wiring required and in this way limits stock keeping costs and potential wiring errors
- The use of solid-state full motor protection permits better utilization of the motors and ensures long-term stability of the tripping characteristic and reliable tripping even after years of service

Multifunctional, solid-state full motor protection for rated motor currents up to 820 A

SIMOCODE pro offers comprehensive protection of the motor feeder by means of a combination of different, multi-step and delayable protection and monitoring functions:

- Inverse-time delayed solid-state overload protection (Class 5 ... 40)
- Thermistor motor protection
- Phase failure/unbalance protection
- Stall protection
- Monitoring of adjustable limit values for the motor current
- Voltage and power monitoring
- Monitoring of the power factor (motor idling/load shedding)
- Ground-fault monitoring
- Temperature monitoring, e. g. over PT100/PT1000
- Monitoring of operating hours, downtime and number of starts etc.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

General data

Recording of measuring curves

SIMOCODE pro can record measuring curves and therefore is able, for example, to present the progression of motor current during motor start-up.

Flexible motor control implemented with integrated control functions (instead of comprehensive hardware interlocks)

Many predefined motor control functions have already been integrated into SIMOCODE pro, including all necessary logic operations and interlocks:

- Overload relays
- Direct-on-line and reversing starters
- Wye/delta starters (also with direction reversal)
- Two speeds, motors with separate windings (pole-changing switch); also with direction reversal
- Two speeds, motors with separate Dahlander windings (also with direction reversal)
- Positioner actuation
- Solenoid valve actuation
- Actuation of a circuit breaker
- Soft starter actuation, also with direction reversal.

These control functions are predefined in SIMOCODE pro and can be freely assigned to the inputs and outputs of the device (including PROFIBUS DP).

These predefined control functions can also be flexibly adapted to each customized configuration of a motor feeder by means of freely configurable logic modules (truth tables, counters, timers, edge evaluation ...) and with the help of standard functions (power failure monitoring, emergency start, external faults ...), without additional auxiliary relays being necessary in the control circuit.

SIMOCODE pro makes a lot of additional hardware and wiring in the control circuit unnecessary which results in a high level of standardization of the motor feeder in terms of its design and circuit diagrams.

Detailed operational, service and diagnostics data

SIMOCODE pro makes different operational, service and diagnostics data available and helps to detect potential faults in time and to prevent them by means of preventative measures. In the event of a malfunction, a fault can be diagnosed, localized and rectified very quickly - there are no or very short downtimes.

Operating data

- Motor switching state derived from the current flow in the main circuit
- All phase currents
- All phase voltages and phase-to-phase voltages
- Active power, apparent power and power factor
- Phase unbalance and phase sequence
- Time to trip
- Motor temperature
- Remaining cooling time etc.

Service data

- Motor operating hours
- Motor stop times
- Number of motor starts
- Number of overload trips
- Consumed power
- Internal comments stored in the device etc.

Diagnostics data

- Numerous detailed early warning and fault messages
- Internal device fault logging with time stamp
- Time stamping of freely selectable status, alarm or fault messages etc.

Easy operation and diagnostics

Operator panels

The operator panel is used to control the motor feeder and can replace all conventional pushbuttons and indicator lights to save

space. This means that SIMOCODE pro or the feeder can be operated directly at the control cabinet. The operator panel also has all the status LEDs found on the basic unit and connects the system interface externally for easier parameterization or diagnostics using a PC or programming device, for example.

Operator panels with display

As an alternative to the 3UF7 20 standard operator panel for SIMOCODE pro V there is also an operator panel with display: the 3UF7 21 is thus able in addition to indicate current measured values, operational and diagnostics data or status information of the motor feeder at the control cabinet. The pushbuttons of the operator panel can be used to control the motor while at the same time the display indicates current measured values, status information, fault messages or the device-internal fault protocol. Using the display settings each user can select for himself how the measured values are presented as standard and how the displayed unit is converted (e. g. °C -> °F).

Communication

SIMOCODE pro is equipped with an integral PROFIBUS DP interface (SUB-D or terminal connection) and can therefore replace all individual wiring (including marshalling racks), which would usually be required for exchanging data with the higher-level automation system, with a single 2-wire cable.

SIMOCODE pro supports among other things:

- Baud rates up to 12 Mbit/s
- Automatic baud rate detection
- Communication with up to 3 masters
- Time synchronization over PROFIBUS (SIMATIC S7)
- Time stamp with high timing precision (SIMATIC S7)
- Cyclic services (DPV0) and acyclic services (DPV1)
- DPV1 communication after the Y-Link etc.

For SIMOCODE pro motor management and control devices with communication function see page 7/12 onwards.

For accessories, see page 7/14 onwards.

For more information see also Chapter 12 "Planning, Configuration and Visualizing for SIRIUS".

For accessories for PROFIBUS DP see Catalog IK PI "Industrial Communication".

Autonomous operation

An essential feature of SIMOCODE pro is independent execution of all protection and control functions even if communication with the I&C system breaks down. If the bus or automation system fails, the full functionality of the feeder is ensured or a predefined response can be initiated, e. g. the feeder can be shut down in a controlled manner or certain configured control mechanisms can be performed (e. g. the direction of rotation can be reversed).

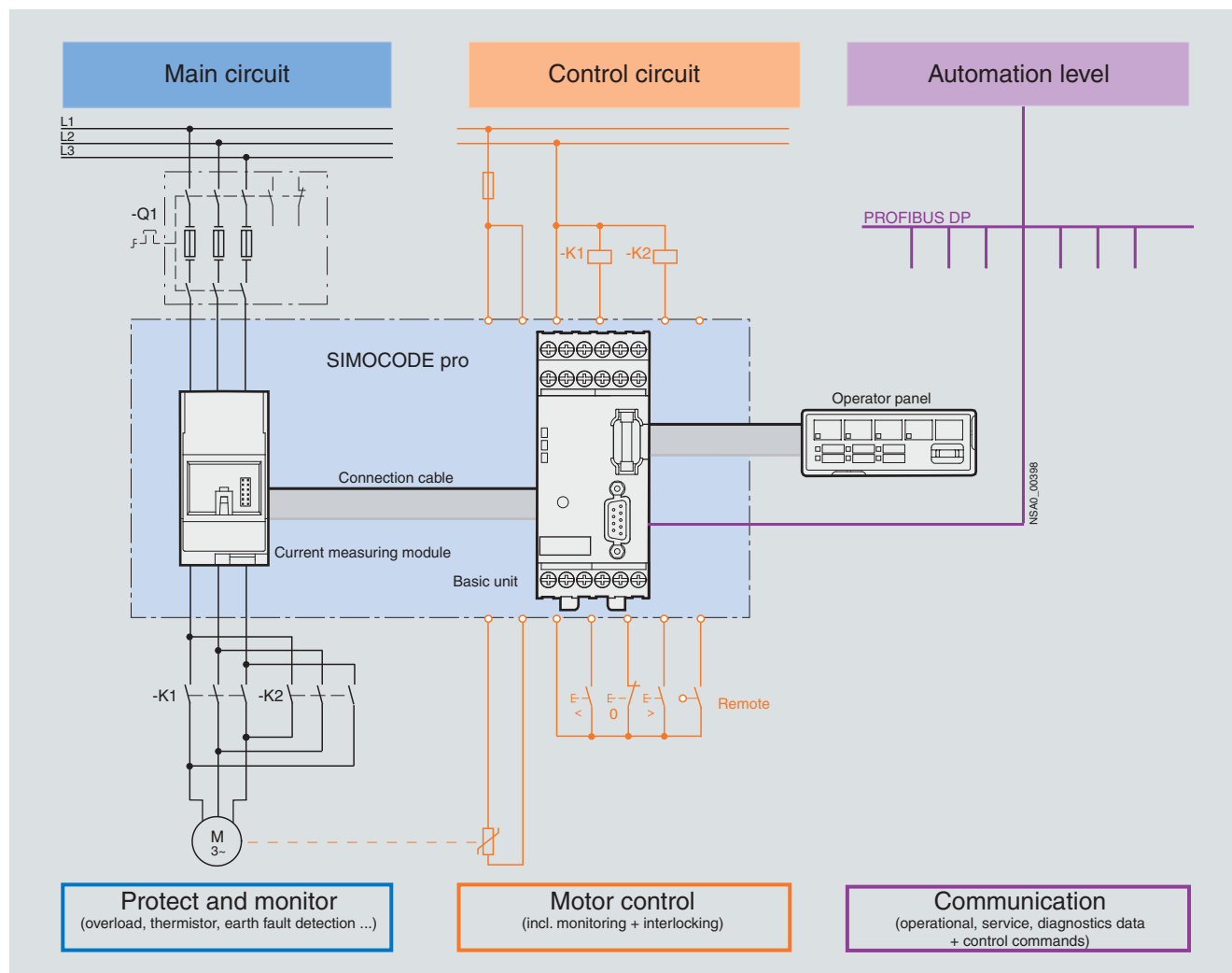
SIMOCODE pro designed for mixed operation

Depending on functional requirements, the two systems can be used simultaneously without any problems and without any additional outlay in a low-voltage system. SIMOCODE pro C is fully upward-compatible to SIMOCODE pro V. The same components are used. The parameterization of SIMOCODE pro C can be transferred without any problems. Both systems have the same removable terminals and the same terminal designations.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

General data



SIMOCODE pro combines all the necessary functions for the motor feeder in a compact system.

Application

SIMOCODE pro is often used for automated processes where plant downtimes are very expensive (e. g. steel or cement industry) and where it is important to prevent plant downtimes through detailed operational, service and diagnostics data or to localize the fault very quickly in the event of a fault.

SIMOCODE pro is modular and space-saving and suited especially for operation in motor control centers in the process industry and for power plant technology.

Applications

Protection and control of motors

- In hazardous areas for types of protection EEx e/d according to ATEX directive 94/9/EC [see Chapter 20 "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for explosion-protected areas \(ATEX Explosion Protection\)".](#)
- With heavy starting (paper, cement, metal and water industries)
- In high-availability plants (chemical, oil, raw material processing industry, power plants)

Industries

Today, SIMOCODE pro is mainly used in the chemical (incl. oil and gas), steel, water, paper, pharmaceutical, cement, and glass industry. It is also used for applications in power plants and large diamond, gold and platinum mines. Based on the experience made with the predecessor system SIMOCODE-DP, SIMOCODE pro has been tailored even more specifically to the requirements of these industries.

An essential requirement in these industries is the availability of the motors and thus the availability of the whole process. Plant downtimes caused by faults frequently result in high costs. For this reason, it is very important to detect potential faults early on and to initiate targeted countermeasures. SIMOCODE pro offers users an up-to-date motor management system based on years of experience.

More information

Configuration instructions when using an operator panel with display and/or a decoupling module

If you want to use an operator panel with display and/or a decoupling module in the SIMOCODE pro V system, then the following configuration instructions concerning the type and number of connectable expansion modules must be observed.

The following tables show the maximum possible configuration of the expansion modules for the various combinations.

Use of an operator panel with display

Digital modules	Digital modules	Analog modules	Temperature modules	Ground-fault modules
Only operator panel with display for Basic Unit 2 (24 V DC or 110 ... 240 V AC/DC)				
Max. 4 expansion modules can be used				
Operator panel with display and current/voltage measurement with Basic Unit 2 (110 ... 240 V AC/DC)				
Max. 3 expansion modules can be used or:				
--	--	✓	✓	--

Use of a decoupling module

(voltage measurement in insulated networks)

Digital modules	Digital modules	Analog modules	Temperature modules	Ground-fault modules
Basic Unit 2 (24 V DC)				
✓ ¹⁾	✓ ¹⁾	✓	✓	✓
Basic Unit 2 (110 ... 240 V AC/DC)				
✓	✓	--	✓	✓
✓ ¹⁾	✓ ¹⁾	✓	✓	--
✓	--	✓	✓	--
✓	--	✓	--	✓

Use of a decoupling module

(voltage measurement in insulated networks)
in combination with an operator panel with display

Digital modules	Digital modules	Analog modules	Temperature modules	Ground-fault modules
Basic Unit 2 (24 V DC)				
✓	--	✓	✓	✓
✓	✓	--	✓	✓
Basic Unit 2 (110 ... 240 V AC/DC)				
✓ ²⁾	--	✓	✓	✓
✓	✓	--	--	--
✓ ¹⁾	✓ ¹⁾	✓ ³⁾	--	--
✓	--	--	✓	✓

✓ Available

-- Not available

¹⁾ No bistable relay outputs and no more than 5 of 7 relay outputs active simultaneously (> 3 s).

²⁾ No bistable relay outputs and no more than 3 of 5 relay outputs active simultaneously (> 3 s).

³⁾ Analog module output is not used.

Protective separation

All circuits in SIMOCODE pro are safely separated from each other according to IEC 60947-1, Annex N. That is, they are designed with double creepages and clearances. In the event of a fault, therefore, no parasitic voltages can be formed in neighboring circuits. The instructions of Test Report No. 2668 must be complied with.

EEx e and EEx d types of protection

The overload protection and the thermistor motor protection of the SIMOCODE pro system comply with the requirements for overload protection of explosion-protected motors to the type of protection:

- EEx d "flameproof enclosure" e. g. according to EN 50018 or EN 60079-1
- EEx e "increased safety" e. g. according to EN 50019 or EN 60079-7.

When using SIMOCODE pro devices with a 24 V DC control voltage, electrical separation must be ensured using a battery or a safety transformer according to EN 61558-2-6.

EC type test certificate: BVS 06 ATEX F 001

Test log: BVS PP 05.2029 EG.

Selection data for type-tested assemblies/load feeders

Configuration tables according to type of coordination 1 or 2 can be found in the manual "SIRIUS Configuration", Order No.: E86060-T1815-A101-A3 or in the SIMOCODE pro System Manual.

System manual

The SIMOCODE pro system manual describes the motor management system and its functions in detail. It contains information about configuration and commissioning as well as for servicing and maintenance. A typical example of a reversing starter application is used to teach the user quickly and practically how to use the system. In addition to help on how to identify and rectify faults in the event of a malfunction, the manual also contains special information for servicing and maintenance. For selection of equipment and for configuration, it is recommended that the 3UF7 970-0AA0-0 system manual is consulted.

Internet

You can find further information on the Internet at:

www.siemens.com/simocode

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

General data

Technical specifications

General technical specifications		
Permissible ambient temperature		
• During operation	°C	-25 ... +60 ; 3UF7 21: 0 ... +60
• Storage and transport	°C	-40 ... +80 ; 3UF7 21: -20 ... +70
Degree of protection (acc. to IEC 60529)		
• Measuring modules with busbar connection		IP00
• Operator panel (front) and door adapter (front) with cover		IP54
• Other components		IP20
Shock resistance (sine pulse)	g/ms	15/11
Mounting position		Any
Frequency	Hz	50/60 ±5 %
Immunity to electromagnetic interference (acc. to IEC 60947-1)		Corresponds to degree of severity 3
• Line-induced interference, burst acc. to IEC 61000-4-4	kV	2 (power ports)
	kV	1 (signal ports)
	V	10
• Line-induced interference, high frequency acc. to IEC 61000-4-6		
• Line-induced interference, surge acc. to IEC 61000-4-5	kV	2 (line to earth)
	kV	1 (line to line)
• Electrostatic discharge, ESD acc. to IEC 61000-4-2	kV	8 (air discharge)
	kV	6 (contact discharge); 3UF7 21: 4 (contact discharge)
• Field-related interference acc. to IEC 61000-4-3	V/m	10
Immunity to electromagnetic interference (acc. to IEC 60947-1)		
• Line-conducted and radiated interference emission		EN 55011/ EN 55022 (CISPR 11/CISPR 22) (corresponds to degree of severity A)
Protective separation (acc. to IEC 60947-1, Annex N)		All circuits in SIMOCODE pro are safely separated from each other acc. to IEC 60947-1, they are designed with doubled creepage paths and clearances. In this context, compliance with the instructions in the test report "Protective separation" No. 2668 is required.

Basic units

Control circuit

Rated control supply voltage U_s (acc. to EN 61131-2)		110 ... 240 V AC/DC; 50/60 Hz	24 V DC
Operating range		0.85 ... 1.1 x U_s	0.80 ... 1.2 x U_s
Power consumption			
• Basic Unit 1 (3UF7 000)		7 VA/5 W	5 W
• Basic Unit 2 (3UF7 010)		10 VA/7 W	7 W
incl. two expansion modules connected to Basic Unit 2			
Rated insulation voltage U_i	V	300 (at pollution degree 3)	
Rated impulse withstand voltage U_{imp}	kV	4	
Relay outputs			
• Number		3 monostable relay outputs	
• Specified short-circuit protection for auxiliary contacts (relay outputs)		<ul style="list-style-type: none"> Fuse links, gL/gA operational class 6 A, quick-acting 10 A (IEC 60947-5-1) Miniature circuit breaker 1.6 A, C characteristic (IEC 60947-5-1) Miniature circuit breaker 6 A, C characteristic ($I_k < 500$ A) 	
• Rated uninterrupted current	A	6	
• Rated switching capacity		AC-15 6 A/24 V AC 6 A/120 V AC 3 A/230 V AC DC-13 2 A/24 V DC 0.55 A/60 V DC 0.25 A/125 V DC	
Inputs (binary)		4 inputs supplied internally by the device electronics with 24 V DC and connected to a common potential	
Thermistor motor protection (binary PTC)			
• Summation cold resistance	kΩ	≤ 1.5	
• Response value	kΩ	3.4 ... 3.8	
• Return value	kΩ	1.5 ... 1.65	

Current measuring modules or current/voltage measuring modules

Main circuit

		3UF7 1.0	3UF7 1.1	3UF7 1.2
Current setting I_e	A	0.3 ... 3	2.4 ... 25	10 ... 100
Rated insulation voltage U_i	V	690; 3UF7 103 and 3UF7 104: 1000 (at pollution degree 3)		
Rated operational voltage U_e	V	690		
Rated impulse withstand voltage U_{imp}	kV	6; 3UF7 103 and 3UF7 104: 8		
Rated frequency	Hz	50/60		
Type of current		Three-phase current		
Short-circuit		Additional short-circuit protection is required in main circuit		
Accuracy of current measurement (in the range 1 x minimum current setting I_u to 8 x max. current setting I_o)	%	±3		
Typical voltage measuring ranges				
• Phase-to-phase voltage/line-to-line voltage (e. g. $U_{L1 L2}$)	V	110 ... 690 (only the phase voltages are available in SIMOCODE pro as measured values)		
• Phase voltage (e. g. U_{L1})	V	65 ... 400		
Accuracy				
• Of voltage measurement (phase voltage U_L in the range 230 ... 400 V)	%	±3 (typical)		
• Of power factor measurement (in the rated load range power factor = 0.4 ... 0.8)	%	±5 (typical)		
• Of apparent power measurement (in the rated load range)	%	±5 (typical)		

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

General data

Current measuring modules or current/voltage measuring modules (continued)

Notes on voltage measurement

- In insulated, high-resistance or asymmetrically grounded forms of power supply system and for single-phase systems
- Feeder lines for voltage measurement

In these networks the current/voltage measuring module can be used only with an upstream decoupling module on the system interface.
In the feeder lines from the main circuit for voltage measurement of SIMOCODE pro it may be necessary to provide additional line protection!

Digital modules

Control circuit

Rated insulation voltage U_i V 300 (at pollution degree 3)

Rated impulse withstand voltage U_{imp} kV 4

Relay outputs

- Number
- Specified short-circuit protection for auxiliary contacts (relay outputs)

2 monostable or bistable relay outputs (depending on the version)
 • Fuse links, gL/gG operational class 6 A, quick-acting 10 A (IEC 60947-5-1)
 • Miniature circuit breaker 1.6 A, C characteristic (IEC 60947-5-1)
 • Miniature circuit breaker 6 A, C characteristic ($I_k < 500$ A)

- Rated uninterrupted current
- Rated switching capacity

A

AC-15	6 A/24 V AC	6 A/120 V AC	3 A/230 V AC
DC-13	2 A/24 V DC	0.55 A/60 V DC	0.25 A/125 V DC

Inputs (binary)

4 externally supplied floating inputs, 24 V DC or 110 ... 240 V AC/DC depending on the version; inputs jointly connected to common potential

Ground-fault modules

Control circuit

Connectable 3UL22 summation current transformer with rated fault currents I_N A 0.3/0.5/1

- $I_{Ground\ fault} \leq 50\% I_N$
- $I_{Ground\ fault} \geq 100\% I_N$

No tripping
Tripping

Response delay (conversion time) ms 300 ... 500, additionally delayable

Temperature modules

Sensor circuit

Typical sensor circuits

- PT100
- PT1000/KTY83/KTY84/NTC

mA

1 (typical)
0.2 (typical)

Open-circuit/short-circuit detection

- For sensor type
- Open circuit
- Short-circuit
- Measuring range

°C

	PT100/PT1000	KTY83-110	KTY84
✓	✓	✓	✓
✓	✓	✓	✓
Measuring range	-50 ... +500	-50 ... +175	-40 ... +300

Measuring accuracy at 20 °C ambient temperature (T20) K $< \pm 2$

Deviation due to ambient temperature (in % of measuring range) % 0.05 per K deviation from T20

Conversion time ms 500

Connection type Two- or three-wire connection

Analog modules

Control circuit

Inputs

- Channels
- Parameterizable measuring ranges
- Shielding
- Max. input current (destruction limit)
- Accuracy
- Input resistance
- Conversion time
- Resolution
- Open-circuit detection

mA

2 (passive)
0/4...20
Up to 30 m shield recommended, from 30 m shield required
40
±1
50
150
12
With measuring range 4 ... 20 mA

Output

- Channels
- Parameterizable output range
- Shielding
- Max. voltage at output
- Accuracy
- Max. output load
- Conversion time
- Resolution
- Short-circuit proof

mA

1
0/4...20
Up to 30 m shield recommended, from 30 m shield required
30 V DC
±1
500
25
12
Yes

Connection type Two-wire connection

Electrical separation of inputs/output to the device electronics No

✓ Detection possible








7

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

Basic units

Selection and ordering data

Version	Current setting	Width	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	A	mm		Order No.	Price per PU				kg	
SIMOCODE pro										
	SIMOCODE pro C, Basic Unit 1									
	PROFIBUS DP interface, 12 Mbit/s, RS 485 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs, rated control supply voltage U_S :									
	• 24 V DC		A	3UF7 000-1AB00-0		1	1 unit	131	0.350	
	• 110 ... 240 V AC/DC		A	3UF7 000-1AU00-0		1	1 unit	131	0.350	
3UF7 000-1A.00-0										
	SIMOCODE pro V, Basic Unit 2									
	PROFIBUS DP interface, 12 Mbit/s, RS 485 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules rated control supply voltage U_S :									
	• 24 V DC		A	3UF7 010-1AB00-0		1	1 unit	131	0.350	
	• 110 ... 240 V AC/DC		A	3UF7 010-1AU00-0		1	1 unit	131	0.350	
3UF7 010-1A.00-0										
	Current measuring modules									
	Straight-through trans-formers	0.3 ... 3	45	A	3UF7 100-1AA00-0		1	1 unit	131	0.100
		2.4 ... 25	45	A	3UF7 101-1AA00-0		1	1 unit	131	0.150
		10 ... 100	55	A	3UF7 102-1AA00-0		1	1 unit	131	0.350
		20 ... 200	120	A	3UF7 103-1AA00-0		1	1 unit	131	0.600
	Busbar connections	20 ... 200	120	A	3UF7 103-1BA00-0		1	1 unit	131	1.000
63 ... 630		145	A	3UF7 104-1BA00-0		1	1 unit	131	1.750	
3UF7 100-1AA00-0										
	Current/voltage measuring modules									
	For SIMOCODE pro V									
	Voltage measuring up to 690 V if required in connection with a decoupling module									
	Straight-through trans-formers	0.3 ... 3	45	A	3UF7 110-1AA00-0		1	1 unit	131	0.150
		2.4 ... 25	45	A	3UF7 111-1AA00-0		1	1 unit	131	0.200
		10 ... 100	55	A	3UF7 112-1AA00-0		1	1 unit	131	0.400
20 ... 200		120	A	3UF7 113-1AA00-0		1	1 unit	131	0.700	
Busbar connections	20 ... 200	120	A	3UF7 113-1BA00-0		1	1 unit	131	1.000	
	63 ... 630	145	A	3UF7 114-1BA00-0		1	1 unit	131	1.750	
3UF7 110-1AA00-0										
	Decoupling modules									
	For connecting upstream from a current/voltage measuring module on the system interface when using voltage detection in insulated, high-resistance or asymmetrically grounded systems and in single-phase systems			A	3UF7 150-1AA00-0		1	1 unit	131	0.150
3UF7 150-1AA00-0										
	Operator panels									
	Installation in control cabinet door or front plate, for plugging into basic unit, 10 LEDs for status indication and user-assignable buttons for controlling the motor			A	3UF7 200-1AA00-0		1	1 unit	131	0.100
3UF7 200-1AA00-0										
	Operator panels with display for SIMOCODE pro V¹⁾									
	Installation in control cabinet door or front plate, for plugging into Basic Unit 2, 7 LEDs for status indication and user-assignable buttons for controlling the motor, multilingual display, e. g. for indication of measured values, status information or fault messages			▶	3UF7 210-1AA00-0		1	1 unit	131	0.150
3UF7 210-1AA00-0										

¹⁾ Only possible with Basic Unit 2, product version E03 and higher (from 12/2006).

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

Expansion modules

Selection and ordering data

Version	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
		Order No.	Price per PU				

Expansion modules for SIMOCODE pro V

With SIMOCODE pro V, it is possible to expand the type and number of inputs and outputs in steps. Each expansion module has two system interfaces on the front. Through the one system interface the expansion module is connected to the system interface of the SIMOCODE pro V using a connection cable; through the second system interface, further expansion modules or the operator panel can be connected. The power supply for the expansion modules is provided by the connection cable through Basic Unit 2.

Important: Please order connection cable separately, see page 7/14!



3UF7 300-1AU00-0

Digital modules

Up to two digital modules can be used to add additional binary inputs and relay outputs to basic unit. The input circuits of the digital modules are supplied from an external power supply.

4 binary inputs and 2 relay outputs,
Up to 2 digital modules can be connected per Basic Unit 2

Relay outputs	Input voltage						
Monostable	24 V DC	A	3UF7 300-1AB00-0	1	1 unit	131	0.150
	110 ... 240 V AC/DC	A	3UF7 300-1AU00-0	1	1 unit	131	0.150
Bistable	24 V DC	A	3UF7 310-1AB00-0	1	1 unit	131	0.150
	110 ... 240 V AC/DC	A	3UF7 310-1AU00-0	1	1 unit	131	0.150



3UF7 400-1AA00-0

Analog modules

Basic Unit 2 can be optionally expanded with analog inputs and outputs (0/4 ... 20 mA) by means of the analog module.

2 inputs (passive) for input and 1 output for output of 0/4 ... 20 mA signals, max. 1 analog module can be connected per Basic Unit 2

A	3UF7 400-1AA00-0	1	1 unit	131	0.150
---	-------------------------	---	--------	-----	-------



3UF7 500-1AA00-0

Ground-fault modules

Instead of ground-fault monitoring using the current measuring modules or current/voltage measuring modules, it may be necessary, especially in high-impedance grounded networks, to implement ground-fault monitoring for smaller ground fault currents using a summation current transformer.

1 input for connecting a summation current transformer 3UL22, up to 1 ground-fault module can be connected per Basic Unit 2

A	3UF7 500-1AA00-0	1	1 unit	131	0.150
---	-------------------------	---	--------	-----	-------

Note:

For the corresponding summation current transformers for rated fault currents of 0.3 A, 0.5 A or 1 A see page 7/51.



3UF7 700-1AA00-0

Temperature modules

Independently of the thermistor motor protection of the basic units, up to 3 analog temperature sensors can be evaluated using a temperature module.

Sensor types: PT100/PT1000, KTY83/KTY84 or NTC

3 inputs for connecting up to 3 analog temperature sensors, up to 1 temperature module can be connected per Basic Unit 2

A	3UF7 700-1AA00-0	1	1 unit	131	0.150
---	-------------------------	---	--------	-----	-------

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

Accessories







Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Connection cables (essential accessory)							
 <p>Connection cables In different lengths for connecting basic unit, current measuring module, current/voltage measuring module, operator panel or expansion modules or decoupling module:</p> <ul style="list-style-type: none"> Length 0.025 m (flat) Note: Only suitable for connecting Basic Unit 2 to its expansion modules or for connecting expansion modules to each other; only when the front plates finish at the same height! Length 0.1 m (flat) Length 0.3 m (flat) Length 0.5 m (flat) Length 0.5 m (round) Length 1.0 m (round) Length 2.5 m (round) 	A	3UF7 930-0AA00-0		1	1 unit	131	0.010
	A	3UF7 931-0AA00-0		1	1 unit	131	0.010
	A	3UF7 935-0AA00-0		1	1 unit	131	0.020
	A	3UF7 932-0AA00-0		1	1 unit	131	0.020
	A	3UF7 932-0BA00-0		1	1 unit	131	0.050
	A	3UF7 937-0BA00-0		1	1 unit	131	0.100
	A	3UF7 933-0BA00-0		1	1 unit	131	0.150
PC cables and adapters							
 <p>For PC/PG communication with SIMOCODE pro Through the system interface, for connecting to the serial interface of the PC/PG</p> <p>USB/serial adapters To connect an RS 232 PC cable to the USB port of a PC, we recommend using 3RK3 modular safety system, 3RW44 soft starter, ET 200S/ECOFASST/ET 200pro motor starter, AS-i safety monitor, AS-i analyzer in conjunction with SIMOCODE pro 3UF7</p>	A	3UF7 940-0AA00-0		1	1 unit	131	0.150
	B	3UF7 946-0AA00-0		1	1 unit	131	0.150
Memory modules							
 <p>3UF7 900-0AA00-0</p>	A	3UF7 900-0AA00-0		1	1 unit	131	0.010
Interface covers							
 <p>3UF7 950-0AA00-0</p>	A	3UF7 950-0AA00-0		1	5 units	131	0.100
Addressing plugs							
 <p>3UF7 910-0AA00-0</p>	A	3UF7 910-0AA00-0		1	1 unit	131	0.030
Door adapters							
 <p>3UF7 920-0AA00-0</p>	A	3UF7 920-0AA00-0		1	1 unit	131	0.030
Adapters for operator panel							
 <p>3UF7 922-0AA00-0</p>	A	3UF7 922-0AA00-0		1	1 unit	131	0.150

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Labeling strips							
	• For pushbuttons of the 3UF7 20 operator panel	A	3UF7 925-0AA00-0	100	400 units	131	15.000
	• For pushbuttons of the 3UF7 21 operator panel with display	A	3UF7 925-0AA01-0	100	600 units	131	15.000
	• For LEDs of the 3UF7 20 operator panel	A	3UF7 925-0AA02-0	100	1200 units	131	15.000
	<i>Note: Pre-punched labeling strips for user-specific printing using the free inscription software "SIRIUS Label Designer" on a laser printer. Note the software version! Download from www.siemens.com/simocode</i>						
3UF7 925-0AA02-0							
Push-in lugs							
	For screw fixing e. g. on mounting plate, 2 units required per device	A	3RB19 00-0B	100	10 units	101	0.100
3RB19 00-0B	• Can be used with 3UF7 1.0, 3UF7 1.1 and 3UF7 1.2		3RP19 03	1	10 units	101	0.002
	• Can be used with 3UF7 0, 3UF7 3, 3UF7 4, 3UF7 5 and 3UF7 7						
Terminal covers							
	Covers for cable lugs and busbar connections		3RT19 56-4EA1	1	1 unit	101	0.070
3RT19 56-4EA1	• Length 100 mm, can be used for 3UF7 1.3-1BA00-0		3RT19 66-4EA1	1	1 unit	101	0.130
	• Length 120 mm, can be used for 3UF7 1.4-1BA00-0						
	Covers for box terminals		3RT19 56-4EA2	1	1 unit	101	0.030
3RT19 56-4EA2	• Length 25 mm, can be used for 3UF7 1.3-1BA00-0		3RT19 66-4EA2	1	1 unit	101	0.040
	• Length 30 mm, can be used for 3UF7 1.4-1BA00-0						
	Covers for screw terminals Between contactor and current measuring module or current/voltage measuring module for direct mounting		3RT19 56-4EA3	1	1 unit	101	0.020
	• Can be used for 3UF7 1.3-1BA00-0		3RT19 66-4EA3	1	1 unit	101	0.060
	• Can be used for 3UF7 1.4-1BA00-0						
Box terminal blocks							
	For round and ribbon cables		3RT19 55-4G	1	1 unit	101	0.230
3RT19 55-4G	• Up to 70 mm ² , can be used for 3UF7 1.3-1BA00-0		3RT19 56-4G	1	1 unit	101	0.260
	• Up to 120 mm ² , can be used for 3UF7 1.3-1BA00-0		3RT19 66-4G	1	1 unit	101	0.676
	• Up to 240 mm ² , can be used for 3UF7 1.4-1BA00-0						
	<i>For conductor cross-sections see note on Technical Information on page 7/1.</i>						
Bus terminations							
	Bus termination module with separate supply voltage for terminating the bus following the last unit on the bus line. Supply voltage:		3UF1 900-1KA00	1	1 unit	131	0.286
	• 115/230 V AC	C	3UF1 900-1KB00	1	1 unit	131	0.192
	• 24 V DC	C					
System manuals							
	SIMOCODE pro With token fee, languages:		3UF7 970-0AA01-0	1	1 unit	131	0.850
3UF7 970-0AA01-0	• German	A	3UF7 970-0AA00-0	1	1 unit	131	0.850
	• English	A	3UF7 970-0AA02-0	1	1 unit	131	0.850
	• French	A					

7

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

Software

Overview

General

In addition to device function and hardware design, a great deal of emphasis is placed on the ease of communication-capable controls on the user-friendliness of the parameterization software and the ability of the system to be integrated easily into various different system configurations and process automation systems. For this reason, the SIMOCODE pro system provides suitable software tools for consistent, time-saving parameterization, configuration and diagnostics:

- SIMOCODE ES for totally integrated start-up and service
- OM SIMOCODE pro object manager for total integration into SIMATIC S7
- PCS 7 function block library SIMOCODE pro for total integration into PCS 7

SIMOCODE ES

With SIMOCODE ES, the SIMOCODE pro motor management system provides a user-friendly and clear-cut user interface with which to configure, operate, monitor and test SIMOCODE pro in the field or from a central location through PROFIBUS. By displaying all operating, service and diagnostics data, SIMOCODE ES supplies important information on whether maintenance work is required or, in the event of a fault, helps to prevent faults or to localize and rectify them once they have occurred.

Unnecessary plant downtimes can be prevented by changing parameters online (even during operation). The printing function integrated into SIMOCODE ES allows comprehensive documentation of all parameters according to EN ISO 7200.

In addition the graphical editor enables extremely ergonomic and user-friendly parameterization with Drag & Drop. Inputs and outputs of function blocks can be graphically linked and parameters can be set. The configured functions can be described in greater detail using comments and the device parameterization can be documented graphically - this speeds up start-up and simplifies the plant documentation.

The parameterization software for SIMOCODE pro can be run on a PC or programming device under Windows XP/Vista.

SIMOCODE ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Test	✓	✓	✓
Service data	✓	✓	✓
Parameterizing with the integrated graphics editor	--	✓	✓
Creating typicals	--	✓	✓
Exporting parameters	--	✓	✓
Comparison functions	--	✓	✓
Trend display of measured values	--	✓	✓
Parameter comparison	--	✓	✓
Analog value recording ¹⁾	--	✓	✓
Standards-conform printout acc. to EN ISO 7200	--	✓	✓
Group functions	--	--	✓
Access through PROFIBUS	--	--	✓
Teleservice through MPI	--	--	✓
S7 Routing	--	--	✓
STEP7 Object Manager	--	--	✓

¹⁾ For SIMOCODE pro V. ✓ Function available -- Function not available

OM SIMOCODE pro object manager

The OM SIMOCODE pro object manager is a component of SIMOCODE ES. In contrast to a conventional GSD file, it enables SIMOCODE ES to be integrated into STEP 7 for convenient device parameterization. By installing SIMOCODE ES and OM SIMOCODE pro on a PC or programming device, which is used to configure the hardware of the SIMATIC S7, SIMOCODE ES can be called directly from the hardware configuration. This allows easy and consistent S7 configuration.

PCS 7 function block library for SIMOCODE pro

The SIMOCODE pro PCS 7 function block library can be used for simple and easy integration of SIMOCODE pro into the SIMATIC PCS 7 process control system. The SIMOCODE pro PCS 7 function block library contains the diagnostics and driver blocks corresponding with the diagnostics and driver concept of SIMATIC PCS 7 as well as the elements (symbols and faceplate) required for operator control and process monitoring. The application is integrated by graphic interconnection using the CFC Editor.

The technological and signal processing functions of the SIMOCODE pro PCS 7 function block library are based on the SIMATIC PCS 7 standard libraries (driver blocks, technological blocks) and are optimally tailored to SIMOCODE pro. Users who previously configured motor feeder circuits using conventional technology by means of signal blocks and motor or valve blocks, can now easily switch to the SIMOCODE pro PCS 7 function block library.

The SIMOCODE pro PCS 7 function block library supplied on CD-ROM allows the user to run the required engineering software on the engineering station (single license) including the runtime software for executing the AS modules in an automation system (single license). If the AS modules are to be used in additional automation systems, the corresponding number of runtime licenses are required which are supplied without a data carrier.

Note: More information can be found in Chapter 12.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

Software: SIMOCODE ES 2007

Selection and ordering data

Parameterization and service software for SIMOCODE pro 3UF7

- Can be run under WIN XP PROF/
Windows Vista Ultimate 32/Business 32
- Without PC cable
Please order PC cable separately, see page 7/14.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	-----------------------------

SIMOCODE ES 2007 Basic



Floating license for one user

E-SW, software and documentation on CD, 3 languages (German/English/French), communication through the system interface

- License key on USB stick, Class A



▶ **3ZS1 312-4CC10-0YA5**

1

1 unit

131

0.230

3ZS1 312-4CC10-0YA5

SIMOCODE ES 2007 Standard

Floating license for one user

E-SW, software and documentation on CD, 3 languages (German/English/French), communication through the system interface

- License key on USB stick, Class A



▶ **3ZS1 312-5CC10-0YA5**

1

1 unit

131

0.230

Upgrade for SIMOCODE ES 2004 and later

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (English/French/German), communication through system interface



▶ **3ZS1 312-5CC10-0YE5**

1

1 unit

131

0.230

Powerpack for SIMOCODE ES 2007 Basic

Floating license for one user, E-SW, license key on USB stick, Class A, 3 languages (English/French/German), communication through the system interface



▶ **3ZS1 312-5CC10-0YD5**

1

1 unit

131

0.230

Software Update Service

For 1 year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface



▶ **3ZS1 312-5CC10-0YL5**

1

1 unit

131

0.230

SIMOCODE ES 2007 Premium

Floating license for one user

E-SW, software and documentation on CD, 3 languages (German/English/French), communication through PROFIBUS or the system interface

- License key on USB stick, Class A



▶ **3ZS1 312-6CC10-0YA5**

1

1 unit

131

0.230

Upgrade for SIMOCODE ES 2004 and later

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (English/French/German), communication through PROFIBUS or the system interface



▶ **3ZS1 312-6CC10-0YE5**

1

1 unit

131

0.230

Powerpack for SIMOCODE ES 2007 Standard

Floating license for one user, E-SW, license key on USB stick, Class A, 3 languages (English/French/German), communication through PROFIBUS or the system interface



▶ **3ZS1 312-6CC10-0YD5**

1

1 unit

131

0.230

Software Update Service

For 1 year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through PROFIBUS or the system interface



▶ **3ZS1 312-6CC10-0YL5**

1

1 unit

131


0.230

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7

Software: SIMOCODE pro function block library for SIMATIC PCS 7

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIMOCODE pro function block library for SIMATIC PCS 7							
 <p>3UF7 982-0AA00-0</p>	SIMOCODE pro function block library for SIMATIC PCS 7 Scope of supply: AS modules and faceplates for integrating SIMOCODE pro into the PCS 7 process control system, engineering software for one engineering station (single license) including runtime software for execution of the AS module in an automation system (single license), English/French/German, Type of delivery: CD incl. electronic documentation						
	• For PCS 7 Version V6.0	A	3UF7 982-0AA00-0	1	1 unit	131	0.240
	• For PCS 7 Version V6.1	A	3UF7 982-0AA02-0	1	1 unit	131	0.240
	• For PCS 7 Version V7.0	A	3UF7 982-0AA10-0	1	1 unit	131	0.240
AS modules for integrating SIMOCODE pro in the PCS 7 process control system Runtime software for execution of the AS module in an automation system (single license), Type of delivery: License without software and documentation							
• For PCS 7 Version V6.x	A	3UF7 982-0AA01-0	1	1 unit	131	0.001	
• For PCS 7 Version V7.x	A	3UF7 982-0AA11-0	1	1 unit	131	0.001	
Upgrade for the PCS 7 function block library SIMOCODE pro, V6.0 or V6.1 on Version SIMOCODE pro V7.0 for integrating SIMOCODE pro into the PCS 7 process control system, for PCS 7 Version V7.0 (single license), German/English/French, Type of delivery: CD incl. electronic documentation		A	3UF7 982-0AA13-0	1	1 unit	131	0.240

SIMOCODE 3UF Motor Management and Control Devices



3UF18 current transformers for overload protection

Overview

The 3UF18 current transformers are protection transformers and are used for actuating overload relays. Protection transformers are designed to ensure proportional current transfer up to a mul-


tipole of the primary rated current. The 3UF18 current transformers convert the maximum current of the corresponding operating range into the standard value of 1 A secondary.

Selection and ordering data

Mounting type	Operating range	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	A		Order No.	Price per PU				kg
For stand-alone installation								
 3UF18 43	Screw fixing and snap-on mounting onto 35 mm standard mounting rail	0.25 ... 2.5 ¹⁾	C	3UF18 43-1BA00	1	1 unit	131	0.488
		1.25 ... 12.5 ¹⁾	C	3UF18 43-2AA00	1	1 unit	131	0.485
		2.5 ... 25 ¹⁾	C	3UF18 43-2BA00	1	1 unit	131	0.490
		12.5 ... 50	C	3UF18 45-2CA00	1	1 unit	131	0.694
		16 ... 65	C	3UF18 47-2DA00	1	1 unit	131	1.182
		25 ... 100	C	3UF18 48-2EA00	1	1 unit	131	1.232
For mounting onto contactors and stand-alone installation								
 3UF18 68	Screw fixing	32 ... 130	C	3UF18 50-3AA00	1	1 unit	131	1.745
		50 ... 200	C	3UF18 52-3BA00	1	1 unit	131	1.890
		63 ... 250	C	3UF18 54-3CA00	1	1 unit	131	3.618
		100 ... 400	C	3UF18 56-3DA00	1	1 unit	131	3.851
		125 ... 500	C	3UF18 57-3EA00	1	1 unit	131	4.138
		160 ... 630	C	3UF18 68-3FA00	1	1 unit	131	7.782
		205 ... 820	C	3UF18 68-3GA00	1	1 unit	131	8.920

¹⁾ For the protection of EEx e motors the following setting ranges are applicable:
 3UF18 43-1BA00, 0.25 A ... 1.25 A
 3UF18 43-2AA00, 1.25 A ... 6.3 A
 3UF18 43-2BA00, 2.5 A ... 12.5 A

Accessories

For contactor type	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg
Terminal covers							
 3TX7 466-0A	For transformer/contactor combinations and stand-alone installation for transformer (cover required per connection side)						
		D	3TX7 446-0A	1	1 unit	101	0.006
		D	3TX7 466-0A	1	1 unit	101	0.035
		D	3TX7 506-0A	1	1 unit	101	0.041
		D	3TX7 536-0A	1	2 units	101	0.112
		B	3TX7 686-0A	1	1 unit	101	0.410
		B	3TX7 696-0A	1	1 unit	101	0.410
For covering the screw terminal for direct mounting on contactor (cover required per contactor/transformer combination)							
	D	3TX7 466-0B	1	1 unit	101	0.013	
	D	3TX7 506-0B	1	1 unit	101	0.019	
	D	3TX7 536-0B	1	1 unit	101	0.057	
	C	3TX7 686-0B	1	1 unit	101	0.085	
	C	3TX7 696-0B	1	1 unit	101	0.102	

* You can order this quantity or a multiple thereof.

LOGO! Logic Modules

General data

Overview



- The compact, user-friendly, and low-cost solution for simple control tasks
- Compact, user-friendly, can be used universally without accessories
- All in one: The display and operator panel are integrated
- 4-line LOGO! TD text display can be connected directly to all LOGO! 6ED1 052-.....-0BA6 basic modules
- 39 different functions can be linked at a press of a button or with PC software; up to 200 blocks in total
- Functions can be changed simply using buttons; no complicated rewiring

Catalog ST 70:

Information on LOGO! can also be found in the catalog ST 70:
www.siemens.com/simatic/printmaterial

Application

LOGO! is universally applicable, e. g.:

- Building installation and wiring (lighting, shutters, awnings, doors, access control, barriers, ventilation systems ...)
- Control cabinet installation
- Machine and device construction (pumps, small presses, compressors, hydraulic lifts, conveyors ...)
- Special controls for conservatories and greenhouses
- Signal preprocessing for other controllers

The LOGO! Modular logic modules can be expanded easily for each application.

Marine approvals

American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd, Lloyds Register of Shipping; Polski Rejestr Statków

Overview



- The space-saving basic versions
- Interface for connecting expansion modules, max. 24 digital inputs, 16 digital outputs, 8 analog inputs and 2 analog outputs can be addressed
- Interface for direct connection of the new LOGO! TD text display

Selection and ordering data

Version	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU				kg
LOGO! Modular basic versions							
LOGO! logic modules 24 Control supply voltage 24 V DC, 8 digital inputs 24 V DC, of which 4 can be used as analog inputs (0 to 10 V), 4 digital outputs 24 V DC, 0.3 A; 200 function blocks can be combined, modular expandability	A	6ED1 052-1CC00-0BA6		1	1 unit	200	0.191
LOGO! logic modules 12/24RC Control supply voltage 12/24 V DC, 8 digital inputs 12/24 V DC, of which 4 can be used as analog inputs (0 to 10 V), 4 relay outputs 10 A, integrated time switch; 200 function blocks can be combined, modular expandability	A	6ED1 052-1MD00-0BA6		1	1 unit	200	0.228
LOGO! logic modules 24RC Control supply voltage 24 V AC/DC, 8 digital inputs 24 V AC/DC (N or P), 4 relay outputs 10 A, integrated time switch; 200 function blocks can be combined, modular expandability	A	6ED1 052-1HB00-0BA6		1	1 unit	200	0.231
LOGO! logic modules 230RC Control supply voltage 115/230 V AC/DC, 8 digital inputs 115/230 V AC/DC, 4 relay outputs 10 A, integrated time switch; 200 function blocks can be combined, modular expandability	A	6ED1 052-1FB00-0BA6		1	1 unit	200	0.232

For accessories, see page 7/26.

LOGO! Logic Modules


LOGO! Modular pure versions

Overview



- The cost-optimized Pure versions
- Interface for connecting expansion modules, max. 24 digital inputs, 16 digital outputs, 8 analog inputs and 2 analog outputs can be addressed
- Interface for direct connection of the new LOGO! TD text display

Selection and ordering data

Version	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price € per PU			
LOGO! Modular pure versions						
LOGO! logic modules 24o Control supply voltage 24 V DC, 8 digital inputs 24 V DC, of which 4 can be used as analog inputs (0 to 10 V), 4 digital outputs 24 V DC, 0.3 A; without display and keyboard; 200 function blocks can be combined, modular expandability	A	6ED1 052-2CC00-0BA6	1	1 unit	200	0.175
LOGO! logic modules 12/24RCo logic modules Control supply voltage 12/24 V DC, 8 digital inputs 12/24 V DC, of which 4 can be used as analog inputs (0 to 10 V), 4 relay outputs 10 A, integrated time switch; without display and keyboard; 200 function blocks can be combined, modular expandability	A	6ED1 052-2MD00-0BA6	1	1 unit	200	0.213
LOGO! logic modules 24RCo logic modules Control supply voltage 24 V AC/DC, 8 digital inputs 24 V AC/DC (N or P), 4 relay outputs 10 A, integrated time switch; without display and keyboard; 200 function blocks can be combined, modular expandability	A	6ED1 052-2HB00-0BA6	1	1 unit	200	0.220
LOGO! logic modules 230RCo logic modules Control supply voltage 115/230 V AC/DC, 8 digital inputs 115/230 V AC/DC, 4 relay outputs 10 A, integrated time switch; without display and keyboard; 200 function blocks can be combined, modular expandability	A	6ED1 052-2FB00-0BA6	1	1 unit	200	0.217

For accessories, see page 7/26.

Overview



- Expansion modules for connection to LOGO! Basic modules
- With digital inputs and outputs, analog inputs or analog outputs

Selection and ordering data

Version	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
		Order No.	Price per PU				
LOGO! Modular expansion modules							
LOGO! DM8 24 Control supply voltage 24 V DC, 4 digital inputs 24 V DC, 4 digital outputs 24 V DC, 0.3 A	A	6ED1 055-1CB00-0BA0		1	1 unit	200	0.122
LOGO! DM16 24 Control supply voltage 24 V DC, 8 digital inputs 24 V DC, 8 digital outputs 24 V DC, 0.3 A	A	6ED1 055-1CB10-0BA0		1	1 unit	200	0.122
LOGO! DM8 12/24R Control supply voltage 12/24 V DC, 4 digital inputs 12/24 V DC, 4 relay outputs 5 A	A	6ED1 055-1MB00-0BA1		1	1 unit	200	0.157
LOGO! DM8 24R Control supply voltage 24 V AC/DC, 4 digital inputs 24 V AC/DC (N or P), 4 relay outputs 5 A	A	6ED1 055-1HB00-0BA0		1	1 unit	200	0.158
LOGO! DM16 24R Control supply voltage 24 V DC, 8 digital inputs 24 V DC (N or P), 8 relay outputs 5 A	A	6ED1 055-1NB10-0BA0		1	1 unit	200	0.159
LOGO! DM8 230R Control supply voltage 115/230 V AC/DC, 4 digital inputs 115/230 V AC/DC, 4 relay outputs 5 A	A	6ED1 055-1FB00-0BA1		1	1 unit	200	0.159
LOGO! DM16 230R Control supply voltage 115/230 V AC/DC, 8 digital inputs 115/230 V AC/DC, 8 relay outputs 5 A	A	6ED1 055-1FB10-0BA0		1	1 unit	200	0.159
LOGO! AM2 Control supply voltage 12/24 V DC, 2 analog inputs 0 to 10 V or 0/4 to 20 mA, 10 bit resolution	A	6ED1 055-1MA00-0BA0		1	1 unit	200	0.119
LOGO! AM2 PT100 Control supply voltage 12/24 V DC, 2 analog inputs PT100, two-wire or three-wire connection, temperature range -50 °C to 200 °C	A	6ED1 055-1MD00-0BA0		1	1 unit	200	0.120
LOGO! AM2 AQ Control supply voltage 24 V DC, 2 analog outputs 0 to 10 V or 0/4 to 20 mA	A	6ED1 055-1MM00-0BA1		1	1 unit	200	0.120

For accessories, see page 7/26.

LOGO! Logic Modules

LOGO! CM EIB/KNX communication modules

Overview



- Expansion module for the LOGO! Basic modules
- For communication between LOGO! master and external *EIB* components via *EIB*

Application

The CM EIB/KNX communication module allows communication between the LOGO! master and external *EIB* components via *EIB*. This module can be used to integrate LOGO! in an *EIB* system.

Selection and ordering data

Version	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU				kg
LOGO! CM EIB/KNX communication modules							
For connection to <i>EIB</i> , control supply voltage 24 V DC	B	6BK1 700-0BA00-0AA1		1	1 unit	475	0.107

For accessories, see page 7/26.

AS-Interface connections for LOGO!

Overview

Every LOGO! can now be connected to the AS-Interface system



Using the AS-Interface connection for LOGO!, an intelligent slave can be integrated in the AS-Interface system. With the modular interface it becomes possible to integrate the different basic units in the system according to their functionality. Similarly, functionalities can be quickly and easily adapted to new requirements by exchanging the basic unit.

The interface module provides four digital inputs and four digital outputs on the system. These I/Os do not actually exist in hardware terms, however, but are only virtually present through the interface on the bus.

Selection and ordering data

Version	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Order No.		Price per PU				kg
AS-Interface connections for LOGO!						
Four virtual digital inputs, four virtual digital outputs	A	3RK1 400-0CE10-0AA2	1	1 unit	121	0.107

For accessories, see page 7/26.

* You can order this quantity or a multiple thereof.

LOGO! Logic Modules

Accessories

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
LOGO! TD text displays							
LOGO! TD text displays 4-line TD text display, for connection to all LOGO! 6ED1 052-...-0BA6 basic modules, degree of protection IP65, including connection cable	A	6ED1 055-4MH00-0BA0		1	1 unit	200	0.220
LOGO! manuals							
LOGO! manuals							
• German	A	6ED1 050-1AA00-0AE7		1	1 unit	200	0.750
• English	A	6ED1 050-1AA00-0BE7		1	1 unit	200	0.750
• French	C	6ED1 050-1AA00-0CE7		1	1 unit	200	0.750
• Spanish	C	6ED1 050-1AA00-0DE7		1	1 unit	200	0.750
• Italian	C	6ED1 050-1AA00-0EE7		1	1 unit	200	0.750
• Chinese	C	6ED1 050-1AA00-0KE7		1	1 unit	200	0.750
LOGO! cards							
LOGO! memory cards For copying, with know-how protection	A	6ED1 056-1DA00-0BA0		1	1 unit	200	0.004
LOGO! battery cards For adding a 2-year buffer to the integrated real-time clock	A	6ED1 056-6XA00-0BA0		1	1 unit	200	0.004
LOGO! memory/battery cards Combination of memory and additional 2-year buffer for the integrated real-time clock	A	6ED1 056-7DA00-0BA0		1	1 unit	200	0.004
LOGO! cables							
LOGO! PC cables For transferring programs between LOGO! and PC	A	6ED1 057-1AA00-0BA0		1	1 unit	200	0.168
LOGO! USB PC cables For transferring programs between LOGO! and PC, drivers on CD-Rom	A	6ED1 057-1AA01-0BA0		1	1 unit	200	0.160
LOGO! modem cables Adapter cable for analog modem communication	A	6ED1 057-1CA00-0BA0		1	1 unit	200	0.176
Front panel assembly kits							
Front panel assembly kits							
• Width: 4 MW	C	6AG1 057-1AA00-0AA0		1	1 unit	470	0.150
• Width: 4 MW, with pushbuttons	D	6AG1 057-1AA00-0AA3		1	1 unit	470	0.150
• Width: 8 MW	C	6AG1 057-1AA00-0AA1		1	1 unit	470	0.170
• Width: 8 MW, with pushbuttons	D	6AG1 057-1AA00-0AA2		1	1 unit	470	0.170
LOGO! News Box							
LOGO! News Box, 12/24 V Contains LOGO! 12/24RC, LOGO! USB PC cable, LOGO! Soft Comfort V6, manual, screwdriver, information material							
• German	A	6ED1 057-3BA00-0AA5		1	1 unit	220	2.400
• English	A	6ED1 057-3BA00-0BA5		1	1 unit	220	2.400
LOGO! News Box, 230 V Contains LOGO! 230RC, LOGO! USB PC cable, LOGO! Soft Comfort V6, manual, screwdriver, information material							
• German	A	6ED1 057-3AA02-0AA0		1	1 unit	220	2.400
• English	A	6ED1 057-3AA02-0BA0		1	1 unit	220	2.400
LOGO! TD News Box, 12/24 V Contains LOGO! 12/24RCo, LOGO! TD, LOGO! USB PC cable, LOGO! Soft Comfort V6, manual, screwdriver, information material							
• German	A	6ED1 057-3BA10-0AA0		1	1 unit	220	2.700
• English	A	6ED1 057-3BA10-0BA0		1	1 unit	220	2.700

LOGO! Contact

Overview



- Switching module for switching resistive loads and motors directly


Application

LOGO! Contact is a switching module with $U \approx 400$ V, 3 NO contacts and 3 NC contacts for direct switching of resistive loads up (to 20 A) and motors (up to 4 kW). LOGO! Contact operates hum-free without noise pollution.

LOGO! Contact is universally applicable:

- Buildings/electrical installations
- Industry and commerce

Selection and ordering data

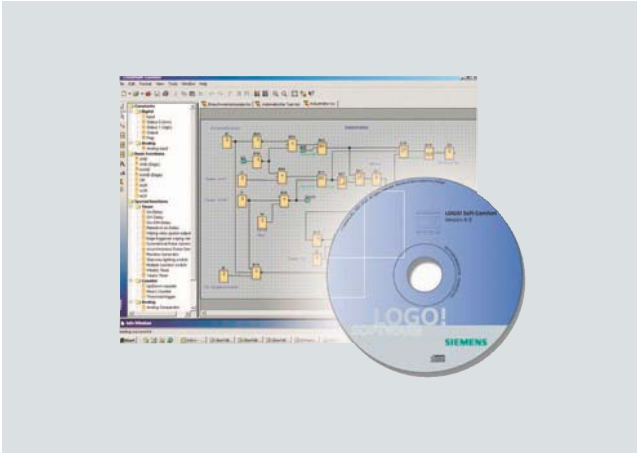
Version	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			
LOGO! Contact		Switching module for direct switching of resistive loads up to 20 A and motors up to 4 kW				
		<ul style="list-style-type: none"> • Switching voltage 24 V • Switching voltage 230 V 				
A		6ED1 057-4CA00-0AA0	1	1 unit	200	0.160
A		6ED1 057-4EA00-0AA0	1	1 unit	200	0.160

* You can order this quantity or a multiple thereof.

LOGO! Logic Modules

LOGO! Software

Overview



- The user-friendly software for switching program generation on the PC
- Switching program generation for function diagrams (FBD) or contact diagrams (LAD)
- Additional testing, simulation, online testing and archiving of the switching programs
- Professional documentation with the help of various comment and print functions

Application

LOGO! Soft Comfort is the multilingual software for switching program generation with LOGO! on the PC. LOGO! Soft Comfort can be used to program all devices of the LOGO! family.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
LOGO! Software							
LOGO! Soft Comfort V6 For programming on the PC in LAD/FBD; runs on Windows 98 SE, Windows Vista/NT/XP/2000, Linux, MAC OS X; on CD-ROM	A	6ED1 058-0BA02-0YA0		1	1 unit	200	0.099
LOGO! Soft Comfort Upgrade From V1.0 to V6	A	6ED1 058-0CA02-0YE0		1	1 unit	200	0.100

General data

Overview

3RP15 and 3RP20 function table

Function	Function chart	3RP20 timing relay and 3RP19 01 label set	3RP15 timing relay and 3RP19 01 label set	Identification letter
		3RP20 05-A	3RP20 25	3RP15 05-A 3RP19 01-0A
				3RP15 1.
				3RP15 25
				3RP15 27
				3RP15 3.
				3RP15 40
				3RP15 55
				3RP15 7.
1 CO				
With ON-delay		■	■	A
OFF-delay with auxiliary voltage		■	■	B ¹⁾
OFF-delay without auxiliary voltage <i>Observe minimum ON period for correct operation. For 3RP15 40...W31: U_s 24 to 40 V AC/DC: 400 ms and U_s > 40 to 240 V AC/DC: 200 ms.</i>				
ON-delay and OFF-delay with auxiliary voltage (t = t _{on} = t _{off})		■	■	C ¹⁾
Flashing, starting with interval (pulse/interval 1:1)		■	■	D
Clock-pulse, starting with interval (dead time, pulse time, and time setting ranges each separately adjustable)				
Passing make contact		■	■	E
Passing break contact with auxiliary voltage		■	■	F ¹⁾
Pulse-forming with auxiliary voltage (pulse generation at the output does not depend on duration of energizing)		■	■	G ¹⁾
Additive ON-delay with auxiliary voltage		■	■	H ¹⁾
1 NO contact (semiconductor)				
ON-delay The two-wire timing relay is connected in series with the load. Timing begins after application of the exciting voltage. The semiconductor output then becomes conducting, and the load is under power.			■	

1) Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero. This does

not apply to G, G● and H, H●, which are not retriggerable.
■ Function is possible

7

Timing Relays

General data

Function	Function chart	3RP20 timing relay and 3RP19 01 label set	3RP15 timing relay and 3RP19 01 label set	Identification letter											
		3RP20 05-B	3RP20 25	3RP15 05-B	3RP19 01-0B	3RP15 05-R	3RP19 01-0A	3RP15 1.	3RP15 25	3RP15 27	3RP15 3.	3RP15 40	3RP15 55	3RP15 60	3RP15 7.
2 CO															
With ON-delay		■		■	■	A	■								
ON-delay and instantaneous contact		■		■		A●									
OFF-delay with auxiliary voltage		■		■	■	B ¹⁾									
OFF-delay with auxiliary voltage and instantaneous contact		■		■		B ¹⁾									
OFF-delay without auxiliary voltage												■			
ON-delay and OFF-delay with auxiliary voltage ($t = t_{on} = t_{off}$)		■		■	■	C ¹⁾									
ON-delay and OFF-delay with auxiliary voltage and instantaneous contact ($t = t_{on} = t_{off}$)		■		■		C● ¹⁾									
Flashing, starting with interval (pulse/interval 1:1)		■		■	■	D									
Flashing, starting with interval (pulse/interval 1:1) and instantaneous contacts		■		■		D●									
Passing make contact		■		■	■	E									
Passing make contact and instantaneous contact		■		■		E●									

For footnote see page 7/31.

■ Function is possible

Function	Function chart	3RP20 timing relay and 3RP19 01 label set	3RP15 timing relay and 3RP19 01 label set	Identification letter	3RP15 1.	3RP15 25	3RP15 27	3RP15 3.	3RP15 40	3RP15 55	3RP15 60	3RP15 7.
<p>2 CO</p> <p>Timing relay energized: </p> <p>Contact closed: </p> <p>Contact open: </p>												
Passing break contact with auxiliary voltage		■	■	F ¹⁾								
Passing break contact with auxiliary voltage and instantaneous contact		■	■	F● ¹⁾								
Pulse-forming with auxiliary voltage (pulse generation at the output does not depend on duration of energizing)		■	■	G ¹⁾								
Pulse-forming with auxiliary voltage and instantaneous contact (pulse generation at the output does not depend on duration of energizing)		■	■	G● ¹⁾								
Additive ON-delay with auxiliary voltage				H ¹⁾								
Additive ON-delay with auxiliary voltage and instantaneous contact		■	■	H● ¹⁾								
Wye-delta function		■	■	YΔ								
<p>2 NO</p>												
Wye-delta function YΔ												■
<p>3 NO</p>												
Wye-delta function with overtravel function ²⁾ (idling)												■

1) Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero. This does not apply to G, G● and H, H●, which are not retriggerable.

2) For function diagrams showing the various possibilities of operation of the 3RP15 60-1S.30, see page 7/34.

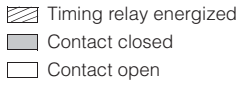
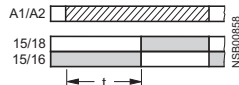
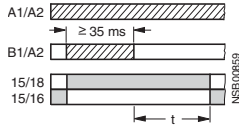
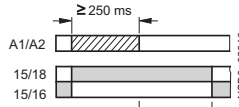
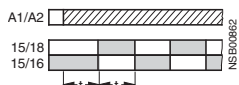
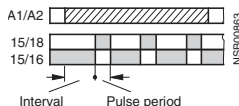
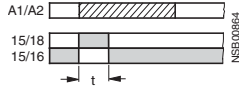
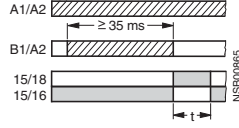
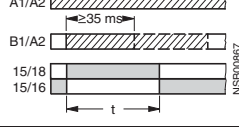
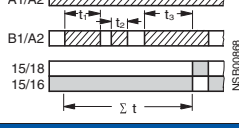
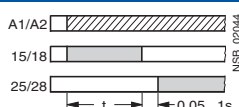
■ Function is possible

7

Timing Relays

General data

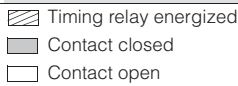
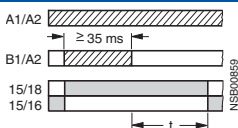
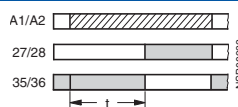
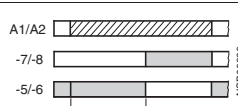
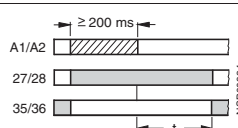
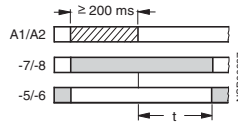
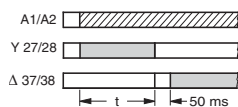
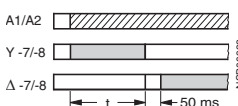
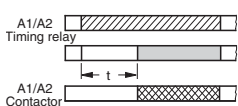
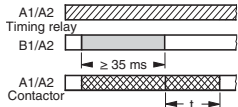
7PV15 function table

Function	Function chart	7PV15 timing relays						
		7PV15 08	Identification letter	7PV15 12 7PV15 13 7PV15 18	7PV15 38	7PV15 40	7PV15 58	7PV15 78
1 CO								
With ON-delay		■	A	■				
OFF-delay with auxiliary voltage		■	B		■			
OFF-delay without auxiliary voltage						■		
Flashing, starting with interval (pulse/interval 1:1)		■	C					
Clock-pulse, starting with interval (dead time, pulse time, and time setting ranges each separately adjustable)							■	
Passing make contact		■	D					
Passing break contact with auxiliary voltage		■	E					
Pulse-forming with auxiliary voltage (pulse generation at the output does not depend on duration of energizing)		■	F					
Additive ON-delay with auxiliary voltage		■	G					
2 CO								
Wye-delta function								■

Note:

With the 7PV15 08 multifunction relay the identification letters A to G are printed on the front alongside the rotary selector switch. The related function can be found in the form of a bar graph on the side of the device.

Function table 3RT19 16, 3RT19 26

Function	Function chart	3RT19 16 timing relays						3RT19 26 timing relays			
		3RT19 16-2C	3RT19 16-2D	3RP19 16-2E	3RT19 16-2F	3RT19 16-2G	3RT19 16-2L	3RT19 26-2C	3RT19 26-2D	3RT19 26-2E	3RT19 26-2F
<p>  </p>											
1 CO											
OFF-delay with auxiliary voltage (varistor integrated)											
1 NO + 1 NC											
ON-delay (varistor integrated)											
With ON-delay											
OFF-delay without auxiliary voltage (varistor integrated)											
OFF-delay without auxiliary voltage											
2 NO											
Wye-delta function (varistor integrated) 1 NO delayed, 1 NO instantaneous, dead time 50 ms (varistor integrated)											
Wye-delta function (varistor integrated) 1 NO delayed, 1 NO instantaneous, dead time 50 ms (varistor integrated)											
1 NO contact (semiconductor)											
ON-delay Two-wire design (varistor integrated)											
OFF-delay with auxiliary voltage (varistor integrated)											

■ Function is possible

Timing Relays

General data

3RP15 function table

Possibilities of operation of the 3RP15 60-1S.30 timing relay

Timing relay energized

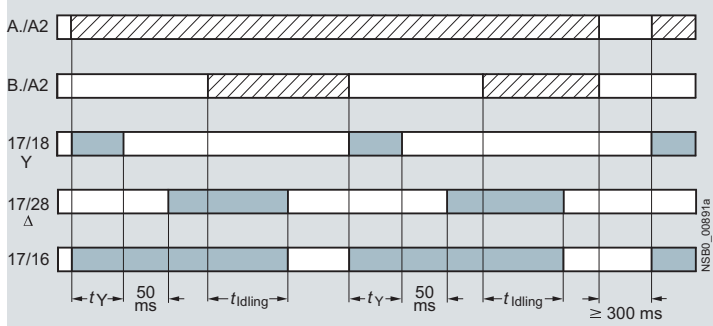
Contact closed

Contact open

t_Y = Star time 1 ... 20 s

t_{idling} = Idling time (coasting time) 30 ... 600 s

Operation 1



Operation 1:

Start contact B./A2 is open when control supply voltage A./A2 is applied.

The control supply voltage is applied to A./A2 and there is no control signal on B./A2. This starts the $Y\Delta$ timing. The idling time (coasting time) is started by applying a control signal to B./A2. When the set time t_{idling} (30 ... 600 s) has elapsed, the output relays (17/16 and 17/28) are reset. If the control signal on B./A2 is switched off (minimum OFF period 270 ms), a new timing is started.

Comments:

Observe response time (dead time) of 400 ms on energizing control supply voltage until contacts 17/18 and 17/16 close.

Operation 2:

Start contact B./A2 is closed when control supply voltage A./A2 is applied.

If the control signal B./A2 is already present when the supply voltage A./A2 is applied, **no** timing is started. The timing is only started when the control signal B./A2 is switched off.

Operation 3:

Start contact B./A2 closes while star time is running.

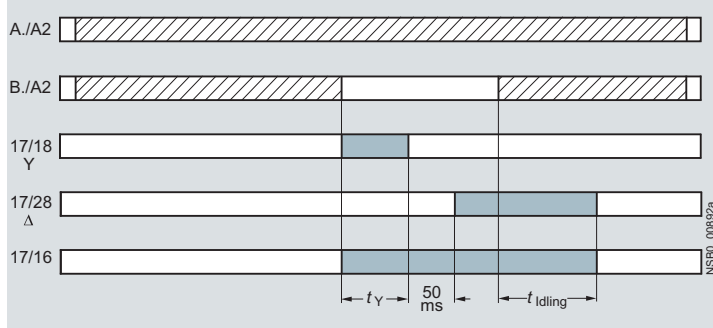
If the control signal B./A2 is applied again during the star time, the idling time starts and the timing is terminated normally.

Operation 4:

Start contact B./A2 opens while delta time is running and is applied again.

If the control signal on B./A2 is applied and switched off again during the delta time, although the idling time has not yet elapsed, the idling time (coasting time) is reset to zero. If the control signal is re-applied to B./A2, the idling time is restarted.

Operation 2



Application example based on standard operation

(operation 1): For example, use of 3RP15 60 for compressor control

Frequent starting of compressors strains the network, the machine, and the increased costs for the operator. The new timing relay prevents frequent starting at times when there is high demand for compressed air. A special control circuit prevents the compressor from being switched off immediately when the required air pressure in the tank has been reached. Instead, the valve in the intake tube is closed and the compressor runs in "Idling" mode for a specific time which can be set from 30 ... 600 s.

If the pressure falls within this time, the motor does not have to be restarted again, but can return to nominal load operation from no-load operation.

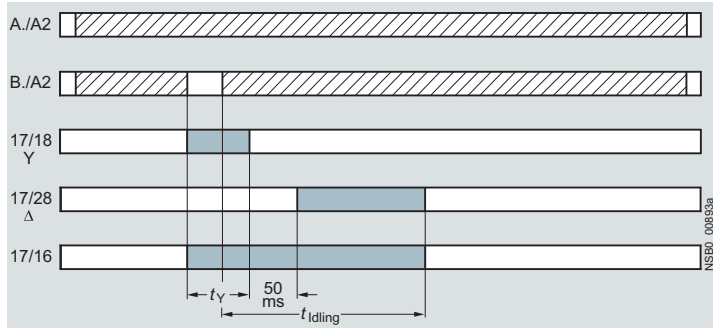
If the pressure does not fall within this idling time, the motor is switched off.

The pressure switch controls the timing via B./A2.

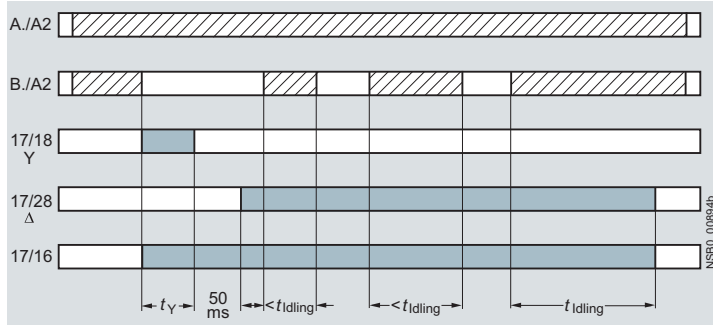
The control supply voltage is applied to A./A2 and the start contact B./A2 is open, i. e. there is no control signal on B./A2 when the control supply voltage is applied. The pressure switch signals "too little pressure in system" and starts the timing by way of terminal B./A2. The compressor is started, enters $Y\Delta$ operation, and fills the pressure tank.

When the pressure switch signals "sufficient pressure", the control signal B./A2 is applied, the idling time (coasting time) is started, and the compressor enters no-load operation for the set period of time from 30 ... 600 s. The compressor is then switched off. The compressor is only restarted if the pressure switch responds again (low pressure).

Operation 3



Operation 4

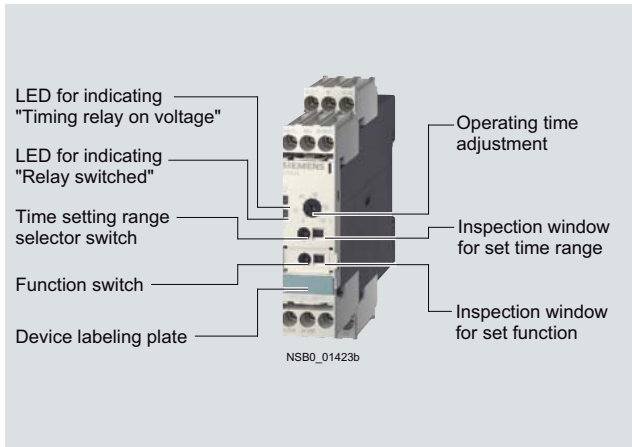


Note:

The following applies to all operations: The pressure switch controls the timing via B./A2.

SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm

Overview

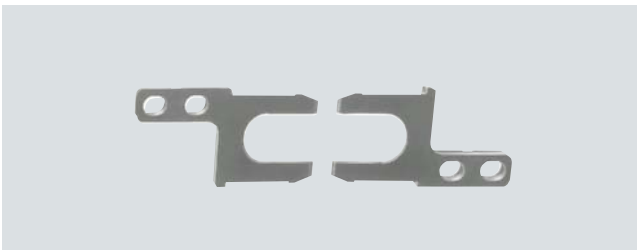


Standards

The timing relays comply with:

- EN 60721-3-3 "Environmental conditions"
- EN 61812-1 (DIN VDE 0435 Part 2021) "Specified time relays for industrial use"
- EN 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- EN 60947-5-1 (VDE 0660 Part 200) "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"

Accessories



Push-in lugs for screw fixing



Sealable covers



Label set for marking the multifunction relay

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Enclosure version

All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to EN 60715 or for screw fixing.

Timing Relays

SIRIUS 3RP15 timing relays in industrial enclosure, 22.5 mm

Selection and ordering data

Solid-state timing relays for general use in control systems and mechanical engineering with:

- 1 changeover contact or 2 changeover contacts
- Single or selectable time setting ranges

- Switch position indication and voltage indication by LED

PU (UNIT, SET, M) = 1, PS* = 1 unit, PG = 101



Version	Time setting range t adjustable by rotary switch to	Rated control supply voltage U_s	DT	Screw terminals	Weight per PU approx.	DT	Spring-type terminals	Weight per PU approx.	
		AC 50/60 Hz V	DC V	Order No.	Price per PU	kg	Order No.	Price per PU	kg

3RP15 05 timing relays, multifunction, 15 time setting ranges

The functions can be adjusted by means of rotary switches. Insert labels can be used to adjust different functions of the 3RP15 05 timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B. [For functions see 3RP19 01 label set, page 7/44.](#)

With LED and								
1 CO contacts, 8 functions	0.05 ... 1 s	--	12	A	3RP15 05-1AA40	0.125	--	
	0.15 ... 3 s	24/100 ... 127	24	▶	3RP15 05-1AQ30	0.140 C	3RP15 05-2AQ30	0.125
	0.5 ... 10 s	24/200 ... 240	24	▶	3RP15 05-1AP30	0.141 A	3RP15 05-2AP30	0.126
	1.5 ... 30 s	24 ... 240 ⁵⁾	24 ... 240 ²⁾	▶	3RP15 05-1AW30	0.136 A	3RP15 05-2AW30	0.132
2 CO contacts, 16 functions	0.05 ... 1 min	24/100 ... 127	24	▶	3RP15 05-1BQ30	0.162 A	3RP15 05-2BQ30	0.142
	5 ... 100 s	24/200 ... 240	24	▶	3RP15 05-1BP30	0.161 A	3RP15 05-2BP30	0.137
	0.5 ... 10 min	24 ... 240 ⁵⁾	24 ... 240 ²⁾	▶	3RP15 05-1BW30	0.168 A	3RP15 05-2BW30	0.143
	1.5 ... 30 min	400 ... 440	-	A	3RP15 05-1BT20	0.169	--	
2 CO contacts, positively driven and hard gold- plated. 8 functions ³⁾⁴⁾	0.05 ... 1 h	24 ... 240	24 ... 240	▶	3RP15 05-1RW30	0.169 A	3RP15 05-2RW30	0.143
	5 ... 100 min							
	0.15 ... 3 h							
	0.5 ... 10 h							

3RP15 1. timing relays, ON-delay, 1 time setting range

With LED and								
1 CO contact	0.5 ... 10 s	24/100 ... 127	24	▶	3RP15 11-1AQ30	0.108 C	3RP15 11-2AQ30	0.092
		24/200 ... 240	24	▶	3RP15 11-1AP30	0.108 A	3RP15 11-2AP30	0.092
	1.5 ... 30 s	24/100 ... 127	24	▶	3RP15 12-1AQ30	0.107 C	3RP15 12-2AQ30	0.092
		24/200 ... 240	24	▶	3RP15 12-1AP30	0.104 A	3RP15 12-2AP30	0.097
	5 ... 100 s	24/100 ... 127	24	▶	3RP15 13-1AQ30	0.107 C	3RP15 13-2AQ30	0.094
		24/200 ... 240	24	▶	3RP15 13-1AP30	0.108 A	3RP15 13-2AP30	0.094

3RP15 25 timing relays, ON-delay, 15 time setting ranges

With LED and								
1 CO	0.05 ... 1 s	24/100 ... 127	24	▶	3RP15 25-1AQ30	0.109 C	3RP15 25-2AQ30	0.095
		24/200 ... 240	24	▶	3RP15 25-1AP30	0.104 A	3RP15 25-2AP30	0.093
2 CO	0.5 ... 10 s	42 ... 48/60	42 ... 48/60 ⁵⁾	A	3RP15 25-1BR30	0.152	--	
		24/100 ... 127	24	▶	3RP15 25-1BQ30	0.152 C	3RP15 25-2BQ30	0.128
	1.5 ... 30 s	24/200 ... 240	24	▶	3RP15 25-1BP30	0.155 A	3RP15 25-2BP30	0.127
	0.05 ... 1 min	24 ... 240 ⁵⁾	24 ... 240 ²⁾	▶	3RP15 25-1BW30	0.159 A	3RP15 25-2BW30	0.134
	5 ... 100 s							
	0.15 ... 3 min							
	0.5 ... 10 min							
	1.5 ... 30 min							
	0.05 ... 1 h							
	5 ... 100 min							
0.15 ... 3 h								

3RP15 27 timing relays, ON-delay, two-wire design, 4 time setting ranges

With LED and								
1 NO contact (semiconductor)	0.05 ... 1 s	24 ... 66	24 ... 66 ⁵⁾	A	3RP15 27-1EC30	0.099 C	3RP15 27-2EC30	0.090
		90 ... 240	90 ... 240 ⁵⁾	▶	3RP15 27-1EM30	0.100 C	3RP15 27-2EM30	0.090
	0.2 ... 4 s							
	1.5 ... 30 s							

1) With switch position ∞ no timing. For test purposes (ON/OFF function) on site. Relay is constantly on when activated, or relay remains constantly off when activated. Depending on which function is set.

2) Operating range 0.7 to 1.1 x U_s .

3) Positively driven: NO and NC are never closed simultaneously; contact gap ≥ 0.5 mm is ensured, minimum make-break capacity 12 V, 3 mA.

4) The changeover contacts are actuated simultaneously, as a result of which only 8 functions are selectable (no wye-delta, no instantaneous contact).

5) Operating range 0.8 to 1.1 x U_s .

SIRIUS 3RP15 timing relays
in industrial enclosure, 22.5 mm

PU (UNIT, SET, M) = 1, PS* = 1 unit, PG = 101



3RP15 33-1AP30



3RP15 40-1BB31



3RP15 55-1AP30



3RP15 60-1SP30



3RP15 76-2NP30



3RP15 33-2AP30



3RP15 40-2BB31

Version	Time setting range t adjustable by rotary switch to	Rated control supply voltage U_s		DT	Screw terminals	Weight per PU approx.	DT	Spring-type terminals	Weight per PU approx.
		AC 50/60 Hz V	DC V		Order No.	Price per PU	kg	Order No.	Price per PU
									kg
3RP15 3. timing relays, OFF-delay, with auxiliary voltage, 1 time setting range									
With LED and 1 CO contact	0.5 ... 10 s	24/100 ... 127	24	A	3RP15 31-1AQ30	0.140	C	3RP15 31-2AQ30	0.124
		24/200 ... 240	24	▶	3RP15 31-1AP30	0.140	C	3RP15 31-2AP30	0.122
The same potential must be applied to terminals A and B	1.5 ... 30 s	24/100 ... 127	24	A	3RP15 32-1AQ30	0.138	C	3RP15 32-2AQ30	0.125
		24/200 ... 240	24	▶	3RP15 32-1AP30	0.139	A	3RP15 32-2AP30	0.121
	5 ... 100 s	24/100 ... 127	24	A	3RP15 33-1AQ30	0.139	C	3RP15 33-2AQ30	0.123
		24/200 ... 240	24	▶	3RP15 33-1AP30	0.140	C	3RP15 33-2AP30	0.125
3RP15 40 timing relays, OFF-delay, without auxiliary voltage, 9 time setting ranges¹⁾									
With LED and									
1 CO	0.05 ... 1 s	24	24 ²⁾	▶	3RP15 40-1AB31	0.116	A	3RP15 40-2AB31	0.105
	0.15 ... 3 s	100 ... 127	100...127 ³⁾	▶	3RP15 40-1AJ31	0.119	A	3RP15 40-2AJ31	0.108
	0.3 ... 6 s	200 ... 240	200...240 ³⁾	▶	3RP15 40-1AN31	0.120	A	3RP15 40-2AN31	0.110
	0.5 ... 10 s	24 ... 240	24 ... 240 ³⁾	▶	3RP15 40-1AW31	0.116	A	3RP15 40-2AW31	0.105
2 CO	1.5 ... 30 s	24	24 ²⁾	▶	3RP15 40-1BB31	0.159	A	3RP15 40-2BB31	0.136
	3 ... 60 s	100 ... 127	100...127 ³⁾	▶	3RP15 40-1BJ31	0.161	A	3RP15 40-2BJ31	0.136
	5 ... 100 s	200 ... 240	200...240 ³⁾	▶	3RP15 40-1BN31	0.161	C	3RP15 40-2BN31	0.136
	15 ... 300 s	24 ... 240	24 ... 240 ³⁾	▶	3RP15 40-1BW31	0.159	A	3RP15 40-2BW31	0.136
	30 ... 600 s								
3RP15 55 timing relays, clock-pulse relay, 15 time setting ranges									
With LED and 1 CO contact	0.05 ... 1 s	42 ... 48/60	42...48/ 60 ⁵⁾	A	3RP15 55-1AR30	0.111	C	3RP15 55-2AR30	0.102
	0.15 ... 3 s	24/100 ... 127	24	▶	3RP15 55-1AQ30	0.111	C	3RP15 55-2AQ30	0.100
	0.5 ... 10 s	24/200 ... 240	24	▶	3RP15 55-1AP30	0.111	A	3RP15 55-2AP30	0.104
	1.5 ... 30 s								
	0.05 ... 1 min								
	5 ... 100 s								
	0.15 ... 3 min								
	0.5 ... 10 min								
	1.5 ... 30 min								
	0.05 ... 1 h								
	5 ... 100 min								
	0.15 ... 3 h								
	0.5 ... 10 h								
	1.5 ... 30 h								
	5 ... 100 h								
	∞ ⁴⁾								
3RP15 60 timing relays, wye-delta function, dead interval 50 ms and coasting time, 1 time setting range									
3 NO contacts ³⁾ (common contact root terminal 17)	Wye-delta	24/100 ... 127	24	A	3RP15 60-1SQ30	0.172	C	3RP15 60-2SP30	0.152
	1 ... 20 s, coasting time (idling)	24/200 ... 240	24	▶	3RP15 60-1SP30	0.175		--	
	30 ... 600 s								
3RP15 7. timing relays, wye-delta function⁶⁾, dead interval 50 ms, 1 time setting range									
1 NO contact instantaneous and 1 NO contact delayed (common contact root terminal 17)	1 ... 20 s	24/100 ... 127	24	▶	3RP15 74-1NQ30	0.113	A	3RP15 74-2NP30	0.104
		24/200 ... 240	24	▶	3RP15 74-1NP30	0.113	B	3RP15 74-2NM20	0.100
		200 ... 240/380 ... 440	--	B	3RP15 74-1NM20	0.113		--	
	3 ... 60 s	24/100 ... 127	24	▶	3RP15 76-1NQ30	0.112	A	3RP15 76-2NQ30	0.102
		24/200 ... 240	24	▶	3RP15 76-1NP30	0.113	A	3RP15 76-2NP30	0.104
		200 ... 240/380 ... 440	--	B	3RP15 76-1NM20	0.113	B	3RP15 76-2NM20	0.100

For accessories, see page 7/44.

1) Setting of output contacts in as-supplied state not defined (bistable relay).

Application of the control supply voltage once results in contact changeover to the correct setting.

2) Operating range 0.7 to 1.25 x U_s .3) Operating range 0.85 to 1.1 x U_s .4) With switch position ∞ no timing. For test purposes (ON/OFF function) on site. For dead time "infinite", the relay is always off. For pulse time "infinite", the relay is always on.5) Operating range 0.8 to 1.1 x U_s .

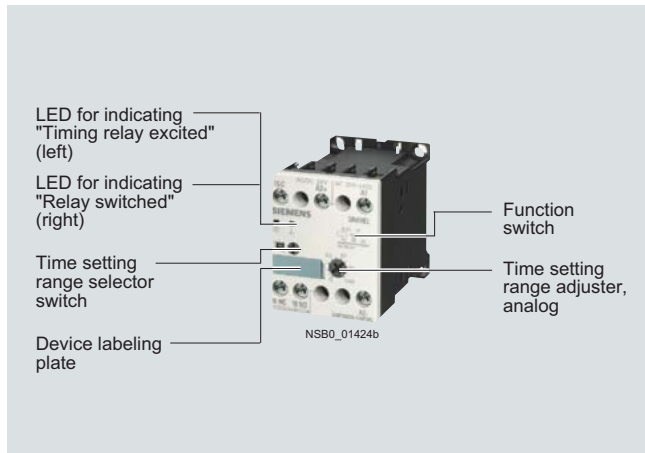
6) For example circuit see note on Technical Information on page 7/1.

* You can order this quantity or a multiple thereof.

Timing Relays

SIRIUS 3RP20 timing relays, 45 mm

Overview



Standards

The timing relays comply with:

- EN 60721-3-3 "Environmental conditions"
- EN 61812-1 (DIN VDE 0435 Part 2021) "Specified time relays for industrial use"
- EN 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- EN 60947-5-1 (VDE 0660 Part 200) "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- EN 61140 "Electrical protective separation"

Accessories



Label set for marking the multifunction relay

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Selection and ordering data

Multifunction

The functions can be adjusted by means of rotary switches. Insert labels can be used to adjust different functions of the 3RP20 05 timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B.

For functions see 3RP19 01 label set, page 7/44.

PU (UNIT, SET, M) = 1, PS* = 1 units, PG = 101



3RP20 05-1BW30



3RP20 25-1AP30



3RP20 05-2BW30



3RP20 25-2AP30

Version	Time setting range t	Rated control supply voltage U_s	DT	Screw terminals	Weight per PU approx.	DT	Spring-type terminals	Weight per PU approx.
		AC 50/60 Hz V	DC V	Order No.	Price per PU	kg	Order No.	Price per PU
3RP20 05 timing relays, multifunction, 15 time setting ranges								
With LED and 1 CO contact, 8 functions	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s	24/100 ... 127 24/200 ... 240	24 24	3RP20 05-1AQ30 3RP20 05-1AP30	0.118 0.119	D ▶	3RP20 05-2AQ30 3RP20 05-2AP30	0.120 0.121
With LED and 2 CO contact, 16 functions ¹⁾	1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ ²⁾	24 ... 240 ³⁾	24 ... 240 ⁴⁾	3RP20 05-1BW30	0.128	D	3RP20 05-2BW30	0.131
3RP20 25 timing relays, ON-delay, 15 time setting ranges								
With LED and 1 CO contact ¹⁾	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ ²⁾	24/100 ... 127 24/200 ... 240	24 24	3RP20 25-1AQ30 3RP20 25-1AP30	0.106 0.106	▶ ▶	3RP20 25-2AQ30 3RP20 25-2AP30	0.110 0.108

For accessories, see page 7/44.

- 1) Units with electrical protective separation.
- 2) With switch position ∞ no timing. For test purposes (ON/OFF function) on site. Relay is constantly on when activated, or relay remains constantly off when activated. Depending on which function is set.
- 3) Operating range 0.8 ... 1.1 x U_s .
- 4) Operating range 0.7 ... 1.1 x U_s .

Timing Relays

7PV15 timing relays in enclosure, 17.5 mm

Overview



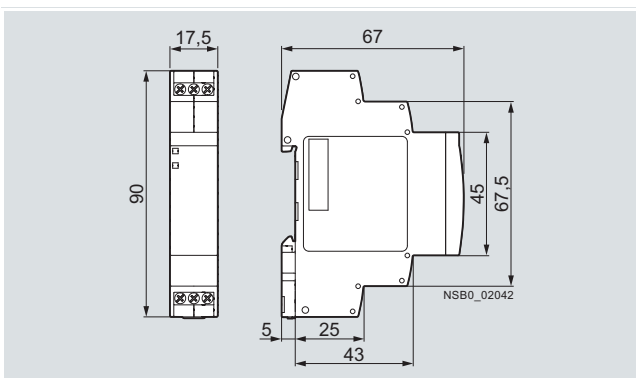
Standards

The timing relays comply with:

- EN 60721-3-3 "Environmental conditions"
- EN 61812-1 (DIN VDE 0435 Part 2021) "Specified time relays for industrial use"
- EN 61000-6-2 and EN 61000-6-4 "Electromagnetic compatibility"
- EN 60947-5-1 (VDE 0660 Part 200) "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- DIN 43880 "Modular installation devices; enclosure dimensions and related mounting dimensions"

Enclosure version

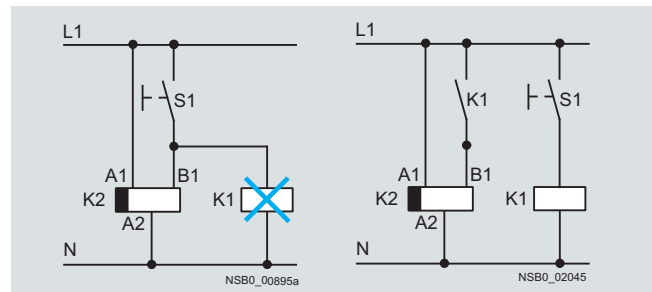
All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to EN 60715. The enclosure complies with DIN 43880, 1 MW.



Dimensions

Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage (see diagrams).



Benefits

- Wide voltage range 12 ... 240 V AC/DC
- High switching capacity, e. g. AC15 at 230 V, 3 A
- Combination voltage, e. g. 24 V AC/DC and 200 ... 240 V AC
- Changes to the time setting range during operation
- Changes to the function in the de-energized state
- High level of functionality and a high repeat accuracy of timer settings
- Integrated surge suppressor
- Function charts printed on the side of the device for reliable device adjustment

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays, e. g. in functional buildings, airports, industrial buildings etc.

7PV15 timing relays in enclosure, 17.5 mm

Selection and ordering data

Solid-state timing relays for general use and in control systems, mechanical engineering and infrastructure with:

- 1 changeover contact or 2 changeover contacts

- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED



7PV15 08-1AW30



7PV15 12-1AP30



7PV15 18-1AW30



7PV15 38-1AW30



7PV15 40-1AW30



7PV15 58-1AW30



7PV15 78-1BW30

Version	Time setting range t adjustable by rotary switch to	Rated control supply voltage U_s	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		AC 50/60 Hz V	DC V	Order No.	Price per PU				kg

7PV15 08 timing relays, multifunction, 7 time setting ranges

The functions can be adjusted by means of rotary switches. The same potential must be applied to terminals A. and B.

With LED and 1 CO contact, 7 functions	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	7PV15 08-1AW30	1	1 unit	101	0.136
--	---	------------	------------	---	-----------------------	---	--------	-----	-------

7PV15 1. timing relays, ON-delay, 1 time setting range

With LED and 1 CO contact	0.5 ... 10 s	24/100 ... 127	24	▶	7PV15 12-1AQ30	1	1 unit	101	0.108
		24/200 ... 240	24	▶	7PV15 12-1AP30	1	1 unit	101	0.108
	5 ... 100 s	24/100 ... 127	24	▶	7PV15 13-1AQ30	1	1 unit	101	0.107
		24/200 ... 240	24	▶	7PV15 13-1AP30	1	1 unit	101	0.108

7PV15 18 timing relays, ON-delay, 7 time setting ranges

With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	7PV15 18-1AW30	1	1 unit	101	0.159
------------------------------	---	------------	------------	---	-----------------------	---	--------	-----	-------

7PV15 38 timing relays, OFF-delay, with auxiliary voltage, 7 time setting ranges

With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	7PV15 38-1AW30	1	1 unit	101	0.140
------------------------------	---	------------	------------	---	-----------------------	---	--------	-----	-------

7PV15 40 timing relays, OFF-delay, without auxiliary voltage, 7 time setting ranges

With LED and 1 CO contact	0.05 ... 1 s 0.15 ... 3s 0.3 ... 6 s 0.5 s ... 10 s 1.5 min ... 30 s 3 ... 60 s 5 ... 100 s	12 ... 240	12 ... 240	▶	7PV15 40-1AW30	1	1 unit	101	0.116
------------------------------	---	------------	------------	---	-----------------------	---	--------	-----	-------

7PV15 58 timing relays, clock-pulse relay, 7 time setting ranges

With LED and 1 CO contact	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	7PV15 58-1AW30	1	1 unit	101	0.111
------------------------------	---	------------	------------	---	-----------------------	---	--------	-----	-------

7PV15 78 timing relays, wye-delta function, 7 time setting ranges



With LED and 2 CO contacts, dead interval 0.05 ... 1 s adjustable	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s 30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	7PV15 78-1BW30	1	1 unit	101	0.113
--	---	------------	------------	---	-----------------------	---	--------	-----	-------

* You can order this quantity or a multiple thereof.

Timing Relays

SIRIUS 3RT19 timing relays for mounting onto contactors

Selection and ordering data

For contactors	Version	Time setting range t	Rated control supply voltage U_s	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Type		s	V		Order No.	Price per PU				kg	
For size S00¹⁾											
 3RT19 16-2...	3RT10 1, 3RH11	Terminal designations acc. to EN 46199-5									
	• ON-delay (varistor integrated)										
	1 NO + 1 NC	0.05 ... 1	24 AC/DC	▶	3RT19 16-2EJ11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 16-2EJ21	1	1 unit	101	0.090		
		5 ... 100		▶	3RT19 16-2EJ31	1	1 unit	101	0.090		
		0.05 ... 1	100 ... 127	C	3RT19 16-2EC11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 16-2EC21	1	1 unit	101	0.090		
		5 ... 100		▶	3RT19 16-2EC31	1	1 unit	101	0.090		
		0.05 ... 1	200 ... 240	D	3RT19 16-2ED11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 16-2ED21	1	1 unit	101	0.090		
		5 ... 100		▶	3RT19 16-2ED31	1	1 unit	101	0.090		
	• OFF-delay without auxiliary voltage (varistor integrated) ²⁾										
	1 NO + 1 NC	0.05 ... 1	24 AC/DC	▶	3RT19 16-2FJ11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 16-2FJ21	1	1 unit	101	0.090		
		5 ... 100		▶	3RT19 16-2FJ31	1	1 unit	101	0.090		
		0.05 ... 1	100 ... 127	C	3RT19 16-2FK11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 16-2FK21	1	1 unit	101	0.090		
		5 ... 100		B	3RT19 16-2FK31	1	1 unit	101	0.090		
		0.05 ... 1	200 ... 240	D	3RT19 16-2FL11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 16-2FL21	1	1 unit	101	0.090		
	5 ... 100		▶	3RT19 16-2FL31	1	1 unit	101	0.090			
• OFF-delay with auxiliary voltage (varistor integrated)											
1 CO	0.5 ... 10	24 AC/DC	B	3RT19 16-2LJ21	1	1 unit	101	0.090			
		100 ... 127	B	3RT19 16-2LC21	1	1 unit	101	0.090			
		200 ... 240	C	3RT19 16-2LD21	1	1 unit	101	0.090			
• Wye-delta function (varistor integrated)											
1 NO, delayed +	1.5 ... 30	24 AC/DC	▶	3RT19 16-2GJ51	1	1 unit	101	0.090			
1 NO, instantaneous, dead time 50 ms		100 ... 127	D	3RT19 16-2GC51	1	1 unit	101	0.090			
		200 ... 240	▶	3RT19 16-2GD51	1	1 unit	101	0.090			
For sizes S0 to S12³⁾											
 3RT19 26-2...	3RT10 2, 3RT10 3, 3RT10 4	Terminal designations acc. to EN 46199-5									
	• ON-delay										
	1 NO + 1 NC	0.05 ... 1	24 AC/DC	D	3RT19 26-2EJ11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 26-2EJ21	1	1 unit	101	0.090		
		5 ... 100		▶	3RT19 26-2EJ31	1	1 unit	101	0.090		
		0.05 ... 1	100 ... 127	C	3RT19 26-2EC11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 26-2EC21	1	1 unit	101	0.090		
		5 ... 100		D	3RT19 26-2EC31	1	1 unit	101	0.090		
		0.05 ... 1	200 ... 240	D	3RT19 26-2ED11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 26-2ED21	1	1 unit	101	0.090		
		5 ... 100		B	3RT19 26-2ED31	1	1 unit	101	0.090		
	• OFF-delay without auxiliary voltage ²⁾										
	1 NO + 1 NC	0.05 ... 1	24 AC/DC	▶	3RT19 26-2FJ11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 26-2FJ21	1	1 unit	101	0.090		
		5 ... 100		▶	3RT19 26-2FJ31	1	1 unit	101	0.090		
		0.05 ... 1	100 ... 127	D	3RT19 26-2FK11	1	1 unit	101	0.090		
		0.5 ... 10		▶	3RT19 26-2FK21	1	1 unit	101	0.090		
		5 ... 100		C	3RT19 26-2FK31	1	1 unit	101	0.090		
		0.05 ... 1	200 ... 240	D	3RT19 26-2FL11	1	1 unit	101	0.090		
		0.5 ... 10		A	3RT19 26-2FL21	1	1 unit	101	0.090		
	5 ... 100		A	3RT19 26-2FL31	1	1 unit	101	0.090			
• Wye-delta function (varistor integrated)											
1 NO, delayed +	1.5 ... 30	24 AC/DC	▶	3RT19 26-2GJ51	1	1 unit	101	0.090			
1 NO, instantaneous, dead time 50 ms		100 ... 127	▶	3RT19 26-2GC51	1	1 unit	101	0.090			
		200 ... 240	▶	3RT19 26-2GD51	1	1 unit	101	0.090			

¹⁾ The terminals for the rated control supply voltage are connected to the contactor beneath by the integrated spring-type contacts of the solid-state time-delay auxiliary switch block when mounting.

²⁾ Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

³⁾ Terminals A1 and A2 for the control supply voltage of the solid-state time-delay auxiliary switch must be connected to the associated contactor by means of connecting cables.

SIRIUS 3RT19 timing relays
for mounting onto contactors

For contactors	Version	Time setting range t	Rated control supply voltage U_s	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type	s	V			Order No.		Price per PU			kg
For size S00, with semiconductor output										
3RT1. 1, 3RH11	For mounting onto the front of contactors The electrical connection between the timing relay block and the contactor beneath is established automatically when it is snapped on.									
• ON-delay, two-wire design (varistor integrated)										
	0.05 ... 1	24 ... 66	B	▶	3RT19 16-2CG11		1	1 unit	101	0.050
	0.5 ... 10		B	▶	3RT19 16-2CG21		1	1 unit	101	0.050
	5 ... 100		B	▶	3RT19 16-2CG31		1	1 unit	101	0.050
	0.05 ... 1	90 ... 240	D	▶	3RT19 16-2CH11		1	1 unit	101	0.050
	0.5 ... 10		D	▶	3RT19 16-2CH21		1	1 unit	101	0.050
	5 ... 100		D	▶	3RT19 16-2CH31		1	1 unit	101	0.050
• OFF-delay with auxiliary voltage (varistor integrated)										
	0.05 ... 1	24 ... 66	C		3RT19 16-2DG11		1	1 unit	101	0.060
	0.5 ... 10		B		3RT19 16-2DG21		1	1 unit	101	0.060
	5 ... 100		B		3RT19 16-2DG31		1	1 unit	101	0.060
	0.05 ... 1	90 ... 240	D		3RT19 16-2DH11		1	1 unit	101	0.060
	0.5 ... 10		D		3RT19 16-2DH21		1	1 unit	101	0.060
	5 ... 100		D		3RT19 16-2DH31		1	1 unit	101	0.060
For sizes S0 to S3, with semiconductor output										
3RT10 2, 3RT10 3, 3RT10 4 ¹⁾	For mounting onto coil terminals on top of the contactors The electrical connection between the relay block and the corresponding contactor is established by screwing the two connecting pins of the timing relay block to coil terminals A1/A2 on top of the contactor.									
• ON-delay, two-wire design (varistor integrated)										
	0.05 ... 1	24 ... 66	D		3RT19 26-2CG11		1	1 unit	101	0.050
	0.5 ... 10		B		3RT19 26-2CG21		1	1 unit	101	0.050
	5 ... 100		D		3RT19 26-2CG31		1	1 unit	101	0.050
	0.05 ... 1	90 ... 240	D	▶	3RT19 26-2CH11		1	1 unit	101	0.050
	0.5 ... 10		D	▶	3RT19 26-2CH21		1	1 unit	101	0.050
	5 ... 100		D	▶	3RT19 26-2CH31		1	1 unit	101	0.050
• OFF-delay with auxiliary voltage (varistor integrated)										
	0.05 ... 1	24 ... 66	D		3RT19 26-2DG11		1	1 unit	101	0.050
	0.5 ... 10		D		3RT19 26-2DG21		1	1 unit	101	0.050
	5 ... 100		D		3RT19 26-2DG31		1	1 unit	101	0.050
	0.05 ... 1	90 ... 240	C		3RT19 26-2DH11		1	1 unit	101	0.050
	0.5 ... 10		D		3RT19 26-2DH21		1	1 unit	101	0.050
	5 ... 100		C		3RT19 26-2DH31		1	1 unit	101	0.050

¹⁾ Not for 3RT10 4 contactor with 24 ... 42 V rated control supply voltage.

Timing Relays

Accessories

Selection and ordering data

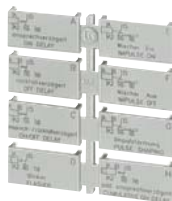
Accessories for 3RP15 and 3RP20

Version	Function	Identification letter	Use	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----------	-----------------------	-----	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

Label set for 3RP15 and 3RP20

Accessory for 3RP15 05 and 3RP20 (not included in the scope of supply). The label set offers the possibility of labeling timing relays with the set function in English and German.



3RP19 01-0A

1 label set (1 unit) with 8 functions	With ON-delay OFF-delay with auxiliary voltage ON-delay and OFF-delay with auxiliary voltage Flashing, starting with interval Passing make contact Passing break contact with auxiliary voltage Pulse-forming with auxiliary voltage Additive ON-delay with auxiliary voltage	A B C D E F G H	for devices with 1 CO contact and 3RP15 05-.RW30	▶	3RP19 01-0A		1	5 units	101	0.003
---------------------------------------	--	--------------------------------------	--	---	--------------------	--	---	---------	-----	-------



3RP19 01-0B

1 label set (1 unit) with 16 functions	With ON-delay OFF-delay with auxiliary voltage ON-delay and OFF-delay with auxiliary voltage Flashing, starting with interval Passing make contact Passing break contact with auxiliary voltage Pulse-forming with auxiliary voltage Additive ON-delay with auxiliary voltage and instantaneous contact ON-delay and instantaneous contact OFF-delay with auxiliary voltage and instantaneous contact ON-delay and OFF-delay with auxiliary voltage and instantaneous contact Flashing, starting with interval, and instantaneous contact Passing make contact and instantaneous contact Passing break contact with auxiliary voltage and instantaneous contact Pulse-forming with auxiliary voltage and instantaneous contact Wye-delta function	A B C D E F G H• A• B• C• D• E• F• G• YΔ	for devices with 2 CO contacts	▶	3RP19 01-0B		1	5 units	101	0.006
--	--	---	--------------------------------	---	--------------------	--	---	---------	-----	-------

Blank labels for 3RP15 and 3RP20

Blank labels, 20 mm x 7 mm, pastel turquoise ¹⁾			For 3RP15, 3RP20	C	3RT19 00-1SB20		100	340 units	101	0.200
--	--	--	------------------	---	-----------------------	--	-----	-----------	-----	-------

Covering caps and push-in lugs for 3RP15



3RP19 03

Push-in lugs For screw fixing, 2 units are required for each device			For 3RP15 with 1 or 2 CO contacts	▶	3RP19 03		1	10 units	101	0.002
---	--	--	-----------------------------------	---	-----------------	--	---	----------	-----	-------



3RP19 02

Sealable covers For securing against unauthorized adjustment of setting knobs			For 3RP15 with 1 or 2 CO contacts	▶	3RP19 02		1	5 units	101	0.004
---	--	--	-----------------------------------	---	-----------------	--	---	---------	-----	-------

¹⁾ PC labeling system for individual inscription of unit labeling plates available from:

murrplastik Systemtechnik GmbH
www.murrplastik.de

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Line monitoring

Overview



Solid-state line monitoring relays provide maximum protection for mobile machines and plants or for unstable networks. Network and voltage faults can be detected early and rectified before far greater damage ensues.

Depending on the version, the relays monitor phase sequence, phase failure with and without N conductor monitoring, phase unbalance, undervoltage or overvoltage.

Phase unbalance is evaluated as the difference between the greatest and the smallest phase voltage relative to the greatest phase voltage. Undervoltage or overvoltage exists when at least one phase voltage deviates by 20 % from the set rated system voltage or the directly set limit values are overshot or undershot. The rms value of the voltage is measured.

With the 3UG46 17 or 3UG46 18 relay, a wrong direction of rotation can also be corrected automatically.

Benefits

- Can be used without auxiliary voltage in any network from 160 ... 600 V AC worldwide thanks to wide voltage range
- Variably adjustable to overvoltage, undervoltage or range monitoring
- Freely configurable delay times and reset response
- Width 22.5 mm
- Permanent display of ACTUAL value and network fault type on the digital versions
- Automatic correction of the direction of rotation by distinguishing between power system faults and wrong phase sequence
- All versions with removable terminals
- All versions with screw terminals or alternatively with innovative spring-type terminals

Application

The relays are used above all for mobile equipment, e. g. air conditioning compressors, refrigerating containers, building site compressors and cranes.








Function	Application
Phase sequence	<ul style="list-style-type: none"> • Direction of rotation of the drive
Phase failure	<ul style="list-style-type: none"> • A fuse has tripped • Failure of the control supply voltage • Broken cable
Phase asymmetry	<ul style="list-style-type: none"> • Overheating of the motor due to asymmetrical voltage • Detection of asymmetrically loaded networks
Undervoltage	<ul style="list-style-type: none"> • Increased current on a motor with corresponding overheating • Unintentional resetting of a device • Network collapse, particularly with battery power
Overvoltage	<ul style="list-style-type: none"> • Protection of a plant against destruction due to overvoltage

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Line monitoring

Selection and ordering data

      							PU (UNIT, SET, M) = 1 PS* = 1 unit PG = 101					
Hysteresis	Under-voltage detection	Over-voltage detection	ON-delay	Tripping delay	Auxiliary contacts Version	Rated control supply voltage U_s ¹⁾	DT	Screw terminals	DT	Spring-type terminals	Weight per PU approx.	
			s	s	CO contact	V		Order No.	Price per PU	Order No.	Price per PU	kg
Monitoring of phase sequence												
Auto-RESET												
--	--	--	--	--	1	160 ... 260 AC	A	3UG45 11-1AN20	B	3UG45 11-2AN20	0.147	
					2		A	3UG45 11-1BN20	B	3UG45 11-2BN20	0.147	
					1	320 ... 500 AC	A	3UG45 11-1AP20	A	3UG45 11-2AP20	0.147	
					2		A	3UG45 11-1BP20	B	3UG45 11-2BP20	0.147	
					1	420 ... 690 AC	B	3UG45 11-1AQ20	B	3UG45 11-2AQ20	0.147	
					2		B	3UG45 11-1BQ20	B	3UG45 11-2BQ20	0.147	
Monitoring of phase sequence, phase failure and phase unbalance												
Auto-RESET, closed-circuit principle, unbalance threshold 10 %												
--	--	--	--	--	1	160 ... 690 AC	A	3UG45 12-1AR20	A	3UG45 12-2AR20	0.147	
					2		A	3UG45 12-1BR20	A	3UG45 12-2BR20	0.147	
Monitoring of phase sequence, phase failure, unbalance and undervoltage												
Analog adjustable, Auto-RESET, closed-circuit principle, fixed unbalance threshold 20 %												
5 % of set value	✓	--	--	0.1 ... 20	2	160 ... 690 AC	A	3UG45 13-1BR20	A	3UG45 13-2BR20	0.147	
Digitally adjustable, Auto or manual RESET, open-circuit or closed-circuit principle, unbalance threshold 0 or 5 ... 20 %												
Adjustable	✓	--	0.1 ... 20	0.1 ... 20	2	160 ... 690 AC	A	3UG46 14-1BR20	A	3UG46 14-2BR20	0.147	
1 ... 20 V												
Monitoring of phase sequence, phase failure, overvoltage and undervoltage												
Digitally adjustable, Auto-RESET or manual RESET, open-circuit or closed-circuit principle												
Adjustable	✓	✓	--	0.1 ... 20 ²⁾	2 ²⁾	160 ... 690 AC	A	3UG46 15-1CR20	A	3UG46 15-2CR20	0.140	
1 ... 20 V												
Monitoring of phase sequence, phase and N conductor failure, overvoltage and undervoltage												
Digitally adjustable, Auto-RESET or manual RESET, open-circuit or closed-circuit principle												
Adjustable	✓	✓	--	0.1 ... 20 ²⁾	2 ²⁾	90 ... 400 AC against N	A	3UG46 16-1CR20	A	3UG46 16-2CR20	0.147	
1 ... 20 V												
Automatic correction of the direction of rotation in case of wrong phase sequence, phase failure, phase unbalance, overvoltage and undervoltage												
Digitally adjustable, Auto or manual RESET, open-circuit or closed-circuit principle, unbalance threshold 0 or 5 ... 20 %												
Adjustable	✓	✓	--	0.1 ... 20	2 ³⁾	160 ... 690 AC	A	3UG46 17-1CR20	B	3UG46 17-2CR20	0.147	
1 ... 20 V												
Automatic correction of the direction of rotation in case of wrong phase sequence, phase and N conductor failure, phase unbalance, overvoltage and undervoltage												
Digitally adjustable, Auto or manual RESET, open-circuit or closed-circuit principle, unbalance threshold 0 or 5 ... 20 %												
Adjustable	✓	✓	--	0.1 ... 20	2 ³⁾	90 ... 400 AC against N	A	3UG46 18-1CR20	B	3UG46 18-2CR20	0.147	
1 ... 20 V												

✓ Function available -- Function not available

1) Absolute limit values.

2) 1 CO contact each and 1 tripping delay time each for U_{min} and U_{max} .

3) 1 CO contact each for power system fault and phase sequence correction.

For accessories, see page 7/57.

* You can order this quantity or a multiple thereof.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Voltage monitoring

Overview



The relays monitor single-phase AC voltages (rms value) and DC voltages against the set threshold value for overshoot and undershoot. The devices differ with regard to their power supply (internal or external).

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overvoltage, undervoltage or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of ACTUAL value and status messages
- All versions with removable terminals
- All versions with screw terminals or alternatively with innovative spring-type terminals

Application

- Protection of a plant against destruction due to overvoltage
- Switch-on of a plant at a defined voltage and higher
- Protection against overloaded control supply voltages, particularly with battery power
- Threshold switch for analog signals from 0.1 ... 10 V

Selection and ordering data



3UG46 31-1AA30



3UG46 33-2AL30

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 101

Measuring range	Hysteresis	Rated control supply voltage U_s	DT	Screw terminals		Spring-type terminals		Weight per PU approx. kg
				Order No.	Price per PU	Order No.	Price per PU	
V	V	V						
Internal power supply without auxiliary voltage, ON-delay and tripping delay can be adjusted separately 0.1 ... 20 s								
Digitally adjustable, LC display, Auto-RESET or manual RESET, open-circuit or closed-circuit principle, 1 CO contact								
17 ... 275 AC/DC	0.1 ... 150	17 ... 275 AC/DC ¹⁾	A	3UG46 33-1AL30	A	3UG46 33-2AL30		0.147
Supplied from an external auxiliary voltage, tripping delay adjustable 0.1 ... 20 s								
Digitally adjustable, LC display, Auto-RESET or manual RESET, open-circuit or closed-circuit principle, 1 CO contact								
0.1 ... 60 AC/DC	0.1 ... 30	24 AC/DC	A	3UG46 31-1AA30	B	3UG46 31-2AA30		0.147
10 ... 600 AC/DC	0.1 ... 300		A	3UG46 32-1AA30	B	3UG46 32-2AA30		0.147
0.1 ... 60 AC/DC	0.1 ... 30	24 ... 240 AC/DC	A	3UG46 31-1AW30	B	3UG46 31-2AW30		0.147
10 ... 600 AC/DC	0.1 ... 300		A	3UG46 32-1AW30	B	3UG46 32-2AW30		0.147

For accessories, see page 7/57.

¹⁾ Absolute limit values.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Current monitoring

Overview



The relays monitor single-phase AC currents (rms value) and DC currents against the set threshold value for overshoot and undershoot. They differ with regard to their measuring ranges and supply voltage types.

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overvoltage, undervoltage or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of ACTUAL value and status messages
- All versions with removable terminals
- All versions with screw terminals or alternatively with innovative spring-type terminals

Application

- Overcurrent and undercurrent monitoring
- Monitoring the functionality of electrical loads
- Open-circuit monitoring
- Threshold switch for analog signals from 4 ... 20 mA

Selection and ordering data





3UG46 21-1AA30



3UG46 22-2AW30

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 101

Measuring range	Hysteresis	Rated control supply voltage U_s	DT	Screw terminals 	DT	Spring-type terminals 	Weight per PU approx.	
		V		Order No.	Price per PU	Order No.	Price per PU	kg

Monitoring of undercurrent and overcurrent, on-delay and tripping delay can be adjusted separately 0.1 ... 20 s

Digitally adjustable, LCD, Auto-RESET or manual RESET, open-circuit or closed-circuit principle, 1 CO contact

AC/DC 3 ... 500 mA	0.1 ... 250 mA	24 AC/DC ¹⁾	A	3UG46 21-1AA30	B	3UG46 21-2AA30	0.147
AC/DC 0.05 ... 10 A	0.01 ... 5 A		A	3UG46 22-1AA30	B	3UG46 22-2AA30	0.147
AC/DC 3 ... 500 mA	0.1 ... 250 mA	24 ... 240 ²⁾ AC/DC	A	3UG46 21-1AW30	B	3UG46 21-2AW30	0.147
AC/DC 0.05 ... 10 A	0.01 ... 5 A		A	3UG46 22-1AW30	A	3UG46 22-2AW30	0.147

For accessories, see page 7/57.

With currents $I > 10$ A it is possible to use 4NC current transformers as an accessory, see Chapter 16.

¹⁾ No electrical separation. Load supply voltage 24 V.

²⁾ Electrical separation between control circuit and measuring circuit. Load supply voltage for safe isolation max. 300 V, for simple isolation max. 500 V.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Power factor and active current monitoring

Overview



The 3UG46 41 power factor and active current monitoring device enables the load monitoring of motors.

Whereas power factor monitoring is used above all for monitoring no-load operation, the active current monitoring option can be used to observe and evaluate the load factor over the entire torque range.

Benefits

- Can be used world-wide thanks to wide voltage range from 90 ... 690 V¹⁾
- Monitoring of even small single-phase motors with a no-load supply current below 0.5 A
- Simple determination of threshold values through the direct collection of measured variables on motor loading
- Range monitoring and active current measurement enable detection of cable breaks between control cabinets and motors, as well as phase failures
- Power factor or active current can be selected as measurement principle

¹⁾ Absolute limit values.

Application


- No-load monitoring and load shedding, such as in the event of a V-belt tear
- Underload monitoring in the low performance range, e. g. in the event of pump no-load operation
- Monitoring of overload, e. g. due to a dirty filter system
- Simple power factor monitoring in networks for control of compensation equipment
- Broken cable between control cabinet and motor


Selection and ordering data

Relay for monitoring the power factor and the active current I_{res} (p.f. $\times I$)

- Suitable for single- and three-phase currents
- Digital adjustable, with illuminated LC display
- Overshoot, undershoot or range monitoring

- Upper and lower threshold value can be adjusted separately
- Permanent display of actual value and tripping state
- 1 changeover contact each for undershoot/overshoot
- All terminals are removable
- Width 22.5 mm

Measuring range		Hysteresis		ON-delay	OFF-delay	Rated control supply voltage U_s ¹⁾	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
For power factor	For active current	For power factor	For active current			V							
p.f.	A	p.f.	A	s	s	V		Order No.	Price per PU			kg	
0.10 ... 0.99	0.2 ... 10.0	0.1	0.1 ... 2.0	0 ... 99	0.1 ... 20.0	90 ... 690	A	3UG46 41-1CS20		1	1 unit	101	0.147

Measuring range		Hysteresis		ON-delay	OFF-delay	Rated control supply voltage U_s ¹⁾	DT	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
For power factor	For active current	For power factor	For active current			V							
p.f.	A	p.f.	A	s	s	V		Order No.	Price per PU			kg	
0.10 ... 0.99	0.2 ... 10.0	0.1	0.1 ... 2.0	0 ... 99	0.1 ... 20.0	90 ... 690	B	3UG46 41-2CS20		1	1 unit	101	0.147

For accessories, see page 7/57.

With active currents > 10 A it is possible to use 4NC current transformers as an accessory, see Chapter 16.

¹⁾ Absolute limit values.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Residual current monitoring: Residual-current monitoring relays

Overview



The 3UG46 24 residual current monitoring relay is used together with the 3UL22 summation current transformer for plant monitoring.

Application


- Plant monitoring


Selection and ordering data

Relay for monitoring residual currents $I_{\Delta n}$ 0.3 ... 40 A

- For 3UL22 summation current transformers with feed-through opening 40 ... 120 mm
- Digital adjustable, with illuminated LC display
- Separately adjustable limit value and warning threshold

- Permanent display of actual value and tripping state
- 1 CO contact each for limit violation and warning threshold
- All terminals are removable
- Width 22.5 mm

Display range	Setting range	Hysteresis		ON / tripping delay time	Rated control supply voltage $U_s^{2)}$	DT	Screw terminals 		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Limit value	Warning value				Order No.	Price per PU				
A	A	A	A	s	V	A						kg
10 ... 120 % of $I_{\Delta n}$	10 ... 100 % of $I_{\Delta n}$	LSB ¹⁾ up to 50 % of $I_{\Delta n}$	5 % of $I_{\Delta n}$	0.1 ... 20	90 ... 690	A	3UG46 24-1CS20		1	1 unit	101	0.147

Display range	Setting range	Hysteresis		ON / tripping delay time	Rated control supply voltage $U_s^{2)}$	DT	Spring-type terminals 		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Limit value	Warning value				Order No.	Price per PU				
A	A	A	A	s	V	B						kg
10 ... 120 % of $I_{\Delta n}$	10 ... 100 % of $I_{\Delta n}$	LSB ¹⁾ up to 50 % of $I_{\Delta n}$	5 % of $I_{\Delta n}$	0.1 ... 20	90 ... 690	B	3UG46 24-2CS20		1	1 unit	101	0.130

For accessories, see page 7/57.

For 3UL22 summation current transformers see page 7/51.

¹⁾ LSB: Smallest adjustable value, transformer-dependent, ≤ 1 % of $I_{\Delta n}$.

²⁾ Absolute limit values.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Residual current monitoring:
Summation current transformers

Overview



The 3UL22 summation current transformers sense fault currents in machines and plants. Together with the 3UG46 24 residual current monitoring relay or the SIMOCODE 3UF motor management and control device they enable residual-current and ground-fault monitoring.

Application

- Plant monitoring

Selection and ordering data

Feed-through opening diameter	Rated insulation voltage U_i	Rated fault current $I_{\Delta n}$	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.				
mm	V	A						kg
Summation current transformer (essential accessory for 3UG46 24 or SIMOCODE 3UF)								
40	690	0.3	B	3UL22 01-1A	1	1 unit	101	0.571
		0.5	B	3UL22 01-2A	1	1 unit	101	0.408
		1	B	3UL22 01-3A	1	1 unit	101	0.324
65	690	0.3	B	3UL22 02-1A	1	1 unit	101	0.900
		0.5	B	3UL22 02-2A	1	1 unit	101	0.713
		1	B	3UL22 02-3A	1	1 unit	101	0.568
		6	C	3UL22 02-1B	1	1 unit	101	0.561
		10	C	3UL22 02-2B	1	1 unit	101	0.563
		16	C	3UL22 02-3B	1	1 unit	101	0.573
		25	C	3UL22 02-4B	1	1 unit	101	0.575
40	C	3UL22 02-5B	1	1 unit	101	0.564		
120	1000	0.3	B	3UL22 03-1A	1	1 unit	101	3.435
		0.5	B	3UL22 03-2A	1	1 unit	101	2.810
		1	B	3UL22 03-3A	1	1 unit	101	1.965
		6	C	3UL22 03-1B	1	1 unit	101	1.955
		10	C	3UL22 03-2B	1	1 unit	101	1.990
		16	C	3UL22 03-3B	1	1 unit	101	1.917
		25	C	3UL22 03-4B	1	1 unit	101	1.851
40	C	3UL22 03-5B	1	1 unit	101	1.905		



3UL22

* You can order this quantity or a multiple thereof.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Insulation monitoring for ungrounded AC networks

Overview



Relay for monitoring the insulation resistance between the ungrounded single or three-phase AC supply and a protective conductor

- Measuring principle with superimposed DC voltage
- Two selectable measuring ranges of 1 ... 110 k Ω
- Stepless setting within the measuring range
- Selectable:
 - Auto reset function with fixed hysteresis or
 - Storage of the tripping operation
- Test function with test button on the front and over terminal connections
- Switching output: 1 CO
- Insulation fault indication with a red LED
- Control supply voltage indication with a green LED
- Electromagnetically compatible according to EN 61000-6-2 and EN 61000-6-4

Application

The 3UG30 81 monitoring device is suitable for insulation monitoring of AC systems with one or three phases in ungrounded networks (IT networks).

Control supply voltage


The 3UG30 81-1AK20 has alternative voltage terminals. Only one control supply voltage is permitted to be connected to it! Terminals A1 and A2 are used to connect 230 V AC and terminals A1 and B2 are used to connect 115 V AC.

The 3UG30 81-1AW30 has a wide-range input of 24 ... 240 V AC/DC on terminals A1 and A2.

Selection and ordering data

Measuring range U_e	Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
k Ω	V		Order No.	Price per PU			kg

Insulation monitors for ungrounded AC networks

	1 ... 110	115 / 230 AC	A	3UG30 81-1AK20	1	1 unit	101	0.327
		24 ... 240 AC/DC	B	3UG30 81-1AW30	1	1 unit	101	0.242

3UG30 81-1AK20

For accessories, see page 7/57.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Insulation monitoring for ungrounded DC networks

Overview



Relay for monitoring the insulation resistance between ungrounded pure DC networks and a protective conductor

- Measuring principle for residual current measurement
- Response value can be adjusted steplessly from 10 to 110 kΩ
- Selectable
 - Auto reset function with hysteresis or
 - Storage of the tripping operation
- Front selector switch for open-circuit and closed-circuit principle for the output relay
- Test function with test buttons on the front for L+ and L- and over terminal connections
- Switching output: 1 CO
- Insulation fault indicator for L+ and L- through two red LEDs
- Control supply voltage indication with a green LED
- Electromagnetically compatible according to EN 61000-6-2 and EN 61000-6-4

Application

The 3UG30 82 monitoring relay has been designed for insulation monitoring in ungrounded, purely DC networks with or without filtering. It is mainly used to monitor ungrounded DC voltage networks as well as to monitor battery-powered systems.

Control supply voltage

Due to the electrical isolation of the supply voltage and the measuring circuit, the relay can be used for DC networks in which the auxiliary voltage is either supplied externally or where the network to be monitored also serves as the power supply.

Note:

If the monitoring relay is supplied with an external voltage, then the terminals A1 and L+ as well as A2 and L- must not be connected with each other!

Selection and ordering data

Measuring range U_e	Rated control supply voltage U_s	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kΩ	V		Order No.	Price per PU			kg

Insulation monitors for ungrounded DC networks

10 ... 110	24 ... 240	B	3UG30 82-1AW30	1	1 unit	101	0.233
------------	------------	---	-----------------------	---	--------	-----	-------



3UG30 82-1AW30

For accessories, see page 7/57.

* You can order this quantity or a multiple thereof.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Level monitoring: Level monitoring relays

Overview



The 3UG45 01 level monitoring relay is used together with 2- or 3-pole sensors to monitor the levels of conductive liquids.

Application

- Single-point and two-point level monitoring
- Overflow protection
- Dry run protection
- Leak monitoring



Selection and ordering data

Level monitoring relay for conductive liquids

- Control principle: inlet or outlet control per rotary switch
- Single-point and two-point control possible
- Analog adjustable sensitivity (specific resistance of the liquid)
- Analog adjustable tripping delay time
- 1 yellow LED for indicating the relay state

- 1 green LED for indicating the applied control supply voltage
- 1 CO
- All terminals are removable
- Width 22.5 mm

PU (UNIT, SET, M) = 1, PS* = 1 units, PG = 101

Sensitivity	Tripping delay time	Rated control supply voltage U_s	DT	Screw terminals 		Spring-type terminals 		Weight per PU approx.
				Order No.	Price per PU	Order No.	Price per PU	
k Ω	s	V AC/DC						kg
2 ... 200	0.5 ... 10	24 ¹⁾ 24 ... 240	A A	3UG45 01-1AA30 3UG45 01-1AW30	A A	3UG45 01-2AA30 3UG45 01-2AW30		0.110 0.120

For accessories, see page 7/57.

For level monitoring sensors see page 7/55.






¹⁾ The rated control supply voltage and the measuring circuit are not electrically separated.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Level monitoring:
Level monitoring sensors

Selection and ordering data

Version	Assignment Cables	Elec- trode	Application	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
<p>With Teflon insulation (PTFE), screw-in gland width A/F 22, 3/8 inch thread, PVC connecting cable, 3 x 0.5 mm², 2 m long, max. operating temperature 90 °C, max. operating pressure 10 bar</p> <p>The wire electrodes can be cut or bent to the required length before or after installation. The Teflon insulation must be removed over a length of approx. 5 mm.</p>										
 3UG32 07-3A	Three-pole wire electrode 500 mm long	Brown White Green	Center elec- trode Not assign- able	▶	3UG32 07-3A		1	1 unit	101	0.254
 3UG32 07-2A	Two-pole wire electrode 500 mm long	Brown White	Not assign- able	▶	3UG32 07-2A		1	1 unit	101	0.230
 3UG32 07-2B	Two-pole bow electrode	Brown White Green	Gland Not assign- able	▶	3UG32 07-2B		1	1 unit	101	0.128
 3UG32 07-1B	Single-pole bow electrode for lateral fitting	Brown White	Gland Elec- trode	▶	3UG32 07-1B		1	1 unit	101	0.122
 3UG32 07-1C	Single-pole rod electrode for lateral fitting	Brown White	Gland Elec- trode	C	3UG32 07-1C		1	1 unit	101	0.144

* You can order this quantity or a multiple thereof.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Speed monitoring

Overview



The 3UG46 51 monitoring relay is used together with a sensor to monitor motor drives for overspeed and/or underspeed.

Furthermore, this relay is ideal for all functions where a continuous pulse signal needs to be monitored (e. g. belt travel monitoring, completeness monitoring, passing monitoring, clock-time monitoring).

Application

- Slip or tear of a belt drive
- Overload monitoring
- Transport monitoring for completeness



Selection and ordering data

Relay for speed monitoring in min^{-1} (rpm)

- Two- or three-wire sensor with mechanical or electronic switching output can be connected
- Two-wire NAMUR sensor can be connected
- Integrated sensor supply 24 V DC/50 mA
- Input frequency 0.1 ... 2200 pulses min^{-1} (0.0017 ... 36.7 Hz)
- With or without enable signal for the drive to be monitored
- Digital adjustable, with illuminated LC display
- Overshoot, undershoot or range monitoring

- Number of pulses per revolution can be adjusted
- Upper and lower threshold value can be adjusted separately
- Auto, manual or remote RESET options after tripping
- Permanent display of actual value and tripping state
- 1 CO
- All terminals are removable
- Width 22.5 mm

PU (UNIT, SET, M) = 1, PS* = 1 units, PG = 101

Measuring range	Hysteresis	ON-delay time	Tripping delay time	Pulses per revolution	Rated control supply voltage U_s AC/DC	DT	Screw terminals 	DT	Spring-type terminals 	Weight per PU approx.	
rpm	rpm	s	s		V		Order No.	Price per PU	Order No.	Price per PU	kg
0.1 ... 2200	OFF 0.1 ... 99.9	0 ... 900	0.1 ... 99.9	1 ... 10	24 ¹⁾ 24 ... 240	A A	3UG46 51-1AA30 3UG46 51-1AW30	A A	3UG46 51-2AA30 3UG46 51-2AW30	0.120 0.130	

For accessories, see page 7/57.

For matching sensors see Catalog FS 10 "Sensors for Production Automation".

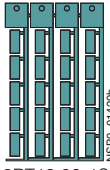




¹⁾ The rated control supply voltage and the measuring circuit are not electrically separated.

SIRIUS 3UG Monitoring Relays for Electrical and Additional Measurements

SIRIUS 3UG Monitoring Relays for Stand-Alone Installation

Accessories

Selection and ordering data

Use	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Blank labels								
 3RT19 00-1SB10	For 3UG4	Unit labeling plates For SIRIUS devices 20 mm x 7 mm, pastel turquoise ¹⁾	C	3RT19 00-1SB20	100	340 units	101	0.200
	For 3UG4	Inscription labels for sticking For SIRIUS devices 19 mm x 6 mm, pastel turquoise	D	3RT19 00-1SB60	100	3060 units	101	15.000
		19 mm x 6 mm, zinc yellow	C	3RT19 00-1SD60	100	3060 units	101	12.000
Push-in lugs and covers								
 3RP19 03	For 3UG4	Push-in lugs For screw fixing, 2 units are required for each device	▶	3RP19 03	1	10 units	101	0.002
	 3RP19 02	For 3UG4	Sealable covers For securing against unauthorized adjustment of setting knobs	▶	3RP19 02	1	5 units	101
Covers for insulation monitoring relays								
	For 3UG30 81, 3UG30 82	Sealable, transparent covers	C	3UG32 08-1A	1	1 unit	101	0.010
Tools for opening spring-type terminals by hand								
 8WH9 200-0AA00	For auxiliary circuit connections	Screwdrivers, 2.5 mm x 0.4 mm, length approx. 160 mm; green, suitable for a max. conductor cross-section of 1.5 mm ²	C	8WH9 200-0AA00	1	10 units	044	0.032
	Tools for opening screw terminals							
 8WA2 803	For main and auxiliary circuit connections	Screwdrivers, 3.5 mm x 0.5 mm, suitable for a max. conductor cross-section of 2.5 mm ²						
		Length approx. 175 mm; green, partially insulated	C	8WA2 880	1	1 unit	041	0.034
	Length approx. 175 mm; green		C	8WA2 803	1	1 unit	041	0.024

¹⁾ PC labeling system for individual inscription of unit labeling plates available from:
murrplastik Systemtechnik GmbH
www.murrplastik.de

Note: SIPLUS CMS1000 condition monitoring for bearings

Condition monitoring has become an indispensable aspect of machine and plant monitoring systems. It puts the user in a better position to plan and verify his maintenance operations and to perform them when they are actually necessary.

With the SIPLUS CMS1000 bearing monitor and a sensor, rolling bearings (e. g. motor rolling bearings) are monitored for long-term damage.

The compact system offers:

- A cost-efficient solution for monitoring bearings
- Monitoring of bearings on motors with variable and non-variable speed
- Monitoring of motors with rolling bearings based on VDI3832
- Teach mode for easy start-up
- Digitally adjustable with LCD for configuration and indication of the diagnostics value
- Adjustable threshold values for warning and alarm
- Two relay outputs for switching in case of warning and alarm
- An acceleration sensor for mounting on the motor to be monitored

Technical information is available at
www.siemens.com/siplus-cms

* You can order this quantity or a multiple thereof.

SIRIUS 3RS10, 3RS11 Temperature Monitoring Relays

Relays, analog adjustable, for 1 sensor

Overview



The 3RS10/3RS11 analog temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is detected by the sensors in the medium, evaluated by the device and monitored for overshoot or undershoot. When the threshold values are reached, the output relay switches on or off depending on the parameterization.

Benefits

- All devices except for 24 V AC/DC feature electrical separation
- Extremely easy operation using a rotary potentiometer
- Variable hysteresis
- Adjustable working principle for devices with 2 threshold values
- All versions with removable terminals
- All versions with screw terminals, many versions alternatively with spring-type connections

Application

The analogically adjustable SIRIUS 3RS10/3RS11 temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e. g. in the monitoring of set temperature limits and the output of alarm messages for:

- Motor and system protection
- Control cabinet temperature monitoring
- Freeze monitoring
- Temperature limits for process variables e. g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Selection and ordering data

Temperature monitoring relays with resistance sensors or thermoelements

- Temperature range -55 °C ... +1000 °C, depending on sensor type
- Wide voltage range versions are electrically isolated.
- Analog adjustable, setting accuracy $\pm 5\%$
- Versions with 2 separately adjustable threshold values and adjustable open/closed-circuit principle

- Hysteresis for threshold value 1 is adjustable (2 ... 20 %), hysteresis for threshold 2 is non-adjustable (5 %)
- 1 NC + 1 NO for versions with one threshold value
- 1 CO for threshold value 1 and 1 NO for threshold value 2
- All terminals are removable
- Width 22.5 mm

Sensor	Function	Measuring range	Rated control supply voltage U_s AC 50/60 Hz	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		°C	V		Order No.	Price per PU			kg

Analogically adjustable, 1 threshold value, width 22.5 mm; closed-circuit principle; without memory; 1 NO + 1 NC





PT100 (resistance sensor)	Overshoot	-50 ... +50	24 AC/DC 110 / 230 AC	C	3RS10 00-1CD00	1	1 unit	101	0.150
				A	3RS10 00-1CK00	1	1 unit	101	0.190
		0 ... +100	24 AC/DC 110 / 230 AC	C	3RS10 00-1CD10	1	1 unit	101	0.145
	Undershoot			A	3RS10 00-1CK10	1	1 unit	101	0.189
		0 ... +200	24 AC/DC 110 / 230 AC	C	3RS10 00-1CD20	1	1 unit	101	0.145
				A	3RS10 00-1CK20	1	1 unit	101	0.186
Type J (thermoelement)	Overshoot	-50 ... +50	24 AC/DC 110 / 230 AC	C	3RS10 10-1CD00	1	1 unit	101	0.150
				A	3RS10 10-1CK00	1	1 unit	101	0.186
		0 ... +100	24 AC/DC 110 / 230 AC	C	3RS10 10-1CD10	1	1 unit	101	0.150
	Undershoot			C	3RS10 10-1CK10	1	1 unit	101	0.190
		0 ... +200	24 AC/DC 110 / 230 AC	C	3RS10 10-1CD20	1	1 unit	101	0.150
				C	3RS10 10-1CK20	1	1 unit	101	0.191
Type K (thermoelement)	Overshoot	0 ... +200	24 AC/DC 110 / 230 AC	A	3RS11 00-1CD20	1	1 unit	101	0.150
				C	3RS11 00-1CK20	1	1 unit	101	0.190
		0 ... +600	24 AC/DC 110 / 230 AC	C	3RS11 00-1CD30	1	1 unit	101	0.149
	Undershoot			C	3RS11 00-1CK30	1	1 unit	101	0.190
		0 ... +200	24 AC/DC 110 / 230 AC	C	3RS11 01-1CD20	1	1 unit	101	0.150
				C	3RS11 01-1CK20	1	1 unit	101	0.190
+500 ... +1000			C	3RS11 01-1CD30	1	1 unit	101	0.150	
			C	3RS11 01-1CK30	1	1 unit	101	0.190	
			C	3RS11 01-1CD40	1	1 unit	101	0.150	
			C	3RS11 01-1CK40	1	1 unit	101	0.190	

SIRIUS 3RS10, 3RS11 Temperature Monitoring Relays

Relays, analog adjustable, for 1 sensor


Sensor	Function	Measuring range	Rated control supply voltage U_s AC 50/60 Hz	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		°C	V		Order No.	Price per PU			kg

Analogically adjustable for warning and disconnection (2 threshold values), 22.5 mm width, open/closed-circuit principle switchable; without memory; 1 NO + 1 CO


	PT100 (resistance sensor)	Overshoot	- 50 ... + 50	24 AC/DC	C	3RS10 20-1DD00	1	1 unit	101	0.166		
			24 ... 240 AC/DC	C	3RS10 20-1DW00	1	1 unit	101	0.175			
		Undershoot	0 ... + 100	24 AC/DC	C	3RS10 20-1DD10	1	1 unit	101	0.164		
				24 ... 240 AC/DC	C	3RS10 20-1DW10	1	1 unit	101	0.175		
			0 ... + 200	24 AC/DC	C	3RS10 20-1DD20	1	1 unit	101	0.166		
				24 ... 240 AC/DC	A	3RS10 20-1DW20	1	1 unit	101	0.175		
	Type J (thermo-element)	Overshoot	0 ... + 200	24 AC/DC	C	3RS11 20-1DD20	1	1 unit	101	0.165		
			24 ... 240 AC/DC	C	3RS11 20-1DW20	1	1 unit	101	0.175			
		0 ... + 600	24 AC/DC	C	3RS11 20-1DD30	1	1 unit	101	0.167			
			24 ... 240 AC/DC	C	3RS11 20-1DW30	1	1 unit	101	0.175			
			Type K (thermo-element)	Overshoot	0 ... + 200	24 ... 240 AC/DC	C	3RS11 21-1DW20	1	1 unit	101	0.179
					0 ... + 600	24 ... 240 AC/DC	C	3RS11 21-1DW30	1	1 unit	101	0.176
+ 500 ... + 1000	24 AC/DC	C	3RS11 21-1DD40	1	1 unit	101	0.167					

Sensor	Function	Measuring range	Rated control supply voltage U_s AC 50/60 Hz	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		°C	V		Order No.	Price per PU			kg

Analogically adjustable, 1 threshold value, width 22.5 mm; closed-circuit principle; without memory; 1 NO + 1 NC

	PT100 (resistance sensor)	Overshoot	- 50 ... + 50	24 AC/DC	C	3RS10 00-2CD00	1	1 unit	101	0.125
			110 / 230 AC	C	3RS10 00-2CK00	1	1 unit	101	0.163	
		Type J (thermo-element)	0 ... + 100	24 AC/DC	C	3RS10 00-2CD10	1	1 unit	101	0.125
				110 / 230 AC	C	3RS10 00-2CK10	1	1 unit	101	0.165
			0 ... + 200	24 AC/DC	C	3RS10 00-2CD20	1	1 unit	101	0.121
				110 / 230 AC	C	3RS10 00-2CK20	1	1 unit	101	0.165
	Overshoot	0 ... + 200	24 AC/DC	C	3RS11 00-2CD20	1	1 unit	101	0.125	

Analogically adjustable for warning and disconnection (2 threshold values), 22.5 mm width, open/closed-circuit principle switchable; without memory; 1 NO + 1 CO

	PT100 (resistance sensor)	Overshoot	0 ... + 200	24 ... 240 AC/DC	C	3RS10 20-2DW20	1	1 unit	101	0.153
		Undershoot	0 ... + 200	24 AC/DC	C	3RS10 30-2DD20	1	1 unit	101	0.145
		Type J (thermo-element)	Overshoot	0 ... + 200	24 AC/DC	C	3RS11 20-2DD20	1	1 unit	101

For accessories, see page 7/63.

SIRIUS 3RS10, 3RS11 Temperature Monitoring Relays

Relays, digitally adjustable, for 1 sensor

Overview



The 3RS10/3RS11 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is detected by the sensor in the medium, evaluated by the device and monitored for overshoot or undershoot or for staying within an operating range (window function).

The relays are also an excellent alternative to temperature controllers in the low-end performance range (2-or 3-point control).

Benefits

- Very simple operation without complicated menu selections
- Two- or three-point control can be configured quickly
- All versions with removable terminals
- All versions with screw terminals or alternatively with innovative spring-type terminals

Application

The 3RS10 40, 3RS10 42, 3RS11 40, 3RS11 42, 3RS20 40 and 3RS21 40 temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e. g. in the monitoring of set temperature limits and the output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e. g. in the packaging industry or electroplating
- Temperature limits for district heating plants
- Exhaust temperature monitoring
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Selection and ordering data

Temperature monitoring relays with resistance sensors or thermoelements

- Temperature range -99 ... +1800 °C, depending on sensor type
- Wide voltage range versions are electrically isolated.
- Non-volatile
- Short-circuit and open-circuit detection in sensor circuit
- Digital adjustable, with illuminated LC display
- Overshoot, undershoot or range monitoring
- Exact sensor type can be set

- 2 separately adjustable threshold values
- 1 hysteresis applies to both thresholds (0 ... 99 K)
- 1 delay time applies to both thresholds (0 ... 999 s)
- Adjustable open/closed-circuit principle
- Adjustable manual/remote reset
- Permanent display of actual value in °C or °F and tripping state
- 1 CO contact each per threshold value
- 1 NO for sensor monitoring
- All terminals are removable
- Width 45 mm

Sensor	Measuring range (measuring range limit depends on the sensor)	Rated control supply voltage U_s AC 50/60 Hz	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		V		⊕				kg
				Order No.	Price per PU			

Temperature monitoring relay, digitally adjustable, 2 threshold values, width 45 mm; 1 CO + 1 CO + 1 NO, memory function possible with external jumper, device parameters are non-volatile



3RS10 40-1GD50

PT100/1000; KTY83/84; NTC (resistance sensors) ¹⁾	-50 ... +500 °C	24 AC/DC	A	3RS10 40-1GD50	1	1 unit	101	0.317
	-58 ... +932 °F	24 ... 240 AC/DC	A	3RS10 40-1GW50	1	1 unit	101	0.329
		24 AC/DC	C	3RS20 40-1GD50	1	1 unit	101	0.189
		24 ... 240 AC/DC	C	3RS20 40-1GW50	1	1 unit	101	0.186
TYPE J, K, T, E, N (thermoelement)	-99 ... +999 °C	24 AC/DC	A	3RS11 40-1GD60	1	1 unit	101	0.318
		24 ... 240 AC/DC	A	3RS11 40-1GW60	1	1 unit	101	0.329
	-99 ... +1830 °F	24 AC/DC	C	3RS21 40-1GD60	1	1 unit	101	0.317
		24 ... 240 AC/DC	C	3RS21 40-1GW60	1	1 unit	101	0.317


Temperature monitoring relay, digitally adjustable, 2 threshold values, width 45 mm; 1 CO + 1 CO + 1 NO, tripping state and device parameters are non-volatile

PT100/1000; KTY83/84; NTC (resistance sensors) ¹⁾	-50 ... +750 °C	24 AC/DC	A	3RS10 42-1GD70	1	1 unit	101	0.317
		24 ... 240 AC/DC	A	3RS10 42-1GW70	1	1 unit	101	0.331
TYPE J, K, T, E, N, R, S, B (thermoelement)	-99 ... +1800 °C	24 AC/DC	C	3RS11 42-1GD80	1	1 unit	101	0.318
		24 ... 240 AC/DC	A	3RS11 42-1GW80	1	1 unit	101	0.329

¹⁾ NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

SIRIUS 3RS10, 3RS11 Temperature Monitoring Relays

Relays, digitally adjustable, for 1 sensor

Sensor	Measuring range (measuring range limit depends on the sensor)	Rated control supply voltage U_s AC 50/60 Hz	DT	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

**Temperature monitoring relay, digitally adjustable,
2 threshold values, width 45 mm; 1 CO + 1 CO + 1 NO,
memory function possible with external jumper,
device parameters are non-volatile**



3RS10 40-2GW50

PT100/1000; KTY83/84; NTC (resistance sen- sors) ¹⁾	-50 ... +500 °C	24 AC/DC	A	3RS10 40-2GD50	1	1 unit	101	0.267
		24 ... 240 AC/DC	A	3RS10 40-2GW50	1	1 unit	101	0.281
	-58 ... +932 °F	24 AC/DC	C	3RS20 40-2GD50	1	1 unit	101	0.100
		24 ... 240 AC/DC	C	3RS20 40-2GW50	1	1 unit	101	0.100
TYPE J, K, T, E, N (thermoelement)	-99 ... +999 °C	24 AC/DC	C	3RS11 40-2GD60	1	1 unit	101	0.269
		24 ... 240 AC/DC	C	3RS11 40-2GW60	1	1 unit	101	0.300
	-99 ... +1830 °F	24 AC/DC	C	3RS21 40-2GD60	1	1 unit	101	0.100
		24 ... 240 AC/DC	C	3RS21 40-2GW60	1	1 unit	101	0.100

**Temperature monitoring relay, digitally adjustable,
2 threshold values, width 45 mm; 1 CO + 1 CO + 1 NO,
tripping state and device parameters are non-volatile**

PT100/1000; KTY83/84; NTC (resistance sen- sors) ¹⁾	-50 ... +750 °C	24 AC/DC	C	3RS10 42-2GD70	1	1 unit	101	0.267
		24 ... 240 AC/DC	C	3RS10 42-2GW70	1	1 unit	101	0.281
TYPE J, K, T, E, N, R, S, B (ther- moelement)	-99 ... +1800 °C	24 AC/DC	C	3RS11 42-2GD80	1	1 unit	101	0.269
		24 ... 240 AC/DC	C	3RS11 42-2GW80	1	1 unit	101	0.300

For accessories, see page 7/63.

¹⁾ NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

SIRIUS 3RS10, 3RS11 Temperature Monitoring Relays

Relays, digitally adjustable, for up to 3 sensors

Overview



The 3RS10 41 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is detected by the sensor in the medium, evaluated by the device and monitored for overshoot or undershoot or for staying within an operating range (window function). The evaluation unit can evaluate up to 3 resistance sensors at the same time and is specially designed for monitoring motor windings and bearings.

Benefits

- Very simple operation without complicated menu selections
- Space-saving with 45 mm width
- All devices are available alternatively with spring-type terminals
- Two- or three-point control can be configured quickly
- All versions with removable terminals
- All versions with screw terminals or alternatively with innovative spring-type terminals

Application

The 3RS10 41 temperature monitoring relays can be used in almost any application in which several temperatures have to be monitored simultaneously for overshoot or undershoot or within a range.

Monitoring of set temperature limits and output of alarm messages for:


- Plant and environment protection
- Temperature limits for process variables e. g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or
- warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Selection and ordering data

Relay for monitoring the temperatures of solids, liquids, and gases

- For two- and three-conductor resistance sensors or thermoelements
- Temperature range -99 ... +1800 °C, depending on sensor type
- Wide voltage range versions are electrically isolated.
- Non-volatile
- Short-circuit and open-circuit detection in sensor circuit
- Digital adjustable, with illuminated LC display
- Overshoot, undershoot or range monitoring

- Exact sensor type and number of sensors can be set
- 2 separately adjustable threshold values
- 1 hysteresis; applies to both thresholds (0 ... 99 K)
- 1 delay time; applies to both thresholds (0 ... 999 s)
- Adjustable open/closed-circuit principle
- With connectable and disconnectable error memory
- Permanent display of actual value in °C or °F and tripping state
- 1 CO contact each per threshold value
- 1 NO for sensor monitoring
- All terminals are removable
- Width 45 mm


Sensor	Number of sensors	Measuring range °C	Rated control supply voltage U_s V	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
					Order No.	Price per PU			

Motor monitoring relay, digitally adjustable for 3 sensors, width 45 mm; 1 CO + 1 CO + 1 NO



3RS10 41-1GW50

PT100/1000; KTY83/84; NTC (resistance sensors) ¹⁾	1 ... 3 sensors	-50 ... +500	24 ... 240 AC/DC	A	3RS10 41-1GW50	1	1 unit	101	0.333
--	--------------------	--------------	------------------	---	-----------------------	---	--------	-----	-------

Sensor	Number of sensors	Measuring range °C	Rated control supply voltage U_s V	DT	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
					Order No.	Price per PU			

Motor monitoring relay, digitally adjustable for 3 sensors, width 45 mm; 1 CO + 1 CO + 1 NO

PT100/1000; KTY83/84; NTC (resistance sensors) ¹⁾	1 ... 3 sensors	-50 ... +500	24 ... 240 AC/DC	A	3RS10 41-2GW50	1	1 unit	101	0.283
--	--------------------	--------------	------------------	---	-----------------------	---	--------	-----	-------

For accessories, see page 7/63.

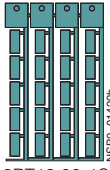




¹⁾ NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

* You can order this quantity or a multiple thereof.

SIRIUS 3RS10, 3RS11 Temperature Monitoring Relays

Accessories

Selection and ordering data

Use	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Blank labels								
 3RT19 00-1SB10	For 3RS1	Unit labeling plates For SIRIUS devices 20 mm x 7 mm, pastel turquoise ¹⁾	C	3RT19 00-1SB20	100	340 units	101	0.200
	For 3RS1	Inscription labels for sticking For SIRIUS devices 19 mm x 6 mm, pastel turquoise	D	3RT19 00-1SB60	100	3060 units	101	15.000
		19 mm x 6 mm, zinc yellow	C	3RT19 00-1SD60	100	3060 units	101	12.000
Push-in lugs and covers								
 3RP19 03	For 3RS1	Push-in lugs For screw fixing, 2 units are required for each device	▶	3RP19 03	1	10 units	101	0.002
 3RP19 02	For 3RS1	Sealable covers For securing against unauthorized adjustment of setting knobs	▶	3RP19 02	1	5 units	101	0.004
Tools for opening spring-type terminals by hand								
 8WH9 200-0AA00	For auxiliary circuit connections	Screwdrivers, 2.5 mm x 0.4 mm, length approx. 160 mm; green, suitable for a max. conductor cross-section of 1.5 mm ²	C	8WH9 200-0AA00	1	10 units	044	0.032
Tools for opening screw terminals								
 8WA2 803	For main and auxiliary circuit connections	Screwdrivers, 3.5 mm x 0.5 mm, suitable for a max. conductor cross-section of 2.5 mm ²						
		Length approx. 175 mm; green, partially insulated	C	8WA2 880	1	1 unit	041	0.034
		Length approx. 175 mm; green	C	8WA2 803	1	1 unit	041	0.024

Matching sensors can be found at
www.siemens.com/temperature

¹⁾ PC labeling system for individual inscription of unit labeling plates available from:
 murrplastik Systemtechnik GmbH
www.murrplastik.de

SIRIUS 3RN1 Thermistor Motor Protection

For PTC sensors

Overview



Thermistor motor protection devices are used for direct monitoring of the motor winding temperature. For this purpose, the motors are equipped with temperature-dependent resistors (PTC) that are directly installed in the motor winding and abruptly change their resistance at their limit temperature.

Benefits

- Thanks to direct motor protection, overdimensioning of the motors is not necessary
- No settings on the device are necessary
- Solid-state compatible output thanks to versions with hard gold-plated contacts
- Rapid error diagnosis thanks to versions that indicate open- and short-circuit in the sensor circuit
- All versions with removable terminals
- All versions with screw terminals or alternatively with innovative spring-type terminals

Application

Direct motor protection through temperature monitoring of the motor winding offers 100 % motor protection even under the most difficult ambient conditions, without the need to make adjustments on the device. Versions with hard gold-plated contacts ensure, in addition, a high switching reliability that is even higher than an electronic control.

Motor protection:

- At increased ambient temperatures
- For high switching frequency
- For long start-up and braking procedures
- Used together with frequency converters (low speeds)

ATEX approval for operation in areas subject to explosion hazard

The SIRIUS 3RN1 thermistor motor protection relay for PTC sensors is certified according to ATEX Ex II (2) G and GD for gases and dust. See "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for explosion-protected areas (ATEX Explosion Protection)".

Motor protection using current- and temperature-dependent protective devices

EN 60204 and IEC 60204 stipulate that motors must be protected from overheating at a rating of 0.5 kW and higher. The protection can take the form of overload protection, overtemperature protection or current limiting.

For motors with frequent starting and braking and in environments where cooling may be impaired (e. g. by dust), it is recommended to use the overtemperature protection option in the form of a protective device coordinated with this mode of operation. A good choice in this case is the use of 3RN1 thermistor motor protection devices.

On rotor-critical motors, overtemperature detection in the stator windings can lead to delayed and hence inadequate protection. In this case the standards stipulate additional protection, e. g. by means of an overload relay.

This combination of thermistor motor protection and an overload relay is recommended for full motor protection in case of frequent starting and braking of motors, irregular intermittent duty or excessive switching frequency. To prevent premature tripping of the overload relay in such operating conditions, a higher setting than that normally required for the operational current is chosen. The overload relay then performs the stall protection, and the 3RN1 thermistor motor protection device monitors the temperature of the motor windings.

Application	Motor protection		
	Only current-dependent, e. g. with overload relay	Only temperature-dependent, e. g. with thermistor motor protection relay	Current- and temperature-dependent
Motor protection in case of			
Overloading in uninterrupted duty	✓	✓	✓
Long start-up and braking operations	○	✓	✓
Irregular intermittent duty	○	✓	✓
Excessively high switching frequency	○	✓	✓
Single-phase operation and current unbalance	✓	✓	✓
Voltage and frequency fluctuations	✓	✓	✓
Stalling of the rotor	✓	✓	✓
Switching on a stalled rotor of a stator-critical motor	✓	✓	✓
Switching on a stalled rotor of a stator-critical motor	✓	○	✓
Elevated ambient temperature	--	✓	✓
Impeded cooling	--	✓	✓

- ✓ Full protection
- Conditional protection
- No protection

Selection and ordering data

Thermistor motor protection relays for monitoring the motor winding temperature using temperature-dependent resistors (PTCs, type A) that are directly installed in the motor winding by the manufacturer.

- Monostable versions with closed-circuit principle, i. e. relays respond in the event of control supply voltage failure
- 3RN10 13-.BW01: Bistable version, does not trigger in the event of control supply voltage failure
- All devices have PTB01 ATEX approval for dust or gas see "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for potentially explosive areas (ATEX explosion protection)".

- All devices except for 24 V AC/DC feature electrical isolation
- Versions with safe isolation up to 300 V according to EN 61140
- Non-volatile versions
- Versions with short-circuit and open-circuit detection in sensor circuit
- Versions with solid-state compatible contacts with hard gold-plating
- Versions for up to 6 sensor circuits
- Versions with manual, remote, autoreset and test button
- Terminal labeling according to DIN 50005
- All terminals are removable
- Width 22.5 mm (45 mm on version for several sensor circuits)



RESET	Contacts	Rated control supply voltage U_s 50/60 Hz	DT	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		V		Order No.	Price per PU				kg

Compact signal evaluation units, width 22.5 mm, 1 LED

Terminal A1 is jumpered with the root of the changeover contact

Auto	1 CO	24 AC/DC	▶	3RN10 00-1AB00	1	1 unit	101	0.114
		110 AC	A	3RN10 00-1AG00	1	1 unit	101	0.157
		230 AC	A	3RN10 00-1AM00	1	1 unit	101	0.156

Standard evaluation units, width 22.5 mm, 2 LEDs

	Auto	1 NO + 1 NC	▶	3RN10 10-1CB00	1	1 unit	101	0.134
			▶	3RN10 10-1CG00	1	1 unit	101	0.174
			▶	3RN10 10-1CM00	1	1 unit	101	0.175
			▶	3RN10 10-1CW00	1	1 unit	101	0.146
			24 ... 240 AC/DC	▶	3RN10 10-1CB00	1	1 unit	101
3RN10 11-1BB00	2 CO	24 AC/DC	A	3RN10 10-1BB00	1	1 unit	101	0.162
		110 AC	A	3RN10 10-1BG00	1	1 unit	101	0.213
		230 AC	A	3RN10 10-1BM00	1	1 unit	101	0.213
	2 CO, gold-plated	24 AC/DC	A	3RN10 10-1GB00	1	1 unit	101	0.154
3RN10 11-1BB00	Manual/Remote ¹⁾	1 NO + 1 NC	▶	3RN10 11-1CB00	1	1 unit	101	0.147
		110 / 230 AC	▶	3RN10 11-1CK00	1	1 unit	101	0.188
	Short-circuit detection for sensor circuit							
	Manual/Remote ¹⁾	2 CO	▶	3RN10 11-1BB00	1	1 unit	101	0.163
			▶	3RN10 11-1BG00	1	1 unit	101	0.214
			▶	3RN10 11-1BM00	1	1 unit	101	0.212
			24 AC/DC	A	3RN10 11-1GB00	1	1 unit	101
3RN10 13-1BB00	Non-volatile ²⁾	1 NO + 1 NC	▶	3RN10 12-1CB00	1	1 unit	101	0.148
	Manual/Remote	110 / 230 AC	▶	3RN10 12-1CK00	1	1 unit	101	0.188
3RN10 13-1BB00	Non-volatile ²⁾ , short-circuit detection in sensor circuit							
	Manual/Remote	2 CO	▶	3RN10 12-1BB00	1	1 unit	101	0.164
			▶	3RN10 12-1BG00	1	1 unit	101	0.214
			▶	3RN10 12-1BM00	1	1 unit	101	0.216
	2 CO, gold-plated	24 AC/DC	A	3RN10 12-1GB00	1	1 unit	101	0.155
3RN10 13-1BB00	Non-volatile ²⁾ , short-circuit and open-circuit detection and indication in sensor circuit; wide voltage range versions with screw terminal with safe isolation							
	Manual/Remote	2 CO	▶	3RN10 13-1BB00	1	1 unit	101	0.160
			▶	3RN10 13-1BW10	1	1 unit	101	0.172
	2 CO, gold-plated	24 ... 240 AC/DC	A	3RN10 13-1GW10	1	1 unit	101	0.168

Evaluation units for 2 sensor circuits, warning and disconnection, width 22.5 mm, 3 LEDs

Manual/Remote	Test/RESET button, non-volatile ²⁾	1 NO + 1 CO	▶	3RN10 22-1DW00	1	1 unit	101	0.173
		24 ... 240 AC/DC						

Evaluation units for 6 sensor circuits, multiple motor protection, width 45 mm, 8 LEDs

Manual/Remote	Test/RESET button, non-volatile ²⁾	1 NO + 1 NC	▶	3RN10 62-1CW00	1	1 unit	101	0.296
		24 ... 240 AC/DC						

Bistable evaluation units, width 22.5 mm



Manual/Remote	Test / RESET button, non-volatile ²⁾ , short-circuit and open-circuit detection and indication in sensor circuit	2 CO	▶	3RN10 13-1BW01	1	1 unit	101	0.169
		24 ... 240 AC/DC						

¹⁾ The unit can be reset with the RESET button or by disconnecting the control supply voltage.

²⁾ For protection against voltage failure see note on Technical Information on page 7/1.

SIRIUS 3RN1 Thermistor Motor Protection

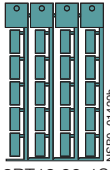




For PTC sensors

RESET	Contacts	Rated control supply voltage U_s 50/60 Hz	DT	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
				Order No.	Price per PU				
									kg
Compact signal evaluation units, width 22.5 mm, 1 LED									
Terminal A1 is jumpered with the root of the changeover contact									
Auto	1 CO	24 AC/DC 110 AC 230 AC	A B B	3RN10 00-2AB00 3RN10 00-2AG00 3RN10 00-2AM00	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.104 0.153 0.153	
Standard evaluation units, width 22.5 mm, 2 LEDs									
 3RN10 12-2CK00	Auto	1 NO + 1 NC	24 AC/DC 110 AC 230 AC 24 ... 240 AC/DC	A A A A	3RN10 10-2CB00 3RN10 10-2CG00 3RN10 10-2CM00 3RN10 10-2CW00	1 1 1 1	1 unit 1 unit 1 unit 1 unit	101 101 101 101	0.116 0.153 0.159 0.127
		2 CO	24 AC/DC 110 AC 230 AC	A C A	3RN10 10-2BB00 3RN10 10-2BG00 3RN10 10-2BM00	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.137 0.139 0.190
		2 CO, gold-plated	24 AC/DC	C	3RN10 10-2GB00	1	1 unit	101	0.139
	Manual/Remote ¹⁾	1 NO + 1 NC	24 AC/DC 110 / 230 AC	A A	3RN10 11-2CB00 3RN10 11-2CK00	1 1	1 unit 1 unit	101 101	0.125 0.164
	Short-circuit detection for sensor circuit	2 CO	24 AC/DC 110 AC 230 AC	A C A	3RN10 11-2BB00 3RN10 11-2BG00 3RN10 11-2BM00	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.138 0.190 0.192
		2 CO, gold-plated	24 AC/DC	A	3RN10 11-2GB00	1	1 unit	101	0.154
	Non-volatile ²⁾	1 NO + 1 NC	24 AC/DC 110 / 230 AC	A A	3RN10 12-2CB00 3RN10 12-2CK00	1 1	1 unit 1 unit	101 101	0.125 0.161
	Non-volatile ²⁾ , short-circuit detection in sensor circuit	2 CO	24 AC/DC 110 AC 230 AC	C C C	3RN10 12-2BB00 3RN10 12-2BG00 3RN10 12-2BM00	1 1 1	1 unit 1 unit 1 unit	101 101 101	0.130 0.130 0.181
		2 CO, gold-plated	24 AC/DC	C	3RN10 12-2GB00	1	1 unit	101	0.140
	Non-volatile ²⁾ , short-circuit and open-circuit detection and indication in sensor circuit	2 CO	24 AC/DC 24 ... 240 AC/DC	A A	3RN10 13-2BB00 3RN10 13-2BW00	1 1	1 unit 1 unit	101 101	0.140 0.151
	Remote	2 CO, gold-plated	24 ... 240 AC/DC	C	3RN10 13-2GW00	1	1 unit	101	0.143
	Evaluation units for 2 sensor circuits, warning and disconnection, width 22.5 mm, 3 LEDs								
	Test/RESET button, non-volatile ²⁾	1 NO + 1 CO	24 ... 240 AC/DC	A	3RN10 22-2DW00	1	1 unit	101	0.147
	Evaluation units for 6 sensor circuits, multiple motor protection, width 45 mm, 8 LEDs								
	Test/RESET button, non-volatile ²⁾	1 NO + 1 NC	24 ... 240 AC/DC	A	3RN10 62-2CW00	1	1 unit	101	0.251
	Bistable evaluation units, width 22.5 mm								
	Test / RESET button, non-volatile ²⁾ , short-circuit and open-circuit detection and indication in sensor circuit	2 CO	24 ... 240 AC/DC	A	3RN10 13-2BW01	1	1 unit	101	0.139

¹⁾ The unit can be reset with the RESET button or by disconnecting the control supply voltage.

²⁾ For protection against voltage failure see note on Technical Information on page 7/1.

Accessories

Use	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Blank labels									
	For 3RN1		Unit labeling plates For SIRIUS devices 20 mm x 7 mm, pastel turquoise ¹⁾	C	3RT19 00-1SB20	100	340 units	101	0.200
	For 3RN1		Inscription labels for sticking For SIRIUS devices 19 mm x 6 mm, pastel turquoise	D	3RT19 00-1SB60	100	3060 units	101	15.000
			19 mm x 6 mm, zinc yellow	C	3RT19 00-1SD60	100	3060 units	101	12.000
Push-in lugs and covers									
	For 3RN1		Push-in lugs For screw fixing, 2 units are required for each device	▶	3RP19 03	1	10 units	101	0.002
	For 3RN1		Sealable covers For securing against unauthorized adjustment of setting knobs	▶	3RP19 02	1	5 units	101	0.004
Tools for opening spring-type terminals by hand									
	For auxiliary circuit con- nections		Screwdrivers, 2.5 mm x 0.4 mm, length approx. 160 mm; green, suitable for a max. conductor cross- section of 1.5 mm ²	C	8WH9 200-0AA00	1	10 units	044	0.032
Tools for opening screw terminals									
	For main and auxiliary circuit con- nections		Screwdrivers, 3.5 mm x 0.5 mm, suitable for a max. conductor cross- section of 2.5 mm ²						
			Length approx. 175 mm; green, partially insulated	C	8WA2 880	1	1 unit	041	0.034
			Length approx. 175 mm; green	C	8WA2 803	1	1 unit	041	0.024

¹⁾ PC labeling system for individual inscription of unit labeling plates available from:
murrplastik Systemtechnik GmbH
www.murrplastik.de

SIRIUS 3TK28 Safety Relays

General data

Overview



SIRIUS safety relays are the key modules of a consistent and cost-effective safety chain. Be it EMERGENCY-STOP disconnection, protective door monitoring or the protection of presses or punches – with SIRIUS safety relays every safety application can be implemented to optimum effect in terms of engineering and price.

SIRIUS safety relays provide numerous safety-related functions:

- Monitoring the safety functions of sensors
- Monitoring the sensor leads
- Monitoring the correct operation of the safety relay
- Monitoring actuators for stoppage
- Safety-oriented disconnection when dangers arise

Depending on the version, SIRIUS safety relays meet the highest requirements (PL e) according to ISO 13849-1 and achieve the highest safety integrity level (SIL 3) according to IEC 61508.

3TK28 26 with DIP switch

OFF	Schematic	DIP switch No.	ON
Without crossover monitoring		1	Switching mat operation
NC/NO contact evaluation		2	NC/NC contact evaluation
2 x 1-channel		3	1 x 2-channel
Debounce time for sensor inputs ≈ 50 ms		4	Debounce time for sensor inputs ≈ 10 ms
Sensor input for autostart		5	Sensor input for monitored start
Cascading input for autostart		6	Cascading input for monitored start
With start test		7	Without start test
Automatic start after mains failure (not permitted in conjunction with start test)		8	Without automatic start after mains failure

Benefits

General

- Can be used for all safety applications thanks to compliance with the highest safety requirements (PL e according to ISO 13849-1 or SIL 3 according to IEC 61508)
- Suitable for use all over the world through compliance with all globally established certifications
- Compact, service-proven SIRIUS design creates more space in the control cabinet
- Flexible connectability and expendability make subsequent changes easy
- Removable terminals for greater plant availability
- Yellow front plate clearly identifies the device as an item of safety technology
- Sensor cable up to 2000 m long enables use in large-scale plants

Relay outputs

- Different voltages can be switched through the floating contacts
- Higher currents can be switched with relay contacts

Solid-state outputs

- Wear-free
- Suitable for operation in fast switching applications
- Insensitive to vibrations and dirt
- Good electrical endurance

Microprocessor systems

- Flexible use thanks to many different integrated functions
- Easy parameterization using DIP switches on the front
- High functional reliability based on extensive monitoring functions
- Operated by the machine control
- Also connection of non-contact sensors (light arrays, light barriers etc.)

Application

SIRIUS safety relays are used mainly in autonomous safety applications which are not connected to a safety-oriented bus system. Their function here is to evaluate the sensors and the safety-oriented shutdown of hazards. Also they check and monitor the sensors, actuators and safety-oriented functions of the safety relay.

Selection and ordering data

Type	3TK28 20 Basic units	3TK28 21 Basic units	3TK28 22 Basic units	3TK28 23 Basic units	3TK28 24 Basic units	3TK28 25 Basic units
Sensors						
• Inputs	1	1	1	1	1	1
• Electronic	✓ ¹⁾	--	--	--	--	--
• With contacts	✓	✓	✓ ²⁾	✓	✓	✓
Safety mats	--	--	--	--	--	--
Start						
• Auto	✓	✓	✓	--	✓	✓
• Monitored	✓	--	--	✓	--	✓
Cascading input 24 V DC	--	--	--	--	--	--
Key-operated switch	--	--	--	--	--	--
Enabling circuit, floating						
• Stop category 0	3 NO	3 NO	2 NO	2 NO	2 NO	3 NO
• Stop category 1	--	--	--	--	--	--
Enabling circuit, solid-state						
• Stop category 0	--	--	--	--	--	--
• Stop category 1	--	--	--	--	--	--
Signaling outputs						
• Floating	1 NC	1 NC	--	--	--	2 NC
• Electronic	--	--	--	--	--	--
Standards	EN 60204-1, EN ISO 12100, ISO 13849-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
Compliance to standards	TÜV, UL, CSA	BG, SUVA, UL, CSA	BG, SUVA, UL, CSA	BG, SUVA, UL, CSA	BG, SUVA, UL, CSA	BG, SUVA, UL, CSA
Category acc. to EN 954-1 max	4 (acc. to ISO 13849-1)	3 ³⁾	4	4	3 ³⁾	4
SIL level max. acc. to IEC 61508	3	1	3	3	1	3
Performance level PL acc. to ISO 13849-1	e	c	e	e	c	e
Probability of a dangerous failure per hour (PFH_d)	9.38 x 10 ⁻¹⁰ /h	1.1 x 10 ⁻⁹ /h	1.3 x 10 ⁻⁹ /h	1.3 x 10 ⁻⁹ /h	8.7 x 10 ⁻¹⁰ /h	1.5 x 10 ⁻⁹ /h
Rated control supply voltage						
• 24 V DC	--	--	--	--	✓	✓
• 24 V AC/DC	✓	✓	✓	✓	✓	--
• 24 V AC	--	--	--	--	--	✓
• 115 V AC	✓	--	--	--	✓	✓
• 230 V AC	✓	--	--	--	✓	✓
• 24 ... 240 V AC/DC	--	--	--	--	--	--

✓ = Available

-- = Not available

1) With restrictions. Further information available from Technical Assistance.

2) The ON button is not monitored.

3) Depending on the hazard assessment, additional measures may be necessary in the sensor circuit (e. g. protected laying).

SIRIUS 3TK28 Safety Relays

With relay enabling circuits

Type	3TK28 26				3TK28 27	3TK28 28	3TK28 30	3TK28 34
	Basic units 4 V DC	Basic units Wide voltage range	Basic units 4 V DC t_V	Basic units Wide voltage range t_V	Basic units t_V	Basic units t_V	Expansion units ²⁾	Two-hand control devices
Sensors								
• Inputs	1	1	1	1	1	1	--	1
• Electronic	✓	✓	✓	✓	--	--	--	--
• With contacts	✓	✓	✓	✓	✓	✓	--	✓
Safety mats	✓	✓	✓	✓	--	--	--	--
Start								
• Auto	✓	✓	✓	✓	--	✓	--	--
• Monitored	✓	✓	✓	✓	✓	--	--	--
Cascading input 24 V DC	✓	✓	✓	✓	--	--	--	--
Key-operated switch	--	--	--	--	--	--	--	--
Enabling circuit, floating								
• Stop category 0	4 NO	4 NO	2 NO	2 NO	2 NO	2 NO	4 NO	2 NO+2 NC
• Stop category 1	--	--	2 NO	2 NO	2 NO	2 NO	--	--
Enabling circuit, solid-state								
• Stop category 0	--	--	--	--	--	--	--	--
• Stop category 1	--	--	--	--	--	--	--	--
Signaling outputs								
• Floating	1 NC	1 NO + 1 NC	2 NC	1 NO + 2 NC	1 NC	1 NC	--	2
• Electronic	2	--	2	--	--	--	--	--
Standards	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508, EN 574
Compliance to standards	TÜV, UL, CSA	TÜV, UL, CSA	TÜV, UL, CSA	TÜV, UL, CSA	BG, SUVA, UL, CSA	BG, SUVA, UL, CSA	BG, SUVA, UL, CSA, TÜV	BG, SUVA, UL, CSA, TÜV
Category acc. to EN 954-1 max	4	4	4	4	4 ¹⁾	4 ¹⁾	As basic unit	4
SIL level max. acc. to IEC 61508	3	3	3	3	3 ³⁾	3 ³⁾	As basic unit	--
Performance level PL acc. to ISO 13849-1	e	e	e	e	e ³⁾	e ³⁾	As basic unit	--
Probability of a dangerous failure per hour (PFH_d)	$7.8 \times 10^{-9}/h$	$7.8 \times 10^{-9}/h$	$7.8 \times 10^{-9}/h$	$7.8 \times 10^{-9}/h$	$2.7 \times 10^{-9}/h$	$2.7 \times 10^{-9}/h$	$1.2 \times 10^{-9}/h$	$1.4 \times 10^{-9}/h$
Rated control supply voltage								
• 24 V DC	✓	--	✓	--	✓	✓	--	✓
• 24 V AC/DC	--	--	--	--	--	--	✓	--
• 24 V AC	--	--	--	--	✓	✓	--	✓
• 115 V AC	--	--	--	--	✓	✓	✓	✓
• 230 V AC	--	--	--	--	✓	✓	✓	✓
• 24 ... 240 V AC/DC	--	✓	--	✓	--	--	--	--

✓ = Available

-- = Not available

1) Only possible for instantaneous enabling contacts, otherwise Category 3.

2) For expansion of Siemens safety products.

3) Only possible for instantaneous enabling contacts, otherwise SIL 2 or Performance Level PL d.

With relay enabling circuits

Selection and ordering data



3TK28 21-1CB30



3TK28 25-1BB40



3TK28 26-2BB40



3TK28 27-1BB41

PU (UNIT, SET, M) = 1
 PS* = 1 units
 PG = 102

Rated control supply voltage U_s	OFF-delay t_v	DT	Screw terminals	Weight per PU approx.	DT	Spring-type terminals	Weight per PU approx.	
V	s		Order No.	Price per PU	kg	Order No.	Price per PU	kg
Rated control supply voltages U_s 24 V DC and AC 50/60 Hz, 24, 115, 230 V								
3TK28 20 basic units								
24 AC/DC	--	▶	3TK28 20-1CB30	0.245	▶	3TK28 20-2CB30	0.245	
115 AC	--	▶	3TK28 20-1AJ20	0.285	▶	3TK28 20-2AJ20	0.285	
230 AC	--	▶	3TK28 20-1AL20	0.285	▶	3TK28 20-2AL20	0.285	
3TK28 21 basic units								
24 AC/DC	--	▶	3TK28 21-1CB30	0.276	▶	3TK28 21-2CB30	0.246	
3TK28 22 basic units								
24 AC/DC	--	▶	3TK28 22-1CB30	0.271	A	3TK28 22-2CB30	0.250	
3TK28 23 basic units								
24 AC/DC	--	▶	3TK28 23-1CB30	0.271	A	3TK28 23-2CB30	0.247	
3TK28 24 basic units								
24 AC/DC	--	▶	3TK28 24-1CB30	0.254	A	3TK28 24-2CB30	0.230	
24 DC	--	▶	3TK28 24-1BB40	0.249	▶	3TK28 24-2BB40	0.228	
115 AC	--	C	3TK28 24-1AJ20	0.294	C	3TK28 24-2AJ20	0.265	
230 AC	--	▶	3TK28 24-1AL20	0.288	B	3TK28 24-2AL20	0.270	
3TK28 25 basic units								
24 DC	--	▶	3TK28 25-1BB40	0.423	▶	3TK28 25-2BB40	0.374	
24 AC	--	A	3TK28 25-1AB20	0.421	C	3TK28 25-2AB20	0.375	
115 AC	--	▶	3TK28 25-1AJ20	0.519	B	3TK28 25-2AJ20	0.472	
230 AC	--	▶	3TK28 25-1AL20	0.516	B	3TK28 25-2AL20	0.475	
3TK28 26 basic units								
24 DC	--	▶	3TK28 26-1BB40	0.370	A	3TK28 26-2BB40	0.370	
24 ... 240 AC/DC	--	▶	3TK28 26-1CW30	0.400	A	3TK28 26-2CW30	0.400	
3TK28 26 basic units t_v								
24 DC	0.05 ... 3	A	3TK28 26-1BB41	0.370	A	3TK28 26-2BB41	0.370	
24 ... 240 AC/DC		A	3TK28 26-1CW31	0.400	A	3TK28 26-2CW31	0.400	
24 DC	0.5 ... 30	A	3TK28 26-1BB42	0.370	A	3TK28 26-2BB42	0.370	
24 ... 240 AC/DC		A	3TK28 26-1CW32	0.400	A	3TK28 26-2CW32	0.400	
24 DC	5 ... 300	A	3TK28 26-1BB44	0.370	A	3TK28 26-2BB44	0.370	
24 ... 240 AC/DC		A	3TK28 26-1CW34	0.400	A	3TK28 26-2CW34	0.400	
3TK28 27 basic units t_v								
24 DC	0.05 ... 3	▶	3TK28 27-1BB41	0.495	A	3TK28 27-2BB41	0.454	
24 AC		B	3TK28 27-1AB21	0.499	B	3TK28 27-2AB21	0.454	
115 AC		B	3TK28 27-1AJ21	0.650	B	3TK28 27-2AJ21	0.240	
230 AC		A	3TK28 27-1AL21	0.650	B	3TK28 27-2AL21	0.605	
24 DC	0.5 ... 30	▶	3TK28 27-1BB40	0.497	A	3TK28 27-2BB40	0.455	
24 AC		A	3TK28 27-1AB20	0.496	C	3TK28 27-2AB20	0.454	
115 AC		▶	3TK28 27-1AJ20	0.650	C	3TK28 27-2AJ20	0.606	
230 AC		▶	3TK28 27-1AL20	0.650	B	3TK28 27-2AL20	0.604	
3TK28 28 basic units t_v								
24 DC	0.05 ... 3	▶	3TK28 28-1BB41	0.499	A	3TK28 28-2BB41	0.450	
24 AC		B	3TK28 28-1AB21	0.501	C	3TK28 28-2AB21	0.454	
115 AC		B	3TK28 28-1AJ21	0.657	B	3TK28 28-2AJ21	0.240	
230 AC		A	3TK28 28-1AL21	0.650	B	3TK28 28-2AL21	0.608	
24 DC	0.5 ... 30	▶	3TK28 28-1BB40	0.496	▶	3TK28 28-2BB40	0.457	
24 AC		B	3TK28 28-1AB20	0.500	B	3TK28 28-2AB20	0.468	
115 AC		A	3TK28 28-1AJ20	0.650	B	3TK28 28-2AJ20	0.609	
230 AC		A	3TK28 28-1AL20	0.650	B	3TK28 28-2AL20	0.612	
3TK28 30 expansion units								
24 AC/DC	--	▶	3TK28 30-1CB30	0.267	▶	3TK28 30-2CB30	0.244	
115 AC		A	3TK28 30-1AJ20	0.306	B	3TK28 30-2AJ20	0.276	
230 AC		A	3TK28 30-1AL20	0.306	B	3TK28 30-2AL20	0.276	
3TK28 34 two-hand control devices								
24 DC	--	▶	3TK28 34-1BB40	0.432	A	3TK28 34-2BB40	0.383	
24 AC		A	3TK28 34-1AB20	0.424	B	3TK28 34-2AB20	0.376	
115 AC		A	3TK28 34-1AJ20	0.519	C	3TK28 34-2AJ20	0.472	
230 AC		A	3TK28 34-1AL20	0.519	B	3TK28 34-2AL20	0.472	

* You can order this quantity or a multiple thereof.

SIRIUS 3TK28 Safety Relays

With electronic enabling circuits

Selection and ordering data

Type	3TK28 40 Basic units	3TK28 41 Basic units	3TK28 42 Basic units	3TK28 45		3TK28 45		3TK28 45		3TK28 45	
				Multi-function units "automatic and monitored start"	Multi-function units "automatic and monitored start"	Multi-function units "monitored start"	Multi-function units "monitored start"	Multi-function units OK button	Multi-function unit OK button	Multifunction units "spring-type interlocking tumbler"	Multifunction units "solenoid-interlocking tumbler"
			t_v		t_v		t_v		t_v	t_v	t_v
Sensors											
• Inputs	1	1	1	2	2	2	2	2	2	2	2
• Electronic	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• With contacts	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Safety mats	--	✓	✓	✓	✓	✓	✓	--	--	--	--
Start											
• Auto	✓	✓	✓	1	1	--	--	1	1	--	--
• Monitored	✓	✓	✓	1	1	2	2	1	1	2	2
Cascading input 24 V DC	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Key-operated switch	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓
Enabling circuit, floating											
• Stop category 0	--	--	--	2 NO	1 NO	2 NO	1 NO	2 NO	1 NO	1 NO	1 NO
• Stop category 1	--	--	--	--	1 NO	--	1 NO	--	1 NO	1 NO	1 NO
Enabling circuit, solid-state											
• Stop category 0	2 ¹⁾	2	1	2	1	2	1	2	1	1	1
• Stop category 1	--	--	1	--	1	--	1	--	1	1	1
Signaling outputs											
• Floating	--	--	--	--	--	--	--	--	--	--	--
• Electronic	--	--	--	1	1	1	1	1	1	1	1
Standards	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508, DIN EN 50156-1		EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508							
Test certificates	TÜV, UL, CSA										
Category acc. to EN 954-1 max	3	4	4	4	4	4	4	4	4	4	4
SIL level max. acc. to IEC 61508	2	3	3	3	3	3	3	3	3	3	3
Performance level PL acc. to ISO 13849-1	d	e	e	e	e	e	e	e	e	e	e
Probability of a dangerous failure per hour (PFH_d)	1.1 × 10 ⁻⁸ /h	5.4 × 10 ⁻¹¹ /h	5.4 × 10 ⁻¹¹ /h	6.9 × 10 ⁻⁹ /h	6.9 × 10 ⁻⁹ /h	6.9 × 10 ⁻⁹ /h	6.9 × 10 ⁻⁹ /h	6.9 × 10 ⁻⁹ /h	6.9 × 10 ⁻⁹ /h	6.9 × 10 ⁻⁹ /h	6.9 × 10 ⁻⁹ /h
Rated control supply voltage 24 V DC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ = Available

-- = Not available

1) The outputs are only safe when an external contactor is used.

SIRIUS 3TK28 Safety Relays

With electronic enabling circuits



3TK28 41-1BB40



3TK28 42-1BB41



3TK28 45-1HB40



3TK28 45-1HB41



3TK28 45-2DB40

PU (UNIT, SET, M) = 1
 PS* = 1 units
 PG = 102

Rated control supply voltage U_s	OFF-delay t_v	DT	Screw terminals		Weight per PU approx.	DT	Spring-type terminals		Weight per PU approx.
V	s		Order No.	Price per PU	kg		Order No.	Price per PU	kg
Rated control supply voltage U_s 24 V DC									
3TK28 40 basic units									
24 DC	--	A	3TK28 40-1BB40		0.180 B		3TK28 40-2BB40		0.150
3TK28 41 basic units									
24 DC	--	A	3TK28 41-1BB40		0.166 A		3TK28 41-2BB40		0.143
3TK28 42 basic units t_v									
24 DC	0.05 ... 3	A	3TK28 42-1BB41		0.168 B		3TK28 42-2BB41		0.143
	0.5 ... 30	A	3TK28 42-1BB42		0.166 A		3TK28 42-2BB42		0.146
	5 ... 300	A	3TK28 42-1BB44		0.166 B		3TK28 42-2BB44		0.149
3TK28 45 multi-function units "automatic and monitored start"									
24 DC	--	A	3TK28 45-1HB40		0.350 B		3TK28 45-2HB40		0.350
3TK28 45 multi-function units t_v "automatic and monitored start"									
24 DC	0.05 ... 3	A	3TK28 45-1HB41		0.350 B		3TK28 45-2HB41		0.350
	0.5 ... 30	A	3TK28 45-1HB42		0.350 B		3TK28 45-2HB42		0.350
	5 ... 300	A	3TK28 45-1HB44		0.350 B		3TK28 45-2HB44		0.350
3TK28 45 multi-function units "monitored start"									
24 DC	--	A	3TK28 45-1DB40		0.350 B		3TK28 45-2DB40		0.350
3TK28 45 multi-function units t_v "monitored start"									
24 DC	0.05 ... 3	A	3TK28 45-1DB41		0.350 B		3TK28 45-2DB41		0.350
	0.5 ... 30	A	3TK28 45-1DB42		0.350 B		3TK28 45-2DB42		0.350
	5 ... 300	C	3TK28 45-1DB44		0.350 B		3TK28 45-2DB44		0.350
3TK28 45 multi-function units "OK button"									
24 DC	--	A	3TK28 45-1EB40		0.350 B		3TK28 45-2EB40		0.350
3TK28 45 multi-function units t_v "OK button"									
24 DC	0.05 ... 3	A	3TK28 45-1EB41		0.350 B		3TK28 45-2EB41		0.350
	0.5 ... 30	A	3TK28 45-1EB42		0.350 B		3TK28 45-2EB42		0.350
	5 ... 300	C	3TK28 45-1EB44		0.350 B		3TK28 45-2EB44		0.350
3TK28 45 multi-function units t_v "spring-type interlocking tumbler"									
24 DC	0.05 ... 3	A	3TK28 45-1FB41		0.350 B		3TK28 45-2FB41		0.350
	0.5 ... 30	A	3TK28 45-1FB42		0.350 B		3TK28 45-2FB42		0.350
	5 ... 300	B	3TK28 45-1FB44		0.350 B		3TK28 45-2FB44		0.350
3TK28 45 multi-function units t_v "solenoid interlocking tumbler"									
24 DC	0.05 ... 3	A	3TK28 45-1GB41		0.350 B		3TK28 45-2GB41		0.350
	0.5 ... 30	A	3TK28 45-1GB42		0.350 B		3TK28 45-2GB42		0.350
	5 ... 300	C	3TK28 45-1GB44		0.350 B		3TK28 45-2GB44		0.350

* You can order this quantity or a multiple thereof.

SIRIUS 3TK28 Safety Relays

With contactor relay enabling circuits

Selection and ordering data

Type	3TK28 50 Basic units	3TK28 51 Basic units	3TK28 52 Basic units	3TK28 53 Basic units	3TK28 56 Expansion units ¹⁾	3TK28 57 Expansion units ¹⁾
Sensors						t_v
• Inputs	1	1	1	1	--	--
• Electronic	--	--	--	✓	--	--
• With contacts	✓	✓	✓	✓	--	--
Safety mats	✓	✓	✓	✓	--	--
Start						
• Auto	✓	✓	✓	✓	--	--
• Monitored	✓	✓	✓	✓	--	--
Cascading input 24 V DC	--	--	--	✓	✓	✓
Key-operated switch	--	--	--	--	--	--
Enabling circuit, floating						
• Stop category 0	3 NO	2 NO	6 NO	3 NO	6 NO	--
• Stop category 1	--	--	--	--	--	3 NO
Enabling circuit, solid-state						
• Stop category 0	--	--	--	1	1	1
• Stop category 1	--	--	--	--	--	--
Signaling outputs						
• Floating	--	1 NC	1 NC	--	1 NC	--
• Electronic	--	--	--	--	--	--
Standards	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
Test certificates	TÜV, UL, CSA	TÜV, UL, CSA	TÜV, UL, CSA	TÜV, UL, CSA	TÜV, UL, CSA	TÜV, UL, CSA
Category acc. to EN 954-1 max	3	3	3	4	As basic unit	As basic unit
SIL level max. acc. to IEC 61508	2	2	2	--	As basic unit	As basic unit
Performance level PL acc. to ISO 13849-1	d	d	d	e	As basic unit	As basic unit
Probability of a dangerous failure per hour (PFH_d)	1.2 x 10 ⁻⁸ /h	1.1 x 10 ⁻⁸ /h	1.1 x 10 ⁻⁸ /h	1.1 x 10 ⁻⁸ /h	1.1 x 10 ⁻⁸ /h	1.1 x 10 ⁻⁸ /h
Rated control supply voltage						
• 24 V DC	✓	✓	✓	✓	✓	✓
• 24 V AC/DC	--	--	--	--	--	--
• 24 V AC	✓	✓	✓	✓	✓	✓
• 115 V AC	✓	✓	✓	✓	✓	✓
• 230 V AC	✓	✓	✓	✓	✓	✓
• 24 ... 240 V AC/DC	--	--	--	--	--	--
Rated operational voltage						
• 24 V DC	✓	✓	✓	✓	✓	✓
• 230 V AC	✓	✓	✓	✓	✓	✓
• 600 V AC	✓	✓	✓	✓	✓	✓
Switching capacity						
• AC-15 at U = 230 V	6 A	6 A	6 A	6 A	6 A	6 A
• DC-13 at U = 24 V	10 A	10 A	10 A	10 A	10 A	10 A

✓ = Available

-- = Not available

¹⁾ For expansion of Siemens safety products.

SIRIUS 3TK28 Safety Relays

With contactor relay enabling circuits



3TK28 50-2BB40





3TK28 51-2BB40



3TK28 52-2BB40

PU (UNIT, SET, M) = 1
 PS* = 1 units
 PG = 102

Rated control supply voltage U_s	OFF-delay t_v	DT	Screw terminals 	Weight per PU approx.	DT	Spring-type terminals 	Weight per PU approx.	
V	s		Order No.	Price per PU	kg	Order No.	Price per PU	kg
Rated control supply voltages U_s 24 V DC and 50/60 Hz, 115, 230 V AC								
3TK28 50 basic units								
24 DC	--	A	3TK28 50-1BB40	0.819	B	3TK28 50-2BB40	0.820	
115 AC		B	3TK28 50-1AJ20	0.765	B	3TK28 50-2AJ20	0.650	
230 AC		B	3TK28 50-1AL20	0.770	B	3TK28 50-2AL20	0.761	
3TK28 51 basic units								
24 DC	--	B	3TK28 51-1BB40	0.821	B	3TK28 51-2BB40	0.650	
115 AC		C	3TK28 51-1AJ20	0.770	B	3TK28 51-2AJ20	0.650	
230 AC		C	3TK28 51-1AL20	0.767	B	3TK28 51-2AL20	0.768	
3TK28 52 basic units								
24 DC	--	A	3TK28 52-1BB40	0.919	B	3TK28 52-2BB40	0.935	
230 AC		B	3TK28 52-1AL20	0.870	B	3TK28 52-2AL20	0.878	
3TK28 53 basic units								
24 DC	--	A	3TK28 53-1BB40	0.714	B	3TK28 53-2BB40	0.705	
3TK28 56 expansion units								
24 DC	--	B	3TK28 56-1BB40	0.785	B	3TK28 56-2BB40	0.750	
3TK28 57 expansion units t_v								
24 DC	0.05 ... 3	A	3TK28 57-1BB41	0.682	B	3TK28 57-2BB41	0.650	
24 DC	0.5 ... 30	B	3TK28 57-1BB42	0.679	B	3TK28 57-2BB42	0.677	
24 DC	5 ... 300	B	3TK28 57-1BB44	0.684	B	3TK28 57-2BB44	0.684	

SIRIUS 3TK28 Safety Relays

With special functions

Selection and ordering data

Type	3TK28 10
	Standstill monitors
Sensors	
• Inputs	3
• Electronic	--
• With contacts	--
• Without sensors (measuring inputs)	3
Safety mats	--
Start	
• Auto	✓
• Monitored	--
Cascading input 24 V DC	--
Key-operated switch	--
Enabling circuit, floating	
• Stop category 0	3 NO + 1 NC
• Stop category 1	--
Enabling circuit, solid-state	
• Stop category 0	--
• Stop category 1	--

✓ = Available

-- = Not available



3TK28 10-0BA01



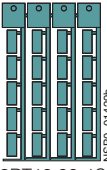




3TK28 10-0GA02

Type	3TK28 10
	Standstill monitors
Signaling outputs	
• Floating	1 CO
• Electronic	2
Standards	EN 60204-1, EN ISO 12100, EN 954-1, IEC 61508
Test certificates	TÜV, UL, CSA
Category acc. to EN 954-1 max	4
SIL level max. acc. to IEC 61508	3
Performance level PL acc. to ISO 13849-1	e
Probability of a dangerous failure per hour (PFH_d)	1.5 x 10 ⁻⁸ /h
Rated control supply voltage	
• 24 V DC	✓
• 230 V AC	✓
• 400 V AC	✓

PU (UNIT, SET, M) = 1
 PS* = 1 units
 PG = 102

Rated control supply voltage U_s	OFF-delay t_v	DT	Screw terminals	Weight per PU approx.	DT	Spring-type terminals	Weight per PU approx.	
V	s		Order No.	Price per PU	kg	Order No.	Price per PU	kg
Rated control supply voltages U_s 24 V DC and 50/60 Hz, 230, 400 V AC								
3TK28 10 standstill monitors								
24 DC	0.2... 6	A	3TK28 10-0BA01	0.500	A	3TK28 10-0BA02	0.500	0.500
230 AC		A	3TK28 10-0GA01	0.500	A	3TK28 10-0GA02	0.500	0.500
400 AC		A	3TK28 10-0JA01	0.500	A	3TK28 10-0JA02	0.500	0.500

Accessories

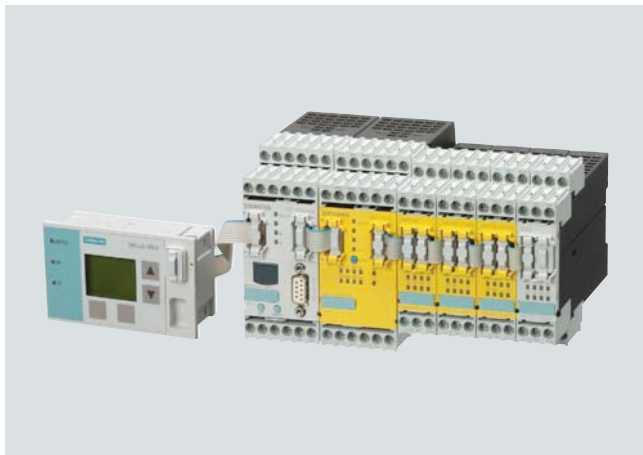
Use	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Blank labels								
	For 3TK28		Unit labeling plates For SIRIUS devices 20 mm x 7 mm, pastel turquoise ¹⁾	C	3RT19 00-1SB20	100 340 units	101	0.200
	For 3TK28		Inscription labels for sticking For SIRIUS devices 19 mm x 6 mm, pastel turquoise D 19 mm x 6 mm, zinc yellow C	D C	3RT19 00-1SB60 3RT19 00-1SD60	100 3060 units 100 3060 units	101 101	15.000 12.000
Push-in lugs and covers								
	For 3TK28		Push-in lugs For screw fixing, 2 units are required for each device	▶	3RP19 03	1 10 units	101	0.002
	For 3TK28 21 to 3TK28 25, 3TK28 27, 3TK28 28, 3TK28 3.		Sealable covers For securing against unauthorized adjustment of setting knobs	▶	3RP19 02	1 5 units	101	0.004
	For 3TK28 26		Sealing foil For securing against unauthorized adjustment of setting knobs	B	3TK28 26-0DA00-0HA0	1 5 units	102	0.004
	For 3TK28 20		Sealing foil For securing against unauthorized adjustment of setting knobs	▶	3TK28 20-0AA00	2 1 unit	102	0.276
Tools for opening spring-type terminals by hand								
	For auxiliary circuit connections		Screwdrivers, 2.5 mm x 0.4 mm, length approx. 160 mm; green, suitable for a max. conductor cross-section of 1.5 mm ²	C	8WH9 200-0AA00	1 10 units	044	0.032
Tools for opening screw terminals								
	For main and auxiliary circuit connections		Screwdrivers, 3.5 mm x 0.5 mm, suitable for a max. conductor cross-section of 2.5 mm ²					
			Length approx. 175 mm; green, partially insulated	C	8WA2 880	1 1 unit	041	0.034
		Length approx. 175 mm; green		C	8WA2 803	1 1 unit	041	0.024

¹⁾ PC labeling system for individual inscription of unit labeling plates available from:
murrplastik Systemtechnik GmbH
www.murrplastik.de

SIRIUS 3RK3 Modular Safety System

General data

Overview



The 3RK3 modular safety system (MSS) is a freely parameterizable modular safety relay. Depending on the type of external connection, safety-orientated applications up to Category 4 according to EN 954-1, Performance Level e according to ISO 13849-1 and SIL3 according to IEC 62061 can be realized.

The modular safety relay permits several safety applications to be interconnected. The safety functions are easily created on the PC using a graphic parameterizing tool. For example, disconnection ranges can be set and other dependencies defined.

With additional safety-oriented expansion modules the system is flexibly adapted to the required safety applications.

The MSS comprises the following system components:

- Central module
- Expansion modules
- Interface modules
- Diagnostics modules
- Parameterization software
- Accessories

The comprehensive error and status diagnostics provides the possibility of finding errors in the system and localizing signals from sensors. Plant downtimes can be reduced as the result.

Optional interface modules send the diagnostics data to higher-level bus systems (e. g. PROFIBUS DP). These data are then available for further processing in the automation system.

Benefits

- More functionality and flexibility through freely configurable safety logic
- For all safety applications thanks to compliance with the highest safety requirements (Category 4 according to EN 954-1, Performance Level e according to ISO 13849-1 or SIL3 according to IEC 62061)
- Suitable for use all over the world through compliance with all globally established certifications
- Modular hardware configuration
- Parameterization by means of software instead of wiring
- Removable terminals for greater plant availability

Communication

The 3RK3 modular safety system can be connected to PROFIBUS through the DP interface and exchange data with higher-level control systems.

The MSS supports among other things:

- Baud rates up to 12 Mbit/s
- Automatic baud rate detection
- Cyclic services (DPV0) and acyclic services (DPV1)
- Exchange of 32-bit cyclic data
- Diagnostics using data record invocations

For MSS with communication function see from page 7/79.

For accessories, see page 7/80 onwards.

For more information see also Chapter 12 "Planning, Configuration and Visualizing for SIRIUS".

Application

The 3RK3 modular safety system can be used for all safety-oriented requirements in the manufacturing industry and offers the following safety functions:

- **EMERGENCY-STOP:**
With this function, signals from EMERGENCY-STOP devices with positive-opening contacts are evaluated.
- **Protective door monitoring:**
Signals from protective doors or protective flaps with positive-opening contacts a combination of NC and NO contacts are evaluated.
- **Non-contact protective devices (BWS):**
Signals from e. g. light curtains and laser scanners are evaluated.
- **Switching mats:**
Signals from switching mats with NC contacts or crossover monitoring are evaluated.
- **Two-hand operator controls:**
With this function, signals from a two-hand operator control device are evaluated.
- **OK buttons:**
Signals from OK buttons with NO contact are evaluated.
- **Operating mode selector switches:**
With this function signals from an operating mode selector switch with NO contacts are evaluated. Up to 5 operating modes can be defined. The operating mode to be implemented can be freely configured in the downstream logic.
- **Logic operation functions:**
AND, OR, XOR, NAND, NOR, negation (NEG), flip-flop (FF-RS)
- **Counter functions:**
 - The safety relay supports the counting function "counter 0 -> 1". The count value is changed only when there is a positive edge at the count inputs. The current count value can be counted forwards or backwards through one own count input each.
 - The safety relay supports the counting function "For negative edge 1 -> 0". The count value is changed only when there is a negative edge. The current count value can be counted forwards or backwards through one own count input each.
 - The safety relay supports the counting function "For both edges". The count value is changed both when there is a positive edge and when there is a negative edge. The current count value can be counted forwards or backwards through one own count input each.
- **Time functions:**
ON delay, ON delay (trigger), passing make contact, passing make contact (trigger), OFF delay, OFF delay (trigger), clock-pulsing.
- **Start functions:**
Manual and automatic start
- **Output functions:**
Standard outputs and fail-safe outputs can be actuated.

Central modules, expansion modules, interface modules, operating and monitoring modules

Selection and ordering data



3RK3 111-1AA10

3RK3 211-1AA10
3RK3 221-1AA10
3RK3 231-1AA10
3RK3 242-1AA10

3RK3 251-1AA10



3RK3 311-1AA10
3RK3 321-1AA10

3RK3 511-1BA10



3RK3 611-3AA00

PU (UNIT, SET, M) = 1
PS* = 1 units
PG = 102

Version	DT	Screw terminals		Weight per PU approx.	DT	Spring-type terminals		Weight per PU approx.
		Order No.	Price per PU	kg		Order No.	Price per PU	kg
Central modules								
3RK3 Basic								
Central modules with safety-orientated inputs and outputs	A	3RK3 111-1AA10		0.300	A	3RK3 111-2AA10		0.300
<ul style="list-style-type: none"> • 8 inputs • 1 two-channel relay output • 1 two-channel solid-state output Max. 7 expansion modules can be connected, including 3RK3 931-0AA00 memory module								
Expansion modules								
4/8 F-DI								
Safety-orientated expansion module	A	3RK3 211-1AA10		0.150	A	3RK3 211-2AA10		0.150
<ul style="list-style-type: none"> • 8 inputs 								
2/4 F-DI 1/2 F-RO								
Safety-orientated mixed expansion module	A	3RK3 221-1AA10		0.150	A	3RK3 221-2AA10		0.150
<ul style="list-style-type: none"> • 4 inputs • 2 single-channel relay outputs 								
2/4 F-DI 2F-DO								
Safety-orientated mixed expansion module	A	3RK3 231-1AA10		0.150	A	3RK3 231-2AA10		0.150
<ul style="list-style-type: none"> • 4 inputs • 2 two-channel solid-state outputs 								
4/8 F-RO								
Safety-orientated output modules	A	3RK3 251-1AA10		0.150	A	3RK3 251-2AA10		0.150
<ul style="list-style-type: none"> • 8 relay outputs 								
4 F-DO								
Safety-orientated output modules	A	3RK3 242-1AA10		0.150	A	3RK3 242-2AA10		0.150
<ul style="list-style-type: none"> • 4 two-channel solid-state outputs 								
8 DI								
Standard input modules	A	3RK3 321-1AA10		0.150	A	3RK3 321-2AA10		0.150
<ul style="list-style-type: none"> • 8 inputs 								
8 DO								
Standard output module	A	3RK3 311-1AA10		0.150	A	3RK3 311-2AA10		0.150
<ul style="list-style-type: none"> • 8 solid-state outputs 								
Interface modules								
DP interface								
<ul style="list-style-type: none"> • PROFIBUS DP interface, 12 Mbit/s, RS 485 	A	3RK3 511-1BA10		0.300	A	3RK3 511-2BA10		0.300
Operating and monitoring modules								
Diagnostics modules								
	A	3RK3 611-3AA00		0.300		--		

To connect the central module to expansion modules or interface module you need the 3UF7 930-0AA00-0 connection cable. See page 7/80.

SIRIUS 3RK3 Modular Safety System

Accessories

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Connection cables (essential accessory)							
Connection cables For connecting the central module, expansion modules and the interface module • Length 0.025 m (flat)		A	3UF7 930-0AA00-0	1	1 unit	131	0.010
PC cables and adapters							
	PC cables for PC/PG communication with 3RK3 modular safety system Through the system interface, for connecting to the serial interface of the PC/PG	A	3UF7 940-0AA00-0	1	1 unit	131	0.150
USB/serial adapters To connect an RS 232 PC cable to the USB port of a PC, recommended for use in conjunction with 3RK3	B	3UF7 946-0AA00-0	1	1 unit	131	0.150	
3UF7 940-0AA00-0							
Interface covers							
	For system interface	A	3UF7 950-0AA00-0	1	5 units	131	0.100
3UF7 950-0AA00-0							
Memory modules							
	For parameterizing the 3RK3 modular safety system without a PC/PG through the system interface	A	3RK3 931-0AA00	1	1 unit	121	0.100
3RK3 931-0AA00							
Door adapters							
	For external connection of the system interface, e. g. outside a control cabinet	A	3UF7 920-0AA00-0	1	1 unit	131	0.030
3UF7 920-0AA00-0							
Push-in lugs							
	For screw fixing e. g. on mounting plate, 2 units required per device • Can be used for 3RK3	▶	3RP19 03	1	10 units	101	0.002
3RP19 03							
Modular Safety System ES 2008 Basic							
	Parameterization, start-up and diagnostics software for the 3RK3 Runs under Win XP PROF/Win VISTA: Business32, Ultimate32; without PC cable Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through the system interface • License key on USB stick, Class A	▶	3ZS1 314-4CC10-0YA5	1	1 unit	131	0.230
3ZS1 314-4CC10-0YA5							
Modular Safety System ES 2008 Standard							
	Floating license for one user E-SW, software and documentation on CD, 3 languages (German/English/French), communication through the system interface • License key on USB stick, Class A	▶	3ZS1 314-5CC10-0YA5	1	1 unit	131	0.230
3ZS1 314-5CC10-0YA5	Powerpack Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface	▶	3ZS1 314-5CC10-0YD5	1	1 unit	131	0.230
	Software Update Service For 1 year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface	▶	3ZS1 314-5CC10-0YL5	1	1 unit	131	0.230

Overview



Interface converters perform the coupling function for analog signals on both the input side and the output side. They are indispensable when processing analog values with electronic controls. Under harsh industrial conditions in particular, it is often necessary to transmit analog signals over long distances. This means that electrical separation is essential due to the different supply systems. The resistance of the wiring causes potential differences and losses which must be prevented.

Electromagnetic faults and overvoltages can affect the signals on the input side in particular or even destroy the analog modules. All terminals of the 3RS17 interface converters are safe up to a voltage of 30 V DC and protected against interchanging poles. Short-circuit protection is an especially important function for the outputs.

The devices are EMC-tested according to

- EN 61000-6-4 (basic specification for emitted interference)
- EN 61000-6-2 (basic specification for interference immunity).

The analog signals comply with

- IEC 60381-1/2.

Application

Converters are used in analog signal processing for

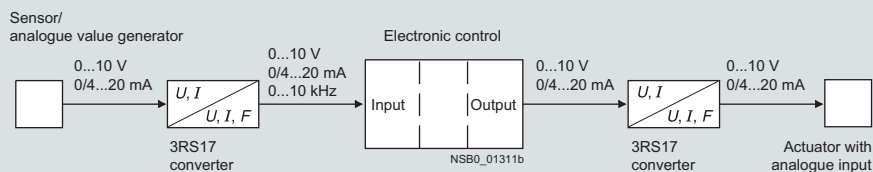
- Electrical isolations
- Conversion of normalized and non-normalized signals
- Matching of gain and impedances
- Conversion to a frequency for processing by a digital input
- Overvoltage and EMC protection
- Short-circuit protection of the outputs
- Potential duplication

3RS17 25 manual/automatic converter

For special applications in which analog signals have to be simulated, or during plant commissioning when the actual process value is not yet available, the 3RS17 25 devices feature an adjustable potentiometer for entering setpoints manually and a manual/automatic switch.

The adjustable potentiometer for the 3RS17 25 devices is used to simulate analog output signals when the changeover switch is set to "Manual" and the control supply voltage is applied, without the need for an analog input signal; the scale ranges from 0 ... 100 %.

Example: When it is set for an output of 4 ... 20 mA, the 0 % scale value on the potentiometer represents an output current of 4 mA and the 100 % scale value represents an output current of 20 mA. In the "Auto" switch position, the output signal follows the input signal proportionally regardless of the potentiometer setting.





Application example: Interface converter in analog signal evaluation


Interface Converters


SIRIUS 3RS17 interface converters

Selection and ordering data

All converters except the passive single interface converters have a yellow LED for indicating "Power on".

Inputs	Output	Width	Rated control supply voltage U_s	Electrical isolation	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
		mm	V			Order No.	Price per PU					kg
Single interface converters, active												
0 ... 10 V	0 ... 10 V	6.2	24 AC/DC	2 paths	A	3RS17 00-1AD00		1	1 unit	101	0.053	
	0 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 00-1CD00		1	1 unit	101	0.052	
	4 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 00-1DD00		1	1 unit	101	0.052	
0 ... 20 mA	0 ... 10 V	6.2	24 AC/DC	2 paths	A	3RS17 02-1AD00		1	1 unit	101	0.052	
	0 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 02-1CD00		1	1 unit	101	0.052	
	4 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 02-1DD00		1	1 unit	101	0.052	
4 ... 20 mA	0 ... 10 V	6.2	24 AC/DC	2 paths	A	3RS17 03-1AD00		1	1 unit	101	0.052	
	0 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 03-1CD00		1	1 unit	101	0.052	
	4 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 03-1DD00		1	1 unit	101	0.053	
Switchable multi-range converters, active												
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	6.2	24 AC/DC	2 paths	A	3RS17 05-1FD00		1	1 unit	101	0.053	
		17.5	24 ... 240 AC/DC	3 paths	A	3RS17 05-1FW00		1	1 unit	101	0.090	
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	0 ... 50 Hz, 0 ... 100 Hz,	6.2	24 AC/DC	2 paths	A	3RS17 05-1KD00		1	1 unit	101	0.053	
	0 ... 1 kHz, 0 ... 10 kHz, selectable	17.5	24 ... 240 AC/DC	3 paths	A	3RS17 05-1KW00		1	1 unit	101	0.099	
Switchable universal converters, active, with 16 input ranges and 3 output ranges												
 3RS17 06-1FD00	0 ... 60 mV, 0 ... 100 mV, 0 ... 300 mV, 0 ... 500 mV, 0 ... 1 V, 0 ... 2 V, 0 ... 5 V, 0 ... 10 V, 0 ... 20 V, 2 ... 10 V, 0 ... 5 mA, 0 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, +/-5 mA, +/-20 mA, selectable	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	17.5	24 AC/DC	2 paths	A	3RS17 06-1FD00		1	1 unit	101	0.082
					3 paths	A	3RS17 06-1FE00		1	1 unit	101	0.082
				24 ... 240 AC/DC	3 paths	A	3RS17 06-1FW00		1	1 unit	101	0.090
	Switchable multi-range converters, active, with manual/automatic switch and single potentiometer as manual analog signal transmitter											
	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	17.5	24 AC/DC	2 paths	A	3RS17 25-1FD00		1	1 unit	101	0.085
					24 ... 240 AC/DC	3 paths	A	3RS17 25-1FW00		1	1 unit	101

Inputs	Output	Width	Number of channels	Electrical isolation	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
		mm				Order No.	Price per PU					kg

Single interface converters, passive											
 3RS17 20-1ET00	0/4 ... 20 mA	0/4 ... 20 mA	6.2	1	2 paths	A	3RS17 20-1ET00	1	1 unit	101	0.049
			12.5	1	2 paths	A	3RS17 21-1ET00	1	1 unit	101	0.059
				2	2 paths	A	3RS17 22-1ET00	1	1 unit	101	0.070

SIRIUS 3RS17 interface converters

All converters except the passive single interface converters have a yellow LED for indicating "Power on".

Inputs	Output	Width	Rated control supply voltage U_s	Electrical isolation	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
		mm	V			Order No.	Price per PU			kg	
Single interface converters, active											
0 ... 10 V	0 ... 10 V	6.2	24 AC/DC	2 paths	A	3RS17 00-2AD00	1	1 unit	101	0.047	
	0 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 00-2CD00	1	1 unit	101	0.047	
	4 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 00-2DD00	1	1 unit	101	0.047	
0 ... 20 mA	0 ... 10 V	6.2	24 AC/DC	2 paths	C	3RS17 02-2AD00	1	1 unit	101	0.047	
	0 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 02-2CD00	1	1 unit	101	0.045	
	4 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 02-2DD00	1	1 unit	101	0.048	
4 ... 20 mA	0 ... 10 V	6.2	24 AC/DC	2 paths	A	3RS17 03-2AD00	1	1 unit	101	0.047	
	0 ... 20 mA	6.2	24 AC/DC	2 paths	C	3RS17 03-2CD00	1	1 unit	101	0.049	
	4 ... 20 mA	6.2	24 AC/DC	2 paths	A	3RS17 03-2DD00	1	1 unit	101	0.047	
Switchable multi-range converters, active											
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	6.2	24 AC/DC	2 paths	A	3RS17 05-2FD00	1	1 unit	101	0.048	
		17.5	24 ... 240 AC/DC	3 paths	A	3RS17 05-2FW00	1	1 unit	101	0.092	
0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	0 ... 50 Hz, 0 ... 100 Hz, 0 ... 1 kHz, 0 ... 10 kHz, selectable	6.2	24 AC/DC	2 paths	C	3RS17 05-2KD00	1	1 unit	101	0.047	
		17.5	24 ... 240 AC/DC	3 paths	A	3RS17 05-2KW00	1	1 unit	101	0.092	
Switchable universal converters, active, with 16 input ranges and 3 output ranges											
0 ... 60 mV, 0 ... 100 mV, 0 ... 300 mV, 0 ... 500 mV, 0 ... 1 V, 0 ... 2 V, 0 ... 5 V, 0 ... 10 V, 0 ... 20 V, 2 ... 10 V, 0 ... 5 mA, 0 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, +/-5 mA, +/-20 mA, selectable	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	17.5	24 AC/DC	2 paths	A	3RS17 06-2FD00	1	1 unit	101	0.078	
				3 paths	A	3RS17 06-2FE00	1	1 unit	101	0.077	
				24 ... 240 AC/DC	3 paths	A	3RS17 06-2FW00	1	1 unit	101	0.094
	Switchable multi-range converters, active, with manual/automatic switch and single potentiometer as manual analog signal transmitter										
	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, selectable	17.5	24 AC/DC	2 paths	A	3RS17 25-2FD00	1	1 unit	101	0.078
				24 ... 240 AC/DC	3 paths	A	3RS17 25-2FW00	1	1 unit	101	0.095
	Single interface converters, passive										
	0/4 ... 20 mA	0/4 ... 20 mA	6.2	1	2 paths	A	3RS17 20-2ET00	1	1 unit	101	0.044
			12.5	1	2 paths	A	3RS17 21-2ET00	1	1 unit	101	0.057
				2	2 paths	A	3RS17 22-2ET00	1	1 unit	101	0.066



3RS17 05-2FD00



3RS17 25-2FD00

* You can order this quantity or a multiple thereof.

Interface Converters

Notes

7



Detecting Devices



8/2 Introduction

8/4 3SE2, 3SE3, 3SF3 Position Switches

8/4 Conversion to 3SE5, 3SF1

8/14 3SE5, 3SE2, 3SE3 Position Switches

8/14 General data

3SE5, plastic enclosures

8/20 - Enclosure width 31 mm according to EN 50047

8/24 - Enclosure width 50 mm

8/28 - Ambient temperature up to -40 °C

3SE2, plastic enclosures

8/30 - Enclosure width 40 mm according to EN 50041

3SE5, metal enclosures

8/34 - Enclosure width 40 mm according to EN 50041

8/38 - Enclosure width 56 mm

8/42 - Ambient temperature up to -40 °C

3SE2, metal enclosures

8/44 - Enclosure width 56 mm

3SE3, metal enclosure

8/47 - Compact design with molded cable

8/48 3SE5, open-type design

8/49 Accessories and Spare Parts

With Separate Actuator

8/52 General data

8/54 3SE5, plastic enclosures

8/55 3SE5, metal enclosures

8/56 Accessories

8/57 3SE2, plastic enclosures

With Solenoid Interlocking

8/58 General data

8/61 3SE5, plastic enclosures

8/62 3SE5, metal enclosures

8/63 Accessories

8/64 3SE2, metal enclosures

Hinge Switches

8/65 General data

8/66 3SE5, plastic enclosures

8/67 3SE5, metal enclosures

8/68 3SE2, plastic enclosures

For Explosion Protection (ATEX)

8/69 3SE5, metal enclosures

8/73 3SF1 AS-Interface Position Switches

8/73 General data

8/74 Plastic enclosures

8/76 Metal enclosures

With Separate Actuator

8/78 General data

8/79 Plastic enclosures

8/80 Metal enclosures

With Solenoid Interlocking

8/82 General data

8/83 Plastic enclosures

8/84 Metal enclosures

Hinge Switches

8/85 Plastic enclosures

8/86 Metal enclosures

8/87 3SE6 Magnetically Operated Switches

8/87 Magnetic monitoring systems

Technical Information

can be found at

www.siemens.com/industrial-controls/support

under Product List

- Technical Specifications

under Entry List

- Updates

- Downloads

- FAQ

- Manuals

- Characteristic curves

- Certificates

and at

www.siemens.com/industrial-controls/configurators

- Configurators

Note:

For safety characteristics for position switches and hinge switches, see Appendix → "Standards and Approvals"

Detecting Devices

Introduction

Overview



	Position switches, standard				Hinge switches		Open-type
Enclosures							
Plastic	✓	✓	--	--	✓	--	✓
Metal	✓	--	✓	✓	✓	✓	
Dimensions (W x H x D) in mm	31 x 68 x 33	50 x 53 x 33	40 x 78 x 38	56 x 78 x 38	31 x 68 x 33	40 x 78 x 38	30 x 48,5 x 20
Degree of protection	IP65, IP66/IP67	IP66/IP67	IP66/IP67	IP66/IP67	IP65	IP66/IP67	IP10 or IP20
Standards	Mounting and operating points acc. to EN 50047				Mounting and operating points acc. to EN 50047		Mounting and operating points acc. to EN 50047
IEC 60947-5-1							
Approvals	CE, UL, CSA, CCC				CE, UL, CSA, CCC		
Contact blocks							
2 slow-action contacts	1 NO + 1 NC, 2 NC		1 NO + 1 NC, 2 NC		--	--	1 NO + 1 NC
2 snap-action contacts	1 NO + 1 NC		1 NO + 1 NC		1 NO + 1 NC	--	1 NO + 1 NC
2 snap-action contacts, short stroke	1 NO + 1 NC		✓		--	--	✓
2 snap-action contacts with 2 x 2 mm contact gap	1 NO + 1 NC		✓		--	--	✓
3 slow-action contacts	1 NO + 2 NC, 2 NO + 1 NC		1 NO + 2 NC, 2 NO + 1 NC		--	--	1 NO + 2 NC
• With make-before-break	1 NO + 2 NC		1 NO + 2 NC		--	--	1 NO + 2 NC
3 snap-action contacts	1 NO + 2 NC		1 NO + 2 NC		1 NO + 2 NC	--	1 NO + 2 NC
Special features							
LED status display	✓	--	✓	--	✓	--	--
Increased corrosion protection	✓	--	✓	--	✓	--	--
Explosion protection (ATEX)	--	--	✓	--	--	✓	--
ASIsafe integrated	✓	--	✓	--	✓	--	--
Electrical specifications							
Insulation voltage U_i	400 V		400 V		400 V		400 V
Conventional thermal current I_{the}	6 A/10 A (3-/2-pole)		6 A/10 A (3-/2-pole)		6 A/10 A (3-/2-pole)		6 A
Terminals							
Cable entry	1 x M20 x 1.5	2 x M20 x 1.5	1 x M20 x 1.5	3 x M20 x 1.5	1 x M20 x 1.5	1 x M20 x 1.5	--
M12 connector socket 4-, 5- or 8-pole	✓	✓	✓	✓	✓	✓	--
Connector socket, 6-pole + PE	--	--	✓	✓	--	--	--
Actuators							
Rounded plungers and roller plungers	✓	--	✓	--	--	--	✓
Roller and angular roller levers	✓	--	✓	--	--	--	--
Spring rod	✓	--	✓	--	--	--	--
Twist levers and rod actuators	✓	--	✓	--	--	--	--
Fork lever	--	--	✓	--	--	--	--
Hinges for mounting	--	--	--	--	✓	--	--
Page							
Complete units	8/20	8/24	8/34	8/38, 8/44	8/66	8/67	8/48
Modular system	8/22	8/26	8/36	8/40	--	--	--
Ambient temperature -40 °C	8/28	8/28	8/42	8/42	--	--	--
ASIsafe	8/74	8/74	8/76	8/76	8/85	8/86	--
ATEX	--	--	8/69	8/69	--	8/72	--

✓ = Available -- Not available



	Position switches with separate actuator		Position switches with solenoid interlocking	Magnetically operated switches
Enclosures				
Plastic	✓	--	✓	✓
Metal	✓	✓	✓	--
Dimensions (W x H x D) in mm	31 × 68 × 33, 50 × 53 × 33	40 × 78 × 38, 56 × 78 × 38	54 × 185 × 44	M30 × 44, 19 × 33 × 13, 25 × 88 × 13
Degree of protection	IP65, IP66/IP67	IP66/IP67	IP66/IP67	IP67
Standards				
IEC 60947-5-1	Mounting acc. to EN 50047	Mounting acc. to EN 50041	EN 1088, GS-ET 19	Category 3 or 4 acc. to ISO 13849-1 (EN 954-1)
Approvals	CE, TÜV, UL, CSA, CCC		CE, TÜV, UL, CSA, CCC	CE, TÜV, UL, CSA
Contact blocks				
2 slow-action contacts	1 NO + 1 NC	--	--	--
2 snap-action contacts	--	--	--	--
3 slow-action contacts	1 NO + 2 NC	--	--	--
3 snap-action contacts	--	--	--	--
6 slow-action contacts	--	--	2 × (1 NO + 2 NC)	--
Reed contacts	--	--	--	1 NO + 1 NC, 2 NC
Special features				
LED status display	✓	--	✓	--
Increased corrosion protection	✓	--	✓	--
Explosion protection (ATEX)	✓	--	--	--
ASIsafe integrated	✓	--	✓	--
Electrical specifications				
Insulation voltage U_i	400 V		400 V	--
Conventional thermal current I_{the}	6 A		6 A	--
Terminals				
Cable entry	1 × M20 × 1.5, 2 × M20 × 1.5	1 × M20 × 1.5, 3 × M20 × 1.5	3 × M20 × 1.5	--
M12 connector socket, 4 or 5-pole	✓	✓	✓	✓
Molded cables	--	--	--	✓
AS-Interface	✓	✓	✓	✓ (through I/O module)
Actuators				
Separate actuators	✓	--	✓	--
Page				
Complete units	8/54	8/55	8/61, 8/62	--
Modular system	--	--	--	8/87
ASIsafe	8/79	8/80	8/83, 8/84	8/87
ATEX	--	8/72	--	--

✓ Available -- Not available

Note:

For safety characteristics see "Appendix"
→ "Standards and approvals" → "Overview"

3SE2, 3SE3, 3SF3 Position Switches

Conversion to 3SE5, 3SF1

Overview

3SE2 ---> 3SE5 position switches

Position switches from the 3SE2 series can be converted to the new switches of the 3SE5 series with the help of this table.

In the 3SE5 series you can choose between complete units and the modular system (basic switch and operating mechanism are available separately) (see page 8/19).

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches, plastic enclosure				
3SE2 200-0C	3SE5232-0BC05	--	--	--
3SE2 200-0D	3SE5232-0BD03	3SE5232-0BC05	3SE5000-0AD03	--
3SE2 200-0DV00-0AA3	--	3SE5232-0BC05	3SE5000-0AD04	--
3SE2 200-0E	3SE5232-0BE10	3SE5232-0BC05	3SE5000-0AE10	--
3SE2 200-0EV00-0AA3	--	3SE5232-0BC05	3SE5000-0AE11	--
3SE2 200-0F	3SE5232-0BF10	3SE5232-0BC05	3SE5000-0AF10	--
3SE2 200-0G	3SE5232-0BK21	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-0GV00-0AG7	--	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA22
3SE2 200-0L	--	3SE5232-0BC05	3SE5000-0AD10	--
3SE2 200-0M	--	3SE5232-0BC05	3SE5000-0AD10	--
3SE2 200-0MV00-0AA3	--	3SE5232-0BC05	3SE5000-0AD11	--
3SE2 200-0S	--	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 200-0U	3SE5232-0BK50	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 200-0UV00-0AG7	--	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA51
3SE2 200-0V	--	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 200-0W	--	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 200-0WV00-0AH0	--	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 200-0WV00-0AL8	--	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA83
3SE2 200-0XC	3SE5232-0BC05	--	--	--
3SE2 200-0XG	3SE5232-0BK21	3SE5232-0BC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-0XJ	3SE5232-0BD03	3SE5232-0BC05	3SE5000-0AD03	--
3SE2 200-1C	3SE5232-0HC05	--	--	--
3SE2 200-1CV00-0AC4	3SE5234-0HC05-1AC4	--	--	--
3SE2 200-1CV00-0AH0	3SE5232-0HC05	--	--	--
3SE2 200-1CV00-0AH1	3SE5232-0HC05	--	--	--
3SE2 200-1CV01	3SE5232-0FC05	--	--	--
3SE2 200-1CV02	3SE5232-0GC05	--	--	--
3SE2 200-1D	3SE5232-0HD03	3SE5232-0HC05	3SE5000-0AD03	--
3SE2 200-1DV00-0AA3	--	3SE5232-0HC05	3SE5000-0AD04	--
3SE2 200-1DV00-0AC4	3SE5234-0HD03-1AC4	3SE5234-0HC05-1AC4	3SE5000-0AD03	--
3SE2 200-1E	3SE5232-0HE10	3SE5232-0HC05	3SE5000-0AE10	--
3SE2 200-1EV00-0AA3	--	3SE5232-0HC05	3SE5000-0AE11	--
3SE2 200-1EV00-0AC4	--	3SE5234-0HC05-1AC4	3SE5000-0AE10	--
3SE2 200-1EV00-0AG5	3SE5232-0HE10	3SE5232-0HC05	3SE5000-0AE10	--
3SE2 200-1EV00-0AK0	3SE5232-0CE12-1CA0	3SE5232-0CC05-1CA0	3SE5000-0AE12	--
3SE2 200-1F	3SE5232-0HF10	3SE5232-0HC05	3SE5000-0AF10	--
3SE2 200-1FV00-0AA3	--	3SE5232-0HC05	3SE5000-0AF11	--
3SE2 200-1G	3SE5232-0HK21	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-1GA10	3SE5232-0HU21	3SE5232-0HC05	3SE5000-0AU21	--
3SE2 200-1GA11	3SE5232-0HU22	3SE5232-0HC05	3SE5000-0AU22	--
3SE2 200-1GV00-0AA3	--	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA22
3SE2 200-1GV00-0AA5	3SE5232-0HK25	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA25
3SE2 200-1GV00-0AC4	--	3SE5234-0HC05-1AC4	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-1GV00-0AH8	--	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA22
3SE2 200-1L	3SE5232-0HD10	3SE5232-0HC05	3SE5000-0AD10	--
3SE2 200-1M	3SE5232-0HD10	3SE5232-0HC05	3SE5000-0AD10	--
3SE2 200-1R	3SE5232-0HR01	3SE5232-0HC05	3SE5000-0AR01	--
3SE2 200-1RV00-0AH0	3SE5232-0HR01	3SE5232-0HC05	3SE5000-0AR01	--
3SE2 200-1S	--	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 200-1U	3SE5232-0HK50	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 200-1V	3SE5232-0HK80	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 200-1W	3SE5232-0HK82	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 200-1XC	3SE5232-0HC05	--	--	--
3SE2 200-1XG	3SE5232-0HK21	3SE5232-0HC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-1XH	3SE5232-0HC05	--	--	--

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches, plastic enclosure				
3SE2 200-3C	3SE5232-0MC05	--	--	--
3SE2 200-3D	--	3SE5232-0MC05	3SE5000-0AD03	--
3SE2 200-3E	--	3SE5232-0MC05	3SE5000-0AE10	--
3SE2 200-3F	--	3SE5232-0MC05	3SE5000-0AF10	--
3SE2 200-3G	--	3SE5232-0MC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-3L	--	3SE5232-0MC05	3SE5000-0AD10	--
3SE2 200-3M	--	3SE5232-0MC05	3SE5000-0AD10	--
3SE2 200-3S	--	3SE5232-0MC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 200-3U	--	3SE5232-0MC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 200-3V	--	3SE5232-0MC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 200-3W	--	3SE5232-0MC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 200-6C	3SE5232-0KC05	--	--	--
3SE2 200-6D	3SE5232-0KD03	3SE5232-0KC05	3SE5000-0AD03	--
3SE2 200-6E	3SE5232-0KE10	3SE5232-0KC05	3SE5000-0AE10	--
3SE2 200-6F	3SE5232-0KF10	3SE5232-0KC05	3SE5000-0AF10	--
3SE2 200-6G	3SE5232-0KK21	3SE5232-0KC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-6L	3SE5232-0KD10	3SE5232-0KC05	3SE5000-0AD10	--
3SE2 200-6M	3SE5232-0KD10	3SE5232-0KC05	3SE5000-0AD10	--
3SE2 200-6S	--	3SE5232-0KC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 200-6U	--	3SE5232-0KC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 200-6V	--	3SE5232-0KC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 200-6W	--	3SE5232-0KC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 200-7C	3SE5232-0PC05	--	--	--
3SE2 200-7D	--	3SE5232-0PC05	3SE5000-0AD03	--
3SE2 200-7E	--	3SE5232-0PC05	3SE5000-0AE10	--
3SE2 200-7F	--	3SE5232-0PC05	3SE5000-0AF10	--
3SE2 200-7G	--	3SE5232-0PC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-7L	--	3SE5232-0PC05	3SE5000-0AD10	--
3SE2 200-7M	--	3SE5232-0PC05	3SE5000-0AD10	--
3SE2 200-7S	--	3SE5232-0PC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 200-7U	--	3SE5232-0PC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 200-7V	--	3SE5232-0PC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 200-7W	--	3SE5232-0PC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 200-8CV00	3SE5232-0LC05	--	--	--
3SE2 200-8DV00	3SE5232-0LD03	3SE5232-0LC05	3SE5000-0AD03	--
3SE2 200-8EV00	3SE5232-0LE10	3SE5232-0LC05	3SE5000-0AE10	--
3SE2 200-8EV00-0AA3	--	3SE5232-0LC05	3SE5000-0AE11	--
3SE2 200-8FV00	3SE5232-0LF10	3SE5232-0LC05	3SE5000-0AF10	--
3SE2 200-8GV00	3SE5232-0LK21	3SE5232-0LC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-8GV00-0AC4	--	3SE5234-0LC05-1AE0	3SE5000-0AK00	3SE5000-0AA21
3SE2 200-8RV00	--	3SE5232-0LC05	3SE5000-0AR01	--
3SE2 200-8SV00	--	3SE5232-0LC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 200-8UV00	3SE5232-0LK50	3SE5232-0LC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 200-8VV00	--	3SE5232-0LC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 200-8WV00	--	3SE5232-0LC05	3SE5000-0AK00	3SE5000-0AA82

3SE2, 3SE3, 3SF3 Position Switches

Conversion to 3SE5, 3SF1

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Lever
Standard switches, plastic enclosure				
3SE2 210-0C	3SE5242-0BC05	3SE5242-0BC05	--	--
3SE2 210-0D	3SE5242-0BD03	3SE5242-0BC05	3SE5000-0AD03	--
3SE2 210-0E	3SE5242-0BE10	3SE5242-0BC05	3SE5000-0AE10	--
3SE2 210-0F	--	3SE5242-0BC05	3SE5000-0AF10	--
3SE2 210-0G	3SE5242-0BK21	3SE5242-0BC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 210-0GV00-0AA3	--	3SE5242-0BC05	3SE5000-0AK00	3SE5000-0AA22
3SE2 210-0L	--	3SE5242-0BC05	3SE5000-0AD10	--
3SE2 210-0M	--	3SE5242-0BC05	3SE5000-0AD10	--
3SE2 210-0S	--	3SE5242-0BC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 210-0U	--	3SE5242-0BC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 210-0V	--	3SE5242-0BC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 210-0W	--	3SE5242-0BC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 210-1C	3SE5242-0HC05	3SE5242-0HC05	--	--
3SE2 210-1CV00-0AH0	3SE5242-0HC05	3SE5242-0HC05	--	--
3SE2 210-1CV01	3SE5242-0FC05	3SE5242-0FC05	--	--
3SE2 210-1D	3SE5242-0HD03	3SE5242-0HC05	3SE5000-0AD03	--
3SE2 210-1E	3SE5242-0HE10	3SE5242-0HC05	3SE5000-0AE10	--
3SE2 210-1EV00-0AA3	--	3SE5242-0HC05	3SE5000-0AE11	--
3SE2 210-1F	--	3SE5242-0HC05	3SE5000-0AF10	--
3SE2 210-1G	3SE5242-0HK21	3SE5242-0HC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 210-1GV00-0AA3	--	3SE5242-0HC05	3SE5000-0AK00	3SE5000-0AA22
3SE2 210-1L	--	3SE5242-0HC05	3SE5000-0AD10	--
3SE2 210-1M	--	3SE5242-0HC05	3SE5000-0AD10	--
3SE2 210-1R	--	3SE5242-0HC05	3SE5000-0AR01	--
3SE2 210-1S	--	3SE5242-0HC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 210-1U	3SE5242-0HK50	3SE5242-0HC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 210-1UV00-0AH3	--	3SE5242-0HC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 210-1V	--	3SE5242-0HC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 210-1W	--	3SE5242-0HC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 210-1XC	3SE5242-0HC05	3SE5242-0HC05	--	--
3SE2 210-1XH	3SE5242-0HC05	3SE5242-0HC05	--	--
3SE2 210-1XW	3SE5242-0FC05-8AA0	--	--	--
3SE2 210-3C	3SE5242-0MC05	--	--	--
3SE2 210-3D	--	3SE5242-0MC05	3SE5000-0AD03	--
3SE2 210-3E	--	3SE5242-0MC05	3SE5000-0AE10	--
3SE2 210-3F	--	3SE5242-0MC05	3SE5000-0AF10	--
3SE2 210-3G	--	3SE5242-0MC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 210-3L	--	3SE5242-0MC05	3SE5000-0AD10	--
3SE2 210-3M	--	3SE5242-0MC05	3SE5000-0AD10	--
3SE2 210-3S	--	3SE5242-0MC05	3SE5000-0AK00	3SE5000-0AA81
3SE2 210-3U	--	3SE5242-0MC05	3SE5000-0AK00	3SE5000-0AA50
3SE2 210-3V	--	3SE5242-0MC05	3SE5000-0AK00	3SE5000-0AA80
3SE2 210-3W	--	3SE5242-0MC05	3SE5000-0AK00	3SE5000-0AA82
3SE2 210-8CV00	3SE5242-0LC05	3SE5242-0LC05	--	--
3SE2 210-8DV00	3SE5242-0LD03	3SE5242-0LC05	3SE5000-0AD03	--
3SE2 210-8EV00	3SE5242-0LE10	3SE5242-0LC05	3SE5000-0AE10	--
3SE2 210-8FV00	--	3SE5242-0LC05	3SE5000-0AF10	--
3SE2 210-8GV00	3SE5242-0LK21	3SE5242-0LC05	3SE5000-0AK00	3SE5000-0AA21
3SE2 210-8UV00	--	3SE5242-0LC05	3SE5000-0AK00	3SE5000-0AA50

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches, metal enclosures				
3SE2 100-0A	--	3SE5122-0BA00	--	--
3SE2 100-0C	3SE5122-0BC02	3SE5122-0BA00	3SE5000-0AC02	--
3SE2 100-0D	3SE5122-0BD02	3SE5122-0BA00	3SE5000-0AD02	--
3SE2 100-0DV00-0AK0	--	3SE5122-0BA00-1CA0	3SE5000-0AD02	--
3SE2 100-0E	3SE5122-0BE01	3SE5122-0BA00	3SE5000-0AE01	--
3SE2 100-0EV00-0AA3	--	3SE5122-0BA00	3SE5000-0AE02	--
3SE2 100-0EV00-0AF4	--	3SE5122-1KA00	3SE5000-0AE01	--
3SE2 100-0EV00-0AK0	--	3SE5122-0BA00-1CA0	3SE5000-0AE03	--
3SE2 100-0F	3SE5122-0BF01	3SE5122-0BA00	3SE5000-0AF01	--
3SE2 100-0GW	3SE5122-0BH01	3SE5122-0BA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 100-0GW00-0AA3	--	3SE5122-0BA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 100-0UW	3SE5122-0BH50	3SE5122-0BA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 100-0VW	--	3SE5122-0BA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 100-0WW	--	3SE5122-0BA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 100-1A	--	3SE5122-0CA00	--	--
3SE2 100-1C	3SE5122-0CC02	3SE5122-0CA00	3SE5000-0AC02	--
3SE2 100-1CV00-0AK0	--	3SE5122-0CA00-1CA0	3SE5000-0AC02	--
3SE2 100-1D	3SE5122-0CD02	3SE5122-0CA00	3SE5000-0AD02	--
3SE2 100-1DV00-0AA3	--	3SE5122-0CA00	3SE5000-0AD02	--
3SE2 100-1DV00-0AE0	3SE5122-0CD02-1DA0	3SE5122-0CA00-1DA0	3SE5000-0AD02	--
3SE2 100-1DV00-0AH3	3SE5122-0CD02	3SE5122-0CA00	3SE5000-0AD02	--
3SE2 100-1DV00-0AK1	--	3SE5122-0CA00-1CA0	3SE5000-0AD02	--
3SE2 100-1E	3SE5122-0CE01	3SE5122-0CA00	3SE5000-0AE01	--
3SE2 100-1EV00-0AA3	3SE5122-0CE02	3SE5122-0CA00	3SE5000-0AE02	--
3SE2 100-1EV00-0AE0	3SE5122-0CE03-1DA0	--	--	--
3SE2 100-1EV00-0AK0	--	3SE5122-0CA00-1CA0	3SE5000-0AE03	--
3SE2 100-1EV00-0AK1	--	3SE5122-0CA00-1CA0	3SE5000-0AE04	--
3SE2 100-1F	3SE5122-0CF01	3SE5122-0CA00	3SE5000-0AF01	--
3SE2 100-1FV00-0AA3	--	3SE5122-0CA00	3SE5000-0AF02	--
3SE2 100-1FV00-0AE0	3SE5122-0CF03-1DA0	3SE5122-0CA00-1DA0	3SE5000-0AF03	--
3SE2 100-1G	3SE5122-0CH01	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 100-1GV00-0AA3	3SE5122-0CH02	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 100-1GV00-0AK1	--	3SE5122-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA12
3SE2 100-1GW	3SE5122-0CH01	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 100-1GW00-0AA3	3SE5122-0CH02	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 100-1GW00-0AE0	3SE5122-0CH11-1DA0	--	--	--
3SE2 100-1GW00-0AK0	--	3SE5122-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA11
3SE2 100-1GW00-0AK1	--	3SE5122-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA12
3SE2 100-1R	3SE5122-0CR01	3SE5122-0CA00	3SE5000-0AR01	--
3SE2 100-1RV00-0AK0	--	3SE5122-0CA00-1CA0	3SE5000-0AR01	--
3SE2 100-1T	--	3SE5122-0CA00	3SE5000-0AT10	3SE5000-0AT01
3SE2 100-1U	3SE5122-0CH50	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 100-1UW	3SE5122-0CH50	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 100-1UW00-0AA3	--	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA51
3SE2 100-1UW00-0AA5	--	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA55
3SE2 100-1V	3SE5122-0CH80	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 100-1VW	3SE5122-0CH80	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 100-1W	--	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 100-1WW	--	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 100-1WW00-0AA0	--	3SE5122-0CA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 100-3A	--	3SE5122-0MA00	--	--
3SE2 100-3C	--	3SE5122-0MA00	3SE5000-0AC02	--
3SE2 100-3D	--	3SE5122-0MA00	3SE5000-0AD02	--
3SE2 100-3E	--	3SE5122-0MA00	3SE5000-0AE01	--
3SE2 100-3F	--	3SE5122-0MA00	3SE5000-0AF01	--

3SE2, 3SE3, 3SF3 Position Switches

Conversion to 3SE5, 3SF1

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Lever
Standard switches, metal enclosures				
3SE2 100-3GW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 100-3UW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 100-3VW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 100-3WW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 100-6A	--	3SE5122-0KA00	--	--
3SE2 100-6C	3SE5122-0KC02	3SE5122-0KA00	3SE5000-0AC02	--
3SE2 100-6CV00-0AK0	--	3SE5122-0KA00-1CA0	3SE5000-0AC02	--
3SE2 100-6D	3SE5122-0KD02	3SE5122-0KA00	3SE5000-0AD02	--
3SE2 100-6E	3SE5122-0KE01	3SE5122-0KA00	3SE5000-0AE01	--
3SE2 100-6F	--	3SE5122-0KA00	3SE5000-0AF01	--
3SE2 100-6GW	3SE5122-0KH01	3SE5122-0KA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 100-6UW	--	3SE5122-0KA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 100-6VW	--	3SE5122-0KA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 100-7A	--	3SE5122-0PA00	--	--
3SE2 100-7C	--	3SE5122-0PA00	3SE5000-0AC02	--
3SE2 100-7D	--	3SE5122-0PA00	3SE5000-0AD02	--
3SE2 100-7E	--	3SE5122-0PA00	3SE5000-0AE01	--
3SE2 100-7F	--	3SE5122-0PA00	3SE5000-0AF01	--
3SE2 100-7GW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 100-7UW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 100-7VW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 100-7WW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 100-8CV00	3SE5122-0LC02	3SE5122-0LA00	3SE5000-0AC02	--
3SE2 100-8DV00	3SE5122-0LD02	3SE5122-0LA00	3SE5000-0AD02	--
3SE2 100-8EV00	3SE5122-0LE01	3SE5122-0LA00	3SE5000-0AE01	--
3SE2 100-8FV00	--	3SE5122-0LA00	3SE5000-0AF01	--
3SE2 100-8GW00	3SE5122-0LH01	3SE5122-0LA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 100-8GW00-0AA3	--	3SE5122-0LA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 100-8RV00	--	3SE5122-0LA00	3SE5000-0AR01	--
3SE2 100-8UW00	--	3SE5122-0LA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 100-8VW00	--	3SE5122-0LA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 100-8WW00	--	3SE5122-0LA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-0A	--	3SE5112-0BA00	--	--
3SE2 120-0AV00-0AF1	--	3SE5112-1KA00	--	--
3SE2 120-0C	3SE5112-0BC02	3SE5112-0BA00	3SE5000-0AC02	--
3SE2 120-0D	3SE5112-0BD02	3SE5112-0BA00	3SE5000-0AD02	--
3SE2 120-0DV00-0AA3	3SE5112-0BD02	3SE5112-0BA00	3SE5000-0AD02	--
3SE2 120-0DV00-0AD1	--	3SE5115-0KA00-1AD1	3SE5000-0AD02	--
3SE2 120-0DV00-0AF7	--	3SE5115-1BA00-1AF2	3SE5000-0AD02	--
3SE2 120-0DV00-0AK0	--	3SE5112-0BA00-1CA0	3SE5000-0AD02	--
3SE2 120-0E	3SE5112-0BE01	3SE5112-0BA00	3SE5000-0AE01	--
3SE2 120-0EV00-0AA3	--	3SE5112-0BA00	3SE5000-0AE02	--
3SE2 120-0EV00-0AF1	--	3SE5112-1KA00	3SE5000-0AE01	--
3SE2 120-0EV00-0AK0	--	3SE5112-0BA00-1CA0	3SE5000-0AE03	--
3SE2 120-0F	3SE5112-0BF01	3SE5112-0BA00	3SE5000-0AF01	--
3SE2 120-0G	3SE5112-0BH01	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-0GV00-0AD1	--	3SE5115-0KA00-1AD1	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-0GW	3SE5112-0BH01	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-0GW00-0AA3	3SE5112-0BH02	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-0GW00-0AA4	--	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA04
3SE2 120-0GW00-0AA5	--	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA05
3SE2 120-0GW00-0AA7	--	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA07
3SE2 120-0GW00-0AF1	--	3SE5112-1KA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-0GW00-0AF2	--	3SE5115-1BA00-1AF2	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-0GW00-0AG2	--	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-0GW00-0AK0	--	3SE5112-0BA00-1CA0	3SE5000-0AH00	3SE5000-0AA11
3SE2 120-0J	3SE5112-0BH01	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-0U	3SE5112-0BH50	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-0UW	3SE5112-0BH50	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-0UW00-0AA3	--	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA51
3SE2 120-0VW	--	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-0WW	--	3SE5112-0BA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-0WW00-0AK0	--	3SE5112-0BA00-1CA0	3SE5000-0AH00	3SE5000-0AA82

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches, metal enclosures				
3SE2 120-1A	--	3SE5112-0CA00	--	--
3SE2 120-1AV00-0AC5	--	3SE5114-0CA00-1AC5	--	--
3SE2 120-1AV00-0AD4	--	3SE5115-1CA00-1AF2	--	--
3SE2 120-1AV00-0AF0	--	3SE5112-1LA00	--	--
3SE2 120-1AV00-0AF1	--	3SE5112-1LA00	--	--
3SE2 120-1AV00-0AF4	--	3SE5112-3LA00	--	--
3SE2 120-1C	3SE5112-0CC02	3SE5112-0CA00	3SE5000-0AC02	--
3SE2 120-1CV00-0AC5	--	3SE5114-0CA00-1AC5	3SE5000-0AC02	--
3SE2 120-1CV00-0AD1	--	3SE5115-0LA00-1AD1	3SE5000-0AC02	--
3SE2 120-1CV00-0AE0	3SE5112-0CC02-1DA0	3SE5115-0CA00-1DA0	3SE5000-0AC02	--
3SE2 120-1CV00-0AF4	--	3SE5112-3LA00	3SE5000-0AC02	--
3SE2 120-1CV00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AC02	--
3SE2 120-1D	3SE5112-0CD02	3SE5112-0CA00	3SE5000-0AD02	--
3SE2 120-1DV00-0AA3	--	3SE5112-0CA00	3SE5000-0AD02	--
3SE2 120-1DV00-0AC4	--	3SE5114-0CA00-1AC5	3SE5000-0AD02	--
3SE2 120-1DV00-0AC5	--	3SE5114-0CA00-1AC5	3SE5000-0AD02	--
3SE2 120-1DV00-0AD0	--	3SE5115-0CA00-1AD0	3SE5000-0AD02	--
3SE2 120-1DV00-0AD1	--	3SE5115-0LA00-1AD1	3SE5000-0AD02	--
3SE2 120-1DV00-0AE0	3SE5112-0CD02-1DA0	--	--	--
3SE2 120-1DV00-0AF0	--	3SE5112-1LA00	3SE5000-0AD02	--
3SE2 120-1DV00-0AF1	--	3SE5112-1LA00	3SE5000-0AD02	--
3SE2 120-1DV00-0AF2	--	3SE5115-1CA00-1AF2	3SE5000-0AD02	--
3SE2 120-1DV00-0AF4	--	3SE5112-3LA00	3SE5000-0AD02	--
3SE2 120-1DV00-0AF6	--	3SE5112-1LA00	3SE5000-0AD02	--
3SE2 120-1DV00-0AF7	--	3SE5115-1CA00-1AF2	3SE5000-0AD02	--
3SE2 120-1DV00-0AJ5	--	3SE5114-1CA00-1AF3	3SE5000-0AD02	--
3SE2 120-1DV00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AD02	--
3SE2 120-1E	3SE5112-0CE01	3SE5112-0CA00	3SE5000-0AE01	--
3SE2 120-1EV00-0AA3	--	3SE5112-0CA00	3SE5000-0AE02	--
3SE2 120-1EV00-0AC4	--	3SE5114-0CA00-1AC5	3SE5000-0AE01	--
3SE2 120-1EV00-0AD0	--	3SE5115-0CA00-1AD0	3SE5000-0AE01	--
3SE2 120-1EV00-0AD1	--	3SE5115-0LA00-1AD1	3SE5000-0AE01	--
3SE2 120-1EV00-0AE0	3SE5112-0CE03-1DA0	--	--	--
3SE2 120-1EV00-0AF0	--	3SE5112-1LA00	3SE5000-0AE01	--
3SE2 120-1EV00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AE03	--
3SE2 120-1F	3SE5112-0CF01	3SE5112-0CA00	3SE5000-0AF01	--
3SE2 120-1FV00-0AA3	--	3SE5112-0CA00	3SE5000-0AF02	--
3SE2 120-1FV00-0AC4	--	3SE5114-0CA00-1AC5	3SE5000-0AF01	--
3SE2 120-1FV00-0AC5	--	3SE5114-0CA00-1AC5	3SE5000-0AF01	--
3SE2 120-1FV00-0AE0	3SE5112-0CF03-1DA0	--	--	--
3SE2 120-1FV00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AF03	--
3SE2 120-1G	3SE5112-0CH01	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GV00-0AA3	3SE5112-0CH02	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GV00-0AD1	--	3SE5115-0LA00-1AD1	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GV00-0AD4	--	3SE5115-1CA00-1AF2	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GV00-0AF0	--	3SE5112-1LA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GV00-0AF4	--	3SE5112-3LA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GV00-0AF5	--	3SE5112-1LA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GV00-0AG0	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA15
3SE2 120-1GV00-0AJ5	--	3SE5114-1CA00-1AF3	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GV00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA11
3SE2 120-1GV00-0AK3	--	3SE5112-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA11
3SE2 120-1GW	3SE5112-0CH01	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AA2	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA04
3SE2 120-1GW00-0AA3	3SE5112-0CH02	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GW00-0AA5	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA05
3SE2 120-1GW00-0AA7	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA07
3SE2 120-1GW00-0AC4	3SE5114-0CH01-1AC5	3SE5114-0CA00-1AC5	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AC5	3SE5114-0CH01-1AC5	3SE5114-0CA00-1AC5	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AD0	--	3SE5115-0CA00-1AD0	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AD1	--	3SE5115-0LA00-1AD1	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AD3	--	3SE5115-0LA00-1AD1	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GW00-0AE0	3SE5112-0CH11-1DA0	--	--	--
3SE2 120-1GW00-0AF0	--	3SE5112-1LA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AF2	--	3SE5115-1CA00-1AF2	3SE5000-0AH00	3SE5000-0AA01

3SE2, 3SE3, 3SF3 Position Switches

Conversion to 3SE5, 3SF1

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches, metal enclosures				
3SE2 120-1GW00-0AF4	--	3SE5112-3LA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AF5	--	3SE5112-1LA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GW00-0AF7	--	3SE5115-1CA00-1AF2	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GW00-0AG1	3SE5 112-0CH01	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1GW00-0AG2	3SE5 112-0CH01	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GW00-0AG8	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA03
3SE2 120-1GW00-0AJ1	--	3SE5115-0LA00-1AD1	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GW00-0AJ4	--	3SE5114-0CA00-1AC5	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1GW00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA11
3SE2 120-1GW00-0AK1	--	3SE5112-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA12
3SE2 120-1J	3SE5112-0CH01	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-1JV00-0AF5	--	3SE5112-1LA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-1R	3SE5112-0CR01	3SE5112-0CA00	3SE5000-0AR01	--
3SE2 120-1RV00-0AD0	--	3SE5115-0CA00-1AD0	3SE5000-0AR01	--
3SE2 120-1RV00-0AE0	3SE5112-0CR01-1DA0	3SE5112-0CA00-1DA0	3SE5000-0AR01	--
3SE2 120-1RV00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AR01	--
3SE2 120-1RV00-0AL0	--	3SE5112-0CA00	3SE5000-0AR02	--
3SE2 120-1RV00-0AL1	--	3SE5112-0CA00	3SE5000-0AR03	--
3SE2 120-1RV00-0AL2	--	3SE5112-0CA00	3SE5000-0AR04	--
3SE2 120-1T	3SE5112-0CT11	3SE5112-0CA00	3SE5000-0AT10	3SE5000-0AT01
3SE2 120-1TV00-0AA3	--	3SE5112-0CA00	3SE5000-0AT10	3SE5000-0AT02
3SE2 120-1TV00-0AC4	--	3SE5114-0CA00-1AC5	3SE5000-0AT10	3SE5000-0AT01
3SE2 120-1TV00-0AE0	3SE5112-0CT13-1DA0	--	--	--
3SE2 120-1TV00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AT10	3SE5000-0AT03
3SE2 120-1U	3SE5112-0CH50	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-1UV00-0AH4	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-1UW	3SE5112-0CH50	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-1UW00-0AA3	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA51
3SE2 120-1UW00-0AA5	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA55
3SE2 120-1UW00-0AA7	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA57
3SE2 120-1UW00-0AC4	--	3SE5114-0CA00-1AC5	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-1UW00-0AD1	--	3SE5115-0LA00-1AD1	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-1UW00-0AF0	--	3SE5112-1LA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-1UW00-0AF7	--	3SE5115-1CA00-1AF2	3SE5000-0AH00	3SE5000-0AA51
3SE2 120-1UW00-0AG1	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-1UW00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA52
3SE2 120-1UW00-0AK4	--	3SE5112-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA58
3SE2 120-1V	3SE5112-0CH80	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-1VV00-0AF0	--	3SE5112-1LA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-1VW	3SE5112-0CH80	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-1VW00-0AC4	--	3SE5114-0CA00-1AC5	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-1VW00-0AD1	--	3SE5115-0LA00-1AD1	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-1VW00-0AG1	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-1VW00-0AG6	--	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-1W	3SE5112-0CH82	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-1WW	3SE5112-0CH82	3SE5112-0CA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-1WW00-0AD0	--	3SE5115-0CA00-1AD0	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-1WW00-0AE0	3SE5112-0CH82-1DA0	--	--	--
3SE2 120-1WW00-0AK0	--	3SE5112-0CA00-1CA0	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-3A	--	3SE5112-0MA00	--	--
3SE2 120-3C	--	3SE5112-0MA00	3SE5000-0AC02	--
3SE2 120-3D	--	3SE5112-0MA00	3SE5000-0AD02	--
3SE2 120-3E	--	3SE5112-0MA00	3SE5000-0AE01	--
3SE2 120-3F	--	3SE5112-0MA00	3SE5000-0AF01	--
3SE2 120-3GW	--	3SE5112-0MA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-3UW	--	3SE5112-0MA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-3VW	--	3SE5112-0MA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-3WW	--	3SE5112-0MA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-6A	--	3SE5112-0KA00	--	--
3SE2 120-6C	3SE5112-0KC02	3SE5112-0KA00	3SE5000-0AC02	--
3SE2 120-6D	3SE5112-0KD02	3SE5112-0KA00	3SE5000-0AD02	--
3SE2 120-6DV00-0AA3	--	3SE5112-0KA00	3SE5000-0AD02	--
3SE2 120-6E	3SE5112-0KE01	3SE5112-0KA00	3SE5000-0AE01	--
3SE2 120-6F	--	3SE5112-0KA00	3SE5000-0AF01	--

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches, metal enclosures				
3SE2 120-6GW	3SE5112-0KH01	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-6GW00-0AA3	--	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-6GW00-0AG1	--	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-6GW00-0AG2	--	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-6GW00-0AG8	--	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA03
3SE2 120-6GW00-0AK1	--	3SE5112-0KA00-1CA0	3SE5000-0AH00	3SE5000-0AA12
3SE2 120-6UW	--	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-6VW	--	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-6WW	--	3SE5112-0KA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-7A	--	3SE5112-0PA00	--	--
3SE2 120-7C	--	3SE5112-0PA00	3SE5000-0AC02	--
3SE2 120-7D	--	3SE5112-0PA00	3SE5000-0AD02	--
3SE2 120-7E	--	3SE5112-0PA00	3SE5000-0AE01	--
3SE2 120-7F	--	3SE5112-0PA00	3SE5000-0AF01	--
3SE2 120-7GW	--	3SE5112-0PA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-7UW	--	3SE5112-0PA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-7VW	--	3SE5112-0PA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-7WW	--	3SE5112-0PA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 120-8AV00	--	3SE5112-0LA00	--	--
3SE2 120-8CV00	3SE5112-0LC02	3SE5112-0LA00	3SE5000-0AC02	--
3SE2 120-8CV00-0AC5	--	3SE5114-0LA00-1AE1	3SE5000-0AC02	--
3SE2 120-8DV00	3SE5112-0LD02	3SE5112-0LA00	3SE5000-0AD02	--
3SE2 120-8DV00-0AC2	--	3SE5115-1LA00-1AD2	3SE5000-0AD02	--
3SE2 120-8DV00-0AC4	--	3SE5114-0LA00-1AE1	3SE5000-0AD02	--
3SE2 120-8DV00-0AC5	--	3SE5114-0LA00-1AE1	3SE5000-0AD02	--
3SE2 120-8DV00-0AJ6	--	3SE5114-0LA00-1AE1	3SE5000-0AD02	--
3SE2 120-8EV00	3SE5112-0LE01	3SE5112-0LA00	3SE5000-0AE01	--
3SE2 120-8EV00-0AC5	--	3SE5114-0LA00-1AE1	3SE5000-0AE01	--
3SE2 120-8FV00	3SE5112-0LF01	3SE5112-0LA00	3SE5000-0AF01	--
3SE2 120-8GW00	3SE5112-0LH01	3SE5112-0LA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-8GW00-0AA3	--	3SE5112-0LA00	3SE5000-0AH00	3SE5000-0AA02
3SE2 120-8GW00-0AC4	--	3SE5114-0LA00-1AE1	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-8GW00-0AC5	--	3SE5114-0LA00-1AE1	3SE5000-0AH00	3SE5000-0AA01
3SE2 120-8GW00-0AK1	--	3SE5112-0LA00-1CA0	3SE5000-0AH00	3SE5000-0AA12
3SE2 120-8RV00	--	3SE5112-0LA00	3SE5000-0AR01	--
3SE2 120-8UW00	3SE5112-0LH50	3SE5112-0LA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 120-8VW00	--	3SE5112-0LA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 120-8WW00	--	3SE5112-0LA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 303-0A	--	3SE5122-0KA00	--	--
3SE2 303-0C	3SE5122-0KC02	3SE5122-0KA00	3SE5000-0AC02	--
3SE2 303-0D	--	3SE5122-0KA00	3SE5000-0AD02	--
3SE2 303-0DV00-0AA3	--	3SE5122-0KA00	3SE5000-0AD02	--
3SE2 303-0E	--	3SE5122-0KA00	3SE5000-0AE01	--
3SE2 303-0F	--	3SE5122-0KA00	3SE5000-0AF01	--
3SE2 303-0GW	--	3SE5122-0KA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 303-0UW	--	3SE5122-0KA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 303-0VW	--	3SE5122-0KA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 303-0WW	--	3SE5122-0KA00	3SE5000-0AH00	3SE5000-0AA82
3SE2 303-1A	--	3SE5122-0PA00	--	--
3SE2 303-1C	--	3SE5122-0PA00	3SE5000-0AC02	--
3SE2 303-1D	--	3SE5122-0PA00	3SE5000-0AD02	--
3SE2 303-1DV00-0AA3	--	3SE5122-0PA00	3SE5000-0AD02	--
3SE2 303-1E	--	3SE5122-0PA00	3SE5000-0AE01	--
3SE2 303-1F	--	3SE5122-0PA00	3SE5000-0AF01	--
3SE2 303-1GW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 303-1UW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 303-1VW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 303-1WW	--	3SE5122-0PA00	3SE5000-0AH00	3SE5000-0AA82

3SE2, 3SE3, 3SF3 Position Switches

Conversion to 3SE5, 3SF1

Old Order No. 3SE2	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches, metal enclosures				
3SE2 303-2A	--	3SE5122-0MA00	--	--
3SE2 303-2C	--	3SE5122-0MA00	3SE5000-0AC02	--
3SE2 303-2D	--	3SE5122-0MA00	3SE5000-0AD02	--
3SE2 303-2DV00-0AA3	--	3SE5122-0MA00	3SE5000-0AD02	--
3SE2 303-2E	--	3SE5122-0MA00	3SE5000-0AE01	--
3SE2 303-2F	--	3SE5122-0MA00	3SE5000-0AF01	--
3SE2 303-2GW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA01
3SE2 303-2UW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA50
3SE2 303-2VW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA80
3SE2 303-2WW	--	3SE5122-0MA00	3SE5000-0AH00	3SE5000-0AA82

3SE2, 3SE3 ---> 3SE5 safety switches

Safety position switches with separate actuator from the 3SE2 and 3SE3 series can be converted to the new switches of the 3SE5 series with the help of this table.

Old Order No. 3SE2, 3SE3	New Order No. Complete units
With separate actuator	
3SE2 120-0XX	3SE5112-0QV10
3SE2 120-0XX00-0AF0	3SE5112-1QV10
3SE2 120-4XX	3SE5112-0QV10
3SE2 120-6XX	3SE5112-0QV10
3SE2 120-6XX00-0AC4	3SE5114-0QV10-1AE1
3SE2 200-0XX03	3SE5232-0RV40
3SE2 200-0XX04	3SE5232-0RV40
3SE3 200-0XX13	3SE5232-0RV40
3SE2 200-6XX03	3SE5232-0QV40
3SE2 200-6XX04	3SE5232-0QV40
3SE3 200-6XX13	3SE5232-0QV40

The 3SE2 243 and 3SE2 257 switches with separate actuator and the 3SE2 83 and 3SE2 84 with solenoid interlocking are still available without any restriction.

Old Order No. 3SE3	New Order No. Complete units
With solenoid interlocking	
3SE3 750-3XX00	3SE5 322-0SB21
3SE3 750-6XX00	3SE5 322-0SB21
3SE3 751-3XX00	3SE5 322-0SB23
3SE3 751-6XX00	3SE5 322-0SB23
3SE3 752-3XX00	3SE5 322-0SB22
3SE3 752-6XX00	3SE5 322-0SB22
3SE3 760-3XX00	3SE5 322-0SD21
3SE3 760-3XX01	3SE5 322-0SE21
3SE3 760-6XX00	3SE5 322-0SD21
3SE3 760-6XX01	3SE5 322-0SE21
3SE3 761-3XX00	3SE5 322-0SD23
3SE3 761-3XX01	3SE5 322-0SE23
3SE3 761-6XX00	3SE5 322-0SD23
3SE3 762-3XX00	3SE5 322-0SD22
3SE3 762-3XX01	3SE5 322-0SE22
3SE3 762-6XX00	3SE5 322-0SD22
3SE3 850-3XX00	3SE5 312-0SB11
3SE3 850-6XX00	3SE5 312-0SB11
3SE3 851-3XX00	3SE5 312-0SB13
3SE3 851-6XX00	3SE5 312-0SB13
3SE3 852-3XX00	3SE5 312-0SB12
3SE3 852-6XX00	3SE5 312-0SB12
3SE3 860-3XX00	3SE5 312-0SD11
3SE3 860-3XX01	3SE5 312-0SE11
3SE3 860-6XX00	3SE5 312-0SD11
3SE3 860-6XX01	3SE5 312-0SE11
3SE3 861-3XX00	3SE5 312-0SD13
3SE3 861-3XX01	3SE5 312-0SE13
3SE3 861-6XX00	3SE5 312-0SD13
3SE3 861-6XX01	3SE5 312-0SE13
3SE3 862-3XX00	3SE5 312-0SD12
3SE3 862-3XX01	3SE5 312-0SE12
3SE3 862-6XX00	3SE5 312-0SD12
3SE3 862-6XX01	3SE5 312-0SE12

AS-Interface 3SF3 --> 3SF1

ASIsafe position switches from the 3SF3 series can be converted to the new switches of the 3SF1 series with the help of this table.

Old Order No. 3SF3	New Order No. Complete units	New Order No. – modular system		
		Basic switches	Operating mechanisms	Levers
Standard switches				
3SF3 100-0CV00-0BA2	--	3SF1124-1KA00-1BA2	3SE5000-0AC02	--
3SF3 100-0DV00-0BA2	--	3SF1124-1KA00-1BA2	3SE5000-0AD02	--
3SF3 100-0EV00-0BA2	--	3SF1124-1KA00-1BA2	3SE5000-0AE01	--
3SF3 100-0FV00-0BA2	--	3SF1124-1KA00-1BA2	3SE5000-0AF01	--
3SF3 100-0GV00-0BA2	--	3SF1124-1KA00-1BA2	3SE5000-0AH00	3SE5000-0AA01
3SF3 100-1CV00-0BA2	--	3SF1124-1LA00-1BA2	3SE5000-0AC02	--
3SF3 100-1DV00-0BA2	--	3SF1124-1LA00-1BA2	3SE5000-0AD02	--
3SF3 100-1EV00-0BA2	--	3SF1124-1LA00-1BA2	3SE5000-0AE01	--
3SF3 100-1FV00-0BA2	--	3SF1124-1LA00-1BA2	3SE5000-0AF01	--
3SF3 100-1GV00-0BA2	--	3SF1124-1LA00-1BA2	3SE5000-0AH00	3SE5000-0AA01
3SF3 120-6CV00-0BA1	--	3SF1114-1KA00-1BA1	3SE5000-0AC02	--
3SF3 120-6DV00-0BA1	--	3SF1114-1KA00-1BA1	3SE5000-0AD02	--
3SF3 120-6EV00-0BA1	--	3SF1114-1KA00-1BA1	3SE5000-0AE01	--
3SF3 120-6FV00-0BA1	--	3SF1114-1KA00-1BA1	3SE5000-0AF01	--
3SF3 120-6GV00-0BA1	--	3SF1114-1KA00-1BA1	3SE5000-0AH00	3SE5000-0AA01
3SF3 120-8CV00-0BA1	--	3SF1114-1LA00-1BA1	3SE5000-0AC02	--
3SF3 120-8DV00-0BA1	--	3SF1114-1LA00-1BA1	3SE5000-0AD02	--
3SF3 120-8EV00-0BA1	--	3SF1114-1LA00-1BA1	3SE5000-0AE01	--
3SF3 120-8FV00-0BA1	--	3SF1114-1LA00-1BA1	3SE5000-0AF01	--
3SF3 120-8GV00-0BA1	--	3SF1114-1LA00-1BA1	3SE5000-0AH00	3SE5000-0AA01
3SF3 200-6CV00-0BA1	3SF1234-1KC05-1BA1	--	--	--
3SF3 200-6DV00-0BA1	--	3SF1234-1KC05-1BA1	3SE5000-0AD03	--
3SF3 200-6EV00-0BA1	--	3SF1234-1KC05-1BA1	3SE5000-0AE10	--
3SF3 200-6FV00-0BA1	--	3SF1234-1KC05-1BA1	3SE5000-0AF10	--
3SF3 200-6GV00-0BA1	--	3SF1234-1KC05-1BA1	3SE5000-0AK00	3SE5000-0AA21
3SF3 200-8CV00-0BA1	3SF1234-1LC05-1BA1	--	--	--
3SF3 200-8DV00-0BA1	--	3SF1234-1LC05-1BA1	3SE5000-0AD03	--
3SF3 200-8EV00-0BA1	--	3SF1234-1LC05-1BA1	3SE5000-0AE10	--
3SF3 200-8FV00-0BA1	--	3SF1234-1LC05-1BA1	3SE5000-0AF10	--
3SF3 200-8GV00-0BA1	--	3SF1234-1LC05-1BA1	3SE5000-0AK00	3SE5000-0AA21
3SF3 210-0CV00-0BA2	3SF1244-1KC05-1BA2	--	--	--
3SF3 210-0DV00-0BA2	--	3SF1244-1KC05-1BA2	3SE5000-0AD03	--
3SF3 210-0EV00-0BA2	--	3SF1244-1KC05-1BA2	3SE5000-0AE10	--
3SF3 210-0FV00-0BA2	--	3SF1244-1KC05-1BA2	3SE5000-0AF10	--
3SF3 210-0GV00-0BA2	--	3SF1244-1KC05-1BA2	3SE5000-0AK00	3SE5000-0AA21
3SF3 210-1CV00-0BA2	3SF1244-1LC05-1BA2	--	--	--
3SF3 210-1DV00-0BA2	--	3SF1244-1LC05-1BA2	3SE5000-0AD03	--
3SF3 210-1EV00-0BA2	--	3SF1244-1LC05-1BA2	3SE5000-0AE10	--
3SF3 210-1FV00-0BA2	--	3SF1244-1LC05-1BA2	3SE5000-0AF10	--
3SF3 210-1GV00-0BA2	--	3SF1244-1LC05-1BA2	3SE5000-0AK00	3SE5000-0AA21

Old Order No. 3SF3	New Order No. Complete units
With separate actuator	
3SF3 120-6XX00-0BA1	3SF1114-1QV10-1BA1
3SF3 200-6XX04-0BA1	3SF1234-1QV40-1BA1
With solenoid interlocking	
3SF3 750-6XX00-0BA1	3SF1 324-1SB21-1BA1
3SF3 760-6XX00-0BA1	3SF1 324-1SD21-1BA1
3SF3 830-6XX00-0BA1	3SF1 314-1SB11-1BA1
3SF3 840-6XX00-0BA1	3SF1 314-1SD11-1BA1
3SF3 850-6XX00-0BA1	3SF1 314-1SB11-1BA1
3SF3 860-6XX00-0BA1	3SF1 314-1SD11-1BA1

3SE5, 3SE2, 3SE3 Position Switches

General data

Overview

The innovative SIRIUS 3SE5 position switches are modern in design, compact, modular and simple to connect. They save time and increase flexibility during installation of a whole range of switch variants. In principle it is possible to combine any enclosure with any operating mechanism, paying due consideration to the EN 50041 and EN 50047 standards where necessary.

Complete units

Popular versions of the position switches in standard enclosures are available as complete units.



3SE5 position switches with plastic and metal enclosures

3SE2 series

The position switches of the 3SE2 series are still available, in particular those switch variants which are not yet covered by the new 3SE5 series, including the complete 3SE2 230 series with 40 mm plastic enclosure and the 3SE2 404 series with metal enclosure and 4 contacts.



3SE2 position switches with plastic and metal enclosures

Modular system

The 3SE5 series features a new modular system comprising different sizes of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the user can select the right solution for his application from numerous versions and install it himself in a very short time.

An easy plug-in method enables fast replacement of the actuator heads.



Examples of selection options in the modular system

A conversion table from 3SE2 to 3SE5 can be found on page 8/4.

Design

All enclosure variants have an integrated chlorinated rubber diaphragm (high functional safety in cold and aggressive environments).

Enclosure sizes

The 3SE5 switches are available in five different enclosure sizes with 2 or 3 contacts:

- Open-type position switch IP20 or IP10
- Plastic enclosures acc. to EN 50047, 31 mm wide, 1 cable entry
- Plastic enclosures, 50 mm wide, 2 cable entries
- Metal enclosures acc. to EN 50041, 40 mm wide, 1 cable entry
- Metal enclosures, 56 mm wide, 3 cable entries

The following items are available in addition from the 3SE2 series:

- Plastic enclosures acc. to EN 50041, 40 mm wide
- Metal enclosures, 56 mm wide, 4 contacts

Enclosure versions

Various basic switches can be selected for the 3SE5 series:

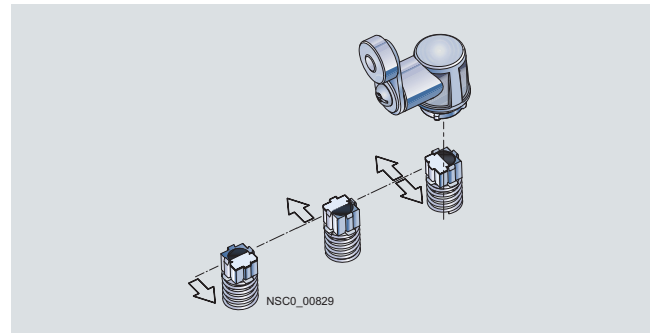
- With contact blocks with two or three contacts (screw terminals) designed as slow-action or snap-action contacts; the slow-action contacts also with make-before-break
- Optional LED status display
- With mounted four- or five-pole M12 connector socket (available for the wide enclosures as an accessory for self-assembly)
- With 6-pole connector socket + PE on the metal enclosures
- Versions with increased corrosion protection
- Versions for operating temperature up to -40 °C
- Metal enclosures for explosion protection (ATEX) ([see page 8/69](#))
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs ([see page 8/73](#))

Actuator variants

All operating mechanisms can be rotated around the axis in increments of 22.5° . The following actuator variants are available:

- Rounded plungers
- Roller plungers
- Roller levers
- Angular roller levers
- Spring rod
- Twist levers and rod actuators
- Fork lever

The actuator rollers are available with various materials and diameters.



Twist actuators for twist levers and rod actuators, with setting of switching to right, left or right/left (standard for all twist actuators except fork levers)

3SE5, 3SE2, 3SE3 Position Switches

General data

Optional LED indicators

LED indicators
available for all enclosure sizes



The enclosure versions can be supplied with an LED signaling indicator (1 × green + 1 × yellow). This is the first time that optical signaling equipment is also available for small standard enclosures acc. to EN 50047. The LED signaling indicators are available in all common voltages (24 V DC and 230 V AC).

Additional contacts

Exchangeable two and three-pole contact blocks for all enclosure sizes



The three-pole contact block with snap-action or slow-action contacts is regularly available for all enclosure forms. The same installation space is required as for a two-pole block. The version with 1 NO + 2 NC offers for example more safety through redundant shutdowns (2 NC contacts) with simultaneous signaling (1 NO contact). The three-pole blocks are also available with make-before-break and with 2 NO + 1 NC.

Contact reliability

The new contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents, e. g. 1 mA at 5 V DC.

Positive opening \ominus

The NC contacts of the switch are forced open mechanically, positively-driven and reliably by the plunger. This is referred to as "positive opening".

Mounting

Easy plug-in method
for fast replacement of the actuator heads



Open cover (1)
Actuate locking lever (2)
Replace the head (turnable by 16 × 22.5°) (3)
Lock and close the cover

Quick-connect technology

For plastic enclosure with a width of 31 mm



These position switches can be wired quickly and easily as an added customer benefit. The connecting cable is first connected to the terminals of the contact block and then guided through a slit into the cable gland opening. The time saved through this new connection method is approx. 20 to 25 %.

Benefits

The 3SE5 position switches differ from the previous series through the following new characteristics:

- The modular structure of the product range allows a number of versions with a smaller number of bearing types for enclosures and operating mechanisms.
- All actuators around the axis in increments of 22.5° (see picture on page 8/16).
- Rounded and roller plungers acc. to EN 50041 with 3 mm overtravel (total travel 9 mm) for greater tolerance when switching.
- All enclosure sizes – now also including the small enclosure 31 mm wide – are optionally available with an LED signaling indicator (see picture on page 8/16).
- All enclosure variants have an integrated chlorinated rubber diaphragm (high functional safety in cold and aggressive environments).
- All contact blocks are replaceable (see page 8/50).
- The three-pole contact blocks are available for all enclosure sizes (see picture on page 8/16).
- **NEW:** Blocks with slow-action contacts 1 NO + 2 NC with make-before-break and 2 NO + 1 NC.
- The short-stroke contact block 1 NO + 1 NC improves the precision of the switching operation through a reduced actuation path.
- The contact block with 1 NO + 1 NC snap-action contacts with 2 x 2 mm contact opening is suitable for simultaneous disconnection and signaling, particularly in the elevator industry.
- The plastic enclosure with a width of 31 mm has simple and fast wiring equipment which makes it possible to save from approx. 20 to 25 % of the time when connecting (see picture on page 8/16).
- The ASIsafe electric component is integrated for the versions with the AS-Interface connection (see page 8/73); an additional adapter is not required.

Application

With the standard position switches, mechanical positions of moved machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can meet practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moved machined parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

IEC 60947-5-1 or EN 60947-5-1.

The protective measure of "total insulation" by the molded-plastic enclosure is guaranteed by the use of molded-plastic screw-glands.

Safety position switches

For controls acc. to IEC 60204-1 or EN 60204-1 the devices can be used as a safety position switch. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

IEC 60947-5-1 and EN 60947-5-1 require positive opening of the NC contacts, i. e. for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked acc. to the IEC standard 60947-5-1 with the symbol ☞.

Category 2 acc. to ISO 13849-1 (EN 954-1) can be attained with 3SE5 position switches with ☞, and category 3 or 4 when using an additional position switch, if the corresponding failsafe evaluation units are selected and correctly installed, e. g. the 3TK28 safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges. The operating mechanisms (actuators) must also be connected to the enclosure by keyed techniques. The corresponding operating mechanisms are marked in the catalog with ☞.

Contacts for each application

- **Snap-action contacts:** NC and NO contacts switch simultaneously – regardless of the actuating speed ($v_{\min} = 0.01$ m/s) and contact erosion.
- **Slow-action contacts:** Difference in travel between "NC contact opens" and "NO contact closes"; the switching speed is the same as or proportional to the actuating speed ($v_{\min} = 0.4$ m/s).
- **Slow-action contacts with make-before-break:** e. g. suitable for adding a second function to a sequence control.

Operating mechanisms for each application

Rounded plungers and roller plungers

- Operation in direction of the plunger axis or in case of roller plunger with bar at right angles to the plunger axis
- The roller plunger is recommended for lateral actuation and relatively long overtravel.

Roller and angular roller levers

- For actuators made of finely ground steel in the form of cams, straight-edges (approach angle 30°) or cam disks

Spring rod

- Can be used for undefined actuations and changing starting conditions
- Starting from any direction is possible.

Twist levers and rod actuators

- For a high starting speed ($v = 1.5$ m/s)
- Variety of starting options
- Insensitive to oil, grinding dust, ice and coarse-grained material
- With the twist lever the maximum approach angle is always equal to the maximum trailing angle
- Rod actuator – when no actuator with approach and trailing angle is possible
- Adjustment of the lever in increments of 10°.
- Can be adjusted with left or right switching




Fork lever

- Switchable in two directions
- Latching actuator
- For reciprocating movements

3SE5, 3SE2, 3SE3 Position Switches

General data

More information

Type		3SE5 1..., 3SE5 2..		3SE2 230, 3SE2 404		Exception: 3SE2 230-8..00	
General data							
Standards		IEC 60947-5-1, EN 60947-5-1					
Rated insulation voltage U_i	V	400		500			
Pollution degree acc. to EN 60664-1		Class 3		Class 3			
Rated impulse withstand voltage U_{imp}	kV	6		6			
Rated operational voltage U_e	V	400 V AC, over 300 V AC only for equal potential ¹⁾		AC 500; over 380 V AC only equal potential		AC 500; over 300 V AC only equal potential	
Conventional free-air thermal current I_{th}	A	10	6	10		10	
Rated operational current I_e		2-pole	3-pole	2-pole and 4-pole		2-pole (2 NC snap-action)	
• With alternating current 50/60 Hz		$I_e/AC-15$	$I_e/AC-15$	$I_e/AC-12$	$I_e/AC-15$	$I_e/AC-12$	$I_e/AC-15$
- At 24 V	A	6	6	10	10	10	10
- At 120 V	A	6	3	10	10	10	10
- At 240 V	A	3	1.5	10	6	10	6
- At 400 V	A	--	--	10	4	10	4
- At 500 V	A	--	--	10	3	10	3
• For direct current		$I_e/DC-13$	$I_e/DC-13$	$I_e/DC-12$	$I_e/DC-13$	$I_e/DC-12$	$I_e/DC-13$
- At 24 V	A	3	3	10	10	10	10
- At 125 V	A	0.55	0.55	--	--	--	--
- At 250 V	A	0.27	0.27	--	--	--	--
- At 48 V		--	--	6	4	6	4
- At 110 V		--	--	4	1	4	1
- At 220 V	A	--	--	1	0.4	1	0.27
- At 440 V	A	--	--	0.5	0.2	0.5	0.1
Short-circuit protection¹⁾							
• With DIAZED fuse links, operational class gG	A	6		6		6	
• With fuse links, quick	A	--		10		--	
• With miniature circuit breaker, Char. C	A	1		--		--	
Mechanical endurance							
• Basic switches		15 × 10 ⁶ operating cycles		30 × 10 ⁶ operating cycles		15 × 10 ⁶ operating cycles	
• With spring rod, 3SE5 ...-R..		10 × 10 ⁶ operating cycles					
• With fork lever 3SE5 1...-T..		1 × 10 ⁶ operating cycles		--		--	
Electrical endurance							
• With 3RH11, 3RT10 16 to 3RT10 26 contactors		10 × 10 ⁶ operating cycles		10 × 10 ⁶ operating cycles			
• For utilization category AC-15 when switching off $I_e/AC-15$ at 240 V		0.1 × 10 ⁶ operating cycles		0.5 × 10 ⁶ operating cycles			
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch					
Switching frequency with 3RH11, 3RT10 16 to 3RT10 26 contactors		6000 operating cycles/h		6000 operating cycles/h		1800 operating cycles/h	
Switching accuracy For repeated switching, measured at the plunger of the contact block	mm	0.05					
Rated data acc. to ,  and 							
• Rated voltage	V	300		600		600	
• Uninterrupted current	A	6		10		10	
• Switching capacity		Heavy duty, A 300/ B 300 /Q 300		Heavy duty, A 600/Q 600		Heavy duty, A 300/Q 600	

¹⁾ For slow-action contacts 1 NO + 2 NC with make-before-break and 2 NO + 1 NC the following applies: over 250 V AC only equal potential.

Options

On the following pages you will find selection tables for complete units as well as components of the modular system.

Complete units

Modular system

The difference between units is indicated in the selection and ordering data by orange backgrounds.

Using the modular system you can assemble switch variants which are not available as complete units. Each complete unit can also be supplied as a module.

A basic switch for the modular system comprises an enclosure with a contact block and a cover. Among the basic switches the following versions, for example, can be selected:

- Basic enclosure with teflon plunger
- Version with increased corrosion protection

- Version with 2 LEDs
- Version with M12 connector socket or 6-pole + PE
- Version with M12 connector socket and with 2 LEDs

For the plastic enclosures with a width of 31 and 50 mm the basic switches are designed as complete units with rounded plunger (acc. to standard).

Online configurator

The online configurator helps you not only to select and order the right switch but also to create complete product documentation.

- Product data sheets
- Dimensional drawings
- Operating travel diagrams
- CAD data in 2D and 3D model images
- Ordering data
- Product photos

www.siemens.com/industrial-controls/configurators


Complete units

Ordering example

Required:

- Position switch acc. to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

To be ordered:

Version	Complete units	Order No.
	<input type="checkbox"/>	
Complete units • Enclosure width 31 mm		
	Angular roller levers With metal lever and plastic roller 13 mm Slow-action contacts 1 NO + 1 NC	3SE5 232-0BF10



Modular system

Ordering example 1

Required:

- Position switch acc. to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

To be ordered separately:




Version	Modular system	Order No.
	<input checked="" type="checkbox"/>	
Basic switches • Enclosure width 31 mm		
	With teflon plunger Slow-action contacts 1 NO + 1 NC	3SE5 232-0BC05
+		
Operating mechanisms		
	Angular roller levers Metal lever, plastic roller	3SE5 000-0AF10

Ordering example 2

Required:

- Position switch acc. to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Twist lever, high-grade steel lever and plastic roller

To be ordered separately:

Version	Modular system	Order No.
	<input checked="" type="checkbox"/>	
Basic switches • Enclosure width 31 mm		
	With teflon plunger Slow-action contacts 1 NO + 1 NC	3SE5 232-0BC05
+		
Twist actuators		
	Twist actuator	3SE5 000-0AK00
	Twist levers High-grade steel lever, plastic roller	3SE5 000-0AA31

3SE5, 3SE2, 3SE3 Position Switches

3SE5, plastic enclosures Enclosure width 31 mm according to EN 50047








Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Complete units	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.					kg

Complete units¹⁾ · Enclosure width 31 mm

Rounded plungers, type B acc. to EN 50047										
 Rounded plunger	With teflon plunger									
	Slow-action contacts	1 NO + 1 NC --		⊕ ▶	3SE5 232-0BC05		1	1 unit	102	0.065
	Snap-action contacts	1 NO + 1 NC --		⊕ B	3SE5 232-0CC05		1	1 unit	102	0.065
	Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --		⊕ ▶	3SE5 232-0HC05		1	1 unit	102	0.065
	Snap-action contacts • Short-stroke, integrated ²⁾	1 NO + 1 NC --		⊕ B	3SE5 232-0FC05		1	1 unit	102	0.065
	Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC --		⊕ B	3SE5 232-0GC05		1	1 unit	102	0.065
	Slow-action contacts	1 NO + 2 NC --		⊕ A	3SE5 232-0KC05		1	1 unit	102	0.075
	Snap-action contacts	1 NO + 2 NC --		⊕ A	3SE5 232-0LC05		1	1 unit	102	0.075
	Slow-action contacts with make-before-break	1 NO + 2 NC --		⊕ B	3SE5 232-0MC05		1	1 unit	102	0.075
	Slow-action contacts	2 NO + 1 NC --		⊕ B	3SE5 232-0PC05		1	1 unit	102	0.075
 With increased corrosion protection	With increased corrosion protection									
	Slow-action contacts	1 NO + 1 NC --		⊕ B	3SE5 232-0BC05-1CA0		1	1 unit	102	0.065
	Snap-action contacts	1 NO + 1 NC --		⊕ B	3SE5 232-0CC05-1CA0		1	1 unit	102	0.065
	Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 232-0KC05-1CA0		1	1 unit	102	0.075
	Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 232-0LC05-1CA0		1	1 unit	102	0.075
	Slow-action contacts with make-before-break	1 NO + 2 NC --		⊕ B	3SE5 232-0MC05-1CA0		1	1 unit	102	0.075
	Slow-action contacts	2 NO + 1 NC --		⊕ B	3SE5 232-0PC05-1CA0		1	1 unit	102	0.075
 With 2 LEDs	With M12 connector socket, 4-pole (250 V, 4 A)									
	Slow-action contacts	1 NO + 1 NC --		⊕ B	3SE5 234-0BC05-1AC4		1	1 unit	102	0.080
	Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --		⊕ A	3SE5 234-0HC05-1AC4		1	1 unit	102	0.080
	Slow-action contacts	2 NC --		⊕ B	3SE5 234-0KC05-1AE0		1	1 unit	102	0.085
	Snap-action contacts	2 NC --		⊕ A	3SE5 234-0LC05-1AE0		1	1 unit	102	0.085
 With 2 LEDs	With 2 LEDs, yellow/green									
	Slow-action contacts	1 NO + 2 NC 24 V DC		⊕ B	3SE5 232-1KC05		1	1 unit	102	0.070
	Snap-action contacts	1 NO + 2 NC 24 V DC		⊕ B	3SE5 232-1LC05		1	1 unit	102	0.070
	Slow-action contacts	1 NO + 2 NC 230 V AC		⊕ B	3SE5 232-3KC05		1	1 unit	102	0.070
	Snap-action contacts	1 NO + 2 NC 230 V AC		⊕ B	3SE5 232-3LC05		1	1 unit	102	0.070
	With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs									
Slow-action contacts	1 NO + 1 NC 24 V DC		⊕ B	3SE5 234-1BC05-1AF3		1	1 unit	102	0.080	
Snap-action contacts	1 NO + 1 NC 24 V DC		⊕ B	3SE5 234-1CC05-1AF3		1	1 unit	102	0.080	
Roller plungers, type C acc. to EN 50047										
 Roller plunger	With plastic roller 10 mm									
	Slow-action contacts	1 NO + 1 NC --		⊕ B	3SE5 232-0BD03		1	1 unit	102	0.075
	Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --		⊕ ▶	3SE5 232-0HD03		1	1 unit	102	0.075
	Snap-action contacts • Short-stroke, integrated ²⁾	1 NO + 1 NC --		⊕ B	3SE5 232-0FD03		1	1 unit	102	0.075
	Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 232-0KD03		1	1 unit	102	0.080
	Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 232-0LD03		1	1 unit	102	0.080
 Actuator head rotated by 90°	Actuator head rotated by 90°									
	Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 232-0LD03-1AH0		1	1 unit	102	0.075
	With M12 connector socket, 4-pole (250 V, 4 A)									
Snap-action contacts, integrated ²⁾	1 NO + 1 NC --		⊕ B	3SE5 234-0HD03-1AC4		1	1 unit	102	0.085	
 Roller plunger with central fixing	Roller plunger with central fixing									
	Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --		⊕ B	3SE5 232-0HD10		1	1 unit	102	0.100
	Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 232-0KD10		1	1 unit	102	0.105

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.







¹⁾ Popular versions.

²⁾ Subsequent replacement of contact blocks is not possible.

* You can order this quantity or a multiple thereof.

3SE5, plastic enclosures
Enclosure width 31 mm according to EN 50047

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Complete units	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.					kg
Complete units¹⁾ · Enclosure width 31 mm									
<i>Roller levers, type E acc. to EN 50047</i>									
With metal lever and plastic roller 13 mm									
	Slow-action contacts	1 NO + 1 NC --	⊕ A	3SE5 232-0BE10		1	1 unit	102	0.065
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5 232-0HE10		1	1 unit	102	0.065
	• Integrated ²⁾								
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0KE10		1	1 unit	102	0.065
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0LE10		1	1 unit	102	0.075
With M12 connector socket, 4-pole (250 V, 4 A)									
	Snap-action contacts,	1 NO + 1 NC --	⊕ B	3SE5 234-0HE10-1AC4		1	1 unit	102	0.075
	• Integrated ²⁾								
<i>Angular roller levers</i>									
With metal lever and plastic roller 13 mm									
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 232-0BF10		1	1 unit	102	0.070
	Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 232-0HF10		1	1 unit	102	0.070
	• Integrated ²⁾								
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0KF10		1	1 unit	102	0.080
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0LF10		1	1 unit	102	0.070
<i>Spring rod</i>									
Length 142.5 mm, with plastic plunger 50 mm									
	Snap-action contacts	1 NO + 1 NC --	A	3SE5 232-0HR01		1	1 unit	102	0.095
	• Integrated ²⁾								
With M12 connector socket, 4-pole (250 V, 4 A)									
	Snap-action contacts	1 NO + 1 NC --	B	3SE5 234-0HR01-1AC4		1	1 unit	102	0.135
	• Integrated ²⁾								
<i>Twist levers, type A acc. to EN 50047</i>									
With metal lever 21 mm and plastic roller 19 mm									
	Slow-action contacts	1 NO + 1 NC --	⊕ A	3SE5 232-0BK21		1	1 unit	102	0.085
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 232-0HK21		1	1 unit	102	0.085
	• Integrated ²⁾								
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0KK21		1	1 unit	102	0.100
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0LK21		1	1 unit	102	0.100
With M12 connector socket, 4-pole (250 V, 4 A)									
	Snap-action contacts,	1 NO + 1 NC -	⊕ B	3SE5 234-0HK21-1AC4		1	1 unit	102	0.110
	• Integrated ²⁾								
<i>Twist levers, adjustable length</i>									
With metal lever with grid hole and plastic roller 19 mm									
	Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 232-0HK60		1	1 unit	102	0.100
	• Integrated ²⁾								
With metal lever and plastic roller 19 mm									
	Slow-action contacts	1 NO + 1 NC --	B	3SE5 232-0BK50		1	1 unit	102	0.115
	Snap-action contacts	1 NO + 1 NC --	▶	3SE5 232-0HK50		1	1 unit	102	0.115
	• Integrated ²⁾								
	Snap-action contacts	1 NO + 2 NC --	B	3SE5 232-0LK50		1	1 unit	102	0.120
With M12 connector socket, 4-pole (250 V, 4 A)									
	Snap-action contacts	1 NO + 1 NC --	B	3SE5 234-0HK50-1AC4		1	1 unit	102	0.120
	• Integrated ²⁾								
<i>Rod actuators</i>									
With aluminum rod, length 200 mm									
	Snap-action contacts	1 NO + 1 NC --	B	3SE5 232-0HK80		1	1 unit	102	0.110
	• Integrated ²⁾								
With plastic rod, length 200 mm									
	Snap-action contacts	1 NO + 1 NC --	B	3SE5 232-0HK82		1	1 unit	102	0.100
	• Integrated ²⁾								
With M12 connector socket, 4-pole (250 V, 4 A)									
	Snap-action contacts	1 NO + 1 NC --	B	3SE5 234-0HK82-1AC4		1	1 unit	102	0.115
	• Integrated ²⁾								

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

Note: If the device you require is not available as a complete unit, see "Modular system" on the next page.






* You can order this quantity or a multiple thereof.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, plastic enclosures Enclosure width 31 mm according to EN 50047

Modular system

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	
Basic switches • Enclosure width 31 mm (with rounded plunger¹⁾)								
 Basic switch	With teflon plunger							
	Slow-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5 232-0BC05	1	1 unit	102	0.065
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 232-0CC05	1	1 unit	102	0.065
	Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --	⊕ ▶	3SE5 232-0HC05	1	1 unit	102	0.065
	Snap-action contacts • Short-stroke, integrated ²⁾	1 NO + 1 NC --	⊕ B	3SE5 232-0FC05	1	1 unit	102	0.065
	Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC --	⊕ B	3SE5 232-0GC05	1	1 unit	102	0.065
	Slow-action contacts	1 NO + 2 NC --	⊕ A	3SE5 232-0KC05	1	1 unit	102	0.075
	Snap-action contacts	1 NO + 2 NC --	⊕ A	3SE5 232-0LC05	1	1 unit	102	0.075
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 232-0MC05	1	1 unit	102	0.075
Slow-action contacts	2 NO + 1 NC --	⊕ B	3SE5 232-0PC05	1	1 unit	102	0.075	
 With increased corrosion protection	With increased corrosion protection³⁾							
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 232-0BC05-1CA0	1	1 unit	102	0.065
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 232-0CC05-1CA0	1	1 unit	102	0.065
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0KC05-1CA0	1	1 unit	102	0.075
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 232-0LC05-1CA0	1	1 unit	102	0.075
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 232-0MC05-1CA0	1	1 unit	102	0.075
Slow-action contacts	2 NO + 1 NC --	⊕ B	3SE5 232-0PC05-1CA0	1	1 unit	102	0.075	
 With M12 socket	With M12 connector socket, 4-pole (250 V, 4 A)							
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 234-0BC05-1AC4	1	1 unit	102	0.080
	Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --	⊕ A	3SE5 234-0HC05-1AC4	1	1 unit	102	0.080
	Slow-action contacts	2 NC --	⊕ B	3SE5 234-0KC05-1AE0	1	1 unit	102	0.085
	Snap-action contacts	2 NC --	⊕ A	3SE5 234-0LC05-1AE0	1	1 unit	102	0.085
 With 2 LEDs	With 2 LEDs, yellow/green							
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 232-1KC05	1	1 unit	102	0.070
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 232-1LC05	1	1 unit	102	0.070
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ B	3SE5 232-3KC05	1	1 unit	102	0.070
Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ B	3SE5 232-3LC05	1	1 unit	102	0.070	
 With M12 socket- and 2 LEDs	With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ B	3SE5 234-1BC05-1AF3	1	1 unit	102	0.080
Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ B	3SE5 234-1CC05-1AF3	1	1 unit	102	0.080	

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.











1) On the plastic version the basic switch is a complete unit with rounded plunger.

2) Subsequent replacement of contact blocks is not possible.

3) Use corresponding high-grade steel lever.

Note: For selection aid, see page 8/19.

3SE5, plastic enclosures
Enclosure width 31 mm according to EN 50047

Version	Diame-ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Operating mechanisms							
	Roller plunger, type C acc. to EN 50047						
	Plastic rollers	10	⊙ A	3SE5 000-0AD03	1	1 unit	102 0.010
	High-grade steel rollers	10	⊙ B	3SE5 000-0AD04	1	1 unit	102 0.010
	Roller plunger with central fixing						
	Plastic rollers	10	⊙ B	3SE5 000-0AD10	1	1 unit	102 0.035
	High-grade steel rollers	10	⊙ B	3SE5 000-0AD11	1	1 unit	102 0.030
	Roller lever, type E acc. to EN 50047						
	Metal lever, plastic roller	13	⊙ A	3SE5 000-0AE10	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	13	⊙ B	3SE5 000-0AE11	1	1 unit	102 0.020
	High-grade steel lever, plastic roller	13	⊙ B	3SE5 000-0AE12	1	1 unit	102 0.010
	High-grade steel lever, high-grade steel roller	13	⊙ B	3SE5 000-0AE13	1	1 unit	102 0.055
	Angular roller levers						
	Metal lever, plastic roller	13	⊙ A	3SE5 000-0AF10	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	13	⊙ B	3SE5 000-0AF11	1	1 unit	102 0.013
	High-grade steel lever, plastic roller	13	⊙ A	3SE5 000-0AF12	1	1 unit	102 0.015
	High-grade steel lever, high-grade steel roller	13	⊙ B	3SE5 000-0AF13	1	1 unit	102 0.020
	Spring rod (for switches with snap-action contacts only)						
	Plastic plunger:						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR01	1	1 unit	102 0.060
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		B	3SE5 000-0AR03	1	1 unit	102 0.020
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		B	3SE5 000-0AR04	1	1 unit	102 0.040
High-grade steel plunger:							
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR02	1	1 unit	102 0.040	
Twist actuators							
	Twist actuators, plastic (without lever)						
	Switching right and/or left, adjustable		⊙ A	3SE5 000-0AK00	1	1 unit	102 0.025
Levers for twist actuators							
	Twist lever 21 mm, straight, type A acc. to EN 50047						
	Metal lever, plastic roller	19	⊙ A	3SE5 000-0AA21	1	1 unit	102 0.010
	Metal lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA22	1	1 unit	102 0.025
	Metal lever, roller with ball bearing	19	⊙ B	3SE5 000-0AA23	1	1 unit	102 0.020
	Metal lever, plastic roller	30	⊙ B	3SE5 000-0AA25	1	1 unit	102 0.010
	High-grade steel lever, plastic roller	19	⊙ B	3SE5 000-0AA31	1	1 unit	102 0.015
	High-grade steel lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA32	1	1 unit	102 0.022
	Twist levers, adjustable length, with grid holes						
	Metal lever, plastic roller	19	⊙ B	3SE5 000-0AA60	1	1 unit	102 0.025
	Metal lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA61	1	1 unit	102 0.040
	Metal lever, plastic roller	50	⊙ B	3SE5 000-0AA67	1	1 unit	102 0.025
	Metal lever, rubber roller	50	⊙ B	3SE5 000-0AA68	1	1 unit	102 0.045
	High-grade steel lever, plastic roller	19	⊙ B	3SE5 000-0AA62	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA63	1	1 unit	102 0.040
	Twist levers, adjustable length						
	Metal lever, plastic roller	19	A	3SE5 000-0AA50	1	1 unit	102 0.025
	Metal lever, high-grade steel roller	19	B	3SE5 000-0AA51	1	1 unit	102 0.035
	Metal lever, plastic roller	30	B	3SE5 000-0AA55	1	1 unit	102 0.025
	Metal lever, plastic roller	50	B	3SE5 000-0AA57	1	1 unit	102 0.025
	Metal lever, rubber roller	50	B	3SE5 000-0AA58	1	1 unit	102 0.040
	High-grade steel lever, plastic roller	19	B	3SE5 000-0AA52	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	B	3SE5 000-0AA53	1	1 unit	102 0.035
Rod actuators							
	Aluminum rod, length 200 mm		6	B	3SE5 000-0AA80	1	1 unit 102 0.070
	Spring rod, length 200 mm		6	B	3SE5 000-0AA81	1	1 unit 102 0.030
	Plastic rod, length 200 mm		6	B	3SE5 000-0AA82	1	1 unit 102 0.020

* You can order this quantity or a multiple thereof.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, plastic enclosures Enclosure width 50 mm





Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	DT	Complete units	□	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Complete units¹⁾ · Enclosure width 50 mm

Complete units ¹⁾ · Enclosure width 50 mm									
Rounded plungers									
 Rounded plunger	With teflon plunger								
	Slow-action contacts	1 NO + 1 NC --	⊕ A	3SE5 242-0BC05	1	1 unit	102	0.065	
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 242-0CC05	1	1 unit	102	0.065	
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5 242-0HC05	1	1 unit	102	0.065	
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 242-0FC05	1	1 unit	102	0.065	
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 242-0GC05	1	1 unit	102	0.065	
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 242-0KC05	1	1 unit	102	0.065	
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 242-0LC05	1	1 unit	102	0.065	
	Snap-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 242-0MC05	1	1 unit	102	0.065	
	Snap-action contacts	2 NO + 1 NC --	⊕ B	3SE5 242-0PC05	1	1 unit	102	0.065	
 With increased corrosion protection	With increased corrosion protection								
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 242-0BC05-1CA0	1	1 unit	102	0.065	
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 242-0HC05-1CA0	1	1 unit	102	0.065	
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 242-0KC05-1CA0	1	1 unit	102	0.075	
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 242-0LC05-1CA0	1	1 unit	102	0.075	
	Snap-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 242-0MC05-1CA0	1	1 unit	102	0.075	
 With 2 LEDs	With 2 LEDs, yellow/green								
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 242-1KC05	1	1 unit	102	0.070	
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 242-1LC05	1	1 unit	102	0.070	
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ B	3SE5 242-3KC05	1	1 unit	102	0.080	
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ B	3SE5 242-3LC05	1	1 unit	102	0.080	
 Roller plunger	Roller plungers								
	With plastic roller 10 mm								
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 242-0BD03	1	1 unit	102	0.075	
	Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 242-0HD03	1	1 unit	102	0.075	
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 242-0LD03	1	1 unit	102	0.080	

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Popular versions.

²⁾ Subsequent replacement of contact blocks is not possible.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, plastic enclosures
Enclosure width 50 mm

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	DT	Complete units	<input type="checkbox"/>	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Complete units¹⁾ • Enclosure width 50 mm

Roller lever

Roller levers**With metal lever and plastic roller 13 mm**

Slow-action contacts	1 NO + 1 NC --		⊖ B	3SE5 242-0BE10		1	1 unit	102	0.080
Snap-action contacts	1 NO + 1 NC --		⊖ A	3SE5 242-0HE10		1	1 unit	102	0.080
• Integrated ²⁾									
Snap-action contacts	1 NO + 2 NC --		⊖ B	3SE5 242-0LE10		1	1 unit	102	0.090

With M12 connector socket, 4-pole right (250 V, 4 A)

Snap-action contacts	2 NC --		⊖ B	3SE5 244-0LE10-1AE0		1	1 unit	102	0.100
----------------------	---------	--	-----	----------------------------	--	---	--------	-----	-------



Twist lever

Twist levers**With metal lever 21 mm and plastic roller 19 mm**

Slow-action contacts	1 NO + 1 NC --		⊖ B	3SE5 242-0BK21		1	1 unit	102	0.095
Snap-action contacts	1 NO + 1 NC --		⊖ A	3SE5 242-0HK21		1	1 unit	102	0.095
• Integrated ²⁾									
Snap-action contacts	1 NO + 2 NC --		⊖ B	3SE5 242-0LK21		1	1 unit	102	0.105

Twist lever,
adjustable
length**Twist levers, adjustable length****With metal lever and plastic roller 19 mm**

Snap-action contacts	1 NO + 1 NC --		B	3SE5 242-0HK50		1	1 unit	102	0.110
• Integrated ²⁾									

⊖ Positive opening acc. to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

Note: If the device you require is not available as a complete unit, see "Modular system" on the next page.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, plastic enclosures Enclosure width 50 mm

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU			kg

Basic switches • Enclosure width 50 mm (with rounded plunger¹⁾)



Basic switch

With teflon plunger

Slow-action contacts	1 NO + 1 NC --		⊕ A	3SE5 242-0BC05	1	1 unit	102	0.065
Snap-action contacts	1 NO + 1 NC --		⊕ B	3SE5 242-0CC05	1	1 unit	102	0.065
Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --		⊕ ▶	3SE5 242-0HC05	1	1 unit	102	0.065
Snap-action contacts • Short-stroke, integrated ²⁾	1 NO + 1 NC --		⊕ B	3SE5 242-0FC05	1	1 unit	102	0.065
Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC --		⊕ B	3SE5 242-0GC05	1	1 unit	102	0.065
Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 242-0KC05	1	1 unit	102	0.065
Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 242-0LC05	1	1 unit	102	0.065
Slow-action contacts with make-before-break	1 NO + 2 NC --		⊕ B	3SE5 242-0MC05	1	1 unit	102	0.065
Slow-action contacts	2 NO + 1 NC --		⊕ B	3SE5 242-0PC05	1	1 unit	102	0.065



With increased
corrosion
protection

With increased corrosion protection³⁾

Slow-action contacts	1 NO + 1 NC --		⊕ B	3SE5 242-0BC05-1CA0	1	1 unit	102	0.065
Snap-action contacts • Integrated ²⁾	1 NO + 1 NC --		⊕ B	3SE5 242-0HC05-1CA0	1	1 unit	102	0.065
Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 242-0KC05-1CA0	1	1 unit	102	0.075
Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 242-0LC05-1CA0	1	1 unit	102	0.075
Slow-action contacts with make-before-break	1 NO + 2 NC --		⊕ B	3SE5 242-0MC05-1CA0	1	1 unit	102	0.075
Slow-action contacts	2 NO + 1 NC --		⊕ B	3SE5 242-0PC05-1CA0	1	1 unit	102	0.075



With 2 LEDs

With 2 LEDs, yellow/green

Slow-action contacts	1 NO + 2 NC	24 V DC	⊕ B	3SE5 242-1KC05	1	1 unit	102	0.070
Snap-action contacts	1 NO + 2 NC	24 V DC	⊕ B	3SE5 242-1LC05	1	1 unit	102	0.070
Slow-action contacts	1 NO + 2 NC	230 V	⊕ B	3SE5 242-3KC05	1	1 unit	102	0.080
Snap-action contacts	1 NO + 2 NC	230 V	⊕ B	3SE5 242-3LC05	1	1 unit	102	0.080

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.











¹⁾ On the plastic version the basic switch is a complete unit with rounded plunger.

²⁾ Subsequent replacement of contact blocks is not possible.

³⁾ Use corresponding high-grade steel lever.

Note: For selection aid, see page 8/19.

3SE5, plastic enclosures
Enclosure width 50 mm

Version	Diame-ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Operating mechanisms							
	Roller plunger, type C acc. to EN 50047						
	Plastic rollers	10	⊙ A	3SE5 000-0AD03	1	1 unit	102 0.010
	High-grade steel rollers	10	⊙ B	3SE5 000-0AD04	1	1 unit	102 0.010
	Roller plunger with central fixing						
	Plastic rollers	10	⊙ B	3SE5 000-0AD10	1	1 unit	102 0.035
	High-grade steel rollers	10	⊙ B	3SE5 000-0AD11	1	1 unit	102 0.030
	Roller lever, type E acc. to EN 50047						
	Metal lever, plastic roller	13	⊙ A	3SE5 000-0AE10	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	13	⊙ B	3SE5 000-0AE11	1	1 unit	102 0.020
	High-grade steel lever, plastic roller	13	⊙ B	3SE5 000-0AE12	1	1 unit	102 0.010
	Angular roller levers						
	Metal lever, plastic roller	13	⊙ A	3SE5 000-0AF10	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	13	⊙ B	3SE5 000-0AF11	1	1 unit	102 0.013
	High-grade steel lever, plastic roller	13	⊙ A	3SE5 000-0AF12	1	1 unit	102 0.015
	Spring rod (for switches with snap-action contacts only)						
	Plastic plunger:						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR01	1	1 unit	102 0.060
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		B	3SE5 000-0AR03	1	1 unit	102 0.020
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		B	3SE5 000-0AR04	1	1 unit	102 0.040
High-grade steel plunger:							
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR02	1	1 unit	102 0.040	
Twist actuators							
	Twist actuators, plastic (without lever)						
	Switching right and/or left, adjustable		⊙ A	3SE5 000-0AK00	1	1 unit	102 0.025
	Levers for twist actuators						
	Twist lever 21 mm, straight, type A acc. to EN 50047						
	Metal lever, plastic roller	19	⊙ A	3SE5 000-0AA21	1	1 unit	102 0.010
	Metal lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA22	1	1 unit	102 0.025
	Metal lever, roller with ball bearing	19	⊙ B	3SE5 000-0AA23	1	1 unit	102 0.020
	Metal lever, plastic roller	30	⊙ B	3SE5 000-0AA25	1	1 unit	102 0.010
	High-grade steel lever, plastic roller	19	⊙ B	3SE5 000-0AA31	1	1 unit	102 0.015
High-grade steel lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA32	1	1 unit	102 0.022	
	Twist levers, adjustable length, with grid holes						
	Metal lever, plastic roller	19	⊙ B	3SE5 000-0AA60	1	1 unit	102 0.025
	Metal lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA61	1	1 unit	102 0.040
	Metal lever, plastic roller	50	⊙ B	3SE5 000-0AA67	1	1 unit	102 0.025
	Metal lever, rubber roller	50	⊙ B	3SE5 000-0AA68	1	1 unit	102 0.045
	High-grade steel lever, plastic roller	19	⊙ B	3SE5 000-0AA62	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA63	1	1 unit	102 0.040
	Twist levers, adjustable length						
	Metal lever, plastic roller	19	A	3SE5 000-0AA50	1	1 unit	102 0.025
	Metal lever, high-grade steel roller	19	B	3SE5 000-0AA51	1	1 unit	102 0.035
	Metal lever, plastic roller	30	B	3SE5 000-0AA55	1	1 unit	102 0.025
	Metal lever, plastic roller	50	B	3SE5 000-0AA57	1	1 unit	102 0.025
	Metal lever, rubber roller	50	B	3SE5 000-0AA58	1	1 unit	102 0.040
	High-grade steel lever, plastic roller	19	B	3SE5 000-0AA52	1	1 unit	102 0.025
High-grade steel lever, high-grade steel roller	19	B	3SE5 000-0AA53	1	1 unit	102 0.035	
	Rod actuators						
	Aluminum rod, length 200 mm	6	B	3SE5 000-0AA80	1	1 unit	102 0.070
	Spring rod, length 200 mm	6	B	3SE5 000-0AA81	1	1 unit	102 0.030
	Plastic rod, length 200 mm	6	B	3SE5 000-0AA82	1	1 unit	102 0.020

* You can order this quantity or a multiple thereof.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, plastic enclosures
Ambient temperature up to -40 °C

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU			kg

Complete units¹⁾ • Enclosure width 31 mm

Twist levers, type A acc. to EN 50047

With high-grade steel lever 21 mm and plastic roller 19 mm

Snap-action contacts 1 NO + 1 NC -- ⊕ A **3SE5 232-0CK31-1AJ0** 1 1 unit 102 0.085



Twist lever

Twist levers, adjustable length

With high-grade steel lever with grid hole and plastic roller 19 mm

Snap-action contacts 1 NO + 1 NC -- ⊕ A **3SE5 232-0CK62-1AJ0** 1 1 unit 102 0.100

Snap-action contacts 1 NO + 2 NC -- ⊕ B **3SE5 232-0LK62-1AJ0** 1 1 unit 102 0.120



Twist lever, adjustable length

Complete units¹⁾ • Enclosure width 50 mm

Twist levers

With metal lever 21 mm and plastic roller 19 mm

Snap-action contacts 1 NO + 1 NC -- ⊕ B **3SE5 242-0HK21-1AJ0** 1 1 unit 102 0.095

• Integrated²⁾

Twist levers, adjustable length

With high-grade steel lever with grid hole and plastic roller 19 mm

Snap-action contacts 1 NO + 1 NC -- ⊕ B **3SE5 242-0HK62-1AJ0** 1 1 unit 102 0.115

• Integrated²⁾



Twist lever, adjustable length

Modular system

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU			kg

Basic switches • Enclosure width 31 mm (with rounded plunger¹⁾)

With teflon plunger

Snap-action contacts 1 NO + 1 NC -- ⊕ B **3SE5 232-0CC05-1AJ0** 1 1 unit 102 0.065

Slow-action contacts 1 NO + 2 NC -- ⊕ B **3SE5 232-0KC05-1AJ0** 1 1 unit 102 0.070

Snap-action contacts 1 NO + 2 NC -- ⊕ B **3SE5 232-0LC05-1AJ0** 1 1 unit 102 0.070



Basic switch

Basic switches • Enclosure width 50 mm (with rounded plunger¹⁾)

With teflon plunger

Slow-action contacts 1 NO + 1 NC -- ⊕ B **3SE5 242-0BC05-1AJ0** 1 1 unit 102 0.065

Snap-action contacts 1 NO + 1 NC -- ⊕ B **3SE5 242-0HC05-1AJ0** 1 1 unit 102 0.065

• Integrated²⁾



Basic switch


⊕ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

[Note: For selection aid, see page 8/19.](#)

¹⁾ On the plastic version the basic switch is a complete unit with rounded plunger.

²⁾ Subsequent replacement of contact blocks is not possible.

3SE5, plastic enclosures
Ambient temperature up to -40 °C

Version	Diame- ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	mm		Order No.	Price per PU			kg	
Operating mechanisms								
 Roller plunger	Roller plunger, type C acc. to EN 50047		3SE5 000-0AD03-1AJ0	1	1 unit	102	0.010	
	Plastic rollers	10						⊙ B
 Roller lever	Roller lever, type E acc. to EN 50047		3SE5 000-0AE10-1AJ0 3SE5 000-0AE12-1AJ0	1	1 unit	102	0.015	
	Metal lever, plastic roller	13						⊙ B
	High-grade steel lever, plastic roller	13						⊙ B
 Angular roller lever	Angular roller levers		3SE5 000-0AF10-1AJ0 3SE5 000-0AF12-1AJ0	1	1 unit	102	0.015	
	Metal lever, plastic roller	13						⊙ B
	High-grade steel lever, plastic roller	13						⊙ B
Twist actuators								
 Twist actuator	Twist actuators , plastic (without lever) Switching right and/or left, adjustable		3SE5 000-0AK00-1AJ0	1	1 unit	102	0.025	
<i>Levers for twist actuators</i>								
 Twist lever	Twist lever straight, 21 mm, type A acc. to EN 50047		3SE5 000-0AA21-1AJ0 3SE5 000-0AA31-1AJ0	1	1 unit	102	0.010	
	Metal lever, plastic roller	19						⊙ B
 Twist lever, adjustable length	Twist levers, adjustable length, with grid holes		3SE5 000-0AA60-1AJ0 3SE5 000-0AA62-1AJ0	1	1 unit	102	0.025	
	Metal lever, plastic roller	19						⊙ B
	High-grade steel lever, plastic roller	19						⊙ B






3SE5, 3SE2, 3SE3 Position Switches

3SE2, plastic enclosures Enclosure width 40 mm according to EN 50041

Selection and ordering data

Complete units

2 contacts · Degree of protection IP66 · Cable entry M20 × 1.5

Version	Contacts	DT	Complete units	□	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU				kg
Complete units¹⁾ · Enclosure width 40 mm								
<i>Rounded plungers, type B, acc. to EN 50041</i>								
With plastic plunger								
 Rounded plunger	Slow-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-0C	1	1 unit	102	0.115
	Snap-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-1C	1	1 unit	102	0.120
	Slow-action contacts with make-before-break	1 NO + 1 NC	⊕ B	3SE2 230-3C	1	1 unit	102	0.115
	Slow-action contacts	2 NO	B	3SE2 230-7C	1	1 unit	102	0.125
	Slow-action contacts	2 NC	⊕ B	3SE2 230-6C	1	1 unit	102	0.115
	Snap-action contacts	2 NC	⊕ B	3SE2 230-8CV00	1	1 unit	102	0.130
	<i>Roller levers, type C, acc. to EN 50041</i>							
With plastic roller 13 mm								
 Roller plunger	Slow-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-0D	1	1 unit	102	0.120
	Snap-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-1D	1	1 unit	102	0.120
	Slow-action contacts with make-before-break	1 NO + 1 NC	⊕ B	3SE2 230-3D	1	1 unit	102	0.130
	Slow-action contacts	2 NO	B	3SE2 230-7D	1	1 unit	102	0.135
	Slow-action contacts	2 NC	⊕ B	3SE2 230-6D	1	1 unit	102	0.120
	Snap-action contacts	2 NC	⊕ B	3SE2 230-8DV00	1	1 unit	102	0.120
	<i>Roller levers</i>							
With metal lever and plastic roller 22 mm								
 Roller lever	Slow-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-0E	1	1 unit	102	0.130
	Snap-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-1E	1	1 unit	102	0.130
	Slow-action contacts with make-before-break	1 NO + 1 NC	⊕ B	3SE2 230-3E	1	1 unit	102	0.130
	Slow-action contacts	2 NO	B	3SE2 230-7E	1	1 unit	102	0.130
	Slow-action contacts	2 NC	⊕ B	3SE2 230-6E	1	1 unit	102	0.130
	Snap-action contacts	2 NC	⊕ B	3SE2 230-8EV00	1	1 unit	102	0.130
	<i>Angular roller levers</i>							
With metal lever and plastic roller 22 mm								
 Angular roller lever	Slow-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-0F	1	1 unit	102	0.130
	Snap-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-1F	1	1 unit	102	0.132
	Slow-action contacts with make-before-break	1 NO + 1 NC	⊕ B	3SE2 230-3F	1	1 unit	102	0.135
	Slow-action contacts	2 NO	C	3SE2 230-7F	1	1 unit	102	0.140
	Slow-action contacts	2 NC	⊕ B	3SE2 230-6F	1	1 unit	102	0.135
	Snap-action contacts	2 NC	⊕ B	3SE2 230-8FV00	1	1 unit	102	0.150
	<i>Spring rod</i>							
Length 139.5 mm, with plastic plunger 50 mm								
 Spring rod	Snap-action contacts	1 NO + 1 NC	B	3SE2 230-1R	1	1 unit	102	0.150
	Snap-action contacts	2 NC	B	3SE2 230-8RV00	1	1 unit	102	0.160




⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ The actuators can be subsequently replaced with other versions (see "Accessories", page 8/32).

3SE5, 3SE2, 3SE3 Position Switches

3SE2, plastic enclosures
Enclosure width 40 mm according to EN 50041

2 contacts · Degree of protection IP66 · Cable entry M20 × 1.5

Version	Contacts	DT	Complete units	□	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU				kg
Complete units¹⁾ • Enclosure width 40 mm								
	Twist levers, type A acc. to EN 50041							
With metal lever and plastic roller 19 mm								
Twist lever	Slow-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-0GW	1	1 unit	102	0.155
	Snap-action contacts	1 NO + 1 NC	⊕ B	3SE2 230-1GW	1	1 unit	102	0.155
	Slow-action contacts with make-before-break	1 NO + 1 NC	⊕ B	3SE2 230-3GW	1	1 unit	102	0.150
	Slow-action contacts	2 NO	B	3SE2 230-7GW	1	1 unit	102	0.150
	Slow-action contacts	2 NC	⊕ C	3SE2 230-6GW	1	1 unit	102	0.145
	Snap-action contacts	2 NC	⊕ B	3SE2 230-8GW00	1	1 unit	102	0.180
	Twist levers, adjustable length							
With metal lever and plastic roller 19 mm								
Twist lever, adjustable length	Slow-action contacts	1 NO + 1 NC	B	3SE2 230-0U	1	1 unit	102	0.160
	Snap-action contacts	1 NO + 1 NC	B	3SE2 230-1U	1	1 unit	102	0.160
	Slow-action contacts	2 NO	B	3SE2 230-7U	1	1 unit	102	0.160
	Slow-action contacts	2 NC	C	3SE2 230-6U	1	1 unit	102	0.160
	Snap-action contacts	2 NC	B	3SE2 230-8UW00	1	1 unit	102	0.170
		Rod actuators, type D, acc. to EN 50041						
With plastic rod, 200 mm								
Rod actuator	Slow-action contacts	1 NO + 1 NC	B	3SE2 230-0W	1	1 unit	102	0.165
	Snap-action contacts	1 NO + 1 NC	B	3SE2 230-1W	1	1 unit	102	0.160
	Slow-action contacts	2 NO	B	3SE2 230-7W	1	1 unit	102	0.160
	Slow-action contacts	2 NC	B	3SE2 230-6W	1	1 unit	102	0.160
	Snap-action contacts	2 NC	B	3SE2 230-8WW00	1	1 unit	102	0.195
	With aluminum rod, 200 mm							
	Slow-action contacts	1 NO + 1 NC	C	3SE2 230-0V	1	1 unit	102	0.190
	Snap-action contacts	1 NO + 1 NC	B	3SE2 230-1V	1	1 unit	102	0.170
	Slow-action contacts	2 NO	B	3SE2 230-7V	1	1 unit	102	0.170
	Slow-action contacts	2 NC	B	3SE2 230-6V	1	1 unit	102	0.170
	Snap-action contacts	2 NC	B	3SE2 230-8VW00	1	1 unit	102	0.200

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ The actuators can be subsequently replaced with other versions (see "Accessories", page 8/32).

3SE5, 3SE2, 3SE3 Position Switches

3SE2, plastic enclosures Enclosure width 40 mm according to EN 50041

Basic switches without operating mechanism

2 contacts · Degree of protection IP66 · Cable entry M20 × 1.5

Version	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----------	----	-----------	--------------	-------------------	-----	----	-----------------------

Basic switches • Enclosure width 40 mm



Basic switch

With plastic plunger

Slow-action contacts	1 NO + 1 NC	B	3SE2 230-0A		1	1 unit	102	0.095
Snap-action contacts	1 NO + 1 NC	B	3SE2 230-1A		1	1 unit	102	0.100
Slow-action contacts with make-before-break	1 NO + 1 NC	B	3SE2 230-3A		1	1 unit	102	0.095
Slow-action contacts	2 NO	B	3SE2 230-7A		1	1 unit	102	0.095
Slow-action contacts	2 NC	B	3SE2 230-6A		1	1 unit	102	0.095

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

For operating mechanisms for basic switches see [Accessories](#).

Accessories

The operating mechanisms of the position switches in series 3SE2 230 can be subsequently replaced with other versions.

Actuator with fixing screws and seal	Can be used for position switches	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
--------------------------------------	-----------------------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Complete actuators



Rounded plungers	3SE2 230-..C	⊕ B	3SX3 160		1	1 unit	102	0.020
-------------------------	--------------	-----	-----------------	--	---	--------	-----	-------



Roller plungers	3SE2 230-..D							
• With plastic roller, Ø 13 mm		⊕ B	3SX3 161		1	1 unit	102	0.025
• With high-grade steel roller, Ø 13 mm		⊕ B	3SX3 262		1	1 unit	102	0.010



Roller levers	3SE2 230-..E							
• With plastic roller, Ø 22 mm		⊕ ▶	3SX3 164		1	1 unit	102	0.035
• With high-grade steel roller, Ø 22 mm			–					



Angular roller levers	3SE2 230-..F							
• With plastic roller, Ø 22 mm		⊕ B	3SX3 168		1	1 unit	102	0.035
• With high-grade steel roller, Ø 22 mm			–					











Spring rods¹⁾	3SE2 230-..R							
• Spring 50 mm, plastic plunger 50 mm		B	3SX3 210		1	1 unit	102	0.050
• Spring 50 mm, high-grade steel plunger 50 mm		B	3SX3 281		1	1 unit	102	0.060
• Spring 150 mm, plastic plunger 50 mm		B	3SX3 283		1	1 unit	102	0.070
• Spring 150 mm, metal plunger 50 mm		B	3SX3 311		1	1 unit	102	0.080

⊕ Positively driven actuator, necessary in safety circuits.

¹⁾ Only for snap-action contacts.

3SE5, 3SE2, 3SE3 Position Switches

3SE2, plastic enclosures
Enclosure width 40 mm according to EN 50041

Actuator with fixing screws and seal	Can be used for position switches	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Complete actuators								
	Twist levers							
	<ul style="list-style-type: none"> Finely adjustable from 10° to 10°, 3SE2 230--GW (supplied with plunger) - With plastic roller, Ø 19 mm 	⊕ C	3SX3 167		1	1 unit	102	0.050
	<ul style="list-style-type: none"> Adjustable length, finely adjustable from 10° to 10°, (supplied with plunger) - With plastic roller, Ø 19 mm 	B	3SX3 163		1	1 unit	102	0.060
Rod actuators								
	Adjustable length							
	<ul style="list-style-type: none"> With plastic rod, 200 mm (supplied with plunger) 	B	3SX3 166		1	1 unit	102	0.060
	<ul style="list-style-type: none"> With aluminum rod, 200 mm 	B	3SX3 165		1	1 unit	102	0.070
Actuators with separate twist actuator								
	Twist actuators (without lever)							
	3SE2 230--GW, 3SE2 230--U, 3SE2 230--V, 3SE2 230--W	B	3SX3 305		1	1 unit	102	0.030
	Twist levers, 30 mm long							
	For round spindle							
	<ul style="list-style-type: none"> With plastic roller, Ø 19 mm 	⊕ ▶	3SX3 212		1	1 unit	102	0.020
	<ul style="list-style-type: none"> With high-grade steel roller, Ø 19 mm 	⊕ B	3SX3 265		1	1 unit	102	0.025
3SX3 212	<ul style="list-style-type: none"> With ball bearing and roller, Ø 19 mm 	⊕ B	3SX3 320		1	1 unit	102	0.025
	<ul style="list-style-type: none"> With plastic roller, Ø 30 mm 	⊕ B	3SX3 278		1	1 unit	102	0.020
	<ul style="list-style-type: none"> With plastic roller, Ø 50 mm 	⊕ B	3SX3 301		1	1 unit	102	0.020
	<ul style="list-style-type: none"> With rubber roller, Ø 50 mm 	⊕ B	3SX3 280		1	1 unit	102	0.020
3SX3 301								
	Twist levers							
	Adjustable length							
	<ul style="list-style-type: none"> Plastic roller, Ø 19 mm 	▶	3SX3 213		1	1 unit	102	0.024
	<ul style="list-style-type: none"> With high-grade steel roller, Ø 19 mm 	B	3SX3 268		1	1 unit	102	0.030
	<ul style="list-style-type: none"> With plastic roller, Ø 30 mm 	B	3SX3 302		1	1 unit	102	0.025
	<ul style="list-style-type: none"> With rubber roller, Ø 50 mm 	B	3SX3 304		1	1 unit	102	0.020
3SX3 304	<ul style="list-style-type: none"> Adjustable length, with grid hole, with plastic roller, Ø 19 mm 	⊕ B	3SX3 321		1	1 unit	102	0.025
Rod actuators with holder								
	<ul style="list-style-type: none"> Plastic rod, 200 mm 	▶	3SX3 215		1	1 unit	102	0.031
	<ul style="list-style-type: none"> Aluminum rod, 200 mm 	▶	3SX3 214		1	1 unit	102	0.032
Rod actuators (without holder)								
	<ul style="list-style-type: none"> Plastic rod, 200 mm 	▶	3SX3 000		1	1 unit	102	0.008
	<ul style="list-style-type: none"> Aluminum rod, 200 mm 	B	3SX3 001		1	1 unit	102	0.016
3SX3 215								

⊕ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures
Enclosure width 40 mm according to EN 50041






Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Complete units	□	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Complete units¹⁾ · Enclosure width 40 mm

Complete units ¹⁾ · Enclosure width 40 mm									
Rounded plungers, type B acc. to EN 50041									
With high-grade steel plungers, with 3 mm overtravel									
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 112-0BC02		1	1 unit	102	0.290
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5 112-0CC02		1	1 unit	102	0.290
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0KC02		1	1 unit	102	0.300
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0LC02		1	1 unit	102	0.300
Roller plungers, type C acc. to EN 50041									
With high-grade steel roller 13 mm, with 3 mm overtravel									
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 112-0BD02		1	1 unit	102	0.310
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5 112-0CD02		1	1 unit	102	0.310
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0KD02		1	1 unit	102	0.320
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0LD02		1	1 unit	102	0.320
With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs									
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ C	3SE5 114-1CD02-1AF3		1	1 unit	102	0.320
Roller levers									
With metal lever and plastic roller 22 mm									
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 112-0BE01		1	1 unit	102	0.300
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5 112-0CE01		1	1 unit	102	0.300
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0KE01		1	1 unit	102	0.310
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0LE01		1	1 unit	102	0.310
Angular roller levers									
With metal lever and plastic roller 22 mm									
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 112-0BF01		1	1 unit	102	0.310
	Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 112-0CF01		1	1 unit	102	0.310
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0LF01		1	1 unit	102	0.320
Spring rod									
Length 142.5 mm, with plastic plunger 50 mm									
	Snap-action contacts	1 NO + 1 NC --	▶	3SE5 112-0CR01		1	1 unit	102	0.315

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Popular versions.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures
Enclosure width 40 mm according to EN 50041

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Complete units	<input type="checkbox"/>	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Complete units¹⁾ · Enclosure width 40 mm



Twist lever

Twist levers, type A acc. to EN 50041

With metal lever 27 mm and plastic roller 19 mm

Slow-action contacts	1 NO + 1 NC --		⊕ B	3SE5 112-0BH01		1	1 unit	102	0.345
Snap-action contacts	1 NO + 1 NC --		⊕ ▶	3SE5 112-0CH01		1	1 unit	102	0.345
Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 112-0KH01		1	1 unit	102	0.355
Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 112-0LH01		1	1 unit	102	0.355

With M12 connector socket, 5-pole (125 V, 4 A)

Snap-action contacts	1 NO + 1 NC --		⊕ A	3SE5 114-0CH01-1AC5		1	1 unit	102	0.350
----------------------	----------------	--	-----	---------------------	--	---	--------	-----	-------

With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs

Snap-action contacts	1 NO + 1 NC 24 V DC		⊕ C	3SE5 114-1CH01-1AF3		1	1 unit	102	0.355
----------------------	---------------------	--	-----	---------------------	--	---	--------	-----	-------

With metal lever 27 mm and high-grade steel roller 19 mm

Slow-action contacts	1 NO + 1 NC --		⊕ B	3SE5 112-0BH02		1	1 unit	102	0.355
Snap-action contacts	1 NO + 1 NC --		⊕ A	3SE5 112-0CH02		1	1 unit	102	0.355

With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs

Snap-action contacts	1 NO + 1 NC --		⊕ C	3SE5 114-1CH02-1AF3		1	1 unit	102	0.375
----------------------	----------------	--	-----	---------------------	--	---	--------	-----	-------

With metal lever 30 mm and plastic roller 19 mm

Snap-action contacts	1 NO + 1 NC --		⊕ ▶	3SE5 112-0CH24		1	1 unit	102	0.350
----------------------	----------------	--	-----	----------------	--	---	--------	-----	-------

Twist levers, adjustable length

With metal lever with grid hole and plastic roller 19 mm

Slow-action contacts	1 NO + 1 NC --		⊕ B	3SE5 112-0BH60		1	1 unit	102	0.360
Snap-action contacts	1 NO + 1 NC --		⊕ ▶	3SE5 112-0CH60		1	1 unit	102	0.360
Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 112-0LH60		1	1 unit	102	0.370



Twist lever, adjustable length, with grid holes

With metal lever and plastic roller 19 mm

Slow-action contacts	1 NO + 1 NC --		B	3SE5 112-0BH50		1	1 unit	102	0.360
Snap-action contacts	1 NO + 1 NC --		▶	3SE5 112-0CH50		1	1 unit	102	0.360
Snap-action contacts	1 NO + 2 NC --		B	3SE5 112-0LH50		1	1 unit	102	0.370

With M12 connector socket, 8-pole (30 V, 2 A) and 2 LEDs

Snap-action contacts	1 NO + 2 NC 24 V DC		⊕ C	3SE5 114-1LH50-1AD4		1	1 unit	102	0.310
----------------------	---------------------	--	-----	---------------------	--	---	--------	-----	-------

With metal lever and high-grade steel roller 19 mm

Snap-action contacts	1 NO + 1 NC --		B	3SE5 112-0CH51		1	1 unit	102	0.370
----------------------	----------------	--	---	----------------	--	---	--------	-----	-------



Twist lever, adjustable length

Fork levers, latching

With metal lever and 2 plastic rollers 19 mm

Snap-action contacts	1 NO + 1 NC --		⊕ B	3SE5 112-0CT11		1	1 unit	102	0.360
----------------------	----------------	--	-----	----------------	--	---	--------	-----	-------



Fork lever

Rod actuators, type D, acc. to EN 50041

With aluminum rod, length 200 mm

Snap-action contacts	1 NO + 1 NC --		▶	3SE5 112-0CH80		1	1 unit	102	0.300
----------------------	----------------	--	---	----------------	--	---	--------	-----	-------

With plastic rod, length 200 mm

Snap-action contacts	1 NO + 1 NC --		B	3SE5 112-0CH82		1	1 unit	102	0.300
----------------------	----------------	--	---	----------------	--	---	--------	-----	-------



Rod actuator

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Popular versions.

Note: If the device you require is not available as a complete unit, see "Modular system" on the next page.










* You can order this quantity or a multiple thereof.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures Enclosure width 40 mm according to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU			
kg								
Basic switches • Enclosure width 40 mm								
	With M20 × 1.5 connecting thread							
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 112-0BA00	1	1 unit	102	0.260
	Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 112-0CA00	1	1 unit	102	0.260
	• Gold-plated contacts		⊕ D	3SE5 112-0CA00-1AC1	1	1 unit	102	0.260
	Slow-action contacts	1 NO + 2 NC --	⊕ A	3SE5 112-0KA00	1	1 unit	102	0.270
	Snap-action contacts	1 NO + 2 NC --	⊕ A	3SE5 112-0LA00	1	1 unit	102	0.270
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 112-0MA00	1	1 unit	102	0.270
Slow-action contacts	2 NO + 1 NC --	⊕ B	3SE5 112-0PA00	1	1 unit	102	0.270	
	With increased corrosion protection¹⁾							
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 112-0BA00-1CA0	1	1 unit	102	0.260
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 112-0CA00-1CA0	1	1 unit	102	0.260
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0KA00-1CA0	1	1 unit	102	0.270
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 112-0LA00-1CA0	1	1 unit	102	0.270
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 112-0MA00-1CA0	1	1 unit	102	0.270
Slow-action contacts	2 NO + 1 NC --	⊕ B	3SE5 112-0PA00-1CA0	1	1 unit	102	0.270	
	With M12 connector socket, 5-pole (125 V, 4 A)							
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 114-0BA00-1AC5	1	1 unit	102	0.270
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 114-0CA00-1AC5	1	1 unit	102	0.270
	Slow-action contacts	2 NC --	⊕ B	3SE5 114-0KA00-1AE1	1	1 unit	102	0.280
Snap-action contacts	2 NC --	⊕ B	3SE5 114-0LA00-1AE1	1	1 unit	102	0.280	
	With connector socket, 6-pole + PE (250 V, 10 A)							
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 115-0KA00-1AD1	1	1 unit	102	0.280
Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 115-0LA00-1AD1	1	1 unit	102	0.280	
	With connector socket, 6-pole + PE (250 V, 10 A) and quick-release device							
Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 115-0CA00-1AD0	1	1 unit	102	0.350	
	With 2 LEDs, yellow/green							
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 112-1KA00	1	1 unit	102	0.280
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 112-1LA00	1	1 unit	102	0.280
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ C	3SE5 112-3KA00	1	1 unit	102	0.280
Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ C	3SE5 112-3LA00	1	1 unit	102	0.280	
	With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ B	3SE5 114-1BA00-1AF3	1	1 unit	102	0.280
Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ C	3SE5 114-1CA00-1AF3	1	1 unit	102	0.280	
	With M12 connector socket, 8-pole (30 V, 2 A) and 2 LEDs							
Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ C	3SE5 114-1LA00-1AD4	1	1 unit	102	0.310	
	With connector socket, 6-pole + PE (10 A), and 2 LEDs							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ B	3SE5 115-1BA00-1AF2	1	1 unit	102	0.290
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ B	3SE5 115-1CA00-1AF2	1	1 unit	102	0.290
Snap-action contacts	2 NC 24 V DC	⊕ B	3SE5 115-1LA00-1AD2	1	1 unit	102	0.300	




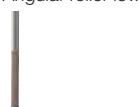


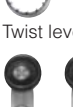





⊕ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

¹⁾ Use corresponding high-grade steel lever.

Note: For selection aid, see page 8/19.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures
Enclosure width 40 mm according to EN 50041

Version	Diame- ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
	mm		Order No.	Price per PU			kg		
Operating mechanisms									
	Rounded plungers, type B acc. to EN 50041								
	High-grade steel plungers, with 3 mm overtravel		⊕ B	3SE5 000-0AC02	1	1 unit	102	0.030	
	Roller plunger, type C acc. to EN 50041								
	13	High-grade steel roller, with 3 mm overtravel	⊕ B	3SE5 000-0AD02	1	1 unit	102	0.050	
	Roller levers								
	22	Metal lever, plastic roller	⊕ A	3SE5 000-0AE01	1	1 unit	102	0.045	
	22	Metal lever, high-grade steel roller	⊕ B	3SE5 000-0AE02	1	1 unit	102	0.065	
	22	High-grade steel lever, plastic roller	⊕ B	3SE5 000-0AE03	1	1 unit	102	0.040	
	22	High-grade steel lever, high-grade steel roller	⊕ B	3SE5 000-0AE04	1	1 unit	102	0.065	
	Angular roller levers								
	22	Metal lever, plastic roller	⊕ A	3SE5 000-0AF01	1	1 unit	102	0.050	
	22	Metal lever, high-grade steel roller	⊕ B	3SE5 000-0AF02	1	1 unit	102	0.075	
	22	High-grade steel lever, plastic roller	⊕ B	3SE5 000-0AF03	1	1 unit	102	0.050	
	22	High-grade steel lever, high-grade steel roller	⊕ B	3SE5 000-0AF04	1	1 unit	102	0.075	
	Spring rod (for switches with snap-action contacts only)								
	Plastic plunger:								
		• Length 142.5 mm (spring 50 mm, plunger 50 mm)	B	3SE5 000-0AR01	1	1 unit	102	0.060	
		• Length 76 mm (spring 23.5 mm, plunger 10 mm)	B	3SE5 000-0AR03	1	1 unit	102	0.020	
		• Length 242.5 mm (spring 150 mm, plunger 50 mm)	B	3SE5 000-0AR04	1	1 unit	102	0.040	
	High-grade steel plunger:								
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)	B	3SE5 000-0AR02	1	1 unit	102	0.040		
Twist actuators									
	Twist actuators, metal (without lever)								
		• For twist levers and rod actuators, switching right and/or left, adjustable	⊕ A	3SE5 000-0AH00	1	1 unit	102	0.070	
	• For fork levers, latching	⊕ B	3SE5 000-0AT10	1	1 unit	102	0.070		
Levers for twist actuators									
	Twist levers, offset, type A acc. to EN 50041								
	19	Metal lever 27 mm, plastic roller	⊕ A	3SE5 000-0AA01	1	1 unit	102	0.015	
	19	Metal lever 27 mm, high-grade steel roller	⊕ A	3SE5 000-0AA02	1	1 unit	102	0.035	
	19	Metal lever 27 mm, roller with ball bearing	⊕ B	3SE5 000-0AA03	1	1 unit	102	0.020	
	19	Metal lever 27 mm, 2 plastic rollers	⊕ B	3SE5 000-0AA04	1	1 unit	102	0.015	
	30	Metal lever 27 mm, plastic roller	⊕ B	3SE5 000-0AA05	1	1 unit	102	0.015	
	50	Metal lever 27 mm, rubber roller	⊕ B	3SE5 000-0AA08	1	1 unit	102	0.030	
	19	High-grade steel lever 27 mm, plastic roller	⊕ B	3SE5 000-0AA11	1	1 unit	102	0.015	
	19	High-grade steel lever 27 mm, high-grade steel roller	⊕ B	3SE5 000-0AA12	1	1 unit	102	0.025	
	19	Metal lever 35 mm, plastic roller	⊕ B	3SE5 000-0AA15	1	1 unit	102	0.050	
		Twist levers 30 mm, straight¹⁾							
		19	Metal lever, plastic roller	⊕ B	3SE5 000-0AA24	1	1 unit	102	0.020
		Twist levers, adjustable length, with grid holes							
		19	Metal lever, plastic roller	⊕ B	3SE5 000-0AA60	1	1 unit	102	0.025
		19	Metal lever, high-grade steel roller	⊕ B	3SE5 000-0AA61	1	1 unit	102	0.040
50		Metal lever, rubber roller	⊕ B	3SE5 000-0AA68	1	1 unit	102	0.045	
19		High-grade steel lever, plastic roller	⊕ B	3SE5 000-0AA62	1	1 unit	102	0.025	
19		High-grade steel lever, high-grade steel roller	⊕ B	3SE5 000-0AA63	1	1 unit	102	0.040	
		Twist levers, adjustable length							
	19	Metal lever, plastic roller	A	3SE5 000-0AA50	1	1 unit	102	0.025	
	19	Metal lever, high-grade steel roller	B	3SE5 000-0AA51	1	1 unit	102	0.035	
	30	Metal lever, plastic roller	B	3SE5 000-0AA55	1	1 unit	102	0.025	
	50	Metal lever, rubber roller	B	3SE5 000-0AA58	1	1 unit	102	0.040	
	19	High-grade steel lever, plastic roller	B	3SE5 000-0AA52	1	1 unit	102	0.025	
	19	High-grade steel lever, high-grade steel roller	B	3SE5 000-0AA53	1	1 unit	102	0.035	
		Fork lever (for switches with snap-action contacts only)							
19		2 metal levers, 2 plastic rollers	⊕ B	3SE5 000-0AT01	1	1 unit	102	0.050	
19		2 metal levers, 2 high-grade steel rollers	⊕ B	3SE5 000-0AT02	1	1 unit	102	0.050	
19		2 high-grade steel levers, 2 plastic rollers	⊕ B	3SE5 000-0AT03	1	1 unit	102	0.050	
	Rod actuators, type D acc. to EN 50041								
	6	Aluminum rod, length 200 mm	B	3SE5 000-0AA80	1	1 unit	102	0.070	
	6	Spring rod, length 200 mm	B	3SE5 000-0AA81	1	1 unit	102	0.030	
	6	Plastic rod, length 200 mm	B	3SE5 000-0AA82	1	1 unit	102	0.020	

⊕ Positively driven actuator, necessary in safety circuits.

¹⁾ Can be mounted on bead (180°).

* You can order this quantity or a multiple thereof.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures Enclosure width 56 mm

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	DT	Complete units	□	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Complete units¹⁾ · Enclosure width 56 mm



Rounded
plunger

Rounded plungers

With high-grade steel plungers, with 3 mm overtravel

Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0BC02	1	1 unit	102	0.355
Snap-action contacts	1 NO + 1 NC --	⊕ ▶ B	3SE5 122-0CC02	1	1 unit	102	0.355
Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0KC02	1	1 unit	102	0.365
Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0LC02	1	1 unit	102	0.365



Roller plunger

Roller plungers

With high-grade steel roller 13 mm, with 3 mm overtravel

Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0BD02	1	1 unit	102	0.375
Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 122-0CD02	1	1 unit	102	0.375
Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0KD02	1	1 unit	102	0.385
Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0LD02	1	1 unit	102	0.385



Roller lever

Roller levers

With metal lever and plastic roller 22 mm

Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0BE01	1	1 unit	102	0.365
Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 122-0CE01	1	1 unit	102	0.365
Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0KE01	1	1 unit	102	0.375
Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0LE01	1	1 unit	102	0.375

With metal lever and high-grade steel roller 22 mm

Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0CE02	1	1 unit	102	0.390
----------------------	----------------	-----	----------------	---	--------	-----	-------



Angular roller
lever

Angular roller levers

With metal lever and plastic roller 22 mm

Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0BF01	1	1 unit	102	0.380
Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0CF01	1	1 unit	102	0.380



Spring rod

Spring rod

Length 142.5 mm, with plastic plunger 50 mm

Snap-action contacts	1 NO + 1 NC --	B	3SE5 122-0CR01	1	1 unit	102	0.385
----------------------	----------------	---	----------------	---	--------	-----	-------

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Popular versions.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures
Enclosure width 56 mm

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	DT	Complete units	<input type="checkbox"/>	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Complete units¹⁾ · Enclosure width 56 mm

Twist lever

Twist levers**With metal lever 27 mm and plastic roller 19 mm**

Slow-action contacts	1 NO + 1 NC --	⊕	B	3SE5 122-0BH01	1	1 unit	102	0.410
Snap-action contacts	1 NO + 1 NC --	⊕	A	3SE5 122-0CH01	1	1 unit	102	0.410
Slow-action contacts	1 NO + 2 NC --	⊕	B	3SE5 122-0KH01	1	1 unit	102	0.420
Snap-action contacts	1 NO + 2 NC --	⊕	B	3SE5 122-0LH01	1	1 unit	102	0.420

With metal lever 27 mm and high-grade steel roller 19 mm

Snap-action contacts	1 NO + 1 NC --	⊕	B	3SE5 122-0CH02	1	1 unit	102	0.250
Snap-action contacts	1 NO + 2 NC --		B	3SE5 122-0LH02	1	1 unit	102	0.250

Twist levers, adjustable length**With metal lever with grid hole and plastic roller 19 mm**

Slow-action contacts	1 NO + 1 NC --	⊕	B	3SE5 122-0BH60	1	1 unit	102	0.250
Snap-action contacts	1 NO + 1 NC --	⊕	A	3SE5 122-0CH60	1	1 unit	102	0.250
Snap-action contacts	1 NO + 2 NC --	⊕	B	3SE5 122-0LH60	1	1 unit	102	0.250

With metal lever and plastic roller 19 mm

Slow-action contacts	1 NO + 1 NC --		B	3SE5 122-0BH50	1	1 unit	102	0.420
Snap-action contacts	1 NO + 1 NC --		A	3SE5 122-0CH50	1	1 unit	102	0.420
Snap-action contacts	1 NO + 2 NC --		B	3SE5 122-0LH50	1	1 unit	102	0.430

Twist lever,
adjustable
length**Fork levers, latching****With metal lever and 2 plastic rollers 19 mm**

Snap-action contacts	1 NO + 1 NC --	⊕	B	3SE5 122-0CT11	1	1 unit	102	0.250
----------------------	----------------	---	---	-----------------------	---	--------	-----	-------



Fork lever

Rod actuators**With aluminum rod, length 200 mm**

Snap-action contacts	1 NO + 1 NC --		B	3SE5 122-0CH80	1	1 unit	102	0.250
----------------------	----------------	--	---	-----------------------	---	--------	-----	-------

With plastic rod, length 200 mm

Snap-action contacts	1 NO + 1 NC --		B	3SE5 122-0CH82	1	1 unit	102	0.250
----------------------	----------------	--	---	-----------------------	---	--------	-----	-------



Rod actuator

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.




¹⁾ Popular versions.*Note: If the device you require is not available as a complete unit, see "Modular system" on the next page.*

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures Enclosure width 56 mm

Modular system





2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU			
Basic switches • Enclosure width 56 mm								
With 3 x M20 x 1.5 connecting thread								
	Slow-action contacts	1 NO + 1 NC --	⊕ A	3SE5 122-0BA00	1	1 unit	102	0.315
	Snap-action contacts	1 NO + 1 NC --	⊕ A	3SE5 122-0CA00	1	1 unit	102	0.315
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0KA00	1	1 unit	102	0.325
	Snap-action contacts	1 NO + 2 NC --	⊕ A	3SE5 122-0LA00	1	1 unit	102	0.325
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 122-0MA00	1	1 unit	102	0.335
	Slow-action contacts	2 NO + 1 NC --	⊕ B	3SE5 122-0PA00	1	1 unit	102	0.335
With increased corrosion protection¹⁾								
	Slow-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0BA00-1CA0	1	1 unit	102	0.315
	Snap-action contacts	1 NO + 1 NC --	⊕ B	3SE5 122-0CA00-1CA0	1	1 unit	102	0.315
	Slow-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0KA00-1CA0	1	1 unit	102	0.325
	Snap-action contacts	1 NO + 2 NC --	⊕ B	3SE5 122-0LA00-1CA0	1	1 unit	102	0.335
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ B	3SE5 122-0MA00-1CA0	1	1 unit	102	0.335
	Slow-action contacts	2 NO + 1 NC --	⊕ B	3SE5 122-0PA00-1CA0	1	1 unit	102	0.335
With 2 LEDs, yellow/green								
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 122-1KA00	1	1 unit	102	0.330
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ B	3SE5 122-1LA00	1	1 unit	102	0.330
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ B	3SE5 122-3KA00	1	1 unit	102	0.330
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ B	3SE5 122-3LA00	1	1 unit	102	0.330

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.




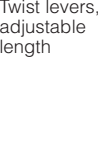


¹⁾ Use corresponding high-grade steel lever.

Note: For selection aid, see page 8/19.

Version	Diame-ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
mm			Order No.	Price per PU			
Operating mechanisms							
Rounded plungers, type B acc. to EN 50041							
	High-grade steel plungers, with 3 mm overtravel		⊕ B	3SE5 000-0AC02	1	1 unit	102 0.030
	High-grade steel roller, with 3 mm overtravel		13 ⊕ B	3SE5 000-0AD02	1	1 unit	102 0.050
Roller levers							
	Metal lever, plastic roller		22 ⊕ A	3SE5 000-0AE01	1	1 unit	102 0.045
	Metal lever, high-grade steel roller		22 ⊕ B	3SE5 000-0AE02	1	1 unit	102 0.065
	High-grade steel lever, plastic roller		22 ⊕ B	3SE5 000-0AE03	1	1 unit	102 0.040
	High-grade steel lever, high-grade steel roller		22 ⊕ B	3SE5 000-0AE04	1	1 unit	102 0.065
Angular roller levers							
	Metal lever, plastic roller		22 ⊕ A	3SE5 000-0AF01	1	1 unit	102 0.050
	Metal lever, high-grade steel roller		22 ⊕ B	3SE5 000-0AF02	1	1 unit	102 0.075
	High-grade steel lever, plastic roller		22 ⊕ B	3SE5 000-0AF03	1	1 unit	102 0.050
	High-grade steel lever, high-grade steel roller		22 ⊕ B	3SE5 000-0AF04	1	1 unit	102 0.075
Spring rod (for switches with snap-action contacts only)							
	Plastic plunger:						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR01	1	1 unit	102 0.060
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		B	3SE5 000-0AR03	1	1 unit	102 0.020
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		B	3SE5 000-0AR04	1	1 unit	102 0.040
	High-grade steel plunger:						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR02	1	1 unit	102 0.040

⊕ Positively driven actuator, necessary in safety circuits.

3SE5, metal enclosures
Enclosure width 56 mm

Version	Diame- ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Twist actuators							
	Twist actuators , metal (without lever)						
	<ul style="list-style-type: none"> For twist levers and rod actuators, switching right and/or left, adjustable For fork levers, latching 						
		⊙ A	3SE5 000-0AH00		1	1 unit	102 0.070
		⊙ B	3SE5 000-0AT10		1	1 unit	102 0.070
Levers for twist actuators							
Twist levers 27 mm, offset, type A acc. to EN 50041							
	Metal lever, plastic roller	19	⊙ A	3SE5 000-0AA01	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	19	⊙ A	3SE5 000-0AA02	1	1 unit	102 0.035
	Metal lever, roller with ball bearing	19	⊙ B	3SE5 000-0AA03	1	1 unit	102 0.020
	Metal lever, 2 plastic rollers	19	⊙ B	3SE5 000-0AA04	1	1 unit	102 0.015
	Metal lever, plastic roller	30	⊙ B	3SE5 000-0AA05	1	1 unit	102 0.015
	Metal lever, plastic roller	50	⊙ B	3SE5 000-0AA07	1	1 unit	102 0.020
	Metal lever, rubber roller	50	⊙ B	3SE5 000-0AA08	1	1 unit	102 0.030
	High-grade steel lever, plastic roller	19	⊙ B	3SE5 000-0AA11	1	1 unit	102 0.015
	High-grade steel lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA12	1	1 unit	102 0.025
	Twist levers 35 mm, offset						
	Metal lever, plastic roller	19	⊙ B	3SE5 000-0AA15	1	1 unit	102 0.050
Twist levers 30 mm, straight¹⁾							
	Metal lever, plastic roller	19	⊙ B	3SE5 000-0AA24	1	1 unit	102 0.020
Twist levers, adjustable length, with grid holes							
	Metal lever, plastic roller	19	⊙ B	3SE5 000-0AA60	1	1 unit	102 0.025
	Metal lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA61	1	1 unit	102 0.040
	Metal lever, plastic roller	50	⊙ B	3SE5 000-0AA67	1	1 unit	102 0.025
	Metal lever, rubber roller	50	⊙ B	3SE5 000-0AA68	1	1 unit	102 0.045
	High-grade steel lever, plastic roller	19	⊙ B	3SE5 000-0AA62	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	⊙ B	3SE5 000-0AA63	1	1 unit	102 0.040
Twist levers, adjustable length							
	Metal lever, plastic roller	19	A	3SE5 000-0AA50	1	1 unit	102 0.025
	Metal lever, high-grade steel roller	19	B	3SE5 000-0AA51	1	1 unit	102 0.035
	Metal lever, plastic roller	30	B	3SE5 000-0AA55	1	1 unit	102 0.025
	Metal lever, plastic roller	50	B	3SE5 000-0AA57	1	1 unit	102 0.025
	Metal lever, rubber roller	50	B	3SE5 000-0AA58	1	1 unit	102 0.040
	High-grade steel lever, plastic roller	19	B	3SE5 000-0AA52	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	B	3SE5 000-0AA53	1	1 unit	102 0.035
Fork lever (for switches with snap-action contacts only)							
	2 metal levers, 2 plastic rollers	19	⊙ B	3SE5 000-0AT01	1	1 unit	102 0.050
	2 metal levers, 2 high-grade steel rollers	19	⊙ B	3SE5 000-0AT02	1	1 unit	102 0.050
	2 high-grade steel levers, 2 plastic rollers	19	⊙ B	3SE5 000-0AT03	1	1 unit	102 0.050
	2 high-grade steel levers, 2 high-grade steel rollers	19	⊙ B	3SE5 000-0AT04	1	1 unit	102 0.050
Rod actuators, type D acc. to EN 50041							
	Aluminum rod, length 200 mm	6	B	3SE5 000-0AA80	1	1 unit	102 0.070
	Spring rod, length 200 mm	6	B	3SE5 000-0AA81	1	1 unit	102 0.030
	Plastic rod, length 200 mm	6	B	3SE5 000-0AA82	1	1 unit	102 0.020

⊙ Positively driven actuator, necessary in safety circuits.

¹⁾ Can be mounted on bead (180°).

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures
Ambient temperature up to -40 °C

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				<input type="checkbox"/>				
				Order No.	Price per PU		kg	

Complete units • Enclosure width 40 mm



Twist lever, adjustable length

Twist levers, adjustable length

With high-grade steel lever with grid hole and plastic roller 19 mm

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				<input type="checkbox"/>				
				Order No.	Price per PU		kg	

Snap-action contacts	1 NO + 1 NC --		⊕ A	3SE5 112-0CH62-1AJ0	1	1 unit	102	0.300
----------------------	----------------	--	-----	----------------------------	---	--------	-----	-------

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				<input type="checkbox"/>				
				Order No.	Price per PU		kg	

Basic switches • Enclosure width 40 mm



Basic switch

With teflon plunger

Snap-action contacts	1 NO + 1 NC --		⊕ B	3SE5 112-0CA00-1AJ0	1	1 unit	102	0.260
Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 112-0KA00-1AJ0	1	1 unit	102	0.270
Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 112-0LA00-1AJ0	1	1 unit	102	0.270

Basic switches • Enclosure width 56 mm



Basic switch

With teflon plunger








Snap-action contacts	1 NO + 1 NC --		⊕ B	3SE5 122-0CA00-1AJ0	1	1 unit	102	0.260
Slow-action contacts	1 NO + 2 NC --		⊕ B	3SE5 122-0KA00-1AJ0	1	1 unit	102	0.325
Snap-action contacts	1 NO + 2 NC --		⊕ B	3SE5 122-0LA00-1AJ0	1	1 unit	102	0.325

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

Note: For selection aid, see page 8/19.

3SE5, 3SE2, 3SE3 Position Switches

3SE5, metal enclosures
Ambient temperature up to -40 °C

Version	Diame- ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Operating mechanisms							
	Rounded plungers, type B acc. to EN 50041						
Rounded plunger	High-grade steel rollers	10	⊕ B	3SE5 000-0AC02-1AJ0	1	1 unit	102 0.030
	Roller plunger, type C acc. to EN 50041						
Roller plunger	High-grade steel rollers	10	⊕ B	3SE5 000-0AD02-1AJ0	1	1 unit	102 0.050
	Roller levers						
Roller lever	Metal lever, plastic roller	13	⊕ B	3SE5 000-0AE01-1AJ0	1	1 unit	102 0.050
	High-grade steel lever, plastic roller	13	⊕ B	3SE5 000-0AE03-1AJ0	1	1 unit	102 0.050
	Angular roller levers						
Angular roller lever	Metal lever, plastic roller	13	⊕ B	3SE5 000-0AF01-1AJ0	1	1 unit	102 0.050
	High-grade steel lever, plastic roller	13	⊕ B	3SE5 000-0AF03-1AJ0	1	1 unit	102 0.050
Twist actuators							
	Twist actuators, metal (without lever)						
Twist actuator	Switching right and/or left, adjustable		⊕ B	3SE5 000-0AH00-1AJ0	1	1 unit	102 0.070
	Levers for twist actuators						
Twist lever	Twist levers, type A acc. to EN 50041						
	Metal lever, plastic roller	19	⊕ B	3SE5 000-0AA01-1AJ0	1	1 unit	102 0.015
	High-grade steel lever, plastic roller	19	⊕ B	3SE5 000-0AA11-1AJ0	1	1 unit	102 0.015
	Twist levers, adjustable length, with grid holes						
Twist lever, adjustable length	Metal lever, plastic roller	19	⊕ B	3SE5 000-0AA60-1AJ0	1	1 unit	102 0.025
	High-grade steel lever, plastic roller	19	⊕ B	3SE5 000-0AA62-1AJ0	1	1 unit	102 0.025

⊕ Positively driven actuator, necessary in safety circuits.







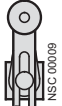
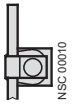
3SE5, 3SE2, 3SE3 Position Switches

3SE2, metal enclosures Enclosure width 56 mm

Selection and ordering data

Complete units

4 contacts · Degree of protection IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg
Complete units • Enclosure width 56 mm							
Plungers							
With plastic head and high-grade steel plunger							
	Slow-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-0B	1	1 unit	102 0.355
	Snap-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-1B	1	1 unit	102 0.353
	Slow-action contacts with make-before-break	2 NO + 2 NC	⊕ C	3SE2 404-2B	1	1 unit	102 0.380
Rounded plungers							
With metal head and high-grade steel plunger							
 NSC00097	Slow-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-0C	1	1 unit	102 0.395
	Snap-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-1C	1	1 unit	102 0.385
	Slow-action contacts with make-before-break	2 NO + 2 NC	⊕ C	3SE2 404-2C	1	1 unit	102 0.400
Roller plungers							
With metal head and brass roller, 13 mm							
 NSC 00098	Slow-action contacts	2 NO + 2 NC	⊕ C	3SE2 404-0D	1	1 unit	102 0.403
	Snap-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-1D	1	1 unit	102 0.420
	Slow-action contacts with make-before-break	2 NO + 2 NC	⊕ C	3SE2 404-2D	1	1 unit	102 0.420
Roller levers							
With metal lever and plastic roller 22 mm							
 NSC 00099	Slow-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-0E	1	1 unit	102 0.381
	Snap-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-1E	1	1 unit	102 0.380
	Slow-action contacts with make-before-break	2 NO + 2 NC	⊕ B	3SE2 404-2E	1	1 unit	102 0.380
Angular roller levers							
With metal lever and plastic roller 22 mm							
 NSC00093	Slow-action contacts	2 NO + 2 NC	⊕ C	3SE2 404-0F	1	1 unit	102 0.380
	Snap-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-1F	1	1 unit	102 0.383
	Slow-action contacts with make-before-break	2 NO + 2 NC	⊕ C	3SE2 404-2F	1	1 unit	102 0.400
Twist levers							
With metal lever and plastic roller 19 mm							
 NSC 00094	Slow-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-0GW	1	1 unit	102 0.470
	Snap-action contacts	2 NO + 2 NC	⊕ B	3SE2 404-1GW	1	1 unit	102 0.469
	Slow-action contacts with make-before-break	2 NO + 2 NC	⊕ C	3SE2 404-2GW	1	1 unit	102 0.480
Twist levers, adjustable length							
With metal lever and plastic roller 19 mm							
 NSC 00099	Slow-action contacts	2 NO + 2 NC	C	3SE2 404-0UW	1	1 unit	102 0.477
	Snap-action contacts	2 NO + 2 NC	B	3SE2 404-1UW	1	1 unit	102 0.479
	Slow-action contacts with make-before-break	2 NO + 2 NC	C	3SE2 404-2UW	1	1 unit	102 0.380
Rod actuators							
With plastic rod							
 NSC 00010	Slow-action contacts	2 NO + 2 NC	C	3SE2 404-0WW	1	1 unit	102 0.380
	Snap-action contacts	2 NO + 2 NC	B	3SE2 404-1WW	1	1 unit	102 0.476
	Slow-action contacts with make-before-break	2 NO + 2 NC	B	3SE2 404-2WW	1	1 unit	102 0.490
With aluminum rod							
Slow-action contacts	2 NO + 2 NC	C	3SE2 404-0VW	1	1 unit	102 0.490	
Snap-action contacts	2 NO + 2 NC	C	3SE2 404-1VW	1	1 unit	102 0.488	
Slow-action contacts with make-before-break	2 NO + 2 NC	C	3SE2 404-2VW	1	1 unit	102 0.380	

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

* You can order this quantity or a multiple thereof.

3SE5, 3SE2, 3SE3 Position Switches

3SE2, metal enclosures
Enclosure width 40 mm / 56 mm

Basic switches without operating mechanism

4 contacts · Degree of protection IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----------	----	-----------	--------------	-------------------	-----	----	--------------------------

Basic switches • Enclosure width 56 mm



Basic switch

➔ Positive opening acc. to IEC 60947-5-1, Appendix K.

With plastic plunger								
Slow-action contacts	2 NO + 2 NC	➔ C	3SE2 404-0A		1	1 unit	102	0.420
Snap-action contacts	2 NO + 2 NC	➔ B	3SE2 404-1A		1	1 unit	102	0.339

Accessories

The operating mechanisms of the position switches with metal enclosure can be subsequently replaced with other versions.

Version	Can be used for position switches	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-----------------------------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Complete actuators



3SX3 100

Plungers With screws and gasket	3SE2 ...-.B	➔ ▶	3SX3 100		1	1 unit	102	0.020
---	-------------	-----	-----------------	--	---	--------	-----	-------



3SX3 106

Rounded plungers With screws and gasket	3SE2 ...-.C	➔ ▶	3SX3 106		1	1 unit	102	0.055
---	-------------	-----	-----------------	--	---	--------	-----	-------



3SX3 107

Roller plungers With screws and gasket	3SE2 ...-.D							
• With brass roller (standard)		➔ ▶	3SX3 107		1	1 unit	102	0.080
• With high-grade steel roller		➔ B	3SX3 263		1	1 unit	102	0.080



3SX3 102

Roller levers With screws and gasket	3SE2 ...-.E							
• With plastic roller (standard)		➔ ▶	3SX3 102		1	1 unit	102	0.035
• With high-grade steel roller		➔ B	3SX3 275		1	1 unit	102	0.050










3SX3 104

Angular roller levers With screws and gasket	3SE2 ...-.F							
• With plastic roller (standard)		➔ ▶	3SX3 104		1	1 unit	102	0.040
• With high-grade steel roller		➔ B	3SX3 276		1	1 unit	102	0.050

➔ Positively driven actuator, necessary in safety circuits.

3SE5, 3SE2, 3SE3 Position Switches

3SE2, metal enclosures Enclosure width 40 mm / 56 mm

Version	Can be used for position switches	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Actuators with separate twist actuator									
 3SX3 211	Twist actuators With round spindle, screws and gasket								
	• Standard	3SE2 ...-.GW, 3SE2 ...-.UW, 3SE2 ...-.VW, 3SE2 ...-.WW	▶	3SX3 211		1	1 unit	102	0.112
	• Switching right and/or left, adjustable	3SE2 ...-.GW, 3SE2 ...-.UW, 3SE2 ...-.VW, 3SE2 ...-.WW	B	3SX3 307		1	1 unit	102	0.085
	• For fork levers	3SE2 1...-T	C	3SX3 127		1	1 unit	102	0.131
 3SX3 212  3SX3 301	Twist levers, 30 mm long For round spindle								
	• With plastic roller, Ø 19 mm		⊕ ▶	3SX3 212		1	1 unit	102	0.020
	• With high-grade steel roller, Ø 19 mm		⊕ B	3SX3 265		1	1 unit	102	0.025
	• With ball bearing and roller, Ø 19 mm		⊕ B	3SX3 320		1	1 unit	102	0.025
	• With plastic roller, Ø 30 mm		⊕ B	3SX3 278		1	1 unit	102	0.020
	• With plastic roller, Ø 50 mm		⊕ B	3SX3 301		1	1 unit	102	0.020
	• With rubber roller, Ø 50 mm		⊕ B	3SX3 280		1	1 unit	102	0.020
 3SX3 213	Twist levers, adjustable length With clamp								
	• With plastic roller, Ø 19 mm	3SE2 ...-.UW	▶	3SX3 213		1	1 unit	102	0.024
	• With high-grade steel roller, Ø 19 mm		B	3SX3 268		1	1 unit	102	0.030
	• With plastic roller, Ø 30 mm		B	3SX3 302		1	1 unit	102	0.025
	• With rubber roller, Ø 50 mm		B	3SX3 304		1	1 unit	102	0.020
	Roller rods, adjustable length (without clamp)	3SE2 ...-.UW	B	3SY3 024		1	1 unit	102	0.036
 3SX3 215	Twist levers, adjustable length with grid hole, With clamp		⊕ B	3SX3 321		1	1 unit	102	0.025
	Rod actuators with holder								
	• Plastic rod, 200 mm	3SE2 ...-.WW	▶	3SX3 215		1	1 unit	102	0.031
	• Aluminum rod, 200 mm	3SE2 ...-.VW	▶	3SX3 214		1	1 unit	102	0.032
 3SX3 115	Rod actuators (without holder)								
	• Plastic rod, 200 mm	3SE2 ...-.WW	▶	3SX3 000		1	1 unit	102	0.008
	• Aluminum rod, 200 mm	3SE2 ...-.VW	B	3SX3 001		1	1 unit	102	0.016
 3SX3 115	Fork levers¹⁾								
	• With 2 plastic rollers, Ø 19 mm	3SE2 1...-T	⊕ B	3SX3 115		1	1 unit	102	0.032
	• With 2 high-grade steel rollers, Ø 19 mm		⊕ B	3SX3 266		1	1 unit	102	0.050

⊕ Positively driven actuator, necessary in safety circuits.

¹⁾ Only for switches with snap-action contacts.

3SE3, metal enclosures Compact design with molded cable

Overview

In harsh industrial environments and in installations with limited space, the small 3SE3 160 and 3SE3 180 compact switches are ideal. The switches are already equipped with a molded cable of 2 m in length and can therefore be installed in the smallest spaces.

Both the enclosure and the twist actuator are made of metal and comply with the high IP67 degree of protection. The roller plunger, rounded plunger and twist lever are available as operating mechanisms.

The contact block is designed with snap-action contacts 1 NO + 1 NC. The NC contact complies with the requirements for positive opening acc. to IEC 60947-5-1.

The 3SE3 1 position switch with molded cable is available in different sizes:

- The 3SE3 180 series complies with the EU standard and features a 30 mm wide enclosure with drilled holes at a distance of 20 mm.
- The 3SE3 160 series meets the requirements of the US market and features a 40 mm wide enclosure with drilled holes at a spacing of 25 mm.

Selection and ordering data

2 contacts · Degree of protection IP67 · With 2 m cable

Operating mechanisms	Enclosure width	DT	Snap-action contacts 1 NO + 1 NC	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Complete units • Enclosure width 30 and 40 mm							
Rounded plungers							
• Standard mounting	30	⊕ A	3SE3 180-1C	1	1 unit	102	0.316
	40	⊕ A	3SE3 160-1C	1	1 unit	102	0.332
• With M12 connecting thread	30	⊕ A	3SE3 180-1CJ	1	1 unit	102	0.331
	40	⊕ A	3SE3 160-1CJ	1	1 unit	102	0.351
Roller plungers							
• Standard mounting	30	⊕ A	3SE3 180-1D	1	1 unit	102	0.323
	40	⊕ A	3SE3 160-1D	1	1 unit	102	0.348
• With M12 connecting thread	30	⊕ A	3SE3 180-1DJ	1	1 unit	102	0.334
	40	⊕ A	3SE3 160-1DJ	1	1 unit	102	0.364
Twist levers							
	30	⊕ A	3SE3 180-1G	1	1 unit	102	0.366
	40	⊕ A	3SE3 160-1G	1	1 unit	102	0.395



⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

3SE5, 3SE2, 3SE3 Position Switches

Open-type

3SE5, open-type design

Overview



Their compact design makes these switches particularly suitable for use in confined conditions. The fixing dimensions and operating points are acc. to EN 50047.

The switches are equipped with two or three contacts in slow-action or snap-action versions. The stroke is 6 mm.

The empty enclosure can be equipped with all switch block variants (see page 8/50).

Selection and ordering data

2 or 3 contacts · Degree of protection IP20 (2 contacts), IP10 (3 contacts)

Version	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
								kg

Plastic enclosures • Enclosure width 30 mm

With teflon plunger, Ø 6 mm



2 contacts

Slow-action contacts 1 NO + 1 NC
Snap-action contacts 1 NO + 1 NC

⊕ A
⊕ ▶

3SE5 250-0BC05
3SE5 250-0CC05

1 1 unit 102 0.025
1 1 unit 102 0.025



3 contacts

Slow-action contacts 1 NO + 2 NC
Snap-action contacts 1 NO + 2 NC
Slow-action contacts with make-before-break 1 NO + 2 NC
Slow-action contacts 2 NO + 1 NC

⊕ B
⊕ A
⊕ B
⊕ A

3SE5 250-0KC05
3SE5 250-0LC05
3SE5 250-0MC05
3SE5 250-0PC05

1 1 unit 102 0.035
1 1 unit 102 0.035
1 1 unit 102 0.035
1 1 unit 102 0.035



Empty enclosures

Empty enclosures without contact block --

⊕ B

3SE5 250-0AC05

1 1 unit 102 0.015

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

Selection and ordering data

The quick-release devices and plug-in connections are used for fast installation and replacement of position switches.






Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Quick-release devices for enclosure width 40 mm							
	B	3SY3 110		1	1 unit	102	0.055
	B	3SY3 027		1	1 unit	102	0.080
		3SY3 110					
		3SY3 027					
Plug-in connections for M20 × 1.5 connecting threads							
	B	3SY3 131		1	1 unit	102	0.030
	A	3SY3 136		1	1 unit	102	0.065
		3SY3 131					
		3SY3 136					
	B	3SY3 127		1	1 unit	102	0.010
	A	3RX8 000-0CB45		1	1 unit	574	0.015
	A	3RX8 000-0CC45		1	1 unit	574	0.015
	B	3SY3 128		1	1 unit	102	0.010
	A	3RX8 000-0CB55		1	1 unit	574	0.016
	A	3RX8 000-0CC55		1	1 unit	574	0.016
	B	3SY3 134		1	1 unit	102	0.025
	A	3RX8 000-0CB81-1GF0		1	1 unit	574	0.326
		3SY3 127					
		3RX8 000					
		3SY3 134					
		3RX8 000-0CB55					
		3RX8 000-0CC55					
		3RX8 000-0CB81-1GF0					
Adapters and cable glands for M20 × 1.5 connecting threads							
	B	3SX9 917		1	1 unit	102	0.035
	D	3SX9 918		1	1 unit	102	0.015
		3SX9 917					
		3SX9 918					
	A	3SX9 926		1	1 unit	102	0.010

1) For wiring, a crimping tool is necessary, max. conductor cross-section 1 mm².

2) For more cable boxes with molded cable see Industry Mall or Catalog FS 10.

3SE5, 3SE2, 3SE3 Position Switches

Accessories and Spare Parts

Version	Color/ contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Optional accessories for 3SE51, 3SE52								
	Protective caps, rubber, for rounded plungers acc. to EN 50047, 3SE5...C05	Black	B	3SE5 000-0AC30	1	1 unit	102	0.003
Spare parts for 3SE51, 3SE52								
	Empty enclosures, plastic	Turquoise						
	Enclosure width 31 mm		B	3SE5 232-0AC05	1	1 unit	102	0.020
	• With increased corrosion protection		B	3SE5 232-0AC05-1CA0	1	1 unit	102	0.020
	Enclosure width 50 mm		B	3SE5 242-0AC05	1	1 unit	102	0.035
Enclosure width 31 mm	• With increased corrosion protection		B	3SE5 242-0AC05-1CA0	1	1 unit	102	0.035
	Empty enclosures, metal	Turquoise						
	• With increased corrosion protection		B	3SE5 212-0AC05-1CA0	1	1 unit	102	0.115
	Enclosure width 40 mm		B	3SE5 112-0AA00	1	1 unit	102	0.230
	• With increased corrosion protection		B	3SE5 112-0AA00-1CA0	1	1 unit	102	0.230
	Enclosure width 40 mm		B	3SE5 122-0AA00	1	1 unit	102	0.250
	• With increased corrosion protection		B	3SE5 122-0AA00-1CA0	1	1 unit	102	0.250
	Contact blocks with 2 contacts							
	• Slow-action contacts	1 NO + 1 NC	⊕ B	3SE5 000-0BA00	1	1 unit	102	0.050
	• Snap-action contacts	1 NO + 1 NC						
	- Standard		⊕ B	3SE5 000-0CA00	1	1 unit	102	0.050
	- Gold-plated contacts		⊕ B	3SE5 000-0CA00-1AC1	1	1 unit	102	0.050
	- 2 × 2 mm switching interval		⊕ B	3SE5 000-0GA00	1	1 unit	102	0.050
- Short stroke		⊕ B	3SE5 000-0NA00	1	1 unit	102	0.050	
	Contact blocks with 3 contacts							
	• Slow-action contacts	1 NO + 2 NC	⊕ B	3SE5 000-0KA00	1	1 unit	102	0.060
	• Snap-action contacts	1 NO + 2 NC	⊕ B	3SE5 000-0LA00	1	1 unit	102	0.060
	• Slow-action contacts with make-before-break	1 NO + 2 NC	⊕ B	3SE5 000-0MA00	1	1 unit	102	0.060
	• Slow-action contacts	2 NO + 1 NC	B	3SE5 000-0PA00	1	1 unit	102	0.060





⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

3SE5, 3SE2, 3SE3 Position Switches

Accessories and Spare Parts

Version	Rated voltage LED	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	V							kg

Spare parts for 3SE51, 3SE52

 31 mm, turquoise with LED	Covers for plastic enclosures, width 31 mm								
	• Turquoise with LED	24 DC	B	3SE5 230-1AA00		1	1 unit	102	0.012
		230 AC	B	3SE5 230-3AA00		1	1 unit	102	0.012
	• Yellow	--	B	3SE5 230-0AA00-1AG0		1	1 unit	102	0.010
	• Yellow with LED	24 DC	B	3SE5 230-1AA00-1AG0		1	1 unit	102	0.012
	230 AC	B	3SE5 230-3AA00-1AG0		1	1 unit	102	0.012	
 50 mm, turquoise with LED	Covers for plastic enclosures, width 50 mm								
	• Turquoise with LED	24 DC	B	3SE5 240-1AA00		1	1 unit	102	0.015
		230 AC	B	3SE5 240-3AA00		1	1 unit	102	0.015
	• Yellow	--	B	3SE5 240-0AA00-1AG0		1	1 unit	102	0.012
	• Yellow with LED	24 DC	B	3SE5 240-1AA00-1AG0		1	1 unit	102	0.015
	230 AC	B	3SE5 240-3AA00-1AG0		1	1 unit	102	0.015	
 40 mm, yellow with LED	Covers for metal enclosures, width 40 mm								
	• Turquoise with LED	24 DC	B	3SE5 110-1AA00		1	1 unit	102	0.060
		230 AC	B	3SE5 110-3AA00		1	1 unit	102	0.060
	• Yellow	--	B	3SE5 110-0AA00-1AG0		1	1 unit	102	0.055
	• Yellow with LED	24 DC	B	3SE5 110-1AA00-1AG0		1	1 unit	102	0.060
	230 AC	B	3SE5 110-3AA00-1AG0		1	1 unit	102	0.060	
 56 mm, yellow with LED	Covers for metal enclosures, width 56 mm								
	• Turquoise with LED	24 DC	B	3SE5 120-1AA00		1	1 unit	102	0.085
		230 AC	B	3SE5 120-3AA00		1	1 unit	102	0.085
	• Yellow	--	B	3SE5 120-0AA00-1AG0		1	1 unit	102	0.080
	• Yellow with LED	24 DC	B	3SE5 120-1AA00-1AG0		1	1 unit	102	0.085
	230 AC	B	3SE5 120-3AA00-1AG0		1	1 unit	102	0.085	

3SE5, 3SE2, 3SE3 Position Switches With Separate Actuator

General data

Overview

Position switches with separate actuator are used where the position of doors, covers or protective grills must be monitored for safety reasons.

3SE5 position switches with separate actuator have the same enclosures as the standard switches (modular system).



Design

Enclosure sizes

The 3SE5 switches are available in various enclosure sizes:

- Plastic enclosures acc. to EN 50047, 31 mm wide, 1 cable entry
- Plastic enclosures, 50 mm wide, 2 cable entries
- Metal enclosures acc. to EN 50041, 40 mm wide, 1 cable entry
- Metal enclosures, 56 mm wide, 3 cable entries

Also available is a switch in the 3SE2 series which has arisen in this form acc. to general market requirements:

- Molded-plastic enclosure outside of the standards, enclosure width 52 mm.

Enclosure versions

Various basic versions can be selected for the enclosures of the 3SE5 series:

- Available with two- or three-pole contact blocks designed as slow-action contacts
- Optional LED status display
- With mounted four- or five-pole M12 connector socket (available for the wide enclosures as an accessory for self-assembly)
- With 6-pole connector socket + PE on the metal enclosures
- Similarly with a combination of connector socket and LED indicators
- Metal enclosures for explosion protection (ATEX) (see page 8/72)
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 8/78)

For a description of the basic switches see page 8/14.

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The switches can also be approached from above.

The twist actuators of the 3SE2 243 and 3SE2 257 switches with special enclosures cannot be changed. The switches can be approached from the two broad sides and from above.

The actuators are not included in the scope of supply of the position switch and must be ordered separately from a choice of six versions to suit the application (see page 8/56).

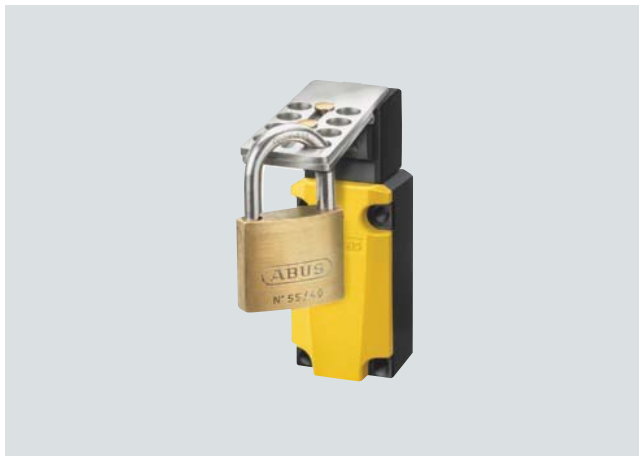
The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The position switches with radius actuators are particularly suitable for rotatable protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more safety (see page 8/56).



Blocking inserts with padlock

Dust protection

A rubber cap to protect the twist actuator from contamination is available for operation in dusty environments (see page 8/56).

Contact reliability

The new contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents, e. g. 1 mA at 5 V DC.

Positive opening

The NC contacts of the switch are forced open mechanically, positively-driven and reliably by the plunger. This is referred to as "positive opening".

3SE5, 3SE2, 3SE3 Position Switches

With Separate Actuator

General data

Benefits

The 3SE5 position switches with separate actuator differ from the previous series through the following new characteristics:

- All enclosure sizes are optionally available with a LED signaling indicator.
- The new three-pole contact block 1 NO + 2 NC is available for all enclosure sizes.
- The plastic enclosure has simple and fast wiring equipment which makes it possible to save from approx. 20 to 25 % of the time when connecting.
- The ASIsafe electric component is integrated for the versions with the AS-Interface connection (see page 8/78); an adapter is not required.

Application

Position switches with separate actuator are used where the position of doors, covers or protective grills must be monitored for safety reasons.

The position switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. Dimensions, fixing points of the enclosure are in accordance with EN 50041 or EN 50047 standards. The devices are suitable for use in any climate.

Standards

IEC 60947-5-1 or EN 60947-5-1.

The protective measure of "total insulation" by the molded-plastic enclosure is guaranteed by the use of molded-plastic screw-lands.

Safety position switches

For controls acc. to IEC 60204-1 or EN 60204-1 the devices can be used as a safety position switch. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

IEC 60947-5-1 and EN 60947-5-1 require positive opening of the NC contacts, i. e. for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked acc. to the IEC standard 60947-5-1 with the symbol \ominus .

Category 3 acc. to ISO 13849-1 (EN 954-1) can be attained with a position switch with a separate actuator if the corresponding failsafe evaluation units are selected and correctly installed, e. g. the 3TK28 safety relays or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

Category 4 can be achieved when using an additional position switch.

More information

Type		3SE5 1...-V.., 3SE5 2...-V..	3SE2 257-XX..	3SE2 243-XX..			
General data							
Standards		IEC 60947-5-1, EN 60947-5-1					
Rated insulation voltage U_i	V	400	500				
Pollution degree acc. to EN 60664-1		Class 3		Class 3			
Rated impulse withstand voltage U_{imp}	kV	6					
Rated operational voltage U_e	V	AC 400; over 300 V AC only equal potential		AC 500; over 380 V AC only equal potential			
Conventional free-air thermal current I_{th}	A	6		10			
Rated operational current I_e		2-pole	3-pole	3-pole	1-pole		
• With alternating current 50/60 Hz		I_e / AC-15	I_e / AC-15	I_e / AC-12	I_e / AC-15	I_e / AC-12	I_e / AC-15
- At 24 V	A	6	6	10	10	10	10
- At 120 V	A	6	3	10	10	10	10
- At 240 V	A	3	1.5	10	6	10	4
- At 400 V	A	--	--	10	4	10	4
- At 500 V	A	--	--	10	3	10	3
• For direct current		I_e / DC-13	I_e / DC-13	I_e / DC-12	I_e / DC-13	I_e / DC-12	I_e / DC-13
- At 24 V	A	3	3	10	10	10	10
- At 125 V	A	0.55	0.55	--	--	--	--
- At 250 V	A	0.27	0.27	--	--	--	--
- At 110 V	A	--	--	4	1	4	1
- At 220 V	A	--	--	1	0.4	1	0.4
- At 440 V	A	--	--	0.5	0.2	0.5	0.2
Short-circuit protection¹⁾							
• With DIAZED fuse links, operational class gG	A	6		6			
• With fuse links, quick		--		10			
• With miniature circuit breaker, Char. C	A	1		--			
Mechanical endurance		1 × 10 ⁶ operating cycles					
Electrical endurance							
• With 3RH11, 3RT10 16 to 3RT10 26 contactors		10 × 10 ⁶ operating cycles		> 1 × 10 ⁶ operating cycles			
• For utilization category AC-15 when switching off I_e / AC-15 at 240 V		0.1 × 10 ⁶ operating cycles		0.5 × 10 ⁶ operating cycles			
Switching frequency with 3RH11, 3RT10 16 to 3RT10 26 contactors		6000 operating cycles/h					

3SE5, 3SE2, 3SE3 Position Switches


With Separate Actuator

3SE5, plastic enclosures
Enclosure width 31 mm acc. to EN 50047 / 50 mm

Selection and ordering data

Complete units

2 or 3 contacts · 5 directions of approach · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	LEDs	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	
Enclosure width 31 mm acc. to EN 50047								
	5 directions of approach							
	Slow-action contacts	1 NO + 1 NC --	⊙ B	3SE5 232-0RV40	1	1 unit	102	0.150
	Slow-action contacts	1 NO + 2 NC --	⊙ ▶ B	3SE5 232-0QV40	1	1 unit	102	0.155
	With M12 connector socket, 4-pole (250 V, 4 A)							
	Slow-action contacts	1 NO + 1 NC --	⊙ B	3SE5 234-0RV40-1AC4	1	1 unit	102	0.165
	Slow-action contacts	2 NC --	⊙ B	3SE5 234-0QV40-1AE0	1	1 unit	102	0.170
	With 2 LEDs, yellow/green							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊙ B	3SE5 232-1RV40	1	1 unit	102	0.155
	Slow-action contacts	1 NO + 1 NC 230 V AC	⊙ B	3SE5 232-3RV40	1	1 unit	102	0.110
	With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊙ C	3SE5 234-1RV40-1AF3	1	1 unit	102	0.175
Enclosure width 50 mm								
	5 directions of approach							
	Slow-action contacts	1 NO + 2 NC --	⊙ B	3SE5 242-0QV40	1	1 unit	102	0.110
	With 2 LEDs, yellow/green							
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊙ B	3SE5 242-1QV40	1	1 unit	102	0.120
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊙ C	3SE5 242-3QV40	1	1 unit	102	0.120

⊙ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 8/56).

3SE5, 3SE2, 3SE3 Position Switches






With Separate Actuator

3SE5, metal enclosures
Enclosure width 40 mm acc. to EN 50041 / 56 mm

Selection and ordering data

Complete units

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	LEDs	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
				Order No.	Price per PU		kg		
Enclosure width 40 mm acc. to EN 50041									
	5 directions of approach			➔ ▶	3SE5 112-0QV10	1	1 unit	102	0.315
	Slow-action contacts	1 NO + 2 NC	--						
With separate actuator	With M12 connector socket, 5-pole (125 V, 4 A)			➔ C	3SE5 114-0RV10-1AC5	1	1 unit	102	0.325
	Slow-action contacts	1 NO + 1 NC	--						
	Slow-action contacts	2 NC	--	➔ C	3SE5 114-0QV10-1AE1	1	1 unit	102	0.325
	With connector socket, 6-pole + PE (250 V, 10 A)			➔ C	3SE5 115-0QV10-1AD1	1	1 unit	102	0.335
Slow-action contacts	1 NO + 2 NC	--							
With M12 socket	With 2 LEDs, yellow/green			➔ B	3SE5 112-1QV10	1	1 unit	102	0.325
	Slow-action contacts	1 NO + 2 NC	24 V DC						
	Slow-action contacts	1 NO + 2 NC	230 V AC	➔ C	3SE5 112-3QV10	1	1 unit	102	0.325
	With M12 connector socket, 5-pole (125 V, 4 A) and 2 LEDs			➔ C	3SE5 114-1RV10-1AF3	1	1 unit	102	0.325
Slow-action contacts	1 NO + 1 NC	24 V DC							
With 2 LEDs	With connector socket, 6-pole + PE (10 A), and 2 LEDs			➔ C	3SE5 115-1RV10-1AF2	1	1 unit	102	0.335
	Slow-action contacts	1 NO + 1 NC	24 V DC						
Enclosure width 56 mm									
	5 directions of approach			➔ B	3SE5 122-0QV10	1	1 unit	102	0.360
	Slow-action contacts	1 NO + 2 NC	--						
With separate actuator	With 2 LEDs, yellow/green			➔ B	3SE5 122-1QV10	1	1 unit	102	0.370
	Slow-action contacts	1 NO + 2 NC	24 V DC						
	Slow-action contacts	1 NO + 2 NC	230 V AC	➔ C	3SE5 122-3QV10	1	1 unit	102	0.370
	With 2 LEDs								

➔ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 8/56).

3SE5, 3SE2, 3SE3 Position Switches

With Separate Actuator

Accessories

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Actuators for 3SE5							
 3SE5 000-0AV01		Standard actuators, length 75.6 mm	▶	3SE5 000-0AV01	1	1 unit	102 0.040
 3SE5 000-0AV02	A	With vertical fixing, length 53 mm		3SE5 000-0AV02	1	1 unit	102 0.070
 3SE5 000-0AV03	A	With transverse fixing, length 47 mm		3SE5 000-0AV03	1	1 unit	102 0.070
 3SE5 000-0AV06	A	Radius actuators, length 51 mm		3SE5 000-0AV04	1	1 unit	102 0.070
	A	<ul style="list-style-type: none"> • Direction of approach from the left • Direction of approach from the right 		3SE5 000-0AV06	1	1 unit	102 0.070
 3SE5 000-0AV05	A	Universal radius actuator, length 77 mm		3SE5 000-0AV05	1	1 unit	102 0.090
 3SE5 000-0AV07	A	Universal radius actuators, heavy-duty		3SE5 000-0AV07-1AK2	1	1 unit	102 0.120
	A	<ul style="list-style-type: none"> • Length 67 mm • Length 77 mm 		3SE5 000-0AV07	1	1 unit	102 0.090
Optional accessories for 3SE5							
 3SE5 000-0AV08-1AA2	B	Protective caps made of black rubber for the actuator head, to protect the actuator openings from contamination (Only for enclosure width 40 or 56 mm)		3SE5 000-0AV08-1AA2	1	1 unit	102 0.010
 3SE5 000-0AV08-1AA3	B	Blocking inserts , high-grade steel, for twist actuator, for up to 8 padlocks		3SE5 000-0AV08-1AA3	1	1 unit	102 0.065
Connections for 3SE5, 3SE2							
 3SY3 127	B	Connector sockets (4-pole), M12, fixed for M20 x 1.5 For max. 250 V, 4 A With 0.25 mm ² connecting cable, plastic, degree of protection IP67, ambient temperature -40 to +85 °C		3SY3 127	1	1 unit	102 0.010
 3RX8 000	A	Cable boxes (4-pole), M12 With terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CB45	1	1 unit	574 0.015
	A	Angular cable boxes (4-pole), M12 With terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CC45	1	1 unit	574 0.015
 3SX9 926	B	Connector sockets (5-pole), M12, fixed for M20 x 1.5 For max. 125 V, 4 A With 0.25 mm ² connecting cable, plastic, degree of protection IP67, ambient temperature -40 to +85 °C		3SY3 128	1	1 unit	102 0.010
	A	Cable boxes (5-pole), M12 With terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CB55	1	1 unit	574 0.016
	A	Angular cable boxes (5-pole), M12 With terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CC55	1	1 unit	574 0.016
	A	Cable glands M20 x 1.5 Plastic		3SX9 926	1	1 unit	102 0.010

¹⁾ For cable boxes with molded cable see Industry Mall or Catalog FS 10.

3SE5, 3SE2, 3SE3 Position Switches

With Separate Actuator

3SE2, plastic enclosures
Enclosure width 52 mm


Selection and ordering data

Complete units






1 or 3 contacts · 3 directions of approach · Degree of protection IP67

Version	Operation	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			<input type="checkbox"/>				
			Order No.	Price per PU			kg

Molded-plastic enclosures in special width of 52 mm

Lateral and front-end actuation ¹⁾		6 mm stroke							
 <p>3SE 2 243</p>	<ul style="list-style-type: none"> With M20 × 1.5 connecting thread 	- Slow-action contacts 1 NO + 2 NC	Extraction force 5 N	⊙ ▶	3SE2 243-0XX40	1	1 unit	102	0.140
			Extraction force 30 N	⊙ ▶	3SE2 243-0XX	1	1 unit	102	0.140
			With automatic ejection	⊙ ▶	3SE2 243-0XX30	1	1 unit	102	0.140
	- Slow-action contacts 1 NC	Extraction force 5 N	⊙ ▶	3SE2 257-6XX40	1	1 unit	102	0.120	
		Extraction force 30 N	⊙ ▶	3SE2 257-6XX	1	1 unit	102	0.120	
		With automatic ejection	⊙ A	3SE2 257-6XX30	1	1 unit	102	0.120	
	<ul style="list-style-type: none"> With M16×1.5 connecting thread 	- Slow-action contacts 1 NO + 2 NC	Extraction force 5 N	⊙ A	3SE2 243-0XX48	1	1 unit	102	0.140
			Extraction force 30 N	⊙ A	3SE2 243-0XX18	1	1 unit	102	0.145
			With automatic ejection	⊙ A	3SE2 243-0XX38	1	1 unit	102	0.140
		- Slow-action contacts 1 NC	Extraction force 5 N	⊙ A	3SE2 257-6XX48	1	1 unit	102	0.140
			Extraction force 30 N	⊙ A	3SE2 257-6XX18	1	1 unit	102	0.140
			With automatic ejection	⊙ ▶	3SE2 257-6XX38	1	1 unit	102	0.140

Accessories

Actuators								
 <p>3SX3 218</p>	<ul style="list-style-type: none"> Standard actuators ($r_{min} = 150$ mm), length 28 mm 		A	3SX3 218	1	1 unit	102	0.020
		 <p>3SX3 228</p>	<ul style="list-style-type: none"> Universal radius actuator ($r_{min} = 45$ mm), length 34 mm 		A	3SX3 228	1	1 unit
 <p>3SX3 256</p>	<ul style="list-style-type: none"> Radius actuator, adjustable radius, length 34 mm 				D	3SX3 256	1	1 unit
		 <p>3SX3 217</p>	<ul style="list-style-type: none"> Ball locating, force adjustable up to 100 N by 2 screws, length 28 mm 		A	3SX3 217	1	1 unit
 <p>3SX3 234</p>	<ul style="list-style-type: none"> Actuator, length 34 mm, with dust protection and slit cover 				D	3SX3 234	1	1 unit
		Accessories <ul style="list-style-type: none"> Slit cover (1 set = 3 units) 			D	3SX3 233	1	3 unit(s)

⊙ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator.

3SE5, 3SE2, 3SE3 Position Switches With Solenoid Interlocking

General data

Overview

The position switches with solenoid interlocking are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grills or other covers as long as a dangerous situation is present (i. e. follow-on motion of the switched off machine).



The safety position switches with solenoid interlocking are comprised of a switch part with electromechanical interlock and a mechanical actuator which has to be ordered separately.

They are rugged protective devices that enable the greatest possible safety for man and machine.

The position switches with solenoid interlocking are offered in plastic or metal enclosures.

Dimensions (W × H × D):

- 3SE5 3: 54 mm × 185 mm × 43.5 mm,
- 3SE2 8: 90 mm × 100 mm (+ head 41.3 mm) × 45 mm.

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The 3SE5 3 switches can also be approached from above.

The actuators are not included in the scope of supply of the position switch and must be ordered separately from a choice of six versions to suit the application (see page 8/63).

Actuation data:

- Maximum actuating speed $v_{\max} = 1.5$ m/s
- Minimum actuating speed $v_{\min} = 0.4$ mm/s
- Minimum force in the direction of actuation $F_{\min} = 30$ N

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The position switches with radius actuators are particularly suitable for rotatable protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel locking device for attaching up to eight padlocks is available for even more safety (see page 8/63).

Dust protection

A rubber cap to protect the twist actuator from contamination is available for operation in dusty environments (see page 8/63).

Solenoid interlocking

There are two versions for locking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Magnetic field lock (open-circuit principle)

The spring-actuated switch is equipped with an auxiliary release for emergency situations or setup mode. Available as options:

- Escape release or
- Emergency release

Contact blocks

The position switches with solenoid interlocking have one contact block each for:

- Monitoring the actuator or the position of the protective door
- Monitoring the position of the solenoid

The mechanical design of the switch corresponds to the requirements of the failsafe principle acc. to EN 1088.

Optical signaling equipment

The position switches with solenoid interlocking are available with an optional optical signaling device.

The signaling device indicates the switch position of the lock and the protective device optically by means of 2 LEDs on the front.

Protective device	Solenoid interlocking	Display	Meaning
Closed	Released		Actuator to be pulled
Closed	Locked		Actuator locked
Open	Released		Actuator pulled

Note:

The voltage of the LEDs at the monitored contacts must be the same as the operational voltage of the solenoid (same potential).

3SE5, 3SE2, 3SE3 Position Switches With Solenoid Interlocking

General data

Benefits

The new generation of 3SE5 3 position switches offers:

- More safety through higher locking forces:
 - 1300 N with plastic enclosure
 - 2600 N with metal enclosure
- Various release mechanisms: lock release, escape release and emergency release
- Two contact blocks each with three contacts as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure variants: Plastic, metal or with integrated ASIsafe
- An extensive range of actuators
- An optional LED status display 24 V DC, 115 V AC or 230 V AC for all switch versions
- Device with ASIsafe electronics integrated in the enclosure (see page 8/82).

Application

The position switches with solenoid interlocking are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grills or other covers as long as a dangerous situation is present (i. e. follow-on motion of the switched off machine).

The safety position switches with solenoid interlocking have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and solenoid interlocking

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switch corresponds to the requirements of the failsafe principle acc. to EN 1088.

Approvals

The switches are approved for use with locking devices acc. to EN 1088 and EN 292, Parts 1 and 2.

3SE5 3 position switches with solenoid interlocking bear the VDE test mark for tested acc. to GS-ET19 (Test Principles of the German Trade Association for Locking Devices with Electromagnetic Interlocks).

3SE2 8 metal-enclosed position switches with solenoid interlocking have been awarded a test certificate from the BIA (Berufsgenossenschaftliches Institut für Arbeitssicherheit).

Category 3 acc. to ISO 13849-1 (EN 954-1) can be attained with a position switch with solenoid interlocking if the corresponding failsafe evaluation units are selected and correctly installed, e. g. the 3TK28 safety relays or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

Category 4 can be achieved when using an additional position switch.

These switches are approved acc. to UL 508, UL 50 and UL 746-C.

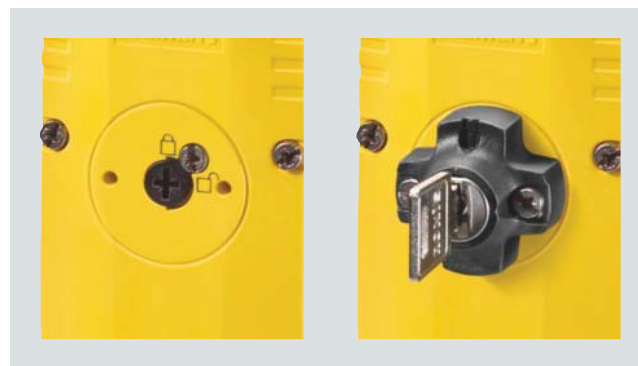
Solenoid interlocking

The separate actuator operates in a similar way to the coding of a key and protects against manipulation. It transmits the locking force to the protective device and helps to monitor its position.

There are two versions of locking:

Spring-actuated lock (closed-circuit principle)

- In the standard version, the position switch locks by means of spring force and releases by means of electromagnetic force. In the case of voltage failure, it reliably prevents the protective device from opening when machine parts are still moving.
- The switch is equipped with an auxiliary release for emergency situations or setup mode.
- An auxiliary release which can be secured with a lock to prevent misuse is available as a version.

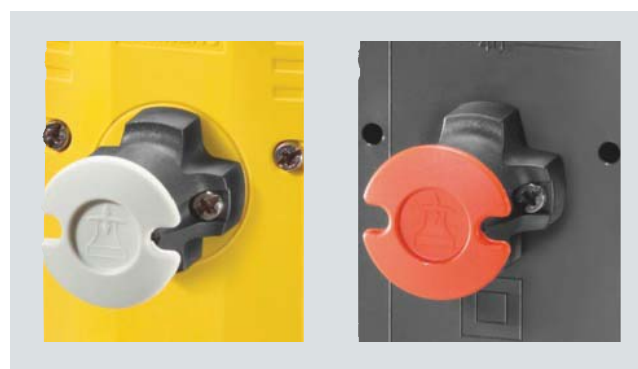


Auxiliary release

Auxiliary release with lock

The new 3SE5 3 position switches are also available with an escape release or emergency release.

- Personnel working inside the hazard zone can use the escape release feature to manually release the interlocking without tools from the escape side (hazardous area side) so that they can exit the hazard area. An intentional act (in this case pulling the gray actuator) is required to release the locking mechanism and restore the normal operating state.
- The emergency release enables someone in an emergency situation to manually release the interlock without tools from the access side (outside the hazardous area). Releasing the lock and restoring the normal operating state must require effort which is comparable to repair activity, in this case disassembly of the red actuator and resetting the mechanical lock.



Escape release from the front

Emergency release from the back

Magnetic field lock (open-circuit principle)

- The second version offers locking by means of electromagnetic force and release by means of spring force. This version has an advantage when it is necessary to quickly access the machine after a power failure occurs, or in the case of very short coasting times.

3SE5, 3SE2, 3SE3 Position Switches

With Solenoid Interlocking

General data

More information

Type		3SE5 322	3SE5 312	3SE2 83, 3SE2 84	
General data					
Standards		IEC 60947-5-1, EN 60947-5-1			
Rated insulation voltage U_i	V	250			
Pollution degree acc. to EN 60664-1		Class 3			
Rated impulse withstand voltage U_{imp}	kV	4		6	
Rated operational voltage U_e					
• DC	V	24		24	
• AC 50/60 Hz	V	230		110 ... 130 230	
Conventional free-air thermal current I_{th}	A	6		10	
Rated operational current I_e					
• With alternating current 50/60 Hz		I_e / AC-15 or B300		I_e / AC-12	I_e / AC-15
- At 24 V	A	6		10	4
- At 120 V	A	3		10	4
- At 230 V	A	1.5		10	4
• For direct current		I_e / DC-13 or Q300		I_e / DC-12	I_e / DC-13
- At 24 V	A	3		10	3
- At 125 V	A	0.55		--	--
- At 250 V	A	0.27		--	--
- At 60 V		--		5	1.5
- At 110 V		--		2.5	0.7
- At 220 V		--		1	0.3
Solenoid					
• Locking force, max.	N	1300	2600	1820	
• Locking force acc. to GS-ET 19	N	1000	2000	1400	
• Power consumption at U_c	W	3.5		5.2	
Short-circuit protection¹⁾					
• With DIAZED fuse links, operational class gG	A	6		6	
• With fuse links, quick		--		10	
• With miniature circuit breaker, Char. C	A	0.5		--	
Mechanical endurance		1 × 10 ⁶ operating cycles		1 × 10 ⁶ operating cycles	
Electrical endurance					
• With 3RH11, 3RT10 16 to 3RT10 26 contactors		1 × 10 ⁶ operating cycles		1 × 10 ⁶ operating cycles	
• For utilization category AC-15 with interrupting of I_e / AC-15 at 230 V		1 × 10 ⁵ operating cycles		0.5 × 10 ⁶ operating cycles	
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch			
Switching frequency with 3RH11, 3RT10 16 to 3RT10 26 contactors		6000 operating cycles/hour			
Shock resistance acc. to IEC 60068-2-27		30 g/11 ms		--	

3SE5, 3SE2, 3SE3 Position Switches

With Solenoid Interlocking







3SE5, plastic enclosures
With locking force up to 1200 N

Selection and ordering data

6 slow-action contacts · 5 directions of approach · Cable entry 3 × M20 × 1.5 · Degree of protection IP66/IP67
Locking force 1300 N (1000 N acc. to GS-ET 19)

Interlock ¹⁾	LEDs	Solenoid, rated operational voltage	DT	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		V		Order No.	Price per PU			kg

1300 N locking force · Enclosure width 54 mm

	Spring-actuated locks								
	• With auxiliary release	--	24 DC	⊕ ▶	3SE5 322-OSD21	1	1 unit	102	0.590
		--	115 AC	⊕ B	3SE5 322-OSD22	1	1 unit	102	0.590
		--	230 AC	⊕ B	3SE5 322-OSD23	1	1 unit	102	0.590
		Yellow/Green	24 DC	⊕ A	3SE5 322-1SD21	1	1 unit	102	0.590
		Yellow/Green	115 AC	⊕ B	3SE5 322-2SD22	1	1 unit	102	0.590
	Yellow/Green	230 AC	⊕ B	3SE5 322-3SD23	1	1 unit	102	0.590	
	• With auxiliary release With lock	--	24 DC	⊕ B	3SE5 322-OSE21	1	1 unit	102	0.745
		--	115 AC	⊕ B	3SE5 322-OSE22	1	1 unit	102	0.745
		--	230 AC	⊕ B	3SE5 322-OSE23	1	1 unit	102	0.745
		Yellow/Green	24 DC	⊕ B	3SE5 322-1SE21	1	1 unit	102	0.745
		Yellow/Green	115 AC	⊕ B	3SE5 322-2SE22	1	1 unit	102	0.745
		Yellow/Green	230 AC	⊕ B	3SE5 322-3SE23	1	1 unit	102	0.745
	• With escape release from the front	--	24 DC	⊕ B	3SE5 322-OSF21	1	1 unit	102	0.590
		--	115 AC	⊕ B	3SE5 322-OSF22	1	1 unit	102	0.590
		--	230 AC	⊕ B	3SE5 322-OSF23	1	1 unit	102	0.590
		Yellow/Green	24 DC	⊕ B	3SE5 322-1SF21	1	1 unit	102	0.590
		Yellow/Green	115 AC	⊕ B	3SE5 322-2SF22	1	1 unit	102	0.590
		Yellow/Green	230 AC	⊕ B	3SE5 322-3SF23	1	1 unit	102	0.590
	• With escape release from the back and auxiliary release from the front	--	24 DC	⊕ B	3SE5 322-OSG21	1	1 unit	102	0.590
		--	115 AC	⊕ B	3SE5 322-OSG22	1	1 unit	102	0.590
		--	230 AC	⊕ B	3SE5 322-OSG23	1	1 unit	102	0.590
		Yellow/Green	24 DC	⊕ B	3SE5 322-1SG21	1	1 unit	102	0.590
		Yellow/Green	115 AC	⊕ B	3SE5 322-2SG22	1	1 unit	102	0.590
		Yellow/Green	230 AC	⊕ B	3SE5 322-3SG23	1	1 unit	102	0.590
	• With escape release from the back and auxiliary release from the front	--	24 DC	⊕ B	3SE5 322-OSH21	1	1 unit	102	0.745
		--	115 AC	⊕ B	3SE5 322-OSJ21	1	1 unit	102	0.745
		--	230 AC	⊕ B	3SE5 322-OSJ22	1	1 unit	102	0.745
		--	230 AC	⊕ B	3SE5 322-OSJ23	1	1 unit	102	0.745
		Yellow/Green	24 DC	⊕ B	3SE5 322-1SJ21	1	1 unit	102	0.745
		Yellow/Green	115 AC	⊕ B	3SE5 322-2SJ22	1	1 unit	102	0.745
	Yellow/Green	230 AC	⊕ B	3SE5 322-3SJ23	1	1 unit	102	0.745	
	Magnetic field lock								
	--	24 DC	⊕ ▶	3SE5 322-OSB21	1	1 unit	102	0.590	
	--	115 AC	⊕ B	3SE5 322-OSB22	1	1 unit	102	0.590	
		--	230 AC	⊕ B	3SE5 322-OSB23	1	1 unit	102	0.590
		Yellow/Green	24 DC	⊕ A	3SE5 322-1SB21	1	1 unit	102	0.590
		Yellow/Green	115 AC	⊕ B	3SE5 322-2SB22	1	1 unit	102	0.590
	Yellow/Green	230 AC	⊕ B	3SE5 322-3SB23	1	1 unit	102	0.590	

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 8/63).

3SE5, 3SE2, 3SE3 Position Switches

With Solenoid Interlocking

3SE5, metal enclosures
With locking force up to 2000 N

Selection and ordering data

6 slow-action contacts · 5 directions of approach · Cable entry 3 × M20 × 1.5 · Degree of protection IP66/IP67
Locking force 2600 N (2000 N acc. to GS-ET 19)

Interlock ¹⁾	LEDs	Solenoid, rated operational voltage	DT	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
		V		Order No.	Price per PU			kg		
2600 N locking force · Enclosure width 54 mm										
Spring-actuated locks										
	• With auxiliary release	--	24 DC	⊕ ▶	3SE5 312-OSD11	1	1 unit	102	1.030	
		--	115 AC	⊕ B	3SE5 312-OSD12	1	1 unit	102	1.030	
		--	230 AC	⊕ B	3SE5 312-OSD13	1	1 unit	102	1.030	
		Yellow/Green		24 DC	⊕ B	3SE5 312-1SD11	1	1 unit	102	1.040
		Yellow/Green		115 AC	⊕ B	3SE5 312-2SD12	1	1 unit	102	1.040
		Yellow/Green		230 AC	⊕ B	3SE5 312-3SD13	1	1 unit	102	1.040
	• With auxiliary release With lock	--	24 DC	⊕ B	3SE5 312-OSE11	1	1 unit	102	1.180	
		--	115 AC	⊕ B	3SE5 312-OSE12	1	1 unit	102	1.180	
		--	230 AC	⊕ B	3SE5 312-OSE13	1	1 unit	102	1.180	
				48 AC/DC	⊕ C	3SE5 312-OSE14	1	1 unit	102	1.180
		Yellow/Green		24 DC	⊕ B	3SE5 312-1SE11	1	1 unit	102	1.180
		Yellow/Green		115 AC	⊕ B	3SE5 312-2SE12	1	1 unit	102	1.180
	• With escape release from the front	--	24 DC	⊕ B	3SE5 312-OSF11	1	1 unit	102	1.180	
		--	115 AC	⊕ B	3SE5 312-OSF12	1	1 unit	102	1.180	
		--	230 AC	⊕ B	3SE5 312-OSF13	1	1 unit	102	1.180	
		Yellow/Green		24 DC	⊕ B	3SE5 312-1SF11	1	1 unit	102	1.180
		Yellow/Green		115 AC	⊕ B	3SE5 312-2SF12	1	1 unit	102	1.180
		Yellow/Green		230 AC	⊕ B	3SE5 312-3SF13	1	1 unit	102	1.180
	• With escape release from the back and auxiliary release from the front	--	24 DC	⊕ B	3SE5 312-OSG11	1	1 unit	102	1.175	
		--	115 AC	⊕ B	3SE5 312-OSG12	1	1 unit	102	1.175	
		--	230 AC	⊕ B	3SE5 312-OSG13	1	1 unit	102	1.175	
		Yellow/Green		24 DC	⊕ B	3SE5 312-1SG11	1	1 unit	102	1.180
		Yellow/Green		115 AC	⊕ B	3SE5 312-2SG12	1	1 unit	102	1.180
		Yellow/Green		230 AC	⊕ B	3SE5 312-3SG13	1	1 unit	102	1.180
	• With escape release from the back and auxiliary release from the front	--	24 DC	⊕ B	3SE5 312-OSH11	1	1 unit	102	1.180	
	• With emergency release from the back and auxiliary release from the front	--	24 DC	⊕ B	3SE5 312-OSJ11	1	1 unit	102	1.180	
		--	115 AC	⊕ B	3SE5 312-OSJ12	1	1 unit	102	1.180	
		--	230 AC	⊕ B	3SE5 312-OSJ13	1	1 unit	102	1.180	
		Yellow/Green		24 DC	⊕ B	3SE5 312-1SJ11	1	1 unit	102	1.180
		Yellow/Green		115 AC	⊕ B	3SE5 312-2SJ12	1	1 unit	102	1.180
		--	230 AC	⊕ B	3SE5 312-3SJ13	1	1 unit	102	0.925	
		Yellow/Green		24 DC	⊕ B	3SE5 312-1SB11	1	1 unit	102	1.030
		Yellow/Green		115 AC	⊕ B	3SE5 312-2SB12	1	1 unit	102	1.030
		Yellow/Green		230 AC	⊕ B	3SE5 312-3SB13	1	1 unit	102	1.030
		Yellow/Green		24 DC	⊕ B	3SE5 312-1SB11	1	1 unit	102	1.040
		Yellow/Green		115 AC	⊕ B	3SE5 312-2SB12	1	1 unit	102	1.040
	Yellow/Green		230 AC	⊕ B	3SE5 312-3SB13	1	1 unit	102	1.040	

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 8/63).

3SE5, 3SE2, 3SE3 Position Switches

With Solenoid Interlocking

Accessories

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Actuators for 3SE5							
 3SE5 000-0AV01		Standard actuators, length 75.6 mm	▶	3SE5 000-0AV01	1	1 unit	102 0.040
 3SE5 000-0AV02	A	With vertical fixing, length 53 mm		3SE5 000-0AV02	1	1 unit	102 0.070
 3SE5 000-0AV03	A	With transverse fixing, length 47 mm		3SE5 000-0AV03	1	1 unit	102 0.070
 3SE5 000-0AV04	A	Radius actuators, length 51 mm		3SE5 000-0AV04	1	1 unit	102 0.070
	A	• Direction of approach from the left		3SE5 000-0AV06	1	1 unit	102 0.070
	A	• Direction of approach from the right		3SE5 000-0AV05	1	1 unit	102 0.090
 3SE5 000-0AV05	A	Universal radius actuator, length 77 mm		3SE5 000-0AV05	1	1 unit	102 0.090
 3SE5 000-0AV07	A	Universal radius actuators, heavy-duty		3SE5 000-0AV07-1AK2	1	1 unit	102 0.120
	A	• Length 67 mm		3SE5 000-0AV07	1	1 unit	102 0.090
	A	• Length 77 mm					
Optional accessories for 3SE5							
 3SE5 000-0AV08-1AA2	B	Protective caps made of black rubber for the actuator head, to protect the actuator openings from contamination		3SE5 000-0AV08-1AA2	1	1 unit	102 0.010
 3SE5 000-0AV08-1AA3	B	Blocking inserts , high-grade steel, for twist actuator, for up to 8 padlocks		3SE5 000-0AV08-1AA3	1	1 unit	102 0.065
Spare parts for 3SE5							
	B	Spare keys		3SX5 100-1F	1	1 unit	102 0.015
Connections for 3SE5, 3SE2							
 3SY3 127	B	Connector sockets (4-pole), M12, fixed for M20 x 1.5 For max 250 V, 4 A, with connecting cable 5 x 0.25 mm ² Plastic, degree of protection IP67, ambient temperature -40 to +85 °C		3SY3 127	1	1 unit	102 0.010
 3RX8 000	A	Cable boxes (4-pole), M12 with terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CB45	1	1 unit	574 0.015
	A	Angular cable boxes (4-pole), M12 with terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CC45	1	1 unit	574 0.015
	B	Connector sockets (5-pole), M12, fixed for M20 x 1.5 For max 125 V, 4 A, with connecting cable 5 x 0.25 mm ² , plastic, degree of protection IP67, ambient temperature -40 to +85 °C		3SY3 128	1	1 unit	102 0.010
	A	Cable boxes (5-pole), M12 with terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CB55	1	1 unit	574 0.016
	A	Angular cable boxes (5-pole), M12 with terminal compartment, can be pre-assembled ¹⁾		3RX8 000-0CC55	1	1 unit	574 0.016
 3SX9 926	A	Cable glands M20 x 1.5 Plastic		3SX9 926	1	1 unit	102 0.010

¹⁾ For cable boxes with molded cable see Industry Mall or Catalog FS 10.




3SE5, 3SE2, 3SE3 Position Switches

With Solenoid Interlocking

3SE2, metal enclosures
With locking force up to 1800 N

Selection and ordering data

4 slow-action contacts · 4 directions of approach · Locking force 1800 N (1400 N acc. to GS-ET 19) · Degree of protection IP67

Interlock/ Signaling equipment	Slow-action contacts		Solenoid, rated operational voltage	DT	Complete units		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
	Position monitoring	Actuators			Solenoid	Order No.					Price per PU
 With auxiliary release	Spring-actuated locks¹⁾ 6 mm stroke										
	• Auxiliary release, sealable	1 NO + 1 NC 2 NC	24 DC	⊕ A	3SE2 840-0XX00		1	1 unit	102	0.885	
			110 AC	⊕ A	3SE2 842-0XX00		1	1 unit	102	0.890	
			230 AC	⊕ A	3SE2 841-0XX00		1	1 unit	102	0.875	
	• Auxiliary release with lock	1 NO + 1 NC 2 NC	24 DC	⊕ A	3SE2 840-0XX01		1	1 unit	102	0.935	
			110 AC	⊕ A	3SE2 842-0XX01		1	1 unit	102	0.925	
			230 AC	⊕ A	3SE2 841-0XX01		1	1 unit	102	0.920	
	Magnetic field locks¹⁾										
	• Standard	1 NO + 1 NC 2 NC	24 DC	⊕ A	3SE2 830-0XX00		1	1 unit	102	0.890	
		110 AC	⊕ A	3SE2 832-0XX00		1	1 unit	102	0.855		
		230 AC	⊕ A	3SE2 831-0XX00		1	1 unit	102	0.855		
 With lock	Spring-actuated locks¹⁾ 6 mm stroke										
	• Auxiliary release, sealable	2 NC 2 NC	24 DC	⊕ A	3SE2 840-6XX00		1	1 unit	102	0.885	
			110 AC	⊕ A	3SE2 842-6XX00		1	1 unit	102	0.880	
			230 AC	⊕ A	3SE2 841-6XX00		1	1 unit	102	0.880	
	• Auxiliary release with lock	2 NC 2 NC	24 DC	⊕ A	3SE2 840-6XX01		1	1 unit	102	0.965	
			110 AC	⊕ A	3SE2 842-6XX01		1	1 unit	102	0.960	
			230 AC	⊕ A	3SE2 841-6XX01		1	1 unit	102	0.925	
	Magnetic field locks¹⁾										
	• Standard	2 NC 2 NC	24 DC	⊕ A	3SE2 830-6XX00		1	1 unit	102	0.885	
		110 AC	⊕ D	3SE2 832-6XX00		1	1 unit	102	0.855		
		230 AC	⊕ A	3SE2 831-6XX00		1	1 unit	102	0.850		
 With optical signal- ing equipment	Spring-actuated locks¹⁾ 6 mm stroke										
	• Auxiliary release, sealable	1 NO + 1 NC 1 NO + 1 NC	24 DC	⊕ A	3SE2 840-1XX00		1	1 unit	102	0.875	
			110 AC	⊕ A	3SE2 842-1XX00		1	1 unit	102	0.890	
			230 AC	⊕ A	3SE2 841-1XX00		1	1 unit	102	0.870	
	• Auxiliary release, sealable, and with optical signaling equipment ²⁾	1 NO + 1 NC 1 NO + 1 NC	24 DC	⊕ A	3SE2 840-1XX20		1	1 unit	102	0.905	
			110 AC	⊕ A	3SE2 842-1XX20		1	1 unit	102	0.885	
			230 AC	⊕ A	3SE2 841-1XX20		1	1 unit	102	0.880	
	• Auxiliary release with lock and with optical signaling equipment ²⁾	1 NO + 1 NC 1 NO + 1 NC	24 DC	⊕ A	3SE2 840-1XX32		1	1 unit	102	0.945	
			110 AC	⊕ A	3SE2 842-1XX32		1	1 unit	102	0.935	
			230 AC	⊕ A	3SE2 841-1XX32		1	1 unit	102	0.930	
	Magnetic field locks¹⁾										
	• Standard	1 NO + 1 NC 1 NO + 1 NC	24 DC	⊕ A	3SE2 830-1XX00		1	1 unit	102	0.870	
			110 AC	⊕ A	3SE2 832-1XX00		1	1 unit	102	0.855	
			230 AC	⊕ A	3SE2 831-1XX00		1	1 unit	102	0.875	
	• With optical signaling equipment ²⁾	1 NO + 1 NC 1 NO + 1 NC	24 DC	⊕ A	3SE2 830-1XX20		1	1 unit	102	0.880	
		110 AC	⊕ A	3SE2 832-1XX20		1	1 unit	102	0.865		
		230 AC	⊕ A	3SE2 831-1XX20		1	1 unit	102	0.875		
Actuators											
	• Standard actuator, length 79 mm			▶	3SX3 197		1	1 unit	102	0.035	
	- For approach from the left, length 132 mm			B	3SX3 207		1	1 unit	102	0.045	
	- With transverse fixing, length 50 mm			▶	3SX3 206		1	1 unit	102	0.025	
	- With vertical fixing, length 50 mm			A	3SX3 306		1	1 unit	102	0.025	
	• Universal radius actuator, length 80 mm			A	3SX3 203		1	1 unit	102	0.120	

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator.

²⁾ On the version with optical signaling equipment the contacts are not electrically separated.

3SE5, 3SE2, 3SE3 Position Switches

Hinge Switches

General data

Overview

3SE5 hinge switches have the same enclosures as the standard switches (modular system).



Hinge switches

Design

Enclosure sizes

The 3SE5 switches are available as complete units in two enclosure sizes:

- Plastic enclosures acc. to EN 50047, 31 mm wide, 1 cable entry
- Metal enclosures acc. to EN 50041, 40 mm wide, 1 cable entry

Enclosure versions

Various basic versions can be selected for the enclosures:

- Available with two or three-pole contact blocks designed as snap-action contacts
- Metal enclosures for explosion protection (ATEX) (see page 8/72)
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 8/85)

For a description of the basic switches see page 8/14.

Operating mechanisms

The hinge switches are provided for mounting on hinges. The actuator head is included in the scope of supply. There are two versions:

- Operating mechanism with hollow shaft, inner diameter 8 mm, outer 12 mm
- Operating mechanism with solid shaft, diameter 10 mm

Benefits

The 3SE5 hinge switches differ from the previous series through the following new characteristics:

- All actuators around the axis in increments of 22.5° (see picture on page 8/16).
- The new three-pole contact block 1 NO + 2 NC is available for all enclosure sizes (see picture on page 8/16).
- The plastic enclosure with a width of 31 mm has simple and fast wiring equipment which makes it possible to save from approx. 20 to 25 % of the time when connecting (see picture on page 8/16).
- The ASIsafe electric component is integrated for the versions with the AS-Interface connection (see page 8/73); an additional adapter is not required.

Application

The hinge switches are used in those areas where the position of swivelable protective devices such as doors or flaps must be monitored. The position of the doors and hinge switches is converted into electric signals with the switches. The switches allows shutdown and signaling without delay in the event of a small opening angle through the snap-action contacts with an operating angle of 10°.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. Dimensions and fixing points of the enclosures are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards


IEC 60947-5-1 or EN 60947-5-1.


The protective measure of "total insulation" by the molded-plastic enclosure is guaranteed by the use of molded-plastic screwglands.

Safety position switches

For controls acc. to IEC 60204-1 or EN 60204-1 the devices can be used as a safety position switch. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

IEC 60947-5-1 and EN 60947-5-1 require positive opening of the NC contacts, i. e. for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked acc. to IEC 60947-5-1 with the symbol .

Category 4 acc. to EN 954-1 can be attained with the 3SE5 hinge switches with  if the corresponding failsafe evaluation units are selected and correctly installed, e. g. the 3TK28 safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges.

3SE5, 3SE2, 3SE3 Position Switches



Hinge Switches

3SE5, plastic enclosures
Enclosure width 31 mm according to EN 50047

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5



Version	Snap-action contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.				
			Order No.	Price per PU							
Plastic enclosures • Enclosure width 31 mm acc. to EN 50047											
	With hollow shaft										
	Operating angle 10°	1 NO + 1 NC ↻ B						3SE5 232-0HU21	1	1 unit	102
Operating angle 10°	1 NO + 2 NC ↻ B	3SE5 232-0LU21						1	1 unit	102	0.080
With solid shaft											
Operating angle 10°	1 NO + 1 NC ↻ B		3SE5 232-0HU22	1	1 unit	102	0.110				
	Operating angle 10°	1 NO + 2 NC ↻ B	3SE5 232-0LU22	1	1 unit	102	0.120				

With hollow shaft

With solid shaft

↻ Positive opening acc. to IEC 60947-5-1, Appendix K.

Accessories/spare parts

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Actuator heads							
	With hollow shaft						
	Operating angle 10°	B					
	With solid shaft						
	Operating angle 10°	B					

Note:

The respective actuators are included in the scope of supply for the complete units.

3SE5, 3SE2, 3SE3 Position Switches

Hinge Switches

3SE5, metal enclosures
Enclosure width 40 mm

Selection and ordering data

Complete units

3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Snap-action contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg

Metal enclosures • Enclosure width 40 mm acc. to EN 50041



With hollow shaft

With hollow shaft Operating angle 10°	1 NO + 2 NC	⊙ B	3SE5 112-0LU21	1	1 unit	102	0.295
---	-------------	-----	-----------------------	---	--------	-----	-------



With solid shaft

With solid shaft Operating angle 10°	1 NO + 2 NC	⊙ B	3SE5 112-0LU22	1	1 unit	102	0.315
--	-------------	-----	-----------------------	---	--------	-----	-------

⊙ Positive opening acc. to IEC 60947-5-1, Appendix K.

Accessories/spare parts

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

Actuator heads



Twist actuators with hollow shaft

With hollow shaft Operating angle 10°		B	3SE5 000-0AU21	1	1 unit	102	0.030
---	--	---	-----------------------	---	--------	-----	-------



Twist actuators with solid shaft

With solid shaft Operating angle 10°		B	3SE5 000-0AU22	1	1 unit	102	0.052
--	--	---	-----------------------	---	--------	-----	-------

Note:

The respective actuators are included in the scope of supply for the complete units.

3SE5, 3SE2, 3SE3 Position Switches

Hinge Switches

3SE2, plastic enclosures With integrated hinge

Overview

The 3SE2 283 hinge switches are particularly suitable for use in doors and flaps of machines that must be closed to ensure the safety of operating personnel. Their thin profile and compact design allow them to be directly mounted on a hinged protective cover and the stable frame.

Benefits

- Easy mounting through use of versions with integrated hinge
- Versions with small operating angle of 4°
- Protection against personal injury provided by positively driven NC contacts acc. to IEC 60947-5-1
- Simultaneous shutdown and reporting by 1 NO + 2 NC contacts

Selection and ordering data

3 contacts · Degree of protection IP65 · Cable entry 2 × (M20 × 1.5)

Version	Slow-action contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			<input type="checkbox"/>				
			Order No.	Price per PU			kg

Plastic enclosures with integrated hinge



3SE2 283

With integrated hinge

(delivered with additional hinge and fixing accessories)

- Aluminum hinge

Operating angle	Slow-action contacts	DT	Order No.	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
- Operating angle 4°	1 NO + 2 NC	⊙ A	3SE2 283-0GA43	1	1 unit	102	0.425
- Operating angle 4°	3 NC	⊙ A	3SE2 283-6GA43	1	1 unit	102	0.425
- Operating angle 8°	1 NO + 2 NC	⊙ D	3SE2 283-0GA53	1	1 unit	102	0.420
- Operating angle 8°	3 NC	⊙ C	3SE2 283-6GA53	1	1 unit	102	0.420

- High-grade steel hinge

Operating angle	Slow-action contacts	DT	Order No.	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
- Operating angle 4°	1 NO + 2 NC	⊙ A	3SE2 283-0GA44	1	1 unit	102	0.800
- Operating angle 4°	3 NC	⊙ C	3SE2 283-6GA44	1	1 unit	102	0.800

⊙ Positive opening acc. to IEC 60947-5-1, Appendix K.

Accessories/spare parts

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

Accessories



3SX3 225

Additional hinges

(delivered with fixing accessories)

- Made of aluminum
- Made of high-grade steel

DT	Order No.	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
⊙ D	3SX3 225	1	1 unit	102	0.160
⊙ D	3SX3 231	1	1 unit	102	0.330

3SE5, 3SE2, 3SE3 Position Switches For Explosion Protection (ATEX)

3SE5, metal enclosures
Enclosure width 40 mm acc. to EN 50041 / 56 mm

Overview



The position switch in the metal enclosure including the hinge switch and the switch with a separate actuator is also available in versions for operation in areas with combustible dust. They are not approved for areas with a gas explosion hazard.

To achieve the maximum possible safety in these areas, the legislators of most countries have drawn up requirements in the form of laws, regulations and standards which these switches comply with to the letter.

These switches comply with Directive 94/9/EC II2D (ATEX 95) of the European Union and are approved for Zone 21/22.

The switches have a grounding screw on the outside of the enclosure. The connection openings are closed with protective caps upon delivery.

See Chapter 20 "Appendix" --> "Standards and approvals" --> "Type overview of approved devices for potentially explosive areas (ATEX explosion protection)".



Selection and ordering data

Complete units


2 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Snap-action contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Order No.			Price per PU				kg

Enclosure width 40 mm acc. to EN 50041

With M20 × 1.5 connecting thread		Snap-action contacts		DT		Complete units		PU (UNIT, SET, M)		PS*		PG		Weight per PU approx.	
 Rounded plunger  Roller lever		1 NO + 1 NC													
	• Rounded plungers, high-grade steel, with 3 mm overtravel		⊕ B	3SE5 112-0CC02-1DA0	1	1 unit	102	0.290							
	• Roller plungers, high-grade steel roller, with 3 mm overtravel		⊕ B	3SE5 112-0CD02-1DA0	1	1 unit	102	0.310							
	• Roller lever, high-grade steel lever, plastic roller		⊕ B	3SE5 112-0CE03-1DA0	1	1 unit	102	0.300							
	• Angular roller lever, high-grade steel lever, plastic roller		⊕ B	3SE5 112-0CF03-1DA0	1	1 unit	102	0.320							
	• Spring rod, length 142.5 mm Plastic plunger		B	3SE5 112-0CR01-1DA0	1	1 unit	102	0.315							
	• Twist lever, high-grade steel lever, plastic roller		⊕ B	3SE5 112-0CH11-1DA0	1	1 unit	102	0.360							
	• Twist lever, adjustable length High-grade steel lever, plastic roller		B	3SE5 112-0CH52-1DA0	1	1 unit	102	0.360							
	• Fork lever, high-grade steel lever, plastic roller		⊕ B	3SE5 112-0CT13-1DA0	1	1 unit	102	0.360							
	• Rod actuators, aluminum rod, length 200 mm		B	3SE5 112-0CH80-1DA0	1	1 unit	102	0.300							
• Rod actuators, plastic rod, length 200 mm		B	3SE5 112-0CH82-1DA0	1	1 unit	102	0.300								

Enclosure width 56 mm

With 3 x M20 x 1.5 connecting thread		Snap-action contacts		DT		Complete units		PU (UNIT, SET, M)		PS*		PG		Weight per PU approx.	
 Twist lever		1 NO + 1 NC													
	• Rounded plunger, high-grade steel, with overtravel		⊕ B	3SE5 122-0CC02-1DA0	1	1 unit	102	0.355							
	• Roller plunger, high-grade steel roller		⊕ B	3SE5 122-0CD02-1DA0	1	1 unit	102	0.380							
	• Roller lever, high-grade steel lever, plastic roller		⊕ B	3SE5 122-0CE03-1DA0	1	1 unit	102	0.375							
	• Angular roller lever, high-grade steel lever, plastic roller		⊕ B	3SE5 122-0CF03-1DA0	1	1 unit	102	0.390							
	• Spring rod, length 142.5 mm Plastic plunger		B	3SE5 122-0CR01-1DA0	1	1 unit	102	0.390							
• Twist lever, high-grade steel lever, plastic roller		⊕ B	3SE5 122-0CH11-1DA0	1	1 unit	102	0.410								

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

Note: If the device you require is not available as a complete unit, see "Modular system" on the next page.



3SE5, 3SE2, 3SE3 Position Switches

For Explosion Protection (ATEX)

3SE5, metal enclosures
Enclosure width 40 mm acc. to EN 50041 / 56 mm






Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			
Basic switches • Enclosure width 40 mm acc. to EN 50041							
With M20 × 1.5 connecting thread							
 Basic switch	Slow-action contacts	1 NO + 1 NC	⊕ B	3SE5 112-0BA00-1DA0	1	1 unit	102 0.260
	Snap-action contacts	1 NO + 1 NC	⊕ B	3SE5 112-0CA00-1DA0	1	1 unit	102 0.260
	Slow-action contacts	1 NO + 2 NC	⊕ B	3SE5 112-0KA00-1DA0	1	1 unit	102 0.270
	Snap-action contacts	1 NO + 2 NC	⊕ B	3SE5 112-0LA00-1DA0	1	1 unit	102 0.270
	Slow-action contacts with make-before-break	1 NO + 2 NC	⊕ B	3SE5 112-0MA00-1DA0	1	1 unit	102 0.270
	Slow-action contacts	2 NO + 1 NC	B	3SE5 112-0PA00-1DA0	1	1 unit	102 0.270
Basic switches • Enclosure width 56 mm							
With 3 x M20 × 1.5 connecting thread							
 Basic switch	Slow-action contacts	1 NO + 1 NC	⊕ B	3SE5 122-0BA00-1DA0	1	1 unit	102 0.325
	Snap-action contacts	1 NO + 1 NC	⊕ B	3SE5 122-0CA00-1DA0	1	1 unit	102 0.325
	Slow-action contacts	1 NO + 2 NC	⊕ B	3SE5 122-0KA00-1DA0	1	1 unit	102 0.335
	Snap-action contacts	1 NO + 2 NC	⊕ B	3SE5 122-0LA00-1DA0	1	1 unit	102 0.335
	Slow-action contacts with make-before-break	1 NO + 2 NC	⊕ B	3SE5 122-0MA00-1DA0	1	1 unit	102 0.335
	Slow-action contacts	2 NO + 1 NC	B	3SE5 122-0PA00-1DA0	1	1 unit	102 0.335

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.






Note: For selection aid, see page 8/19.

Version	Diameter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			
Operating mechanisms							
Rounded plungers, type B, acc. to EN 50041							
 Rounded plunger			⊕ B	3SE5 000-0AC02	1	1 unit	102 0.030
Roller plungers, type C acc. to EN 50041							
 Roller plunger	13		⊕ B	3SE5 000-0AD02	1	1 unit	102 0.050
Roller levers							
 Roller lever		22	⊕ A	3SE5 000-0AE01	1	1 unit	102 0.045
		22	⊕ B	3SE5 000-0AE02	1	1 unit	102 0.065
		22	⊕ B	3SE5 000-0AE03	1	1 unit	102 0.040
		22	⊕ B	3SE5 000-0AE04	1	1 unit	102 0.065
Angular roller levers							
 Angular roller lever		22	⊕ A	3SE5 000-0AF01	1	1 unit	102 0.050
		22	⊕ B	3SE5 000-0AF02	1	1 unit	102 0.075
		22	⊕ B	3SE5 000-0AF03	1	1 unit	102 0.050
		22	⊕ B	3SE5 000-0AF04	1	1 unit	102 0.075
Spring rod (for switches with snap-action contacts only)							
 Spring rod	Plastic plunger:						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR01	1	1 unit	102 0.060
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		B	3SE5 000-0AR03	1	1 unit	102 0.020
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		B	3SE5 000-0AR04	1	1 unit	102 0.040
	High-grade steel plunger:						
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		B	3SE5 000-0AR02	1	1 unit	102 0.040	

⊕ Positively driven actuator, necessary in safety circuits.

3SE5, 3SE2, 3SE3 Position Switches For Explosion Protection (ATEX)

3SE5, metal enclosures
Enclosure width 40 mm acc. to EN 50041 / 56 mm

Version	Diame- ter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Twist actuators							
	Twist actuators, metal (without lever)						
Twist actuator	<ul style="list-style-type: none"> For twist levers and rod actuators, switching right and/or left, adjustable - For enclosure width 40 and 56 mm For fork levers, latching 		⊕ A	3SE5 000-0AH00	1	1 unit	102 0.070
			⊕ B	3SE5 000-0AT10	1	1 unit	102 0.070
Levers for twist actuators							
	Twist levers 27 mm, offset, type A, acc. to EN 50041						
Twist lever	Metal lever, plastic roller	19	⊕ A	3SE5 000-0AA01	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	19	⊕ A	3SE5 000-0AA02	1	1 unit	102 0.035
	Metal lever, roller with ball bearing	19	⊕ B	3SE5 000-0AA03	1	1 unit	102 0.020
	Metal lever, 2 plastic rollers	19	⊕ B	3SE5 000-0AA04	1	1 unit	102 0.015
	Metal lever, plastic roller	30	⊕ B	3SE5 000-0AA05	1	1 unit	102 0.015
	Metal lever, rubber roller	50	⊕ B	3SE5 000-0AA08	1	1 unit	102 0.030
	High-grade steel lever, plastic roller	19	⊕ B	3SE5 000-0AA11	1	1 unit	102 0.015
	High-grade steel lever, high-grade steel roller	19	⊕ B	3SE5 000-0AA12	1	1 unit	102 0.025
Twist levers 35 mm, offset							
	Metal lever, plastic roller	19	⊕ B	3SE5 000-0AA15	1	1 unit	102 0.050
Twist levers 30 mm, straight¹⁾							
	Metal lever, plastic roller	19	⊕ B	3SE5 000-0AA24	1	1 unit	102 0.020
Twist levers, adjustable length, with grid holes							
	Metal lever, plastic roller	19	⊕ B	3SE5 000-0AA60	1	1 unit	102 0.025
Twist levers, adjustable length	Metal lever, high-grade steel roller	19	⊕ B	3SE5 000-0AA61	1	1 unit	102 0.040
	Metal lever, rubber roller	50	⊕ B	3SE5 000-0AA68	1	1 unit	102 0.045
	High-grade steel lever, plastic roller	19	⊕ B	3SE5 000-0AA62	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	⊕ B	3SE5 000-0AA63	1	1 unit	102 0.040
Twist levers, adjustable length							
	Metal lever, plastic roller	19	A	3SE5 000-0AA50	1	1 unit	102 0.025
Fork lever	Metal lever, high-grade steel roller	19	B	3SE5 000-0AA51	1	1 unit	102 0.035
	Metal lever, plastic roller	30	B	3SE5 000-0AA55	1	1 unit	102 0.025
	Metal lever, rubber roller	50	B	3SE5 000-0AA58	1	1 unit	102 0.040
	High-grade steel lever, plastic roller	19	B	3SE5 000-0AA52	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	B	3SE5 000-0AA53	1	1 unit	102 0.035
Fork lever (for switches with snap-action contacts only)							
	2 metal levers, 2 plastic rollers	19	⊕ B	3SE5 000-0AT01	1	1 unit	102 0.050
Rod actuator	2 metal levers, 2 high-grade steel rollers	19	⊕ B	3SE5 000-0AT02	1	1 unit	102 0.050
	2 high-grade steel levers, 2 plastic rollers	19	⊕ B	3SE5 000-0AT03	1	1 unit	102 0.050
	2 high-grade steel levers, 2 high-grade steel rollers	19	⊕ B	3SE5 000-0AT04	1	1 unit	102 0.050
Rod actuators, type D, acc. to EN 50041							
	Aluminum rod, length 200 mm	6	B	3SE5 000-0AA80	1	1 unit	102 0.070
	Spring rod, length 200 mm	6	B	3SE5 000-0AA81	1	1 unit	102 0.030
	Plastic rod, length 200 mm	6	B	3SE5 000-0AA82	1	1 unit	102 0.020

⊕ Positively driven actuator, necessary in safety circuits.

¹⁾ Can be mounted on bead (180°).



3SE5, 3SE2, 3SE3 Position Switches

For Explosion Protection (ATEX)

3SE5, metal enclosures
Enclosure width 40 mm acc. to EN 50041 / 56 mm

Position switches with separate actuator · Complete units

5 directions of approach · 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU		kg	
Enclosure width 40 mm acc. to EN 50041							
	With M20 × 1.5 connecting thread Slow-action contacts	1 NO + 2 NC ↻ B	3SE5 112-0QV10-1DA0	1	1 unit	102	0.315
Enclosure width 56 mm							
	With 3 x M20 x 1.5 connecting thread Slow-action contacts	1 NO + 2 NC ↻ B	3SE5 122-0QV10-1DA0	1	1 unit	102	0.250

With separate
actuator



With separate
actuator

↻ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 8/56).

Hinge switches · Complete units

3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Snap-action contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU		kg	
Enclosure width 40 mm acc. to EN 50041							
	With hollow shaft, Ø 8/12 mm Operating angle 10°	1 NO + 2 NC ↻ B	3SE5 112-0LU21-1DA0	1	1 unit	102	0.295
	With solid shaft, Ø = 10 mm Operating angle 10°	1 NO + 2 NC ↻ B	3SE5 112-0LU22-1DA0	1	1 unit	102	0.315

With hollow shaft

With solid shaft

↻ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, can be used in safety circuits.

Overview

The 3SF1 position switches with safety-oriented communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be conventionally wired up.

With the 3SF1 position switches the ASIsafe electronics are integrated in the switch enclosure.



Examples of selection options in the modular system

Modular system

The position switches of the 3SF1 1.4 and 3SF1 2.4 series are constructed from a modular system comprising different versions of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the end user can select the right solution for his application from numerous versions and install it himself in a very short time.

Design

The 3SF1 switches are available in four different enclosure sizes:

- Plastic enclosures acc. to EN 50047, 31 mm wide, with M12 plug
- Plastic enclosures, 50 mm wide, with M12 plug and M12 socket
- Metal enclosures acc. to EN 50041, 40 mm wide, with M12 plug
- Metal enclosures, 56 mm wide, with M12 plug and M12 socket

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-i/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 connector socket (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second position switch. Category 4 acc. to EN 954-1 is thus achieved.

Benefits

The new generation of 3SF1 position switches offers:

- ASIsafe Electronics integrated in the enclosure, with low power consumption < 60 mA
- An extensive range of actuators
- Status display with three LEDs

Application

With the standard position switches, mechanical positions of moved machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can meet practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moved machined parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switch corresponds to the requirements of the failsafe principle acc. to EN 1088.

Approvals

AS-Interface acc. to EN 50295 and IEC 62026-2.

With a 3SF1 position switch it is possible to achieve category 2 acc. to ISO 13849-1 (EN 954-1) or SIL 1 acc. to IEC 61508.

Categories 3 or 4 acc. to ISO 13849-1 (EN 954-1) or SIL 2 or 3 acc. to IEC 61508 can be achieved by using a second 3SE5 position switch.

The 3SF1 position switches are approved acc. to UL 508, UL 50 and UL 746-C.

3SF1 AS-Interface Position Switches


Plastic enclosures
Enclosure width 31 mm acc. to EN 50047 / 50 mm

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 connector socket



Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
								
				Order No.	Price per PU			
						kg		

Basic switches (with rounded plunger¹⁾) · Enclosure width 31 mm acc. to EN 50047



With teflon plunger

With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on NC contact

Slow-action contacts	2 NC	24 V DC		C	3SF1 234-1KC05-1BA1	1	1 unit	121	0.170
Snap-action contacts	2 NC	24 V DC		B	3SF1 234-1LC05-1BA1	1	1 unit	121	0.170



ASIsafe basic switch

Basic switches (with rounded plunger¹⁾) · Enclosure width 50 mm




With teflon plunger

With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right

Slow-action contacts	1 NC	24 V DC		C	3SF1 244-1KC05-1BA2	1	1 unit	121	0.180
Snap-action contacts	1 NC	24 V DC		C	3SF1 244-1LC05-1BA2	1	1 unit	121	0.180

ASIsafe basic switch








 Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, can be used in safety circuits.

¹⁾ On the plastic version the basic switch is a complete unit with rounded plunger.

Note: For selection aid, see page 8/19.

For 4-pole cable boxes see page 8/49.

Plastic enclosures
Enclosure width 31 mm acc. to EN 50047 / 50 mm

Version	Roller diameter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Operating mechanisms							
 Roller plunger	Roller plunger, type C acc. to EN 50047						
	Plastic rollers	10	⊕ A	3SE5 000-0AD03	1	1 unit	102 0.010
	High-grade steel rollers	10	⊕ B	3SE5 000-0AD04	1	1 unit	102 0.010
 With central fixing	Roller plungers with central fixing						
	Plastic rollers	10	⊕ B	3SE5 000-0AD10	1	1 unit	102 0.035
	High-grade steel rollers	10	⊕ B	3SE5 000-0AD11	1	1 unit	102 0.030
 Roller lever	Roller lever, type E acc. to EN 50047						
	Metal lever, plastic roller	13	⊕ A	3SE5 000-0AE10	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	13	⊕ B	3SE5 000-0AE11	1	1 unit	102 0.020
	High-grade steel lever, plastic roller	13	⊕ B	3SE5 000-0AE12	1	1 unit	102 0.010
	High-grade steel lever, high-grade steel roller	13	⊕ B	3SE5 000-0AE13	1	1 unit	102 0.055
 Angular roller lever	Angular roller levers						
	Metal lever, plastic roller	13	⊕ A	3SE5 000-0AF10	1	1 unit	102 0.015
	Metal lever, high-grade steel roller	13	⊕ B	3SE5 000-0AF11	1	1 unit	102 0.013
	High-grade steel lever, plastic roller	13	⊕ A	3SE5 000-0AF12	1	1 unit	102 0.015
	High-grade steel lever, high-grade steel roller	13	⊕ B	3SE5 000-0AF13	1	1 unit	102 0.020
Twist actuators with lever							
 Twist actuator	Twist actuators, plastic (without lever)						
	Switching right or left, adjustable		⊕ A	3SE5 000-0AK00	1	1 unit	102 0.025
Levers for twist actuators							
 Twist lever	Twist levers, type A acc. to EN 50047						
	Metal lever, plastic roller	19	⊕ A	3SE5 000-0AA21	1	1 unit	102 0.010
	Metal lever, high-grade steel roller	19	⊕ B	3SE5 000-0AA22	1	1 unit	102 0.025
	Metal lever, roller with ball bearing	19	⊕ B	3SE5 000-0AA23	1	1 unit	102 0.020
	Metal lever, plastic roller	30	⊕ B	3SE5 000-0AA25	1	1 unit	102 0.010
	High-grade steel lever, plastic roller	19	⊕ B	3SE5 000-0AA31	1	1 unit	102 0.015
	High-grade steel lever, high-grade steel roller	19	⊕ B	3SE5 000-0AA32	1	1 unit	102 0.022
 Twist lever, adjustable length	Twist lever, adjustable length, with grid holes						
	Metal lever, plastic roller	19	⊕ B	3SE5 000-0AA60	1	1 unit	102 0.025
	Metal lever, high-grade steel roller	19	⊕ B	3SE5 000-0AA61	1	1 unit	102 0.040
	Metal lever, plastic roller	50	⊕ B	3SE5 000-0AA67	1	1 unit	102 0.025
	Metal lever, rubber roller	50	⊕ B	3SE5 000-0AA68	1	1 unit	102 0.045
	High-grade steel lever, plastic roller	19	⊕ B	3SE5 000-0AA62	1	1 unit	102 0.025
	High-grade steel lever, high-grade steel roller	19	⊕ B	3SE5 000-0AA63	1	1 unit	102 0.040

⊕ Positively driven actuator, usable in safety circuits.

3SF1 AS-Interface Position Switches

Metal enclosures
Enclosure width 40 mm acc. to EN 50041 / 56 mm

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 connector socket

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				☒				
				Order No.	Price per PU		kg	

Basic switches · Enclosure width 40 mm acc. to EN 50041



With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on NC contact

Slow-action contacts	2 NC	24 V DC	↻	C
Snap-action contacts	2 NC	24 V DC	↻	B

3SF1 114-1KA00-1BA1

1 1 unit 121 0.400

3SF1 114-1LA00-1BA1

1 1 unit 121 0.400

ASIsafe basic switch

Basic switches · Enclosure width 56 mm



With M12 connector socket, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right

Slow-action contacts	1 NC	24 V DC	↻	C
Snap-action contacts	1 NC	24 V DC	↻	C

3SF1 124-1KA00-1BA2

1 1 unit 121 0.470

3SF1 124-1LA00-1BA2

1 1 unit 121 0.470

ASIsafe basic switch









↻ Positive opening acc. to IEC 60947-5-1, Appendix K, or positively driven actuator, can be used in safety circuits.

¹⁾ On the version with a width of 31 mm the basic switch is a complete unit with rounded plunger.

Note: For selection aid, see page 8/19.

For 4-pole cable boxes see page 8/49.

Metal enclosures
 Enclosure width 40 mm acc. to EN 50041 / 56 mm

Version	Roller diameter	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm		Order No.	Price per PU			kg
Operating mechanisms							
	Rounded plungers, type B, acc. to EN 50041						
Rounded plunger	High-grade steel plungers, with 3 mm overtravel		⊕ B	3SE5 000-0AC02	1	1 unit	102 0.030
	Roller plungers, type C acc. to EN 50041						
Roller plunger	13	High-grade steel roller, with 3 mm overtravel	⊕ B	3SE5 000-0AD02	1	1 unit	102 0.050
	Roller levers						
Roller lever	22	Metal lever, plastic roller	⊕ A	3SE5 000-0AE01	1	1 unit	102 0.045
	22	Metal lever, high-grade steel roller	⊕ B	3SE5 000-0AE02	1	1 unit	102 0.065
	22	High-grade steel lever, plastic roller	⊕ B	3SE5 000-0AE03	1	1 unit	102 0.040
	22	High-grade steel lever, high-grade steel roller	⊕ B	3SE5 000-0AE04	1	1 unit	102 0.065
	Angular roller levers						
Angular roller lever	22	Metal lever, plastic roller	⊕ A	3SE5 000-0AF01	1	1 unit	102 0.050
	22	Metal lever, high-grade steel roller	⊕ B	3SE5 000-0AF02	1	1 unit	102 0.075
	22	High-grade steel lever, plastic roller	⊕ B	3SE5 000-0AF03	1	1 unit	102 0.050
	22	High-grade steel lever, high-grade steel roller	⊕ B	3SE5 000-0AF04	1	1 unit	102 0.075
Twist actuators with lever							
	Twist actuators, metal (without lever)						
Twist actuator	• For twist levers, switching right or left, adjustable - For enclosure width 40 and 56 mm		⊕ A	3SE5 000-0AH00	1	1 unit	102 0.070
	• For fork levers, latching		⊕ B	3SE5 000-0AT10	1	1 unit	102 0.070
Levers for twist actuators							
	Twist levers 27 mm, offset, type A, acc. to EN 50041						
Twist lever	19	Metal lever, plastic roller	⊕ A	3SE5 000-0AA01	1	1 unit	102 0.015
	19	Metal lever, high-grade steel roller	⊕ A	3SE5 000-0AA02	1	1 unit	102 0.035
	19	Metal lever, roller with ball bearing	⊕ B	3SE5 000-0AA03	1	1 unit	102 0.020
	19	Metal lever, 2 plastic rollers	⊕ B	3SE5 000-0AA04	1	1 unit	102 0.015
	30	Metal lever, plastic roller	⊕ B	3SE5 000-0AA05	1	1 unit	102 0.015
	50	Metal lever, plastic roller	⊕ B	3SE5 000-0AA07	1	1 unit	102 0.020
	50	Metal levers, rubber roller	⊕ B	3SE5 000-0AA08	1	1 unit	102 0.030
	19	High-grade steel lever, plastic roller	⊕ B	3SE5 000-0AA11	1	1 unit	102 0.015
	19	High-grade steel lever, high-grade steel roller	⊕ B	3SE5 000-0AA12	1	1 unit	102 0.025
	Twist levers 35 mm, offset						
Twist lever, adjustable length	19	Metal lever, plastic roller	⊕ B	3SE5 000-0AA15	1	1 unit	102 0.050
	Twist levers 30 mm, straight¹⁾						
Fork lever	19	Metal lever, plastic roller	⊕ B	3SE5 000-0AA24	1	1 unit	102 0.020
	Twist lever, adjustable length, with grid holes						
	19	Metal lever, plastic roller	⊕ B	3SE5 000-0AA60	1	1 unit	102 0.025
	19	Metal lever, high-grade steel roller	⊕ B	3SE5 000-0AA61	1	1 unit	102 0.040
	50	Metal lever, plastic roller	⊕ B	3SE5 000-0AA67	1	1 unit	102 0.025
	50	Metal lever, rubber roller	⊕ B	3SE5 000-0AA68	1	1 unit	102 0.045
	19	High-grade steel lever, plastic roller	⊕ B	3SE5 000-0AA62	1	1 unit	102 0.025
	19	High-grade steel lever, high-grade steel roller	⊕ B	3SE5 000-0AA63	1	1 unit	102 0.040
Fork lever (for switches with snap-action contacts only)							
	19	Metal lever, 2 plastic rollers	⊕ B	3SE5 000-0AT01	1	1 unit	102 0.050
	19	Metal lever, 2 high-grade steel rollers	⊕ B	3SE5 000-0AT02	1	1 unit	102 0.050
	19	High-grade steel lever, 2 plastic rollers	⊕ B	3SE5 000-0AT03	1	1 unit	102 0.050
	19	High-grade steel lever, 2 high-grade steel rollers	⊕ B	3SE5 000-0AT04	1	1 unit	102 0.050

⊕ Positively driven actuator, usable in safety circuits.

¹⁾ Can be mounted on bead (180°).

3SF1 AS-Interface Position Switches

With Separate Actuator

General data

Overview

The 3SF1 position switches with safety-oriented communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be conventionally wired up.

With the 3SF1 position switches the ASIsafe electronics are integrated in the switch enclosure.



3SF1 position switches with separate actuator and with integrated ASIsafe electronics

3SF1 position switches with separate actuator have the same enclosures as the standard switches.

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The switches can also be approached from above.

The actuators are not included in the scope of supply of the position switch and must be ordered separately from a choice of six versions to suit the application.

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more safety.

A rubber cap to protect the metal enclosure from contamination is available for operation in dusty environments.

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-i/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 connector socket (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second position switch. Category 4 acc. to EN 954-1 is thus achieved.

Benefits

The new generation of 3SF1 position switches with separate actuator offers:

- ASIsafe Electronics integrated in the enclosure, with low power consumption $< 60 \text{ mA}$
- An extensive range of actuators
- Status display with three LEDs

Application

Position switches with separate actuator are used where the position of doors, covers or protective grills must be monitored for safety reasons.

The position switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the best contact blocks suited for the particular purpose. Dimensions, fixing points of the enclosure are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switch corresponds to the requirements of the failsafe principle acc. to EN 1088.

Approvals

AS-Interface acc. to EN 50295 and IEC 62026-2.

With a 3SF1 position switch it is possible to achieve category 3 acc. to ISO 13849-1 (EN 954-1) or SIL 2 acc. to IEC 61508.

Category 4 acc. to ISO 13849-1 (EN 954-1) or SIL 3 acc. to IEC 61508 can be achieved by using a second 3SE5 position switch.

The 3SF1 position switches are approved acc. to UL 508, UL 50 and UL 746-C.

3SF1 AS-Interface Position Switches



With Separate Actuator

Plastic enclosures
Enclosure width 31 mm acc. to EN 50047 / 50 mm

Overview

- Contacts: 1 or 2 slow-action contacts
- Status display with 3 LEDs 24 V DC;
1: F-IN1, 2: F-IN2, 3: AS-i/FAULT
- Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm)

Selection and ordering data

Version ¹⁾	Contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU		kg	
Enclosure width 31 mm acc. to EN 50047							
	5 directions of approach With M12 connector socket, 4-pole; channel 1 on NC contact, channel 2 on NC contact Slow-action contacts	2 NC	⊕ B	3SF1 234-1QV40-1BA1	1	1 unit	121 0.210
Enclosure width 50 mm							
	5 directions of approach With M12 connector socket, 4-pole; channel 1 on NC, channel 2 on M12 socket, right Slow-action contacts	1 NC	⊕ C	3SF1 244-1QV40-1BA2	1	1 unit	121 0.220

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately.

3SF1 AS-Interface Position Switches

With Separate Actuator

Metal enclosures
Enclosure width 40 mm acc. to EN 50041 / 56 mm

Overview

- Contacts: 1 or 2 slow-action contacts
- Status display with 3 LEDs 24 V DC;
1: F-IN1, 2: F-IN2, 3: AS-i/FAULT
- Degree of protection IP66/IP67

Selection and ordering data

Version ¹⁾	Contacts	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU	kg		

Enclosure width 40 mm acc. to EN 50041



5 directions of approach

With M12 connector socket,
4-pole;
channel 1 on NC contact,
channel 2 on NC contact

Slow-action contacts

2 NC



B

3SF1 114-1QV10-1BA1

1

1 unit

121

0.550

Enclosure width 56 mm



5 directions of approach

With M12 connector socket,
4-pole;
channel 1 on NC,
channel 2 on M12 socket, right

Slow-action contacts

1 NC



C

3SF1 124-1QV10-1BA2

1

1 unit

121

0.600

↻ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately.

3SF1 AS-Interface Position Switches

With Separate Actuator

Accessories

Overview

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Actuators							
		▶ 3SE5 000-0AV01		1	1 unit	102	0.040
<ul style="list-style-type: none">• Standard actuators, length 75.6 mm							
	A	3SE5 000-0AV02		1	1 unit	102	0.070
<ul style="list-style-type: none">• With vertical fixing, length 53 mm							
	A	3SE5 000-0AV03		1	1 unit	102	0.070
<ul style="list-style-type: none">• With transverse fixing, length 47 mm							
	A	3SE5 000-0AV04		1	1 unit	102	0.070
<ul style="list-style-type: none">• Radius actuator, left, length 51 mm, direction of approach from the left							
	A	3SE5 000-0AV06		1	1 unit	102	0.070
<ul style="list-style-type: none">• Radius actuator, length 51 mm, direction of approach from the right							
	A	3SE5 000-0AV05		1	1 unit	102	0.090
<ul style="list-style-type: none">• Universal radius actuator, length 77 mm							
	A	3SE5 000-0AV07-1AK2		1	1 unit	102	0.120
<ul style="list-style-type: none">• Universal radius actuators, heavy-duty							
<ul style="list-style-type: none">- Length 67 mm	A	3SE5 000-0AV07		1	1 unit	102	0.090
<ul style="list-style-type: none">- Length 77 mm	A						
Optional accessories							
	B	3SE5 000-0AV08-1AA2		1	1 unit	102	0.010
<ul style="list-style-type: none">• Protective caps made of black rubber for the actuator head, to protect the actuator openings from contamination							
<ul style="list-style-type: none">(Only for enclosure width 40 or 56 mm)							
	B	3SE5 000-0AV08-1AA3		1	1 unit	102	0.065
<ul style="list-style-type: none">• Blocking inserts, high-grade steel, for actuator head, for up to 8 padlocks							
Connections for 3SF1							
	A	3RX8 000-0CB45		1	1 unit	574	0.015
<ul style="list-style-type: none">• Cable boxes (4-pole), M12							
<ul style="list-style-type: none">With terminal compartment, can be pre-assembled¹⁾							
	A	3RX8 000-0CC45		1	1 unit	574	0.015
<ul style="list-style-type: none">• Angular cable boxes (4-pole), M12							
<ul style="list-style-type: none">With terminal compartment, can be pre-assembled¹⁾							
	A	3RX8 000-0CD45		1	1 unit	574	0.022
<ul style="list-style-type: none">• Coupling plugs (4-pole), M12							
<ul style="list-style-type: none">With terminal compartment, can be pre-assembled							
	A	3RX8 000-0CE45		1	1 unit	574	0.022
<ul style="list-style-type: none">• Angular coupling plugs (4-pole), M12							
<ul style="list-style-type: none">With terminal compartment, can be pre-assembled							

¹⁾ For cable boxes with molded cable see Industry Mall or Catalog FS 10.

3SF1 AS-Interface Position Switches

With Solenoid Interlocking

General data

Overview

The 3SF1 position switches with safety-oriented communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be conventionally wired up.

With the 3SF1 position switches the ASIsafe electronics are integrated in the switch enclosure.



3SF1 position switches with solenoid interlocking and integrated ASIsafe electronics

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The switches can also be approached from above.

The actuators are not included in the scope of supply of the position switch and must be ordered separately from a choice of six versions to suit the application.

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more safety.

A rubber cap to protect the enclosure from contamination is available for operation in dusty environments.

Solenoid interlocking

There are two versions for locking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Magnetic field lock (open-circuit principle)

For more explanations see page 8/59.

Display

The switches have a status display with four LEDs:

- LED 1 (green): AS-i
- LED 2 (red): FAULT
- LED 3 (yellow): F-IN1
- LED 4 (yellow): F-IN2

Connection

Connection to the AS-Interface is by means of a 4-pole M12 connector socket (plastic version) connected to the yellow AS-Interface bus cable (no additional supply of auxiliary power is required thanks to the low current consumption of the solenoid of max. 170 mA).

Benefits

The new generation of 3SF1 3 position switches with solenoid interlocking offers:

- More safety through higher locking forces:
 - 1300 N for the plastic version
 - 2600 N for the metal version
- Various release mechanisms: lock release, escape release and emergency release
- ASIsafe Electronics integrated in the enclosure; connected through 4-pole M12 connector socket
- Current consumption of the solenoid max. 170 mA
- Two contact blocks as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure variants: Plastic, metal
- An extensive range of actuators
- Status display with four LEDs

Application

The position switches with solenoid interlocking are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grills or other covers as long as a dangerous situation is present (i. e. follow-on motion of the switched off machine).

The safety position switches with solenoid interlocking have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and solenoid interlocking

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Switchgear and Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Circuit Devices).

The mechanical design of the switch corresponds to the requirements of the failsafe principle acc. to EN 1088.

Approvals

AS-Interface acc. to EN 50295 and IEC 62026-2.

The switches are approved for use with locking devices acc. to EN 1088 and EN 292, Parts 1 and 2.

3SE5 3 position switches with solenoid interlocking bear the VDE test mark for tested acc. to GS-ET19 (Test Principles of the German Trade Association for Locking Devices with Electromagnetic Interlocks).

With a 3SF1 3 position switch it is possible to achieve category 3 acc. to ISO 13849-1 (EN 954-1) or SIL 2 acc. to IEC 61508.

Category 4 acc. to ISO 13849-1 (EN 954-1) or SIL 3 acc. to IEC 61508 can be achieved by using a second 3SE5 position switch.

The 3SF1 position switches are approved acc. to UL 508, UL 50 and UL 746-C.

3SF1 AS-Interface Position Switches

With Solenoid Interlocking

Plastic enclosures
With locking force greater than 1200 N

Overview

5 directions of approach · Degree of protection IP66/IP67

- Slow-action contacts:
 - Version -1BA1: ASIsafe channel 1 on 1 NC contact from the actuator and channel 2 on 1 NC contact from the solenoid
 - Version -1BA3: ASIsafe channel 1 on 1 NC contact from the actuator and channel 2 on 1 NC contact from the actuator
- Solenoid: Rated operational voltage 24 V DC
- Locking force 1300 N (1000 N acc. to GS-ET 19)
- Status display with 4 LEDs 24 V DC;
 - 1: AS-i, 2: FAULT, 3: F-IN1, 4: F-IN2

Selection and ordering data

Interlock ¹⁾	Contacts Actua-tors/Sole-noids	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU	kg		
1300 N locking force · Enclosure width 54 mm							
Spring-actuated locks							
	• With auxiliary release	1 NC/1 NC	⊕ B	3SF1 324-1SD21-1BA1	1	1 unit	121 0.600
	• With auxiliary release	2 NC/--	⊕ C	3SF1 324-1SD21-1BA3	1	1 unit	121 0.600
	• With auxiliary release with lock	1 NC/1 NC	⊕ C	3SF1 324-1SE21-1BA1	1	1 unit	121 0.760
3SF1 324-1SD21-...							
	• With escape release from the front	1 NC/1 NC	⊕ C	3SF1 324-1SF21-1BA1	1	1 unit	121 0.620
	• With escape release from the back and auxiliary release from the front	1 NC/1 NC	⊕ C	3SF1 324-1SG21-1BA1	1	1 unit	121 0.640
	• With emergency release from the back and auxiliary release from the front	1 NC/1 NC	⊕ C	3SF1 324-1SJ21-1BA1	1	1 unit	121 0.650
3SF1 324-1SF21-...							
	Magnetic field lock		⊕ C	3SF1 324-1SB21-1BA1	1	1 unit	121 0.600
		2 NC/--	⊕ C	3SF1 324-1SB21-1BA3	1	1 unit	121 0.600
3SF1 324-1SB21-...							
Actuators							
Actuators							
	• Standard actuators, length 75.6 mm		▶	3SE5 000-0AV01	1	1 unit	102 0.040
	• With vertical fixing, length 53 mm		A	3SE5 000-0AV02	1	1 unit	102 0.070
	• With transverse fixing, length 47 mm		A	3SE5 000-0AV03	1	1 unit	102 0.070
	• Radius actuators, length 51 mm						
	- Direction of approach from the left		A	3SE5 000-0AV04	1	1 unit	102 0.070
	- Direction of approach from the right		A	3SE5 000-0AV06	1	1 unit	102 0.070
	• Universal radius actuator, length 77 mm		A	3SE5 000-0AV05	1	1 unit	102 0.090
	• Universal radius actuators, heavy-duty						
	- Length 67 mm		A	3SE5 000-0AV07-1AK2	1	1 unit	102 0.120
	- Length 77 mm		A	3SE5 000-0AV07	1	1 unit	102 0.090

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately.

For 4-pole cable boxes and optional accessories see page 8/63.

* You can order this quantity or a multiple thereof.

3SF1 AS-Interface Position Switches

With Solenoid Interlocking

Metal enclosures
With locking force greater than 2000 N

Overview

5 directions of approach · Degree of protection IP66/IP67

- Slow-action contacts:
ASIsafe channel 1 on 1 NC contact from the actuator and channel 2 on 1 NC contact from the solenoid
- Solenoid: Rated operational voltage 24 V DC
- Locking force 2600 N (2000 N acc. to GS-ET 19)
- Status display with 4 LEDs 24 V DC;
1: AS-i, 2: FAULT, 3: F-IN1, 4: F-IN2

Selection and ordering data

Interlock ¹⁾	Contacts Actua- tors/Sole- noids	DT	Complete units	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
			Order No.	Price per PU				
								kg
2600 N locking force · Enclosure width 54 mm								
Spring-actuated locks								
	• With auxiliary release	1 NC/1 NC	⊕ C	3SF1 314-1SD11-1BA1	1	1 unit	121	1.060
	• With auxiliary release with lock	1 NC/1 NC	⊕ C	3SF1 314-1SE11-1BA1	1	1 unit	121	1.220
3SF1 314-1SD21-...								
	• With escape release from the front	1 NC/1 NC	⊕ C	3SF1 314-1SF11-1BA1	1	1 unit	121	1.060
	• With escape release from the back and auxiliary release from the front	1 NC/1 NC	⊕ C	3SF1 314-1SG11-1BA1	1	1 unit	121	1.080
	• With emergency release from the back and auxiliary release from the front	1 NC/1 NC	⊕ C	3SF1 314-1SJ11-1BA1	1	1 unit	121	1.100
3SF1 314-1SF21-...								
	Magnetic field lock	1 NC/1 NC	⊕ C	3SF1 314-1SB11-1BA1	1	1 unit	121	1.060
3SF1 314-1BF21-...								
Actuators								
	• Standard actuators, length 75.6 mm		▶	3SE5 000-0AV01	1	1 unit	102	0.040
	• With vertical fixing, length 53 mm		A	3SE5 000-0AV02	1	1 unit	102	0.070
	• With transverse fixing, length 47 mm		A	3SE5 000-0AV03	1	1 unit	102	0.070
	• Radius actuators, length 51 mm							
	- Direction of approach from the left		A	3SE5 000-0AV04	1	1 unit	102	0.070
	- Direction of approach from the right		A	3SE5 000-0AV06	1	1 unit	102	0.070
	• Universal radius actuator, length 77 mm		A	3SE5 000-0AV05	1	1 unit	102	0.090
	• Universal radius actuators, heavy-duty							
	- Length 67 mm		A	3SE5 000-0AV07-1AK2	1	1 unit	102	0.120
	- Length 77 mm		A	3SE5 000-0AV07	1	1 unit	102	0.090

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately.

For 4-pole cable boxes and optional accessories see page 8/63.

3SF1 AS-Interface Position Switches

Hinge Switches

Plastic enclosures
Enclosure width 31 mm acc. to EN 50047 / 50 mm

Overview

The 3SF1 hinge switches with safety-oriented communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be conventionally wired up.

With the 3SF1 position switches the ASIsafe electronics are integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:

- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm

For the ASIsafe version of the hinge switch, the basic switch and twist actuator must be ordered separately. The basic switches correspond to the position switches of the standard version (only use versions with snap-action contacts).

The standards and approvals are the same as for the 3SF1 standard switches (see page 8/73).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 connector socket

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	

Basic switches · Enclosure width 31 mm acc. to EN 50047



With teflon plunger, with M12 connector socket, 4-pole channel 1 on NC contact, channel 2 on NC contact

Snap-action contacts

2 NC

24 V DC



B

3SF1 234-1LC05-1BA1

1

1 unit

121

0.170

ASIsafe basic switch

Basic switches · Enclosure width 50 mm



With teflon plunger, with M12 connector socket, 4-pole channel 1 on NC contact, channel 2 on M12 socket, right

Snap-action contacts

1 NC

24 V DC



C

3SF1 244-1LC05-1BA2

1

1 unit

121

0.180

ASIsafe basic switch

Actuator heads



Twist actuator with hollow shaft

With hollow shaft

Operating angle 10°

B

3SE5 000-0AU21

1

1 unit

102

0.030



Twist actuator with solid shaft

With solid shaft

Operating angle 10°

B

3SE5 000-0AU22

1

1 unit

102

0.052

⊕ Positive opening acc. to IEC 60947-5-1, Appendix K.

For 4-pole cable boxes see page 8/49.

3SF1 AS-Interface Position Switches

Hinge Switches

Metal enclosures

Enclosure width 40 mm acc. to EN 50041 / 56 mm

Overview

The 3SF1 hinge switches with safety-oriented communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be conventionally wired up.

With the 3SF1 position switches the ASIsafe electronics are integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:

- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm

For the ASIsafe version of the hinge switch, the basic switch and twist actuator must be ordered separately. The basic switches correspond to the position switches of the standard version (only use versions with snap-action contacts).

The standards and approvals are the same as for the 3SF1 standard switches ([see page 8/73](#)).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 connector socket

Version	Contacts	LEDs	DT	Modular system	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	

Basic switches · Enclosure width 40 mm acc. to EN 50041



ASIsafe basic switch

With M12 connector socket, 4-pole
Channel 1 on NC contact,
channel 2 on NC contact
Snap-action contacts

2 NC

24 V DC ↻ B

3SF1 114-1LA00-1BA1

1

1 unit

121

0.400

Basic switches · Enclosure width 56 mm



ASIsafe basic switch

With M12 connector socket, 4-pole
Channel 1 on NC contact,
channel 2 on M12 socket, right
Snap-action contacts

1 NC

24 V DC ↻ C

3SF1 124-1LA00-1BA2

1

1 unit

121

0.470

Actuator heads



Twist actuator with
hollow shaft

Hollow shaft

Operating angle 10°

B

3SE5 000-0AU21

1

1 unit

102

0.030



Twist actuator with
solid shaft

Solid shaft

Operating angle 10°

B

3SE5 000-0AU22

1

1 unit

102

0.052

↻ Positive opening acc. to IEC 60947-5-1, Appendix K.

For 4-pole cable boxes see [page 8/49](#).

Overview

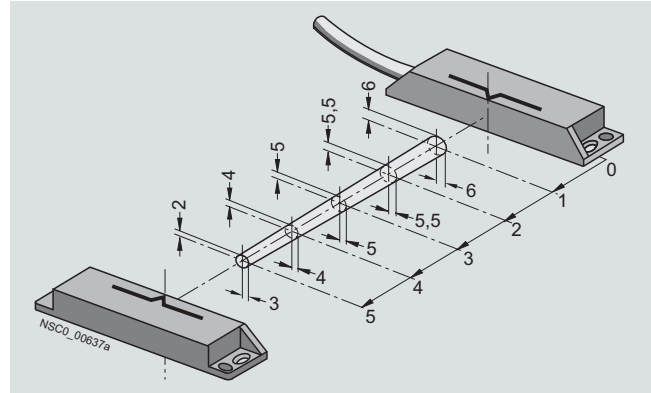


Switching magnets and contact blocks

A magnetically operated switch is comprised of a coded switching magnet and a contact block (sensor unit). Evaluation requires a safety relay or connection to a bus system.

3SE6 806 safety relay

Up to six protective devices (sensors) can be connected to the safety relay.



Enabling range (example)

The device has six current-sourcing semiconductor outputs (Y1 ... Y6), which report the state of the connected protective devices.

The 3SE6 806 safety relay has two floating enabling circuits (safe circuits) as NO contact circuits and one floating signaling circuit as a NC circuit. The number of enabling circuits can be increased by adding one or more 3TK28 30 expansion modules.

Application

SIRIUS 3SE6 magnetically operated switches are designed for mounting on movable protective guards (hoods, hinge switches, doors, etc.). Evaluation can be performed by means of a safety relay or through connection to a bus system.

The 3SE6 6 non-contact, magnetically operated safety switches stand out due to their enclosed design with degree of protection IP67. They are particularly suitable therefore for areas exposed to contamination, cleaning or disinfecting.

A magnetic monitoring system comprises one or more magnetically operated switches and an evaluation unit, e. g. a safety relay. When contact blocks 1 NO + 1 NC are used the 3SE6 806 safety relay provides a high degree of protection against manipulation and can be installed in safety circuits up to Category 3 acc. to ISO 13849-1 (EN 954-1).

Combination of monitoring unit and magnetically operated switch

Monitoring units	Magnetically operated switches (contact block + switching magnet)				Achievable category (EN 954-1)/ Performance level (EN ISO 13849-1)	
	1 NC + 1 NO		2 NC			
	3SE6 605-1BA	3SE6 605-2BA	3SE6 605-3BA	3SE6 604-2BA		
	3SE6 704-1BA	3SE6 704-2BA	3SE6 704-3BA	3SE6 704-2BA		
Relay outputs						
SIRIUS safety relays, 6-fold	3SE6 806-2CD00	✓	✓	✓	–	Cat. 3
SIRIUS safety relays	3TK28 26	✓	✓	✓	✓	Cat. 4/e
Solid-state outputs						
SIRIUS safety relays	3TK28 40	–	–	–	✓	Cat. 3/d
	3TK28 41, 3TK28 42, 3TK28 45	–	–	–	✓	Cat. 4/e
SIRIUS safety relays with contactor relay	3TK28 50, 3TK28 51, 3TK28 52	–	–	–	✓	Cat. 3/d
	3TK28 53	–	–	–	✓	Cat. 4/e
SIRIUS safe load feeders	3RA71 0.	–	–	–	✓	Cat. 3
	3RA71 1.	–	–	–	✓	Cat. 4
ASIsafe compact safety modules	3RK1 205, 3RK1 405	–	–	–	✓	Cat. 4
SIMATIC S7-31xF-2 DP or SIMATIC ET 200M	SM 326 F, 24 DI, 24 V DC, SM 326 F, 8 DI, NAMUR	✓	✓	✓	✓	Cat. 4
SIMATIC ET 200S PROFIsafe	4/8 F-DI / 3 F-DO, 24 V DC	✓	✓	✓	✓	Cat. 3
	4/8 F DI, 24 V DC	✓	✓	✓	✓	Cat. 4
SIMATIC ET 200eco	4/8 F DI, 24 V DC	✓	✓	✓	✓	Cat. 4
SIMATIC ET 200pro	8/16 F-DI, 24 V DC, 4/8 F-DI / 4 F-DO 2 A, 24 V DC, F-Switch	✓	✓	✓	✓	Cat. 4
Modular Safety System	3RK3	✓	✓	✓	✓	Cat. 4/e

3SE6 Magnetically Operated Switches

Magnetic monitoring systems

Selection and ordering data

Version	Size	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
mm									
Round sensor units									
	Switching magnets (coded)	M30	A	3SE6 704-1BA		1	1 unit	102	0.035
	Contact blocks								
	• With cable, 3 m	M30	1 NO + 1 NC	A	3SE6 605-1BA	1	1 unit	102	0.165
	• With M12 plug, 4-pole	M30	1 NO + 1 NC	C	3SE6 605-1BA02	1	1 unit	102	0.040
Rectangular sensor units									
	Switching magnets (coded)	25 × 88	A	3SE6 704-2BA		1	1 unit	102	0.027
	Contact blocks								
	• With cable, 3 m	25 × 88	1 NO + 1 NC	A	3SE6 605-2BA	1	1 unit	102	0.165
			2 NC	A	3SE6 604-2BA	1	1 unit	102	0.165
	• With M8 plug, 4-pole	25 × 88	1 NO + 1 NC	C	3SE6 605-2BA01	1	1 unit	102	0.040
			2 NC	C	3SE6 604-2BA01	1	1 unit	102	0.130
	Switching magnets (coded)	25 × 33	A	3SE6 704-3BA		1	1 unit	102	0.014
	Contact blocks with cable, 3 m	25 × 33	1 NO + 1 NC	A	3SE6 605-3BA	1	1 unit	102	0.150
Accessories									
	Spacers	25 × 88	D	3SX3 260		1	1 unit	102	0.015
	Spacers	25 × 33	D	3SX3 261		1	1 unit	102	0.010
Version	Number of sensors	Enabling/signaling circuits	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Monitoring units									
	Safety relays with relay output, 6-fold	6	2 NO / 1 NC	B	3SE6 806-2CD00	1	1 unit	102	0.200
	Rated control supply voltage								
	24 V DC								

For more monitoring units, see Chapters 6 and 7 and Catalog IK PI.

Commanding and Signaling Devices



9/2	Introduction		
	3SB2 Pushbuttons and Indicator Lights, 16 mm	9/93	<u>Enclosures for AS-Interface</u> General data
9/4	General data	9/94	AS-Interface enclosures with standard fittings
9/6	Complete units	9/95	Components for AS-Interface enclosures
9/8	Actuators and indicators	IK PI ¹⁾	<u>AS-Interface Enclosures and Front Panel Modules</u>
9/10	Contact blocks and lampholders <u>Accessories and Spare Parts</u>		3SB3 Two-Hand Operation Consoles
9/12	Insert labels and insert caps	9/96	Plastic and metal enclosures
9/16	Name plates		3SE7, 3SF2 Cable-Operated Switches
9/17	Mounting parts and components	9/97	3SE7 metal enclosures
	3SB3 Pushbuttons and Indicator Lights, 22 mm	9/101	3SF2 AS-Interface cable-operated switches
9/19	General data <u>Actuators and Indicators, Plastic, Round, 22 mm</u>		3SE2, 3SE3 Foot Switches
9/22	Complete units	9/102	Plastic and metal enclosures
9/28	Coordinate switches, complete		8WD4 Signaling Columns
9/31	Actuators and indicators <u>Actuators and Indicators, Plastic, Square, 26 mm × 26 mm</u>	9/104	General data
9/39	Complete units	9/107	8WD42 signaling columns, 50 mm diameter
9/41	Actuators and indicators <u>Actuators and Indicators, Metal, Round, 22 mm</u>	9/109	8WD44 signaling columns, 70 mm diameter
9/45	Complete units		8WD5 Integrated Signal Lamps
9/50	Actuators and indicators <u>Components for Actuators and Indicators</u>	9/112	8WD53 integrated signal lamps, 70 mm diameter
9/60	Contact blocks and lampholders		Technical Information
9/64	AS-Interface F adapters for EMERGENCY-STOP devices		can be found at www.siemens.com/industrial-controls/support
9/65	Special locks <u>Inscriptions</u>		under Product List - Technical Specifications
9/66	Laser inscriptions		under Entry List - Updates - Downloads - FAQ - Manuals - Characteristic curves - Certificates
9/67	Inscriptions by laser printer		and at www.siemens.com/industrial-controls/configurators
9/68	Insert labels		- Configurators
9/70	Name plates <u>Accessories and Spare Parts</u>		
9/75	Buttons and lenses		
9/76	Lamps, acoustic signal transformers and keys		
9/78	Protective covers		
9/80	Miscellaneous accessories <u>Enclosures</u>	1)	See Catalog IK PI "Industrial Communication".
9/83	General data		
9/84	Enclosures with standard fittings		
9/86	Empty enclosures		
9/87	Customer-specific enclosures		
9/88	Contact blocks and lampholders		
9/90	Inscription labels for enclosures		
9/92	Accessories for enclosures		

Note:
For safety characteristics for commanding and signaling devices see "Appendix" → "Standards and approvals" → "Overview".

Commanding and Signaling Devices

Introduction

Overview



3SB2

3SB30, 3SB32

3SB31, 3SB33

3SB35, 3SB36

Pushbuttons and indicator lights				
Designs				
Nominal diameter	16 mm	22 mm	26 mm × 26 mm	22 mm
Version	Plastic, round	Plastic, round	Plastic, square	Metal, round
Actuators				
Pushbuttons and switches	✓ ¹⁾	✓	✓	✓
Illuminated pushbuttons and switches	✓ ¹⁾	✓	✓	✓
Mushroom pushbuttons	--	✓	--	✓
Push-pull buttons	--	✓	--	✓
EMERGENCY-STOP mushroom pushbuttons	✓	✓	✓	✓
Selector switches	✓	✓	✓	✓
Key-operated switches	✓	✓	✓	✓
Special actuators				
Coordinate switches	--	✓	--	--
Twin pushbuttons	--	✓	--	--
Potentiometer drives	--	✓	--	--
Indicators				
Indicator lights	✓	✓	✓	✓
Acoustic signaling devices	--	✓	--	--
Contact blocks				
Single-pole	✓	✓	✓	✓
Two-pole	✓	✓	✓	✓
Lampholders				
Wedge bases	✓	✓ (with solder connections)	✓ (with solder connections)	✓ (with solder connections)
BA 9s bases	--	✓	✓	✓
With integrated LED	--	✓	✓	✓
Terminals				
Plug-in connection	✓	--	--	--
Screw terminals	--	✓	✓	✓
Spring-type terminals	--	✓	✓	✓
Solder pins	✓	✓	✓	✓
AS-Interface	--	✓	✓	✓

AS-Interface solutions

Commanding and signaling devices of the SIRIUS 3SB3 series can be connected to the AS-Interface communication system quickly and easily with the help of various solutions.

For AS-Interface solutions, see Catalog IK PI "Industrial Communication".

AS-Interface EMERGENCY-STOP according to ISO 13850

Using a special F adapter, EMERGENCY-STOP devices according to ISO 13850 (former EN 418) can be directly connected through the standard AS-Interface with safety-oriented communication (see page 9/64).

AS-Interface enclosures

Enclosures with standard fittings are listed in this catalog. For customized enclosures, use the 3SB configurator to select the elements for equipping (see page 9/93).

- ✓ Standard
- Not available
- Optional

¹⁾ Only pushbuttons, no pushbutton switches.

AS-Interface front panel modules

The front panel module has one 4I/4O slave for connection of four 3SB3 commanding or signaling devices (see Catalog IK PI).

Note:

For safety characteristics see "Appendix" → "Standards and approvals" → "Overview"



	3SB38	3SB38 6	3SE7, 3SF2	3SE29
	Enclosures	Two-hand oper. consoles	Cable-operated switches	Foot switches
Enclosures				
Plastic	✓	✓	--	✓
Metal	✓	✓	✓	✓
Actuators				
Pushbuttons and switches	✓	✓	✓	✓
Illuminated pushb. and switches	✓	✓	--	--
Mushroom pushbuttons	✓	✓	--	--
Push-pull buttons	✓	☐	--	--
EMERG.-STOP mushroom pushb.	✓	✓	✓	--
Selector switches	✓	☐	--	--
Key-operated switches	✓	☐	--	--
Bowden wires	--	--	✓	--
Indicators				
Indicator lights	✓	☐	✓	--
Acoustic signaling devices	✓	☐	--	--
Contact blocks				
Single-pole	✓	✓	--	--
Two-pole	--	✓	✓	✓
Three-pole	--	--	--	✓
Four-pole	--	--	✓	✓
Terminals				
Screw terminals	✓	✓	✓	✓
Spring-type terminals	✓	☐	--	--
Molded cables	--	--	☐	✓
Plug-in connection	☐	☐	☐	☐
AS-Interface	✓	☐	✓	--



	8WD42, 8WD44	8WD53
	Signaling columns	Integrated signal lamps
Enclosures		
Plastic	✓	✓
Metal	--	--
Illumination		
Incandescent lamps	✓	✓
LEDs	✓	✓
Flashlights	✓	✓
Terminals		
Screw terminals	✓	✓
Spring-type terminals	✓	--
AS-Interface	✓	--

3SB2 Pushbuttons and Indicator Lights, 16 mm

General data

Overview

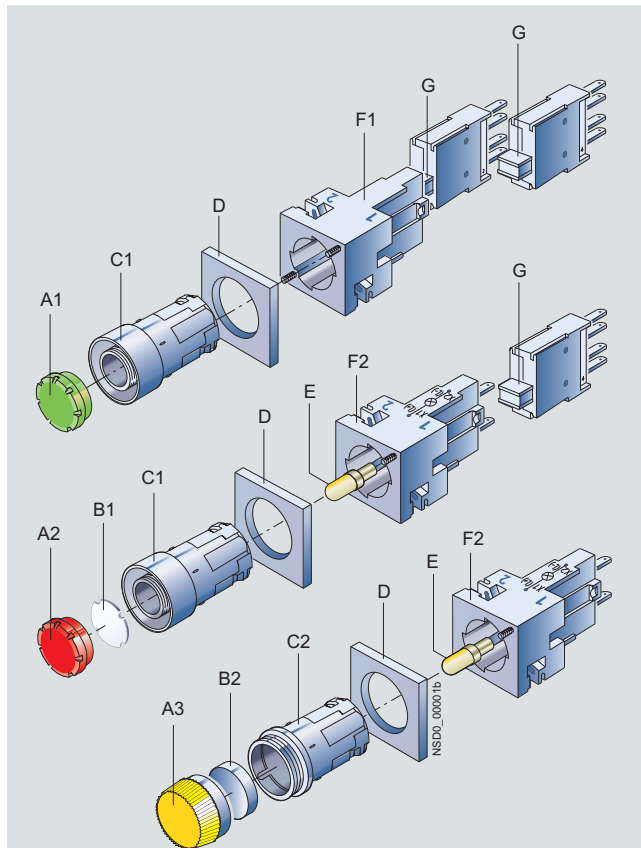
The 3SB2 pushbuttons and indicator lights are provided for front plate mounting and rear connection with flat connectors. For use on printed circuit boards, contact blocks and lampholders with solder pins are also available.

Standards

IEC 60947-5-1, EN 60947-5-1 (VDE 0660 Part 200),

IEC 60947-5-5, EN 60947-5-5 (VDE 0660 Part 210) for EMERGENCY-STOP mushroom pushbuttons.

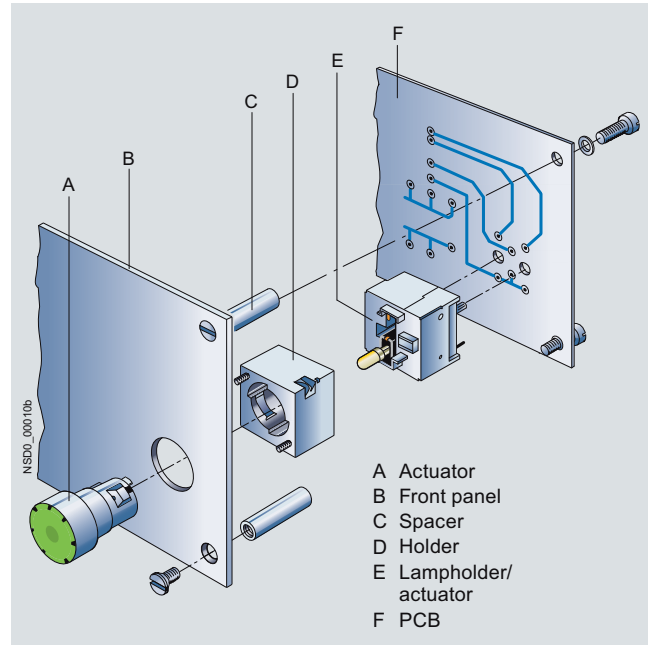
Version with flat connector



- A1 Button, flat
- A2 Illuminated button, flat
- A3 Screw lens for indicator light
- B1 Insert label, for labeling
- B2 Insert cap, for labeling
- C1 Collar with extruded front ring
- C2 Collar for indicator light
- D Frame for rectangular design
- E Wedge base lamp, W2 x 4.6d
- F1 Holders
- F2 Lampholder with holder
- G Contact block for snapping onto the holder and/or onto the lampholder(1NO or 1NC)

For PCB mounting

For use on printed circuit boards, special contact blocks and lampholders for soldering into the printed circuit board are available. For this purpose, the contact blocks and lampholders are fitted with 0.8 mm x 0.8 mm solder pins of length 3.5 mm.



Flat connectors



Solder pin connections

The terminals are indicated in the selection and ordering data by orange backgrounds.

Application

The devices are climate-proof and suitable for marine applications.

Safety EMERGENCY-STOP pushbuttons acc. to ISO 13850

For controls according to IEC 60204-1 or EN 60204-1 (VDE 0113 Part 1), the mushroom pushbuttons of the 3SB2 series are suitable for use as safety EMERGENCY-STOP pushbuttons.

Safety circuits

IEC 60947-5-1 and EN 60947-5-1 require positive opening, i. e. for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to IEC 60947-5-1 with the symbol

Category 4 according to EN 954-1 can be attained with the EMERGENCY-STOP mushroom pushbuttons if the corresponding failsafe evaluation units are selected and correctly installed, e. g. the 3TK28 safety relays or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

More information




Type	3SB2	
Contact blocks and lampholders		
Standards	IEC 60947-5-1, EN 60947-5-1 IEC 60947-5-5, EN 60947-5-5	
Rated insulation voltage U_i	V	250
Conventional free-air thermal current I_{th}	A	10
Rated operational current I_e at rated operational voltage U_e		
• Alternating current AC-12 - At $U_e = 24 \dots 230$ V	A	10
• Alternating current AC-15 - At $U_e = 24 \dots 230$ V	A	4
• Direct current DC-12 - At $U_e = 24$ V	A	6
- At $U_e = 60$ V	A	5
- At $U_e = 110$ V	A	2.5
- At $U_e = 230$ V	A	1
• Direct current DC-13 - At $U_e = 24$ V	A	3
- At $U_e = 60$ V	A	1.5
- At $U_e = 110$ V	A	0.7
- At $U_e = 230$ V	A	0.3
Contact stability		
• Test voltage/test current	5 V/1 mA	
Lamps		
• Bases	Wedge bases W2 × 4.6d	
• Rated voltage	V	6, 12, 24, 30, 48, 60
• Rated power, max.	W	1
Short-circuit protection weld-free acc. to IEC 60947-5-1		
• DIAZED fuse links, utilization category gL/gG	10 A TDz, 16 A Dz	
• Miniature circuit breaker with C characteristic acc. to IEC 60898	10 A	
Electrical endurance		
• For utilization category AC-15 with 3RT10 15 to 3RT10 26 contactors	10 × 10 ⁶ operating cycles	
Mechanical endurance		
	10 × 10 ⁶ operating cycles	
Degree of protection acc. to IEC 60529		
• Connection of contact blocks and lampholders behind the front panel	IP00	
• Contact chambers of the contact blocks behind the front panel	IP40	
Finger-safe acc. to EN 61140 and BGV A3		
	With voltages > 50 V AC or 120 V DC, insulation sleeves must be fitted to the unassigned tab connections.	
Data according to UL and CSA		
Rated voltage		
• Contact blocks	V	250 AC
• Indicator light (lamp with wedge base W2 × 4.6 d)	V	60; 1 W
Uninterrupted current	A	5
Switching capacity	B 300, R 300	
Actuators and indicators		
Mechanical endurance		
• Pushbutton	10 × 10 ⁶ operating cycles	
• Actuators, rotary or latching	3 × 10 ⁵ operating cycles	
• Illuminated pushbuttons	3 × 10 ⁶ operating cycles	
Climatic withstand capability		
	Climate-proof; suitable for marine applications	
Ambient temperature		
• During operation, non-illuminated devices and complete with LED	°C	-25 ... +70
• During operation, devices with incandescent lamp	°C	-25 ... +60
• During storage, transport	°C	-40 ... +80
Degree of protection acc. to IEC 60529		
• Actuators and indicators	IP65	
• Actuators and indicators with protective cap	IP67	
Protective measures		
• For mounting in metal front plates and enclosures	The actuators and lens assemblies must not be included in the protective measures.	
• For fitting into enclosures with total insulation	The protective measure "Total insulation" is retained.	
Shock resistance acc. to IEC 60068-2-27		
• Shock amplitude	≤ 50 g	
• Shock duration	ms	11
• Shock form	Half-sine	

For further technical information, see page 9/1.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Complete units

Selection and ordering data

Version	Contact blocks	Color of handle	DT	Flat connectors	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
				Order No.	Price per PU					
 <p>Pushbuttons with flat button</p>	Pushbuttons with flat button		1 NO	Black	▶	3SB22 02-0AB01	1	1 unit	102	0.023
	1 NC	Black	B	3SB22 03-0AB01	1	1 unit	102	0.023		
	1 NC	Red	▶	3SB22 03-0AC01	1	1 unit	102	0.023		
	1 NO	Yellow	B	3SB22 02-0AD01	1	1 unit	102	0.023		
	1 NO	Green	▶	3SB22 02-0AE01	1	1 unit	102	0.023		
	1 NO	Blue	B	3SB22 02-0AF01	1	1 unit	102	0.023		
	1 NO	White	▶	3SB22 02-0AG01	1	1 unit	102	0.023		
	1 NO	Clear ¹⁾	B	3SB22 02-0AH01	1	1 unit	102	0.023		
	Illuminated pushbuttons with flat button		1 NC	Red	▶	3SB22 07-0AC01	1	1 unit	102	0.025
	Lampholder W2 x 4.6 d ²⁾		1 NO	Yellow ¹⁾	B	3SB22 06-0AD01	1	1 unit	102	0.025
		1 NO	Green	▶	3SB22 06-0AE01	1	1 unit	102	0.025	
		1 NO	Blue	B	3SB22 06-0AF01	1	1 unit	102	0.025	
		1 NO	Clear ¹⁾	▶	3SB22 06-0AH01	1	1 unit	102	0.025	
 <p>Illuminated pushbutton with raised button</p>	Illuminated pushbuttons with flat button		1 NC	Red	▶	3SB22 27-0AC01	1	1 unit	102	0.025
	Lampholder W2 x 4.6 d		1 NO	Yellow ¹⁾	B	3SB22 26-0AD01	1	1 unit	102	0.025
	with incandescent lamp 24 V		1 NO	Green	▶	3SB22 26-0AE01	1	1 unit	102	0.025
			1 NO	Blue	B	3SB22 26-0AF01	1	1 unit	102	0.025
			1 NO	Clear ¹⁾	▶	3SB22 26-0AH01	1	1 unit	102	0.025
	Pushbuttons with raised button		1 NO	Black	B	3SB22 02-0LB01	1	1 unit	102	0.024
			1 NC	Red	B	3SB22 03-0LC01	1	1 unit	102	0.024
			1 NO	Yellow	B	3SB22 02-0LD01	1	1 unit	102	0.024
			1 NO	Blue	B	3SB22 02-0LF01	1	1 unit	102	0.024
			1 NO	Clear ¹⁾	B	3SB22 02-0LH01	1	1 unit	102	0.024
 <p>EMERGENCY-STOP mushroom pushbuttons</p>	Illuminated pushbuttons with raised button		1 NC	Red	B	3SB22 07-0LC01	1	1 unit	102	0.025
	Lampholder W2 x 4.6 d ²⁾		1 NO	Yellow ¹⁾	B	3SB22 06-0LD01	1	1 unit	102	0.025
			1 NO	Green	B	3SB22 06-0LE01	1	1 unit	102	0.025
			1 NO	Blue	B	3SB22 06-0LF01	1	1 unit	102	0.025
			1 NO	Clear ¹⁾	B	3SB22 06-0LH01	1	1 unit	102	0.025
	Illuminated pushbuttons with raised button		1 NC	Red	B	3SB22 27-0LC01	1	1 unit	102	0.026
	Lampholder W2 x 4.6 d		1 NO	Yellow ¹⁾	B	3SB22 26-0LD01	1	1 unit	102	0.026
	with incandescent lamp 24 V		1 NO	Green	B	3SB22 26-0LE01	1	1 unit	102	0.026
			1 NO	Blue	B	3SB22 26-0LF01	1	1 unit	102	0.026
			1 NO	Clear ¹⁾	B	3SB22 26-0LH01	1	1 unit	102	0.026
EMERGENCY-STOP mushroom pushbuttons acc. to ISO 13850, latching³⁾		1 NC	→ ⁴⁾ Red	▶	3SB22 03-1AC01	1	1 unit	102	0.032	
Latches automatically when pressed; unlatches by turning the mushroom head anticlockwise, with yellow name plate, with inscription "NOT-HALT"										

¹⁾ Inscription is possible by inserting a label.




²⁾ For wedge base lamps, see Accessories.




³⁾ The mushroom pushbutton cannot be combined with 3SB29 02-0AB name plate or 3SB29 02-0AA single frame.


⁴⁾ Positive opening according to IEC 60947-5-1, Appendix K.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Complete units

Version	Contact blocks	Color of handle	DT	Flat connectors		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
				Order No.	Price per PU				
 <p>Selector switches</p>	1 NO 1 NO Switching sequence O-I, 62° operating angle, latching	Black	▶	3SB22 02-2AB01 3SB22 02-2AC01 3SB22 02-2AE01 3SB22 02-2AG01		1	1 unit	102	0.026
		Red	B						
		Green	B						
		White	B						
	1 NO, 1 NO 1 NO, 1 NO Switching sequence I-O-II, 2 × 62° operating angle, latching	Black	▶	3SB22 10-2DB01 3SB22 10-2DC01 3SB22 10-2DE01 3SB22 10-2DG01		1	1 unit	102	0.030
		Red	B						
		Green	B						
		White	B						
	1 NO, 1 NO 1 NO, 1 NO Switching sequence I-O-II, 2 × 50° operating angle, momentary contact type	Black	▶	3SB22 10-2EB01 3SB22 10-2EC01 3SB22 10-2EE01 3SB22 10-2EG01		1	1 unit	102	0.029
		Red	B						
		Green	B						
		White	B						

Version	Contact blocks	Lock No.	Key removal position	DT	Flat connectors		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg										
					Order No.	Price per PU														
 <p>CES key-operated switch</p>	1 NO 1 NO Switching sequence O-I, 62° operating angle, latching	SB2	O	▶	3SB22 02-4LA01 3SB22 02-4LB01		1	1 unit	102	0.053										
				B																
											1 NO, 1 NO Switching sequence I-O-II, 2 × 62° operating angle, latching	SB2	I + O + II	▶	3SB22 10-4PA01 3SB22 10-4PB01		1	1 unit	102	0.056
														B						
	1 NO, 1 NO Switching sequence I-O-II, 2 × 50° operating angle, momentary contact type	SB2	O	▶	3SB22 10-4QA01		1	1 unit	102	0.057										
				B																

Version	Color of screw lens	DT	Flat connectors		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			Order No.	Price per PU				
 <p>Indicator lights</p>	Lampholder W2 x 4.6 d without lamp ¹⁾	▶	3SB22 04-6BC06 3SB22 04-6BD06 3SB22 04-6BE06 3SB22 04-6BG06 3SB22 04-6BH06		1	1 unit	102	0.020
		B						
		B						
		B						
		B						
		B						
Lampholder W2 x 4.6 d with incandescent lamp 24 V	Red Yellow Green White Clear	▶	3SB22 24-6BC06 3SB22 24-6BD06 3SB22 24-6BE06 3SB22 24-6BG06 3SB22 24-6BH06		1	1 unit	102	0.021
		B						
		B						
		B						
		B						
		B						




¹⁾ For wedge base lamps, see Accessories.

* You can order this quantity or a multiple thereof.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Actuators and indicators

Selection and ordering data



Version	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Pushbutton								
 <p>Pushbutton and illuminated pushbutton with flat button</p>	Pushbuttons with flat button		Black ▶	3SB20 00-0AB01	1	1 unit	102	0.005
			Red ▶	3SB20 00-0AC01	1	1 unit	102	0.005
			Yellow B	3SB20 00-0AD01	1	1 unit	102	0.005
			Green ▶	3SB20 00-0AE01	1	1 unit	102	0.005
			Blue C	3SB20 00-0AF01	1	1 unit	102	0.005
			White ▶	3SB20 00-0AG01	1	1 unit	102	0.005
		Clear ¹⁾ B	3SB20 00-0AH01	1	1 unit	102	0.005	
	Illuminated pushbuttons with flat button		Red ▶	3SB20 01-0AC01	1	1 unit	102	0.005
			Yellow ¹⁾ B	3SB20 01-0AD01	1	1 unit	102	0.005
			Green ▶	3SB20 01-0AE01	1	1 unit	102	0.005
			Blue B	3SB20 01-0AF01	1	1 unit	102	0.005
			White ▶	3SB20 00-0AG01	1	1 unit	102	0.005
			Clear ¹⁾ B	3SB20 00-0AH01	1	1 unit	102	0.005
 <p>Pushbutton and illuminated pushbutton with raised button</p>	Pushbuttons with raised button		Black B	3SB20 00-0LB01	1	1 unit	102	0.005
			Red B	3SB20 00-0LC01	1	1 unit	102	0.005
			Yellow B	3SB20 00-0LD01	1	1 unit	102	0.006
			Blue B	3SB20 00-0LF01	1	1 unit	102	0.006
			White B	3SB20 00-0LG01	1	1 unit	102	0.006
			Clear ¹⁾ B	3SB20 00-0LH01	1	1 unit	102	0.006
	Illuminated pushbuttons with raised button		Red B	3SB20 01-0LC01	1	1 unit	102	0.005
			Yellow ¹⁾ B	3SB20 01-0LD01	1	1 unit	102	0.005
			Green B	3SB20 01-0LE01	1	1 unit	102	0.005
			Blue B	3SB20 01-0LF01	1	1 unit	102	0.005
			Clear ¹⁾ B	3SB20 00-0LH01	1	1 unit	102	0.006
			Red ▶	3SB20 00-1AC01	1	1 unit	102	0.015
 <p>EMERGENCY-STOP mushroom pushbuttons acc. to ISO 13850, latching²⁾ Latches automatically when pressed; unlatches by turning the mushroom head anticlockwise</p>								

¹⁾ Inscription is possible by inserting a label.

²⁾ The mushroom pushbutton cannot be combined with 3SB29 02-0AB name plate or 3SB29 02-0AA single frame.

Version	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-----------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Selector switches

 <p>Selector switches</p>	Selector switches with 2 switch positions		Black ▶	3SB20 00-2AB01	1	1 unit	102	0.008
			Red ▶	3SB20 00-2AC01	1	1 unit	102	0.008
			Green B	3SB20 00-2AE01	1	1 unit	102	0.008
			White B	3SB20 00-2AG01	1	1 unit	102	0.008
			Black C	3SB20 00-2BB01	1	1 unit	102	0.008
	Selector switches with 2 switch positions		Red B	3SB20 00-2BC01	1	1 unit	102	0.008
			Green B	3SB20 00-2BE01	1	1 unit	102	0.008
			Black B	3SB20 00-2HB01	1	1 unit	102	0.008
	Selector switches with 2 switch positions		Red B	3SB20 00-2HC01	1	1 unit	102	0.008
			Green C	3SB20 00-2HE01	1	1 unit	102	0.008
			White B	3SB20 00-2HG01	1	1 unit	102	0.008
			Black ▶	3SB20 00-2DB01	1	1 unit	102	0.007
	Selector switches with 3 switch positions		Red C	3SB20 00-2DC01	1	1 unit	102	0.007
			Green B	3SB20 00-2DE01	1	1 unit	102	0.007
			White B	3SB20 00-2DG01	1	1 unit	102	0.007
			Black ▶	3SB20 00-2EB01	1	1 unit	102	0.007
	Selector switches with 3 switch positions		Red B	3SB20 00-2EC01	1	1 unit	102	0.007
			Green B	3SB20 00-2EE01	1	1 unit	102	0.007
			White B	3SB20 00-2EG01	1	1 unit	102	0.007
			Black B	3SB20 00-2JB01	1	1 unit	102	0.008
 <p>Selector switches with 3 switch positions Switching sequence I-O-II, 2 x 90° operating angle, latching</p>								

3SB2 Pushbuttons and Indicator Lights, 16 mm

Actuators and indicators

Version	Lock No.	Key removal position	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----------	----------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Key-operated switches



CES key-operated switch

<p>CES key-operated switches with 2 keys, 2 switch positions Switching sequence O-I, 62° operating angle, latching</p> <p>CES key-operated switches with 2 keys, 2 switch positions Switching sequence O-I, 50° operating angle, momentary contact</p> <p>CES key-operated switches with 2 keys, 3 switch positions Switching sequence I-O-II, 2 x 62° operating angle, latching</p> <p>CES key-operated switches with 2 keys, 3 switch positions Switching sequence I-O-II, 2 x 50° operating angle, momentary contact</p>		SB2	O+I O	B ▶	3SB20 00-4LB01 3SB20 00-4LA01	1 1	1 unit 1 unit	102 102	0.035 0.035
		SB2	O	▶	3SB20 00-4MA01	1	1 unit	102	0.035
		SB2	I+O+II O	B B	3SB20 00-4PB01 3SB20 00-4PA01	1 1	1 unit 1 unit	102 102	0.035 0.035
		SB2	O	B	3SB20 00-4QA01	1	1 unit	102	0.034

Version	Color of screw lens	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	---------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Indicator lights



Indicator lights




<p>Indicator lights with concentric rings (inscription by inserting a cap is not possible)</p> <p>Indicator lights, smooth for inscription by inserting a cap¹⁾</p>	Red	▶	3SB20 01-6BC06	1	1 unit	102	0.004
	Yellow	B	3SB20 01-6BD06	1	1 unit	102	0.004
	Green	▶	3SB20 01-6BE06	1	1 unit	102	0.004
	Blue	B	3SB20 01-6BF06	1	1 unit	102	0.004
	White	▶	3SB20 01-6BG06	1	1 unit	102	0.004
	Clear	B	3SB20 01-6BH06	1	1 unit	102	0.004
	Red	B	3SB20 01-6CC06	1	1 unit	102	0.004
	Yellow	B	3SB20 01-6CD06	1	1 unit	102	0.004
	Green	B	3SB20 01-6CE06	1	1 unit	102	0.004
	Blue	B	3SB20 01-6CF06	1	1 unit	102	0.004
	Clear	B	3SB20 01-6CH06	1	1 unit	102	0.004

¹⁾ For insert caps, see Accessories.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Contact blocks and lampholders

Selection and ordering data

Version	Diagram	Operating travel  Contact closed  Contact open	DT	Flat connectors 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	

Contact blocks and lampholders with flat connectors 2 × 2.8 – 0.8 mm according to IEC 60760

Holders for fixing the actuator and the contact blocks



Holder

Holders for 2 contact blocks
Inscription with identification number 1-2

▶	3SB29 08-0AA	1	5 units	102	0.008
---	---------------------	---	---------	-----	-------

Lampholders with holder for fixing the actuator and the contact blocks



Lampholders

Lampholders
W2 x 4.6 d
without lamp



▶	3SB23 04-2A	1	1 unit	102	0.009
---	--------------------	---	--------	-----	-------

Lampholders
W2 x 4.6 d



- With 6 V incandescent lamp
- With 24 V incandescent lamp

B	3SB23 04-2F	1	1 unit	102	0.010
B	3SB23 04-2H	1	1 unit	102	0.010

Voltage reducers¹⁾
For connecting the 3SB29 08-1AE lamp (48 V) to 230 V AC



B	3SB24 04-3D	1	1 unit	102	0.009
---	--------------------	---	--------	-----	-------

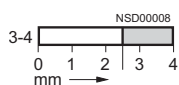


Voltage reducer

Contact blocks for fixing in the holder or lampholder

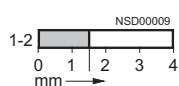
Contact blocks with one contact²⁾

1 NO

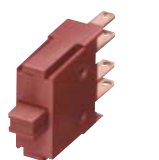


▶	3SB24 04-0B	1	1 unit	102	0.004
---	--------------------	---	--------	-----	-------

1 NC ³⁾



▶	3SB24 04-0C	1	1 unit	102	0.004
---	--------------------	---	--------	-----	-------



Contact blocks


¹⁾ Use fixpoint terminal according to IEC 60439-1.

²⁾ For plug-in and insulation sleeves, see Accessories.

³⁾ Positive opening according to IEC 60947-5-1, Appendix K.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Contact blocks and lampholders

Version	Diagram	Operating travel <input type="checkbox"/> Contact closed <input type="checkbox"/> Contact open	DT	Solder pin connections 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	

Contact blocks and lampholders with solder pins



Holders for contact block with solder pins
For fixing the actuators in the front panel

Lampholders
Wedge base
W2 x 4.6 d¹⁾

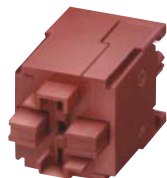


C	3SB29 08-0AB	1	5 units	102	0.006
---	---------------------	---	---------	-----	-------


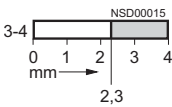

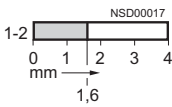

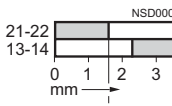

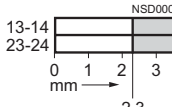

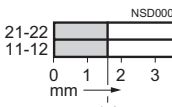
B	3SB24 55-2A	1	1 unit	102	0.008
---	--------------------	---	--------	-----	-------

Holder

Contact blocks




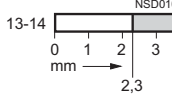

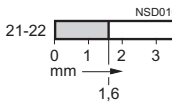

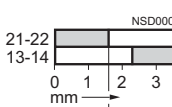

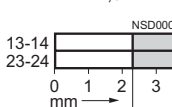

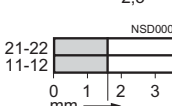
Contact block with solder pins

1 NO			B	3SB24 55-0B	1	1 unit	102	0.008
1 NC			B	3SB24 55-0C	1	1 unit	102	0.008
1 NO + 1 NC			B	3SB24 55-0J	1	1 unit	102	0.010
1 NO + 1 NO			B	3SB24 55-0E	1	1 unit	102	0.009
1 NC + 1 NC			B	3SB24 55-0F	1	1 unit	102	0.009

Contact blocks and lampholders, wedge base W2 x 4.6 d¹⁾



Contact block and lampholder with solder pins

1 NO			C	3SB24 55-1B	1	1 unit	102	0.009
1 NC			C	3SB24 55-1C	1	1 unit	102	0.009
1 NO + 1 NC			B	3SB24 55-1J	1	1 unit	102	0.010
1 NO + 1 NO			B	3SB24 55-1E	1	1 unit	102	0.010
1 NC + 1 NC			C	3SB24 55-1F	1	1 unit	102	0.010

1) The lamp is not included in the scope of supply.

2) Positive opening according to IEC 60947-5-1, Appendix K.

* You can order this quantity or a multiple thereof.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Insert labels and insert caps

Overview

Clear pushbuttons, illuminated pushbuttons and indicator lights can be fitted with insert labels and caps for identification purposes.







The insert labels and insert caps are made of a milky-transparent plastic with black lettering; they can be fitted in any 90° angle.

Inscriptions

The inscriptions have upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

For customized inscriptions, see "Options".
























Selection and ordering data

Inscription/Symbol	Symbol No.	DT	Insert labels		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
			Order No.	Price per PU						
For self-inscription										
 Blank		C	3SB29 01-4AA		100	10 units	102	0.100		
With inscription										
 Ein	Ein	B	3SB29 01-4AB		100	10 units	102	0.100		
	Aus	B	3SB29 01-4AC		100	10 units	102	0.100		
	Auf	B	3SB29 01-4AD		100	10 units	102	0.100		
	Ab	B	3SB29 01-4AE		100	10 units	102	0.100		
	Vor	B	3SB29 01-4AF		100	10 units	102	0.100		
	Zurück	B	3SB29 01-4AG		100	10 units	102	0.100		
	Rechts	B	3SB29 01-4AH		100	10 units	102	0.100		
	Links	B	3SB29 01-4AJ		100	10 units	102	0.100		
	Halt	C	3SB29 01-4AK		100	10 units	102	0.100		
	Zu	B	3SB29 01-4AL		100	10 units	102	0.100		
	Langsam	C	3SB29 01-4AN		100	10 units	102	0.100		
	Störung	B	3SB29 01-4AQ		100	10 units	102	0.100		
	On	C	3SB29 01-4EB		100	10 units	102	0.100		
	Start	B	3SB29 01-4EK		100	10 units	102	0.100		
	Stop	B	3SB29 01-4EL		100	10 units	102	0.100		
	Reset	B	3SB29 01-4EM		100	10 units	102	0.100		
	Test	B	3SB29 01-4EN		100	10 units	102	0.100		
	0	B	3SB29 01-4RA		100	10 units	102	0.100		
	1	B	3SB29 01-4RB		100	10 units	102	0.100		
	2	B	3SB29 01-4RC		100	10 units	102	0.100		
	3	B	3SB29 01-4RD		100	10 units	102	0.100		
	4	B	3SB29 01-4RE		100	10 units	102	0.100		
	5	C	3SB29 01-4RF		100	10 units	102	0.100		
	6	C	3SB29 01-4RG		100	10 units	102	0.100		
	7	C	3SB29 01-4RH		100	10 units	102	0.100		
	8	C	3SB29 01-4RJ		100	10 units	102	0.100		
	9	C	3SB29 01-4RK		100	10 units	102	0.100		
Graphic ON/OFF symbols										
 O (Off)				5008 IEC	B	3SB29 01-4MB	100	10 units	102	0.100
	I (On)			5007 IEC	B	3SB29 01-4MC	100	10 units	102	0.100
	II (On)			--	C	3SB29 01-4MD	100	10 units	102	0.100

3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts















Insert labels and insert caps

Inscription/Symbol	Symbol No.	DT	Insert labels For pushbuttons and illuminated pushbuttons, flat	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
			Order No.	Price per PU			kg		
Graphic equipment symbols									
	Electric motor		0011 ISO	B	3SB29 01-4PA	100	10 units	102	0.100
	Horn		5014 IEC	B	3SB29 01-4PB	100	10 units	102	0.100
	Pump		0134 ISO	C	3SB29 01-4PD	100	10 units	102	0.100
	Coolant pump		0355 ISO	B	3SB29 01-4PE	100	10 units	102	0.100
Graphic motion symbols									
	Motion in direction of arrow		5022 IEC	B	3SB29 01-4NA	100	10 units	102	0.100
	Motion in direction of arrow		--	B	3SB29 01-4NB	100	10 units	102	0.100
	Clockwise rotation		0004 ISO	B	3SB29 01-4NC	100	10 units	102	0.100
	Anticlockwise rotation		--	B	3SB29 01-4ND	100	10 units	102	0.100
	Fast motion		0266 ISO	C	3SB29 01-4NE	100	10 units	102	0.100
	Increase (plus)		5005 IEC	B	3SB29 01-4NG	100	10 units	102	0.100
	Decrease (minus)		5006 IEC	B	3SB29 01-4MC	100	10 units	102	0.100
Graphic control symbols									
	Clamp		--	B	3SB29 01-4QB	100	10 units	102	0.100
	Release		--	B	3SB29 01-4QC	100	10 units	102	0.100
	Brake off		0021 ISO	C	3SB29 01-4QE	100	10 units	102	0.100
	Lock		0022 ISO	C	3SB29 01-4QF	100	10 units	102	0.100
	Unlock		0023 ISO	B	3SB29 01-4QG	100	10 units	102	0.100
	On/Off, momentary contact		5011 IEC	B	3SB29 01-4QJ	100	10 units	102	0.100
	Manual operation		0096 ISO	B	3SB29 01-4QK	100	10 units	102	0.100
	Automatic sequence		0017 ISO	B	3SB29 01-4QL	100	10 units	102	0.100
Customized inscriptions									
	Any inscription				3SB29 01-4AZ				
	1 line of text with up to 6 characters of 3 mm in height. Please add the appropriate order code to the Order No. and specify the line of text required.			C	K0Y	1	1 unit	102	0.001
				B	K1Y or K2Y	1	1 unit	102	0.001
	See "Options", page 9/15.			B	K5Y	1	1 unit	102	0.001
	Other graphic symbols			B	3SB29 01-4AZ	1	1 unit	102	0.001
	Please add the order code "K3Y" to the Order No. and specify the serial number and the applied standard (ISO 7000 or IEC 60417).				K3Y				
	Any inscription or symbol			B	3SB29 01-4AZ	1	1 unit	102	0.001
	Please add the order code "K9Y" to the Order No. and specify the inscription or the symbol required.				K9Y				

3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts







Insert labels and insert caps

Inscription/Symbol	Symbol No.	DT	Insert caps For pushbuttons and illuminated pushbuttons, raised	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg
For self-inscription							
	Blank	C	3SB29 01-5AA		100	10 units	102 0.100
With inscription							
	Aus	B	3SB29 01-5AC		100	10 units	102 0.100
	Auf	B	3SB29 01-5AD		100	10 units	102 0.100
	Zu	B	3SB29 01-5AL		100	10 units	102 0.100
	0	C	3SB29 01-5RA		100	10 units	102 0.100
	1	B	3SB29 01-5RB		100	10 units	102 0.100
	2	B	3SB29 01-5RC		100	10 units	102 0.100
	3	B	3SB29 01-5RD		100	10 units	102 0.100
	4	B	3SB29 01-5RE		100	10 units	102 0.100
	5	B	3SB29 01-5RF		100	10 units	102 0.100
	6	B	3SB29 01-5RG		100	10 units	102 0.100
	7	B	3SB29 01-5RH		100	10 units	102 0.100
	8	B	3SB29 01-5RJ		100	10 units	102 0.100
	9	B	3SB29 01-5RK		100	10 units	102 0.100
Graphic ON/OFF symbols							
	O (Off)			5008 IEC	C	3SB29 01-5MB	100 10 units 102 0.100
	I (On)			5007 IEC	B	3SB29 01-5MC	100 10 units 102 0.100
Graphic motion symbols							
	Motion in direction of arrow			5022 IEC	B	3SB29 01-5NA	100 10 units 102 0.100
	Motion in direction of arrow			--	B	3SB29 01-5NB	100 10 units 102 0.100
	Increase (plus)			5005 IEC	B	3SB29 01-5NG	100 10 units 102 0.100
	Decrease (minus)			5006 IEC	B	3SB29 01-5MC	100 10 units 102 0.100
Graphic control symbols							
	Clamp			--	B	3SB29 01-5QB	100 10 units 102 0.100
	Release			--	B	3SB29 01-5QC	100 10 units 102 0.100
Customized inscriptions							
	Any inscription					3SB29 01-5AZ	
	1 line of text with up to 6 characters of 3 mm in height. Please add the appropriate order code to the Order No. and specify the line of text required. See "Options", page 9/15.	C	K0Y		1	1 unit	102 0.001
		B	K1Y or K2Y		1	1 unit	102 0.001
		B	K5Y		1	1 unit	102 0.001
	Other graphic symbols	B	3SB29 01-5AZ K3Y		1	1 unit	102 0.001
	Please add the order code " K3Y " to the Order No. and specify the serial number and the applied standard (ISO 7000 or IEC 60417).						
	Any inscription or symbol	B	3SB29 01-5AZ K9Y		1	1 unit	102 0.001
	Please add the order code " K9Y " to the Order No. and specify the inscription or the symbol required.						

3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Insert labels and insert caps

Inscription/Symbol	Symbol No.	DT	Insert caps For indicator lights	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No.	Price per PU			kg
For self-inscription							
	Blank	X	3SB29 01-7AA		100	10 units	102 0.100
With inscription							
	Betrieb	B	3SB29 01-7AP		100	1 unit	102 0.100
	Störung	B	3SB29 01-7AQ		100	10 units	102 0.100
Graphic symbols							
	Pump			0134 ISO	B	3SB29 01-7PD	100 10 units 102 0.100
	Manual operation			0096 ISO	B	3SB29 01-7QK	100 10 units 102 0.100
Customized inscriptions							
	Any inscription		1 line of text with up to 6 characters of 3 mm in height. Please add the appropriate order code to the Order No. and specify the line of text required. See "Options", page 9/15.		C	3SB29 01-7AZ K0Y	1 1 unit 102 0.001
		B	K1Y or K2Y		B		1 1 unit 102 0.001
		B	K5Y		B		1 1 unit 102 0.001
	Other graphic symbols	B	Please add the order code " K3Y " to the Order No. and specify the serial number and the applied standard (ISO 7000 or IEC 60417).		B	3SB29 01-7AZ K3Y	1 1 unit 102 0.001
	Any inscription or symbol	B	Please add the order code " K9Y " to the Order No. and specify the inscription or the symbol required.		B	3SB29 01-7AZ K9Y	1 1 unit 102 0.001

Options

Customized inscriptions

Labels and caps can be inscribed with text and symbols not listed in the ordering data. Append the following codes to the Order No.:

- Text line in upper/lower case, always upper case for beginning of line (e. g. "Lift"): **K0Y**
- Text line in upper case (e. g. "LIFT"): **K1Y**
- Text line in lower case (e. g. "lift"): **K2Y**
- Text line in upper/lower case, all words begin with upper case letters (e. g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the order number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

One line with up to 6 characters with 3 mm letter height is possible for the inscription ([see ordering example 1](#)).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 ([see ordering example 2 and 3](#)).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example 1

3SB29 01-4AZ
K1Y
Z = pump

Ordering example 2

3SB29 01-4AZ
K3Y
Z = 5008 IEC

Ordering example 3

3SB29 01-4AZ
K3Y
Z = 1118 ISO

3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Name plates

Overview







The name plates consist of a black plastic label holder and an inscription label (silver with black print) for sticking in place.

Note mounting dimensions!


Inscriptions

The inscriptions (also special inscriptions) are lower case with upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

Selection and ordering data

Inscription/Symbol	Symbol No.	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Inscription labels, self-adhesive, 9.5 mm × 18.5 mm								
	Blank	▶	3SB29 01-2AA		100	10 units	102	0.100
	Ein	B	3SB29 01-2AB		100	10 units	102	0.100
	Aus	B	3SB29 01-2AC		100	10 units	102	0.100
	Auf	B	3SB29 01-2AD		100	10 units	102	0.100
	Zu	B	3SB29 01-2AL		100	10 units	102	0.100
	Vor	B	3SB29 01-2AF		100	10 units	102	0.100
	Zurück	B	3SB29 01-2AG		100	10 units	102	0.100
	Schnell	C	3SB29 01-2AM		100	10 units	102	0.100
	Langsam	C	3SB29 01-2AN		100	10 units	102	0.100
	Betrieb	B	3SB29 01-2AP		100	10 units	102	0.100
	Störung	B	3SB29 01-2AQ		100	10 units	102	0.100
	Einrichten	B	3SB29 01-2AR		100	10 units	102	0.100
	On	B	3SB29 01-2EB		100	10 units	102	0.100
	Off	B	3SB29 01-2EC		100	10 units	102	0.100
	Start	B	3SB29 01-2EL		100	10 units	102	0.100
	Reset	B	3SB29 01-2EM		100	10 units	102	0.100
	Fault	B	3SB29 01-2EW		100	10 units	102	0.100
	Hand Auto	B	3SB29 01-2BA		100	10 units	102	0.100
	Manual 0 Auto	B	3SB29 01-2BE		100	10 units	102	0.100
	Man 0 Auto	B	3SB29 01-2ET		100	10 units	102	0.100
Graphic symbols								
	O (Off)			5008 IEC	B	3SB29 01-2MB		100 10 units 102 0.100
	I (On)			5007 IEC	B	3SB29 01-2MC		100 10 units 102 0.100
	O I (horizontal)			--	B	3SB29 01-2MF		100 10 units 102 0.100
	Motion in direction of arrow			5002 IEC	C	3SB29 01-2NA		100 10 units 102 0.100
Customized inscriptions or symbols								
	(see Options)				C	K0Y		1 1 unit 102 0.001
					B	K1Y, K2Y or K3Y		1 1 unit 102 0.001
					B	K5Y		1 1 unit 102 0.001
					B	K9Y		1 1 unit 102 0.001

Label holders

	Label holders for inscription labels	B	3SB29 02-0AB		100	10 units	102	0.100
	The label holders must not be used with the 3SB2...-1AC01 EMERGENCY-STOP mushroom pushbutton.							

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data. Append the following codes to the Order No.:

- Text line(s) in upper/lower case, upper case always for beginning of line (e. g. "Lift out"): **K0Y**
- Text line(s) in upper case (e. g. "LIFT OUT"): **K1Y**
- Text line(s) in lower case (e. g. "lift out"): **K2Y**
- Text line(s) in upper/lower case, all words begin with upper case letters (e. g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the order number and order code.

In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

Two lines of 11 characters are permitted with 4 mm letter height (1 line) or 3 mm (2-line).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 ([see ordering example](#)).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example

3SB29 01-2XZ
K3Y
Z = 1118 ISO












* You can order this quantity or a multiple thereof.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Mounting parts and components

Selection and ordering data

Version	Lamp voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Buttons and lenses¹⁾									
 3SB29 10-0AF	Buttons, flat For pushbuttons	Black	C	3SB29 10-0AB		100	10 units	102	0.100
		Red	C	3SB29 10-0AC		100	10 units	102	0.100
		Yellow	C	3SB29 10-0AD		100	10 units	102	0.100
		Green	C	3SB29 10-0AE		100	10 units	102	0.100
		Blue	C	3SB29 10-0AF		100	10 units	102	0.100
		White	C	3SB29 10-0AG		100	10 units	102	0.100
		Clear	C	3SB29 10-0AH		100	10 units	102	0.100
 3SB29 10-0CF	Buttons, flat For illuminated pushbuttons	Red	C	3SB29 10-0CC		100	10 units	102	0.100
		Yellow	C	3SB29 10-0CD		100	10 units	102	0.100
		Green	C	3SB29 10-0CE		100	10 units	102	0.100
		Blue	C	3SB29 10-0CF		100	10 units	102	0.100
		White	C	3SB29 10-0AG		100	10 units	102	0.100
		Clear	C	3SB29 10-0AH		100	10 units	102	0.100
 3SB29 10-0BD	Buttons, raised For pushbuttons	Black	C	3SB29 10-0BB		1	10 units	102	0.001
		Red	C	3SB29 10-0BC		1	10 units	102	0.001
		Yellow	C	3SB29 10-0BD		1	10 units	102	0.001
		Clear	C	3SB29 10-0BH		1	10 units	102	0.001
 3SB29 10-0DD	Buttons, raised For illuminated pushbuttons	Red	C	3SB29 10-0DC		1	10 units	102	0.001
		Yellow	C	3SB29 10-0DD		1	10 units	102	0.001
		Clear	C	3SB29 10-0BH		1	10 units	102	0.001
 3SB29 10-1AD	Screw lenses With concentric rings	Red	C	3SB29 10-1AC		100	10 units	102	0.100
		Yellow	C	3SB29 10-1AD		100	10 units	102	0.100
		Green	A	3SB29 10-1AE		100	10 units	102	0.100
		Blue	C	3SB29 10-1AF		100	10 units	102	0.100
		White	C	3SB29 10-1AG		100	10 units	102	0.100
		Clear	C	3SB29 10-1AH		100	10 units	102	0.100
 3SB29 10-1BE	Screw lenses Smooth, for inscription with insert cap	Red	C	3SB29 10-1BC		100	10 units	102	0.100
		Yellow	C	3SB29 10-1BD		100	10 units	102	0.100
		Green	C	3SB29 10-1BE		100	10 units	102	0.100
		Blue	C	3SB29 10-1BF		100	10 units	102	0.100
		Clear	C	3SB29 10-1BH		100	10 units	102	0.100
Key for actuators									
 3SB29 08-2AJ	Keys For CES key-operated switch, lock No. SB2		B	3SB29 08-2AJ		1	1 unit	102	0.004
Lamps, Wedge bases²⁾									
 3SB29 08-1AE	Incandescent lamps Wedge base W2 × 4.6 d, 1.0 W	AC/DC	Clear	C	3SB29 08-1AA	100	10 units	102	0.100
				B	3SB29 08-1AB	100	10 units	102	0.100
				▶	3SB29 08-1AC	100	10 units	102	0.100
				A	3SB29 08-1AD	100	10 units	102	0.100
				B	3SB29 08-1AE	1	10 units	102	0.001
				B	3SB29 08-1AF	1	10 units	102	0.001
 3SB39 01-1SB	LED lamps, super-bright Wedge base W2 × 4.6 d	24 AC/DC	Red	B	3SB39 01-1SB	1	10 units	102	0.001
			Yellow	B	3SB39 01-1RB	1	10 units	102	0.001
			Green	B	3SB39 01-1TB	1	10 units	102	0.001
			White	B	3SB39 01-1UB	1	10 units	102	0.001
			Blue	B	3SB29 08-1BD	1	10 units	102	0.001
		 3SB29 08-1BD		28 AC/DC	Red	B	3SB39 01-1SE	1	10 units
	Yellow			B	3SB39 01-1RE	1	10 units	102	0.001
	Green			B	3SB39 01-1TE	1	10 units	102	0.001
	White			B	3SB39 01-1UE	1	10 units	102	0.001
	Blue			D	3SB39 01-1VE	1	10 units	102	0.001
 3SB29 08-1AB	Lamp extractors For lamps with bases W2 × 4.6 d					▶	3SB29 08-2AB	1	1 unit

¹⁾ Included in the scope of supply of actuators or indicator lights.

²⁾ Included in the scope of supply of some complete units.

3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Mounting parts and components

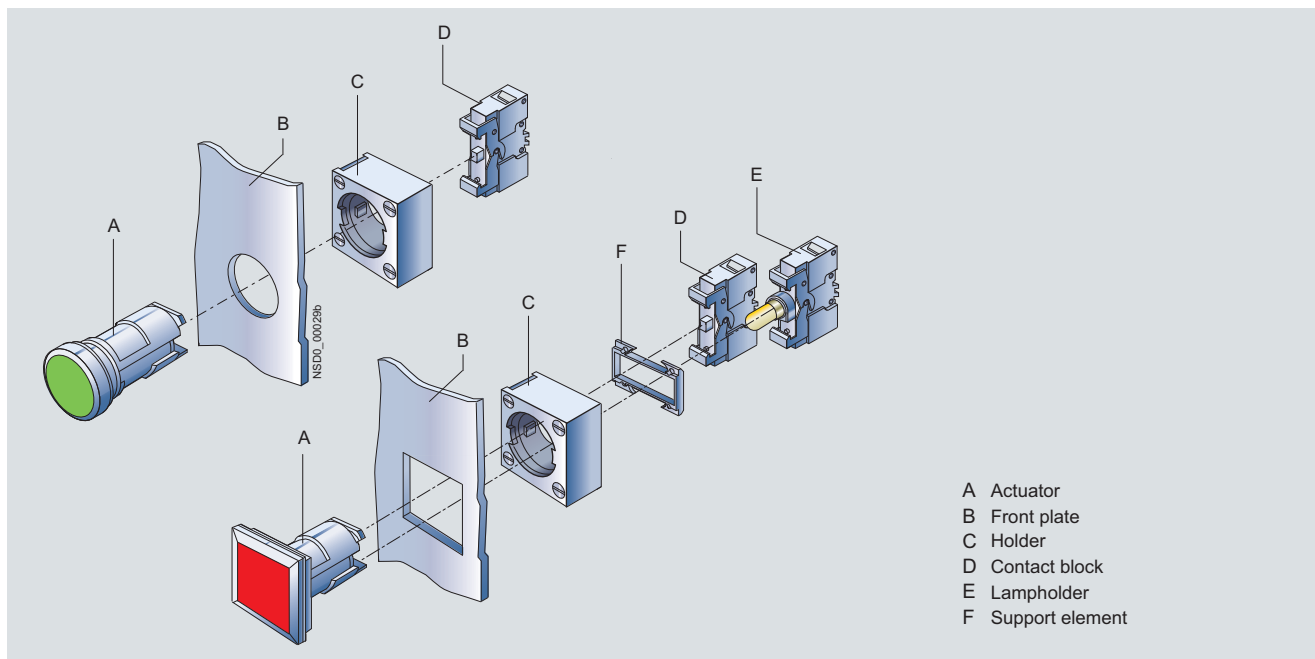
Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Accessories for command points							
 3SB29 02-0AA		Single frames for square design ¹⁾		100	10 units	102	0.100
 3SB29 08-2AG		Name plates, yellow, Ø 50 mm As backing plate for EMERGENCY STOP, self-adhesive • Blank • With German inscription "NOT-HALT" • With German inscription "NOT-AUS"		1	1 unit	102	0.001
				1	1 unit	102	0.001
				1	1 unit	102	0.001
 3SB29 08-3AA	B	Blanking plugs Black plastic (degree of protection IP65)		1	1 unit	102	0.005
 3SB29 08-1	B	Protective caps, clear Silicone, for pushbuttons with flat and raised button		1	1 unit	102	0.002
Flat connectors							
 3SB29 08-8AA	A	Plug-in sleeves For flat connectors 2.8 × 0.8 mm, cross-section 0.5 ... 1.5 mm ²		100	250 units	102	0.200
 3SB29 08-8AB	D	Insulation sleeves For flat connectors, connection from the front		100	250 units	102	0.100
 3SB29 08-8AD	D	Complete connectors²⁾ For connecting contact blocks and lampholders (up to 10 connections). Guaranteed finger-safe acc. to IEC 61140 and BGV A3 (VBG 4)		1	1 unit	102	0.005
 3SB29 08-8AE	B	Plug-in sleeves For flat connectors 2.8 × 0.8 mm, with locating spring for latching in complete connector		100	10 units	102	0.100
Tools							
 3SB29 08-2AA		Dismantling tools For holders and lampholders with holder		1	1 unit	102	0.015
 3SB29 08-2AC		Mounting tools For buttons and screw lenses		1	1 unit	102	0.012
 6179 0950		Crimping tools for non-insulated connections, type KRBC 0560 For plug-in sleeves (both versions)	Art. No. 6179 0950 Lapp Holding AG Oskar-Lapp-Str. 2 D-70565 Stuttgart Tel.: +49 (0) 711/78 38-01 Fax: +49 (0) 711/78 38-26 40 E-mail: info@lappkabel.de www.lappkabel.de				

¹⁾ Not suitable for EMERGENCY-STOP mushroom pushbuttons.

²⁾ Required 3SB29 08-8AE plug-in sleeves for flat connectors 2.8 × 0.8 mm are not included in the scope of supply.

Overview

Front plate mounting



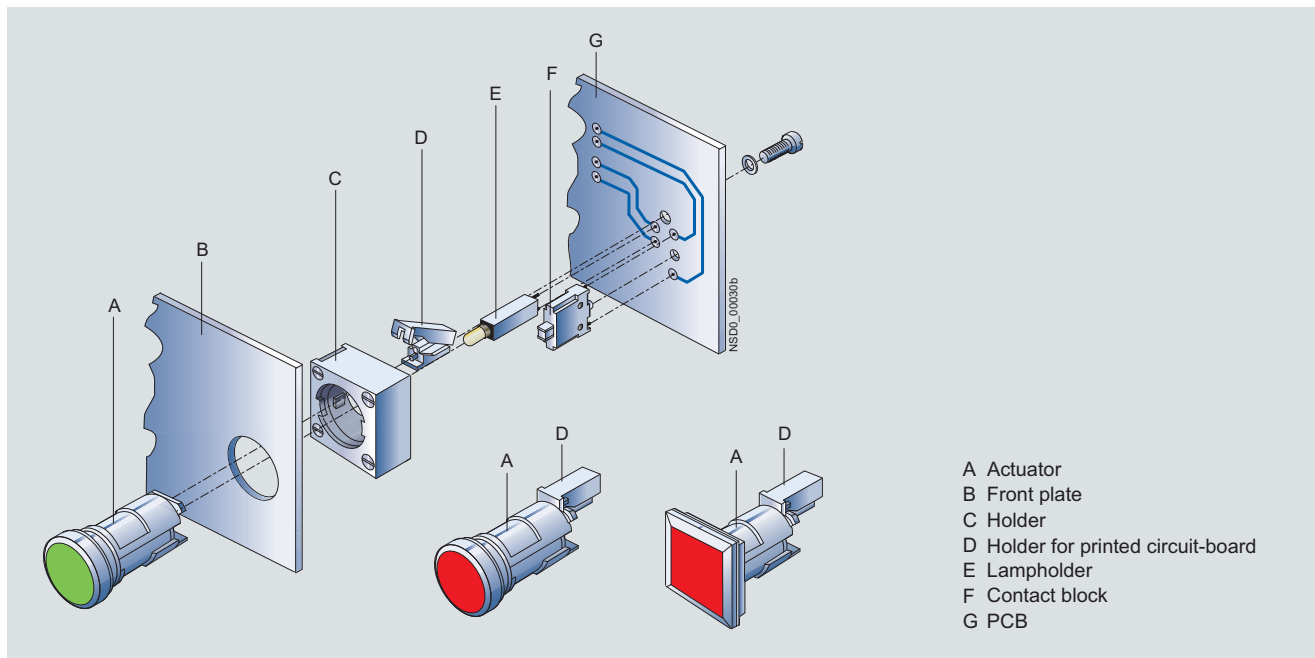
- A Actuator
- B Front plate
- C Holder
- D Contact block
- E Lampholder
- F Support element

For actuators see page 9/22 to 9/59.

For contact blocks and lampholders see page 9/60 to 9/62.

For holders see page 9/63.

Used on printed circuit boards



- A Actuator
- B Front plate
- C Holder
- D Holder for printed circuit-board
- E Lampholder
- F Contact block
- G PCB

For contact blocks for use on printed circuit boards see page 9/63.

3SB3 Pushbuttons and Indicator Lights, 22 mm

General data

Design

The 3SB3 series is a modular range of commanding and signaling devices for front panel mounting and rear conductor connection. As an alternative, individual elements can also be supplied for use on printed circuit boards. Complete units are offered for the most commonly used applications.



Actuators and indicators and complete units

The 3SB3 series is available:

- Made of molded plastic in flat, round and square design
- Made of metal in round design.

The devices are of modern industrial design and can be mounted rapidly by a single person. The operating surfaces of the pushbuttons and illuminated pushbuttons are concave. The lenses of the indicator lights are convex.

The metal version with a high degree of protection according to IP67 and NEMA 4 is available for the world market.

One command point comprises:

- An actuator or lens assembly in front of the control panel
- A holder for mounting behind the control panel
- Up to 3 contact blocks and/or 1 lampholder behind the control panel
- A comprehensive range of accessories for inscription

Two contact blocks can be snapped onto the actuator in the standard version.

When three contact blocks or illuminated actuators are required, an additional holder must be plugged onto the actuator from the rear.

- 3SB39 01-0AB holder for 3 contact blocks or for 2 contact blocks and 1 lampholder
- 3SB39 01-0AC holder with pressure plates for actuating a central contact block when using a selector switch, key-operated switch and twin pushbutton with 3 contact blocks.

For illuminated pushbuttons, illuminated switches and illuminated selector switches the holder is included in the scope of supply as standard.

The contact blocks are fitted with a slow-action contact (1 NO contact or 1 NC contact) with double operating contacts. These ensure a high switching reliability even with small voltages and currents, such as 5 V/1 mA. They are suitable for use in solid-state systems as well as conventional controls.


Standards


IEC 60947-1, EN 60947-1,
IEC 60947-5-1, EN 60947-5-1.
IEC 60947-5-5, EN 60947-5-5 for EMERGENCY-STOP mushroom pushbuttons.

Connection methods

The devices are available with screw terminals (box terminals), spring-type terminals or solder pins.

 Screw terminals

 Spring-type terminals

 Solder pin connections

The terminals are indicated in the selection and ordering data by orange backgrounds.

Application

The devices are climate-proof (KTW 24) and suitable for standard industrial applications and operation in marine applications. For operation in oily atmospheres (organic oils/lubricants) we recommend actuators of polyamide type (-OPA0 versions).

AS-Interface solutions

The 3SB3 commanding and signaling devices can be connected to the AS-Interface communication system quickly and safely with the help of various solutions.

The following solutions are available:

- ASIsafe EMERGENCY-STOP mushroom pushbuttons (see page 9/64)
- AS-Interface enclosures with 1 to 6 command points (see page 9/93).
- AS-Interface front panel modules for 4 command points (see Catalog IK PI)

"Intrinsic safety" type of protection EEx i according to ATEX directive 94/9/EC


The pushbuttons and indicator lights in round design can also be used in hazardous areas. The 3SB34 ...-0. contact blocks and the 3SB34 ...-1A lampholders (with 3SB39 01-1.A LED lamp) with screw terminals or spring-type terminals can be used.

See Chapter 20 "Appendix" → "Standards and approvals" → "Type overview of approved devices for potentially explosive areas (ATEX explosion protection)".

Safety EMERGENCY-STOP pushbuttons acc. to ISO 13850

For controls according to IEC 60204-1 or EN 60204-1 (VDE 0113 Part 1), the mushroom pushbuttons of the 3SB3 series are suitable for use as safety EMERGENCY-STOP pushbuttons.

Safety circuits




IEC 60947-5-1 and EN 60947-5-1 require positive opening, i. e. for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked according to IEC 60947-5-1 with the symbol .

Category 4 according to EN 954-1 can be attained with the EMERGENCY-STOP mushroom pushbuttons if the corresponding failsafe evaluation units are selected and correctly installed, e. g. the 3TK28 safety relays or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

3SB3 Pushbuttons and Indicator Lights, 22 mm

General data

More information

Type		3SB34 00-0, 3SB34 20-0	3SB14 00-0J	3SB34 00-1, 3SB34 20-1	3SB34 03-0, 3SB34 23-0	3SB34 03-1, 3SB34 23-1	3SB34 11-0	3SB34 11-1
Contact blocks and lampholders								
Standards		IEC 60947-5-1, IEC 60947-5-5, EN 60947-5-1, EN 60947-5-5						
Connection type		 Screw terminals			 Spring-type terminals		 Solder pins	
Rated insulation voltage U_i	V	400		250	400	400	250	60
For pollution degree acc. to IEC 60947-1		Class 3			Class 3		Class 3	
Rated impulse withstand voltage U_{imp}	kV	4		4	4	4	4	1.5
Conventional free-air thermal current I_{th}	A	10		--	10	--	10	--
Rated operational current I_e for rated operational voltage U_e								
• Alternating current 50/60 Hz, AC-12		10		--	10	--	10	
• Alternating current 50/60 Hz, AC-15								
- At $U_e = 24 \dots 230$ V	A	6		--	6	--	4	--
- At $U_e = 400$ V	A	3	4	--	3	--	--	--
• Direct current DC-12								
- At $U_e = 24$ V	A	10	10	--	10	--	10	--
- At $U_e = 48$ V	A	5	--	--	5	--	5	--
- At $U_e = 110$ V	A	2.5	2	--	2.5	--	2.5	--
- At $U_e = 230$ V	A	1	0.5	--	1	--	1	--
• Direct current DC-13								
- At $U_e = 24$ V	A	3	5	--	3	--	3	--
- At $U_e = 48$ V	A	1.5	--	--	1.5	--	1.5	--
- At $U_e = 110$ V	A	0.7	0.5	--	0.7	--	0.7	--
- At $U_e = 230$ V	A	0.3	0.2	--	0.3	--	0.3	--
Contact stability								
• Test voltage	V	5		--	5	--	5	--
• Test current	mA	1		--	1	--	1	--
Lampholders		--		BA 9s	--	BA 9s	--	Wedge bases
Lamps		--		Incandescent lamps, glow lamps and LED lamps	--	Incandescent lamps, glow lamps and LED lamps	--	Incandescent lamps and LED lamps
Short-circuit protection , weld-free, acc. to IEC 60947-5-1								
• DIAZED fuse links, utilization category gG acc. to IEC 60269-3-1		Dz10 A						
• DIAZED fuse links, quick acc. to DIN VDE 0635		Dz 16 A						
• Miniature circuit breaker with C characteristic acc. to IEC 60898	A	10						
Mechanical endurance		10 × 10 ⁶ operating cycles						
Electrical endurance		10 × 10 ⁶ operating cycles						
• For utilization category AC-15 with 3RT10 15 to 3RT10 26 contactors		10 × 10 ⁶ operating cycles						
• With utilization category DC-12, DC-13		With direct current it depends on the operational voltage, the breaking current, the circuit inductance and the switching frequency						
Switching frequency	1/h	1000 operating cycles						
Degree of protection acc. to IEC 60529								
• Terminals		IP20						
• Contact chambers		IP40		--	IP40	--	IP40	--
Touch protection acc. to EN 61140 and BGV A3		Finger-safe			Finger-safe		--	
Actuators and indicators								
Mechanical endurance		10 × 10 ⁶ operating cycles						
• Pushbutton		10 × 10 ⁶ operating cycles						
• Illuminated pushbuttons		3 × 10 ⁶ operating cycles						
• Actuators, rotary or maintained contact		3 × 10 ⁵ operating cycles						
• Key-operated switch with key monitoring		1 × 10 ⁵ operating cycles						
Degree of protection acc. to IEC 60529								
• Standard, plastic		IP66 (round), IP65 (square)						
• Standard, metal		IP67 and NEMA Type 4						
• Twin pushbuttons		IP65						
• Key-operated switch with key monitoring		IP54						
Ambient temperature		-25 ... +70						
• During operation, non-illuminated and with LED	°C	-25 ... +70						
• During operation, devices with incandescent lamp	°C	-25 ... +60						
• During storage, transport	°C	-40 ... +80						

For further technical information, see page 9/1.

3SB3 Pushbuttons and Indicator Lights, 22 mm



Actuators and Indicators, Plastic, Round, 22 mm

Complete units

Selection and ordering data

The following applies to all complete units:

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102

Rated voltage of lamp	Color of handle	Contacts for front plate mounting	DT	Screw terminals		Weight per PU approx.	DT	Spring-type terminals		Weight per PU approx.
				Order No.	Price per PU			Order No.	Price per PU	
Pushbutton										
Pushbuttons with flat button										
	--	Black	1 NO	▶	3SB32 02-0AA11	0.040	B	3SB32 02-0AA11-0CC0	0.040	
		Black	1 NC	B	3SB32 03-0AA11	0.040	B	3SB32 03-0AA11-0CC0	0.040	
		Red	1 NC	▶	3SB32 03-0AA21	0.040	B	3SB32 03-0AA21-0CC0	0.040	
		Yellow	1 NO	B	3SB32 02-0AA31	0.040	B	3SB32 02-0AA31-0CC0	0.040	
		Green	1 NO	▶	3SB32 02-0AA41	0.040	B	3SB32 02-0AA41-0CC0	0.040	
		Blue	1 NO	B	3SB32 02-0AA51	0.040	B	3SB32 02-0AA51-0CC0	0.040	
		White	1 NO	▶	3SB32 02-0AA61	0.040	B	3SB32 02-0AA61-0CC0	0.040	
		Black	1 NO + 1 NC	B	3SB32 01-0AA11	0.050	B	3SB32 01-0AA11-0CC0	0.050	
		Red	1 NO + 1 NC	B	3SB32 01-0AA21	0.050	B	3SB32 01-0AA21-0CC0	0.060	
		Yellow	1 NO + 1 NC	B	3SB32 01-0AA31	0.047	B	3SB32 01-0AA31-0CC0	0.060	
		Green	1 NO + 1 NC	B	3SB32 01-0AA41	0.047	B	3SB32 01-0AA41-0CC0	0.060	
		Blue	1 NO + 1 NC	B	3SB32 01-0AA51	0.047	B	3SB32 01-0AA51-0CC0	0.060	
		White	1 NO + 1 NC	B	3SB32 01-0AA61	0.047	B	3SB32 01-0AA61-0CC0	0.060	
	Illuminated pushbuttons with flat button									
With integrated LED (including holder for 3 elements)										
	24	Red ¹⁾	1 NC	▶	3SB32 46-0AA21	0.050	B	3SB32 46-0AA21-0CC0	0.050	
	AC/DC	Yellow ¹⁾	1 NO	B	3SB32 45-0AA31	0.050	B	3SB32 45-0AA31-0CC0	0.050	
		Green ¹⁾	1 NO	▶	3SB32 45-0AA41	0.050	B	3SB32 45-0AA41-0CC0	0.050	
		Blue ¹⁾	1 NO	B	3SB32 45-0AA51	0.050	B	3SB32 45-0AA51-0CC0	0.050	
		White	1 NO	B	3SB32 45-0AA61	0.050	B	3SB32 45-0AA61-0CC0	0.050	
		Clear ¹⁾	1 NO	▶	3SB32 45-0AA71	0.050	B	3SB32 45-0AA71-0CC0	0.050	
	24	Red ¹⁾	1 NO + 1 NC	B	3SB32 47-0AA21	0.050	B	3SB32 47-0AA21-0CC0	0.060	
	AC/DC	Yellow ¹⁾	1 NO + 1 NC	B	3SB32 47-0AA31	0.050	B	3SB32 47-0AA31-0CC0	0.060	
		Green ¹⁾	1 NO + 1 NC	B	3SB32 47-0AA41	0.050	B	3SB32 47-0AA41-0CC0	0.060	
		Blue ¹⁾	1 NO + 1 NC	B	3SB32 47-0AA51	0.050	B	3SB32 47-0AA51-0CC0	0.060	
		White	1 NO + 1 NC	B	3SB32 47-0AA61	0.050	B	3SB32 47-0AA61-0CC0	0.060	
		Clear ¹⁾	1 NO + 1 NC	B	3SB32 47-0AA71	0.050	B	3SB32 47-0AA71-0CC0	0.060	
	110 AC	Red ¹⁾	1 NC	B	3SB32 50-0AA21	0.050		--		
		Yellow ¹⁾	1 NO	B	3SB32 57-0AA31	0.050		--		
	Green ¹⁾	1 NO	B	3SB32 57-0AA41	0.050		--			
	Blue ¹⁾	1 NO	B	3SB32 57-0AA51	0.050		--			
	White	1 NO	B	3SB32 57-0AA61	0.050		--			
	Clear ¹⁾	1 NO	B	3SB32 57-0AA71	0.050		--			
110 AC	Red ¹⁾	1 NO + 1 NC	B	3SB32 51-0AA21	0.060		--			
	Yellow ¹⁾	1 NO + 1 NC	B	3SB32 51-0AA31	0.060		--			
	Green ¹⁾	1 NO + 1 NC	B	3SB32 51-0AA41	0.060		--			
	Blue ¹⁾	1 NO + 1 NC	C	3SB32 51-0AA51	0.060		--			
	White	1 NO + 1 NC	B	3SB32 51-0AA61	0.060		--			
	Clear ¹⁾	1 NO + 1 NC	B	3SB32 51-0AA71	0.060		--			
230 AC	Red ¹⁾	1 NC	▶	3SB32 54-0AA21	0.050	B	3SB32 54-0AA21-0CC0	0.050		
	Yellow ¹⁾	1 NO	B	3SB32 53-0AA31	0.050	B	3SB32 53-0AA31-0CC0	0.050		
	Green ¹⁾	1 NO	▶	3SB32 53-0AA41	0.050	B	3SB32 53-0AA41-0CC0	0.050		
	Blue ¹⁾	1 NO	B	3SB32 53-0AA51	0.050	B	3SB32 53-0AA51-0CC0	0.050		
	White	1 NO	B	3SB32 53-0AA61	0.060	B	3SB32 53-0AA61-0CC0	0.050		
	Clear ¹⁾	1 NO	▶	3SB32 53-0AA71	0.050	B	3SB32 53-0AA71-0CC0	0.050		
230 AC	Red ¹⁾	1 NO + 1 NC	B	3SB32 55-0AA21	0.060	B	3SB32 55-0AA21-0CC0	0.060		
	Yellow ¹⁾	1 NO + 1 NC	B	3SB32 55-0AA31	0.060	B	3SB32 55-0AA31-0CC0	0.060		
	Green ¹⁾	1 NO + 1 NC	B	3SB32 55-0AA41	0.060	B	3SB32 55-0AA41-0CC0	0.060		
	Blue ¹⁾	1 NO + 1 NC	B	3SB32 55-0AA51	0.060	B	3SB32 55-0AA51-0CC0	0.060		
	White	1 NO + 1 NC	B	3SB32 55-0AA61	0.060	B	3SB32 55-0AA61-0CC0	0.060		
	Clear ¹⁾	1 NO + 1 NC	B	3SB32 55-0AA71	0.060	B	3SB32 55-0AA71-0CC0	0.060		



¹⁾ Inscription is possible by inserting a label.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Complete units

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102

Color of handle	Contacts for front plate mounting	DT	Screw terminals			DT	Spring-type terminals		
			Order No.	Price per PU	Weight per PU approx. kg		Order No.	Price per PU	Weight per PU approx. kg
Pushbutton									
									
Illuminated pushbuttons with flat button With BA 9s lampholder, without lamp (including holder for 3 elements)									
Red ¹⁾	1 NC	B	3SB32 07-0AA21	0.050	B	3SB32 07-0AA21-0CC0	0.050		
Yellow ¹⁾	1 NO	B	3SB32 06-0AA31	0.050	B	3SB32 06-0AA31-0CC0	0.050		
Green ¹⁾	1 NO	B	3SB32 06-0AA41	0.050	B	3SB32 06-0AA41-0CC0	0.050		
Blue ¹⁾	1 NO	B	3SB32 06-0AA51	0.050	B	3SB32 06-0AA51-0CC0	0.050		
White	1 NO	B	3SB32 06-0AA61	0.050	B	3SB32 06-0AA61-0CC0	0.050		
Clear ¹⁾	1 NO	B	3SB32 06-0AA71	0.050	B	3SB32 06-0AA71-0CC0	0.050		
Illuminated pushbutton with flat button	Red ¹⁾	1 NO + 1 NC	B	3SB32 05-0AA21	0.060	B	3SB32 05-0AA21-0CC0	0.060	
	Yellow ¹⁾	1 NO + 1 NC	B	3SB32 05-0AA31	0.060	B	3SB32 05-0AA31-0CC0	0.060	
	Green ¹⁾	1 NO + 1 NC	B	3SB32 05-0AA41	0.060	B	3SB32 05-0AA41-0CC0	0.060	
	Blue ¹⁾	1 NO + 1 NC	B	3SB32 05-0AA51	0.060	B	3SB32 05-0AA51-0CC0	0.060	
	White	1 NO + 1 NC	B	3SB32 05-0AA61	0.060	B	3SB32 05-0AA61-0CC0	0.060	
	Clear ¹⁾	1 NO + 1 NC	B	3SB32 05-0AA71	0.060	B	3SB32 05-0AA71-0CC0	0.060	
Mushroom pushbuttons									
									
Mushroom push-pull buttons, Ø 40 mm, latching, with pull-to-unlatch mechanism									
	Red	1 NC	▶	3SB32 03-1CA21	0.050	B	3SB32 03-1CA21-0CC0	0.050	
Mushroom push-pull button		1 NO + 1 NC	B	3SB32 01-1CA21	0.060	B	3SB32 01-1CA21-0CC0	0.060	



¹⁾ Inscription is possible by inserting a label.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Complete units

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102

Version	Color of handle/ Lock No.	Contacts for front plate mounting	DT	Screw terminals		Weight per PU approx.	DT	Spring-type terminals		Weight per PU approx.
				Order No.	Price per PU	kg				
				Order No.	Price per PU	kg				

Selector switches



Selector switches

Selector switches, 2 switch positions

Switching sequence O-I,
50° operating angle

Latching Black 1 NO ▶
 1 NO + 1 NC B



3SB32 02-2KA11

0.040 B

3SB32 02-2KA11-0CC0

0.040

3SB32 01-2KA11

0.050 B

3SB32 01-2KA11-0CC0

0.050

Selector switches, 2 switch positions

Switching sequence O-I,
90° operating angle

Latching Black 1 NO B
 1 NO + 1 NC B



3SB32 02-2HA11

0.040

--

3SB32 01-2HA11

0.050

--

Selector switches, 3 switch positions

switching sequence I-O-II,
2 x 50° operating angle

Latching Black 1 NO, 1 NO ▶
 1 NO + 1 NC, B
 1 NO + 1 NC B



3SB32 10-2DA11

0.070 B

3SB32 10-2DA11-0CC0

0.070

3SB32 08-2DA11

0.070 B

3SB32 08-2DA11-0CC0

0.070

Momentary Black 1 NO, 1 NO B
 contact 1 NO + 1 NC, B
 type 1 NO + 1 NC



3SB32 10-2EA11

0.070 B

3SB32 10-2EA11-0CC0

0.070

3SB32 08-2EA11

0.070 C

3SB32 08-2EA11-0CC0

0.070

Key-operated switches



RONIS key-operated switch

RONIS key-operated switches, 2 switch positions

With 2 keys,
removal position O + I,
switching sequence O-I,
50° operating angle

Latching SB 30 1 NO ▶
 1 NO + 1 NC B



3SB32 02-4AD11

0.070 B

3SB32 02-4AD11-0CC0

0.070

3SB32 01-4AD11

0.080 B

3SB32 01-4AD11-0CC0

0.080

Twin pushbuttons



Twin pushbuttons with flat buttons

Twin pushbuttons, with flat, square buttons¹⁾

With I/O White/ 1 NO + 1 NC, D
 inscription White 1 NO + 1 NC

3SB31 00-8AC61

0.070

--

¹⁾ Accessories for twin pushbuttons, see page 9/38.

3SB3 Pushbuttons and Indicator Lights, 22 mm Actuators and Indicators, Plastic, Round, 22 mm

Complete units

PU (UNIT) = 1
PS* = 1 UNIT
PG = 102

Color of handle	Contacts for front plate mounting	DT	Screw terminals			DT	Spring-type terminals		
			Order No.	Price per PU	Weight per PU approx. kg		Order No.	Price per PU	Weight per PU approx. kg

EMERGENCY-STOP devices acc. to ISO 13850, with yellow name plate, Ø 80 mm, with inscription



With rotate-to-unlatch mechanism

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching function, with rotate-to-unlatch mechanism

• English inscription "EMERGENCY STOP"

Red 1 NC →¹⁾ B **3SB32 03-1HR20**
Red 1 NO + 1 NC →¹⁾ B **3SB32 01-1HR20**

• French inscription "ARRET D'URGENCE"

Red 1 NC →¹⁾ B **3SB32 03-1HP20**
Red 1 NO + 1 NC →¹⁾ B **3SB32 01-1HP20**

• German inscription "NOT-HALT"

Red 1 NC →¹⁾ ▶ B **3SB32 03-1HA20**
Red 1 NO + 1 NC →¹⁾ B **3SB32 01-1HA20**

With rotate-to-unlatch mechanism and mechanical switch position indication

• English inscription "EMERGENCY STOP"

Red 1 NC →¹⁾ B **3SB32 03-1HR26**
Red 1 NO + 1 NC →¹⁾ B **3SB32 01-1HR26**

• German inscription "NOT-HALT"

Red 1 NC →¹⁾ B **3SB32 03-1HA26**
Red 1 NO + 1 NC →¹⁾ B **3SB32 01-1HA26**



With rotate-to-unlatch mechanism and switch position indication

With pull-to-unlatch mechanism

• English inscription "EMERGENCY STOP"

Red 1 NC →¹⁾ B **3SB32 03-1TR20**
Red 1 NO + 1 NC →¹⁾ B **3SB32 01-1TR20**

• German inscription "NOT-HALT"

Red 1 NC →¹⁾ B **3SB32 03-1TA20**
Red 1 NO + 1 NC →¹⁾ B **3SB32 01-1TA20**



With pull-to-unlatch mechanism

¹⁾ Positive opening according to IEC 60947-5-1, Appendix K. Can be used with 3TK28 safety relays. Certificate:



3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Complete units

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102


Rated voltage of lamp	Color of lens	DT	Screw terminals			Weight per PU approx.	DT	Spring-type terminals			Weight per PU approx.	
			Order No.	Price per PU	kg			Order No.	Price per PU	kg		
Indicator lights												
Indicator lights, with smooth lens¹⁾ With integrated LED												
24 AC/DC	Red	▶	3SB32 44-6AA20		0.040	B	3SB32 44-6AA20-0CC0		0.040		0.040	
	Yellow	B	3SB32 44-6AA30		0.040	B	3SB32 44-6AA30-0CC0		0.040		0.040	
	Green	▶	3SB32 44-6AA40		0.040	B	3SB32 44-6AA40-0CC0		0.040		0.040	
	Blue	B	3SB32 44-6AA50		0.040	B	3SB32 44-6AA50-0CC0		0.040		0.040	
	White	B	3SB32 44-6AA60		0.040	B	3SB32 44-6AA60-0CC0		0.040		0.040	
	Clear	▶	3SB32 44-6AA70		0.040	B	3SB32 44-6AA70-0CC0		0.040		0.040	
	110 AC	Red	B	3SB32 48-6AA20		0.040		--				
		Yellow	B	3SB32 48-6AA30		0.040		--				
		Green	B	3SB32 48-6AA40		0.040		--				
		Blue	B	3SB32 48-6AA50		0.040		--				
		White	B	3SB32 48-6AA60		0.040		--				
		Clear	B	3SB32 48-6AA70		0.040		--				
230 AC	Red	▶	3SB32 52-6AA20		0.040	B	3SB32 52-6AA20-0CC0		0.040		0.040	
	Yellow	B	3SB32 52-6AA30		0.040	B	3SB32 52-6AA30-0CC0		0.040		0.040	
	Green	▶	3SB32 52-6AA40		0.040	B	3SB32 52-6AA40-0CC0		0.040		0.040	
	Blue	B	3SB32 52-6AA50		0.040	B	3SB32 52-6AA50-0CC0		0.040		0.040	
	White	B	3SB32 52-6AA60		0.040	B	3SB32 52-6AA60-0CC0		0.040		0.040	
	Clear	▶	3SB32 52-6AA70		0.040	B	3SB32 52-6AA70-0CC0		0.040		0.040	
With BA 9s lampholder, without lamp												
--	Red	B	3SB32 04-6AA20		0.040	B	3SB32 04-6AA20-0CC0		0.040		0.040	
	Yellow	B	3SB32 04-6AA30		0.040	B	3SB32 04-6AA30-0CC0		0.040		0.040	
	Green	B	3SB32 04-6AA40		0.040	B	3SB32 04-6AA40-0CC0		0.040		0.040	
	Blue	B	3SB32 04-6AA50		0.040	B	3SB32 04-6AA50-0CC0		0.040		0.040	
	White	B	3SB32 04-6AA60		0.040	B	3SB32 04-6AA60-0CC0		0.040		0.040	
	Clear	B	3SB32 04-6AA70		0.040	B	3SB32 04-6AA70-0CC0		0.040		0.040	
Indicator lights with lens with concentric rings¹⁾ With integrated LED												
24 AC/DC	Red	▶	3SB32 44-6BA20		0.040	B	3SB32 44-6BA20-0CC0		0.040		0.040	
	Yellow	B	3SB32 44-6BA30		0.040	B	3SB32 44-6BA30-0CC0		0.040		0.040	
	Green	▶	3SB32 44-6BA40		0.040	B	3SB32 44-6BA40-0CC0		0.040		0.040	
	Blue	B	3SB32 44-6BA50		0.040	B	3SB32 44-6BA50-0CC0		0.040		0.040	
	White	B	3SB32 44-6BA60		0.040	B	3SB32 44-6BA60-0CC0		0.040		0.040	
	Clear	▶	3SB32 44-6BA70		0.040	B	3SB32 44-6BA70-0CC0		0.040		0.040	
110 AC	Red	B	3SB32 48-6BA20		0.040		--					
	Yellow	B	3SB32 48-6BA30		0.040		--					
	Green	B	3SB32 48-6BA40		0.040		--					
	Blue	B	3SB32 48-6BA50		0.040		--					
	White	B	3SB32 48-6BA60		0.040		--					
	Clear	B	3SB32 48-6BA70		0.040		--					
230 AC	Red	▶	3SB32 52-6BA20		0.040	B	3SB32 52-6BA20-0CC0		0.040		0.040	
	Yellow	B	3SB32 52-6BA30		0.040	B	3SB32 52-6BA30-0CC0		0.040		0.040	
	Green	▶	3SB32 52-6BA40		0.040	B	3SB32 52-6BA40-0CC0		0.040		0.040	
	Blue	B	3SB32 52-6BA50		0.040	B	3SB32 52-6BA50-0CC0		0.040		0.040	
	White	B	3SB32 52-6BA60		0.040	B	3SB32 52-6BA60-0CC0		0.040		0.040	
	Clear	▶	3SB32 52-6BA70		0.040	B	3SB32 52-6BA70-0CC0		0.040		0.040	
With BA 9s lampholder, without lamp												
--	Amber	B	3SB32 04-6BA00		0.040		--					
	Red	B	3SB32 04-6BA20		0.040	B	3SB32 04-6BA20-0CC0		0.040		0.040	
	Yellow	B	3SB32 04-6BA30		0.040	B	3SB32 04-6BA30-0CC0		0.040		0.040	
	Green	B	3SB32 04-6BA40		0.040	B	3SB32 04-6BA40-0CC0		0.040		0.040	
	Blue	B	3SB32 04-6BA50		0.040	B	3SB32 04-6BA50-0CC0		0.040		0.040	
	White	B	3SB32 04-6BA60		0.040	B	3SB32 04-6BA60-0CC0		0.040		0.040	
	Clear	B	3SB32 04-6BA70		0.040	B	3SB32 04-6BA70-0CC0		0.040		0.040	
	With BA 9s lampholder, with LED											
130 AC	Amber	B	3SB32 40-6BA00		0.039		--					
	Red	B	3SB32 40-6BA20		0.040		--					
	Yellow	B	3SB32 40-6BA30		0.039		--					
	Green	B	3SB32 40-6BA40		0.040		--					
	Blue	B	3SB32 40-6BA50		0.039		--					
	White	B	3SB32 40-6BA60		0.039		--					
	Clear	B	3SB32 40-6BA70		0.040		--					

¹⁾ Inscription by inserting a label is not possible.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Complete units

Version	Rated voltage of lamp	Color of lens	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Signaling devices



Acoustic signaling device

Acoustic signaling devices, IP65¹⁾

Rated voltage of lamp	Color of lens	DT
24 AC/DC	Black	A
115 AC/DC		B
230 AC/DC		A



3SB32 33-7BA10	1	1 unit	102	0.042
3SB32 34-7BA10	1	1 unit	102	0.042
3SB32 35-7BA10	1	1 unit	102	0.040

¹⁾ Mounting in 3SB38 enclosure only with 3SB34 00-1A lampholder; not possible with 3SB34 20-1A lampholder for floor mounting.

Version	Degree of protection	Color of handle	DT	Without connection	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
				Order No.	Price per PU				kg

Special devices

Actuators for potentiometers²⁾³⁾

With shaft Ø 6 mm,
30 ... 32 mm long

IP65

B

3SB10 00-7CH07

1

1 unit

102

0.030



Potentiometer drive

Pushbuttons with extended stroke²⁾ for actuating relays

12 mm stroke

IP65

Black

B

3SB30 00-0EA11

1

1 unit

102

0.020



Pushbuttons with 12 mm stroke

²⁾ Mounting in 3SB38 enclosure is not possible.

³⁾ The potentiometer is not included in the scope of supply.

3SB3 Pushbuttons and Indicator Lights, 22 mm Actuators and Indicators, Plastic, Round, 22 mm

Coordinate switches, complete

Overview



Joystick switches control auxiliary circuits permitting movements in various directions of machines and equipment.

The switches are designed for front panel mounting. They are climate-proof.

Operation

The 3SB14 00-0J contact block is used, which due to its depth cannot be built into 3SB38 enclosures.

Switches are available as follows:

- With 2 or 4 switch positions
- Latching or momentary contact type
- With or without mechanical interlocking

In the case of switches with mechanical interlock in O position, the switch is unlatched with the unlatching button at the front of the actuating lever.

Inscriptions

A name plate consisting of a black, plastic label holder and two or four adhesive, silver-colored inscription labels of 27 mm x 27 mm in size is available for labeling purposes. These labels can be supplied with and without customized inscription.

Note mounting dimensions!

Selection and ordering data

Version	Operating travel	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	<input type="checkbox"/> Contact closed <input type="checkbox"/> Contact open						
Order No.			Price per PU				kg

Coordinate switches

2 switch positions, 1 NO per direction

Horizontal, momentary contact type



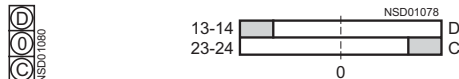
Without mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

With mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

Vertical, momentary contact type



Without mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

With mechanical locking in the O position

- With plastic front ring, black
- With metal front ring




Coordinate switch, 2 switch positions

B	3SB12 01-7DV01	1	1 unit	102	0.110
B	3SB12 01-7DV20	1	1 unit	102	0.110
B	3SB12 01-7DW01	1	1 unit	102	0.110
B	3SB12 01-7DW20	1	1 unit	102	0.110
B	3SB12 01-7FV01	1	1 unit	102	0.110
B	3SB12 01-7FV20	1	1 unit	102	0.110
B	3SB12 01-7FW01	1	1 unit	102	0.110
B	3SB12 01-7FW20	1	1 unit	102	0.110

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Coordinate switches, complete

Version	Operating travel <input type="checkbox"/> Contact closed <input type="checkbox"/> Contact open	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Order No.			Price per PU		kg		

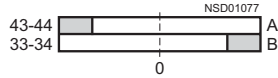
Coordinate switches

2 switch positions, 1 NO per direction



Coordinate switch, 2 switch positions

Horizontal, latching



Without mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

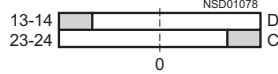
B	3SB12 01-7EV01	1	1 unit	102	0.110
B	3SB12 01-7EV20	1	1 unit	102	0.110

With mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

B	3SB12 01-7EW01	1	1 unit	102	0.110
B	3SB12 01-7EW20	1	1 unit	102	0.110

Vertical, latching



Without mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

B	3SB12 01-7GV01	1	1 unit	102	0.110
B	3SB12 01-7GV20	1	1 unit	102	0.110

With mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

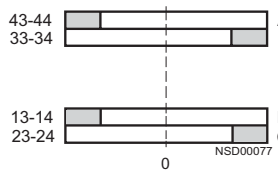
B	3SB12 01-7GW01	1	1 unit	102	0.110
B	3SB12 01-7GW20	1	1 unit	102	0.110

4 switch positions, 1 NO per direction

Momentary contact type



Coordinate switch, 4 switch positions



Without mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

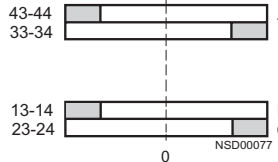
B	3SB12 08-7JV01	1	1 unit	102	0.124
B	3SB12 08-7JV20	1	1 unit	102	0.133

With mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

B	3SB12 08-7JW01	1	1 unit	102	0.128
B	3SB12 08-7JW20	1	1 unit	102	0.130

Latching



Without mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

B	3SB12 08-7KV01	1	1 unit	102	0.129
B	3SB12 08-7KV20	1	1 unit	102	0.132

With mechanical locking in the O position

- With plastic front ring, black
- With metal front ring

B	3SB12 08-7KW01	1	1 unit	102	0.127
B	3SB12 08-7KW20	1	1 unit	102	0.129


* You can order this quantity or a multiple thereof.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Coordinate switches, complete

Accessories

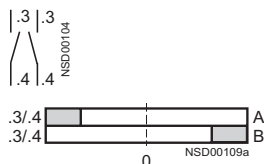
Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Contact blocks	Symbols/ operating travel	Screw terminals 					kg
	<input type="checkbox"/> Contact closed <input type="checkbox"/> Contact open						

Spare contact blocks



3SB14 00-0J

Contact blocks with 2 contacts
1 NO, 1 NO
(in scope of supply of switch)



Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	C	3SB14 00-0J		1	1 unit	102	0.020

Name plates



3SB19 06-0AV

Label holders for joystick switches

2 switch positions, horizontal,
89 mm × 30 mm

2 switch positions, vertical,
30 mm × 89 mm

4 switch positions

Inscription labels 27 mm × 27 mm, silver-colored, for sticking in place

Without inscription

With inscription (engraved)

- Text lines (up to 5 lines each with 11 characters)
- Graphic symbol with number acc. to ISO 7000 or IEC 60417
- Any inscription or symbol

3SB19 06-0AW

For black plastic labels, see page 9/72.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	B	3SB19 06-0AU		1	1 unit	102	0.003
	B	3SB19 06-0AV		1	1 unit	102	0.003
	B	3SB19 06-0AW		1	1 unit	102	0.006
	B	3SB19 06-2AA		100	10 units	102	0.100
	D	3SB19 06-2XZ					
	D	K0Y, K1Y, K2Y, or K5Y		1	1 unit	102	0.001
	D	K3Y		1	1 unit	102	0.001
	D	K9Y		1	1 unit	102	0.001

Options

Customized inscriptions

These labeling plates can be inscribed with text or symbols. 5 lines with 11 characters each in a letter height of 4 mm are possible.

Ordering notes

Append the following codes to the Order No.:

- Text line(s) in upper/lower case, upper case always for beginning of line (e. g. "Lift out"): **K0Y**
- Text line(s) in upper case (e. g. "LIFT OUT"): **K1Y**
- Text line(s) in lower case (e. g. "lift out"): **K2Y**
- Text line(s) in upper/lower case, all words begin with upper case letters (e. g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbol according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the order number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

In the case of multi-line inscriptions, the text must be assigned to the respective line, e. g. "Z1 = Lift, Z2 = Lower".

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417.

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example

A label inscribed with symbol No. 1117 according to ISO 7000 is required:

3SB19 06-2XZ
K3Y
Z = 1117 ISO

For other ordering examples see page 9/74.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Selection and ordering data

Version	Inscriptions	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Pushbuttons with holder¹⁾										
	With flat button	Pushbuttons with flat button		Black ▶	3SB30 00-0AA11		1	1 unit	102	0.025
		Red ▶	3SB30 00-0AA21		1	1 unit	102	0.025		
		Yellow B	3SB30 00-0AA31		1	1 unit	102	0.025		
		Green ▶	3SB30 00-0AA41		1	1 unit	102	0.025		
		Blue ▶	3SB30 00-0AA51		1	1 unit	102	0.025		
		White ▶	3SB30 00-0AA61		1	1 unit	102	0.025		
		Gray ▶	3SB30 00-0AB51		1	1 unit	102	0.025		
		Clear ²⁾ B	3SB30 00-0AA71		1	1 unit	102	0.025		
		I Green B	3SB30 00-0AA81		1	1 unit	102	0.025		
		O Red B	3SB30 00-0AB01		1	1 unit	102	0.025		
I White B	3SB30 00-0AB11		1	1 unit	102	0.025				
O Black B	3SB30 00-0AB21		1	1 unit	102	0.025				
R Blue B	3SB30 00-0AC81		1	1 unit	102	0.025				
	With raised button	Pushbuttons with raised button		Black B	3SB30 00-0BA11		1	1 unit	102	0.025
		Red B	3SB30 00-0BA21		1	1 unit	102	0.025		
		Yellow B	3SB30 00-0BA31		1	1 unit	102	0.025		
		Green B	3SB30 00-0BA41		1	1 unit	102	0.025		
		Blue B	3SB30 00-0BA51		1	1 unit	102	0.025		
		White B	3SB30 00-0BA61		1	1 unit	102	0.025		
	With raised button, latching	Pushbuttons with raised button, latching by pressing in and turning to the right, unlatches by turning to the left		Black ▶	3SB30 00-0CA11		1	1 unit	102	0.030
		Red B	3SB30 00-0CA21		1	1 unit	102	0.030		
	With raised button, latching	Pushbuttons with raised front ring (height 13 mm)		Black B	3SB30 00-0AA12		1	1 unit	102	0.025
		Red B	3SB30 00-0AA22		1	1 unit	102	0.025		
		Yellow B	3SB30 00-0AA32		1	1 unit	102	0.025		
		Green B	3SB30 00-0AA42		1	1 unit	102	0.025		
		Blue B	3SB30 00-0AA52		1	1 unit	102	0.025		
White B	3SB30 00-0AA62		1	1 unit	102	0.025				
	With raised front ring, castellated	Pushbuttons with raised front ring, castellated (height 13 mm)		Black B	3SB30 00-0AA13		1	1 unit	102	0.025
		Red B	3SB30 00-0AA23		1	1 unit	102	0.025		
		Yellow B	3SB30 00-0AA33		1	1 unit	102	0.025		
		Green B	3SB30 00-0AA43		1	1 unit	102	0.025		
	With raised front ring	Illuminated pushbuttons with flat button (including holder for 3 elements)		Amber ²⁾ C	3SB30 01-0AA01		1	1 unit	102	0.025
		Red ²⁾ ▶	3SB30 01-0AA21		1	1 unit	102	0.025		
		Yellow ²⁾ ▶	3SB30 01-0AA31		1	1 unit	102	0.025		
		Green ²⁾ ▶	3SB30 01-0AA41		1	1 unit	102	0.025		
		Blue ²⁾ B	3SB30 01-0AA51		1	1 unit	102	0.025		
		White B	3SB30 01-0AA61		1	1 unit	102	0.025		
		Clear ²⁾ ▶	3SB30 01-0AA71		1	1 unit	102	0.025		
	With raised front ring, castellated	Illuminated pushbuttons with raised button (including holder for 3 elements)		Red B	3SB30 01-0BA21		1	1 unit	102	0.025
		Yellow B	3SB30 01-0BA31		1	1 unit	102	0.025		
		Green B	3SB30 01-0BA41		1	1 unit	102	0.025		
		Blue B	3SB30 01-0BA51		1	1 unit	102	0.025		
		Clear B	3SB30 01-0BA71		1	1 unit	102	0.025		
	With raised front ring, castellated	Pushbuttons with flat button, latching , unlatches by pressing again		Black B	3SB30 00-0DA11		1	1 unit	102	0.025
		Red B	3SB30 00-0DA21		1	1 unit	102	0.025		
		Yellow B	3SB30 00-0DA31		1	1 unit	102	0.025		
		Green B	3SB30 00-0DA41		1	1 unit	102	0.026		
		Blue B	3SB30 00-0DA51		1	1 unit	102	0.025		
		White B	3SB30 00-0DA61		1	1 unit	102	0.025		
		Gray C	3SB30 00-0DB51		1	1 unit	102	0.075		
	Illuminated pushbutton with raised button	Illuminated pushbuttons with flat button, latching , unlatches by pressing again, (including holder for 3 elements)		Red ²⁾ B	3SB30 01-0DA21		1	1 unit	102	0.025
		Yellow ²⁾ B	3SB30 01-0DA31		1	1 unit	102	0.025		
		Green ²⁾ B	3SB30 01-0DA41		1	1 unit	102	0.025		
		Blue ²⁾ B	3SB30 01-0DA51		1	1 unit	102	0.025		
		White B	3SB30 01-0DA61		1	1 unit	102	0.025		
Clear ²⁾ B	3SB30 01-0DA71		1	1 unit	102	0.025				

1) Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

2) Inscription is possible by inserting a label.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Version	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Mushroom pushbuttons with holder¹⁾²⁾									
	Mushroom pushbuttons, Ø 30 mm	Black	B	3SB30 00-1DA11		1	1 unit	102	0.035
		Red	B	3SB30 00-1DA21		1	1 unit	102	0.035
		Yellow	B	3SB30 00-1DA31		1	1 unit	102	0.035
		Green	B	3SB30 00-1DA41		1	1 unit	102	0.035
	Mushroom pushbuttons, Ø 40 mm	Black	▶	3SB30 00-1GA11		1	1 unit	102	0.035
		Red	▶	3SB30 00-1GA21		1	1 unit	102	0.035
		Yellow	B	3SB30 00-1GA31		1	1 unit	102	0.035
		Green	B	3SB30 00-1GA41		1	1 unit	102	0.035
	Mushroom pushbuttons, Ø 60 mm	Black	B	3SB30 00-1QA11		1	1 unit	102	0.040
		Red	B	3SB30 00-1QA21		1	1 unit	102	0.040
		Yellow	B	3SB30 00-1QA31		1	1 unit	102	0.040
		Green	B	3SB30 00-1QA41		1	1 unit	102	0.040
	Illuminated mushroom pushbuttons, Ø 30 mm (including holder for 3 elements)	Red	B	3SB30 01-1DA21		1	1 unit	102	0.050
		Yellow	B	3SB30 01-1DA31		1	1 unit	102	0.050
		Green	B	3SB30 01-1DA41		1	1 unit	102	0.050
		Blue	B	3SB30 01-1DA51		1	1 unit	102	0.050
		White	B	3SB30 01-1DA61		1	1 unit	102	0.050
		Clear	B	3SB30 01-1DA71		1	1 unit	102	0.050
	Illuminated mushroom pushbuttons, Ø 40 mm (including holder for 3 elements)	Yellow	B	3SB30 01-1GA31		1	1 unit	102	0.035
		Green	B	3SB30 01-1GA41		1	1 unit	102	0.035
		White	B	3SB30 01-1GA61		1	1 unit	102	0.035
	Push-pull buttons, Ø 30 mm, latching, pull to unlatch	Black	B	3SB30 00-1EA11		1	1 unit	102	0.030
		Red	B	3SB30 00-1EA21		1	1 unit	102	0.030
	Push-pull buttons, Ø 40 mm, latching, pull to unlatch	Black	▶	3SB30 00-1CA11		1	1 unit	102	0.035
		Red	▶	3SB30 00-1CA21		1	1 unit	102	0.035
	Push-pull buttons, Ø 60 mm, latching, pull to unlatch	Black	B	3SB30 00-1RA11		1	1 unit	102	0.050
		Red	B	3SB30 00-1RA21		1	1 unit	102	0.050
	Push-pull buttons, Ø 30 mm, can be illuminated, latching, pull to unlatch, (including holder for 3 elements)	Red	B	3SB30 01-1EA21		1	1 unit	102	0.035
		Yellow	B	3SB30 01-1EA31		1	1 unit	102	0.035
		Green	B	3SB30 01-1EA41		1	1 unit	102	0.035
		Blue	B	3SB30 01-1EA51		1	1 unit	102	0.035
		Clear	B	3SB30 01-1EA71		1	1 unit	102	0.035
	Push-pull buttons, Ø 40 mm, can be illuminated, latching, pull to unlatch, (including holder for 3 elements)	Red	B	3SB30 01-1CA21		1	1 unit	102	0.035
		Yellow	B	3SB30 01-1CA31		1	1 unit	102	0.035
		Green	B	3SB30 01-1CA41		1	1 unit	102	0.035
		Blue	B	3SB30 01-1CA51		1	1 unit	102	0.035
		Clear	B	3SB30 01-1CA71		1	1 unit	102	0.035

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".







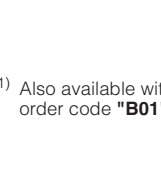
²⁾ Maximum permissible equipment: 3 single-pole or 2 double-pole contact blocks. When using the 3SB39 01-0AB holder, the central command point must not be empty.

* You can order this quantity or a multiple thereof.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Version	Version Illumination	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg				
Selector switches with holder¹⁾													
Selector switches with 2 switch positions													
 Non-illuminated	Switching sequence O-I, 90° operating angle, latching	Non-illuminated	Black	B	3SB30 00-2HA11		1	1 unit	102	0.028			
			Red	B	3SB30 00-2HA21		1	1 unit	102	0.028			
			Green	B	3SB30 00-2HA41		1	1 unit	102	0.028			
			White	B	3SB30 00-2HA61		1	1 unit	102	0.028			
 Illuminated	Switching sequence O-I, 50° operating angle, latching	Non-illuminated	Black	▶	3SB30 00-2KA11		1	1 unit	102	0.030			
			Red	B	3SB30 00-2KA21		1	1 unit	102	0.030			
			Green	B	3SB30 00-2KA41		1	1 unit	102	0.030			
			White	B	3SB30 00-2KA61		1	1 unit	102	0.030			
		Illuminated (including holder for 3 elements)	Red	B	3SB30 01-2KA21		1	1 unit	102	0.030			
			Yellow	B	3SB30 01-2KA31		1	1 unit	102	0.030			
			Green	B	3SB30 01-2KA41		1	1 unit	102	0.030			
 Illuminated	Switching sequence O-I, 50° operating angle, momentary contact type	Non-illuminated	Black	▶	3SB30 00-2LA11		1	1 unit	102	0.030			
			Red	B	3SB30 00-2LA21		1	1 unit	102	0.030			
			Green	B	3SB30 00-2LA41		1	1 unit	102	0.030			
			White	B	3SB30 00-2LA61		1	1 unit	102	0.030			
		Illuminated (including holder for 3 elements)	Red	B	3SB30 01-2LA21		1	1 unit	102	0.030			
			Yellow	B	3SB30 01-2LA31		1	1 unit	102	0.030			
			Green	B	3SB30 01-2LA41		1	1 unit	102	0.030			
			Blue	B	3SB30 01-2LA51		1	1 unit	102	0.030			
			Clear	B	3SB30 01-2LA71		1	1 unit	102	0.030			
			Selector switches with 3 switch positions										
 Non-illuminated	Switching sequence I-O-II, 2 x 50° operating angle, latching	Non-illuminated	Black	▶	3SB30 00-2DA11		1	1 unit	102	0.030			
			Red	B	3SB30 00-2DA21		1	1 unit	102	0.030			
			Green	B	3SB30 00-2DA41		1	1 unit	102	0.030			
			White	B	3SB30 00-2DA61		1	1 unit	102	0.030			
 Illuminated	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type	Illuminated (including holder for 3 elements)	Red	B	3SB30 01-2DA21		1	1 unit	102	0.030			
			Yellow	B	3SB30 01-2DA31		1	1 unit	102	0.030			
			Green	B	3SB30 01-2DA41		1	1 unit	102	0.030			
			Blue	B	3SB30 01-2DA51		1	1 unit	102	0.030			
		Non-illuminated	Black	▶	3SB30 00-2EA11		1	1 unit	102	0.030			
			Red	B	3SB30 00-2EA21		1	1 unit	102	0.030			
			Green	B	3SB30 00-2EA41		1	1 unit	102	0.030			
			White	B	3SB30 00-2EA61		1	1 unit	102	0.030			
			Illuminated (including holder for 3 elements)	Red	B	3SB30 01-2EA21		1	1 unit	102	0.030		
				Yellow	B	3SB30 01-2EA31		1	1 unit	102	0.030		
 Illuminated	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right	Non-illuminated	Black	▶	3SB30 00-2GA11		1	1 unit	102	0.030			
			Red	B	3SB30 00-2GA21		1	1 unit	102	0.030			
			Green	B	3SB30 00-2GA41		1	1 unit	102	0.030			
			White	B	3SB30 00-2GA61		1	1 unit	102	0.030			
		Illuminated (including holder for 3 elements)	Red	B	3SB30 01-2GA21		1	1 unit	102	0.030			
			Yellow	B	3SB30 01-2GA31		1	1 unit	102	0.030			
			Green	B	3SB30 01-2GA41		1	1 unit	102	0.030			
			Blue	B	3SB30 01-2GA51		1	1 unit	102	0.030			
			Clear	B	3SB30 01-2GA71		1	1 unit	102	0.030			
			Selector switches with 2 switch positions										
			 Illuminated	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right	Non-illuminated	Black	B	3SB30 00-2FA11		1	1 unit	102	0.030
						Red	B	3SB30 00-2FA21		1	1 unit	102	0.030
Green	B	3SB30 00-2FA41					1	1 unit	102	0.030			
White	B	3SB30 00-2FA61					1	1 unit	102	0.030			
Illuminated (including holder for 3 elements)	Red	B			3SB30 01-2FA21		1	1 unit	102	0.030			
	Yellow	B			3SB30 01-2FA31		1	1 unit	102	0.030			
	Green	B			3SB30 01-2FA41		1	1 unit	102	0.030			
	Blue	C			3SB30 01-2FA51		1	1 unit	102	0.030			
	Clear	B			3SB30 01-2FA71		1	1 unit	102	0.030			

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".



3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Version	Lock version			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type	Lock No./ color	Key removal position							

kg

Key-operated switches with holder¹⁾



RONIS key-operated switch

Key-operated switches with 2 keys and 2 switch positions

Switching sequence O-I, 50° operating angle, latching	RONIS	SB 30	O+I	B	3SB30 00-4HD11	1	1 unit	102	0.060
			O	B	3SB30 00-4HD01	1	1 unit	102	0.060
			I	B	3SB30 00-4HD21	1	1 unit	102	0.060



CES key-operated switch

Switching sequence O-I, 50° operating angle, latching	RONIS	SB 30	O+I	▶	3SB30 00-4AD11	1	1 unit	102	0.060
			O	▶	3SB30 00-4AD01	1	1 unit	102	0.060
			I	▶	3SB30 00-4AD21	1	1 unit	102	0.060
	CES	SSG 10	O+I	▶	3SB30 00-4LD11	1	1 unit	102	0.140
			O	▶	3SB30 00-4LD01	1	1 unit	102	0.140
			I	B	3SB30 00-4LD21	1	1 unit	102	0.140
	LSG 1	O+I	O	B	3SB30 00-4LF01	1	1 unit	102	0.140
			O	B	3SB30 00-4LF11	1	1 unit	102	0.140



BKS key-operated switch

CES with key monitoring ²⁾	SSG 10	O	C		3SB30 00-4LD05	1	1 unit	102	0.140
BKS	S1	O+I	B		3SB30 00-5AD11	1	1 unit	102	0.140
		O	B		3SB30 00-5AD01	1	1 unit	102	0.140
		I	B		3SB30 00-5AD21	1	1 unit	102	0.140
E1 for VW ³⁾	O+I	B			3SB30 00-5AE01	1	1 unit	102	0.130
	O	B			3SB30 00-5AE11	1	1 unit	102	0.130
E2 for VW ³⁾	O+I	B			3SB30 00-5AE21	1	1 unit	102	0.130
	O	B			3SB30 00-5AE31	1	1 unit	102	0.130
E7 for VW ³⁾	O+I	B			3SB30 00-5AE41	1	1 unit	102	0.130
	O	B			3SB30 00-5AE51	1	1 unit	102	0.130
E9 for VW ³⁾	O+I	B			3SB30 00-5AE61	1	1 unit	102	0.130
	O	B			3SB30 00-5AE71	1	1 unit	102	0.130



O.M.R. key-operated switch

O.M.R. ⁴⁾	73038	O+I	B		3SB30 00-3AG11	1	1 unit	102	0.130
Light blue		O	B		3SB30 00-3AG01	1	1 unit	102	0.130
73037	O+I	B			3SB30 00-3AH11	1	1 unit	102	0.130
Red	O	B			3SB30 00-3AH01	1	1 unit	102	0.130
73034	O+I	B			3SB30 00-3AJ11	1	1 unit	102	0.130
Black	O	B			3SB30 00-3AJ01	1	1 unit	102	0.130
73033	O+I	B			3SB30 00-3AK11	1	1 unit	102	0.130
Yellow	O	B			3SB30 00-3AK01	1	1 unit	102	0.130
Switching sequence O-I, 50° operating angle, momentary contact type	RONIS	SB 30	O	▶	3SB30 00-4BD01	1	1 unit	102	0.060
	CES	SSG 10	O	▶	3SB30 00-4MD01	1	1 unit	102	0.140
	LSG 1	O	B		3SB30 00-4MF11	1	1 unit	102	0.150
	BKS	S1	O	B	3SB30 00-5BD01	1	1 unit	102	0.140
O.M.R. ⁴⁾	73038	O	B		3SB30 00-3BG01	1	1 unit	102	0.130
Light blue									
73037	O	B			3SB30 00-3BH01	1	1 unit	102	0.130
Red									
73034	O	B			3SB30 00-3BJ01	1	1 unit	102	0.130
Black									
73033	O	B			3SB30 00-3BK01	1	1 unit	102	0.130
Yellow									



For BKS and CES special locks, see page 9/65.

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ For locks with key monitoring the supplied 3SB39 01-0AB holder must be used.

The key scan is performed by a 3SB34 single-pole NC contact block which must be snap-mounted in the center position. Scanning of the switch positions must be performed by additional contact blocks which are snap-mounted on the actuator.

³⁾ Keys are not included in scope of supply.

⁴⁾ According to FIAT standards; also available for other users.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Version	Lock version			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type	Lock No./color	Key removal position							

kg

Key-operated switches with holder¹⁾



RONIS key-operated switch

Key-operated switches with 2 keys and 3 switch positions

Switching sequence I-O-II, 2 x 50° operating angle, latching



CES key-operated switch



BKS key-operated switch



O.M.R. key-operated switch

Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type



Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right



Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right



RONIS	SB 30	I+O+II	B	3SB30 00-4DD11	1	1 unit	102	0.060		
		O	B	3SB30 00-4DD01	1	1 unit	102	0.060		
		I+II	B	3SB30 00-4DD41	1	1 unit	102	0.060		
		I	B	3SB30 00-4DD21	1	1 unit	102	0.060		
		II	B	3SB30 00-4DD31	1	1 unit	102	0.060		
CES	SSG 10	I+O+II	B	3SB30 00-4PD11	1	1 unit	102	0.150		
		O	B	3SB30 00-4PD01	1	1 unit	102	0.150		
		O+I	B	3SB30 00-4PD51	1	1 unit	102	0.150		
		I+II	B	3SB30 00-4PD41	1	1 unit	102	0.150		
		I	B	3SB30 00-4PD21	1	1 unit	102	0.150		
CES with key monitoring ²⁾	SSG 10	O	C	3SB30 00-4PD05	1	1 unit	102	0.150		
		BKS	S1	I+O+II	B	3SB30 00-5DD11	1	1 unit	102	0.140
				II	C	3SB30 00-5DD31	1	1 unit	102	0.140
		O.M.R. ³⁾	73038 Light blue	I+O+II	B	3SB30 00-3DG11	1	1 unit	102	0.130
				O	B	3SB30 00-3DG01	1	1 unit	102	0.130
73037 Red	O			B	3SB30 00-3DH01	1	1 unit	102	0.130	
	O+I			B	3SB30 00-3DH51	1	1 unit	102	0.130	
73034 Black	I+O+II			B	3SB30 00-3DJ11	1	1 unit	102	0.130	
	O	B	3SB30 00-3DJ01	1	1 unit	102	0.130			
RONIS	SB 30	O	B	3SB30 00-4ED01	1	1 unit	102	0.060		
		CES	SSG 10	O	B	3SB30 00-4QD01	1	1 unit	102	0.140
				O	B	3SB30 00-4QD01	1	1 unit	102	0.140
		BKS	S1	O	B	3SB30 00-5ED01	1	1 unit	102	0.140
				O	B	3SB30 00-5ED01	1	1 unit	102	0.140
O.M.R. ³⁾	73034 Black	O	B	3SB30 00-3EJ01	1	1 unit	102	0.130		
		RONIS	SB 30	O + II	B	3SB30 00-4GD61	1	1 unit	102	0.060
				O	B	3SB30 00-4GD01	1	1 unit	102	0.060
				II	B	3SB30 00-4GD31	1	1 unit	102	0.060
		CES	SSG 10	O + II	B	3SB30 00-4SD61	1	1 unit	102	0.140
O	B			3SB30 00-4SD01	1	1 unit	102	0.140		
RONIS	SB 30	O+I	B	3SB30 00-4FD51	1	1 unit	102	0.060		
		O	B	3SB30 00-4FD01	1	1 unit	102	0.060		
		I	B	3SB30 00-4FD21	1	1 unit	102	0.060		
		CES	SSG 10	O+I	B	3SB30 00-4RD51	1	1 unit	102	0.140
				O	B	3SB30 00-4RD01	1	1 unit	102	0.140
BKS	S1	I	B	3SB30 00-4RD21	1	1 unit	102	0.140		
		O+I	B	3SB30 00-5FD51	1	1 unit	102	0.140		
		O	B	3SB30 00-5FD01	1	1 unit	102	0.140		
O.M.R. ³⁾	73038 Light blue	I	B	3SB30 00-5FD21	1	1 unit	102	0.140		
		O	B	3SB30 00-3FG01	1	1 unit	102	0.130		
		73034 Black	I	B	3SB30 00-3FJ21	1	1 unit	102	0.130	

For BKS and CES special locks, see page 9/65.

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ For locks with key monitoring the supplied 3SB39 01-0AB holder must be used. The key scan is performed by a 3SB34 single-pole NC contact block which must be snap-mounted in the center position. Scanning of the switch positions must be performed by additional contact blocks which are snap-mounted on the actuator.

³⁾ According to FIAT standards; also available for other users.

* You can order this quantity or a multiple thereof.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Version	Color of handle	Approval	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-----------------	----------	----	-----------	--------------	-------------------	-----	----	--------------------------

EMERGENCY-STOP devices according to ISO 13850 and IEC 60947-5-5, with holder¹⁾²⁾. Can also be used with 3TK28 safety relays.



Mushroom diameter 32 mm

EMERGENCY-STOP mushroom pushbuttons, Ø 32 mm, with positive latching acc. to ISO 13850, with rotate-to-unlatch mechanism

Red



B

3SB30 00-1FA20

1

1 unit

102

0.050



Mushroom diam. 40 mm, with rotate-to-unlatch mechanism with switch position indication

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching acc. to ISO 13850, with rotate-to-unlatch mechanism

Red



B

3SB30 00-1HA20

1

1 unit

102

0.060

- Standard version
- With mechanical switch position indication

A

3SB30 00-1HA26

1

1 unit

102

0.070



Mushroom diameter 40 mm, pull-to-unlatch mechanism

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching acc. to ISO 13850, with pull-to-unlatch mechanism

Red



B

3SB30 00-1TA20

1

1 unit

102

0.060



Mushroom diameter 60 mm

EMERGENCY-STOP mushroom pushbuttons, Ø 60 mm, with positive latching acc. to ISO 13850, with rotate-to-unlatch mechanism

Red



B

3SB30 00-1AA20

1

1 unit

102

0.080



Mushroom diameter 40 mm, with RONIS key-operated switch

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with RONIS key-operated switches, lock No. SB 30, with positive latching acc. to ISO 13850, unlocking only possible using key

Red



B

3SB30 00-1BA20

1

1 unit

102

0.090



Mushroom diameter 40 mm, with CES key-operated switch

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with CES lock, lock No. SSG 10, with positive latching acc. to ISO 13850, unlocking only possible using key

Red



B

3SB30 00-1KA20

1

1 unit

102

0.110

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with BKS lock, lock No. S1, with positive latching acc. to ISO 13850, unlocking only possible using key

Red



B

3SB30 00-1LA20

1

1 unit

102

0.110

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with O.M.R. key-operated switch, lock No. 73037, with positive latching acc. to ISO 13850, unlocking only possible using key

Red



B

3SB30 00-1MA20

1

1 unit

102

0.120

For BKS and CES special locks, see page 9/65.

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ The yellow backing plates must be ordered separately, see Accessories.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Version	Color of lens	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	---------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Signaling elements with holder¹⁾



Indicator light with concentric rings

Indicator lights With smooth lens ²⁾	Amber	B	3SB30 01-6AA00		1	1 unit	102	0.020
	Red	▶	3SB30 01-6AA20		1	1 unit	102	0.020
	Yellow	B	3SB30 01-6AA30		1	1 unit	102	0.020
	Green	▶	3SB30 01-6AA40		1	1 unit	102	0.020
	Blue	B	3SB30 01-6AA50		1	1 unit	102	0.020
	White	B	3SB30 01-6AA60		1	1 unit	102	0.020
	Clear	▶	3SB30 01-6AA70		1	1 unit	102	0.020
Indicator lights With lens with concentric rings ²⁾	Amber	B	3SB30 01-6BA00		1	1 unit	102	0.020
	Red	B	3SB30 01-6BA20		1	1 unit	102	0.020
	Yellow	B	3SB30 01-6BA30		1	1 unit	102	0.020
	Green	B	3SB30 01-6BA40		1	1 unit	102	0.020
	Blue	B	3SB30 01-6BA50		1	1 unit	102	0.020
	White	B	3SB30 01-6BA60		1	1 unit	102	0.020
	Clear	B	3SB30 01-6BA70		1	1 unit	102	0.020



Acoustic signaling device

Acoustic signaling devices, IP40³⁾ For acoustic signal transformer 24 V DC ⁴⁾ (without BA 9s base)	Black	B	3SB30 00-7AA10		1	1 unit	102	0.025
--	-------	---	-----------------------	--	---	--------	-----	-------

1) Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

2) Inscription by inserting a label is not possible.

3) For acoustic signaling devices, IP65, see Complete Units.

4) To order 3SB1902-2BN acoustic signal transformers separately, see Accessories. The 3SB34 00-1A lampholder is also required; only version with screw terminals can be used. With front mounting, use in the enclosure is also possible.

Version	Inscriptions	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	--------------	-----------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Twin pushbuttons with indicator light with holder¹⁾



Twin pushbutton with indicator light, with flat buttons

Twin pushbuttons with indicator light, With flat, square buttons, including holder for 3 elements	I/O ²⁾	Green/Red	B	3SB31 01-8BC21		1	1 unit	102	0.035
	I/O ²⁾	White/Black	B	3SB31 01-8BC31		1	1 unit	102	0.035
	↑/↓ ²⁾	Green/Red	D	3SB31 01-8BC81		1	1 unit	102	0.035



Twin pushbutton with indicator light, with flat and raised buttons

Twin pushbuttons with indicator light, With flat and raised, square buttons, including holder for 3 elements	I/O ²⁾	Green/Red	B	3SB31 01-8DC21		1	1 unit	102	0.035
	I/O ²⁾	White/Black	B	3SB31 01-8DC31		1	1 unit	102	0.035

1) Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

2) Black inscription for green, red and white buttons; white inscription on black button.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Round, 22 mm

Actuators and indicators

Version	Inscriptions	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	--------------	-----------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Twin pushbuttons with holder¹⁾



Twin pushbuttons with flat buttons

Twin pushbuttons, with flat, square buttons	I/O ²⁾	Green/Red	B	3SB31 00-8AC21		1	1 unit	102	0.035
	I/O ²⁾	White/Black	B	3SB31 00-8AC31		1	1 unit	102	0.035
Twin pushbuttons, with flat and raised, square button	I/O ²⁾	Green/Red	B	3SB31 00-8CC21		1	1 unit	102	0.035
	I/O ²⁾	White/Black	B	3SB31 00-8CC31		1	1 unit	102	0.035

1) Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

2) Black inscription for green, red and white buttons; white inscription on black button.

Version	Use	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	-----	----	-----------	--------------	-------------------	-----	----	-----------------------

Accessories for twin pushbuttons



Label holders

Label holders 70 mm x 30 mm For inscription label 12.5 mm x 27 mm ¹⁾	Twin pushbuttons	B	3SB39 22-0AY		100	10 units	102	0.200
---	------------------	---	---------------------	--	-----	----------	-----	-------



Protective cap

Protective caps, clear Silicone, for degree of protection IP67	Twin pushbuttons with flat buttons	B	3SB39 21-0AQ		1	1 unit	102	0.005
--	------------------------------------	---	---------------------	--	---	--------	-----	-------




1) For blank labels see pages 9/70 and 9/71.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Square, 26 mm × 26 mm

Complete units


Selection and ordering data

Version	Rated voltage of lamp	Color of handle	Contacts for front plate mounting	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
					Order No.	Price per PU			kg			
Pushbutton												
	Pushbutton	Pushbuttons with flat button		--	Black	1 NO	B	3SB33 02-0AA11	1	1 unit	102	0.040
		Black	1 NC	B	3SB33 03-0AA11	1	1 unit	102	0.039			
		Red	1 NC	B	3SB33 03-0AA21	1	1 unit	102	0.040			
		Yellow	1 NO	B	3SB33 02-0AA31	1	1 unit	102	0.040			
		Green	1 NO	B	3SB33 02-0AA41	1	1 unit	102	0.040			
		Blue	1 NO	B	3SB33 02-0AA51	1	1 unit	102	0.040			
		White	1 NO	B	3SB33 02-0AA61	1	1 unit	102	0.040			
		Black	1 NO + 1 NC	B	3SB33 01-0AA11	1	1 unit	102	0.050			
		Red	1 NO + 1 NC	B	3SB33 01-0AA21	1	1 unit	102	0.050			
		Yellow	1 NO + 1 NC	B	3SB33 01-0AA31	1	1 unit	102	0.050			
		Green	1 NO + 1 NC	B	3SB33 01-0AA41	1	1 unit	102	0.050			
		Blue	1 NO + 1 NC	C	3SB33 01-0AA51	1	1 unit	102	0.050			
		White	1 NO + 1 NC	B	3SB33 01-0AA61	1	1 unit	102	0.050			
			Illuminated pushbuttons	Illuminated pushbuttons with flat button		24 AC/DC	Red ¹⁾	1 NC	B	3SB33 46-0AA21	1	1 unit
Yellow ¹⁾	1 NO			B	3SB33 45-0AA31	1	1 unit	102	0.050			
Green ¹⁾	1 NO			B	3SB33 45-0AA41	1	1 unit	102	0.050			
Blue ¹⁾	1 NO			B	3SB33 45-0AA51	1	1 unit	102	0.050			
White	1 NO			B	3SB33 45-0AA61	1	1 unit	102	0.050			
Clear ¹⁾	1 NO			B	3SB33 45-0AA71	1	1 unit	102	0.050			
Red ¹⁾	1 NO + 1 NC			B	3SB33 47-0AA21	1	1 unit	102	0.060			
Yellow ¹⁾	1 NO + 1 NC			B	3SB33 47-0AA31	1	1 unit	102	0.060			
Green ¹⁾	1 NO + 1 NC			B	3SB33 47-0AA41	1	1 unit	102	0.060			
Blue ¹⁾	1 NO + 1 NC			B	3SB33 47-0AA51	1	1 unit	102	0.060			
White	1 NO + 1 NC			B	3SB33 47-0AA61	1	1 unit	102	0.060			
Clear ¹⁾	1 NO + 1 NC			B	3SB33 47-0AA71	1	1 unit	102	0.060			
Illuminated pushbuttons with flat button	With integrated LED (including holder for 3 elements)			230 AC	Red ¹⁾	1 NC	B	3SB33 54-0AA21	1	1 unit	102	0.050
				Yellow ¹⁾	1 NO	C	3SB33 53-0AA31	1	1 unit	102	0.050	
		Green ¹⁾	1 NO	B	3SB33 53-0AA41	1	1 unit	102	0.050			
		Blue ¹⁾	1 NO	C	3SB33 53-0AA51	1	1 unit	102	0.050			
		White	1 NO	B	3SB33 53-0AA61	1	1 unit	102	0.050			
		Clear ¹⁾	1 NO	B	3SB33 53-0AA71	1	1 unit	102	0.050			
		Red ¹⁾	1 NO + 1 NC	B	3SB33 55-0AA21	1	1 unit	102	0.060			
		Yellow ¹⁾	1 NO + 1 NC	C	3SB33 55-0AA31	1	1 unit	102	0.060			
		Green ¹⁾	1 NO + 1 NC	B	3SB33 55-0AA41	1	1 unit	102	0.060			
		Blue ¹⁾	1 NO + 1 NC	C	3SB33 55-0AA51	1	1 unit	102	0.060			
		White	1 NO + 1 NC	C	3SB33 55-0AA61	1	1 unit	102	0.060			
		Clear ¹⁾	1 NO + 1 NC	B	3SB33 55-0AA71	1	1 unit	102	0.060			
		Illuminated pushbuttons with flat button	With BA 9s lampholder without lamp (including holder for 3 elements)	Red ¹⁾	1 NC	B	3SB33 07-0AA21	1	1 unit	102	0.050	
				Yellow ¹⁾	1 NO	B	3SB33 06-0AA31	1	1 unit	102	0.050	
Green ¹⁾	1 NO			B	3SB33 06-0AA41	1	1 unit	102	0.050			
Blue ¹⁾	1 NO			B	3SB33 06-0AA51	1	1 unit	102	0.050			
White	1 NO			B	3SB33 06-0AA61	1	1 unit	102	0.050			
Clear ¹⁾	1 NO			B	3SB33 06-0AA71	1	1 unit	102	0.050			
Red ¹⁾	1 NO + 1 NC			B	3SB33 05-0AA21	1	1 unit	102	0.060			
Yellow ¹⁾	1 NO + 1 NC			B	3SB33 05-0AA31	1	1 unit	102	0.060			
Green ¹⁾	1 NO + 1 NC			B	3SB33 05-0AA41	1	1 unit	102	0.060			
Blue ¹⁾	1 NO + 1 NC			B	3SB33 05-0AA51	1	1 unit	102	0.060			
White	1 NO + 1 NC			B	3SB33 05-0AA61	1	1 unit	102	0.060			
Clear ¹⁾	1 NO + 1 NC			B	3SB33 05-0AA71	1	1 unit	102	0.060			

¹⁾ Inscription is possible by inserting a label.

3SB3 Pushbuttons and Indicator Lights, 22 mm Actuators and Indicators, Plastic, Square, 26 mm × 26 mm

Complete units

Version	Color of handle	Contacts for front plate mounting	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU	kg		

EMERGENCY-STOP devices acc. to ISO 13850, with yellow name plate, Ø 80 mm, with inscription¹⁾. Can also be used with 3TK28 safety relays.



EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching function
With rotate-to-unlatch mechanism


Red 1 NC ²⁾ B
1 NO + 1 NC ²⁾ B

3SB33 03-1HA20	1	1 unit	102	0.070
3SB33 01-1HA20	1	1 unit	102	0.080

EMERGENCY-STOP mushroom pushbutton
Rotate-to-unlatch mechanism

¹⁾ German inscription "NOT-HALT".

²⁾ Positive opening according to IEC 60947-5-1, Appendix K.

Version	Rated voltage of lamp	Color of lens	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU	kg		

Signaling devices



Indicator lights


Indicator lights With integrated LED	24 AC/DC	Red	B	3SB33 44-6AA20	1	1 unit	102	0.040
		Yellow	B	3SB33 44-6AA30	1	1 unit	102	0.040
		Green	B	3SB33 44-6AA40	1	1 unit	102	0.040
		Blue	B	3SB33 44-6AA50	1	1 unit	102	0.040
		White	B	3SB33 44-6AA60	1	1 unit	102	0.040
		Clear	B	3SB33 44-6AA70	1	1 unit	102	0.040
Indicator lights With integrated LED	230 AC	Red	B	3SB33 52-6AA20	1	1 unit	102	0.040
		Yellow	B	3SB33 52-6AA30	1	1 unit	102	0.040
		Green	B	3SB33 52-6AA40	1	1 unit	102	0.040
		Blue	B	3SB33 52-6AA50	1	1 unit	102	0.040
		White	B	3SB33 52-6AA60	1	1 unit	102	0.040
		Clear	B	3SB33 52-6AA70	1	1 unit	102	0.040
Indicator lights With BA 9s lampholder (without lamp)	-	Red	B	3SB33 04-6AA20	1	1 unit	102	0.040
		Yellow	B	3SB33 04-6AA30	1	1 unit	102	0.040
		Green	B	3SB33 04-6AA40	1	1 unit	102	0.040
		Blue	B	3SB33 04-6AA50	1	1 unit	102	0.040
		White	B	3SB33 04-6AA60	1	1 unit	102	0.040
		Clear	B	3SB33 04-6AA70	1	1 unit	102	0.040

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Square, 26 mm × 26 mm

Actuators and indicators

Selection and ordering data

Version	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Pushbuttons and switches with holder¹⁾								
 Pushbutton	Pushbuttons with flat button	Black	B	3SB31 10-0AA11		1	1 unit	102 0.025
		Red	B	3SB31 10-0AA21		1	1 unit	102 0.025
		Yellow	B	3SB31 10-0AA31		1	1 unit	102 0.025
		Green	B	3SB31 10-0AA41		1	1 unit	102 0.025
		Blue	B	3SB31 10-0AA51		1	1 unit	102 0.025
		White	B	3SB31 10-0AA61		1	1 unit	102 0.025
	Clear ²⁾	B	3SB31 10-0AA71		1	1 unit	102 0.025	
 Pushbutton with raised front ring	Pushbuttons with raised front ring (height 13 mm)	Black	B	3SB31 10-0AA12		1	1 unit	102 0.025
		Red	B	3SB31 10-0AA22		1	1 unit	102 0.025
		Green	C	3SB31 10-0AA42		1	1 unit	102 0.025
		White	B	3SB31 10-0AA62		1	1 unit	102 0.025
 Pushbutton with raised front ring, castellated	Pushbuttons with raised front ring, castellated (height 13 mm)	Black	C	3SB31 10-0AA13		1	1 unit	102 0.025
		Red	C	3SB31 10-0AA23		1	1 unit	102 0.025
		Yellow	C	3SB31 10-0AA33		1	1 unit	102 0.025
		Green	C	3SB31 10-0AA43		1	1 unit	102 0.025
		White	C	3SB31 10-0AA63		1	1 unit	102 0.025
 Illuminated pushbuttons	Illuminated pushbuttons with flat button (including holder for 3 elements)	Red ²⁾	B	3SB31 11-0AA21		1	1 unit	102 0.025
		Yellow ²⁾	B	3SB31 11-0AA31		1	1 unit	102 0.025
		Green ²⁾	B	3SB31 11-0AA41		1	1 unit	102 0.025
		Blue ²⁾	B	3SB31 11-0AA51		1	1 unit	102 0.025
		White	B	3SB31 11-0AA61		1	1 unit	102 0.025
		Clear ²⁾	B	3SB31 11-0AA71		1	1 unit	102 0.025
 Pushbutton	Pushbuttons, latching, with flat button, unlocking by pressing again	Black	B	3SB31 10-0DA11		1	1 unit	102 0.025
		Red	B	3SB31 10-0DA21		1	1 unit	102 0.025
		Yellow	B	3SB31 10-0DA31		1	1 unit	102 0.025
		Green	B	3SB31 10-0DA41		1	1 unit	102 0.025
		Blue	C	3SB31 10-0DA51		1	1 unit	102 0.025
		White	B	3SB31 10-0DA61		1	1 unit	102 0.025
 Illuminated pushbutton	Illuminated pushbuttons, latching, with flat button (including holder for 3 elements), unlocking by pressing again	Red ²⁾	B	3SB31 11-0DA21		1	1 unit	102 0.025
		Yellow ²⁾	B	3SB31 11-0DA31		1	1 unit	102 0.025
		Green ²⁾	B	3SB31 11-0DA41		1	1 unit	102 0.025
		Blue ²⁾	B	3SB31 11-0DA51		1	1 unit	102 0.025
		White	B	3SB31 11-0DA61		1	1 unit	102 0.025
		Clear ²⁾	B	3SB31 11-0DA71		1	1 unit	102 0.025

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ Inscription is possible by inserting a label.

3SB3 Pushbuttons and Indicator Lights, 22 mm Actuators and Indicators, Plastic, Square, 26 mm × 26 mm

Actuators and indicators

Selector switches with holder¹⁾



Selector switches



Selector switch, illuminated



Selector switches



Selector switch, illuminated

Version	Version Illumination	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Selector switches with 2 switch positions									
Switching sequence O-I, 50° operating angle, latching 	Non-illuminated	Black	B	3SB31 10-2KA11		1	1 unit	102	0.030
		Red	B	3SB31 10-2KA21		1	1 unit	102	0.030
		Green	B	3SB31 10-2KA41		1	1 unit	102	0.030
		White	B	3SB31 10-2KA61		1	1 unit	102	0.030
	Illuminated (including holder for 3 elements)	Red	B	3SB31 11-2KA21		1	1 unit	102	0.030
		Yellow	B	3SB31 11-2KA31		1	1 unit	102	0.030
		Green	B	3SB31 11-2KA41		1	1 unit	102	0.030
		Blue	B	3SB31 11-2KA51		1	1 unit	102	0.030
		Clear	B	3SB31 11-2KA71		1	1 unit	102	0.030
		Switching sequence O-I, 50° operating angle, momentary contact type 	Non-illuminated	Black	B	3SB31 10-2LA11		1	1 unit
Red	C			3SB31 10-2LA21		1	1 unit	102	0.030
Green	C			3SB31 10-2LA41		1	1 unit	102	0.030
White	C			3SB31 10-2LA61		1	1 unit	102	0.030
Illuminated (including holder for 3 elements)	Red		B	3SB31 11-2LA21		1	1 unit	102	0.030
	Yellow		C	3SB31 11-2LA31		1	1 unit	102	0.030
Switching sequence I-O-II 2 x 50° operating angle, latching 	Non-illuminated	Black	B	3SB31 10-2DA11		1	1 unit	102	0.030
		Red	B	3SB31 10-2DA21		1	1 unit	102	0.030
		Green	C	3SB31 10-2DA41		1	1 unit	102	0.030
		White	C	3SB31 10-2DA61		1	1 unit	102	0.030
	Illuminated (including holder for 3 elements)	Red	B	3SB31 11-2DA21		1	1 unit	102	0.030
		Yellow	B	3SB31 11-2DA31		1	1 unit	102	0.030
		Green	B	3SB31 11-2DA41		1	1 unit	102	0.030
		Blue	C	3SB31 11-2DA51		1	1 unit	102	0.030
		Clear	B	3SB31 11-2DA71		1	1 unit	102	0.030
		Switching sequence I-O-II 2 x 50° operating angle, momentary contact type 	Non-illuminated	Black	B	3SB31 10-2EA11		1	1 unit
Red	B			3SB31 10-2EA21		1	1 unit	102	0.030
Green	C			3SB31 10-2EA41		1	1 unit	102	0.030
White	C			3SB31 10-2EA61		1	1 unit	102	0.030
Illuminated (including holder for 3 elements)	Red		C	3SB31 11-2EA21		1	1 unit	102	0.030
	Yellow		C	3SB31 11-2EA31		1	1 unit	102	0.030
Switching sequence I-O-II 2 x 50° operating angle, momentary contact type to the left, latching to the right 	Non-illuminated	Black	B	3SB31 10-2GA11		1	1 unit	102	0.030
		Green	C	3SB31 10-2GA41		1	1 unit	102	0.030
		White	B	3SB31 10-2GA61		1	1 unit	102	0.030
		Non-illuminated	Black	B	3SB31 10-2FA11		1	1 unit	102
	Red		C	3SB31 10-2FA21		1	1 unit	102	0.030
	Switching sequence I-O-II 2 x 50° operating angle, momentary contact type to the right 	Non-illuminated	Green	B	3SB31 10-2FA41		1	1 unit	102

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Plastic, Square, 26 mm × 26 mm

Actuators and indicators

Version	Lock version			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type	Lock No./color	Key removal position							
kg										

Key-operated switches with holder¹⁾



Key-operated switches with 2 keys and 2 switch positions

Switching sequence O-I, 50° operating angle, latching	RONIS	SB 30	O+I	B	3SB31 10-4AD11	1	1 unit	102	0.060
			O	B	3SB31 10-4AD01	1	1 unit	102	0.060
Switching sequence O-I, 50° operating angle, latching	CES	SSG 10	O+I	B	3SB31 10-4LD11	1	1 unit	102	0.140
			O	B	3SB31 10-4LD01	1	1 unit	102	0.140
			I	B	3SB31 10-4LD21	1	1 unit	102	0.140
	LSG 1	O+I	C	3SB31 10-4LF01	1	1 unit	102	0.140	
			O	B	3SB31 10-4LF11	1	1 unit	102	0.140
Switching sequence O-I, 50° operating angle, latching	BKS	E2 for VW ²⁾	O	B	3SB31 10-5AE31	1	1 unit	102	0.130
			O+I	B	3SB31 10-5AE41	1	1 unit	102	0.130
			O	B	3SB31 10-5AE51	1	1 unit	102	0.130
Switching sequence O-I, 50° operating angle, latching	O.M.R. ³⁾	73037 Red	O	B	3SB31 10-3AH01	1	1 unit	102	0.130
			O+I	B	3SB31 10-3AJ11	1	1 unit	102	0.130
Switching sequence O-I, 50° operating angle, momentary contact type	RONIS	SB 30	O	B	3SB31 10-4BD01	1	1 unit	102	0.060
	CES	SSG 10	O	B	3SB31 10-4MD01	1	1 unit	102	0.140



Key-operated switches with 2 keys and 3 switch positions

Switching sequence I-O-II, 2 x 50° operating angle, latching	RONIS	SB 30	I+O+II	B	3SB31 10-4DD11	1	1 unit	102	0.060
	CES	SSG 10	I+O+II	B	3SB31 10-4PD11	1	1 unit	102	0.140
			O	B	3SB31 10-4PD01	1	1 unit	102	0.140
Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type	RONIS	SB 30	O	B	3SB31 10-4ED01	1	1 unit	102	0.060
	CES	SSG 10	O	B	3SB31 10-4QD01	1	1 unit	102	0.140
Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right	CES	SSG 10	O	B	3SB31 10-4SD01	1	1 unit	102	0.140
Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right	CES	SSG 10	O+I	C	3SB31 10-4RD51	1	1 unit	102	0.140

For BKS and CES special locks, see page 9/65.

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ Keys are not included in scope of supply.

³⁾ According to FIAT standards; also available for other users.

* You can order this quantity or a multiple thereof.

3SB3 Pushbuttons and Indicator Lights, 22 mm Actuators and Indicators, Plastic, Square, 26 mm × 26 mm

Actuators and indicators

Version	Color of handle	Approval	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-----------------	----------	----	-----------	--------------	-------------------	-----	----	--------------------------

EMERGENCY-STOP devices according to ISO 13850 and IEC 60947-5-5, with holder¹⁾²⁾. Can also be used with 3TK28 safety relays.



EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching acc. to ISO 13850, rotate-to-unlatch mechanism

Red



B

3SB31 10-1HA20

1

1 unit

102

0.060

EMERGENCY-STOP mushroom pushbutton Rotate-to-unlatch mechanism



EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with RONIS key-operated switch

Red



B

3SB31 10-1BA20

1

1 unit

102

0.100

(with 2 keys), lock No. SB 30, with positive latching acc. to ISO 13850, unlocking only possible using key

EMERGENCY-STOP mushroom pushbutton with RONIS key-operated switch



EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with CWS key-operated switch

Red



B

3SB31 10-1KA20

1

1 unit

102

0.110

(with 2 keys), lock No. SSG 10, with positive latching acc. to ISO 13850, unlocking only possible using key

EMERGENCY-STOP mushroom pushbutton with BKS key-operated switch



EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with BKS key-operated switch

Red



B

3SB31 10-1LA20

1

1 unit

102

0.120

(with 2 keys), lock No. S1, with positive latching acc. to ISO 13850, unlocking only possible using key

EMERGENCY-STOP mushroom pushbutton with O.M.R. key-operated switch

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with O.M.R. key-operated switch

Red



B

3SB31 10-1MA20

1

1 unit

102

0.120

(with 2 keys), lock No. 73037 with positive latching acc. to ISO 13850, unlocking only using key

For BKS and CES special locks, see page 9/65.

²⁾ The yellow backing plates must be ordered separately, see Accessories.

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

Version	Color of lens	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	---------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Signaling elements with holder¹⁾



Indicator lights

Indicator lights

Red
Yellow
Green
Blue
Clear
White

B

3SB31 11-6AA20

1

1 unit

102

0.025

B

3SB31 11-6AA30

1

1 unit

102

0.025

B

3SB31 11-6AA40

1

1 unit

102

0.025

B

3SB31 11-6AA50

1

1 unit

102

0.025

B

3SB31 11-6AA70

1

1 unit

102

0.025

B

3SB31 11-6AA60

1

1 unit

102

0.025

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

* You can order this quantity or a multiple thereof.

3SB3 Pushbuttons and Indicator Lights, 22 mm Actuators and Indicators, Metal, Round, 22 mm

Complete units

Selection and ordering data

The following applies to all complete units:

PU (UNIT) = 1
PS* = 1 UNIT
PG = 102

Rated voltage of lamp	Color of handle	Contacts for front plate mounting	DT	Screw terminals	⊕	Weight per PU approx.	DT	Spring-type terminals	⊕	Weight per PU approx.
				Order No.	Price per PU	kg				
				Order No.	Price per PU	kg				

Pushbutton

Pushbuttons with flat button



Pushbutton with flat button

--	Black	1 NO	▶	3SB36 02-0AA11		0.090	C	3SB36 02-0AA11-0CC0		0.090
	Black	1 NC	B	3SB36 03-0AA11		0.090	C	3SB36 03-0AA11-0CC0		0.090
	Red	1 NC	▶	3SB36 03-0AA21		0.090	C	3SB36 03-0AA21-0CC0		0.090
	Yellow	1 NO	B	3SB36 02-0AA31		0.090	C	3SB36 02-0AA31-0CC0		0.090
	Green	1 NO	▶	3SB36 02-0AA41		0.090	C	3SB36 02-0AA41-0CC0		0.090
	Blue	1 NO	B	3SB36 02-0AA51		0.090	C	3SB36 02-0AA51-0CC0		0.090
	White	1 NO	▶	3SB36 02-0AA61		0.090	C	3SB36 02-0AA61-0CC0		0.090
	Black	1 NO + 1 NC	B	3SB36 01-0AA11		0.100	C	3SB36 01-0AA11-0CC0		0.100
	Red	1 NO + 1 NC	B	3SB36 01-0AA21		0.100	C	3SB36 01-0AA21-0CC0		0.100
	Yellow	1 NO + 1 NC	B	3SB36 01-0AA31		0.100	C	3SB36 01-0AA31-0CC0		0.100
	Green	1 NO + 1 NC	B	3SB36 01-0AA41		0.100	C	3SB36 01-0AA41-0CC0		0.100
	Blue	1 NO + 1 NC	B	3SB36 01-0AA51		0.100	C	3SB36 01-0AA51-0CC0		0.100
	White	1 NO + 1 NC	B	3SB36 01-0AA61		0.100	C	3SB36 01-0AA61-0CC0		0.100
	Clear	1 NO + 1 NC	C	3SB36 01-0AA71		0.100		--		--

Illuminated pushbuttons with flat button with integrated LED



Illuminated pushbutton with flat button

24 AC/DC	Red ¹⁾	1 NC	▶	3SB36 46-0AA21		0.100	C	3SB36 46-0AA21-0CC0		0.100
	Yellow ¹⁾	1 NO	B	3SB36 45-0AA31		0.100	C	3SB36 45-0AA31-0CC0		0.100
	Green ¹⁾	1 NO	▶	3SB36 45-0AA41		0.100	C	3SB36 45-0AA41-0CC0		0.100
	Blue ¹⁾	1 NO	B	3SB36 45-0AA51		0.100	C	3SB36 45-0AA51-0CC0		0.100
	White	1 NO	B	3SB36 45-0AA61		0.100	C	3SB36 45-0AA61-0CC0		0.100
	Clear ¹⁾	1 NO	▶	3SB36 45-0AA71		0.100	C	3SB36 45-0AA71-0CC0		0.100
	Red ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA21		0.110	C	3SB36 47-0AA21-0CC0		0.110
	Yellow ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA31		0.110	C	3SB36 47-0AA31-0CC0		0.110
	Green ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA41		0.110	C	3SB36 47-0AA41-0CC0		0.110
	Blue ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA51		0.110	C	3SB36 47-0AA51-0CC0		0.110
	White	1 NO + 1 NC	B	3SB36 47-0AA61		0.110	C	3SB36 47-0AA61-0CC0		0.110
	Clear ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA71		0.110	C	3SB36 47-0AA71-0CC0		0.110
110 AC	Red ¹⁾	1 NC	B	3SB36 50-0AA21		0.100		--		--
	Yellow ¹⁾	1 NO	B	3SB36 57-0AA31		0.100		--		--
	Green ¹⁾	1 NO	B	3SB36 57-0AA41		0.100		--		--
	Blue ¹⁾	1 NO	B	3SB36 57-0AA51		0.100		--		--
	White	1 NO	B	3SB36 57-0AA61		0.100		--		--
	Clear ¹⁾	1 NO	D	3SB36 57-0AA71		0.100		--		--
	Red ¹⁾	1 NO + 1 NC	B	3SB36 51-0AA21		0.110		--		--
	Yellow ¹⁾	1 NO + 1 NC	B	3SB36 51-0AA31		0.110		--		--
	Green ¹⁾	1 NO + 1 NC	B	3SB36 51-0AA41		0.110		--		--
	Blue ¹⁾	1 NO + 1 NC	D	3SB36 51-0AA51		0.110		--		--
	White	1 NO + 1 NC	B	3SB36 51-0AA61		0.110		--		--
	Clear ¹⁾	1 NO + 1 NC	D	3SB36 51-0AA71		0.110		--		--
230 AC	Red ¹⁾	1 NC	▶	3SB36 54-0AA21		0.100	C	3SB36 54-0AA21-0CC0		0.100
	Yellow ¹⁾	1 NO	B	3SB36 53-0AA31		0.100	C	3SB36 53-0AA31-0CC0		0.100
	Green ¹⁾	1 NO	▶	3SB36 53-0AA41		0.100	C	3SB36 53-0AA41-0CC0		0.100
	Blue ¹⁾	1 NO	D	3SB36 53-0AA51		0.100	C	3SB36 53-0AA51-0CC0		0.100
	White	1 NO	B	3SB36 53-0AA61		0.100	C	3SB36 53-0AA61-0CC0		0.100
	Clear ¹⁾	1 NO	▶	3SB36 53-0AA71		0.100	C	3SB36 53-0AA71-0CC0		0.100
	Red ¹⁾	1 NO + 1 NC	B	3SB36 55-0AA21		0.110	C	3SB36 55-0AA21-0CC0		0.110
	Yellow ¹⁾	1 NO + 1 NC	B	3SB36 55-0AA31		0.110	C	3SB36 55-0AA31-0CC0		0.110
	Green ¹⁾	1 NO + 1 NC	B	3SB36 55-0AA41		0.110	C	3SB36 55-0AA41-0CC0		0.110
	Blue ¹⁾	1 NO + 1 NC	D	3SB36 55-0AA51		0.110	C	3SB36 55-0AA51-0CC0		0.110
	White	1 NO + 1 NC	B	3SB36 55-0AA61		0.110	C	3SB36 55-0AA61-0CC0		0.110
	Clear ¹⁾	1 NO + 1 NC	B	3SB36 55-0AA71		0.110	C	3SB36 55-0AA71-0CC0		0.110




¹⁾ Inscription is possible by inserting a label.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Complete units

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102

Rated voltage of lamp	Color of handle	Contacts for front plate mounting	DT	Screw terminals		Weight per PU approx.	DT	Spring-type terminals		Weight per PU approx.	
				Order No.	Price per PU			Order No.	Price per PU		
Pushbutton											
Pushbuttons with flat button with BA 9s lampholder, without lamp											
 Illuminated pushbutton with flat button	--	Red ¹⁾	1 NC	B	3SB36 07-0AA21	0.100	C	3SB36 07-0AA21-0CC0	0.100		
		Amber ¹⁾	1 NO	D	3SB36 06-0AA01	0.100	--				
		Yellow ¹⁾	1 NO	B	3SB36 06-0AA31	0.100	C	3SB36 06-0AA31-0CC0	0.100		
		Green ¹⁾	1 NO	B	3SB36 06-0AA41	0.100	C	3SB36 06-0AA41-0CC0	0.100		
		Blue ¹⁾	1 NO	B	3SB36 06-0AA51	0.100	C	3SB36 06-0AA51-0CC0	0.100		
		White	1 NO	B	3SB36 06-0AA61	0.100	C	3SB36 06-0AA61-0CC0	0.100		
		Clear ¹⁾	1 NO	B	3SB36 06-0AA71	0.100	B	3SB36 06-0AA71-0CC0	0.100		
		Red ¹⁾	1 NO + 1 NC	B	3SB36 05-0AA21	0.110	C	3SB36 05-0AA21-0CC0	0.110		
		Amber ¹⁾	1 NO + 1 NC	C	3SB36 05-0AA01	0.110	--				
		Yellow ¹⁾	1 NO + 1 NC	B	3SB36 05-0AA31	0.110	C	3SB36 05-0AA31-0CC0	0.110		
		Green ¹⁾	1 NO + 1 NC	B	3SB36 05-0AA41	0.110	C	3SB36 05-0AA41-0CC0	0.110		
		Blue ¹⁾	1 NO + 1 NC	B	3SB36 05-0AA51	0.110	C	3SB36 05-0AA51-0CC0	0.110		
		White	1 NO + 1 NC	B	3SB36 05-0AA61	0.110	C	3SB36 05-0AA61-0CC0	0.110		
		Clear ¹⁾	1 NO + 1 NC	B	3SB36 05-0AA71	0.110	C	3SB36 05-0AA71-0CC0	0.110		
Illuminated pushbuttons with flat solvent-resistant button²⁾, with integrated LED											
 Illuminated pushbutton with flat button	24 V AC/DC	Red ¹⁾	1 NC	B	3SB36 46-0AA21-0PA0	0.100	--				
		Yellow ¹⁾	1 NO	B	3SB36 45-0AA31-0PA0	0.100	--				
		Green ¹⁾	1 NO	B	3SB36 45-0AA41-0PA0	0.100	--				
		Blue ¹⁾	1 NO	B	3SB36 45-0AA51-0PA0	0.100	--				
		White	1 NO	B	3SB36 45-0AA61-0PA0	0.100	--				
		Clear ¹⁾	1 NO	B	3SB36 45-0AA71-0PA0	0.100	--				
		Red ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA21-0PA0	0.110	--				
		Yellow ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA31-0PA0	0.110	--				
		Green ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA41-0PA0	0.110	--				
		Blue ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA51-0PA0	0.110	--				
		White	1 NO + 1 NC	B	3SB36 47-0AA61-0PA0	0.110	--				
		Clear ¹⁾	1 NO + 1 NC	B	3SB36 47-0AA71-0PA0	0.110	--				
	Mushroom pushbuttons										
	Mushroom push-pull buttons, Ø 40 mm, latching with pull-to-unlatch mechanism										
 Mushroom push-pull button	--	Red	1 NC	B	3SB36 03-1CA21	0.100	C	3SB36 03-1CA21-0CC0	0.100		
			1 NO + 1 NC	B	3SB36 01-1CA21	0.107	C	3SB36 01-1CA21-0CC0	0.107		

1) Inscription is possible by inserting a label.









2) Not suitable for laser inscription.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Complete units

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102

Version	Color of handle/ Lock No.	Contacts for front plate mounting	DT	Screw terminals		Weight per PU approx.	DT	Spring-type terminals		Weight per PU approx.	
				Order No.	Price per PU	kg					
				Order No.	Price per PU	kg					
Selector switches											
											
Selector switches, 2 switch positions Switching sequence O-I, 50° operating angle											
Latching 	Black	1 NO	▶	3SB36 02-2KA11		0.100	C	3SB36 02-2KA11-0CC0		0.100	
	Standard	1 NO + 1 NC	B	3SB36 01-2KA11		0.100	C	3SB36 01-2KA11-0CC0		0.100	
	Heavy duty	1 NO	C	3SB36 02-2PA11		0.110	--				
			1 NO + 1 NC	C	3SB36 01-2PA11		0.120	--			
Selector switches, 3 switch positions switching sequence I-O-II, 2 x 50° operating angle											
Latching 	Black	1 NO, 1 NO	▶	3SB36 10-2DA11		0.120	C	3SB36 10-2DA11-0CC0		0.120	
		1 NO + 1 NC, 1 NO + 1 NC	▶	3SB36 08-2DA11		0.120	C	3SB36 08-2DA11-0CC0		0.120	
	Heavy duty	1 NO, 1 NO	C	3SB36 10-2SA11		0.130	--				
			1 NO + 1 NC, 1 NO + 1 NC	C	3SB36 08-2SA11		0.130	--			
Momentary contact type 	Black	1 NO, 1 NO	▶	3SB36 10-2EA11		0.110	C	3SB36 10-2EA11-0CC0		0.110	
		1 NO + 1 NC, 1 NO + 1 NC	B	3SB36 08-2EA11		0.110	C	3SB36 08-2EA11-0CC0		0.110	
	Heavy duty	1 NO, 1 NO	C	3SB36 10-2TA11		0.140	--				
			1 NO + 1 NC, 1 NO + 1 NC	C	3SB36 08-2TA11		0.140	--			
Key-operated switches											
											
RONIS key-operated switch, 2 switch positions With 2 keys, removal position O + I, switching sequence O-I, 50° operating angle											
Latching 	SB 30	1 NO	▶	3SB36 02-4AD11		0.120	C	3SB36 02-4AD11-0CC0		0.120	
		1 NO + 1 NC	B	3SB36 01-4AD11		0.130	C	3SB36 01-4AD11-0CC0		0.130	

* You can order this quantity or a multiple thereof.

3SB3 Pushbuttons and Indicator Lights, 22 mm

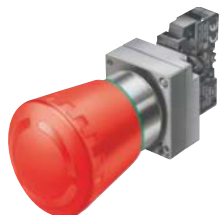
Actuators and Indicators, Metal, Round, 22 mm

Complete units

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102

Color of handle	Contacts for front plate mounting	DT	Screw terminals			Weight per PU approx.	DT	Spring-type terminals			Weight per PU approx.
			Order No.	Price per PU	kg			Order No.	Price per PU	kg	

EMERGENCY-STOP devices acc. to ISO 13850, with yellow name plate, Ø 80 mm, with inscription



EMERGENCY-STOP mushroom pushbutton
 Rotate-to-unlatch mechanism

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching function, with rotate-to-unlatch mechanism

• English inscription "EMERGENCY STOP"

Red 1 NC (→)¹⁾ B **3SB36 03-1HR20**
 1 NO + 1 NC (→)¹⁾ B **3SB36 01-1HR20**

• French inscription "ARRET D'URGENCE"

Red 1 NC (→)¹⁾ B **3SB36 03-1HP20**
 1 NO + 1 NC (→)¹⁾ B **3SB36 01-1HP20**

• German inscription "NOT-HALT"

Red 1 NC (→)¹⁾ ▶ **3SB36 03-1HA20** 0.130 B **3SB36 03-1HA20-0CC0** 0.130
 1 NO + 1 NC (→)¹⁾ B **3SB36 01-1HA20** 0.140 B **3SB36 01-1HA20-0CC0** 0.140
 1 NC + 1 NC (→)¹⁾ -- B **3SB36 11-1HA20-0CC0** 0.137



EMERGENCY-STOP mushroom pushbuttons with rotate-to-unlatch mechanism and switch position indication

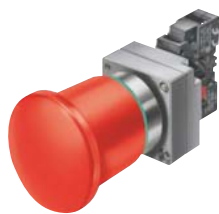
With rotate-to-unlatch mechanism and mechanical switch position indication

• English inscription "EMERGENCY STOP"

Red 1 NC (→)¹⁾ B **3SB36 03-1HR26**
 1 NO + 1 NC (→)¹⁾ B **3SB36 01-1HR26**

• German inscription "NOT-HALT"

Red 1 NC (→)¹⁾ B **3SB36 03-1HA26** 0.130 B **3SB36 03-1HA26-0CC0** 0.130
 1 NO + 1 NC (→)¹⁾ B **3SB36 01-1HA26** 0.140 B **3SB36 01-1HA26-0CC0** 0.140



EMERGENCY-STOP mushroom pushbutton
 Pull-to-unlatch mechanism

With pull-to-unlatch mechanism

• English inscription "EMERGENCY STOP"

Red 1 NC (→)¹⁾ B **3SB36 03-1TR20**
 1 NO + 1 NC (→)¹⁾ B **3SB36 01-1TR20**

• German inscription "NOT-HALT"

Red 1 NC (→)¹⁾ B **3SB36 03-1TA20** 0.130 B **3SB36 03-1TA20-0CC0** 0.130
 1 NO + 1 NC (→)¹⁾ B **3SB36 01-1TA20** 0.140 B **3SB36 01-1TA20-0CC0** 0.140
 1 NC + 1 NC (→)¹⁾ -- B **3SB36 11-1TA20-0CC0** 0.131

¹⁾ Positive opening according to IEC 60947-5-1, Appendix K.
 Can be used with 3TK28 safety relays.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Complete units

PU (UNIT) = 1
 PS* = 1 UNIT
 PG = 102

Rated voltage of lamp	Color of lens	DT	Screw terminals			Spring-type terminals		
			Order No.	Price per PU	Weight per PU approx. kg	Order No.	Price per PU	Weight per PU approx. kg
Indicator lights								
Indicator lights with lens with concentric rings¹⁾								
With integrated LED								
24 AC/DC	Red	▶	3SB36 44-6BA20		0.080 C	3SB36 44-6BA20-0CC0		0.080
	Yellow	B	3SB36 44-6BA30		0.080 C	3SB36 44-6BA30-0CC0		0.080
	Green	▶	3SB36 44-6BA40		0.080 C	3SB36 44-6BA40-0CC0		0.080
	Blue	B	3SB36 44-6BA50		0.080 C	3SB36 44-6BA50-0CC0		0.080
	White	B	3SB36 44-6BA60		0.080 C	3SB36 44-6BA60-0CC0		0.080
	Clear	▶	3SB36 44-6BA70		0.080 C	3SB36 44-6BA70-0CC0		0.080
110 AC	Red	B	3SB36 48-6BA20		0.080 B	3SB36 48-6BA20-0CC0		0.080
	Yellow	B	3SB36 48-6BA30		0.080 B	3SB36 48-6BA30-0CC0		0.080
	Green	B	3SB36 48-6BA40		0.080 B	3SB36 48-6BA40-0CC0		0.080
	Blue	B	3SB36 48-6BA50		0.080 B	3SB36 48-6BA50-0CC0		0.080
	White	B	3SB36 48-6BA60		0.080 B	3SB36 48-6BA60-0CC0		0.080
	Clear	B	3SB36 48-6BA70		0.080 B	3SB36 48-6BA70-0CC0		0.080
230 AC	Red	▶	3SB36 52-6BA20		0.080 C	3SB36 52-6BA20-0CC0		0.080
	Yellow	B	3SB36 52-6BA30		0.080 C	3SB36 52-6BA30-0CC0		0.080
	Green	▶	3SB36 52-6BA40		0.080 C	3SB36 52-6BA40-0CC0		0.080
	Blue	B	3SB36 52-6BA50		0.080 C	3SB36 52-6BA50-0CC0		0.080
	White	B	3SB36 52-6BA60		0.080 C	3SB36 52-6BA60-0CC0		0.080
	Clear	▶	3SB36 52-6BA70		0.080 C	3SB36 52-6BA70-0CC0		0.080
With BA 9s lampholder, without lamp								
--	Red	B	3SB36 04-6BA20		0.080 C	3SB36 04-6BA20-0CC0		0.080
	Yellow	B	3SB36 04-6BA30		0.080 C	3SB36 04-6BA30-0CC0		0.080
	Green	B	3SB36 04-6BA40		0.080 C	3SB36 04-6BA40-0CC0		0.080
	Blue	B	3SB36 04-6BA50		0.080 C	3SB36 04-6BA50-0CC0		0.080
	White	B	3SB36 04-6BA60		0.080 C	3SB36 04-6BA60-0CC0		0.080
	Clear	B	3SB36 04-6BA70		0.080 C	3SB36 04-6BA70-0CC0		0.080

¹⁾ Inscription by inserting a label is not possible.









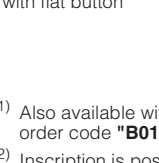


Indicator lights

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Selection and ordering data

Version	Inscriptions	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Pushbuttons with holder¹⁾										
	Pushbuttons with flat button	Black	▶	3SB35 00-0AA11		1	1 unit	102	0.080	
		Red	▶	3SB35 00-0AA21		1	1 unit	102	0.080	
		Yellow	B	3SB35 00-0AA31		1	1 unit	102	0.080	
		Green	▶	3SB35 00-0AA41		1	1 unit	102	0.080	
		Blue	▶	3SB35 00-0AA51		1	1 unit	102	0.080	
		White	▶	3SB35 00-0AA61		1	1 unit	102	0.080	
		Gray	▶	3SB35 00-0AB51		1	1 unit	102	0.080	
		Clear ²⁾	B	3SB35 00-0AA71		1	1 unit	102	0.080	
	Pushbuttons with raised button	I	Green	B	3SB35 00-0AA81		1	1 unit	102	0.080
		O	Red	B	3SB35 00-0AB01		1	1 unit	102	0.080
		I	White	B	3SB35 00-0AB11		1	1 unit	102	0.080
		O	Black	B	3SB35 00-0AB21		1	1 unit	102	0.080
	Pushbutton with raised front ring (height 15.5 mm)	R	Blue	D	3SB35 00-0AC81		1	1 unit	102	0.080
			Red	C	3SB35 00-0AA21-0PA0		1	1 unit	102	0.080
			Yellow	C	3SB35 00-0AA31-0PA0		1	1 unit	102	0.080
			Green	C	3SB35 00-0AA41-0PA0		1	1 unit	102	0.080
	Illuminated pushbuttons with flat button	Blue	C	3SB35 00-0AA51-0PA0		1	1 unit	102	0.080	
		White	C	3SB35 00-0AA61-0PA0		1	1 unit	102	0.080	
		Black	B	3SB35 00-0BA11		1	1 unit	102	0.080	
		Red	B	3SB35 00-0BA21		1	1 unit	102	0.080	
		Yellow	B	3SB35 00-0BA31		1	1 unit	102	0.080	
	Illuminated pushbuttons with raised button	Green	B	3SB35 00-0BA41		1	1 unit	102	0.080	
		Blue	B	3SB35 00-0BA51		1	1 unit	102	0.080	
		White	B	3SB35 00-0BA61		1	1 unit	102	0.080	
		Black	B	3SB35 00-0AA12		1	1 unit	102	0.080	
		Red	B	3SB35 00-0AA22		1	1 unit	102	0.080	
	Illuminated pushbuttons with flat button	Yellow	B	3SB35 00-0AA32		1	1 unit	102	0.080	
		Green	B	3SB35 00-0AA42		1	1 unit	102	0.080	
		Blue	B	3SB35 00-0AA52		1	1 unit	102	0.080	
		White	B	3SB35 00-0AA62		1	1 unit	102	0.080	
		Amber ²⁾	D	3SB35 01-0AA01		1	1 unit	102	0.080	
	Illuminated pushbuttons with raised button	Red ²⁾	▶	3SB35 01-0AA21		1	1 unit	102	0.080	
		Yellow ²⁾	▶	3SB35 01-0AA31		1	1 unit	102	0.080	
		Green ²⁾	▶	3SB35 01-0AA41		1	1 unit	102	0.080	
		Blue ²⁾	▶	3SB35 01-0AA51		1	1 unit	102	0.080	
		White	B	3SB35 01-0AA61		1	1 unit	102	0.080	
	Pushbutton with flat button	Clear ²⁾	▶	3SB35 01-0AA71		1	1 unit	102	0.080	
		Red ²⁾	C	3SB35 01-0AA21-0PA0		1	1 unit	102	0.080	
		Yellow ²⁾	C	3SB35 01-0AA31-0PA0		1	1 unit	102	0.080	
		Green ²⁾	C	3SB35 01-0AA41-0PA0		1	1 unit	102	0.080	
		Blue ²⁾	C	3SB35 01-0AA51-0PA0		1	1 unit	102	0.080	
	Pushbutton with flat button	White	C	3SB35 01-0AA61-0PA0		1	1 unit	102	0.080	
		Clear ²⁾	C	3SB35 01-0AA71-0PA0		1	1 unit	102	0.080	
		Amber	D	3SB35 01-0BA01		1	1 unit	102	0.080	
		Red	B	3SB35 01-0BA21		1	1 unit	102	0.080	
		Yellow	B	3SB35 01-0BA31		1	1 unit	102	0.080	
	Pushbutton with flat button	Green	B	3SB35 01-0BA41		1	1 unit	102	0.080	
		Blue	B	3SB35 01-0BA51		1	1 unit	102	0.080	
		Clear	B	3SB35 01-0BA71		1	1 unit	102	0.080	
		Black	B	3SB35 00-0DA11		1	1 unit	102	0.080	
		Red	B	3SB35 00-0DA21		1	1 unit	102	0.080	
	Pushbutton with flat button	Yellow	B	3SB35 00-0DA31		1	1 unit	102	0.080	
		Green	B	3SB35 00-0DA41		1	1 unit	102	0.080	
		Blue	B	3SB35 00-0DA51		1	1 unit	102	0.080	
		White	B	3SB35 00-0DA61		1	1 unit	102	0.080	
		Gray	D	3SB35 00-0DB51		1	1 unit	102	0.077	
	Pushbutton with flat button	Amber ²⁾	D	3SB35 01-0DA01		1	1 unit	102	0.080	
		Red ²⁾	B	3SB35 01-0DA21		1	1 unit	102	0.080	
		Yellow ²⁾	B	3SB35 01-0DA31		1	1 unit	102	0.080	
		Green ²⁾	B	3SB35 01-0DA41		1	1 unit	102	0.080	
		Blue ²⁾	B	3SB35 01-0DA51		1	1 unit	102	0.080	
	Pushbutton with flat button	White	B	3SB35 01-0DA61		1	1 unit	102	0.080	
		Clear ²⁾	B	3SB35 01-0DA71		1	1 unit	102	0.080	
		Unlatches by pressing again (including holder for 3 elements)								

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ Inscription is possible by inserting a label.

³⁾ Not suitable for laser inscription.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Mushroom pushbuttons with holder¹⁾



Mushroom pushbutton, Ø 30 mm



Mushroom pushbutton, Ø 40 mm



Illuminated mushroom push-button, Ø 60 mm



Push-pull button, Ø 30 mm



Push-pull button, Ø 40 mm



Push-pull button, Ø 60 mm, can be illuminated

Version	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mushroom pushbuttons, Ø 30 mm								
	Black	B	3SB35 00-1DA11		1	1 unit	102	0.080
	Red	B	3SB35 00-1DA21		1	1 unit	102	0.080
	Yellow	B	3SB35 00-1DA31		1	1 unit	102	0.080
	Green	B	3SB35 00-1DA41		1	1 unit	102	0.080
Mushroom pushbuttons, Ø 40 mm								
	Black	B	3SB35 00-1GA11		1	1 unit	102	0.085
	Red	B	3SB35 00-1GA21		1	1 unit	102	0.085
	Yellow	B	3SB35 00-1GA31		1	1 unit	102	0.085
	Green	B	3SB35 00-1GA41		1	1 unit	102	0.085
Mushroom pushbuttons, Ø 60 mm								
	Black	B	3SB35 00-1QA11		1	1 unit	102	0.090
	Red	B	3SB35 00-1QA21		1	1 unit	102	0.090
	Yellow	B	3SB35 00-1QA31		1	1 unit	102	0.090
	Green	B	3SB35 00-1QA41		1	1 unit	102	0.090
Illuminated mushroom push-buttons, Ø 30 mm (including holder for 3 elements)								
	Amber	D	3SB35 01-1DA01		1	1 unit	102	0.080
	Yellow	B	3SB35 01-1DA31		1	1 unit	102	0.080
	Green	B	3SB35 01-1DA41		1	1 unit	102	0.080
	White	B	3SB35 01-1DA61		1	1 unit	102	0.080
Illuminated mushroom push-buttons, Ø 40 mm (including holder for 3 elements)								
	Amber	D	3SB35 01-1GA01		1	1 unit	102	0.085
	Yellow	B	3SB35 01-1GA31		1	1 unit	102	0.085
	Green	B	3SB35 01-1GA41		1	1 unit	102	0.085
	White	B	3SB35 01-1GA61		1	1 unit	102	0.085
Illuminated mushroom push-buttons, Ø 60 mm (including holder for 3 elements)								
	Amber	D	3SB35 01-1QA01		1	1 unit	102	0.090
	Yellow	B	3SB35 01-1QA31		1	1 unit	102	0.090
	Green	B	3SB35 01-1QA41		1	1 unit	102	0.090
	White	B	3SB35 01-1QA61		1	1 unit	102	0.090
Push-pull buttons, Ø 30 mm, latching, with pull-to-unlatch								
	Black	B	3SB35 00-1EA11		1	1 unit	102	0.080
	Red	B	3SB35 00-1EA21		1	1 unit	102	0.080
Push-pull buttons, Ø 40 mm, latching, with pull-to-unlatch								
	Black	B	3SB35 00-1CA11		1	1 unit	102	0.085
	Red	B	3SB35 00-1CA21		1	1 unit	102	0.085
	Yellow	B	3SB35 00-1CA31		1	1 unit	102	0.085
	Green	D	3SB35 00-1CA41		1	1 unit	102	0.085
Push-pull buttons, Ø 60 mm, latching, with pull-to-unlatch								
	Black	B	3SB35 00-1RA11		1	1 unit	102	0.090
	Red	B	3SB35 00-1RA21		1	1 unit	102	0.090
Push-pull buttons, Ø 30 mm, latching, with pull-to-unlatch, can be illuminated, (including holder for 3 elements)								
	Amber	D	3SB35 01-1EA01		1	1 unit	102	0.080
	Red	B	3SB35 01-1EA21		1	1 unit	102	0.080
	Yellow	B	3SB35 01-1EA31		1	1 unit	102	0.080
	Green	B	3SB35 01-1EA41		1	1 unit	102	0.080
	Blue	B	3SB35 01-1EA51		1	1 unit	102	0.080
	Clear	B	3SB35 01-1EA71		1	1 unit	102	0.080
Push-pull buttons, Ø 40 mm, latching, with pull-to-unlatch, can be illuminated, (including holder for 3 elements)								
	Amber	D	3SB35 01-1CA01		1	1 unit	102	0.085
	Red	B	3SB35 01-1CA21		1	1 unit	102	0.085
	Yellow	B	3SB35 01-1CA31		1	1 unit	102	0.085
	Green	B	3SB35 01-1CA41		1	1 unit	102	0.085
	Blue	B	3SB35 01-1CA51		1	1 unit	102	0.085
	Clear	B	3SB35 01-1CA71		1	1 unit	102	0.085
Push-pull buttons, Ø 60 mm, latching, with pull-to-unlatch, can be illuminated, (including holder for 3 elements)								
	Amber	D	3SB35 01-1RA01		1	1 unit	102	0.090
	Red	B	3SB35 01-1RA21		1	1 unit	102	0.090
	Yellow	B	3SB35 01-1RA31		1	1 unit	102	0.090
	Green	D	3SB35 01-1RA41		1	1 unit	102	0.090
	Blue	B	3SB35 01-1RA51		1	1 unit	102	0.090
	Clear	D	3SB35 01-1RA71		1	1 unit	102	0.090

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Version	Version Illumination	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----------------------	-----------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Selector switches with holders



Selector switch, 2 switch positions, standard version, 90°

Selector switches with 2 switch positions

Switching sequence O-I, 90° operating angle, latching



Non-illuminated, standard version¹⁾
Black
Red
Green
White

▶
A
D
B

3SB35 00-2HA11
3SB35 00-2HA21
3SB35 00-2HA41
3SB35 00-2HA61

1
1
1
1

1 unit
1 unit
1 unit
1 unit

102
102
102
102

0.080
0.080
0.080
0.080

Non-illuminated, with solvent-resistant knob¹⁾
Black
Red
Green

B
B
B

3SB35 00-2HA11-0PA0
3SB35 00-2HA21-0PA0
3SB35 00-2HA41-0PA0

1
1
1

1 unit
1 unit
1 unit

102
102
102

0.080
0.080
0.080

Illuminated, standard version¹⁾, (including holder for 3 elements)
Amber
Red
Yellow
Green
Blue
Clear

C
C
C
C
C
C

3SB35 01-2HA01
3SB35 01-2HA21
3SB35 01-2HA31
3SB35 01-2HA41
3SB35 01-2HA51
3SB35 01-2HA71

1
1
1
1
1
1

1 unit
1 unit
1 unit
1 unit
1 unit
1 unit

102
102
102
102
102
102

0.100
0.100
0.100
0.100
0.100
0.100



Selector switch, 2 switch positions, standard version, 50°

Switching sequence O-I, 50° operating angle, latching



Non-illuminated, standard version¹⁾
Black
Red
Green
White

▶
B
B
B
B

3SB35 00-2KA11
3SB35 00-2KA21
3SB35 00-2KA41
3SB35 00-2KA61

1
1
1
1

1 unit
1 unit
1 unit
1 unit

102
102
102
102

0.080
0.080
0.080
0.080

Non-illuminated, with solvent-resistant knob¹⁾
Black
Red
Green

D
D
B

3SB35 00-2KA11-0PA0
3SB35 00-2KA21-0PA0
3SB35 00-2KA41-0PA0

1
1
1

1 unit
1 unit
1 unit

102
102
102

0.080
0.080
0.080

Illuminated, standard version¹⁾, (including holder for 3 elements)
Amber
Red
Yellow
Green
Blue
Clear

D
B
B
B
B
B

3SB35 01-2KA01
3SB35 01-2KA21
3SB35 01-2KA31
3SB35 01-2KA41
3SB35 01-2KA51
3SB35 01-2KA71

1
1
1
1
1
1

1 unit
1 unit
1 unit
1 unit
1 unit
1 unit

102
102
102
102
102
102

0.080
0.080
0.080
0.080
0.080
0.080



Selector switch, 2 switch positions, heavy-duty version

Illuminated, with solvent-resistant knob¹⁾, (including holder for 3 elements)
Red
Green
Blue
Clear

D
D
D
D

3SB35 01-2KA21-0PA0
3SB35 01-2KA41-0PA0
3SB35 01-2KA51-0PA0
3SB35 01-2KA71-0PA0

1
1
1
1

1 unit
1 unit
1 unit
1 unit

102
102
102
102

0.080
0.080
0.080
0.080



Selector switch, 2 switch positions, long handle

Non-illuminated, heavy-duty version
Black
Red
Green
White

B
C
C
C

3SB35 00-2PA11
3SB35 00-2PA21
3SB35 00-2PA41
3SB35 00-2PA61

1
1
1
1

1 unit
1 unit
1 unit
1 unit

102
102
102
102

0.110
0.110
0.110
0.110

Illuminated, heavy-duty version, (including holder for 3 elements)
Amber
Red
Yellow
Green
Blue
Clear

C
C
C
C
C
C

3SB35 01-2PA01
3SB35 01-2PA21
3SB35 01-2PA31
3SB35 01-2PA41
3SB35 01-2PA51
3SB35 01-2PA71

1
1
1
1
1
1

1 unit
1 unit
1 unit
1 unit
1 unit
1 unit

102
102
102
102
102
102

0.110
0.110
0.110
0.110
0.110
0.110

Non-illuminated, long handle
Black
Red
Green
White

C
C
C
C

3SB35 00-3PA11
3SB35 00-3PA21
3SB35 00-3PA41
3SB35 00-3PA61

1
1
1
1

1 unit
1 unit
1 unit
1 unit

102
102
102
102

0.110
0.110
0.110
0.110

Illuminated, long handle, (including holder for 3 elements)
Red
Yellow
Green
Blue
Clear

C
C
C
C
C

3SB35 01-3PA21
3SB35 01-3PA31
3SB35 01-3PA41
3SB35 01-3PA51
3SB35 01-3PA71

1
1
1
1
1

1 unit
1 unit
1 unit
1 unit
1 unit

102
102
102
102
102

0.110
0.110
0.110
0.110
0.110

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Version	Version Illumination	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----------------------	-----------------	----	-----------	--------------	-------------------	-----	----	-----------------------

Selector switches with holders



Selector switch, 2 switch positions, standard version



Selector switch, 2 switch positions, heavy-duty version



Selector switch, 2 switch positions, long handle

Selector switches with 2 switch positions

Switching sequence O-I, 50° operating angle, momentary contact type







Non-illuminated, standard version¹⁾	Black	▶	3SB35 00-2LA11	1	1 unit	102	0.080	
	Red	B	3SB35 00-2LA21	1	1 unit	102	0.080	
	Green	B	3SB35 00-2LA41	1	1 unit	102	0.080	
	White	B	3SB35 00-2LA61	1	1 unit	102	0.080	
	Non-illuminated, with solvent-resistant knob¹⁾	Black	B	3SB35 00-2LA11-0PA0	1	1 unit	102	0.080
		Red	B	3SB35 00-2LA21-0PA0	1	1 unit	102	0.080
		Green	B	3SB35 00-2LA41-0PA0	1	1 unit	102	0.080
	Illuminated, standard version¹⁾, (including holder for 3 elements)	Amber	D	3SB35 01-2LA01	1	1 unit	102	0.080
		Red	B	3SB35 01-2LA21	1	1 unit	102	0.080
		Yellow	B	3SB35 01-2LA31	1	1 unit	102	0.080
		Green	B	3SB35 01-2LA41	1	1 unit	102	0.080
		Blue	B	3SB35 01-2LA51	1	1 unit	102	0.080
Clear		B	3SB35 01-2LA71	1	1 unit	102	0.080	
Illuminated, with solvent-resistant knob¹⁾ (including holder for 3 elements)	Red	D	3SB35 01-2LA21-0PA0	1	1 unit	102	0.080	
	Green	D	3SB35 01-2LA41-0PA0	1	1 unit	102	0.080	
	Blue	D	3SB35 01-2LA51-0PA0	1	1 unit	102	0.080	
	Clear	B	3SB35 01-2LA71-0PA0	1	1 unit	102	0.080	
Non-illuminated, heavy-duty version	Black	C	3SB35 00-2QA11	1	1 unit	102	0.100	
	Red	C	3SB35 00-2QA21	1	1 unit	102	0.100	
	Green	C	3SB35 00-2QA41	1	1 unit	102	0.100	
	White	C	3SB35 00-2QA61	1	1 unit	102	0.100	
Illuminated, heavy-duty version, (including holder for 3 elements)	Amber	C	3SB35 01-2QA01	1	1 unit	102	0.100	
	Red	C	3SB35 01-2QA21	1	1 unit	102	0.100	
	Yellow	C	3SB35 01-2QA31	1	1 unit	102	0.100	
	Green	C	3SB35 01-2QA41	1	1 unit	102	0.100	
	Blue	C	3SB35 01-2QA51	1	1 unit	102	0.100	
	Clear	C	3SB35 01-2QA71	1	1 unit	102	0.100	
Non-illuminated, long handle	Black	C	3SB35 00-3QA11	1	1 unit	102	0.100	
	Red	C	3SB35 00-3QA21	1	1 unit	102	0.100	
	Green	C	3SB35 00-3QA41	1	1 unit	102	0.100	
Illuminated, long handle, (including holder for 3 elements)	Red	C	3SB35 01-3QA21	1	1 unit	102	0.100	
	Yellow	C	3SB35 01-3QA31	1	1 unit	102	0.100	
	Green	C	3SB35 01-3QA41	1	1 unit	102	0.100	
	Blue	C	3SB35 01-3QA51	1	1 unit	102	0.100	
	Clear	C	3SB35 01-3QA71	1	1 unit	102	0.100	

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators







Version	Version Illumination	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Selector switches with holders										
 <p>Selector switch, 3 switch positions, standard version</p>	Selector switches with 3 switch positions									
	Switching sequence I-O-II, 2 x 50° operating angle, latching 	Non-illuminated, standard version¹⁾	Black	▶	3SB35 00-2DA11		1	1 unit	102	0.080
			Red	B	3SB35 00-2DA21		1	1 unit	102	0.080
			Green	B	3SB35 00-2DA41		1	1 unit	102	0.080
			White	B	3SB35 00-2DA61		1	1 unit	102	0.080
		Non-illuminated, with solvent-resistant knob¹⁾	Black	B	3SB35 00-2DA11-0PA0		1	1 unit	102	0.080
			Red	B	3SB35 00-2DA21-0PA0		1	1 unit	102	0.080
			Green	B	3SB35 00-2DA41-0PA0		1	1 unit	102	0.080
		Illuminated, standard version¹⁾	Amber	D	3SB35 01-2DA01		1	1 unit	102	0.080
			Red	B	3SB35 01-2DA21		1	1 unit	102	0.080
			Yellow	B	3SB35 01-2DA31		1	1 unit	102	0.080
		Green	B	3SB35 01-2DA41		1	1 unit	102	0.080	
(including holder for 3 elements)		Blue	B	3SB35 01-2DA51		1	1 unit	102	0.080	
		Clear	B	3SB35 01-2DA71		1	1 unit	102	0.080	
	Illuminated, with solvent-resistant knob¹⁾	Red	B	3SB35 01-2DA21-0PA0		1	1 unit	102	0.080	
		Green	D	3SB35 01-2DA41-0PA0		1	1 unit	102	0.080	
Blue		B	3SB35 01-2DA51-0PA0		1	1 unit	102	0.080		
Clear		D	3SB35 01-2DA71-0PA0		1	1 unit	102	0.080		
(including holder for 3 elements)										
	Non-illuminated, heavy-duty version	Black	B	3SB35 00-2SA11		1	1 unit	102	0.100	
		Red	C	3SB35 00-2SA21		1	1 unit	102	0.100	
		Green	C	3SB35 00-2SA41		1	1 unit	102	0.100	
		White	C	3SB35 00-2SA61		1	1 unit	102	0.100	
	Illuminated, heavy-duty version,	Amber	C	3SB35 01-2SA01		1	1 unit	102	0.100	
		Red	C	3SB35 01-2SA21		1	1 unit	102	0.100	
		Yellow	C	3SB35 01-2SA31		1	1 unit	102	0.100	
		Green	C	3SB35 01-2SA41		1	1 unit	102	0.100	
(including holder for 3 elements)		Blue	C	3SB35 01-2SA51		1	1 unit	102	0.100	
		Clear	C	3SB35 01-2SA71		1	1 unit	102	0.100	
	Non-illuminated, long handle	Black	C	3SB35 00-3SA11		1	1 unit	102	0.100	
		Red	C	3SB35 00-3SA21		1	1 unit	102	0.100	
Green		C	3SB35 00-3SA41		1	1 unit	102	0.100		
White		C	3SB35 00-3SA61		1	1 unit	102	0.100		
	Illuminated, long handle	Red	C	3SB35 01-3SA21		1	1 unit	102	0.100	
		Yellow	C	3SB35 01-3SA31		1	1 unit	102	0.100	
		Green	C	3SB35 01-3SA41		1	1 unit	102	0.100	
		Blue	C	3SB35 01-3SA51		1	1 unit	102	0.100	
(including holder for 3 elements)	Clear	C	3SB35 01-3SA71		1	1 unit	102	0.100		
 <p>Selector switch, 3 switch positions, heavy-duty version</p>	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type 	Non-illuminated, standard version¹⁾	Black	▶	3SB35 00-2EA11		1	1 unit	102	0.080
			Red	B	3SB35 00-2EA21		1	1 unit	102	0.080
			Green	B	3SB35 00-2EA41		1	1 unit	102	0.080
			White	B	3SB35 00-2EA61		1	1 unit	102	0.080
		Non-illuminated, with solvent-resistant knob¹⁾	Black	B	3SB35 00-2EA11-0PA0		1	1 unit	102	0.080
			Red	B	3SB35 00-2EA21-0PA0		1	1 unit	102	0.080
			Green	B	3SB35 00-2EA41-0PA0		1	1 unit	102	0.080
		Illuminated, standard version¹⁾,	Amber	D	3SB35 01-2EA01		1	1 unit	102	0.080
			Red	B	3SB35 01-2EA21		1	1 unit	102	0.080
			Yellow	B	3SB35 01-2EA31		1	1 unit	102	0.080
			Green	B	3SB35 01-2EA41		1	1 unit	102	0.080
(including holder for 3 elements)		Blue	B	3SB35 01-2EA51		1	1 unit	102	0.080	
		Clear	B	3SB35 01-2EA71		1	1 unit	102	0.080	
	Illuminated, with solvent-resistant knob¹⁾	Red	B	3SB35 01-2EA21-0PA0		1	1 unit	102	0.080	
		Green	B	3SB35 01-2EA41-0PA0		1	1 unit	102	0.080	
Blue		B	3SB35 01-2EA51-0PA0		1	1 unit	102	0.080		
Clear		D	3SB35 01-2EA71-0PA0		1	1 unit	102	0.080		
(including holder for 3 elements)										

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Version	Version Illumination	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Selector switches with holders										
Selector switches with 3 switch positions										
 <p>Selector switch, 3 switch positions, standard version</p>	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type 	Non-illuminated,	Black	B	3SB35 00-2TA11		1	1 unit	102	0.100
			Red	C	3SB35 00-2TA21		1	1 unit	102	0.100
		heavy-duty version	Green	C	3SB35 00-2TA41		1	1 unit	102	0.100
			White	C	3SB35 00-2TA61		1	1 unit	102	0.100
		Illuminated, heavy-duty version,	Amber	C	3SB35 01-2TA01		1	1 unit	102	0.100
		(including holder for 3 elements)	Red	C	3SB35 01-2TA21		1	1 unit	102	0.100
			Yellow	C	3SB35 01-2TA31		1	1 unit	102	0.100
			Green	C	3SB35 01-2TA41		1	1 unit	102	0.100
			Blue	C	3SB35 01-2TA51		1	1 unit	102	0.100
			Clear	C	3SB35 01-2TA71		1	1 unit	102	0.100
		Non-illuminated, long handle	Black	C	3SB35 00-3TA11		1	1 unit	102	0.100
			Red	C	3SB35 00-3TA21		1	1 unit	102	0.100
	Green	C	3SB35 00-3TA41		1	1 unit	102	0.100		
	White	D	3SB35 00-3TA61		1	1 unit	102	0.100		
Illuminated, long handle	Red	C	3SB35 01-3TA21		1	1 unit	102	0.100		
(including holder for 3 elements)	Yellow	C	3SB35 01-3TA31		1	1 unit	102	0.100		
	Green	C	3SB35 01-3TA41		1	1 unit	102	0.100		
	Blue	C	3SB35 01-3TA51		1	1 unit	102	0.100		
	Clear	C	3SB35 01-3TA71		1	1 unit	102	0.100		
 <p>Selector switch, 3 switch positions, heavy-duty version</p>	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right 	Non-illuminated, standard version¹⁾	Black	B	3SB35 00-2GA11		1	1 unit	102	0.080
			Red	B	3SB35 00-2GA21		1	1 unit	102	0.080
			Green	B	3SB35 00-2GA41		1	1 unit	102	0.080
			White	B	3SB35 00-2GA61		1	1 unit	102	0.080
		Illuminated, standard version¹⁾,	Amber	D	3SB35 01-2GA01		1	1 unit	102	0.080
		(including holder for 3 elements)	Red	D	3SB35 01-2GA21		1	1 unit	102	0.080
			Yellow	D	3SB35 01-2GA31		1	1 unit	102	0.080
			Green	B	3SB35 01-2GA41		1	1 unit	102	0.080
			Blue	D	3SB35 01-2GA51		1	1 unit	102	0.080
			Clear	D	3SB35 01-2GA71		1	1 unit	102	0.080
		Non-illuminated, heavy-duty version	Black	C	3SB35 00-2VA11		1	1 unit	102	0.100
			Red	C	3SB35 00-2VA21		1	1 unit	102	0.100
	Green	C	3SB35 00-2VA41		1	1 unit	102	0.100		
	White	C	3SB35 00-2VA61		1	1 unit	102	0.100		
Illuminated, heavy-duty version	Amber	C	3SB35 01-2VA01		1	1 unit	102	0.100		
	Red	C	3SB35 01-2VA21		1	1 unit	102	0.100		
	Yellow	C	3SB35 01-2VA31		1	1 unit	102	0.100		
	Green	C	3SB35 01-2VA41		1	1 unit	102	0.100		
	Blue	C	3SB35 01-2VA51		1	1 unit	102	0.100		
	Clear	C	3SB35 01-2VA71		1	1 unit	102	0.100		
Non-illuminated, long handle	Black	C	3SB35 00-3VA11		1	1 unit	102	0.100		
	Red	C	3SB35 00-3VA21		1	1 unit	102	0.100		
 <p>Selector switch, 3 switch positions, long handle</p>	Switching sequence I-O-II, 2 x 50° operating angle, latching to the left, momentary contact type to the right 	Non-illuminated, standard version¹⁾	Black	B	3SB35 00-2FA11		1	1 unit	102	0.080
			Red	D	3SB35 00-2FA21		1	1 unit	102	0.080
			Green	B	3SB35 00-2FA41		1	1 unit	102	0.080
			White	B	3SB35 00-2FA61		1	1 unit	102	0.080
		Illuminated, standard version¹⁾,	Amber	D	3SB35 01-2FA01		1	1 unit	102	0.080
		(including holder for 3 elements)	Red	D	3SB35 01-2FA21		1	1 unit	102	0.080
			Yellow	D	3SB35 01-2FA31		1	1 unit	102	0.080
			Green	B	3SB35 01-2FA41		1	1 unit	102	0.080
			Blue	D	3SB35 01-2FA51		1	1 unit	102	0.080
			Clear	B	3SB35 01-2FA71		1	1 unit	102	0.080
		Non-illuminated, heavy-duty version	Black	C	3SB35 00-2UA11		1	1 unit	102	0.110
			Red	C	3SB35 00-2UA21		1	1 unit	102	0.110
	Green	C	3SB35 00-2UA41		1	1 unit	102	0.110		
	White	C	3SB35 00-2UA61		1	1 unit	102	0.110		
Illuminated, heavy-duty version	Amber	C	3SB35 01-2UA01		1	1 unit	102	0.110		
	Red	C	3SB35 01-2UA21		1	1 unit	102	0.110		
	Yellow	C	3SB35 01-2UA31		1	1 unit	102	0.110		
	Green	C	3SB35 01-2UA41		1	1 unit	102	0.110		
	Blue	C	3SB35 01-2UA51		1	1 unit	102	0.110		
	Clear	C	3SB35 01-2UA71		1	1 unit	102	0.110		
Non-illuminated, long handle	Black	C	3SB35 00-3UA11		1	1 unit	102	0.100		
	Red	C	3SB35 00-3UA21		1	1 unit	102	0.100		
	Green	C	3SB35 00-3UA41		1	1 unit	102	0.100		
	White	C	3SB35 00-3UA61		1	1 unit	102	0.100		

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Version	Lock version			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type	Lock No./ color	Key removal position							

kg

Key-operated switches with holder¹⁾



RONIS key-operated switch

Key-operated switches with 2 keys, 2 switch positions

Switching sequence O-I, 50° operating angle, latching



CES key-operated switch



BKS key-operated switch



O.M.R. key-operated switch

Switching sequence O-I, 50° operating angle, momentary contact type



RONIS	SB 30	O+I	▶	3SB35 00-4AD11	1	1 unit	102	0.110		
		O	▶	3SB35 00-4AD01	1	1 unit	102	0.110		
		I	B	3SB35 00-4AD21	1	1 unit	102	0.110		
CES	SSG 10	O+I	▶	3SB35 00-4LD11	1	1 unit	102	0.190		
		O	▶	3SB35 00-4LD01	1	1 unit	102	0.190		
		I	B	3SB35 00-4LD21	1	1 unit	102	0.190		
LSG 1	O+I	O	B	3SB35 00-4LF01	1	1 unit	102	0.190		
		O	B	3SB35 00-4LF11	1	1 unit	102	0.190		
BKS	S1	O+I	B	3SB35 00-5AD11	1	1 unit	102	0.190		
		O	B	3SB35 00-5AD01	1	1 unit	102	0.190		
E1 for VW ²⁾	O	B	3SB35 00-5AE11	1	1 unit	102	0.180			
E2 for VW ²⁾	O+I	O	B	3SB35 00-5AE21	1	1 unit	102	0.180		
		O	B	3SB35 00-5AE31	1	1 unit	102	0.180		
E7 for VW ²⁾	O+I	O	B	3SB35 00-5AE41	1	1 unit	102	0.180		
		O	B	3SB35 00-5AE51	1	1 unit	102	0.180		
E9 for VW ²⁾	O	B	3SB35 00-5AE71	1	1 unit	102	0.180			
O.M.R. ³⁾	73038	O+I	B	3SB35 00-3AG11	1	1 unit	102	0.170		
		Light blue	O	B	3SB35 00-3AG01	1	1 unit	102	0.170	
		blue	I	B	3SB35 00-3AG21	1	1 unit	102	0.170	
73037	Red	O+I	B	3SB35 00-3AH11	1	1 unit	102	0.170		
		O	B	3SB35 00-3AH01	1	1 unit	102	0.170		
		I	B	3SB35 00-3AH21	1	1 unit	102	0.170		
73034	Black	O+I	B	3SB35 00-3AJ11	1	1 unit	102	0.170		
		O	B	3SB35 00-3AJ01	1	1 unit	102	0.170		
		I	B	3SB35 00-3AJ21	1	1 unit	102	0.170		
73033	Yellow	O+I	B	3SB35 00-3AK11	1	1 unit	102	0.170		
		O	B	3SB35 00-3AK01	1	1 unit	102	0.170		
		I	B	3SB35 00-3AK21	1	1 unit	102	0.170		
RONIS	SB 30	O	▶	3SB35 00-4BD01	1	1 unit	102	0.110		
		CES	SSG 10	O	▶	3SB35 00-4MD01	1	1 unit	102	0.190
				LSG 1	O	B	3SB35 00-4MF11	1	1 unit	102
BKS	S1	O	B	3SB35 00-5BD01	1	1 unit	102	0.190		
O.M.R. ³⁾	73038	Light blue	O	B	3SB35 00-3BG01	1	1 unit	102	0.170	
		73037	Red	O	B	3SB35 00-3BH01	1	1 unit	102	0.170
				O	B	3SB35 00-3BJ01	1	1 unit	102	0.170
73033	Yellow	O	B	3SB35 00-3BK01	1	1 unit	102	0.170		

For BKS and CES special locks, see page 9/65.

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ Keys are not included in scope of supply.

³⁾ According to FIAT standards; also available for other users.









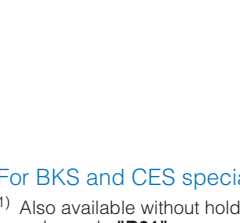

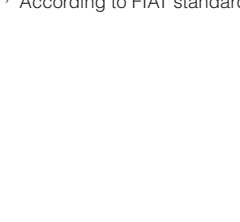

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Version	Lock version			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type	Lock No./color	Key removal position							
kg										

Key-operated switches with holder¹⁾

		Key-operated switches with 2 keys, 3 switch positions										
 <p>RONIS key-operated switch</p>	Switching sequence I-O-II, 2 x 50° operating angle, latching		RONIS	SB 30	I+O+II	B	3SB35 00-4DD11	1	1 unit	102	0.110	
			O	B	3SB35 00-4DD01	1	1 unit	102	0.110			
			I+II	B	3SB35 00-4DD41	1	1 unit	102	0.110			
			I	B	3SB35 00-4DD21	1	1 unit	102	0.110			
			II	B	3SB35 00-4DD31	1	1 unit	102	0.110			
 <p>CES key-operated switch</p>	Switching sequence O+I+II, latching		CES	SSG 10	O+I+II	B	3SB35 00-4PD11	1	1 unit	102	0.190	
			O	B	3SB35 00-4PD01	1	1 unit	102	0.190			
			I+II	B	3SB35 00-4PD41	1	1 unit	102	0.190			
			I	B	3SB35 00-4PD21	1	1 unit	102	0.190			
			II	B	3SB35 00-4PD31	1	1 unit	102	0.190			
 <p>BKS key-operated switch</p>	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type		BKS	S1	O	C	3SB35 00-5DD01	1	1 unit	102	0.190	
			I+II	C	3SB35 00-5DD41	1	1 unit	102	0.190			
			O.M.R. ²⁾	73038	Light blue	I+O+II	B	3SB35 00-3DG11	1	1 unit	102	0.170
			73037	Red	I+O+II	B	3SB35 00-3DH11	1	1 unit	102	0.170	
			73034	Black	I+O+II	B	3SB35 00-3DJ11	1	1 unit	102	0.170	
 <p>BKS key-operated switch</p>	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right		RONIS	SB 30	O	B	3SB35 00-4ED01	1	1 unit	102	0.110	
			CES	SSG 10	O	B	3SB35 00-4GD01	1	1 unit	102	0.190	
			BKS	S1	O	B	3SB35 00-5ED01	1	1 unit	102	0.190	
			O.M.R.	73034	Black	O	B	3SB35 00-3EJ01	1	1 unit	102	0.170
			 <p>O.M.R. key-operated switch</p>	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right		RONIS	SB 30	O+II	B	3SB35 00-4GD61	1	1 unit
O	B	3SB35 00-4GD01				1	1 unit	102	0.110			
CES	SSG 10	O+II				B	3SB35 00-4SD61	1	1 unit	102	0.190	
O	B	3SB35 00-4SD01				1	1 unit	102	0.190			
II	B	3SB35 00-4SD31				1	1 unit	102	0.190			
 <p>O.M.R. key-operated switch</p>	Switching sequence I-O-II, 2 x 50° operating angle, momentary contact type to the left, latching to the right		BKS	S1	O+II	C	3SB35 00-5GD61	1	1 unit	102	0.190	
			O	C	3SB35 00-5GD01	1	1 unit	102	0.190			
			O.M.R.	73033	Yellow	II	C	3SB35 00-3GK31	1	1 unit	102	0.170
			RONIS	SB 30	O+I	B	3SB35 00-4FD51	1	1 unit	102	0.110	
			CES	SSG 10	O+I	B	3SB35 00-4RD51	1	1 unit	102	0.190	
O	B	3SB35 00-4RD01	1	1 unit	102	0.190						
I	B	3SB35 00-4RD21	1	1 unit	102	0.190						
BKS	S1	O+I	C	3SB35 00-5FD51	1	1 unit	102	0.190				
O	B	3SB35 00-5FD01	1	1 unit	102	0.190						
I	B	3SB35 00-5FD21	1	1 unit	102	0.190						

For BKS and CES special locks, see page 9/65.

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ According to FIAT standards; also available for other users.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Version	Color of handle	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-----------------	----	-----------	--------------	-------------------	-----	----	--------------------------

EMERGENCY-STOP devices according to ISO 13850 and IEC 60947-5-5 with holder¹⁾²⁾. Can also be used with 3TK28 safety relays.



Mushroom diameter 32 mm

EMERGENCY-STOP mushroom pushbuttons, Ø 32 mm, with positive latching acc. to ISO 13850, with rotate-to-unlatch mechanism

Red

B

3SB35 00-1FA20

1

1 unit

102

0.110



Mushroom diameter 40 mm, with rotate-to-unlatch mechanism, with switch position indication

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching acc. to ISO 13850, with rotate-to-unlatch mechanism

Red

- Standard version
- With mechanical switch position indication

▶

3SB35 00-1HA20

1

1 unit

102

0.120

A

3SB35 00-1HA26

1

1 unit

102

0.120

With pull-to-unlatch mechanism

Red

B

3SB35 00-1TA20

1

1 unit

102

0.120



Mushroom diameter 40 mm, pull-to-unlatch mechanism

EMERGENCY-STOP mushroom pushbuttons, Ø 60 mm, with positive latching acc. to ISO 13850, with rotate-to-unlatch mechanism

Red

B

3SB35 00-1AA20

1

1 unit

102

0.140



Mushroom diameter 60 mm

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with RONIS key-operated switch, (with 2 keys), lock No. SB 30, with positive latching acc. to ISO 13850, unlocking only possible using key

Red

B

3SB35 00-1BA20

1

1 unit

102

0.140



Mushroom diameter 40 mm, with CES key-operated switch

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with CES key-operated switch, (with 2 keys), lock No. SSG 10, with positive latching acc. to ISO 13850, unlocking only possible using key

Red

B

3SB35 00-1KA20

1

1 unit

102

0.170



Mushroom diameter 40 mm, with BKS key-operated switch

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with BKS key-operated switch, (with 2 keys), lock No. S1, with positive latching acc. to ISO 13850, unlocking only possible using key

Red

B

3SB35 00-1LA20

1

1 unit

102

0.170

EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with O.M.R. key-operated switch (with 2 keys), lock No. 73037 with positive latching acc. to ISO 13850, unlocking only using key

Red

B

3SB35 00-1MA20

1

1 unit

102

0.180

For BKS and CES special locks, see page 9/65.


¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code "B01".

²⁾ The yellow backing plates must be ordered separately, see Accessories.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Actuators and Indicators, Metal, Round, 22 mm

Actuators and indicators

Version	Color of lens	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
Signaling elements with holder¹⁾										
	Indicator lights with lens with concentric rings²⁾	Amber	B	3SB35 01-6BA00		1	1 unit	102	0.060	
		Red	▶	3SB35 01-6BA20		1	1 unit	102	0.060	
		Yellow	B	3SB35 01-6BA30		1	1 unit	102	0.060	
		Green	▶	3SB35 01-6BA40		1	1 unit	102	0.060	
		Blue	B	3SB35 01-6BA50		1	1 unit	102	0.060	
		White	B	3SB35 01-6BA60		1	1 unit	102	0.060	
		Clear	▶	3SB35 01-6BA70		1	1 unit	102	0.060	
		Indicator lights with smooth lens²⁾	Amber	B	3SB35 01-6AA00		1	1 unit	102	0.060
		Red	B	3SB35 01-6AA20		1	1 unit	102	0.060	
		Yellow	B	3SB35 01-6AA30		1	1 unit	102	0.060	
Green	B	3SB35 01-6AA40		1	1 unit	102	0.060			
Blue	B	3SB35 01-6AA50		1	1 unit	102	0.060			
White	▶	3SB35 01-6AA60		1	1 unit	102	0.060			
Clear	B	3SB35 01-6AA70		1	1 unit	102	0.060			
Indicator lights with smooth solvent-resistant lens²⁾³⁾	Red	C	3SB35 01-6AA20-0PA0		1	1 unit	102	0.060		
Yellow	D	3SB35 01-6AA30-0PA0		1	1 unit	102	0.060			
Green	C	3SB35 01-6AA40-0PA0		1	1 unit	102	0.060			
Blue	D	3SB35 01-6AA50-0PA0		1	1 unit	102	0.060			
White	C	3SB35 01-6AA60-0PA0		1	1 unit	102	0.060			
Clear	C	3SB35 01-6AA70-0PA0		1	1 unit	102	0.060			

¹⁾ Also available without holder. Supplement Order No. with "-Z" and quote order code **"B01"**.

²⁾ Inscription by inserting a label is not possible.




³⁾ Not suitable for laser inscription.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Components for Actuators and Indicators

Contact blocks and lampholders

Selection and ordering data

Version	Diagram	Operating travel  Contact closed  Contact open	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU		kg	

Contact blocks for front plate mounting



3SB34 00-0B



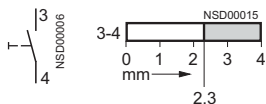
3SB34 00-0M

Contact blocks with one contact

- Mounting depth: 50 mm

1 NO

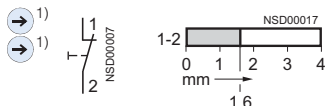
1 NO with gold-plated contacts



▶	3SB34 00-0B	1	1 unit	102	0.011
C	3SB34 00-0BA	1	1 unit	102	0.011

1 NC

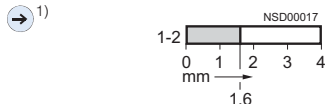
1 NC with gold-plated contacts



▶	3SB34 00-0C	1	1 unit	102	0.011
C	3SB34 00-0CA	1	1 unit	102	0.011

- With mounting monitoring contact²⁾, mounting depth 63 mm

1 NC



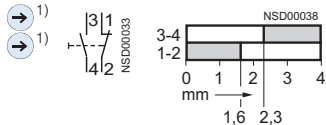
B	3SB34 00-0M	1	1 unit	102	0.018
---	--------------------	---	--------	-----	-------

Contact blocks with 2 contacts

Mounting depth 63 mm (including unit labeling plate)

1 NO + 1 NC

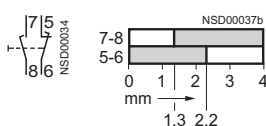
1 NO + 1 NC with gold-plated contacts



▶	3SB34 00-0A	1	1 unit	102	0.018
B	3SB34 00-0AA	1	1 unit	102	0.018

1 NO leading + 1 NC lagging

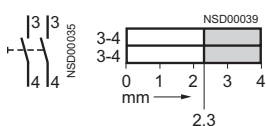
1 NO leading + 1 NC lagging with gold-plated contacts



B	3SB34 00-0H	1	1 unit	102	0.018
D	3SB34 00-0HA	1	1 unit	102	0.018

2 NO

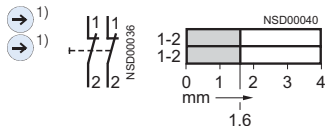
2 NO with gold-plated contacts



B	3SB34 00-0D	1	1 unit	102	0.018
B	3SB34 00-0DA	1	1 unit	102	0.018

2 NC

2 NC with gold-plated contacts

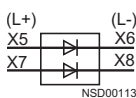


B	3SB34 00-0E	1	1 unit	102	0.018
B	3SB34 00-0EA	1	1 unit	102	0.018

Blocks with 2 diodes type 1N 4007

Mounting depth: 63 mm

$U_{RMS} = \text{max. } 250 \text{ V}$
 $I_{FAV} = 0.8 \text{ A}$
 at $T_U = 60 \text{ }^\circ\text{C}$



B	3SB34 00-2A	1	1 unit	102	0.018
---	--------------------	---	--------	-----	-------



3SB34 00-2A



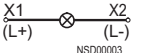
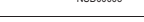
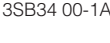
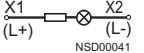
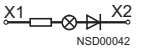

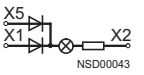


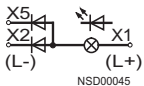


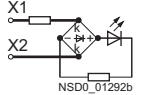
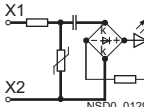
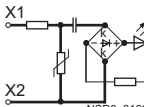


¹⁾ Positive opening according to IEC 60947-5-1, Appendix K.

²⁾ The NC contact opens automatically upon disconnection of the actuator. On delivery, the contact is open (= safe state). Activation (= NC contacts on the non-actuated control device are closed) takes place upon first-time actuation after the contact block is snapped onto the actuator. Unsuitable for mounting in 3SB38 enclosures.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Components for Actuators and Indicators

Contact blocks and lampholders

Version	Diagram	Rated voltage of lamp	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
		V		Order No.	Price per PU			kg	
Contact blocks for front plate mounting									
	BA 9s lampholders, mounting depth 50 mm								
	Without lamp		Acc. to lamp	B	3SB34 00-1A	1	1 unit	102	0.010
	With 24 V incandescent lamp (3SX1 344)		24 AC/DC	B	3SB34 00-1D	1	1 unit	102	0.012
	BA 9s lampholders, mounting depth 50 mm								
	With built-in resistor for longer endurance and with 130 V lamp (3SX1 731) ¹⁾		110/130 AC/DC	B	3SB34 00-1B	1	1 unit	102	0.013
	With integrated voltage reducer and with 130 V lamp (3SX1 731) ¹⁾		230 / 240 AC	B	3SB34 00-1C	1	1 unit	102	0.013
	BA 9s lampholders with separate lamp test function²⁾³⁾								
	With integrated voltage reducer and with 130 V lamp (3SX1 731) ¹⁾		230 / 240 AC	B	3SB34 00-1F	1	1 unit	102	0.019
	Without lamp		Acc. to lamp	B	3SB34 00-1G	1	1 unit	102	0.016
	For incandescent lamp, max. 2.6 W; for LED lamp, 24/48/230 V AC/DC ⁴⁾		Acc. to lamp	B	3SB34 00-1L	1	1 unit	102	0.017
	Without lamp		Acc. to lamp	B	3SB34 00-1I	1	1 unit	102	0.016
	For incandescent lamp, max. 2.6 W; for LED lamp, AC or DC ⁵⁾		Acc. to lamp	B	3SB34 00-1H	1	1 unit	102	0.016
	Lampholders with integrated LED								
	Mounting depth: 50 mm								
	Yellow		24 AC/DC	B	3SB34 00-1PA	1	1 unit	102	0.011
	Red		B	3SB34 00-1PB	1	1 unit	102	0.011	
	Green		B	3SB34 00-1PC	1	1 unit	102	0.011	
	Blue		B	3SB34 00-1PD	1	1 unit	102	0.011	
	White		B	3SB34 00-1PE	1	1 unit	102	0.011	
	Yellow		110 AC	B	3SB34 00-1QA	1	1 unit	102	0.012
	Red		B	3SB34 00-1QB	1	1 unit	102	0.012	
	Green		B	3SB34 00-1QC	1	1 unit	102	0.012	
	Blue		B	3SB34 00-1QD	1	1 unit	102	0.012	
	White		B	3SB34 00-1QE	1	1 unit	102	0.012	
	Yellow		230 AC	B	3SB34 00-1RA	1	1 unit	102	0.012
	Red		B	3SB34 00-1RB	1	1 unit	102	0.012	
	Green		B	3SB34 00-1RC	1	1 unit	102	0.012	
Blue	B		3SB34 00-1RD	1	1 unit	102	0.012		
White	B		3SB34 00-1RE	1	1 unit	102	0.012		
	Transformers								
	For snapping onto 3SB34 00-1A lampholder								
			127 / 24	B	3SB34 00-3A	1	1 unit	102	0.109
			240 / 24	B	3SB34 00-3C	1	1 unit	102	0.108
			260 / 24	D	3SB34 00-3E	1	1 unit	102	0.110
			400 / 24	B	3SB34 00-3F	1	1 unit	102	0.108
	For incandescent lamp		127 / 6	B	3SB34 00-3M	1	1 unit	102	0.108
	AC, max. 2 W		240 / 6	B	3SB34 00-3P	1	1 unit	102	0.107
	Mounting depth: 97 mm		400 / 6	B	3SB34 00-3S	1	1 unit	102	0.107
			480 / 6	B	3SB34 00-3U	1	1 unit	102	0.132
		600 / 6	D	3SB34 00-3W	1	1 unit	102	0.128	

1) Use these lamps only.

2) The lampholder with separate lamp test function can not be installed in an enclosure.

3) For circuit examples, see note on Technical Information on page 9/1.

4) Not suitable for LEDs which are suitable only for AC or DC.

5) Not suitable for LED for 24/48/230 V AC/DC. For connecting to DC, X5 must be connected to L-.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Components for Actuators and Indicators

Contact blocks and lampholders

Version	Rated voltage of lamp/ Diagram	Operating travel/color	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	V	<input type="checkbox"/> Contact closed <input type="checkbox"/> Contact open						
				Order No.	Price per PU			kg

Contact blocks for front plate mounting

<p>3SB34 03-0B</p>	Contact blocks with one contact Mounting depth 50 mm								
	1 NO			B	3SB34 03-0B	1	1 unit	102	0.008
	1 NO with gold-plated contacts			B	3SB34 03-0BA	1	1 unit	102	0.008
	1 NC			B	3SB34 03-0C	1	1 unit	102	0.008
<p>3SB34 03-0M</p>	1 NC with gold-plated contacts			B	3SB34 03-0CA	1	1 unit	102	0.008
	• With mounting monitoring contact ²⁾ , mounting depth 63 mm								
	1 NC			B	3SB34 03-0M	1	1 unit	102	0.018
<p>3SB34 03-0A</p>	Contact blocks with 2 contacts Mounting depth 63 mm								
	1 NO + 1 NC			B	3SB34 03-0A	1	1 unit	102	0.018
	1 NO + 1 NC with gold-plated contacts			B	3SB34 03-0AA	1	1 unit	102	0.018
	1 NO leading + 1 NC lagging			B	3SB34 03-0H	1	1 unit	102	0.018
	1 NO leading + 1 NC lagging with gold-plated contacts			B	3SB34 03-0HA	1	1 unit	102	0.018
	2 NO			B	3SB34 03-0D	1	1 unit	102	0.017
	2 NO with gold-plated contacts			D	3SB34 03-0DA	1	1 unit	102	0.017
	2 NC			B	3SB34 03-0E	1	1 unit	102	0.018
	2 NC with gold-plated contacts			D	3SB34 03-0EA	1	1 unit	102	0.018
	<p>3SB34 03-1C</p>	BA 9s lampholders, mounting depth 50 mm							
Without lamp		Acc. to lamp 		B	3SB34 03-1A	1	1 unit	102	0.008
With integrated voltage reducer and with 130 V lamp (3SX1 731) ³⁾	230/240 V AC 		B	3SB34 03-1C	1	1 unit	102	0.010	
<p>3SB3403-1PA</p>	Lampholders with integrated LED								
	24 V AC/DC	Yellow Red Green Blue White		B	3SB34 03-1PA	1	1 unit	102	0.009
	Mounting depth: 50 mm		Red	B	3SB34 03-1PB	1	1 unit	102	0.010
			Green	B	3SB34 03-1PC	1	1 unit	102	0.009
			Blue	B	3SB34 03-1PD	1	1 unit	102	0.009
			White	B	3SB34 03-1PE	1	1 unit	102	0.009
			White	B	3SB34 03-1PE	1	1 unit	102	0.009
	110 V AC	Yellow Red Green Blue White		B	3SB34 03-1QA	1	1 unit	102	0.010
	Mounting depth: 50 mm		Red	B	3SB34 03-1QB	1	1 unit	102	0.010
			Green	B	3SB34 03-1QC	1	1 unit	102	0.010
Blue			B	3SB34 03-1QD	1	1 unit	102	0.010	
White			B	3SB34 03-1QE	1	1 unit	102	0.010	
White			B	3SB34 03-1QE	1	1 unit	102	0.010	
230 V AC	Yellow Red Green Blue White		B	3SB34 03-1RA	1	1 unit	102	0.010	
Mounting depth: 50 mm		Red	B	3SB34 03-1RB	1	1 unit	102	0.010	
		Green	B	3SB34 03-1RC	1	1 unit	102	0.010	
		Blue	B	3SB34 03-1RD	1	1 unit	102	0.010	
		White	B	3SB34 03-1RE	1	1 unit	102	0.010	
		White	B	3SB34 03-1RE	1	1 unit	102	0.010	

1) Positive opening according to IEC 60947-5-1, Appendix K.
 2) The NC contact opens automatically upon disconnection of the actuator. On delivery, the contact is open (= safe state).

For more explanations see footnote on page 9/60.
 Unsuitable for mounting in 3SB38 enclosures.
 3) Use these lamps only.


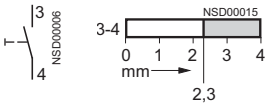
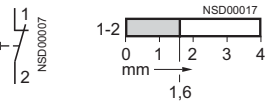

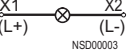
3SB3 Pushbuttons and Indicator Lights, 22 mm

Components for Actuators and Indicators

Contact blocks and lampholders

Version	Diagram	Operating travel <input type="checkbox"/> Contact closed <input type="checkbox"/> Contact open	DT	Solder pin connections	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU	kg		

Contact blocks for use on printed circuit boards


 3SB34 11-0B	Contact blocks with one contact Mounting depth 44 mm							
	1 NO		B	3SB34 11-0B	1	1 unit	102	0.003
	1 NC		B	3SB34 11-0C	1	1 unit	102	0.003
 3SB34 11-1A	Wedge base lampholders W2 x 4.6 d Mounting depth: 44 mm Without lamp							
			B	3SB34 11-1A	1	1 unit	102	0.002

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				kg			

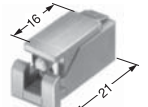
Holders for 3 contact blocks, for front panel mounting

 3SB39 01-0AB	Holders for pushbuttons and switches²⁾ For snapping on 3 blocks (for illuminated pushbuttons and illuminated selector switches the holder is included in the scope of supply)		▶	3SB39 01-0AB	100	20 units	102	0.100
	 3SB39 01-0AC	Holders for selector switches, key-operated switches and twin pushbuttons With pressure plate for actuating the central contact block of 3 contact blocks		▶	3SB39 01-0AC	100	10 units	102

Pressure plates for use on printed circuit boards

 3SB39 01-0AW	Pressure plates for selector switches and key-operated switches For actuating the central contact block of 3 contact blocks		B	3SB39 01-0AW	100	10 units	102	0.100
---	---	--	---	---------------------	-----	----------	-----	-------

Accessories for printed circuit boards

 3SB39 01-0AA	Holders for printed circuit boards For mounting the command devices on the printed circuit board (screw is included in the scope of supply)		B	3SB39 01-0AA	100	10 units	102	0.200
---	---	--	---	---------------------	-----	----------	-----	-------

1) Positive opening according to IEC 60947-5-1, Appendix K.

2) Holder also for mushroom pushbutton and push-pull button.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Components for Actuators and Indicators

AS-Interface F adapters for EMERGENCY-STOP devices

Overview





The AS-Interface F adapter is used to connect an EMERGENCY-STOP device according to ISO 13850 from the 3SB3 series to the AS-Interface bus system. The F adapter is suitable for control devices with mounting on front plates.

The F adapter has a safe AS-Interface 2E slave and is snapped from behind onto the EMERGENCY-STOP device (actuator). In the 2I/1O expanded version, an output is also available for actuating an indicator light with LED.



Connection to the AS-Interface bus cable is made with screw terminal or spring-type terminals depending on the version. Addressing is performed using the AS-Interface connection or the integrated addressing socket.

Safety category 4 (SIL3) is achieved with the adapter.



Selection and ordering data

Version	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg
 AS-Interface F adapters for 3SB3 EMERGENCY-STOP actuator For mounting on front plate	<ul style="list-style-type: none"> • 2I • 2I/1O, with output for LED control 	▶ 3SF5 402-1AA03	1	1 unit	121	0.066
		▶ 3SF5 402-1AB03	1	1 unit	121	0.066

3SF5 402-1AA03

Version	DT	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg
 AS-Interface F adapters for 3SB3 EMERGENCY-STOP actuator For mounting on front plate	<ul style="list-style-type: none"> • 2I • 2I/1O, with output for LED control 	▶ 3SF5 402-1AA04	1	1 unit	121	0.066
		▶ 3SF5 402-1AB04	1	1 unit	121	0.066

3SF5 402-1AA04

Version	DT	Insulation piercing method 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg
 AS-Interface F adapters for 3SB3 EMERGENCY-STOP actuator For mounting on front plate	<ul style="list-style-type: none"> • 2I • 2I/1O, with output for LED control 	▶ 3SF5 402-1AA05	1	1 unit	121	0.066
		▶ 3SF5 402-1AB05	1	1 unit	121	0.066

3SF5 402-1AA05

3SB3 Pushbuttons and Indicator Lights, 22 mm

Components for Actuators and Indicators

Special locks

Options

Special locks for key-operated switches

The BKS and CES plastic and metal key-operated switches, round and square versions, can be optionally equipped with special locks.

In this case the Order No. of the matching key-operated switch must be supplemented with **"-Z"**, the matching order code **"Y01"** or **"Y02"** and the required lock number.

Order code	Y01	Y02
In accordance with the table of special locks	No	Yes
Normal delivery time	25 working days	5 working days
Additional price per unit	On request	On request
Ordering example	3SB30 00-4LD01-Z Y01 Z = SSG18	3SB30 00-4LD01-Z Y02 Z = SSG11

Available special locks with order code "Y02"	Order No. with order code
Key-operated switch	
CES SSG 11 to SSG 15	3SB3. ...-4LD...-Z Y02 3SB3. ...-4MD01...-Z Y02 3SB3. ...-4PD...-Z Y02 3SB3. ...-4QD...-Z Y02 3SB3. ...-4RD...-Z Y02 3SB3. ...-4SD...-Z Y02
BKS E1, E2, E7, E9 ¹⁾	3SB3. ...-5AD...-Z Y02 3SB3. ...-5BD01...-Z Y02 3SB3. ...-5DD...-Z Y02 3SB3. ...-5ED01-Z Y02 3SB3. ...-5FD01-Z Y02 3SB3. ...-5GD01-Z Y02
BKS E9 ¹⁾	3SB3. ...-5FD51-Z Y02

EMERGENCY-STOP mushroom push-buttons

CES SSP 9	3SB3. ...-1KA20-Z Y02
BKS E2, E7, E9 ¹⁾	3SB3. ...-1LA20-Z Y02

¹⁾ Delivery of these BKS key-operated switches (locks for VW) without key.

Notes

- For all special locks, an additional price applies.
- The order code **"Y01"** or **"Y02"** must be quoted in accordance with the above table. Automated processing of the order with a defined delivery time can be guaranteed only for correctly submitted orders.
- For applications in which access security is important and several lock numbers are used, we recommend the use of BKS or CES key-operated switches.
- Special locks for VW (E1, E2, ...) will be delivered without keys, all others with 2 keys.

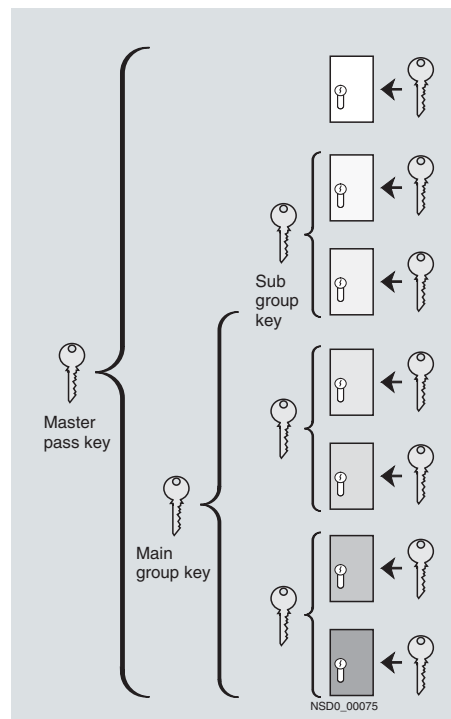
Master and master-pass key systems

The following key systems can be supplied with BKS and CES key-operated switches:

- Central lock systems
- Master key systems
- Central master key systems
- Master-pass key systems

When placing an order you must supplement the Order No. of the matching key-operated switches with **"-Z"** and quote the order code **"Y03"**.

Please enquire for price and delivery time.



Example of master-pass key system

3SB3 Pushbuttons and Indicator Lights, 22 mm

Inscriptions

Laser inscriptions

Overview

Inscription of actuators and indicators

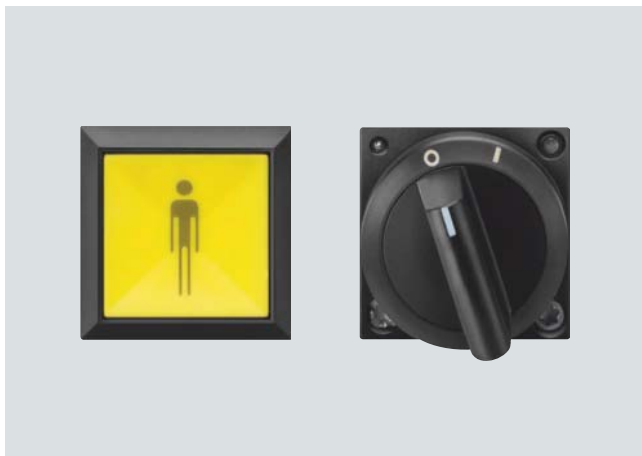
Actuators and indicators of plastic as well as metal version can be optionally inscribed with a laser.



Pushbutton (metal) with laser inscription

The actuators of the pushbuttons, illuminated pushbuttons, mushroom pushbuttons and illuminated mushroom pushbuttons can be inscribed as well as the lenses of the indicator lights.

Selector switches can be inscribed only if they are made of plastic (only one text line on the front ring).



Pushbutton and selector switch (plastic) with laser inscription

Version

A letter height of 4 mm is used as standard for text inscriptions:

The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

For round buttons and lenses, the possible number of characters per line is:

- 10 characters for one line of text
- 8 characters for 2 lines of text
- 6 characters for 3 lines of text, but 10 characters in the middle line

On square buttons and lenses, 10 characters are possible per line.

Ordering notes

When ordering, supplement the Order No. of the actuator or the indicator light with "**-Z**" and an order code:

- Text line in upper/lower case, always upper case for beginning of line (e. g. "Lift out"): **Y10**
- Text in upper case (e. g. "LIFT OUT"): **Y11**
- Text in lower case (e. g. "lift out"): **Y12**
- Text in upper/lower case, all words begin with capital letters (e. g. "Lift Out"): **Y15**
- Symbol with number according to ISO 7000 or IEC 60417: **Y13**
- Any inscription or symbol according to order form supplement: **Y19**

Additional price per unit for Y10 to Y19 on request.

When ordering, specify the required inscription in plain text in addition to the order number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language (see [ordering example 1](#)).

In the case of multi-line inscriptions, the text must be assigned to the respective line, e. g. "Z1 = Lift, Z2 = Lower". For long words you can also specify the end-of-line division.

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see [ordering example 2 and 3](#)).

For special symbols (order code Y19), a CAD drawing in DXF format can be submitted.

Ordering example 1

A round pushbutton with the inscription "Reset" is required:

3SB30 00-0AA41-Z
Y10
Z = Reset (English)

Ordering example 2

A square pushbutton inscribed with symbol No. 5389 according to IEC 60417 is required:

3SB31 10-0AA31-Z
Y13
Z = 5389 IEC

Ordering example 3

A round pushbutton inscribed with symbol No. 1118 according to ISO 7000 is required:

3SB30 00-0AA41-Z
Y13
Z = 1118 ISO

3SB3 Pushbuttons and Indicator Lights, 22 mm Inscriptions

Inscriptions by laser printer

Overview

Label inscriptions

Using the *Label Designer* software, which can be downloaded from the Internet, and the inscription labels for laser inscription you can create your own customized labels with a standard laser printer.

The self-adhesive or snap-on labels can be stuck or snapped onto the corresponding label holders (see [Name plates](#)). Round labels are provided for inserting in illuminated pushbuttons and switches.

The labels are suitable for printing with one to three lines of text or symbols.

For applications with more exacting requirements we recommend factory-printed inscription labels and insert labels (laser-printed or engraved depending on the type).

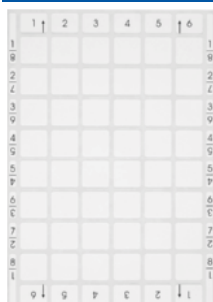
You can find the *Label Designer* software on the Internet at:

www.siemens.com/sirius-label-designer

Selection and ordering data

Version	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	-------	----	-----------	--------------	-------------------	-----	----	--------------------------

Labels for printing



Insert labels For inserting in round illuminated push-buttons and illuminated switches	Milky	A	3SB39 01-2AB		100	480 units	102	0.100
Inscription labels 12.5 mm x 27 mm For sticking onto label holder	White	A	3SB39 02-2AA		100	480 units	102	0.100
Inscription labels 27 mm x 27 mm For sticking onto label holder	White	A	3SB39 03-2AA		100	480 units	102	0.100
Inscription labels 17.5 mm x 28 mm For snapping onto label holder	White	A	3SB39 05-2AA		100	720 units	102	0.100
Inscription labels 22 mm x 22 mm For sticking onto enclosure	White	A	3SB39 06-2AA		100	700 units	102	0.100

* You can order this quantity or a multiple thereof.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Inscriptions

Insert labels

Overview

Pushbuttons (clear) and illuminated pushbuttons with a flat button can be fitted with insert labels for identification purposes, but indicator lights cannot.

These insert labels are made of clear, transparent plastic with black inscription; they can be fitted in any 90° angle.

Inscriptions

The inscriptions have upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417 (see page 9/69).











The insert labels without inscription are suitable for user marking with permanent pen.

Selection and ordering data

PU (UNIT) = 100 (customized inscription: 1)
 PS* = 10 units (customized inscription: 1 unit)
 PG = 102

Inscription/Symbol	Symbol No.	DT	Round range		DT	Square range		Weight per PU approx.
			Order No.	Price per PU		Order No.	Price per PU	
				kg			kg	

Insert labels

For self-inscription									
	Blank	B	3SB19 01-4AS	0.100	B	3SB39 40-4AA	0.100		
With inscription									
	Ein On	B	3SB19 01-4AB	0.100	B	3SB39 40-4AB	0.100		
	Aus Off	B	3SB19 01-4EB	0.100	C	3SB39 40-4EB	0.100		
		B	3SB19 01-4AC	0.100	C	3SB39 40-4AC	0.100		
		B	3SB19 01-4EC	0.100	C	3SB39 40-4EC	0.100		
	Auf Up	B	3SB19 01-4AD	0.100	B	3SB39 40-4AD	0.100		
	Ab Down	B	3SB19 01-4ED	0.100	C	3SB39 40-4ED	0.100		
		B	3SB19 01-4AE	0.100	B	3SB39 40-4AE	0.100		
		B	3SB19 01-4EE	0.100	C	3SB39 40-4EE	0.100		
	Vor Forward	B	3SB19 01-4AF	0.100	--	--	--		
	Zurück Reverse	B	3SB19 01-4EF	0.100	C	3SB39 40-4EF	0.100		
		B	3SB19 01-4AG	0.100	--	--	--		
		B	3SB19 01-4EG	0.100	C	3SB39 40-4EG	0.100		
	Rechts Right	B	3SB19 01-4AH	0.100	--	--	--		
	Links Left	C	3SB19 01-4EH	0.100	--	--	--		
		B	3SB19 01-4AJ	0.100	--	--	--		
		C	3SB19 01-4EJ	0.100	--	--	--		
	Auf Open	B	3SB19 01-4AD	0.100	B	3SB39 40-4AD	0.100		
	Zu Close	B	3SB19 01-4EP	0.100	--	--	--		
		B	3SB19 01-4AL	0.100	B	3SB39 40-4AL	0.100		
		B	3SB19 01-4EQ	0.100	--	--	--		
	Schnell Fast	B	3SB19 01-4AM	0.100	B	3SB39 40-4AM	0.100		
	Langsam Slow	B	3SB19 01-4ER	0.100	--	--	--		
		B	3SB19 01-4AN	0.100	B	3SB39 40-4AN	0.100		
		B	3SB19 01-4ES	0.100	--	--	--		
	Betrieb Running	B	3SB19 01-4AP	0.100	--	--	--		
	Störung Fault	B	3SB19 01-4EV	0.100	--	--	--		
		B	3SB19 01-4AQ	0.100	C	3SB39 40-4AQ	0.100		
		B	3SB19 01-4EW	0.100	--	--	--		
	Einrichten Reset	B	3SB19 01-4AR	0.100	--	--	--		
		B	3SB19 01-4EM	0.100	C	3SB39 40-4EM	0.100		
	Test Start	B	3SB19 01-4EN	0.100	--	--	--		
	Halt Stop	B	3SB19 01-4EK	0.100	B	3SB39 40-4EK	0.100		
		B	3SB19 01-4AK	0.100	B	3SB39 40-4AK	0.100		
		B	3SB19 01-4EL	0.100	B	3SB39 40-4EL	0.100		
With graphic symbol									
	O (Off)		5008 IEC	B	3SB19 01-4MB	0.100	B	3SB39 40-4MB	0.100
	I (On)		5007 IEC	B	3SB19 01-4MC	0.100	B	3SB39 40-4MC	0.100
	II (On)		--	B	3SB19 01-4MD	0.100	B	3SB39 40-4MD	0.100
	Electric motor		0011 ISO	B	3SB19 01-4PA	0.100	--	--	
	Motion in direction of arrow		5022 IEC	B	3SB19 01-4NA	0.100	B	3SB39 40-4NA	0.100
	Increase, plus		5005 IEC	B	3SB19 01-4NG	0.100	B	3SB39 40-4NG	0.100
	Decrease, minus		5006 IEC	B	3SB19 01-4MC	0.100	B	3SB39 40-4MC	0.100
With customized inscription									
	For inscriptions or symbols see "Options"								
	• Text line(s) or symbol with No.	D	3SB19 01-4AZ K0Y, K1Y, K2Y, K3Y or K5Y	0.001	B	3SB39 40-4AZ K0Y, K1Y, K2Y, K3Y or K5Y	0.001		
	• Any inscription or symbol	D	K9Y	0.001	B	K9Y	0.001		

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

By default, a letter height of 4 mm (for a single line of text) or 3 mm (for 2 or 3 lines of text) is used for text inscriptions.

The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

For round insert labels, the maximum possible number of characters per line is:

- 10 characters for one line of text
- 8 characters for 2 lines of text
- 6 characters for 3 lines of text, but 10 characters in the middle line

On square insert labels, 10 characters are possible per line.

Examples for customized inscription

Two-line inscription in upper/lower case lettering (K0Y)



Single-line inscription in upper case lettering (K1Y)



Three-line inscription in lower case letters (K2Y)



Symbol number 5011 according to IEC 60147 (K3Y)



Any symbol according to order form supplement (K9Y)

Ordering notes

Append the following codes to the Order No.:

- Text line(s) in upper/lower case, upper case always for beginning of line (e. g. "Lift out"): **K0Y**
- Text line(s) in upper case (e. g. "LIFT OUT"): **K1Y**
- Text line(s) in lower case (e. g. "lift out"): **K2Y**
- Text line(s) in upper/lower case, all words begin with upper case letters (e. g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbol according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the order number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

In the case of multi-line inscriptions, the text must be assigned to the respective line, e. g. "Z1 = Lift, Z2 = Lower". For long words you can also specify the end-of-line division ([see ordering example 1](#)).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 ([see ordering example 2 and 3](#)).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example 1

A label with 2 lines of text is required:

```
3SB19 01-4AZ
K1Y
Z1 = LIFT
Z2 = LOWER
```

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

```
3SB19 01-4AZ
K3Y
Z = 5011 IEC
```

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

```
3SB19 01-4AZ
K3Y
Z = 1118 ISO
```

3SB3 Pushbuttons and Indicator Lights, 22 mm

Inscriptions

Name plates

Overview

The name plates consist of a black plastic label holder and an inscription label (black with white print or silver-colored with black print) for sticking or snapping in place. They are not suitable for EMERGENCY-STOP pushbuttons.

Note mounting dimensions!

Inscriptions

The inscriptions have upper case initial letters. The typeface is Arial. Graphic symbols, including those not listed in the tables, are according to ISO 7000 or IEC 60417 (see page 9/74).

Self-adhesive labels

There are 2 sizes available for the round and square ranges:

- Label holders 30 mm × 45 mm × 7 mm with inscription label 12.5 mm × 27 mm.
- Label holders 30 mm × 60 mm × 7 mm with inscription label 27 mm × 27 mm.

Snap-on labels

The following version is available for the round range:





- Label holders 29.8 mm × 51 mm × 3 mm with inscription label 17.5 mm × 28 mm (inscription area: 17.5 mm × 27 mm).

Selection and ordering data

PU (UNIT) = 100 (customized inscription: 1)
 PS* = 10 units (customized inscription: 1 unit)
 PG = 102

Inscriptions	DT	Black	Weight per PU approx.	DT	Silver-colored	Weight per PU approx.
		Order No.	Price per PU		Order No.	Price per PU
			kg			kg

Inscription labels, self-adhesive, 12.5 mm × 27 mm

		<i>For self-inscription</i>			
	Blank	▶	3SB39 02-1AA	0.100 B	3SB19 01-2AA 0.100
					
	<i>With inscription</i>				
	Ein	B	3SB39 02-1AB	0.100 B	3SB19 01-2AB 0.100
	On	B	3SB39 02-1EB	0.100 B	3SB19 01-2EB 0.100
	Aus	B	3SB39 02-1AC	0.100 B	3SB19 01-2AC 0.100
	Off	B	3SB39 02-1EC	0.100 B	3SB19 01-2EC 0.100
	Auf	B	3SB39 02-1AD	0.100 B	3SB19 01-2AD 0.100
	Up	B	3SB39 02-1ED	0.100 B	3SB19 01-2ED 0.100
	Ab	B	3SB39 02-1AE	0.100 B	3SB19 01-2AE 0.100
	Down	B	3SB39 02-1EE	0.100 B	3SB19 01-2EE 0.100
	Vor	B	3SB39 02-1AF	0.100 B	3SB19 01-2AF 0.100
	Forward	B	3SB39 02-1EF	0.100	--
	Zurück	B	3SB39 02-1AG	0.100 B	3SB19 01-2AG 0.100
	Reverse	B	3SB39 02-1EG	0.100	--
	Rechts	B	3SB39 02-1AH	0.100 B	3SB19 01-2AH 0.100
	Right	B	3SB39 02-1EH	0.100 B	3SB19 01-2EH 0.100
	Links	B	3SB39 02-1AJ	0.100 B	3SB19 01-2AJ 0.100
	Left	B	3SB39 02-1EJ	0.100 B	3SB19 01-2EJ 0.100
	Auf	B	3SB39 02-1AD	0.100 B	3SB19 01-2AD 0.100
	Open	B	3SB39 02-1EP	0.100 B	3SB19 01-2EP 0.100
	Zu	B	3SB39 02-1AL	0.100 B	3SB19 01-2AL 0.100
	Close	B	3SB39 02-1EQ	0.100 B	3SB19 01-2EQ 0.100
	Schnell	--	--	B	3SB19 01-2AM 0.100
	Fast	--	--	B	3SB19 01-2ER 0.100
	Langsam	--	--	B	3SB19 01-2AN 0.100
	Slow	--	--	B	3SB19 01-2ES 0.100
	Halt	B	3SB39 02-1AK	0.100 B	3SB19 01-2AK 0.100
	Stop	B	3SB39 02-1EK	0.100 B	3SB19 01-2EK 0.100
	Start	B	3SB39 02-1EL	0.100 B	3SB19 01-2EL 0.100
	Test	B	3SB39 02-1EN	0.100 B	3SB19 01-2EN 0.100
	Betrieb	B	3SB39 02-1AP	0.100 B	3SB19 01-2AP 0.100
	Running	--	--	B	3SB19 01-2EV 0.100
	Störung	B	3SB39 02-1AQ	0.100 B	3SB19 01-2AQ 0.100
	Fault	B	3SB39 02-1EW	0.100 B	3SB19 01-2EW 0.100
	Einrichten	--	--	B	3SB19 01-2AR 0.100
	Reset	--	--	B	3SB19 01-2EM 0.100
	Stop Start	B	3SB39 02-1BC	0.100 B	3SB19 01-2BC 0.100
	Hand Auto	C	3SB39 02-1BA	0.100 B	3SB19 01-2BA 0.100
	Man Auto	B	3SB39 02-1EU	0.100 B	3SB19 01-2EU 0.100
	Hand O Auto	--	--	B	3SB19 01-2BE 0.100
	Man O Auto	--	--	B	3SB19 01-2ET 0.100

For label holders see page 9/73.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Inscriptions

Name plates

PU (UNIT) = 100 (customized inscription: 1)
 PS* = 10 units (customized inscription: 1 unit)
 PG = 102

Inscriptions	DT	Black	Weight per PU approx.	DT	Silver-colored	Weight per PU approx.	
		Order No.	Price per PU	kg	Order No.	Price per PU	kg

Inscription labels, self-adhesive, 12.5 mm × 27 mm

With graphic symbol


O	B	3SB39 02-1MB	0.100	B	3SB19 01-2MB	0.100
I	B	3SB39 02-1MC	0.100	B	3SB19 01-2MC	0.100
II		--		C	3SB19 01-2MD	0.100
III		--		B	3SB19 01-2ME	0.100
O I	B	3SB39 02-1MF	0.100	B	3SB19 01-2MF	0.100
I O II	B	3SB39 02-1MG	0.100	B	3SB19 01-2MG	0.100
1 O 2		--		B	3SB19 01-2MK	0.100
1 2	B	3SB39 02-1ML	0.100		--	
↑	B	3SB39 02-1NJ	0.100	B	3SB19 01-2NA	0.100
→	B	3SB39 02-1NA	0.100	B	3SB19 01-2NJ	0.100


With customized inscription

For inscriptions or symbols see "Options"

• Text line(s)	C	3SB39 02-1XZ K0Y	0.001	D	3SB19 01-2XZ K0Y	0.001
• Text line(s) or symbol with No.	B	K1Y, K2Y, K3Y or K5Y	0.001	D	K1Y, K2Y, K3Y or K5Y	0.001
• Any inscription or symbol	B	K9Y	0.001	D	K9Y	0.001

Inscriptions	DT	Black	Weight per PU approx.	DT	Silver-colored	Weight per PU approx.	
		Order No.	Price per PU	kg	Order No.	Price per PU	kg

Inscription labels, self-adhesive, 27 mm × 27 mm

For self-inscription

Blank	B	3SB39 03-1AA	0.100	B	3SB19 06-2AA	0.100
-------	---	--------------	-------	---	--------------	-------



For self-inscription

With inscription

Ein	B	3SB39 03-1AB	0.100	--		
On	B	3SB39 03-1EB	0.100	--		
Aus	B	3SB39 03-1AC	0.100	--		
Off	B	3SB39 03-1EC	0.100	--		
Auf	B	3SB39 03-1AD	0.100	--		
Ab	B	3SB39 03-1AE	0.100	--		
Vor	B	3SB39 03-1AF	0.100	--		
Zurück	B	3SB39 03-1AG	0.100	--		
Rechts	B	3SB39 03-1AH	0.100	--		
Links	B	3SB39 03-1AJ	0.100	--		
Auf	B	3SB39 03-1AD	0.100	--		
Zu	B	3SB39 03-1AL	0.100	--		
Halt	B	3SB39 03-1AK	0.100	--		
Start	B	3SB39 03-1EL	0.100	--		
Betrieb	B	3SB39 03-1AP	0.100	--		
Störung	B	3SB39 03-1AQ	0.100	--		
Stop Start	B	3SB39 03-1BC	0.100	--		
Hand Auto	B	3SB39 03-1BA	0.100	--		


With graphic symbol

O	C	3SB39 03-1MB	0.100	--		
O I	B	3SB39 03-1MF	0.100	--		
→	B	3SB39 03-1NA	0.100	--		


With customized inscription

For inscriptions or symbols see "Options"

• Text line(s)	C	3SB39 03-1XZ K0Y	0.001	D	3SB19 06-2XZ K0Y	0.001
• Text line(s) or symbol with No.	B	K1Y, K2Y, K3Y or K5Y	0.001	D	K1Y, K2Y, K3Y or K5Y	0.001
• Any inscription or symbol	B	K9Y	0.001	D	K9Y	0.001








For label holders see page 9/73.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Inscriptions

Name plates

PU (UNIT) = 100 (customized inscription: 1)
 PS* = 10 units (customized inscription: 1 unit)
 PG = 102




Inscriptions	DT	Black		Weight per PU approx. kg	DT	Silver-colored		Weight per PU approx. kg
		Order No.	Price per PU			Order No.	Price per PU	
Inscription labels, for snapping on, 17.5 mm x 28 mm								
<i>For self-inscription</i>								
		B	3SB39 05-1AA	0.100	B	3SB19 04-2AA		0.100
<i>With inscription</i>								
	Ein	B	3SB39 05-1AB	0.100	B	3SB19 04-2AB		0.100
	On	B	3SB39 05-1EB	0.100	B	3SB19 04-2EB		0.100
	Aus	B	3SB39 05-1AC	0.100	B	3SB19 04-2AC		0.100
	Off	C	3SB39 05-1EC	0.100	B	3SB19 04-2EC		0.100
	Auf	B	3SB39 05-1AD	0.100	B	3SB19 04-2AD		0.100
	Up	B	3SB39 05-1ED	0.100	--	--		
	Ab	B	3SB39 05-1AE	0.100	B	3SB19 04-2AE		0.100
	Down	C	3SB39 05-1EE	0.100	--	--		
	Vor	C	3SB39 05-1AF	0.100	B	3SB19 04-2AF		0.100
	Forward	B	3SB39 05-1EF	0.100	--	--		
	Zurück	B	3SB39 05-1AG	0.100	B	3SB19 04-2AG		0.100
	Reverse	B	3SB39 05-1EG	0.100	B	3SB19 04-2EG		0.100
	Rechts	B	3SB39 05-1AH	0.100	B	3SB19 04-2AH		0.100
	Right	B	3SB39 05-1EH	0.100	--	--		
	Links	--	--		B	3SB19 04-2AJ		0.100
	Auf	B	3SB39 05-1AD	0.100	B	3SB19 04-2AD		0.100
	Open	C	3SB39 05-1EP	0.100	--	--		
	Zu	B	3SB39 05-1AL	0.100	B	3SB19 04-2AL		0.100
	Close	C	3SB39 05-1EQ	0.100	--	--		
	Halt	B	3SB39 05-1AK	0.100	B	3SB19 04-2AK		0.100
	Stop	B	3SB39 05-1EK	0.100	B	3SB19 04-2EK		0.100
	Start	B	3SB39 05-1EL	0.100	B	3SB19 04-2EL		0.100
	Test	--	--		B	3SB19 04-2EN		0.100
	Betrieb	B	3SB39 05-1AP	0.100	B	3SB19 04-2AP		0.100
	Running	C	3SB39 05-1EV	0.100	--	--		
	Störung	B	3SB39 05-1AQ	0.100	B	3SB19 04-2AQ		0.100
	Fault	B	3SB39 05-1EW	0.100	B	3SB19 04-2EW		0.100
	Einrichten	--	--		B	3SB19 04-2AR		0.100
	Reset	--	--		B	3SB19 04-2EM		0.100
	Stop Start	B	3SB39 05-1BC	0.100	B	3SB19 04-2BC		0.100
	Hand Auto	B	3SB39 05-1BA	0.100	B	3SB19 04-2BA		0.100
	Man Auto	B	3SB39 05-1EU	0.100	C	3SB19 04-2EU		0.100
	Man O Auto	--	--		B	3SB19 04-2ET		0.100
<i>With graphic symbol</i>								
	O	C	3SB39 05-1MB	0.100	B	3SB19 04-2MB		0.100
	I	C	3SB39 05-1MC	0.100	B	3SB19 04-2MC		0.100
	O I	B	3SB39 05-1MF	0.100	B	3SB19 04-2MF		0.100
	I O II	--	--		B	3SB19 04-2MG		0.100
	I O 2	--	--		B	3SB19 04-2MK		0.100
	→	B	3SB39 05-1NA	0.100	B	3SB19 04-2NA		0.100
	↑	B	3SB39 05-1NJ	0.100	B	3SB19 04-2NJ		0.100
<i>With customized inscription</i>								
	For inscriptions or symbols see "Options"		3SB39 05-1XZ			3SB19 04-2XZ		
	• Text line(s)	C	K0Y	0.001	D	K0Y		0.001
	• Text line(s) or symbol with No.	B	K1Y, K2Y, K3Y or K5Y	0.001	D	K1Y, K2Y, K3Y or K5Y		0.001
	• Any inscription or symbol	B	K9Y	0.001	D	K9Y		0.001

For label holders see page 9/73.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Inscriptions

Name plates

Version	DT	Black	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
		Order No.	Price per PU				
							kg
Label holders for inscription labels 12.5 mm × 27 mm							
	For round range, flat	B	3SB39 22-0AV	100	10 units	102	0.200
	For potentiometer drives 3SB10 00-7CH07¹⁾	B	3SB39 22-0AS	1	1 unit	102	0.003
	For square range, flat	B	3SB39 42-0AX	100	5 units	102	0.200
Label holders for inscription labels 27 mm × 27 mm							
	For round range, flat	B	3SB39 23-0AV	100	10 units	102	0.200
	For round range, raised	C	3SB39 23-0AX	1	10 units	102	0.005
	For potentiometer drives, flat	B	3SB39 23-0AS	1	1 unit	102	0.003
	For square range, flat	B	3SB39 43-0AX	100	1 unit	102	0.200
Label holders for inscription labels 17.5 mm × 28 mm							
	For round design	▶	3SB39 25-0AV	100	10 units	102	0.200

¹⁾ This label holder can also be used for pushbuttons with dust covers if the front panel thickness of 3 mm is not exceeded.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Inscriptions

Name plates

Options

Customized inscriptions

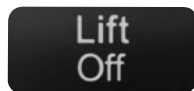
The labels can be inscribed with text and symbols not listed in the ordering data.

The following letter heights are used as standard for text inscriptions:

- Label size 12.5 mm × 27 mm: maximum 3 lines with letter height 4 mm (1-line), 3.5 mm (2-line) or 2.5 mm (3-line)
- Label size 27 mm × 27 mm: maximum 5 lines with letter height 4 mm (1- to 5-line)
- Label size 17.5 mm × 28 mm: maximum 3 lines with letter height 4 mm (1- and 2-line) or 3 mm (3-line)

Up to 11 characters per line are possible. The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

Examples for customized inscription



Two-line inscription in upper/lower case lettering (K0Y)



Single-line inscription in upper case lettering (K1Y)



Three-line inscription in lower case letters (K2Y)



Symbol number 5011 according to IEC 60417 (K3Y)



Any symbol according to order form supplement (K9Y)

Ordering notes

Append the following codes to the Order No.:

- Text line(s) in upper/lower case, upper case always for beginning of line (e. g. "Lift out"): **K0Y**
- Text line(s) in upper case (e. g. "LIFT OUT"): **K1Y**
- Text line(s) in lower case (e. g. "lift out"): **K2Y**
- Text line(s) in upper/lower case, all words begin with upper case letters (e. g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbol according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the order number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

In the case of multi-line inscriptions, the text must be assigned to the respective line, e. g. "Z1 = Lift, Z2 =Lower". For long words you can also specify the end-of-line division ([see ordering example 1](#)).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 ([see ordering example 2 and 3](#)).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example 1

A label with 2 lines of text is required:

```
3SB39 02-1XZ
K1Y
Z1 = LIFT
Z2 = LOWER
```

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

```
3SB39 02-1XZ
K3Y
Z = 5011 IEC
```

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:









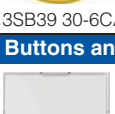


```
3SB39 02-1XZ
K3Y
Z = 1118 ISO
```


3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts

Buttons and lenses

Selection and ordering data

Version	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Buttons and lenses for round version¹⁾								
	Buttons, flat For round illuminated pushbuttons and illuminated switches, plastic version	Red	B	3SB39 30-0CA2	100	10 units	102	0.100
		Yellow	B	3SB39 30-0CA3	100	10 units	102	0.100
		Green	B	3SB39 30-0CA4	100	10 units	102	0.100
		Blue	B	3SB39 30-0CA5	100	10 units	102	0.100
		White	B	3SB39 30-0CA6	100	10 units	102	0.100
		Clear	B	3SB39 30-0CA7	100	10 units	102	0.100
	Buttons, flat For round pushbuttons and switches, metal version	Black	B	3SB39 30-0EA1	100	10 units	102	0.200
		Red	B	3SB39 30-0EA2	100	10 units	102	0.200
		Yellow	B	3SB39 30-0EA3	100	10 units	102	0.200
		Green	B	3SB39 30-0EA4	100	10 units	102	0.200
		Blue	B	3SB39 30-0EA5	100	10 units	102	0.200
		White	B	3SB39 30-0EA6	100	10 units	102	0.200
		Clear	B	3SB39 30-0EA7	100	10 units	102	0.200
	Buttons, raised For round illuminated pushbuttons and illuminated switches, plastic version	Red	B	3SB39 30-0DA2	1	10 units	102	0.003
		Green	B	3SB39 30-0DA4	1	10 units	102	0.003
		Clear	B	3SB39 30-0DA7	1	10 units	102	0.003
	Buttons, raised For round pushbuttons and switches, metal version	Black	D	3SB39 30-0FA1	1	10 units	102	0.003
		Red	C	3SB39 30-0FA2	1	10 units	102	0.003
		Yellow	C	3SB39 30-0FA3	1	10 units	102	0.003
		Green	C	3SB39 30-0FA4	1	10 units	102	0.003
		Blue	C	3SB39 30-0FA5	1	10 units	102	0.003
		White	C	3SB39 30-0FA6	1	10 units	102	0.003
		Clear	C	3SB39 30-0FA7	1	10 units	102	0.003
	Buttons, flat For round illuminated pushbuttons and illuminated switches, metal version	Amber	B	3SB39 30-0GA0	100	10 units	102	0.200
		Red	B	3SB39 30-0GA2	100	10 units	102	0.200
		Yellow	B	3SB39 30-0GA3	100	10 units	102	0.200
		Green	B	3SB39 30-0GA4	100	10 units	102	0.200
		Blue	B	3SB39 30-0GA5	100	10 units	102	0.200
		White	B	3SB39 30-0GA6	100	10 units	102	0.200
		Clear	B	3SB39 30-0GA7	100	10 units	102	0.200
	Buttons, flat, solvent-resistant²⁾ For round illuminated pushbuttons and switches, metal version	Red	B	3SB39 30-0GA20-0PA0	100	10 units	102	0.200
		Yellow	B	3SB39 30-0GA30-0PA0	100	10 units	102	0.200
		Green	B	3SB39 30-0GA40-0PA0	100	10 units	102	0.200
		Blue	B	3SB39 30-0GA50-0PA0	100	10 units	102	0.200
		White	B	3SB39 30-0GA60-0PA0	100	10 units	102	0.200
		Clear	B	3SB39 30-0GA70-0PA0	100	10 units	102	0.200
	Buttons, raised For round illuminated pushbuttons and illuminated switches, metal version	Amber	C	3SB39 30-0HA0	1	10 units	102	0.003
		Red	C	3SB39 30-0HA2	1	10 units	102	0.003
		Yellow	C	3SB39 30-0HA3	1	10 units	102	0.003
		Green	C	3SB39 30-0HA4	1	10 units	102	0.003
		Blue	C	3SB39 30-0HA5	1	10 units	102	0.003
		White	C	3SB39 30-0HA6	1	10 units	102	0.003
		Clear	C	3SB39 30-0HA7	1	10 units	102	0.003
	Lenses, smooth For round indicator lights, plastic and metal version	Amber	C	3SB39 30-6BA0	1	10 units	102	0.002
		Red	B	3SB39 30-6BA2	1	10 units	102	0.002
		Yellow	B	3SB39 30-6BA3	1	10 units	102	0.002
		Green	B	3SB39 30-6BA4	1	10 units	102	0.002
		Blue	B	3SB39 30-6BA5	1	10 units	102	0.002
		White	B	3SB39 30-6BA6	1	10 units	102	0.002
		Clear	B	3SB39 30-6BA7	1	10 units	102	0.002
	Lenses with concentric rings For round indicator lights, plastic and metal version	Amber	B	3SB39 30-6CA0	1	10 units	102	0.002
		Red	B	3SB39 30-6CA2	1	10 units	102	0.002
		Yellow	B	3SB39 30-6CA3	1	10 units	102	0.002
		Green	B	3SB39 30-6CA4	1	10 units	102	0.002
		Blue	B	3SB39 30-6CA5	1	10 units	102	0.002
		White	B	3SB39 30-6CA6	1	10 units	102	0.002
		Clear	B	3SB39 30-6CA7	1	10 units	102	0.002
Buttons and lenses for square version								
	Buttons, flat For square illuminated pushbuttons and illuminated switches, plastic version	Red	B	3SB39 50-0CA2	100	10 units	102	0.100
		Yellow	B	3SB39 50-0CA3	100	10 units	102	0.100
		Green	B	3SB39 50-0CA4	100	10 units	102	0.100
		Blue	B	3SB39 50-0CA5	100	10 units	102	0.100
		White	B	3SB39 50-0CA6	100	10 units	102	0.100
		Clear	B	3SB39 50-0CA7	100	10 units	102	0.100
	Lenses, smooth For square indicator lights, plastic version	Red	B	3SB39 50-6AA2	1	10 units	102	0.002
		Yellow	B	3SB39 50-6AA3	1	10 units	102	0.002
		Green	B	3SB39 50-6AA4	1	10 units	102	0.002
		Blue	B	3SB39 50-6AA5	1	10 units	102	0.002
		White	B	3SB39 50-6AA6	1	10 units	102	0.002
		Clear	B	3SB39 50-6AA7	1	10 units	102	0.002

¹⁾ In scope of supply of pushbuttons or indicator lights.







²⁾ Not suitable for laser inscription.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts

Lamps, acoustic signal transformers and keys

Selection and ordering data

Version	Rated voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
V									
Lamps, BA 9s bases¹⁾									
 3SB19 02-0AY	Incandescent lamps 1.2 W Length up to 28 mm, max. bulb diameter 10 mm	24 AC/DC	Clear	A	3SB19 02-0AY		1 10 units	102	0.003
	Incandescent lamps 2 W Length up to 28 mm, max. bulb diameter 10 mm	6 AC/DC	Clear	A	3SX1 342		1 10 units	102	0.003
		12 AC/DC		A	3SX1 343		1 10 units	102	0.003
		24 AC/DC		A	3SX1 344		1 10 units	102	0.003
		30 AC/DC		B	3SB19 02-2AF		1 10 units	102	0.003
		48 AC/DC		B	3SB19 02-1AP		1 10 units	102	0.003
60 AC/DC		A	3SR94 24		1 10 units	102	0.003		
Incandescent lamps 2.6 W Length 28 mm, bulb diameter 10 mm	110 ... 130 ²⁾	Clear	▶	3SX1 731		1 10 units	102	0.003	
 3SB39 01-1PA	Multi-incandescent lamps 1.2 W Endurance 25 000 h, high resistance to vibration	24 AC/DC		B	3SB19 02-2BU		1 10 units	102	0.002
	LED lamps, super-bright Length up to 28 mm, max. bulb diameter 10 mm, max. operational current 15 mA	24 AC/DC	Red	▶	3SB39 01-1CA		1 10 units	102	0.002
		Yellow	B	3SB39 01-1BA		1 10 units	102	0.002	
		Green	▶	3SB39 01-1DA		1 10 units	102	0.002	
		Blue	B	3SB39 01-1PA		1 10 units	102	0.002	
		White	▶	3SB39 01-1QA		1 10 units	102	0.002	
48 AC/DC		Red	B	3SB39 01-1CC		1 10 units	102	0.002	
		Yellow	B	3SB39 01-1BC		1 10 units	102	0.002	
		Green	B	3SB39 01-1DC		1 10 units	102	0.002	
		Blue	B	3SB39 01-1PC		1 10 units	102	0.002	
		White	B	3SB39 01-1QC		1 10 units	102	0.002	
130 AC, 70 ... 90 DC, if X1 at "+"		Red	B	3SB39 01-1CD		1 10 units	102	0.002	
		Yellow	B	3SB39 01-1BD		1 10 units	102	0.002	
		Green	B	3SB39 01-1DD		1 10 units	102	0.002	
		Blue	B	3SB39 01-1PD		1 10 units	102	0.002	
		White	B	3SB39 01-1QD		1 10 units	102	0.002	
230 AC, 110 ... 160 DC, if X1 at "+"		Red	B	3SB39 01-1CF		1 10 units	102	0.003	
		Yellow	B	3SB39 01-1BF		1 10 units	102	0.003	
		Green	B	3SB39 01-1DF		1 10 units	102	0.003	
		Blue	B	3SB39 01-1PF		1 10 units	102	0.003	
		White	B	3SB39 01-1QF		1 10 units	102	0.003	
230 AC/DC	Red	B	3SB39 01-1CG		1 10 units	102	0.003		
	Yellow	B	3SB39 01-1BG		1 10 units	102	0.003		
	Green	B	3SB39 01-1DG		1 10 units	102	0.004		
	Blue	B	3SB39 01-1PG		1 10 units	102	0.003		
	White	B	3SB39 01-1QG		1 10 units	102	0.004		
 3SB19 02-4MC	LED lamps Length up to 28 mm, max. bulb diameter 10 mm, max. operational current 15 mA	22 ... 32	Red	D	3SB19 02-4AJ		1 10 units	102	0.002
			Yellow	D	3SB19 02-4BJ		1 10 units	102	0.002
			Green	D	3SB19 02-4CJ		1 10 units	102	0.002
 3SB19 02-4NC	LED lamps, flashing (1.4 Hz) length up to 28 mm, bulb diameter 10 mm, operational current 24 ... 29 mA	24 DC	Red	B	3SB19 02-4LC		1 10 units	102	0.002
			Yellow	C	3SB19 02-4MC		1 10 units	102	0.002
			Green	C	3SB19 02-4NC		1 10 units	102	0.002
 3SX1 703	Glow lamps³⁾ Length 28 mm, bulb diameter 10 mm, operational current approx. 1.8 mA	110 AC	Clear	A	3SX1 703		1 10 units	102	0.003
		220 AC	Clear	A	3SX1 701		1 10 units	102	0.003
		220 AC	Green	C	3SX1 702		1 10 units	102	0.003
 3SB19 02-2AD	Lamp extractors For lamps with BA 9s base			▶	3SB19 02-2AD		1 1 unit	102	0.006

¹⁾ Essential accessories when using lampholders with BA 9s base and delivery without lamp.

²⁾ Also for 230 V when used with a 3SB34 00-1C voltage reducer.

³⁾ Due to the inherent orange color of glow lamps and their lower luminance level compared to incandescent lamps, it is recommended that they should only be used with clear or red screw lenses and in areas where ambient light levels are not very high.






3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts


Lamps, acoustic signal transformers and keys

Version	Rated voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	---------------	-------	----	-----------	--------------	-------------------	-----	----	-----------------------

Lamps, Wedge bases¹⁾

 3SB29 08-1AE	Incandescent lamps Wedge base W2 × 4.6 d, 1.0 W	6 AC/DC	Clear	C	3SB29 08-1AA	100	10 units	102	0.100
		12 AC/DC		B	3SB29 08-1AB	100	10 units	102	0.100
		24 AC/DC		▶	3SB29 08-1AC	100	10 units	102	0.100
		30 AC/DC		A	3SB29 08-1AD	100	10 units	102	0.100
		48 AC/DC		B	3SB29 08-1AE	1	10 units	102	0.001
		60 AC/DC		B	3SB29 08-1AF	1	10 units	102	0.001
 3SB39 01-1SB	LED lamps, super-bright Wedge base W2 × 4.6 d, operational current 10 mA	24 AC/DC	Red	B	3SB39 01-1SB	1	10 units	102	0.001
			Yellow	B	3SB39 01-1RB	1	10 units	102	0.001
			Green	B	3SB39 01-1TB	1	10 units	102	0.001
			White	B	3SB39 01-1UB	1	10 units	102	0.001
		28 AC/DC	Blue	B	3SB29 08-1BD	1	10 units	102	0.001
			Red	B	3SB39 01-1SE	1	10 units	102	0.001
			Yellow	B	3SB39 01-1RE	1	10 units	102	0.001
			Green	B	3SB39 01-1TE	1	10 units	102	0.001
 3SB39 01-1VE			White	B	3SB39 01-1UE	1	10 units	102	0.001
			Blue	D	3SB39 01-1VE	1	10 units	102	0.001
 3SB29 08-2AB	Lamp extractors For lamps with bases W2 × 4.6 d	▶			3SB29 08-2AB	1	1 unit	102	0.003
					C	3SB19 02-1AU	1	1 unit	102
 3SB19 02-1AU	Lamp adapters For fitting a lamp with a wedge base socket into a BA 9s lampholder								

Acoustic signal transformers, BA 9s base


 3SB19 02-2BN	Acoustic signal transformers For acoustic signaling devices ²⁾ Operational current 25 mA, 0.6 W, sound pressure 80 dB/10 cm	24 ... 28 DC		B	3SB19 02-2BN	1	1 unit	102	0.004
--	--	--------------	--	---	---------------------	---	--------	-----	-------

¹⁾ Can be used with lamp adapters in lampholders with BA 9s base.

²⁾ For increased protection, the IP65 acoustic signaling device (complete unit) can be used.

Version	Lock	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	------	-------	----	-----------	--------------	-------------------	-----	----	-----------------------

Keys for actuators¹⁾²⁾

 3SY1 054	Ronis	SB 30		B	3SB39 10-4A	1	1 unit	102	0.012
	BKS	S1		A	3SY1 066	1	1 unit	102	0.007
	CES	LSG 1		B	3SB19 10-2F	1	1 unit	102	0.007
		SSG 10		B	3SY1 054	1	1 unit	102	0.007
		SSP 9		A	3SY1 052	1	1 unit	102	0.008
	IKON	360012 K1		A	3SY1 053	1	1 unit	102	0.007
	O.M.R.	73038	Light blue	C	3SB19 10-2L	1	1 unit	102	0.011
		73037	Red	B	3SB19 10-2M	1	1 unit	102	0.011
		73034	Black	B	3SB19 10-2N	1	1 unit	102	0.011
		73033	Yellow	D	3SB19 10-2P	1	1 unit	102	0.011

¹⁾ Included in scope of supply of the key-operated switches and the EMERGENCY-STOP mushroom pushbuttons with lock.

²⁾ Also available with special lock. Supplement Order No. with "-Z" and quote the required lock in plain text.
Additional price on request.
This does not include locks for VW and main and general locking systems.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts

Protective covers

Selection and ordering data





Version	Use	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Protective caps¹⁾, degree of protection IP67									
<i>Material: elastolan</i>									
 3SB39 21-0AJ	Protective caps For round version	Flat button (plastic)	Clear	B	3SB39 21-0AJ		1	1 unit	102 0.001
		Flat button (metal), raised button (plastic)	Clear	B	3SB39 21-0AM		1	1 unit	102 0.002
	• PVC	Raised button (metal)	Clear	C	3SB19 02-2AN		1	1 unit	102 0.004
 3SB39 41-0AJ	Protective caps For square version	Flat button (plastic)	Clear	B	3SB39 41-0AJ		1	1 unit	102 0.002
		<i>Material: silicone</i>							
 3SB39 21-0AH	Protective caps For round version	Flat button (plastic)	Clear	B	3SB39 21-0AH		1	1 unit	102 0.002
		Flat button (metal), raised button (plastic)	Clear	B	3SB19 02-0AK		1	1 unit	102 0.002
			Clear	B	3SB19 02-0AN		1	1 unit	102 0.003
 3SB19 02-0AK	Protective caps For round version	Selector switch (plastic and metal, normal handle)	Clear	B	3SB39 21-0BA		1	1 unit	102 0.003
 3SB19 02-0AN			Mushroom push-pull button, Ø 40 mm (plastic and metal)	Clear	B	3SB19 02-2BH		1	1 unit
 3SB39 21-0BA	Protective caps For round version	EMERGENCY-STOP mushroom pushbutton, Ø 40 mm (plastic and metal)	Clear	B	3SB39 21-0BU		1	1 unit	102 0.013
 3SB19 02-2BH			Flat button (plastic)	Clear	B	3SB39 41-0AH		1	1 unit
 3SB39 21-0BU	Protective caps For square version	Flat button (plastic)	Clear	B	3SB39 41-0AH		1	1 unit	102 0.002
 3SB39 41-0AH									

¹⁾ Not for mounting in 3SB38 enclosure with 3SB34 20 or 3SB34 23 contact blocks and lampholders for floor mounting.
Not to be used with label holder.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts

Protective covers

Version	Use	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Other protective caps¹⁾									
	Sealable caps For round version	Flat button (plastic)	Black	B	3SB19 02-0AL		1	1 unit	102 0.003
3SB19 02-0AL									
		Flat button (metal), raised button (plastic)	Clear	B	3SB19 02-2AR		1	1 unit	102 0.011
3SB19 02-2AR									
	Dust covers For use in dusty environments	Key-operated switch BKS, CES, IKON, O.M.R.	Clear	B	3SB39 21-0BT		1	1 unit	102 0.003
3SB39 21-0BT									
Protective collars for front plates									
	Protective collars for EMERGENCY-STOP²⁾ For round version	EMERGENCY-STOP mushroom pushbutton without lock	Yellow	▶	3SB39 21-0AK		1	1 unit	102 0.044
3SB39 21-0AX			EMERGENCY-STOP mushroom pushbutton with lock	Gray	C	3SB39 21-0AP		1	1 unit
	Protective collars for EMERGENCY-STOP for 5 padlocks²⁾ For round version	EMERGENCY-STOP mushroom pushbutton	Yellow	B	3SB39 21-0AX		1	1 unit	102 0.053
3SB39 21-0CG				▶	3SB39 21-0CG		1	1 unit	102 0.044
	Sun collars For round version	Illuminated pushbuttons	Black	B	3SB39 21-0AS		1	1 unit	102 0.003
3SB39 21-0AS									
Blanking plugs for spare command points for front plates									
	Blanking plugs For round version	Plastic version	Black	▶	3SB39 21-0AA		1	10 units	102 0.012
3SB39 21-0AA									
	Blanking plugs For square version	Plastic version	Black	B	3SB39 41-0AA		1	1 unit	102 0.013
3SB39 41-0AA									
	Blanking plugs For round version	Metal version	Aluminized	B	3SB19 02-0AQ		1	10 units	102 0.081
3SB19 02-0AQ									

¹⁾ Unsuitable for mounting in 3SB38 enclosures. Not to be used with label holder.







²⁾ The protective collar must only be used to protect against inadvertent actuating and must be fitted to allow unimpeded actuation of the EMERGENCY-STOP mushroom pushbutton.

3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts

Miscellaneous accessories

Selection and ordering data

Version	Use	Inscriptions	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Yellow name plates for EMERGENCY-STOP										
<i>For use on front plates</i>										
	Name plates, round Self-adhesive, external diameter 80 mm, hole 23 mm	EMERGENCY-STOP	Blank	B	3SB39 21-0AB		1	1 unit	102	0.002
		mushroom pushbutton (round version)	4 languages, de, en, it, es	B	3SB39 21-0BW		1	1 unit	102	0.001
			NOT-HALT	B	3SB39 21-0AC		1	1 unit	102	0.001
			NOT-AUS	B	3SB39 21-0CK		1	1 unit	102	0.001
			EMERGENCY STOP	B	3SB39 21-0AD		1	1 unit	102	0.001
			ARRET D'URGENCE	B	3SB39 21-0AG		1	1 unit	102	0.002
	Name plates, round Self-adhesive, external diameter 80 mm, cut-out 26 mm x 26 mm	EMERGENCY-STOP	Blank	B	3SB39 41-0AB		1	1 unit	102	0.001
		mushroom pushbuttons (square version)	NOT-HALT	B	3SB39 41-0AC		1	1 unit	102	0.001
			NOT-AUS	B	3SB39 41-0BX		1	1 unit	102	0.001
			EMERGENCY STOP	B	3SB39 41-0AD		1	1 unit	102	0.002
	Name plates, round 1 mm thick, external diameter 75 mm, hole 22.5 mm	EMERGENCY-STOP	Blank	B	3SB19 02-2BA		1	1 unit	102	0.006
		mushroom pushbuttons (round version)	NOT-HALT	B	3SB19 02-2BB		1	1 unit	102	0.006
			NOT-AUS	B	3SB39 21-0CH		1	1 unit	102	0.006
	Name plates, round Self-adhesive, external diameter 60 mm, hole 23 mm ¹⁾ Illuminated, suitable as signaling device for EMERGENCY-STOP, with plug-in connection for 24 V AC/DC ²⁾	EMERGENCY-STOP	Blank	B	3SB39 21-0DA		1	1 unit	102	0.020
		mushroom pushbutton (round version)	NOT-HALT	B	3SB39 21-0DK		1	1 unit	102	0.020
			NOT-AUS	B	3SB39 21-0DC		1	1 unit	102	0.020
			EMERGENCY STOP	B	3SB39 21-0DD		1	1 unit	102	0.020
Inscription labels										
	Inscription labels For supporting dust resistance	Contact blocks		B	3SB39 01-0CH		100	10 units	102	0.100
	Unit labeling plates	Contact blocks		B	3TX4 210-0H		100	100 units	101	0.300





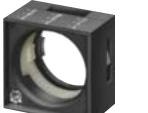


¹⁾ For front panel thickness of max. 4 mm.

²⁾ The illuminated label can also be operated through the AS-Interface F adapter (see page 9/64).

3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts

Miscellaneous accessories

Version	Use	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Holders and pressure plates								
 3SB39 01-0AB	Holders For snapping on 3 blocks ¹⁾		▶ 3SB39 01-0AB		100	20 units	102	0.100
 3SB39 01-0AC	Holders with pressure plate For actuating the central contact block of 3 contact blocks		▶ 3SB39 01-0AC		100	10 units	102	0.200
 3SB39 01-0AW	Pressure plates For actuating the central contact block of 3 contact blocks	B	3SB39 01-0AW		100	10 units	102	0.100
Holders for commanding and signaling elements²⁾								
 3SB39 31-0AA	Holders For plastic version, round		▶ 3SB39 31-0AA		1	10 units	102	0.014
 3SB39 51-0AA	Holders For plastic version, square	B	3SB39 51-0AA		1	1 unit	102	0.013
 3SB39 31-0AC	Holders For metal version, round		▶ 3SB39 31-0AC		1	10 units	102	0.044
 3SB39 21-0BD	Grounding screws For grounding metal actuators for fitting in front plates made of non-conducting materials	B	3SB39 21-0BD		100	50 units	102	0.100

¹⁾ The holder for illuminated commanding devices is included in the scope of supply.

²⁾ The matching holder for actuators and indicators is included in the scope of supply (exception: Order with order code "B01").

3SB3 Pushbuttons and Indicator Lights, 22 mm

Accessories and Spare Parts

Miscellaneous accessories

Version	Use	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Tools									
	Blanking tools 26 mm × 26 mm, for square version		B	3SB39 41-0AF		1	1 unit	102	0.817
3SB39 41-0AF									
	Hole drilling templates For 30 mm × 30 mm grid, horizontal, for round and square ver- sions		C	3SB19 02-2BG		1	1 unit	102	0.015
3SB19 02-2BG									
	Mounting tools For buttons and lenses, metal version		B	3SB39 21-0BC		1	1 unit	102	0.024
3SB39 21-0BC									
	Mounting tools For potentiometer drives and for pushbuttons with extended stroke		C	3SX1 707		1	1 unit	102	0.018
3SX1 707									
	Dismantling tools For contact blocks and lampholders	Blocks with screw termi- nals	B	3SB39 01-0CB		1	1 unit	102	0.015
3SB39 01-0CB									
	Dismantling tools For contact blocks and lampholders	Blocks with spring-type terminals	C	3SB39 01-0CG		1	1 unit	102	0.010
Various accessories									
	Single frames For square design of the round version	Black	C	3SB39 21-0AU		1	1 unit	102	0.002
3SB39 21-0AU									
	Adapter parts Adapters for 30.5 mm mounting hole, comprising a metal disk with an adhesive layer on one side, degree of protection IP65	As thrust ring for a thin molded-plas- tic front plate	B	3SB39 21-0AE		1	1 unit	102	0.008
3SB39 21-0AE									
	Printed circuit board holders For mounting the com- mand devices on the printed circuit board (screw is included in the scope of supply)	Contact blocks and lamphold- ers for solder connection	B	3SB39 01-0AA		100	10 units	102	0.200
3SB39 01-0AA									
	Extension plungers For compensation of the distance between a pushbutton and the unlatching button of an overload relay	Pushbuttons with extended stroke	A	3SX1 335		1	1 unit	102	0.004
3SX1 335									

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

General data

Overview



Enclosed pushbuttons and indicator lights are used as hand operated control devices for separately allocated control units and cabinets.

Enclosures with handle are available for suspension (e. g. for crane control units).

The enclosed pushbuttons and indicator lights are available with conventional controls as well as for connection to the AS-Interface bus system.

The following versions are available:

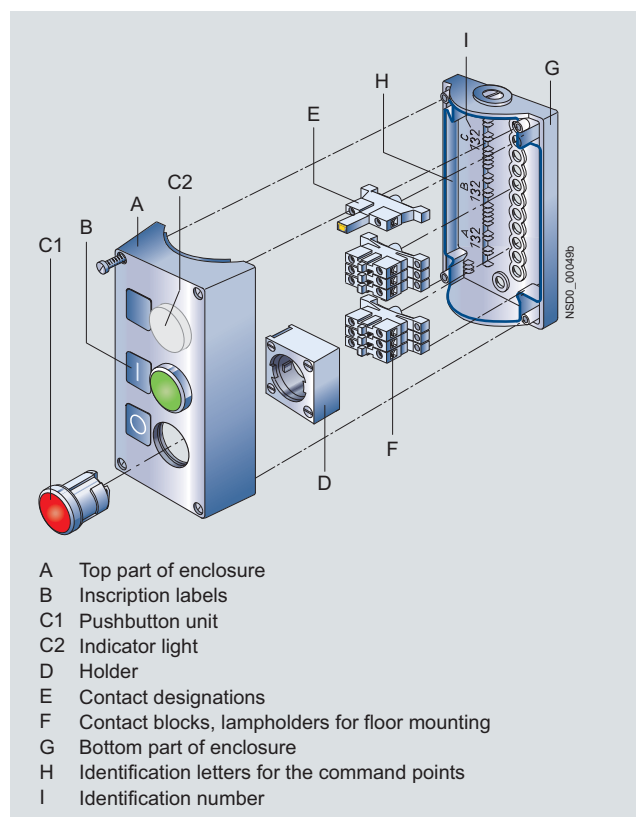
- Enclosure with standard fittings with 1 to 3 command points
- Enclosure with customized equipment with 1 to 6 command points
- Empty enclosures (individual parts must be ordered separately).

Customer-specific enclosures

On request enclosures with more than 6 command points can also be supplied with AS-Interface connection.

For AS-Interface enclosures see page 9/93.

Enclosures with standard fittings



Standards

IEC 60947-5-1, EN 60947-5-1

Application

The devices are climate-proof (KTW 24) according to EN ISO 6270-2 and suitable for stationary use (weather-protected) and for use in marine applications.

More information

Type	3SB38 0.-0, 3SB38 0.-1	3SB38 0.-2, 3SB38 0.-3
Enclosures		
Enclosure material	Plastic	Metal
Actuators and indicators	Plastic, round	Metal, round
Degree of protection acc. to IEC 60529	IP65	IP67 and NEMA Type 4
Climatic withstand capability acc. to EN ISO 6270-2	KTW 24	
Shock resistance acc. to IEC 60068-2-27 for half-sine shock type, 11 ms shock duration		
• Devices without incandescent lamp	≤ 50 g	
• Devices with incandescent lamp	≤ 30 g	
Vibration resistance acc. to IEC 60068-2-6		
• Acceleration at frequency 20 ... 200 Hz	5 g	

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Enclosures with standard fittings

Overview

Enclosures with standard fittings are available with:

- 1 to 3 command points
- Operational voltage up to 400 V
- Vertical mounting type
- Plastic enclosures are equipped with plastic actuators and indicators, metal enclosures are equipped with metal actuators and indicators
- Contact blocks and lampholders for floor mounting (are snapped into the enclosure base). Screw terminals (box terminals) as standard; some versions also with spring-type terminals (Order No. ends with -OCC0).

The actuators/indicators are fixed with an enclosure nut. If required it can be disassembled with a 27 mm socket wrench or with a 3SX17 07 ring nut wrench.


Color of enclosure cover:

- Gray, RAL 7035, or
- Yellow, RAL 1004

Color of enclosure base:

- Black, RAL 9005

Selection and ordering data

Equipment	Contact block function	Number of command points	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				
kg									

Plastic enclosures with standard fittings

Cable entry top and bottom each 1 x M20







3SB38 01-0DA3

A = Pushbutton green, label "I"	1 NO	1	B	3SB38 01-0DA3		1	1 unit	102	0.210
A = Pushbutton red, label "O"	1 NC	1	B	3SB38 01-0DB3		1	1 unit	102	0.209
A = Pushbutton white, label "I"	1 NO	1	B	3SB38 01-0DD3		1	1 unit	102	0.205
A = Pushbutton black, label "O"	1 NC	1	B	3SB38 01-0DE3		1	1 unit	102	0.205



3SB38 01-0.F3

A = EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching acc. to ISO 13850 and rotate-to-unlatch mechanism									
• With yellow top part, without protective collar	1 NC 	1	B	3SB38 01-0DG3		1	1 unit	102	0.242
	2 NC 	1	B	3SB38 01-0EG3		1	1 unit	102	0.250
• With yellow top part, with protective collar ¹⁾	1 NC 	1	B	3SB38 01-0DF3		1	1 unit	102	0.270
	2 NC 	1	B	3SB38 01-0EF3		1	1 unit	102	0.270



3SB38 02-0DA3

B = Pushbutton green, label "I", A = Pushbutton red, label "O"	1 NO, 1 NC	2	B	3SB38 02-0DA3		1	1 unit	102	0.261
B = Pushbutton white, label "I", A = Pushbutton black, label "O"	1 NO, 1 NC	2	B	3SB38 02-0DB3		1	1 unit	102	0.260



3SB38 03-0DA3

C = Indicator light clear, label without inscription, B = Pushbutton green, label "I", A = Pushbutton red, label "O"	BA 9s ³⁾ , 1 NO, 1 NC	3	B	3SB38 03-0DA3		1	1 unit	102	0.320
C = Pushbutton black, label "II", B = Pushbutton black, label "I", A = Pushbutton red, label "O"	1 NO, 1 NO, 1 NC	3	C	3SB38 03-0DB3		1	1 unit	102	0.324
C = Indicator light clear, label without inscription, B = Pushbutton white, label "I", A = Pushbutton black, label "O"	BA 9s ³⁾ , 1 NO, 1 NC	3	C	3SB38 03-0DC3		1	1 unit	102	0.328

¹⁾ The protective collar must only be used to protect against inadvertent actuating and must be fitted to allow unimpeded access to the EMERGENCY-STOP mushroom pushbutton.

²⁾ Positive opening according to IEC 60947-5-1, Appendix K.

³⁾ Only lampholder; order lamp separately.

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Enclosures with standard fittings

Equipment	Contact block function	Number of command points	DT	Screw terminals Spring-type terminals ³⁾	⊕ ⊖	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU				kg

Metal enclosures with standard fittings

Cable entry top and bottom each 1 x M20



3SB38 01-2DB3

A = Pushbutton green, label "I"	1 NO	1	B	3SB38 01-2DA3		1	1 unit	102	0.532
A = Pushbutton red, label "O"	1 NC	1	B	3SB38 01-2DB3		1	1 unit	102	0.535
A = Pushbutton white, label "I"	1 NO	1	B	3SB38 01-2DD3		1	1 unit	102	0.538
A = Pushbutton black, label "O"	1 NC	1	B	3SB38 01-2DE3		1	1 unit	102	0.530



3SB38 01-2.F3

A = EMERGENCY-STOP mushroom pushbuttons, Ø 40 mm, with positive latching acc. to ISO 13850 and rotate-to-unlatch mechanism									
• With yellow top part, without protective collar	1 NC → ²⁾	1	B	3SB38 01-2DG3		1	1 unit	102	0.591
	2 NC → ²⁾	1	B	3SB38 01-2EG3		1	1 unit	102	0.590
- With M12 socket	2 NC → ²⁾³⁾	1	C	3SB38 01-2EG10-0CC0		1	1 unit	102	0.590
• With yellow top part, with protective collar ¹⁾	1 NC → ²⁾	1	B	3SB38 01-2DF3		1	1 unit	102	0.684
	2 NC → ²⁾	1	B	3SB38 01-2EF3		1	1 unit	102	0.680



3SB38 01-2EB30

A = EMERGENCY-STOP mushroom pushbuttons, Ø 60 mm, with positive latching acc. to ISO 13850 and rotate-to-unlatch mechanism									
• With yellow top part, with protective collar for 5 padlocks	2 NC → ²⁾	1	B	3SB38 01-2EA30		1	1 unit	102	0.590
	2 NC → ²⁾³⁾	1	B	3SB38 01-2EA30-0CC0		1	1 unit	102	0.591



3SB38 02-2DA3

A = mushroom pushbutton, Ø 60 mm, black, with positive latching and rotate-to-unlatch mechanism									
• With gray top part, with protective collar for 5 padlocks	2 NC ³⁾	1	B	3SB38 01-2EB30-0CC0		1	1 unit	102	0.591
B = Pushbutton green, label "I", A = Pushbutton red, label "O"	1 NO, 1 NC	2	B	3SB38 02-2DA3		1	1 unit	102	0.675
B = Pushbutton white, label "I", A = Pushbutton black, label "O"	1 NO, 1 NC	2	B	3SB38 02-2DB3		1	1 unit	102	0.667



3SB38 03-2DA3

C = Indicator light clear, label without inscription, B = Pushbutton green, label "I", A = Pushbutton red, label "O"	BA 9s ⁴⁾ , 1 NO, 1 NC	3	B	3SB38 03-2DA3		1	1 unit	102	0.840
C = Pushbutton black, label "II", B = Pushbutton black, label "I", A = Pushbutton red, label "O"	1 NO, 1 NO, 1 NC	3	B	3SB38 03-2DB3		1	1 unit	102	0.856



3SB38 03-2DB3

C = Indicator light clear, label without inscription, B = Pushbutton white, label "I", A = Pushbutton black, label "O"	BA 9s ⁴⁾ , 1 NO, 1 NC	3	B	3SB38 03-2DC3		1	1 unit	102	0.844
--	--	---	---	----------------------	--	---	--------	-----	-------

¹⁾ The protective collar must only be used to protect against inadvertent actuating and must be fitted to allow unimpeded access to the EMERGENCY-STOP mushroom pushbutton.

²⁾ Positive opening according to IEC 60947-5-1, Appendix K.

³⁾ **-0CC0**: Contact blocks with spring-type terminals.

⁴⁾ Only lampholder; order lamp separately.

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Empty enclosures

Selection and ordering data

Version	Number of command points	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	--------------------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Empty enclosures, plastic



3SB38 02-0AA3

Cable entry top and bottom each 1 x M20 for 1 to 3 command points, each 1 x M25 for 4 and 6 command points

For contact blocks, lampholders and accessories with snap-on floor mounting, also single-pole front plate blocks can be used (switching state is maintained upon opening)	1	B	3SB38 01-0AA3		1	1 unit	102	0.185
	2	B	3SB38 02-0AA3		1	1 unit	102	0.214
	3	B	3SB38 03-0AA3		1	1 unit	102	0.258
	4	B	3SB38 04-0AA3		1	1 unit	102	0.301
	6	B	3SB38 06-0AA3		1	1 unit	102	0.427



3SB38 01-0AB3

For EMERGENCY-STOP, for contact blocks, lampholders and accessories with snap-on floor mounting, also single-pole front plate blocks can be used (switching state is maintained upon opening)

• With yellow top part, without protective collar	1	B	3SB38 01-0AB3		1	1 unit	102	0.185
• With yellow top part, with protective collar ¹⁾	1	B	3SB38 01-0AD3		1	1 unit	102	0.213

Empty enclosures, metal



3SB38 04-2AA3

Cable entry top and bottom each 1 x M20 for 1 to 3 command points, each 1 x M25 for 4 and 6 command points

For contact blocks, lampholders and accessories with snap-on floor mounting, also single-pole front plate blocks can be used (switching state is maintained upon opening)	1	B	3SB38 01-2AA3		1	1 unit	102	0.445
	2	B	3SB38 02-2AA3		1	1 unit	102	0.524
	3	B	3SB38 03-2AA3		1	1 unit	102	0.634
	4	B	3SB38 04-2AA3		1	1 unit	102	0.735
	6	B	3SB38 06-2AA3		1	1 unit	102	0.985



3SB38 01-2AB3

For EMERGENCY-STOP, for contact blocks, lampholders and accessories with snap-on floor mounting, also single-pole front plate blocks can be used (switching state is maintained upon opening)

• With yellow top part, without protective collar	1	B	3SB38 01-2AB3		1	1 unit	102	0.447
• With yellow top part, with protective collar ¹⁾	1	B	3SB38 01-2AD3		1	1 unit	102	0.551



3SB38 01-2AD3

• With gray top part, with protective collar	1	B	3SB38 01-2AE3		1	1 unit	102	0.551
--	---	---	----------------------	--	---	--------	-----	-------



3SB38 01-2EC3

• With yellow top part, with protective collar for 3 padlocks, for mushroom Ø 40 mm, can be locked (BKS, CES, O.M.R.)	1	B	3SB38 01-2EC3		1	1 unit	102	0.551
---	---	---	----------------------	--	---	--------	-----	-------

¹⁾ The protective collar must only be used to protect against inadvertent actuating and must be fitted to allow unimpeded access to the EMERGENCY-STOP mushroom pushbutton.

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Customer-specific enclosures

Overview

Customized enclosures are available with:

- 1 to 6 command points
- Operational voltage up to 400 V.

One command point comprises:

- 1 actuator or indicator
- Up to 3 contact blocks or up to 2 contact blocks + 1 lampholder
- 1 inscription label

For plastic enclosures the command points are equipped as standard with plastic actuators and indicators, for metal enclosures they are equipped with metal actuators and indicators.

For routing the cable in, one hole for M20 (for 1 to 3 command points) or for M25 (for 4 or 6 command points) is provided at the top and bottom.

Ordering notes (selection by configurator)

To order customized enclosures with the 3SB3 control devices, use the 3SB configurator to select the blocks for equipping. An electronic order form will be generated for the additional options. The configurator is available in the electronic catalog CA 01 on DVD or in the Industry Mall:

www.siemens.com/automation/mall

Supplement the Order No. with the order code "**K0Y**" (as already listed in the selection table).

The list price of the complete enclosure is generated in the configurator for the customized equipment.

Please send the resulting electronic order form along with your order by e-mail to our Competence Center at sirius-attach.aud@siemens.com

If you are unable to access either catalog, please contact our Technical Assistance.

Selection and ordering data

Version	Number of command points	DT	Order No.	Price per PU ¹⁾	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	--------------------------	----	-----------	----------------------------	-------------------	-----	----	--------------------------

Plastic enclosures



3SB38 03-.AZ

With contact blocks and lampholders for floor mounting	1	C	3SB38 01-0AZK0Y		1	1 unit	102
	2	C	3SB38 02-0AZK0Y		1	1 unit	102
	3	C	3SB38 03-0AZK0Y		1	1 unit	102
	4	B	3SB38 04-0AZK0Y		1	1 unit	102
	6	B	3SB38 06-0AZK0Y		1	1 unit	102
	With single-pole contact blocks and lampholders for front plate mounting	1	C	3SB38 01-1AZK0Y		1	1 unit
2		C	3SB38 02-1AZK0Y		1	1 unit	102
3		C	3SB38 03-1AZK0Y		1	1 unit	102
4		B	3SB38 04-1AZK0Y		1	1 unit	102
6		B	3SB38 06-1AZK0Y		1	1 unit	102

Metal enclosures



3SB38 03-.AZ

With contact blocks and lampholders for floor mounting	1	C	3SB38 01-2AZK0Y		1	1 unit	102
	2	C	3SB38 02-2AZK0Y		1	1 unit	102
	3	C	3SB38 03-2AZK0Y		1	1 unit	102
	4	C	3SB38 04-2AZK0Y		1	1 unit	102
	6	C	3SB38 06-2AZK0Y		1	1 unit	102
	With single-pole contact blocks and lampholders for front plate mounting	1	C	3SB38 01-3AZK0Y		1	1 unit
2		C	3SB38 02-3AZK0Y		1	1 unit	102
3		C	3SB38 03-3AZK0Y		1	1 unit	102
4		C	3SB38 04-3AZK0Y		1	1 unit	102
6		C	3SB38 06-3AZK0Y		1	1 unit	102



Suspended pushbuttons With holding plate and handle, customized equipment	max. 6	D	3SB38 87-1AZK0Y		1	1 unit	102
---	--------	---	------------------------	--	---	--------	-----



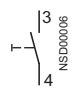
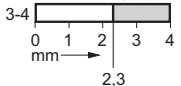

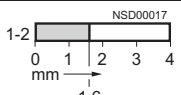

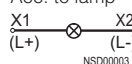
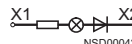

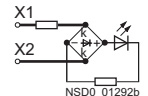
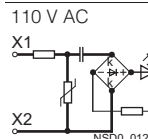
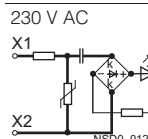

¹⁾ The prices depend on the equipment selected in the configurator.

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Contact blocks and lampholders

Selection and ordering data

For self-equipping of the enclosures

Version	Rated voltage/ Diagram	Operating travel/color <input type="checkbox"/> Contact closed <input type="checkbox"/> Contact open	DT	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
				Order No.	Price per PU		kg		
Contact blocks for floor mounting									
	Contact blocks with one contact								
	1 NO 1 NO with gold-plated contacts			B	3SB34 20-0B	1	1 unit	102	0.012
					3SB34 20-0BA	1	1 unit	102	0.015
3SB34 20-0B	1 NC 1 NC with gold-plated contacts			C	3SB34 20-0C	1	1 unit	102	0.012
					3SB34 20-0CA	1	1 unit	102	0.015
	BA 9s lampholders								
	Without lamp	Acc. to lamp 			3SB34 20-1A	1	1 unit	102	0.012
3SB34 20-1A	With integrated volt- age reducer and with 130 V lamp (3SX1 731) ²⁾	230/240 V AC 	Clear	B	3SB34 20-1C	1	1 unit	102	0.016
		Lampholders with integrated LED							
24 V AC/DC			Yellow Red Green Blue White	B ▶ ▶ ▶ B ▶	3SB34 20-1PA 3SB34 20-1PB 3SB34 20-1PC 3SB34 20-1PD 3SB34 20-1PE	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	102 102 102 102 102	0.011 0.011 0.011 0.011 0.011
110 V AC			Yellow Red Green Blue White	B B B D B	3SB34 20-1QA 3SB34 20-1QB 3SB34 20-1QC 3SB34 20-1QD 3SB34 20-1QE	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	102 102 102 102 102	0.012 0.012 0.012 0.012 0.012
230 V AC			Yellow Red Green Blue White	B B B B B	3SB34 20-1RA 3SB34 20-1RB 3SB34 20-1RC 3SB34 20-1RD 3SB34 20-1RE	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	102 102 102 102 102	0.012 0.012 0.012 0.012 0.012
		Fixpoint terminals							
			Black	B	3SB39 01-0AG	1	1 unit	102	0.012
			Blue	B	3SB39 01-0AH	1	1 unit	102	0.012
		Green/Yellow	B	3SB39 01-0AJ	1	1 unit	102	0.012	

1) Positive opening according to IEC 60947-5-1, Appendix K.
2) Only use with this lamp.

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Contact blocks and lampholders

Version	Rated voltage/ Diagram	Operating travel/color □ Contact closed □ Contact open	DT	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
				Order No.	Price per PU			

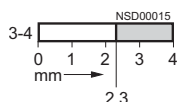
Contact blocks for floor mounting



3SB34 23-0B

Contact blocks with one contact

1 NO
1 NO with gold-plated contacts

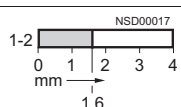


B
D

3SB34 23-0B
3SB34 23-0BA

1 1 unit 102 0.011
1 1 unit 102 0.015

1 NC
1 NC with gold-plated contacts

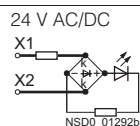


B
B

3SB34 23-0C
3SB34 23-0CA

1 1 unit 102 0.011
1 1 unit 102 0.015

Lampholders with integrated LED

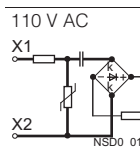


24 V AC/DC
Yellow
Red
Green
Blue
White

B
B
B
B
B

3SB34 23-1PA
3SB34 23-1PB
3SB34 23-1PC
3SB34 23-1PD
3SB34 23-1PE

1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011

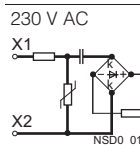


110 V AC
Yellow
Green
Red
Blue
White

B
D
D
D
D

3SB34 23-1QA
3SB34 23-1QC
3SB34 23-1QB
3SB34 23-1QD
3SB34 23-1QE

1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011



230 V AC
Yellow
Blue
Green
Red
White

D
B
B
B
B

3SB34 23-1RA
3SB34 23-1RD
3SB34 23-1RC
3SB34 23-1RB
3SB34 23-1RE

1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011
1 1 unit 102 0.011

Fixpoint terminals

Black
Blue
Green/Yellow

B
B
B

3SB34 23-2F
3SB34 23-2G
3SB34 23-2H

1 1 unit 102 0.011
1 1 unit 102 0.010
1 1 unit 102 0.010



3SB34 23-2G

1) Positive opening according to IEC 60947-5-1, Appendix K.

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

Accessories



3SB39 01-0AW

Pressure plates for selector switches and key-operated switches
For actuating the central contact block of 3 contact blocks

B

3SB39 01-0AW

100 10 units 102 0.100

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Inscription labels for enclosures

Overview

Black labels

The inscription labels (black with white inscription or silver-colored with black print) have an adhesive layer on the back. The size of the labels is 22 mm × 22 mm.

Inscriptions




The inscriptions have upper case initial letters. The typeface is Arial. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417 (see page 9/91).

Selection and ordering data

PU (UNIT) = 1
PS* = 10 units (customized inscription: 1 unit)
PG = 102

Inscriptions	DT	Black		Weight per PU approx. kg	DT	Silver-colored		Weight per PU approx. kg
		Order No.	Price per PU			Order No.	Price per PU	


Inscription labels, self-adhesive, 22 mm × 22 mm

		<i>For self-inscription</i>			
	Blank	▶	3SB39 06-1AA	0.100	B 3SB19 01-3AA 0.100
	<i>With inscription</i>				
	Ein	B	3SB39 06-1AB	0.001	B 3SB19 01-3AB 0.001
	On	B	3SB39 06-1EB	0.001	B 3SB19 01-3EB 0.001
	Aus	B	3SB39 06-1AC	0.001	B 3SB19 01-3AC 0.001
	Off	B	3SB39 06-1EC	0.001	B 3SB19 01-3EC 0.001
	Auf	B	3SB39 06-1AD	0.001	B 3SB19 01-3AD 0.001
	Up	B	3SB39 06-1ED	0.001	B 3SB19 01-3ED 0.001
	Ab	B	3SB39 06-1AE	0.001	B 3SB19 01-3AE 0.001
	Down	B	3SB39 06-1EE	0.001	B 3SB19 01-3EE 0.001
	Auf	B	3SB39 06-1AD	0.001	B 3SB19 01-3AD 0.001
	Open	B	3SB39 06-1EP	0.001	B 3SB19 01-3EP 0.001
	Zu	B	3SB39 06-1AL	0.001	B 3SB19 01-3AL 0.001
	Close	B	3SB39 06-1EQ	0.001	B 3SB19 01-3EQ 0.001
	Vor	B	3SB39 06-1AF	0.001	B 3SB19 01-3AF 0.001
	Forward	B	3SB39 06-1EF	0.001	B 3SB19 01-3EF 0.001
	Zurück	B	3SB39 06-1AG	0.001	B 3SB19 01-3AG 0.001
	Reverse	B	3SB39 06-1EG	0.001	B 3SB19 01-3EG 0.001
	Rechts	B	3SB39 06-1AH	0.001	B 3SB19 01-3AH 0.001
	Right	B	3SB39 06-1EH	0.001	--
	Links	B	3SB39 06-1AJ	0.001	B 3SB19 01-3AJ 0.001
	Left	B	3SB39 06-1EJ	0.001	--
	Schnell	B	3SB39 06-1AM	0.001	B 3SB19 01-3AM 0.001
	Fast	B	3SB39 06-1ER	0.001	--
	Langsam	B	3SB39 06-1AN	0.001	B 3SB19 01-3AN 0.001
	Slow	B	3SB39 06-1ES	0.001	--
	Betrieb	B	3SB39 06-1AP	0.001	B 3SB19 01-3AP 0.001
	Running	B	3SB39 06-1EV	0.001	B 3SB19 01-3EV 0.001
	Störung	B	3SB39 06-1AQ	0.001	B 3SB19 01-3AQ 0.001
	Fault	B	3SB39 06-1EW	0.001	--
	Einrichten	B	3SB39 06-1AR	0.001	B 3SB19 01-3AR 0.001
	Start	B	3SB39 06-1EL	0.001	B 3SB19 01-3EL 0.001
	Reset	B	3SB39 06-1EM	0.001	B 3SB19 01-3EM 0.001
	Test	B	3SB39 06-1EN	0.001	B 3SB19 01-3EN 0.001
	Halt	B	3SB39 06-1AK	0.001	B 3SB19 01-3AK 0.001
	Stop	B	3SB39 06-1EK	0.001	B 3SB19 01-3EK 0.001
	NOT-HALT	B	3SB39 06-1AS	0.001	B 3SB19 01-3AT 0.001
	NOT-AUS	B	3SB39 06-1AV	0.001	B 3SB19 01-3AS 0.001
	EMERGENCY STOP	B	3SB39 06-1EY	0.001	B 3SB19 01-3EY 0.001
	Lüfter	B	3SB39 06-1CA	0.001	--
	Pumpe	B	3SB39 06-1CB	0.001	B 3SB19 01-3CB 0.001
	Kühlung	B	3SB39 06-1CC	0.001	--
	Heizung	B	3SB39 06-1CD	0.001	--
	Beleuchtung	B	3SB39 06-1CE	0.001	B 3SB19 01-3CE 0.001
	Filter	B	3SB39 06-1CF	0.001	--
	Motor	C	3SB39 06-1CG	0.001	--
	Kompressor	C	3SB39 06-1CH	0.001	X 3SB19 01-3CH 0.001
	<i>With graphic symbol</i>				
	O	B	3SB39 06-1MB	0.001	B 3SB19 01-3MB 0.001
	I	B	3SB39 06-1MC	0.001	B 3SB19 01-3MC 0.001
	II	B	3SB39 06-1MD	0.001	B 3SB19 01-3MD 0.001
	III	B	3SB39 06-1ME	0.001	B 3SB19 01-3ME 0.001
	O I (horizontal)	B	3SB39 06-1MF	0.001	B 3SB19 01-3MF 0.001
	I O II (horizontal)	B	3SB39 06-1MG	0.001	B 3SB19 01-3MG 0.001
	I O (vertical)	B	3SB39 06-1MH	0.001	B 3SB19 01-3MH 0.001
	II O I (vertical)	B	3SB39 06-1MW	0.001	C 3SB19 01-3MW 0.001
	→	B	3SB39 06-1NA	0.001	B 3SB19 01-3NA 0.001

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Inscription labels for enclosures

PU (UNIT) = 1
 PS* = 10 units (customized inscription: 1 unit)
 PG = 102

Inscriptions	DT	Black			DT	Silver-colored		
		Order No.	Price per PU	Weight per PU approx. kg		Order No.	Price per PU	Weight per PU approx. kg
Inscription labels, self-adhesive, 22 mm × 22 mm								
<i>With customized inscription</i>								
 <p>For inscriptions or symbols see "Options"</p> <ul style="list-style-type: none"> Text line(s) or symbol with No. 		3SB39 06-0XZ				3SB19 01-3XZ		
	C	K0Y		0.001	C	K0Y		0.001
	B	K1Y, K2Y, K3Y or K5Y		0.001	D	K1Y, K2Y, K3Y or K5Y		0.001
<ul style="list-style-type: none"> Any inscription or symbol 	B	K9Y		0.001	D	K9Y		0.001

Options

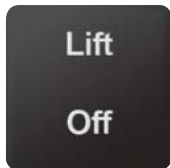
Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

A letter height of 4 mm is used as standard for text inscriptions (1 to 3 lines)

Up to 11 characters per line are possible. The typeface used is Arial. Other letter heights and typefaces are possible, but must be specified when ordering.

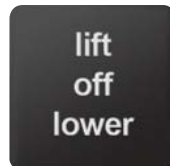
Examples for customized inscription



Two-line inscription in upper/lower case lettering (K0Y)



Single-line inscription in upper case lettering (K1Y)



Three-line inscription in lower case letters (K2Y)



Symbol number 5011 according to IEC 60417 (K3Y)



Any symbol according to order form supplement (K9Y)

Ordering notes

Append the following codes to the Order No.:

- Text line in upper/lower case, always upper case for beginning of line (e. g. "Lift out"): **K0Y**
- Text line(s) in upper case (e. g. "LIFT OUT"): **K1Y**
- Text line(s) in lower case (e. g. "lift out"): **K2Y**
- Text line(s) in upper/lower case, all words begin with upper case letters (e. g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbol according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the order number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

In the case of multi-line inscriptions, the text must be assigned to the respective line, e. g. "Z1 = Lift, Z2 = Lower". For long words you can also specify the end-of-line division (see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering example 2 and 3).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example 1

A label with 2 lines of text is required:

3SB39 06-0XZ
 K1Y
 Z1 = LIFT
 Z2 = LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SB39 06-0XZ
 K3Y
 Z = 5011 IEC

Ordering example 3












A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SB39 06-0XZ
 K3Y
 Z = 1118 ISO

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures

Accessories for enclosures

Selection and ordering data

Version	Color/ inscription	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Blanking plugs for spare command points								
 3SB39 21-0AA	Blanking plugs For plastic version, round	Black	▶ 3SB39 21-0AA		1	10 units	102	0.012
 3SB19 02-0AQ	Blanking plugs For metal version, round	Aluminized	B 3SB19 02-0AQ		1	10 units	102	0.081
Holders and pressure plates								
 3SB39 01-0AB	Holders for pushbuttons and switches For snapping on 3 blocks, ¹⁾ for front plate mounting		▶ 3SB39 01-0AB		100	20 units	102	0.100
 3SB39 01-0AC	Holders for selector switches and key-operated switches with pressure plate For actuating a central contact block, for front plate mounting		▶ 3SB39 01-0AC		100	10 units	102	0.200
 3SB39 01-0AW	Pressure plates for selector switches and key-operated switches For actuating a central contact block, for floor mounting		B 3SB39 01-0AW		100	10 units	102	0.100
Accessories for enclosures								
	Yellow name plates As backing plate for EMERGENCY-STOP, self-adhesive	Without inscription	B 3SB19 02-1AQ		1	1 unit	102	0.001
		With inscription	B 3SB19 02-2AQ		1	1 unit	102	0.001
		• NOT-HALT	B 3SB39 21-0CJ		1	1 unit	102	0.001
		• NOT-AUS	B 3SB39 21-0BV		1	1 unit	102	0.001
		With recess for inscription label	B 3SB39 21-0BV		1	1 unit	102	0.001
 3SB39 01-0CK	M20 cable gland including hexagonal nut		B 3SB39 01-0CK		1	1 unit	102	0.011
	M25 cable gland including hexagonal nut		B 3SB39 01-0CM		1	1 unit	102	0.014
 3SB39 01-0CL	M20 hexagonal nuts For cable glands		B 3SB39 01-0CL		100	10 units	102	0.100
	M25 hexagonal nuts For cable glands		B 3SB39 01-0CN		100	10 units	102	0.100
 3SB39 01-0C	Connecting pieces For connecting 2 plastic enclosures	• M20/M20	B 3SB39 01-0CS		1	1 unit	102	0.038
		• M20/M25	B 3SB39 01-0CT		1	1 unit	102	0.038
		• M25/M25	B 3SB39 01-0CU		1	1 unit	102	0.038
 3SB39 01-0C	Connecting pieces For connecting 2 metal enclosures	• M20/M20	B 3SB39 01-0CP		1	1 unit	102	0.038
		• M20/M25	B 3SB39 01-0CQ		1	1 unit	102	0.040
 3SB39 01-0AB	Enclosure nuts For plastic version		B 3SB39 31-0AB		1	10 units	102	0.007

¹⁾ The holder for illuminated commanding devices is included in the scope of supply.

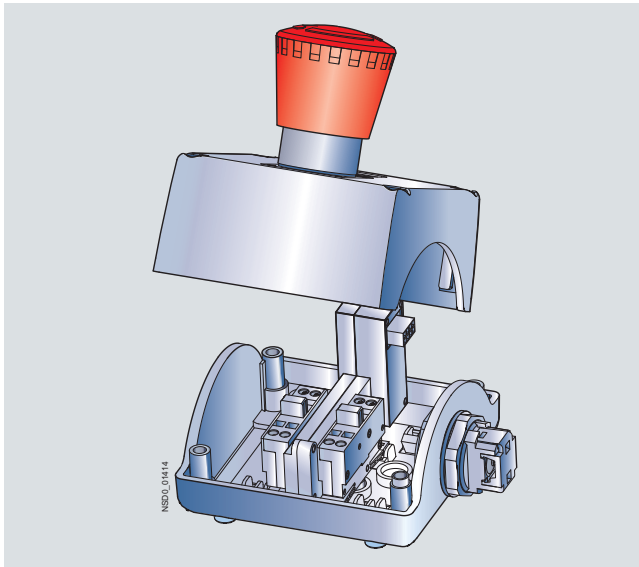
3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures for AS-Interface

General data

Overview



Distributed command devices of the 3SB3 series can be quickly connected to the AS-Interface using AS-Interface enclosures. Using suitable components you can make your own enclosures with integrated AS-Interface or flexibly modify existing enclosures.



EMERGENCY-STOP enclosures

Enclosures

Color of enclosure cover:

- Gray, RAL 7035, or
- Yellow, RAL 1004, for EMERGENCY-STOP.

Color of enclosure base:

- Black, RAL 9005

Installation of AS-Interface slaves

The following slave types are available for connecting the command points:

- Slave in A/B technology with 4 inputs and 3 outputs
- Slave with 4 inputs and 4 outputs
- F slave with 2 safe inputs for EMERGENCY-STOP

The following table shows the maximum number of equippable slaves:

Enclosures for	Number of slaves for enclosures without EMERGENCY-STOP	Number of slaves for enclosures with EMERGENCY-STOP
1 command point	Not available	1 x F slave
2 command points	1 x slave 4I/4O or 4I/3O	Not available
3 command points	1 x slave 4I/4O or 4I/3O	1 x slave 4I/4O or 4I/3O + 1 x F slave
4 command points	2 x slave 4I/4O or 4I/3O ¹⁾	2 x slave 4I/4O or 4I/3O + 1 x F slave ¹⁾
6 command points	2 x slave 4I/4O or 4I/3O	2 x slave 4I/4O or 4I/3O + 1 x F slave

¹⁾ For metal enclosures with 4 command points, only 1 x slave 4I/4O or 4I/3O is possible.

Connection

One set of links is required in each case to connect a slave to contact blocks, to lampholders and to the connection element.

The connection elements are mounted in the front-end cable glands and are used for connection of the AS-Interface or for bringing unused inputs or outputs out of the enclosure.

For connection to the AS-Interface bus there is a choice of the following options:

- Terminal for shaped AS-Interface cable. The cable is contacted by the insulation piercing method and routed past the enclosure on the outside (possible only with plastic enclosure).
- Cable gland for the shaped AS-Interface cable or round cable. The cable is routed into the enclosure (preferable for metal enclosure).
- Connection using M12 plug.

If less than all inputs/outputs of the installed slaves in an enclosure are used for connecting the command devices, free inputs and outputs can be routed on request to the outside through an M12 socket on the top or bottom side of the enclosure.

To supply inputs with power, the S+ connection of the slave must be assigned to the socket, for outputs the OUT- connection must be assigned.

Addressing is performed using the AS-Interface connections or the integrated addressing socket. An external power supply is not required.

Customized enclosures (selection by configurator)

To order customized 3SF58 AS-Interface enclosures with the 3SB3 control devices, use the 3SB/3SF configurator to select the blocks for equipping. An electronic order form will be generated for the additional options.

For ordering notes see page 9/87.

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures for AS-Interface

AS-Interface enclosures with standard fittings

Overview

Enclosures with standard fittings are available with:

- 1 to 3 command points
- Operational voltage through AS-Interface (approx. 30V)
- Vertical mounting type
- Plastic enclosures are equipped with plastic actuators and indicators, metal enclosures are equipped with metal actuators and indicators.

The actuators/indicators are fixed with an enclosure nut. If required it can be disassembled with a 27 mm socket wrench or with a 3SX17 07 ring nut wrench.

The enclosures without EMERGENCY-STOP each have one user module with 4I/3O; the enclosures with EMERGENCY-STOP have a safe AS-Interface slave integrated in the enclosure.

EMERGENCY-STOP enclosures are fitted with two NC contact blocks, which are wired to the safe slave. The contact blocks and lampholders (with spring-type terminals) of the control device, and the AS-Interface slaves, are mounted in the base of the enclosure and are cable-connected.

The plastic versions of the enclosures have a connection for the AS-Interface flat cable (the cable is routed past the enclosure on the outside); in the case of the metal versions the AS-Interface cable is routed into the enclosure.

The EMERGENCY-STOP enclosures can also be supplied with an M12 plug in place of the gland.

Selection and ordering data















Equipping options (A, B, C = identification letters of the command points)	Number of command points	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
AS-Interface enclosures, plastic								
<i>With M12 top connector</i>								
A = EMERGENCY-STOP mushroom pushbuttons, with rotate-to-unlatch mechanism, 1 NC, 1 NC, yellow enclosure top	1	B	3SF5 811-0AA10		1	1 unit	121	0.315
<i>With terminal for insulation piercing method at top</i>								
A = EMERGENCY-STOP mushroom pushbuttons, with rotate-to-unlatch mechanism, 1 NC, 1 NC								
• Yellow enclosure top	1	A	3SF5 811-0AA08		1	1 unit	121	0.315
• Yellow enclosure top, with protective collar	1	A	3SF5 811-0AB08		1	1 unit	121	0.415
B = Pushbutton green, label "I", 1 NO	2	A	3SF5 812-0DA00		1	1 unit	121	0.352
A = Pushbutton red, label "O", 1 NO								
B = Pushbutton white, label "I", 1 NO	2	A	3SF5 812-0DB00		1	1 unit	121	0.352
A = Pushbutton black, label "O", 1 NO								
C = Indicator lights clear, label without inscription	3	A	3SF5 813-0DA00		1	1 unit	121	0.420
B = Pushbutton green, label "I", 1 NO								
A = Pushbutton red, label "O", 1 NO								
C = Indicator lights clear, label without inscription	3	A	3SF5 813-0DC00		1	1 unit	121	0.415
B = Pushbutton white, label "I", 1 NO								
A = Pushbutton black, label "O", 1 NO								
C = Pushbutton black, label "II", 1 NO	3	A	3SF5 813-0DB00		1	1 unit	121	0.416
B = Pushbutton black, label "I", 1 NO								
A = Pushbutton red, label "O", 1 NO								
AS-Interface enclosures, metal								
<i>With M12 top connector</i>								
A = EMERGENCY-STOP mushroom pushbuttons, with rotate-to-unlatch mechanism, 1 NC, 1 NC								
• Yellow enclosure top	1	C	3SF58 11-2AA10		1	1 unit	121	0.315
• Yellow enclosure top, with protective collar	1	C	3SF58 11-2AB10		1	1 unit	121	0.315
<i>With cable gland at top</i>								
A = EMERGENCY-STOP mushroom pushbuttons, with rotate-to-unlatch mechanism, 1 NC, 1 NC								
• Yellow enclosure top	1	A	3SF5 811-2AA08		1	1 unit	121	0.415
• Yellow enclosure top, with protective collar	1	A	3SF5 811-2AB08		1	1 unit	121	0.415
B = Pushbutton green, label "I", 1 NO	2	A	3SF5 812-2DA00		1	1 unit	121	0.415
A = Pushbutton red, label "O", 1 NO								
B = Pushbutton white, label "I", 1 NO	2	A	3SF5 812-2DB00		1	1 unit	121	0.415
A = Pushbutton black, label "O", 1 NO								
C = Indicator lights clear, label without inscription	3	A	3SF5 813-2DA00		1	1 unit	121	0.415
B = Pushbutton green, label "I", 1 NO								
A = Pushbutton red, label "O", 1 NO								
C = Indicator lights clear, label without inscription	3	A	3SF5 813-2DC00		1	1 unit	121	0.415
B = Pushbutton white, label "I", 1 NO								
A = Pushbutton black, label "O", 1 NO								
C = Pushbutton black, label "II", 1 NO	3	A	3SF5 813-2DB00		1	1 unit	121	0.415
B = Pushbutton black, label "I", 1 NO								
A = Pushbutton red, label "O", 1 NO								

3SB3 Pushbuttons and Indicator Lights, 22 mm Enclosures for AS-Interface

Components for AS-Interface enclosures

Selection and ordering data

For self-equipping of the enclosures

Version	Number of command points	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For plastic enclosures								
 3SF5 500-0BA	AS-Interface slaves F slave, 2 safe inputs, for plastic enclosure, EMERGENCY-STOP, without protective collar	1 ... 6	A	3SF5 500-0BA		1	1 unit	121 0.415
 3SF5 500-0DA	F slave, 2 safe inputs, for plastic or metal enclosure, EMERGENCY-STOP, with protective collar	1	A	3SF5 500-0DA		1	1 unit	121 0.415
 3SF5 500-0BB	A/B slave, 4I/3O for plastic enclosure	2 ... 6	A	3SF5 500-0BB		1	1 unit	121 0.001
 3SF5 500-0BC	Slave, 4I/4O, for plastic enclosure	2 ... 6	A	3SF5 500-0BC		1	1 unit	121 0.001
Sets of links								
 3SF5 900-0BA	For F slave		A	3SF5 900-0BA		1	1 unit	121 0.001
 3SF5 900-0BB	For slave 4I/4O or A/B slave 4I(3O)		A	3SF5 900-0BB		1	1 unit	121 0.001
Connection elements								
 3SF5 900-0CA	For AS-Interface shaped cable, connection by insulation piercing method, for plastic enclosure	1 ... 3	A	3SF5 900-0CA		1	1 unit	121 0.001
 3SF5 900-0CB	For AS-Interface connection using M12 plug, for plastic enclosure	4 ... 6	B	3SF5 900-0CB		1	1 unit	121 0.001
 3SF5 900-0CC	For bringing out unused inputs/outputs through an M12 socket, for plastic enclosure	1 ... 3	B	3SF5 900-0CC		1	1 unit	121 0.001
 3SF5 900-0CD	For bringing out unused inputs/outputs through an M12 socket, for plastic enclosure	4 ... 6	B	3SF5 900-0CD		1	1 unit	121 0.001
 3SF5 900-0CE	For AS-Interface shaped cable, cable is routed into the enclosure, for plastic or metal enclosure	1 ... 3	A	3SF5 900-0CE		1	1 unit	121 0.001
 3SF5 900-0CF	For AS-Interface shaped cable, cable is routed into the enclosure, for plastic or metal enclosure	4 ... 6	A	3SF5 900-0CF		1	1 unit	121 0.001
 3SF5 900-0CG	For round cable, cable is routed into the enclosure, for plastic or metal enclosure	1 ... 3	A	3SF5 900-0CG		1	1 unit	121 0.001
 3SF5 900-0CH	For round cable, cable is routed into the enclosure, for plastic or metal enclosure	4 ... 6	A	3SF5 900-0CH		1	1 unit	121 0.001
3SF5 900-0CJ	For round cable, cable is routed into the enclosure, for plastic or metal enclosure	1 ... 3	A	3SF5 900-0CJ		1	1 unit	121 0.001
3SF5 900-0CK	For round cable, cable is routed into the enclosure, for plastic or metal enclosure	4 ... 6	A	3SF5 900-0CK		1	1 unit	121 0.001
For metal enclosures								
3SF5 500-0CA	AS-Interface slaves F slave, 2 safe inputs, for metal enclosure, EMERGENCY-STOP, without protective collar	1 ... 6	A	3SF5 500-0CA		1	1 unit	121 0.415
3SF5 500-0DA	F slave, 2 safe inputs, for plastic or metal enclosure, EMERGENCY-STOP, with protective collar	1	A	3SF5 500-0DA		1	1 unit	121 0.415
3SF5 500-0CB	A/B slave, 4I/3O for metal enclosure	2 ... 6	A	3SF5 500-0CB		1	1 unit	121 0.001
3SF5 500-0CC	Slave, 4I/4O, for metal enclosure	2 ... 6	A	3SF5 500-0CC		1	1 unit	121 0.001
Sets of links								
3SF5 900-0BA	For F slave		A	3SF5 900-0BA		1	1 unit	121 0.001
3SF5 900-0BB	For slave 4I/4O or A/B slave 4I(3O)		A	3SF5 900-0BB		1	1 unit	121 0.001
Connection elements								
3SF5 900-2CC	For AS-Interface connection using M12 plug, for metal enclosure	1 ... 3	B	3SF5 900-2CC		1	1 unit	121 0.001
3SF5 900-2CD	For AS-Interface connection using M12 plug, for metal enclosure	4 ... 6	B	3SF5 900-2CD		1	1 unit	121 0.001
3SF5 900-2CE	For bringing out unused inputs/outputs through an M12 socket, for metal enclosure	1 ... 3	B	3SF5 900-2CE		1	1 unit	121 0.001
3SF5 900-2CF	For bringing out unused inputs/outputs through an M12 socket, for metal enclosure	4 ... 6	B	3SF5 900-2CF		1	1 unit	121 0.001
3SF5 900-0CG	For AS-Interface shaped cable, cable is routed into the enclosure, for plastic or metal enclosure	1 ... 3	A	3SF5 900-0CG		1	1 unit	121 0.001
3SF5 900-0CH	For AS-Interface shaped cable, cable is routed into the enclosure, for plastic or metal enclosure	4 ... 6	A	3SF5 900-0CH		1	1 unit	121 0.001
3SF5 900-0CJ	For round cable, cable is routed into the enclosure, for plastic or metal enclosure	1 ... 3	A	3SF5 900-0CJ		1	1 unit	121 0.001
3SF5 900-0CK	For round cable, cable is routed into the enclosure, for plastic or metal enclosure	4 ... 6	A	3SF5 900-0CK		1	1 unit	121 0.001

* You can order this quantity or a multiple thereof.

3SB3 Two-Hand Operation Consoles

Plastic and metal enclosures

Overview



Two-hand operation console with metal enclosure

Equipment

The two-hand operation consoles are pre-equipped with 3SB3 command devices. In the case of plastic enclosures the command points are equipped as standard with actuators and indicators made of plastic, in the case of metal enclosures they are equipped with actuators and indicators made of metal.

The standard equipment comprises:

- 2 black mushroom pushbuttons, Ø 40 mm, 1 NO + 1 NC, Order No. 3SB30 00-1GA11 or 3SB35 00-1GA11
- 1 red EMERGENCY-STOP mushroom pushbutton according to ISO 13850, Ø 40 mm, with positive latching, 2 NC, Order No. 3SB30 00-1HA20 or 3SB35 00-1HA20.

The plastic version can be retrofitted with up to 8 customized command points. The surface of the console has premachined breaking points for this purpose.

Application

The two-hand operation consoles are required for use with machines and systems that have hazardous areas, in order to direct both hands of the operator to one position.

Operator panels are primarily used on presses, stamping machines, printing presses and paper converting machines, in the chemical industry and in the rubber and plastics industries.




The control command is given by pressing the two mushroom pushbuttons on the sides simultaneously (within 0.5 s of each other) and must be maintained for as long as a hazard exists.

For the further processing of control commands, suitable evaluation units are used, e. g. 3TK28 3 safety relays (see Chapter 7 "Monitoring and Control Devices" --> "Safety Relays").

Standards

The two-hand operation consoles comply with the requirements of EN 574.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Metal enclosures, degree of protection IP65								
 3SB38 63-4BB	Two-hand operation consoles, metal enclosure							
	• With standard fittings	B	3SB38 63-4BB		1	1 unit	102	4.800
	• With standard fittings and 4 additional holes for 22.5 mm command devices ¹⁾	B	3SB38 63-4BA		1	1 unit	102	4.800
	• Empty enclosure, unequipped	B	3SB38 63-4BC		1	1 unit	102	4.800
Plastic enclosures, degree of protection IP65								
 3SB38 63-1BB3	Two-hand operation consoles, plastic enclosure							
	With standard fittings and premachined breaking points for 8 additional 22.5 mm ¹⁾ command devices, with holes for metric cable glands		B	3SB38 63-1BB3		1	1 unit	102
Accessories								
 3SB39 01-0AQ	Stands for two-hand operation consoles							
	With holes for metric cable glands		B	3SB39 01-0AQ3		1	1 unit	102

¹⁾ See 3SB3 Pushbuttons and Indicator Lights.

3SE7 metal enclosures

Overview



The cable-operated switches are used for monitoring or for EMERGENCY-STOP devices on particularly endangered system sections.

As the effective range of a cable-operated switch is only limited by the length of the trip-wire, large systems can also be protected. Cable-operated switches (requiring pulling at both ends) and conveyor belt unbalance trackers are used primarily for monitoring very long belt systems.

Contact blocks

The switches for bowden wire lengths up to 50 m are available with 1 NO + 1 NC or 2 NC contacts, and up to 75 m with 1 NO + 3 NC contacts. The switches for bowden wire lengths of 2 × 75 m and the conveyor belt unbalance trackers are supplied with 2 NO + 2 NC contacts.

The NC contacts of the cable-break or cable-pull signaling are positive opening. The NO contact can be used, for example, for signaling purposes.

Free position and indication

Cable-operated switches with one-side operation are held in free position by the pre-tension on the turnbuckle.

On switches with interlocking, with a pretensioned cable, the locking must be deactivated beforehand in order to return the cable-operated switch to its original position.

The cable-operated switch and the conveyor belt unbalance tracker can be supplied optionally with a factory-fitted LED (red, 24 V DC). This light in innovative chip-on-board technology allows the operating state of the switch to be visible at a distance of at least 50 m.

Application**Standards**

The switches are equipped with positive latching and positive NC contacts and are thus suitable for operation in EMERGENCY-STOP devices according to EN ISO 13850.

More information

Type		3SE7 120	3SE7 150	3SE7 140	3SE7 141	3SE7 160	3SE7 310
General data							
Standards		IEC 60947-5-1, EN 60947-5-1; IEC 60204-1, EN 60204-1; EN ISO 13850					
Approvals		UL/CSA					
Electrical design		Contacts electrically isolated from each other					
Electrical load							
• At AC-15		400 V AC, 6 A			250 V AC, 2 A	400 V AC, 6 A	
• Min.		24 V AC/DC, 10 mA					
Short-circuit protection	A	6 (slow)					
Mechanical endurance		> 1 million operating cycles					
Contact material		Fine silver					
Operation		By pulling or breaking of bowden wire					
Bowden wire length, maximum	m	10	25	50	75	2 × 75	–
Distance between wire supports, max.	m	2.5	3	5			–
Enclosures							
Enclosure material		GD Al alloy, coated (color), dark black RAL 9005					
Cover		Shock-resistant thermoplast					
Degree of protection acc. to EN 60529		IP65			IP67	IP65	
Ambient temperature	°C	–25 ... +70					
Mounting		Designed for M5					
Fixing spacing	mm	30 and 40					
Cable entry		2 × (M20 × 1.5)		1 × (M16 × 1.5)	3 × (M20 × 1.5)	2 × (M25 × 1.5)	
Connection type		Screw terminals M3.5, self-lifting clamp terminal					

3SE7, 3SF2 Cable-Operated Switches

3SE7 metal enclosures

Selection and ordering data

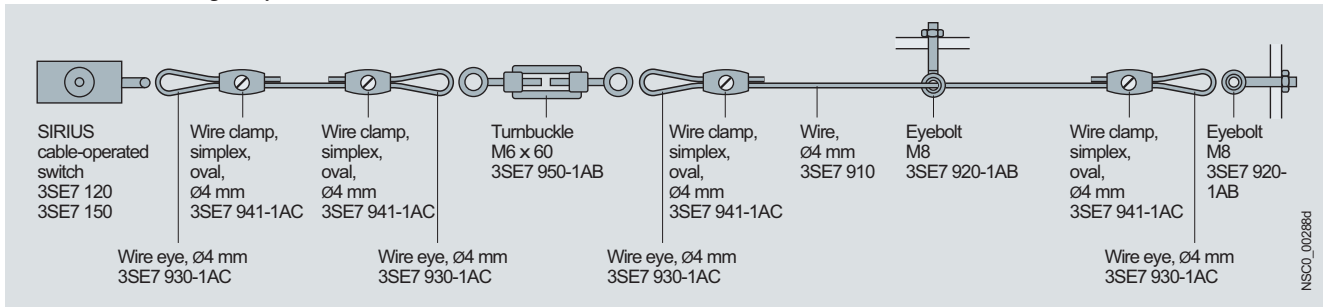
Version	Wire length	Contacts	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	m								kg
Cable-operated switches									
	10	Metal enclosures, IP65 (cover made of molded plastic)							
		<ul style="list-style-type: none"> Without latching, only cable pull monitoring 	1 NO + 1 NC → ¹⁾ A	3SE7 120-2DD01	1	1 unit	102	0.395	
		<ul style="list-style-type: none"> With latching and button reset 	2 NC → ¹⁾ A	3SE7 120-1BF00	1	1 unit	102	0.410	
	25	Metal enclosures, IP65 (cover made of molded plastic), with dust protection and alignment window							
		<ul style="list-style-type: none"> Without latching 	1 NO + 1 NC → ¹⁾ A	3SE7 150-2DD00	1	1 unit	102	0.425	
		<ul style="list-style-type: none"> With latching and button reset 	1 NO + 1 NC → ¹⁾ A	3SE7 150-1BD00	1	1 unit	102	0.445	
		<ul style="list-style-type: none"> With latching and key unlatching 	2 NC → ¹⁾ A	3SE7 150-1BF00	1	1 unit	102	0.440	
			1 NO + 1 NC → ¹⁾ A	3SE7 150-1CD00	1	1 unit	102	0.510	
	25	Metal enclosures, IP65 (cover made of molded plastic), with dust protection and alignment window, with LED, red, 24 V DC							
		<ul style="list-style-type: none"> Without latching 	1 NO + 1 NC → ¹⁾ A	3SE7 150-2DD04	1	1 unit	102	0.425	
		<ul style="list-style-type: none"> With latching and button reset 	1 NO + 1 NC → ¹⁾ A	3SE7 150-1BD04	1	1 unit	102	0.450	
	50	Metal enclosures, IP65 (cover made of molded plastic), with dust protection							
		<ul style="list-style-type: none"> With latching and button reset 	1 NO + 1 NC → ¹⁾ A	3SE7 140-1BD00	1	1 unit	102	0.790	
			2 NC → ¹⁾ A	3SE7 140-1BF00	1	1 unit	102	0.790	
		<ul style="list-style-type: none"> In addition with LED, red, 24 V DC 	1 NO + 1 NC → ¹⁾ A	3SE7 140-1BD04	1	1 unit	102	0.820	
		<ul style="list-style-type: none"> With latching and key unlatching 	1 NO + 1 NC → ¹⁾ A	3SE7 140-1CD00	1	1 unit	102	0.835	
	75	Metal enclosures, IP67 (cover made of molded plastic), with EMERGENCY-STOP mushroom, rotate-to-unlatch mechanism		1 NO + 3 NC → ¹⁾ A	3SE7 141-1EG10	1	1 unit	102	0.790
	2 × 75	Metal enclosures, IP65 with actuation on both sides							
		<ul style="list-style-type: none"> With latching and button reset 	2 NO + 2 NC → ¹⁾ A	3SE7 160-1AE00	1	1 unit	102	1.270	
			1 NO + 1 NC → ¹⁾ A	3SE7 160-1BD00	1	1 unit	102	0.300	
		<ul style="list-style-type: none"> In addition with LED, red, 24 V DC 	2 NO + 2 NC → ¹⁾ A	3SE7 160-1AE04	1	1 unit	102	1.200	
Conveyor belt unbalance protection devices									
	10	Metal enclosures, IP65							
		<ul style="list-style-type: none"> With latching and button reset 	2 NO + 2 NC → ¹⁾ A	3SE7 310-1AE00	1	1 unit	102	1.805	
		<ul style="list-style-type: none"> In addition with LED, red, 24 V DC 	2 NO + 2 NC → ¹⁾ A	3SE7 310-1AE04	1	1 unit	102	1.815	

¹⁾ Positive opening according to IEC 60947-5-1, Appendix K.

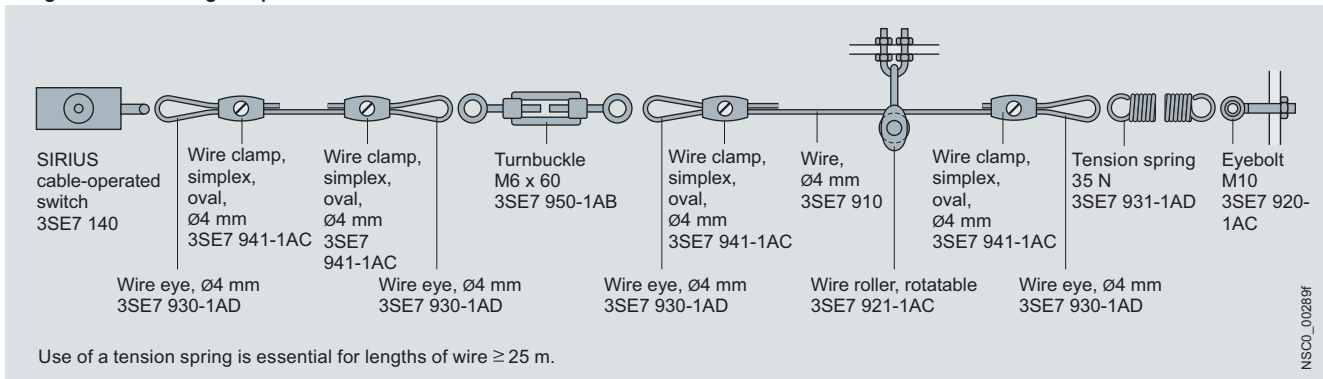
Accessories

Configuration of the cable-operated switches

Short bowden wire lengths up to 25 m

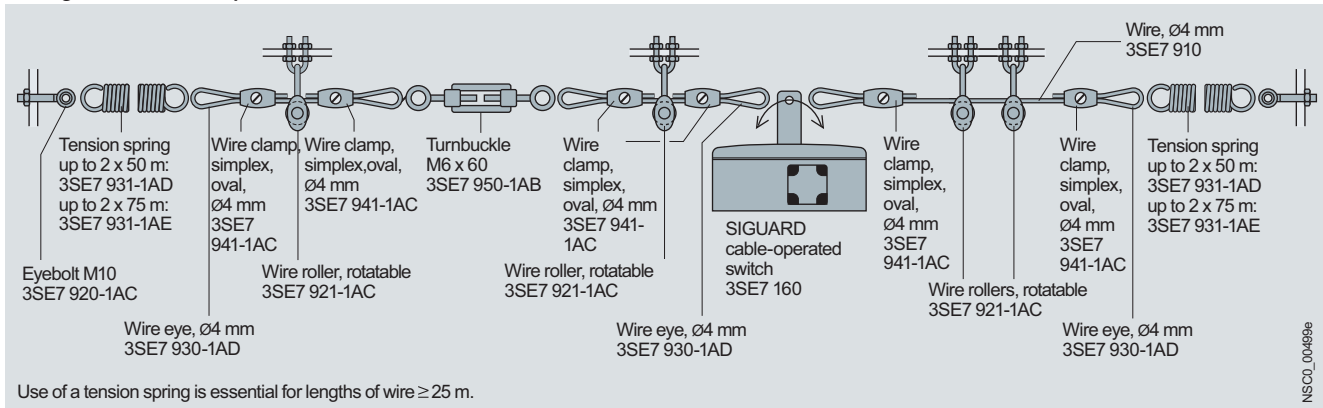


Long bowden wire lengths up to 50 m



Use of a tension spring is essential for lengths of wire ≥ 25 m.

Pulling from both sides up to 2 x 75 m







Use of a tension spring is essential for lengths of wire ≥ 25 m.

Note:

Large temperature fluctuations require corresponding compensation springs. For reliable connection the PVC sheath must be removed from the clamping area of the steel bowden wire. Bowden wire supports must be used at the recommended intervals.

3SE7, 3SF2 Cable-Operated Switches

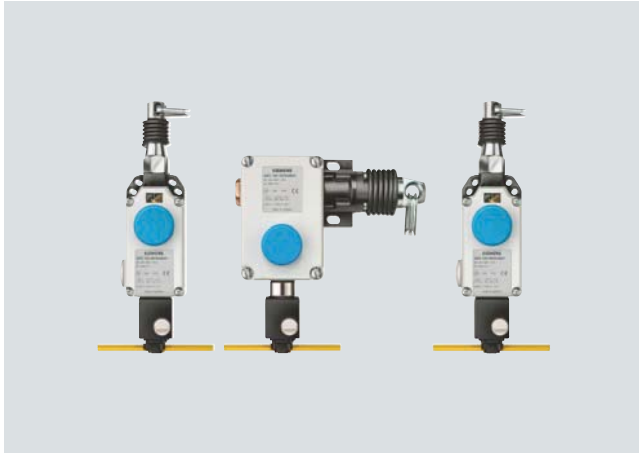
3SE7 metal enclosures

Version	Wire length/ diameter	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Trip-wire with fixing								
	Steel wires , with red plastic sheath, Ø 4 mm ¹⁾	10 m	A	3SE7 910-3AA		1	1 unit	102 0.420
		15 m	A	3SE7 910-3AB		1	1 unit	102 0.665
		20 m	A	3SE7 910-3AC		1	1 unit	102 0.865
		50 m	A	3SE7 910-3AH		1	1 unit	102 2.065
Wire clamps , galvanized white								
   	• Oval	2 × Ø 4 mm	A	3SE7 941-1AC		1	1 unit	102 0.040
	• Simplex (1 set = 4 units)	2 × Ø 4 mm	A	3SE7 943-1AC		1	4 units	102 0.010
	• Duplex (1 set = 4 units)	2 × Ø 4 mm	A	3SE7 944-1AC		1	4 units	102 0.020
	• Single (1 set = 4 units)	2 × Ø 4 mm	A	3SE7 942-1AA		1	4 units	102 0.025
Tension springs (zinc-plated) to maintain the counter tension								
	• 13 N		A	3SE7 931-1AB		1	1 unit	102 0.150
	• 35 N, for bowden wires up to 50 m		A	3SE7 931-1AD		1	1 unit	102 0.340
	• > 35 N, for bowden wires up to 2 × 75 m		A	3SE7 931-1AE		1	1 unit	102 0.340
Wire rollers for changing the direc- tion of the wire, rotatable								
	Ø 4 mm		A	3SE7 921-1AC		1	1 unit	102 0.045
Fixtures for the wire rollers (including fixing nuts)								
			A	3SE7 921-1AA		1	1 unit	102 0.015
Wire eyes for changes in wire direc- tion and improved power transmis- sion at the fixing points (1 set = 4 units)								
	Ø 4 mm		A	3SE7 930-1AD		1	4 units	102 0.005
Eyebolts for fixing the wire								
	• Including M8 nut		A	3SE7 920-1AB		1	1 unit	102 0.035
	• Including M10 nut		A	3SE7 920-1AC		1	1 unit	102 0.060
Turnbuckles for precise adjustment of the pretension								
	• M6 x 60		A	3SE7 950-1AB		1	1 unit	102 0.055
	• M6 x 110		A	3SE7 950-1AD		1	1 unit	102 0.075
Spare parts								
	LED lamps , red 24 V DC 25 mm diameter; for M20 x 1.5 connection		A	3SX3 235		1	1 unit	102 0.015

¹⁾ Diameter including casing; the diameter of the steel wire is 3.2 mm.

3SF2 AS-Interface cable-operated switches

Overview



AS-Interface cable-operated switches can now be directly connected via the standard AS-Interface with safety-oriented communication.

The safety functions no longer have to be conventionally wired up.

Application

SIRIUS cable-operated switches are used for monitoring or for EMERGENCY-STOP devices on particularly endangered system sections.

As the effective range of a cable-operated switch is only limited by the length of the trip-wire, large systems can also be protected.

Standards

The switches with positive latching are suitable for operation in EMERGENCY-STOP devices in according to ISO 13850. They can achieve up to category 4 according to EN ISO 13849-1 (EN 954-1) or SIL 3 according to IEC 61508.

Selection and ordering data

Version	Basic switches	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
								kg

ASIsafe cable-operated switches

Metal enclosures, IP65
(cover made of molded plastic), with dust protection, latching acc. to ISO 13850, with button reset, 2 NC contacts

- For wire lengths up to 10 m, *3SE7 120-1BF00* → C



3SF2 120-1BF00-0BA1

- For wire lengths up to 25 m, *3SE7 150-1BF00* → C



3SF2 150-1BF00-0BA1

- For wire lengths up to 50 m, *3SE7 140-1BF00* → B



3SF2 140-1BF00-0BA1

→ Positive opening according to IEC 60947-5-1, Appendix K.

3SF2 120-1BF00-0BA1	1	1 unit	121	0.620
3SF2 150-1BF00-0BA1	1	1 unit	121	0.630
3SF2 140-1BF00-0BA1	1	1 unit	121	0.905

* You can order this quantity or a multiple thereof.

3SE2, 3SE3 Foot Switches

Plastic and metal enclosures

Overview



Foot switches with metal enclosures

Standard switches

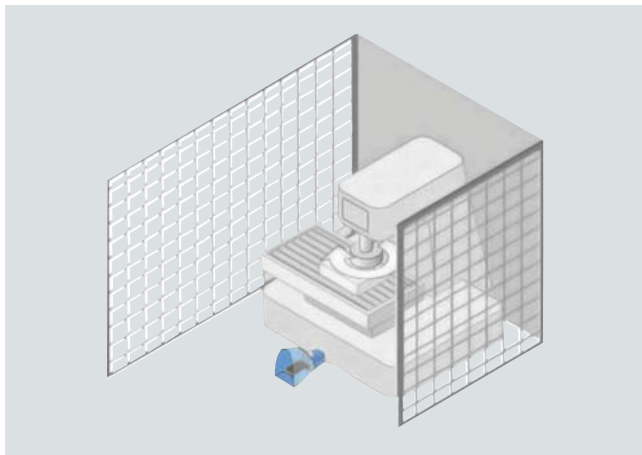
The 3SE2 9 and 3SE3 9 foot switch range encompasses versions in a metal enclosure for rugged applications as well as versions with plastic enclosure for less harsh environments. The devices can be supplied with or without a cover and have fixing holes for them to be screwed to the floor.

Depending on the particular application, the metal enclosures can be ordered in latching or momentary-contact versions. The momentary-contact pedal switch in the plastic enclosure has one microswitch (changeover contact) per actuating pedal.

Safety foot switches

The 3SE2 924-3AA20 single-pedal safety foot switches are used on machines and plants as OK switches when operation by hand is not possible and the EMERGENCY-STOP function must be available if a hazardous status arises. The switches are interlocked according to EN ISO 13850 and bear the CE mark in accordance with the machinery directive.

The safety foot switches are protected by a guard hood against accidental operation.



Application example

The switches have two contact blocks, each with one NO contact and one NC contact. The NO contacts and NC contacts of the two contact blocks are connected for easy connection of a single-phase motor. The normal workflow is initiated by pressing down the pedal as far as the pressure point so that the two NO contacts close and the motor starts to run.

If in the event of danger the pedal is pressed beyond the resistance of the pressure point, the positively driven NC contacts will open and the motor is stopped. At the same time the independent latching takes effect and holds the NC contacts in open position. This prevents the machine parts from continuing to run out of control or from being restarted.

After the hazard is eliminated, the machine can only be restarted after manually releasing the switch using a pushbutton on the top of the enclosure. The contacts are then released again and return to their initial position (the NO contacts are open and the NC contacts are closed).

More information

Type	3SE29	3SE39
Metal and plastic enclosures		
Standards	IEC 60947-5-1	
Electrical load		
• At AC-15, 400 V	A 16 6 A for 3SE2903-1....	–
• At AC 250 V	A –	5
Short-circuit protection	A 16 (slow) A 6 (slow) for 3SE2903-1....	5 (slow)
Mechanical endurance	> 10 ⁶ operating cycles	
Material		
• Enclosures	Aluminum casting	Impact-resistant thermoplast, self-extinguishing acc. to UL 94 VO
• Cover	Thermoplast	–
• Guard hood	Aluminum casting	Metal
Degree of protection	IP65	IP65
Ambient temperature	°C -25 ... +80	-10 ... +75
Connection	Cable entry, metric	Cable AWG20, UL Style 2464, length 3 m

Selection and ordering data

Version	Slow-action contacts for each pedal	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Metal enclosures, degree of protection IP65								
 3SE2 90.-.AA20 3SE2 91.-.AA20	Momentary-contact foot switches, single pedal M20 x 1.5 cable entry							
	• Without hood	1 NO + 1 NC → ¹⁾ A		3SE2 902-0AB20	1	1 unit	102	0.655
		2 NO + 2 NC → ¹⁾ A		3SE2 903-1AB20	1	1 unit	102	0.665
	• With hood	1 NO + 1 NC → ¹⁾ A		3SE2 902-0AA20	1	1 unit	102	1.375
	2 NO + 2 NC → ¹⁾ A		3SE2 903-1AA20	1	1 unit	102	1.370	
 3SE2 912.-.AA20	Momentary-contact foot switches, single pedal M20 x 1.5 cable entry							
	• Without hood	1 NO + 1 NC → ¹⁾ C		3SE2 912-2AB20	1	1 unit	102	0.665
	• With hood	1 NO + 1 NC → ¹⁾ C		3SE2 912-2AA20	1	1 unit	102	1.350
	 3SE2 932.-.AB20 3SE2 932.-.AA20	Momentary-contact foot switches, two pedals M25 x 1.5 cable entry						
• Without hood		1 NO + 1 NC → ¹⁾ B		3SE2 932-0AB20	1	1 unit	102	1.680
		2 NO + 2 NC → ¹⁾ B		3SE2 932-1AB20	1	1 unit	102	1.870
• With hood		1 NO + 1 NC → ¹⁾ B		3SE2 932-0AA20	1	1 unit	102	2.550
	2 NO + 2 NC → ¹⁾ B		3SE2 932-1AA20	1	1 unit	102	2.570	
 3SE2 924-3AA20	Safety foot switches, single pedal with hood, M20 x 1.5 cable entry, with interlock acc. to ISO 13850, NO closes as momentary contact type, NC opens with latching		2 NO + 2 NC → ¹⁾ C	3SE2 924-3AA20	1	1 unit	102	1.350
Plastic enclosures, degree of protection IP65								
 3SE3 902-4CA20	Momentary-contact pedal switches, 3 m cable Microswitch							
	• Single pedal							
	- Without hood	1 CO	B	3SE3 902-4CB20	1	1 unit	102	0.355
	- With hood	1 CO	B	3SE3 902-4CA20	1	1 unit	102	1.100
 3SE3 934-5CB20	• Two pedals, without hood	2 x 1 CO	B	3SE3 934-5CB20	1	1 unit	102	0.800

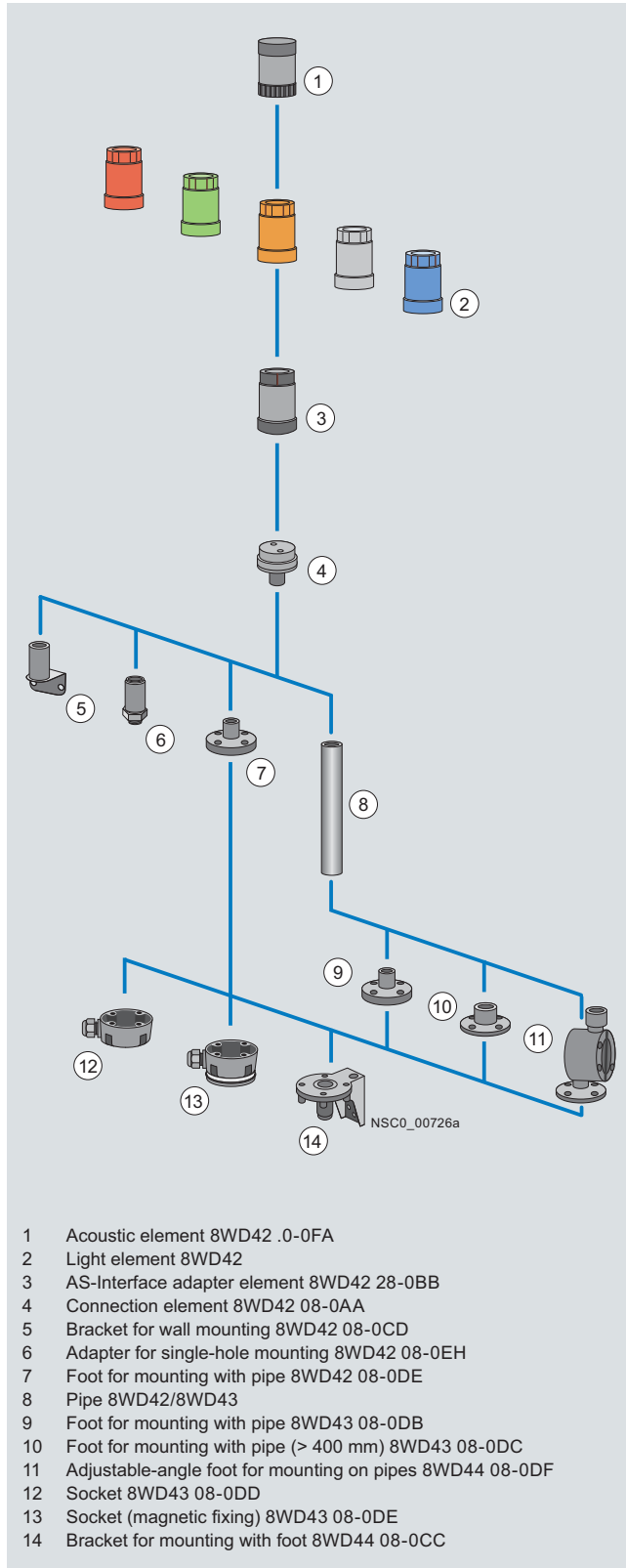
¹⁾ Positive opening according to IEC 60947-5-1, Appendix K.

8WD4 Signaling Columns

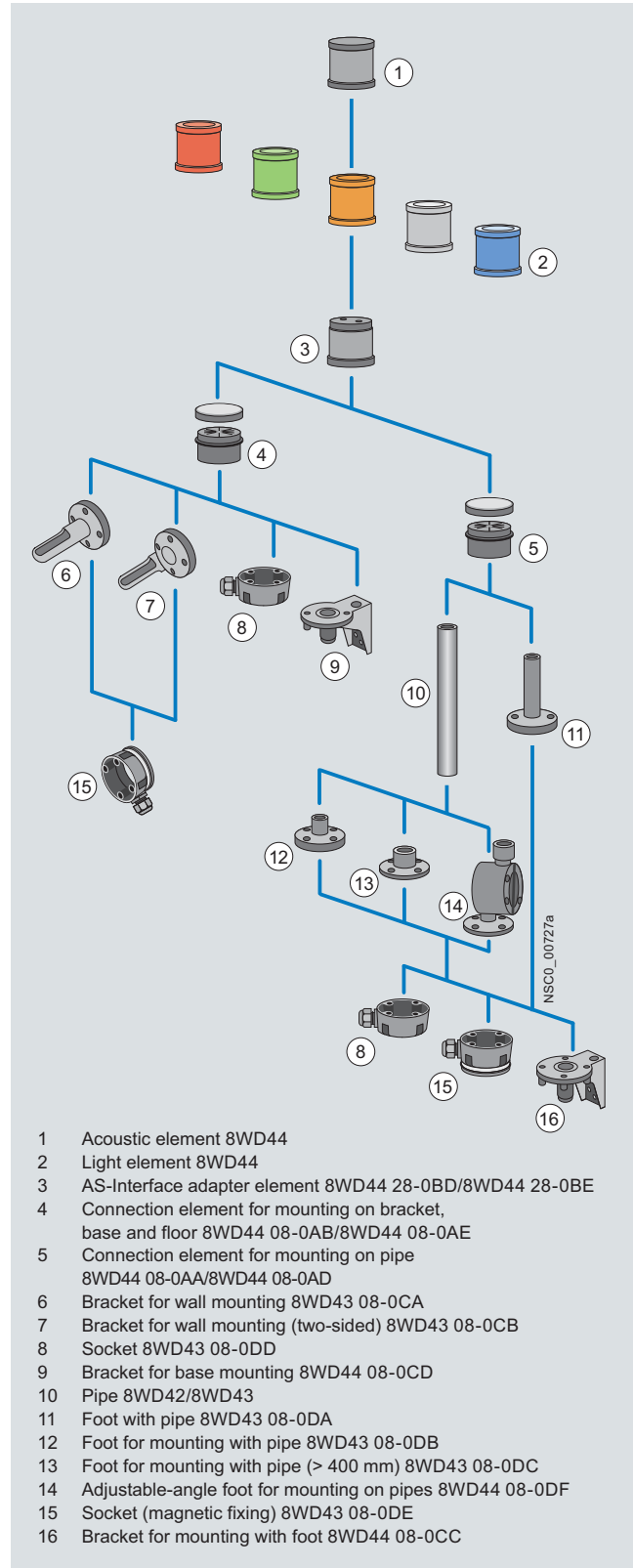
General data

Overview

The 8WD4 signaling columns are flexible in design and versatile in use.



8WD42 signaling columns (width 50 mm) with up to 4 elements



8WD44 signaling columns (width 70 mm) with up to 5 elements

Two product series are available:

- 8WD42
 - Thermoplast enclosure, diameter 50 mm
 - Degree of protection IP54
 - Up to 4 elements can be mounted between the connection element and the cover
- 8WD44
 - Thermoplast enclosure, diameter 70 mm
 - Advanced design and significantly improved illumination
 - Fast and flexible connection using spring-type terminals
 - Integrated degree of protection IP65
 - Up to 5 elements can be mounted between the connection element and the cover



Signaling columns, mounting examples

The illustrated examples are from the left:

- 8WD42: Cover (no No.), 4 light elements ②, connection element ④, pipe ⑧, foot ⑨
- 8WD44: Cover (no No.), acoustic element ①, 2 light elements ②, connection element ⑤, foot with pipe ⑩
- 8WD44: Cover (no No.), 4 light elements ②, AS-Interface adapter element ③, connection element ④, bracket for wall mounting ⑥
- 8WD44: Cover (no No.), 3 light elements ②, AS-Interface adapter element ③, connection element ⑤, foot with pipe ⑩

Note:

The cover is supplied with the connection element.

Benefits

- Choice of various light and acoustic elements with different functions: continuous light, blinklight, flashlight and rotating light; buzzer and siren
- Light elements with particularly long-lasting LEDs
- Variety of colors: red, yellow, green, white or blue
- Optimized illumination through improved prism technology with the 8WD44
- Acoustic elements can be adjusted in tone and volume
- Extremely resistant to shock and vibrations
- Easy connection and quick lamp change with secure bayonet mechanism
- Communication capability through connection to AS-Interface

Application

8WD4 signaling columns are used in machines or in automatic processes for monitoring complex procedures or as visual or acoustic warning devices in emergency situations, e. g. for displaying individual assembly stages.

Communication capability

Connection to AS-Interface

The 8WD4 signaling columns can be directly connected to the AS-Interface bus system through an adapter element that can be integrated. Wiring outlay is reduced as the result. The two-wire bus cable is fixed to the screw terminals in the connection element. Up to three signaling elements can be mounted on it using an adapter element.

A/B technology enables the connection of up to 62 slaves on one AS-Interface system.

Connection

The signaling elements are wired up using the screw terminals in the connection element, screw terminals on the 8WD42 and screw or spring-type terminals on the 8WD44.

Cable outlet

The connecting cables can be guided either downwards or sideways through the cable gland using an adapter that can be screwed under the foot. This makes wiring easier if there is no access from below.

Connection to AS-Interface



8WD42:

The two-wire bus cable is fixed to the screw terminals in the connection element. The adapter element must be the first module to be positioned on the connection element. A maximum of 4 signaling elements can then be mounted on it.

The adapter element 8WD42 28-0BB is a standard slave.

8WD44:

The two-wire bus cable is fixed to the screw or spring-type terminals in the connection element. The adapter element must be the first module to be positioned on the connection element. The signaling elements can then be mounted on it.

The adapter element 8WD44 28-0BE is a standard slave. A maximum of 4 signaling elements can be mounted on it.

The adapter element 8WD44 28-0BD with A/B technology enables the connection of up to 62 slaves on one AS-Interface system. The addressing socket provides user-friendly parameterization of the AS-Interface elements. A maximum of 3 signaling elements can be mounted on it.

8WD4 Signaling Columns

General data

More information

Type	8WD42	8WD44
General data		
Approvals	UL, CSA	
Light and acoustic elements		
Rated voltage, power consumption		
Light elements with incandescent lamp	(AC values for 50/60 Hz)	(AC values for 50/60 Hz)
• Continuous light	12 V, 24 V, 115 V, 230 V AC/DC	12 V, 24 V, 115 V, 230 V AC/DC
• Blinklight	24 V AC/DC/125 mA; 115 V AC/20 mA; 230 V AC/15 mA	24 V AC/DC/125 mA; 115 V AC/20 mA; 230 V AC/15 mA
• Flashlights	--	24 V DC/125 mA; 115 V AC/20 mA; 230 V AC/35 mA
• Max. inrush current, blinklight/flashlight	--	500 mA
Light elements with integrated LED		
• Continuous light	24 V AC/DC/60 mA	24 V AC/DC/45 mA; 115 V AC/DC/25 mA; 230 V AC/25 mA
• Blinklight	--	24 V AC/DC/40 mA
• Rotating light	--	24 V AC/DC/70 mA
Acoustic elements		
• Buzzer element (tone: pulsating or continuous, 85 dB)	24 V AC/DC/25 mA; 115 V AC/DC/25 mA; 230 V AC/25 mA	24 V AC/DC/25 mA; 115 V AC/DC/25 mA; 230 V AC/25 mA
• Siren element (8 tones + amplification can be set, 100 dB)	--	24 V AC/DC/80 mA; 115 V AC/30 mA; 230 V AC/16 mA
• Siren element (108 dB)	--	24 V DC/100 mA
GSM radio elements	--	24 V DC (controlled $\pm 15\%$)/50 mA, transient 450 mA
Power consumption		
• Incandescent lamps, base BA 15d	W	max. 5
• Flashlight, flash energy	Ws	--
• Flashlights		7
		2
Endurance		
• Flashlights		4 × 10 ⁶ flashes
		4 × 10 ⁶ flashes
AS-Interface adapter elements		
IO code/ID code	8/F	8/E
Power supply		
• Operational voltage	V	Through bus cable 18.5 V ... 31.6
• Power consumption I_{max}	mA	50
		100
Protective measures		
• Watchdog	✓	✓
• Short-circuit/overload protection	External back-up fuse M 1.6 A	✓
• Reverse polarity protection	✓	✓
• Induction protection	Does not apply	✓
Outputs		
• Load voltage		4 relay outputs
		3 solid-state outputs
• External auxiliary voltage	V	through bus cable or external auxiliary voltage, switch-selectable
	V	
		0 ... 30
		0 ... 230
• Current carrying capacity ΣI_{max}		
- with external auxiliary voltage	A	1.5
- without external auxiliary voltage	A	--
		0.3
		0.2
Operating temperature	°C	-20 ... +50
		-30 ... +50
Enclosures		
Enclosure material	Thermoplast (polyamide), impact-resistant, black	Thermoplast (polyamide), impact-resistant, black
Light elements, GSM radio element	Thermoplast (polycarbonate)	Thermoplast (polycarbonate)
Mounting		
• Horizontal (for floor mounting, foot with 25 mm \varnothing pipe)	✓	✓
• Horizontal (single-hole mounting)	✓	--
• Vertical with bracket	✓	✓
Degree of protection		
• Light elements	IP54	IP65 (seal premounted with every module)
• Acoustic elements, AS-i adapter elements	IP54	IP65
Operating temperature	°C	-20 ... +50
		-20 ... +50
Connection		
• Conductor cross-sections	mm ²	M3 screw terminals
• Tightening torque	Nm	Spring-type terminals/M3 screw terminals
		Max. 2.5
		Max. 0.5
		- / max. 0.5

8WD4 Signaling Columns

8WD42 signaling columns, 50 mm diameter

Overview

Features:

- Thermoplast enclosure, diameter 50 mm
- Degree of protection IP54
- Up to 4 elements can be mounted

Selection and ordering data

Version	Rated voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	V								kg	
Acoustic elements¹⁾										
	Buzzer elements 80 dB, pulsating or continuous tone, adjustable by means of a wire jumper	24 AC/DC	Black	A	8WD42 20-0FA		1	1 unit	102	0.060
		115 AC		A	8WD42 40-0FA		1	1 unit	102	0.065
		230 AC		A	8WD42 50-0FA		1	1 unit	102	0.065
Light elements for incandescent lamps/LEDs, BA 15d bases²⁾										
	Continuous light elements	24 ... 230	Red	A	8WD42 00-1AB		1	1 unit	102	0.050
			Green	A	8WD42 00-1AC		1	1 unit	102	0.050
			Yellow	A	8WD42 00-1AD		1	1 unit	102	0.050
			Clear	A	8WD42 00-1AE		1	1 unit	102	0.050
			Blue	A	8WD42 00-1AF		1	1 unit	102	0.050
Light elements with integrated LED										
	Continuous light elements	24 AC/DC	Red	A	8WD42 20-5AB		1	1 unit	102	0.050
			Green	A	8WD42 20-5AC		1	1 unit	102	0.050
			Yellow	A	8WD42 20-5AD		1	1 unit	102	0.050
	Blinklight elements	24 AC/DC	Red	A	8WD42 20-5BB		1	1 unit	102	0.050
			Green	A	8WD42 20-5BC		1	1 unit	102	0.050
			Yellow	A	8WD42 20-5BD		1	1 unit	102	0.050
			Clear	A	8WD42 20-5BE		1	1 unit	102	0.050
			Blue	A	8WD42 20-5BF		1	1 unit	102	0.050
	Blinklight elements	115 AC	Red	A	8WD42 40-5BB		1	1 unit	102	0.055
			Green	A	8WD42 40-5BC		1	1 unit	102	0.055
			Yellow	A	8WD42 40-5BD		1	1 unit	102	0.055
			Clear	D	8WD42 40-5BE		1	1 unit	102	0.055
			Blue	D	8WD42 40-5BF		1	1 unit	102	0.055
	Blinklight elements	230 AC	Red	A	8WD42 50-5BB		1	1 unit	102	0.055
			Green	A	8WD42 50-5BC		1	1 unit	102	0.055
			Yellow	A	8WD42 50-5BD		1	1 unit	102	0.055
			Clear	A	8WD42 50-5BE		1	1 unit	102	0.055
			Blue	A	8WD42 50-5BF		1	1 unit	102	0.055
Adapter elements for AS-Interface										
	AS-Interface adapter elements with external auxiliary voltage	For 4 signaling elements 24 V DC	Black	A	8WD42 28-0BB		1	1 unit	102	0.075
										
Connection elements³⁾										
	Connection elements with cover		Black	A	8WD42 08-0AA		1	1 unit	102	0.085
										

¹⁾ The cover is included in the scope of supply of the acoustic elements and fixed in place.

²⁾ The lamp is not included in the scope of supply. Please order separately.

³⁾ The connection element with cover is an essential part for assembling the signaling columns.

Note:

For mounting and configuring help see the publication "Versatile, robust, communication-capable: SIRIUS signaling columns and integrated signal lamps", Order No. E20001-A670-P305.

8WD4 Signaling Columns

8WD42 signaling columns, 50 mm diameter

Version	Rated voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	V								kg
Lamps									
	Incandescent lamps, 5 W								
	Base BA 15d	24 AC/DC	A	8WD43 28-1XX		1 10 units	102	0.010	
		115 AC	A	8WD43 48-1XX		1 10 units	102	0.010	
		230 AC	A	8WD43 58-1XX		1 10 units	102	0.010	
	LEDs								
	Base BA 15d	24 AC/DC	Red	A 8WD44 28-6XB		1 1 unit	102	0.020	
			Green	A 8WD44 28-6XC		1 1 unit	102	0.020	
			Yellow	A 8WD44 28-6XD		1 1 unit	102	0.020	
			Clear	A 8WD44 28-6XE		1 1 unit	102	0.020	
			Blue	A 8WD44 28-6XF		1 1 unit	102	0.020	
		115 AC	Red	A 8WD44 48-6XB		1 1 unit	102	0.020	
			Green	A 8WD44 48-6XC		1 1 unit	102	0.020	
			Yellow	A 8WD44 48-6XD		1 1 unit	102	0.020	
			Clear	A 8WD44 48-6XE		1 1 unit	102	0.020	
			Blue	A 8WD44 48-6XF		1 1 unit	102	0.020	
		230 AC	Red	A 8WD44 58-6XB		1 1 unit	102	0.020	
			Green	A 8WD44 58-6XC		1 1 unit	102	0.020	
			Yellow	A 8WD44 58-6XD		1 1 unit	102	0.020	
			Clear	A 8WD44 58-6XE		1 1 unit	102	0.020	
			Blue	A 8WD44 58-6XF		1 1 unit	102	0.020	
Mounting									
	Feet, single	Plastic, for mounting on pipes	A	8WD43 08-0DB		1 1 unit	102	0.050	
		Metal, for pipe lengths > 400 mm	A	8WD43 08-0DC		1 1 unit	102	0.315	
		Plastic, for floor mounting (without pipe)	A	8WD42 08-0DE		1 1 unit	102	0.040	
	Adjustable-angle foot	Plastic, for mounting on pipes, including rubber seal for positioning in 7.5° increments ¹⁾	X	8WD44 08-0DF		1 1 unit	102	0.050	
	Pipes, single	Length 100 mm	A	8WD42 08-0EF		1 1 unit	102	0.030	
		Length 150 mm	A	8WD43 08-0EE		1 1 unit	102	0.045	
		Length 250 mm	A	8WD43 08-0EA		1 1 unit	102	0.080	
		Length 400 mm	A	8WD43 08-0EB		1 1 unit	102	0.120	
		Length 1000 mm	A	8WD43 08-0ED		1 1 unit	102	0.300	
	Sockets for feet	Side cable outlet	A	8WD43 08-0DD		1 1 unit	102	0.070	
		Side cable outlet, with magnetic fixing ²⁾	A	8WD43 08-0DE		1 1 unit	102	0.300	
	Brackets for mounting with foot		A	8WD44 08-0CC		1 1 unit	102	0.070	
	Brackets for wall mounting (plastic)	Mounting without feet and pipe	A	8WD42 08-0CD		1 1 unit	102	0.090	
	Adapters for single-hole mounting	Mounting without feet and pipe, with M18 thread and fixing nut	A	8WD42 08-0EH		1 1 unit	102	0.120	

For labeling panels, see 8WD44, page 9/111.

¹⁾ Markings for 30°, 45°, 60° and 90°.

²⁾ For horizontal mounting, only 1 element is recommended.

* You can order this quantity or a multiple thereof.

8WD4 Signaling Columns

8WD44 signaling columns, 70 mm diameter

Overview

Features:

- Thermoplast enclosure, diameter 70 mm
- Advanced design and significantly improved illumination
- Fast and flexible connection using spring-type terminals
- Integrated degree of protection IP65
- Up to 5 elements can be mounted.

Selection and ordering data

Version	Rated voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
V										
Acoustic elements¹⁾										
	Buzzer elements 85 dB, pulsating or continuous tone, adjustable by means of a wire jumper	24 AC/DC	Black	A	8WD44 20-0FA		1	1 unit	102	0.085
		115 AC		A	8WD44 40-0FA		1	1 unit	102	0.090
		230 AC		A	8WD44 50-0FA		1	1 unit	102	0.090
	Siren elements , multi-tone, 100 dB, 8 tones and volume are adjustable	24 AC/DC	Black	A	8WD44 20-0EA2		1	1 unit	102	0.090
		115 AC		A	8WD44 40-0EA2		1	1 unit	102	0.105
		230 AC		A	8WD44 50-0EA2		1	1 unit	102	0.100
	Siren elements 108 dB, IP40	24 DC	Black	A	8WD44 20-0EA		1	1 unit	102	0.135
	Light elements for incandescent lamps/LEDs, BA 15d bases²⁾									
		Continuous light elements	12 ... 230	Red	A	8WD44 00-1AB		1	1 unit	102
Green				A	8WD44 00-1AC		1	1 unit	102	0.070
Yellow				A	8WD44 00-1AD		1	1 unit	102	0.070
Clear				A	8WD44 00-1AE		1	1 unit	102	0.070
Blue				A	8WD44 00-1AF		1	1 unit	102	0.070
	Blinklight elements	24 AC/DC	Red	A	8WD44 20-1BB		1	1 unit	102	0.075
			Green	A	8WD44 20-1BC		1	1 unit	102	0.080
			Yellow	A	8WD44 20-1BD		1	1 unit	102	0.075
			Clear	A	8WD44 20-1BE		1	1 unit	102	0.080
			Blue	A	8WD44 20-1BF		1	1 unit	102	0.075
	115 AC	Red	A	8WD44 40-1BB		1	1 unit	102	0.080	
		Green	A	8WD44 40-1BC		1	1 unit	102	0.080	
		Yellow	A	8WD44 40-1BD		1	1 unit	102	0.080	
		Clear	A	8WD44 40-1BE		1	1 unit	102	0.080	
		Blue	A	8WD44 40-1BF		1	1 unit	102	0.080	
	230 AC	Red	A	8WD44 50-1BB		1	1 unit	102	0.080	
		Green	A	8WD44 50-1BC		1	1 unit	102	0.080	
		Yellow	A	8WD44 50-1BD		1	1 unit	102	0.080	
		Clear	A	8WD44 50-1BE		1	1 unit	102	0.080	
		Blue	A	8WD44 50-1BF		1	1 unit	102	0.080	
Light elements with integrated flash lamps³⁾										
	Flashlight elements with integrated electronic flash	24 DC	Red	A	8WD44 20-0CB		1	1 unit	102	0.090
			Green	A	8WD44 20-0CC		1	1 unit	102	0.090
			Yellow	A	8WD44 20-0CD		1	1 unit	102	0.090
			Clear	A	8WD44 20-0CE		1	1 unit	102	0.090
			Blue	A	8WD44 20-0CF		1	1 unit	102	0.090
	115 AC	Red	A	8WD44 40-0CB		1	1 unit	102	0.090	
		Green	D	8WD44 40-0CC		1	1 unit	102	0.090	
		Yellow	A	8WD44 40-0CD		1	1 unit	102	0.090	
		Clear	D	8WD44 40-0CE		1	1 unit	102	0.090	
		Blue	D	8WD44 40-0CF		1	1 unit	102	0.090	
	230 AC	Red	A	8WD44 50-0CB		1	1 unit	102	0.085	
		Green	A	8WD44 50-0CC		1	1 unit	102	0.085	
		Yellow	A	8WD44 50-0CD		1	1 unit	102	0.085	
		Clear	A	8WD44 50-0CE		1	1 unit	102	0.085	
		Blue	A	8WD44 50-0CF		1	1 unit	102	0.085	








¹⁾ The cover is included in the scope of supply of the acoustic elements and fixed in place.

²⁾ The lamp is not included in the scope of supply. Please order separately.

³⁾ The lamp is included in the scope of supply.

8WD4 Signaling Columns










8WD44 signaling columns, 70 mm diameter

Version	Rated voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	V								kg	
Light elements with integrated LED										
   	Continuous light elements	24 AC/DC	Red	A	8WD44 20-5AB		1	1 unit	102	0.075
			Green	A	8WD44 20-5AC		1	1 unit	102	0.075
			Yellow	A	8WD44 20-5AD		1	1 unit	102	0.075
			Clear	A	8WD44 20-5AE		1	1 unit	102	0.075
			Blue	A	8WD44 20-5AF		1	1 unit	102	0.070
		115 AC	Red	A	8WD44 40-5AB		1	1 unit	102	0.075
			Green	A	8WD44 40-5AC		1	1 unit	102	0.075
			Yellow	A	8WD44 40-5AD		1	1 unit	102	0.075
			Clear	A	8WD44 40-5AE		1	1 unit	102	0.075
			Blue	A	8WD44 40-5AF		1	1 unit	102	0.075
		230 AC	Red	A	8WD44 50-5AB		1	1 unit	102	0.075
			Green	A	8WD44 50-5AC		1	1 unit	102	0.075
			Yellow	A	8WD44 50-5AD		1	1 unit	102	0.075
			Clear	A	8WD44 50-5AE		1	1 unit	102	0.075
			Blue	A	8WD44 50-5AF		1	1 unit	102	0.075
	Blinklight elements	24 AC/DC	Red	A	8WD44 20-5BB		1	1 unit	102	0.070
			Green	A	8WD44 20-5BC		1	1 unit	102	0.075
			Yellow	A	8WD44 20-5BD		1	1 unit	102	0.075
	Rotating light elements	24 AC/DC	Red	A	8WD44 20-5DB		1	1 unit	102	0.080
			Green	A	8WD44 20-5DC		1	1 unit	102	0.080
			Yellow	A	8WD44 20-5DD		1	1 unit	102	0.085
Adapter elements for AS-Interface										
	AS-Interface adapter elements									
										
	<ul style="list-style-type: none"> A/B technology, with/without external auxiliary voltage, switchable Standard AS-Interface, with external auxiliary voltage 	For 3 signaling elements 24 V DC	Black	A	8WD44 28-0BD		1	1 unit	102	0.110
		For 4 signaling elements 24 V DC	Black	A	8WD44 28-0BE		1	1 unit	102	0.110
Connection elements¹⁾										
	Connection elements with cover		Black							
	Screw terminals									
	<ul style="list-style-type: none"> For mounting on pipes For mounting on bracket and floor 			A	8WD44 08-0AA		1	1 unit	102	0.110
				A	8WD44 08-0AB		1	1 unit	102	0.115
	Spring-type terminals									
<ul style="list-style-type: none"> For mounting on pipes For mounting on bracket and floor 			A	8WD44 08-0AD		1	1 unit	102	0.105	
			A	8WD44 08-0AE		1	1 unit	102	0.105	
Lamps										
	Incandescent lamps, 5 W									
	Base BA 15d	24 AC/DC		A	8WD43 28-1XX		1	10 units	102	0.010
		115 AC		A	8WD43 48-1XX		1	10 units	102	0.010
		230 AC		A	8WD43 58-1XX		1	10 units	102	0.010
	LEDs									
	Base BA 15d	24 AC/DC	Red	A	8WD44 28-6XB		1	1 unit	102	0.020
		Green	A	8WD44 28-6XC		1	1 unit	102	0.020	
		Yellow	A	8WD44 28-6XD		1	1 unit	102	0.020	
		Clear	A	8WD44 28-6XE		1	1 unit	102	0.020	
		Blue	A	8WD44 28-6XF		1	1 unit	102	0.020	
	115 AC	Red	A	8WD44 48-6XB		1	1 unit	102	0.020	
		Green	A	8WD44 48-6XC		1	1 unit	102	0.020	
		Yellow	A	8WD44 48-6XD		1	1 unit	102	0.020	
		Clear	A	8WD44 48-6XE		1	1 unit	102	0.020	
		Blue	A	8WD44 48-6XF		1	1 unit	102	0.020	
	230 AC	Red	A	8WD44 58-6XB		1	1 unit	102	0.020	
		Green	A	8WD44 58-6XC		1	1 unit	102	0.020	
		Yellow	A	8WD44 58-6XD		1	1 unit	102	0.020	
		Clear	A	8WD44 58-6XE		1	1 unit	102	0.020	
		Blue	A	8WD44 58-6XF		1	1 unit	102	0.020	

¹⁾ The connection element with cover is an essential part for assembling the signaling columns.

8WD4 Signaling Columns

8WD44 signaling columns, 70 mm diameter

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mounting							
	Foot with pipe	Pipe length 100 mm	A	8WD43 08-ODA	1	1 unit	102 0.080
	Feet, single	Plastic, for mounting on pipes	A	8WD43 08-0DB	1	1 unit	102 0.050
		Metal, for pipe lengths > 400 mm	A	8WD43 08-0DC	1	1 unit	102 0.315
	Adjustable-angle foot for positioning in 7.5° increments ¹⁾	Plastic, for mounting on pipes, including rubber seal	X	8WD44 08-0DF	1	1 unit	102 0.050
	Pipes, single	Length 100 mm	A	8WD42 08-0EF	1	1 unit	102 0.030
		Length 150 mm	A	8WD43 08-0EE	1	1 unit	102 0.045
		Length 250 mm	A	8WD43 08-0EA	1	1 unit	102 0.080
		Length 400 mm	A	8WD43 08-0EB	1	1 unit	102 0.120
		Length 1000 mm	A	8WD43 08-0ED	1	1 unit	102 0.300
	Sockets for feet	Side cable outlet (can also be used without feet)	A	8WD43 08-0DD	1	1 unit	102 0.070
		Side cable outlet, with magnetic fixing ²⁾	A	8WD43 08-0DE	1	1 unit	102 0.300
	Brackets for wall mounting (mounting without feet and pipe)	For single-sided mounting	A	8WD43 08-0CA	1	1 unit	102 0.090
		For double-sided mounting	A	8WD43 08-0CB	1	1 unit	102 0.085
	Brackets for mounting with foot		A	8WD44 08-0CC	1	1 unit	102 0.070
	Brackets for base mounting	Mounting without feet and pipe	A	8WD44 08-0CD	1	1 unit	102 0.055
	Adapter for mounting on pipes acc. to NPT	Mounting on pipes, Ø 25 mm, with NPT 1/2" thread	A	8WD43 08-0DF	1	1 unit	102 0.080
Inscriptions							
	Labeling panels	With fixing accessories for mounting on pipe Ø 25 mm Inscription area/step 50 mm x 140 mm Suitable for standard labels, e. g. • Zweckform 3425 • Herma 4457	A	8WD44 08-0FA	1	1 unit	102 0.345

¹⁾ Markings for 30°, 45°, 60° and 90°.

²⁾ For horizontal mounting, only 1 element is recommended.

Note:

For mounting and configuring help see the publication "Versatile, robust, communication-capable: SIRIUS signaling columns and integrated signal lamps", Order No. E20001-A670-P305.

* You can order this quantity or a multiple thereof.

8WD5 Integrated Signal Lamps

8WD53 integrated signal lamps, 70 mm diameter

Overview



Design

Features:

- Thermoplast enclosures, diameter 70 mm
- Degree of protection IP65
- Rated voltage 24 V, 115 V, 230 V AC/DC
- Ambient temperature -20 to +50 °C, incandescent lamp up to 60 °C

The special shape of the integrated signal lamps means that the light is emitted optimally in every direction (to the sides and upwards). Continuous lights (with incandescent lamp or LED) and single-flash lights are available in five colors.

The LED versions of the integrated signal lamps offer a considerably longer endurance than the incandescent lamp versions.

All integrated signal lamps have a high degree of protection IP65 and are made of a material highly resistant to impact.

Mounting

8WD53 integrated signal lamps can be mounted directly at any point of the machine for the purpose of giving visual signals. They are mounted by means of a Pg 29 screw base with nut.

Selection and ordering data

Version	Rated voltage	Color	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Lights for incandescent lamps/LED, BA 15d base										
	Continuous lights¹⁾	24 ... 230	Red	A	8WD53 00-1AB		1	1 unit	102	0,130
			Green	A	8WD53 00-1AC		1	1 unit	102	0,130
			Yellow	A	8WD53 00-1AD		1	1 unit	102	0,130
			Clear	A	8WD53 00-1AE		1	1 unit	102	0,130
			Blue	A	8WD53 00-1AF		1	1 unit	102	0,130
Lights with integrated flash lamp										
	Single-flash lights with integrated electronic flash	24 AC/DC	Red	A	8WD53 20-0CB		1	1 unit	102	0,150
			Green	D	8WD53 20-0CC		1	1 unit	102	0,150
			Yellow	A	8WD53 20-0CD		1	1 unit	102	0,150
			Clear	A	8WD53 20-0CE		1	1 unit	102	0,150
			Blue	A	8WD53 20-0CF		1	1 unit	102	0,150
		115 AC	Red	A	8WD53 40-0CB		1	1 unit	102	0,145
			Green	D	8WD53 40-0CC		1	1 unit	102	0,145
			Yellow	D	8WD53 40-0CD		1	1 unit	102	0,145
			Clear	D	8WD53 40-0CE		1	1 unit	102	0,145
			Blue	D	8WD53 40-0CF		1	1 unit	102	0,145
		230 AC	Red	A	8WD53 50-0CB		1	1 unit	102	0,145
			Green	D	8WD53 50-0CC		1	1 unit	102	0,145
			Yellow	A	8WD53 50-0CD		1	1 unit	102	0,145
			Clear	A	8WD53 50-0CE		1	1 unit	102	0,145
			Blue	D	8WD53 50-0CF		1	1 unit	102	0,145
Lights with integrated LED										
	Continuous lights	24 AC/DC	Red	A	8WD53 20-5AB		1	1 unit	102	0,135
			Green	A	8WD53 20-5AC		1	1 unit	102	0,135
			Yellow	A	8WD53 20-5AD		1	1 unit	102	0,135
	Blinklight lamps	24 AC/DC	Red	A	8WD53 20-5BB		1	1 unit	102	0,135
			Green	D	8WD53 20-5BC		1	1 unit	102	0,135
Yellow			A	8WD53 20-5BD		1	1 unit	102	0,135	
Rotating lights	24 AC/DC	Red	A	8WD53 20-5DB		1	1 unit	102	0,140	
		Green	A	8WD53 20-5DC		1	1 unit	102	0,140	
		Yellow	A	8WD53 20-5DD		1	1 unit	102	0,140	

For incandescent lamps and LEDs, see Signal Lamps.

¹⁾ Lamp not included in scope of supply. Please order separately.

Transformers



10/2 Introduction

Single-Phase TransformersSafety, Isolating, Control and Mains Transformers

- 10/5 General data
- 10/6 SIRIUS 4AM safety, mains and control transformers
- 10/20 SIRIUS 4AM safety and mains transformers
- 10/24 SIRIUS 4AM, 4AT isolating, control and mains transformers
- 10/42 SIRIUS 4AM isolating and mains transformers
- 10/47 SIRIUS 4AT isolating transformers for the supply of medical premises
- 10/48 SIRIUS 4AM, 4AT transformers with selectable voltages

Power Transformers

- 10/50 General data
- 10/51 SIRIUS 4BT transformers with selectable voltages

Voltage Regulators

- 10/52 4FL voltage regulators, transformer type
- 10/53 4FK voltage regulators, magnetic type

Three-Phase TransformersSafety, Isolating, Control and Mains Transformers

- 10/54 General data
- 10/55 SIRIUS 4AP, 4AU isolating, control and mains transformers
- 10/57 SIRIUS 4AP isolating and mains transformers
- 10/58 SIRIUS 4AP, 4AU transformers with selectable voltages
- 10/60 SIRIUS 4AP, 4AU autotransformers for mains matching

Power Transformers

- 10/62 General data
- 10/63 SIRIUS 4BU matching transformers
- 10/73 SIRIUS 4BU matching transformers with cURus approval
- 10/83 SIRIUS 4BU transformers with selectable voltages

Voltage Regulators

- 10/85 4FL voltage regulators, transformer type

Technical Information

can be found at

www.siemens.com/industrial-controls/support

under Product List:

- Technical Specifications

under Entry List:

- Updates
- Downloads
- FAQ
- Manuals
- Characteristic curves
- Certificates

and at

www.siemens.com/industrial-controls/configurators

- Configurators

Introduction

Overview

Single-phase transformers



4AM



4AT



4BT

4AT for supply
of medical pre-
mises

4FK



4CH

Version	Rated power kVA	Rated input voltage V AC	Rated output voltage V AC	Safety class	Page
Safety, Isolating, Control and Mains Transformers					
SIRIUS 4AM safety, mains and control transformers					
With one input voltage	0.063 ... 1.0	230 ± 5 %; 400 ± 5 %; 440 ± 5 %; 500 ± 5 %	24; 42	I	10/6
For European voltages	0.063 ... 1.0	400/230 ± 15 V	24; 42	I	10/14
In multi-voltage version	0.063 ... 1.0	550 ... 208; 600 ... 230	24; 42	I	10/16
SIRIUS 4AM safety and mains transformers					
With one input voltage	0.025 ... 0.04	230 ± 5 %; 400 ± 5 %; 440 ± 5 %; 500 ± 5 %	24; 42	I	10/20
SIRIUS 4AM, 4AT isolating, control and mains transformers					
4AM and 4AT with one input voltage	4AM: 0.063 ... 2.5; 4AT: 4 ... 10	230 ± 5 %; 400 ± 5 %; 440 ± 5 %; 500 ± 5 %	110; 2 × 115; 230	I	10/24
4AM with one input voltage without cFLus	4AM: 0.063 ... 2.5	660 ± 5 %; 690 ± 5 %	230	I	10/37
4AM and 4AT in European voltage design	4AM: 0.063 ... 2.5; 4AT: 4 ... 10	400/230 ± 15 V	2 × 115	I	10/39
4AM and 4AT in multi-voltage version	4AM: 0.063 ... 2.5; 4AT: 4 ... 10	550 ... 208; 600 ... 230	2 × 115	I	10/40
SIRIUS 4AM isolating and mains transformers					
4AM with one input voltage	0.025 ... 0.04	230 ± 5 %; 400 ± 5 %; 440 ± 5 %; 500 ± 5 %	110; 230	I	10/42
4AM with one input voltage without cFLus	0.025 ... 0.04	660 ± 5 %; 690 ± 5 %	230	I	10/46
SIRIUS 4AT isolating transformers					
For supply of medical premises	2.5 ... 8	230	230-115	I	10/47
SIRIUS 4AM, 4AT transformers with selectable voltages					
4AM and 4AT safety, isolating, control and mains transformers and autotransformers	4AM: 0.025 ... 2.5; 4AT: 4 ... 16	selectable; 4AM: 12 ... 690 ¹⁾ ; 4AT: 24 ... 690 ¹⁾	selectable; 4AM: 12 ... 690 ¹⁾ ; 4AT: 24 ... 690 ¹⁾	I	10/48
Power transformers					
SIRIUS 4BT transformers with selectable voltages	18 ... 250	selectable; 100 ... 1000 ¹⁾	selectable; 100 ... 1000 ¹⁾	I	10/51
Voltage regulators					
4FL transformer type	1 ... 63	230	230	I	10/52
4FK magnetic type	0.06 ... 10	230/selectable	230/selectable	I	10/53
Variable-ratio transformers					
4CH toroidal-core variable-ratio transformers	0.28 ... 3.22	400	0 ... 230 stepless	I	2)
	0.69 ... 3.22	230	0 ... 230 stepless	I	2)
4CP pillar-type variable-ratio transformers	13.8 ... 207	400	0 ... 400 stepless	I	2)

1) **cFLus** max. 600 V.

2) For more information see the interactive Catalog CA 01 and Industry Mall.

Three-phase transformers



4AP20



4AU



4BU



4FL

Version	Rated power kVA	Rated input voltage V AC	Rated output voltage V AC	Safety class	Page
Safety, Isolating, Control and Mains Transformers					
SIRIUS 4AP, 4AU isolating, control and mains transformers					
4AP and 4AU in two-voltage version	0.63 ... 16	Y 500-400 /Δ 289-230	Y 400/Δ 230	I	10/55
4AP and 4AU in multi-voltage version	0.63 ... 16	Y 520 ... 360 /Δ 300 ... 208	Y 400/Δ 230	I	10/56
SIRIUS 4AP isolating and mains transformers					
In two-voltage version	0.16 ... 0.4	Y 500-400 /Δ 289-230	Y 400/Δ 230	I	10/57
SIRIUS 4AP, 4AU transformers with selectable voltages					
4AP and 4AU safety, isolating, control and mains transformers and autotransformers	4AP: 0.16 ... 5; 4AU: 6.3 ... 16	selectable; 4AP: 12 ... 690 ¹⁾ ; 4AU: 24 ... 690 ¹⁾	selectable; 4AP: 12 ... 690 ¹⁾ ; 4AU: 24 ... 690 ¹⁾	I	10/58
SIRIUS 4AP, 4AU autotransformers					
for matching purposes	4AP: 5 ... 22.5; 4AU: 12.5 ... 50	4AP, 4AU: 480 ... 380 4AP, 4AU: 480 ... 400 (380) ²⁾	4AP, 4AU: 400 4AP, 4AU: 230 (220) ²⁾	I	10/60
Power transformers					
SIRIUS 4BU matching transformers with one input voltage	18 ... 180 ³⁾	Δ 400, 400 ± 5 %, 440, 440 ± 5 %, 480, 480 ± 5 %/ Y 400, 400 ± 5 %, 440, 440 ± 5 %, 480, 480 ± 5 %	Y 208, 400	I	10/63
SIRIUS 4BU matching transformers With cTus approval With one input voltage	18 ... 180 ³⁾	Δ 400, 400 ± 5 %, 440, 440 ± 5 %, 480, 480 ± 5 %/ Y 400, 400 ± 5 %, 440, 440 ± 5 %, 480, 480 ± 5 %	Y 208, 400	I	10/73
SIRIUS 4BU transformers with selectable voltages	18 ... 400	Selectable 100 ... 1000 ¹⁾	Selectable 100 ... 1000 ¹⁾	I	10/83
Voltage regulators					
4FL transformer type	3 ... 190	400	400	I	10/85
Variable-ratio transformers					
4CJ toroidal-core variable-ratio transformers	2.07 ... 9.66	400	0 ... 400 stepless	I	4)
4CQ pillar-type variable-ratio transformers	16 ... 240	400	0 ... 400 stepless	I	4)

1) **cTus** max. 600 V.

2) Operating with 380 V AC three-phase at the input terminals results in an output voltage of 220 V AC three-phase.

3) For other ratings up to 400 kVA see the interactive Catalog CA 01 and Industry Mall.

4) For more information see the interactive Catalog CA 01 and Industry Mall.

Note



Screw terminals



Cage Clamp terminals



Flat connectors

The terminals are indicated in the selection and ordering data by orange backgrounds.

Introduction

Options

Delivery time class DT

The delivery time classes are specified in the selection tables in front of the order numbers.

The standard transport time for Germany is 1 day (see "Explanations" on page 4).

The quoted delivery time class is applicable to an order quantity of up to 5 units.

► **Preferred type**

This delivery time class applies with the degree of protection IP00, i. e. these units can be supplied immediately from stock¹⁾ and will be dispatched within 24 hours. The transport times depend on the destination and the mode of delivery.

Delivery time class B is applicable to an order quantity of 6 units and more.

Delivery time class A

The ordered units will be dispatched within 2 working days.

Delivery time class B is applicable to an order quantity of 6 units and more.

Delivery time class B

The ordered units will be dispatched within 1 week.

Delivery time class C is applicable to an order quantity of 6 units and more.

Delivery time class C

The ordered units will be dispatched within 3 weeks.

Delivery time class D is applicable to an order quantity of 6 units and more.

Delivery time class D

The ordered units, including enclosure and additional options, will be dispatched within 6 weeks.

Delivery time class X

On request.

Orders for transformers with selectable voltages and magnetic voltage regulators with selectable input and output voltages

Please send your selection by e-mail with the basic Order No. and the required options specified in plain text to:

Anfrage@mdexx.com

In response you will receive the complete Order No. for completing your order.

Ordering transformers in customized versions or with special applications

Inquiries for customized transformers not found in our catalog, for example:

- Toroidal-core transformers
- Associated transformers
- Medium-frequency transformers
- Transformers for converter applications
- Special transformers for rail vehicles
- Special transformers for marine applications and container cranes
 - Option: Vibration-resistant, low-noise version (available in enclosure only)
- Special transformers according to EN 60601-1 (VDE 0750) for medical equipment
- High-reactance transformers
- 4CH, 4CP, 4CJ and 4CQ toroidal-core variable-ratio and pillar-type variable-ratio transformers (see the interactive Catalog CA 01 and Industry Mall)
- Transformers for noise-sensitive environments

should be sent by e-mail to:

Anfrage@mdexx.com

or by fax to +49 (0)421/5125 333.

In reply you will receive the complete Order No. which should be quoted in your order.

¹⁾ This is based on commercially available orders – normal order!

More information

More information about transformers, power supplies, fans, reactors and filters can be found on the Internet at

www.siemens.com/sirius-supplying

For products and information on

- Reactors and filters, see Catalog LV 60, Order No.: E86060-K2803-A101-A5-7600
- For 2CC and 2CQ axial fans, see Catalog LV 65, Order No.: E86060-K1865-A101-A1-7600

Transformers for converter systems from Siemens can be found in the following catalogs:

Catalog NC 60, SINUMERIK & SIMODRIVE
Order No.: E86060-K4460-A101-B2-7600

Catalog DA 65.10, SIMOVERT MASTERDRIVES Vector Control
Order No.: E86060-K5165-A101-A3-7600

Catalog DA 65.11, SIMOVERT MASTERDRIVES Motion Control
Order No.: E86060-K5165-A111-A3-7600

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

General data

Overview

4AM../4AT.. transformers

With the right transformer, the right voltage will be available at any conditions.

Our transformers are the right choice for each application: They work reliably, safely and worldwide under a wide range of different conditions.

The transformers with selectable input and output voltages are configured in user-friendly combinations as:

- Isolating, control and mains transformers according to EN 61558-2-4, -2-2, -2-1 or
- Safety, control and mains transformers according to EN 61558-2-6, -2-2, -2-1 or
- Autotransformers according to EN 61558-2-13

Note:

Mains transformers with ≤ 50 V on the output side are, in the case of SIRIUS transformers, always designed as safety transformers.

SIRIUS transformers provide optimal protection through high permissible ambient temperatures up to 40 °C or 55 °C, a high short-time rating in the case of control transformers, fuseless construction and due to their safety standard "Safety inside" EN 61558.

Benefits

- High short-time rating of the SIRIUS transformers: lower transformer rated power for a large number of contactors
- Suitable for "fuseless construction": The small inrush current means that "circuit breakers for motor protection" can also be used on the primary side
- **cULus** approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum supplied from stock: rapid availability

Application

In industrial machines, process engineering, heating and air-conditioning equipment, etc., for supplying control and signaling circuits, when:

- Several electromagnetic loads (e. g. contactors) have to be controlled
- Control and signaling devices are used outside the control cabinet
- The operational voltage for the loads differs from the available voltage level
- Voltage matching for machines and installations with electrical isolation or as an autotransformer

Generally for voltage matching of electrical devices, e. g. in communications, medical engineering and domestic appliances.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM safety, mains and control transformers

Overview

- According to EN 61558-2-6, -2-1, -2-2
- **cULus**
- $t_a = 40 \text{ °C/B}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54



4AM with screw/flat connectors (left) and with Cage Clamp terminals (right)



Selection and ordering data

With one input voltage

Rated input voltage $U_{1N} 230 \text{ V} \pm 5 \%$,
rated output voltage $U_{2N} 24 \text{ V}$



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.1}$	DT ²⁾	Screw terminals/ flat connectors	Price per PU	Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA									kg	kg
Degree of protection IP00, standard version³⁾											
0.063	0.19	▶	4AM32 42-4TN00-0EA0		0.240	1.400	B	4AM32 42-4TN00-0EA1		0.240	1.400
0.1	0.31	▶	4AM34 42-4TN00-0EA0		0.260	2.000	B	4AM34 42-4TN00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-4TN00-0EA0		0.320	2.700	B	4AM38 42-4TN00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-4TN00-0EA0		0.590	3.700	B	4AM40 42-4TN00-0EA1		0.590	3.700
0.315	1.12	▶	4AM43 42-4TN00-0EA0		0.670	4.500	B	4AM43 42-4TN00-0EA1		0.670	4.500
0.4	1.44	▶	4AM46 42-4TN00-0EA0		1.100	5.400	B	4AM46 42-4TN00-0EA1		1.100	5.400
0.5	2	▶	4AM48 42-4TN00-0EA0		1.100	7.000	B	4AM48 42-4TN00-0EA1		1.100	7.000
0.63	2.35	▶	4AM52 42-4TN00-0EA0		1.700	7.900		--		--	--
0.8	3.4	▶	4AM55 42-4TN00-0EA0		1.900	11.000		--		--	--
1	5	▶	4AM57 42-4TN00-0EA0		2.000	14.000		--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	▶	4AM32 42-4TN00-0EA0		0.240	1.400	B	4AM32 42-4TN00-0EA1		0.240	1.400
0.1	0.31	▶	4AM34 42-4TN00-0EA0		0.260	2.000	B	4AM34 42-4TN00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-4TN00-0EA0		0.320	2.700	B	4AM38 42-4TN00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-4TN00-0EA0		0.590	3.700	B	4AM40 42-4TN00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-4TN00-0EB0		0.670	4.500	B	4AM43 42-4TN00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-4TN00-0EB0		1.100	5.400	B	4AM46 42-4TN00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-4TN00-0EB0		1.100	7.000	B	4AM48 42-4TN00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-4TN00-0EC0		0.240	2.700	B	4AM32 42-4TN00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-4TN00-0EC0		0.260	3.300	B	4AM34 42-4TN00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-4TN00-0EC0		0.320	5.600	B	4AM38 42-4TN00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-4TN00-0EC0		0.590	6.600	B	4AM40 42-4TN00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-4TN00-0EC0		0.670	7.400	B	4AM43 42-4TN00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-4TN00-0EC0		1.100	8.300	B	4AM46 42-4TN00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-4TN00-0EC0		1.100	9.900	B	4AM48 42-4TN00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-4TN00-0EC0		1.820	10.800		--		--	--
0.68	3.4	B	4AM55 42-4TN00-0EC0		1.900	13.900		--		--	--
0.85	5	B	4AM57 42-4TN00-0EC0		2.000	16.900		--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-4TN00-0ED0		0.240	2.700	B	4AM32 42-4TN00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-4TN00-0ED0		0.260	3.300	B	4AM34 42-4TN00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-4TN00-0ED0		0.320	5.600	B	4AM38 42-4TN00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-4TN00-0ED0		0.590	6.600	B	4AM40 42-4TN00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-4TN00-0ED0		0.670	7.400	B	4AM43 42-4TN00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-4TN00-0ED0		1.100	8.300	B	4AM46 42-4TN00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-4TN00-0ED0		1.100	9.900	B	4AM48 42-4TN00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-4TN00-0ED0		1.700	10.800		--		--	--
0.6	3.4	B	4AM55 42-4TN00-0ED0		1.900	13.900		--		--	--
0.75	5	B	4AM57 42-4TN00-0ED0		2.000	16.900		--		--	--

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM
 safety, mains and control transformers

With one input voltage

 Rated input voltage U_{1N} 230 V ± 5 %,
 rated output voltage U_{2N} 42 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	▶	4AM32 42-4TV00-0EA0		0.240	1.400	B	4AM32 42-4TV00-0EA1		0.270	1.400
0.1	0.31	▶	4AM34 42-4TV00-0EA0		0.260	2.000	B	4AM34 42-4TV00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-4TV00-0EA0		0.320	2.700	B	4AM38 42-4TV00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-4TV00-0EA0		0.590	3.700	B	4AM40 42-4TV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-4TV00-0EA0		0.670	4.500	B	4AM43 42-4TV00-0EA1		0.670	4.500
0.4	1.44	B	4AM46 42-4TV00-0EA0		1.100	5.400	B	4AM46 42-4TV00-0EA1		1.100	5.400
0.5	2	B	4AM48 42-4TV00-0EA0		1.100	7.000	B	4AM48 42-4TV00-0EA1		1.100	7.000
0.63	2.35	B	4AM52 42-4TV00-0EA0		1.700	7.900	B	--		--	--
0.8	3.4	B	4AM55 42-4TV00-0EA0		1.900	11.000	B	--		--	--
1	5	B	4AM57 42-4TV00-0EA0		2.000	14.000	B	--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	▶	4AM32 42-4TV00-0EA0		0.240	1.400	B	4AM32 42-4TV00-0EA1		0.270	1.400
0.1	0.31	▶	4AM34 42-4TV00-0EA0		0.260	2.000	B	4AM34 42-4TV00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-4TV00-0EA0		0.320	2.700	B	4AM38 42-4TV00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-4TV00-0EA0		0.590	3.700	B	4AM40 42-4TV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-4TV00-0EB0		0.670	4.500	B	4AM43 42-4TV00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-4TV00-0EB0		1.100	5.400	B	4AM46 42-4TV00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-4TV00-0EB0		1.100	7.000	B	4AM48 42-4TV00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-4TV00-0EC0		0.240	2.700	B	4AM32 42-4TV00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-4TV00-0EC0		0.260	3.300	B	4AM34 42-4TV00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-4TV00-0EC0		0.320	5.600	B	4AM38 42-4TV00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-4TV00-0EC0		0.590	6.600	B	4AM40 42-4TV00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-4TV00-0EC0		0.670	7.400	B	4AM43 42-4TV00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-4TV00-0EC0		1.100	8.300	B	4AM46 42-4TV00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-4TV00-0EC0		1.100	9.900	B	4AM48 42-4TV00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-4TV00-0EC0		1.700	10.800	B	--		--	--
0.68	3.4	B	4AM55 42-4TV00-0EC0		1.900	13.900	B	--		--	--
0.85	5	B	4AM57 42-4TV00-0EC0		2.000	16.900	B	--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-4TV00-0ED0		0.240	2.700	B	4AM32 42-4TV00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-4TV00-0ED0		0.260	3.300	B	4AM34 42-4TV00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-4TV00-0ED0		0.320	5.600	B	4AM38 42-4TV00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-4TV00-0ED0		0.590	6.600	B	4AM40 42-4TV00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-4TV00-0ED0		0.670	7.400	B	4AM43 42-4TV00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-4TV00-0ED0		1.100	8.300	B	4AM46 42-4TV00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-4TV00-0ED0		1.100	9.900	B	4AM48 42-4TV00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-4TV00-0ED0		1.700	10.800	B	--		--	--
0.6	3.4	B	4AM55 42-4TV00-0ED0		1.900	13.900	B	--		--	--
0.75	5	B	4AM57 42-4TV00-0ED0		2.000	16.900	B	--		--	--

 1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM

safety, mains and control transformers

With one input voltage

Rated input voltage U_{1N} 400 V \pm 5 %,
rated output voltage U_{2N} 24 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	▶	4AM32 42-5AN00-0EA0		0.240	1.400	▶	4AM32 42-5AN00-0EA1		0.240	1.400
0.1	0.31	▶	4AM34 42-5AN00-0EA0		0.260	2.000	B	4AM34 42-5AN00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-5AN00-0EA0		0.320	2.700	B	4AM38 42-5AN00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-5AN00-0EA0		0.590	3.700	B	4AM40 42-5AN00-0EA1		0.590	3.700
0.315	1.12	▶	4AM43 42-5AN00-0EA0		0.670	4.500	B	4AM43 42-5AN00-0EA1		0.670	4.500
0.4	1.44	▶	4AM46 42-5AN00-0EA0		1.100	5.400	B	4AM46 42-5AN00-0EA1		1.100	5.400
0.5	2	▶	4AM48 42-5AN00-0EA0		1.100	7.000	B	4AM48 42-5AN00-0EA1		1.100	7.000
0.63	2.35	▶	4AM52 42-5AN00-0EA0		1.700	7.900		--		--	--
0.8	3.4	▶	4AM55 42-5AN00-0EA0		1.900	11.000		--		--	--
1	5	▶	4AM57 42-5AN00-0EA0		2.000	14.000		--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	▶	4AM32 42-5AN00-0EA0		0.240	1.400	▶	4AM32 42-5AN00-0EA1		0.240	1.400
0.1	0.31	▶	4AM34 42-5AN00-0EA0		0.260	2.000	B	4AM34 42-5AN00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-5AN00-0EA0		0.320	2.700	B	4AM38 42-5AN00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-5AN00-0EA0		0.590	3.700	B	4AM40 42-5AN00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5AN00-0EB0		0.670	4.500	B	4AM43 42-5AN00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-5AN00-0EB0		1.100	5.400	B	4AM46 42-5AN00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-5AN00-0EB0		1.100	7.000	B	4AM48 42-5AN00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5AN00-0EC0		0.240	2.700	B	4AM32 42-5AN00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-5AN00-0EC0		0.260	3.300	B	4AM34 42-5AN00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-5AN00-0EC0		0.320	5.600	B	4AM38 42-5AN00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-5AN00-0EC0		0.590	6.600	B	4AM40 42-5AN00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-5AN00-0EC0		0.670	7.400	B	4AM43 42-5AN00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-5AN00-0EC0		1.100	8.300	B	4AM46 42-5AN00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-5AN00-0EC0		1.100	9.900	B	4AM48 42-5AN00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-5AN00-0EC0		1.700	10.800		--		--	--
0.68	3.4	B	4AM55 42-5AN00-0EC0		1.900	13.900		--		--	--
0.85	5	B	4AM57 42-5AN00-0EC0		2.000	16.900		--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5AN00-0ED0		0.240	2.700	B	4AM32 42-5AN00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-5AN00-0ED0		0.260	3.300	B	4AM34 42-5AN00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-5AN00-0ED0		0.320	5.600	B	4AM38 42-5AN00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-5AN00-0ED0		0.590	6.600	B	4AM40 42-5AN00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-5AN00-0ED0		0.670	7.400	B	4AM43 42-5AN00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-5AN00-0ED0		1.100	8.300	B	4AM46 42-5AN00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-5AN00-0ED0		1.100	9.900	B	4AM48 42-5AN00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-5AN00-0ED0		1.700	10.800		--		--	--
0.6	3.4	B	4AM55 42-5AN00-0ED0		1.900	13.900		--		--	--
0.75	5	B	4AM57 42-5AN00-0ED0		2.000	16.900		--		--	--

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM
safety, mains and control transformers

With one input voltage

Rated input voltage U_{1N} 400 V \pm 5 %,
rated output voltage U_{2N} 42 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	▶	4AM32 42-5AV00-0EA0		0.240	1.400	B	4AM32 42-5AV00-0EA1		0.240	1.400
0.1	0.31	▶	4AM34 42-5AV00-0EA0		0.260	2.000	B	4AM34 42-5AV00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-5AV00-0EA0		0.320	2.700	B	4AM38 42-5AV00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-5AV00-0EA0		0.590	3.700	B	4AM40 42-5AV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5AV00-0EA0		0.670	4.500	B	4AM43 42-5AV00-0EA1		0.670	4.500
0.4	1.44	B	4AM46 42-5AV00-0EA0		1.100	5.400	B	4AM46 42-5AV00-0EA1		1.100	5.400
0.5	2	B	4AM48 42-5AV00-0EA0		1.100	7.000	B	4AM48 42-5AV00-0EA1		1.100	7.000
0.63	2.35	B	4AM52 42-5AV00-0EA0		1.700	7.900	B	--		--	--
0.8	3.4	B	4AM55 42-5AV00-0EA0		1.900	11.000	B	--		--	--
1	5	B	4AM57 42-5AV00-0EA0		2.000	14.000	B	--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	▶	4AM32 42-5AV00-0EA0		0.240	1.400	B	4AM32 42-5AV00-0EA1		0.240	1.400
0.1	0.31	▶	4AM34 42-5AV00-0EA0		0.260	2.000	B	4AM34 42-5AV00-0EA1		0.260	2.000
0.16	0.49	▶	4AM38 42-5AV00-0EA0		0.320	2.700	B	4AM38 42-5AV00-0EA1		0.320	2.700
0.25	0.85	▶	4AM40 42-5AV00-0EA0		0.590	3.700	B	4AM40 42-5AV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5AV00-0EB0		0.670	4.500	B	4AM43 42-5AV00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-5AV00-0EB0		1.100	5.400	B	4AM46 42-5AV00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-5AV00-0EB0		1.100	7.000	B	4AM48 42-5AV00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5AV00-0EC0		0.240	2.700	B	4AM32 42-5AV00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-5AV00-0EC0		0.260	3.300	B	4AM34 42-5AV00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-5AV00-0EC0		0.320	5.600	B	4AM38 42-5AV00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-5AV00-0EC0		0.590	6.600	B	4AM40 42-5AV00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-5AV00-0EC0		0.670	7.400	B	4AM43 42-5AV00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-5AV00-0EC0		1.100	8.300	B	4AM46 42-5AV00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-5AV00-0EC0		1.100	9.900	B	4AM48 42-5AV00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-5AV00-0EC0		1.700	10.800	B	--		--	--
0.68	3.4	B	4AM55 42-5AV00-0EC0		1.900	13.900	B	--		--	--
0.85	5	B	4AM57 42-5AV00-0EC0		2.000	16.900	B	--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5AV00-0ED0		0.240	2.700	B	4AM32 42-5AV00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-5AV00-0ED0		0.260	3.300	B	4AM34 42-5AV00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-5AV00-0ED0		0.320	5.600	B	4AM38 42-5AV00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-5AV00-0ED0		0.590	6.600	B	4AM40 42-5AV00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-5AV00-0ED0		0.670	7.400	B	4AM43 42-5AV00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-5AV00-0ED0		1.100	8.300	B	4AM46 42-5AV00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-5AV00-0ED0		1.100	9.900	B	4AM48 42-5AV00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-5AV00-0ED0		1.700	10.800	B	--		--	--
0.6	3.4	B	4AM55 42-5AV00-0ED0		1.900	13.900	B	--		--	--
0.75	5	B	4AM57 42-5AV00-0ED0		2.000	16.900	B	--		--	--

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM

safety, mains and control transformers

With one input voltage

Rated input voltage U_{1N} 440 V \pm 5 %,
rated output voltage U_{2N} 24 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating P_{short} ¹⁾ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	B	4AM32 42-5CN00-0EA0		0.240	1.400	B	4AM32 42-5CN00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5CN00-0EA0		0.260	2.000	B	4AM34 42-5CN00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5CN00-0EA0		0.320	2.700	B	4AM38 42-5CN00-0EA1		0.370	2.700
0.25	0.85	B	4AM40 42-5CN00-0EA0		0.590	3.700	B	4AM40 42-5CN00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5CN00-0EA0		0.690	4.500	B	4AM43 42-5CN00-0EA1		0.670	4.500
0.4	1.44	B	4AM46 42-5CN00-0EA0		1.100	5.400	B	4AM46 42-5CN00-0EA1		1.100	5.400
0.5	2	B	4AM48 42-5CN00-0EA0		1.100	7.000	B	4AM48 42-5CN00-0EA1		1.100	7.000
0.63	2.35	B	4AM52 42-5CN00-0EA0		1.700	7.900		--		--	--
0.8	3.4	B	4AM55 42-5CN00-0EA0		1.900	11.000		--		--	--
1	5	B	4AM57 42-5CN00-0EA0		2.000	14.000		--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	B	4AM32 42-5CN00-0EA0		0.240	1.400	B	4AM32 42-5CN00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5CN00-0EA0		0.260	2.000	B	4AM34 42-5CN00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5CN00-0EA0		0.320	2.700	B	4AM38 42-5CN00-0EA1		0.370	2.700
0.25	0.85	B	4AM40 42-5CN00-0EA0		0.590	3.700	B	4AM40 42-5CN00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5CN00-0EB0		0.670	4.500	B	4AM43 42-5CN00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-5CN00-0EB0		1.100	5.400	B	4AM46 42-5CN00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-5CN00-0EB0		1.100	7.000	B	4AM48 42-5CN00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5CN00-0EC0		0.240	2.700	B	4AM32 42-5CN00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-5CN00-0EC0		0.260	3.300	B	4AM34 42-5CN00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-5CN00-0EC0		0.320	5.600	B	4AM38 42-5CN00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-5CN00-0EC0		0.590	6.600	B	4AM40 42-5CN00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-5CN00-0EC0		0.670	7.400	B	4AM43 42-5CN00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-5CN00-0EC0		1.100	8.300	B	4AM46 42-5CN00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-5CN00-0EC0		1.100	9.900	B	4AM48 42-5CN00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-5CN00-0EC0		1.700	10.800		--		--	--
0.68	3.4	B	4AM55 42-5CN00-0EC0		1.900	13.900		--		--	--
0.85	5	B	4AM57 42-5CN00-0EC0		2.000	16.900		--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5CN00-0ED0		0.240	2.700	B	4AM32 42-5CN00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-5CN00-0ED0		0.260	3.300	B	4AM34 42-5CN00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-5CN00-0ED0		0.320	5.600	B	4AM38 42-5CN00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-5CN00-0ED0		0.590	6.600	B	4AM40 42-5CN00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-5CN00-0ED0		0.670	7.400	B	4AM43 42-5CN00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-5CN00-0ED0		1.100	8.300	B	4AM46 42-5CN00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-5CN00-0ED0		1.100	9.900	B	4AM48 42-5CN00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-5CN00-0ED0		1.700	10.800		--		--	--
0.6	3.4	B	4AM55 42-5CN00-0ED0		1.900	13.900		--		--	--
0.75	5	B	4AM57 42-5CN00-0ED0		2.000	16.900		--		--	--

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM
safety, mains and control transformers

With one input voltage

Rated input voltage U_{1N} 440 V \pm 5 %,
rated output voltage U_{2N} 42 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	B	4AM32 42-5CV00-0EA0		0.240	1.400	B	4AM32 42-5CV00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5CV00-0EA0		0.260	2.000	B	4AM34 42-5CV00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5CV00-0EA0		0.320	2.700	B	4AM38 42-5CV00-0EA1		0.320	2.700
0.25	0.85	B	4AM40 42-5CV00-0EA0		0.590	3.700	B	4AM40 42-5CV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5CV00-0EA0		0.740	4.500	B	4AM43 42-5CV00-0EA1		0.670	4.500
0.4	1.44	B	4AM46 42-5CV00-0EA0		1.100	5.400	B	4AM46 42-5CV00-0EA1		1.100	5.400
0.5	2	B	4AM48 42-5CV00-0EA0		1.100	7.000	B	4AM48 42-5CV00-0EA1		1.100	7.000
0.63	2.35	B	4AM52 42-5CV00-0EA0		1.700	7.900	B	--		--	--
0.8	3.4	B	4AM55 42-5CV00-0EA0		1.900	11.000	B	--		--	--
1	5	B	4AM57 42-5CV00-0EA0		2.000	14.000	B	--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	B	4AM32 42-5CV00-0EA0		0.240	1.400	B	4AM32 42-5CV00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5CV00-0EA0		0.260	2.000	B	4AM34 42-5CV00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5CV00-0EA0		0.320	2.700	B	4AM38 42-5CV00-0EA1		0.320	2.700
0.25	0.85	B	4AM40 42-5CV00-0EA0		0.590	3.700	B	4AM40 42-5CV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5CV00-0EB0		0.670	4.500	B	4AM43 42-5CV00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-5CV00-0EB0		1.100	5.400	B	4AM46 42-5CV00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-5CV00-0EB0		1.100	7.000	B	4AM48 42-5CV00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5CV00-0EC0		0.240	2.700	B	4AM32 42-5CV00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-5CV00-0EC0		0.260	3.300	B	4AM34 42-5CV00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-5CV00-0EC0		0.320	5.600	B	4AM38 42-5CV00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-5CV00-0EC0		0.590	6.600	B	4AM40 42-5CV00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-5CV00-0EC0		0.670	7.400	B	4AM43 42-5CV00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-5CV00-0EC0		1.100	8.300	B	4AM46 42-5CV00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-5CV00-0EC0		1.100	9.900	B	4AM48 42-5CV00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-5CV00-0EC0		1.700	10.800	B	--		--	--
0.68	3.4	B	4AM55 42-5CV00-0EC0		1.900	13.900	B	--		--	--
0.85	5	B	4AM57 42-5CV00-0EC0		2.000	16.900	B	--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5CV00-0ED0		0.240	2.700	B	4AM32 42-5CV00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-5CV00-0ED0		0.260	3.300	B	4AM34 42-5CV00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-5CV00-0ED0		0.320	5.600	B	4AM38 42-5CV00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-5CV00-0ED0		0.590	6.600	B	4AM40 42-5CV00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-5CV00-0ED0		0.670	7.400	B	4AM43 42-5CV00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-5CV00-0ED0		1.100	8.300	B	4AM46 42-5CV00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-5CV00-0ED0		1.100	9.900	B	4AM48 42-5CV00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-5CV00-0ED0		1.700	10.800	B	--		--	--
0.6	3.4	B	4AM55 42-5CV00-0ED0		1.900	13.900	B	--		--	--
0.75	5	B	4AM57 42-5CV00-0ED0		2.000	16.900	B	--		--	--

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM

safety, mains and control transformers

With one input voltage

Rated input voltage $U_{1N} 500 V \pm 5 \%$,
rated output voltage $U_{2N} 24 V$



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}^{1)}$ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	B	4AM32 42-5FN00-0EA0		0.240	1.400	B	4AM32 42-5FN00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5FN00-0EA0		0.260	2.000	B	4AM34 42-5FN00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5FN00-0EA0		0.320	2.700	B	4AM38 42-5FN00-0EA1		0.320	2.700
0.25	0.85	B	4AM40 42-5FN00-0EA0		0.590	3.700	B	4AM40 42-5FN00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5FN00-0EA0		0.670	4.500	B	4AM43 42-5FN00-0EA1		0.760	4.500
0.4	1.44	B	4AM46 42-5FN00-0EA0		1.100	5.400	B	4AM46 42-5FN00-0EA1		1.100	5.400
0.5	2	B	4AM48 42-5FN00-0EA0		1.100	7.000	B	4AM48 42-5FN00-0EA1		1.100	7.000
0.63	2.35	B	4AM52 42-5FN00-0EA0		1.700	7.900		--		--	--
0.8	3.4	B	4AM55 42-5FN00-0EA0		1.900	11.000		--		--	--
1	5	B	4AM57 42-5FN00-0EA0		2.000	14.000		--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	B	4AM32 42-5FN00-0EA0		0.240	1.400	B	4AM32 42-5FN00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5FN00-0EA0		0.260	2.000	B	4AM34 42-5FN00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5FN00-0EA0		0.320	2.700	B	4AM38 42-5FN00-0EA1		0.320	2.700
0.25	0.85	B	4AM40 42-5FN00-0EA0		0.590	3.700	B	4AM40 42-5FN00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5FN00-0EB0		0.670	4.500	B	4AM43 42-5FN00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-5FN00-0EB0		1.100	5.400	B	4AM46 42-5FN00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-5FN00-0EB0		1.100	7.000	B	4AM48 42-5FN00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5FN00-0EC0		0.240	2.700	B	4AM32 42-5FN00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-5FN00-0EC0		0.260	3.300	B	4AM34 42-5FN00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-5FN00-0EC0		0.320	5.600	B	4AM38 42-5FN00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-5FN00-0EC0		0.590	6.600	B	4AM40 42-5FN00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-5FN00-0EC0		0.670	7.400	B	4AM43 42-5FN00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-5FN00-0EC0		1.100	8.300	B	4AM46 42-5FN00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-5FN00-0EC0		1.100	9.900	B	4AM48 42-5FN00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-5FN00-0EC0		1.700	10.800		--		--	--
0.68	3.4	B	4AM55 42-5FN00-0EC0		1.900	13.900		--		--	--
0.85	5	B	4AM57 42-5FN00-0EC0		2.000	16.900		--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5FN00-0ED0		0.240	2.700	B	4AM32 42-5FN00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-5FN00-0ED0		0.260	3.300	B	4AM34 42-5FN00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-5FN00-0ED0		0.320	5.600	B	4AM38 42-5FN00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-5FN00-0ED0		0.590	6.600	B	4AM40 42-5FN00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-5FN00-0ED0		0.670	7.400	B	4AM43 42-5FN00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-5FN00-0ED0		1.100	8.300	B	4AM46 42-5FN00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-5FN00-0ED0		1.100	9.900	B	4AM48 42-5FN00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-5FN00-0ED0		1.700	10.800		--		--	--
0.6	3.4	B	4AM55 42-5FN00-0ED0		1.900	13.900		--		--	--
0.75	5	B	4AM57 42-5FN00-0ED0		2.000	16.900		--		--	--

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM
safety, mains and control transformers

With one input voltage

Rated input voltage U_{1N} 500 V ± 5 %,
rated output voltage U_{2N} 42 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	B	4AM32 42-5FV00-0EA0		0.240	1.400	B	4AM32 42-5FV00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5FV00-0EA0		0.260	2.000	B	4AM34 42-5FV00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5FV00-0EA0		0.320	2.700	B	4AM38 42-5FV00-0EA1		0.320	2.700
0.25	0.85	B	4AM40 42-5FV00-0EA0		0.590	3.700	B	4AM40 42-5FV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5FV00-0EA0		0.750	4.500	B	4AM43 42-5FV00-0EA1		0.670	4.500
0.4	1.44	B	4AM46 42-5FV00-0EA0		1.100	5.400	B	4AM46 42-5FV00-0EA1		1.100	5.400
0.5	2	B	4AM48 42-5FV00-0EA0		1.100	7.000	B	4AM48 42-5FV00-0EA1		1.100	7.000
0.63	2.35	B	4AM52 42-5FV00-0EA0		1.700	7.900	B	--		--	--
0.8	3.4	B	4AM55 42-5FV00-0EA0		1.900	11.000	B	--		--	--
1	5	B	4AM57 42-5FV00-0EA0		2.000	14.000	B	--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	B	4AM32 42-5FV00-0EA0		0.240	1.400	B	4AM32 42-5FV00-0EA1		0.240	1.400
0.1	0.31	B	4AM34 42-5FV00-0EA0		0.260	2.000	B	4AM34 42-5FV00-0EA1		0.260	2.000
0.16	0.49	B	4AM38 42-5FV00-0EA0		0.320	2.700	B	4AM38 42-5FV00-0EA1		0.320	2.700
0.25	0.85	B	4AM40 42-5FV00-0EA0		0.590	3.700	B	4AM40 42-5FV00-0EA1		0.590	3.700
0.315	1.12	B	4AM43 42-5FV00-0EB0		0.670	4.500	B	4AM43 42-5FV00-0EB1		0.670	4.500
0.4	1.44	B	4AM46 42-5FV00-0EB0		1.100	5.400	B	4AM46 42-5FV00-0EB1		1.100	5.400
0.5	2	B	4AM48 42-5FV00-0EB0		1.100	7.000	B	4AM48 42-5FV00-0EB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5FV00-0EC0		0.240	2.700	B	4AM32 42-5FV00-0EC1		0.240	2.700
0.09	0.31	B	4AM34 42-5FV00-0EC0		0.260	3.300	B	4AM34 42-5FV00-0EC1		0.260	3.300
0.145	0.49	B	4AM38 42-5FV00-0EC0		0.320	5.600	B	4AM38 42-5FV00-0EC1		0.320	5.600
0.225	0.85	B	4AM40 42-5FV00-0EC0		0.590	6.600	B	4AM40 42-5FV00-0EC1		0.590	6.600
0.268	1.12	B	4AM43 42-5FV00-0EC0		0.670	7.400	B	4AM43 42-5FV00-0EC1		0.670	7.400
0.34	1.44	B	4AM46 42-5FV00-0EC0		1.100	8.300	B	4AM46 42-5FV00-0EC1		1.100	8.300
0.425	2	B	4AM48 42-5FV00-0EC0		1.100	9.900	B	4AM48 42-5FV00-0EC1		1.100	9.900
0.535	2.35	B	4AM52 42-5FV00-0EC0		1.700	10.800	B	--		--	--
0.68	3.4	B	4AM55 42-5FV00-0EC0		1.900	13.900	B	--		--	--
0.85	5	B	4AM57 42-5FV00-0EC0		2.000	16.900	B	--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5FV00-0ED0		0.240	2.700	B	4AM32 42-5FV00-0ED1		0.240	2.700
0.08	0.31	B	4AM34 42-5FV00-0ED0		0.260	3.300	B	4AM34 42-5FV00-0ED1		0.260	3.300
0.128	0.49	B	4AM38 42-5FV00-0ED0		0.320	5.600	B	4AM38 42-5FV00-0ED1		0.320	5.600
0.2	0.85	B	4AM40 42-5FV00-0ED0		0.590	6.600	B	4AM40 42-5FV00-0ED1		0.590	6.600
0.236	1.12	B	4AM43 42-5FV00-0ED0		0.670	7.400	B	4AM43 42-5FV00-0ED1		0.670	7.400
0.3	1.44	B	4AM46 42-5FV00-0ED0		1.100	8.300	B	4AM46 42-5FV00-0ED1		1.100	8.300
0.375	2	B	4AM48 42-5FV00-0ED0		1.100	9.900	B	4AM48 42-5FV00-0ED1		1.100	9.900
0.475	2.35	B	4AM52 42-5FV00-0ED0		1.700	10.800	B	--		--	--
0.6	3.4	B	4AM55 42-5FV00-0ED0		1.900	13.900	B	--		--	--
0.75	5	B	4AM57 42-5FV00-0ED0		2.000	13.400	B	--		--	--

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM

safety, mains and control transformers

For European voltages

Rated input voltage U_{1N} 400/230 V ± 15 V,
rated output voltage U_{2N} 24 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version³⁾											
0.063	0.19	▶	4AM32 42-8JN00-0EA0		0.340	1.500	B	4AM32 42-8JN00-0EA1		0.340	1.500
0.1	0.31	▶	4AM34 42-8JN00-0EA0		0.360	2.100	B	4AM34 42-8JN00-0EA1		0.360	2.100
0.16	0.49	▶	4AM38 42-8JN00-0EA0		0.450	2.800	B	4AM38 42-8JN00-0EA1		0.450	2.800
0.25	0.85	▶	4AM40 42-8JN00-0EA0		0.820	3.900	B	4AM40 42-8JN00-0EA1		0.820	3.900
0.315	1.12	B	4AM43 42-8JN00-0EA0		1.000	4.800	B	4AM43 42-8JN00-0EA1		1.000	4.800
0.4	1.44	B	4AM46 42-8JN00-0EA0		1.500	5.800	B	4AM46 42-8JN00-0EA1		1.500	5.800
0.5	2	B	4AM48 42-8JN00-0EA0		1.500	7.400	B	4AM48 42-8JN00-0EA1		1.500	7.400
0.63	2.35	B	4AM52 42-8JN00-0EA0		2.400	8.600		--		--	--
0.8	3.4	B	4AM55 42-8JN00-0EA0		2.600	12.000		--		--	--
1	5	B	4AM57 42-8JN00-0EA0		2.800	15.000		--		--	--
Degree of protection IP00, standard rail mounting³⁾											
0.063	0.19	▶	4AM32 42-8JN00-0EA0		0.340	1.500	B	4AM32 42-8JN00-0EA1		0.340	1.500
0.1	0.31	▶	4AM34 42-8JN00-0EA0		0.360	2.100	B	4AM34 42-8JN00-0EA1		0.360	2.100
0.16	0.49	▶	4AM38 42-8JN00-0EA0		0.450	2.800	B	4AM38 42-8JN00-0EA1		0.450	2.800
0.25	0.85	▶	4AM40 42-8JN00-0EA0		0.820	3.900	B	4AM40 42-8JN00-0EA1		0.820	3.900
0.315	1.12	B	4AM43 42-8JN00-0EB0		1.000	4.800	B	4AM43 42-8JN00-0EB1		1.000	4.800
0.4	1.44	B	4AM46 42-8JN00-0EB0		1.500	5.800	B	4AM46 42-8JN00-0EB1		1.500	5.800
0.5	2	B	4AM48 42-8JN00-0EB0		1.500	7.400	B	4AM48 42-8JN00-0EB1		1.500	7.400
Degree of protection IP23											
0.057	0.19	B	4AM32 42-8JN00-0EC0		0.340	2.800	B	4AM32 42-8JN00-0EC1		0.340	2.800
0.09	0.31	B	4AM34 42-8JN00-0EC0		0.360	3.400	B	4AM34 42-8JN00-0EC1		0.360	3.400
0.145	0.49	B	4AM38 42-8JN00-0EC0		0.450	5.700	B	4AM38 42-8JN00-0EC1		0.450	5.700
0.225	0.85	B	4AM40 42-8JN00-0EC0		0.820	6.800	B	4AM40 42-8JN00-0EC1		0.820	6.800
0.268	1.12	B	4AM43 42-8JN00-0EC0		1.000	7.700	B	4AM43 42-8JN00-0EC1		1.000	7.700
0.34	1.44	B	4AM46 42-8JN00-0EC0		1.500	8.700	B	4AM46 42-8JN00-0EC1		1.500	8.700
0.425	2	B	4AM48 42-8JN00-0EC0		1.500	10.300	B	4AM48 42-8JN00-0EC1		1.500	10.300
0.535	2.35	B	4AM52 42-8JN00-0EC0		2.400	11.500		--		--	--
0.68	3.4	B	4AM55 42-8JN00-0EC0		2.600	14.900		--		--	--
0.85	5	B	4AM57 42-8JN00-0EC0		2.800	17.900		--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-8JN00-0ED0		0.340	2.800	B	4AM32 42-8JN00-0ED1		0.340	2.800
0.08	0.31	B	4AM34 42-8JN00-0ED0		0.360	3.400	B	4AM34 42-8JN00-0ED1		0.360	3.400
0.128	0.49	B	4AM38 42-8JN00-0ED0		0.450	5.700	B	4AM38 42-8JN00-0ED1		0.450	5.700
0.2	0.85	B	4AM40 42-8JN00-0ED0		0.820	6.800	B	4AM40 42-8JN00-0ED1		0.820	6.800
0.236	1.12	B	4AM43 42-8JN00-0ED0		1.000	7.700	B	4AM43 42-8JN00-0ED1		1.000	7.700
0.3	1.44	B	4AM46 42-8JN00-0ED0		1.500	8.700	B	4AM46 42-8JN00-0ED1		1.500	8.700
0.375	2	B	4AM48 42-8JN00-0ED0		1.500	10.300	B	4AM48 42-8JN00-0ED1		1.500	10.300
0.475	2.35	B	4AM52 42-8JN00-0ED0		2.400	11.500		--		--	--
0.6	3.4	B	4AM55 42-8JN00-0ED0		2.600	14.900		--		--	--
0.75	5	B	4AM57 42-8JN00-0ED0		2.800	17.900		--		--	--

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers


Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM
 safety, mains and control transformers

For European voltages

 Rated input voltage U_{1N} 400/230 V ± 15 V,
 rated output voltage U_{2N} 42 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals/ flat connectors		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA					
Degree of protection IP00, standard version³⁾						
0.063	0.19	B	4AM32 42-8JV00-0EA0		0.340	1.500
0.1	0.31	B	4AM34 42-8JV00-0EA0		0.360	2.100
0.16	0.49	B	4AM38 42-8JV00-0EA0		0.450	2.800
0.25	0.85	B	4AM40 42-8JV00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8JV00-0EA0		1.000	4.800
0.4	1.44	B	4AM46 42-8JV00-0EA0		1.500	5.800
0.5	2	B	4AM48 42-8JV00-0EA0		1.500	7.400
0.63	2.35	B	4AM52 42-8JV00-0EA0		2.400	8.600
0.8	3.4	B	4AM55 42-8JV00-0EA0		2.600	12.000
1	5	B	4AM57 42-8JV00-0EA0		2.800	15.000
Degree of protection IP00, standard rail mounting³⁾						
0.063	0.19	B	4AM32 42-8JV00-0EA0		0.340	1.500
0.1	0.31	B	4AM34 42-8JV00-0EA0		0.360	2.100
0.16	0.49	B	4AM38 42-8JV00-0EA0		0.450	2.800
0.25	0.85	B	4AM40 42-8JV00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8JV00-0EB0		1.000	4.800
0.4	1.44	B	4AM46 42-8JV00-0EB0		1.500	5.800
0.5	2	B	4AM48 42-8JV00-0EB0		1.500	7.400
Degree of protection IP23						
0.057	0.19	B	4AM32 42-8JV00-0EC0		0.340	2.800
0.09	0.31	B	4AM34 42-8JV00-0EC0		0.360	3.400
0.145	0.49	B	4AM38 42-8JV00-0EC0		0.450	5.700
0.225	0.85	B	4AM40 42-8JV00-0EC0		0.820	6.800
0.268	1.12	B	4AM43 42-8JV00-0EC0		1.000	7.700
0.34	1.44	B	4AM46 42-8JV00-0EC0		1.500	8.700
0.425	2	B	4AM48 42-8JV00-0EC0		1.500	10.300
0.535	2.35	B	4AM52 42-8JV00-0EC0		2.400	11.500
0.68	3.4	B	4AM55 42-8JV00-0EC0		2.600	14.900
0.85	5	B	4AM57 42-8JV00-0EC0		2.800	17.900
Degree of protection IP54						
0.05	0.19	B	4AM32 42-8JV00-0ED0		0.340	2.800
0.08	0.31	B	4AM34 42-8JV00-0ED0		0.360	3.400
0.128	0.49	B	4AM38 42-8JV00-0ED0		0.450	5.700
0.2	0.85	B	4AM40 42-8JV00-0ED0		0.820	6.800
0.236	1.12	B	4AM43 42-8JV00-0ED0		1.000	7.700
0.3	1.44	B	4AM46 42-8JV00-0ED0		1.500	8.700
0.375	2	B	4AM48 42-8JV00-0ED0		1.500	10.300
0.475	2.35	B	4AM52 42-8JV00-0ED0		2.400	11.500
0.6	3.4	B	4AM55 42-8JV00-0ED0		2.600	14.900
0.75	5	B	4AM57 42-8JV00-0ED0		2.800	17.900

 1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers



SIRIUS 4AM safety, mains and control transformers

In multi-voltage version

Rated input voltage U_{1N}
550-525-500-480-460-440-415-400-380-230-208 V,
rated output voltage U_{2N} 24 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$ ¹⁾	DT ²⁾	Screw terminals/ flat connectors	 	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version³⁾						
0.063	0.19	▶	4AM32 42-8DN00-0EA0		0.340	1.500
0.1	0.31	▶	4AM34 42-8DN00-0EA0		0.360	2.100
0.16	0.49	▶	4AM38 42-8DN00-0EA0		0.450	2.800
0.25	0.85	▶	4AM40 42-8DN00-0EA0		0.820	3.900
0.315	1.12	▶	4AM43 42-8DN00-0EA0		1.000	4.800
0.4	1.44	▶	4AM46 42-8DN00-0EA0		1.500	5.800
0.5	2	▶	4AM48 42-8DN00-0EA0		1.500	7.400
0.63	2.35	▶	4AM52 42-8DN00-0EA0		2.400	8.600
0.8	3.4	B	4AM55 42-8DN00-0EA0		2.600	12.000
1	5	B	4AM57 42-8DN00-0EA0		2.800	15.000
Degree of protection IP00, standard rail mounting³⁾						
0.063	0.19	▶	4AM32 42-8DN00-0EA0		0.340	1.500
0.1	0.31	▶	4AM34 42-8DN00-0EA0		0.360	2.100
0.16	0.49	▶	4AM38 42-8DN00-0EA0		0.450	2.800
0.25	0.85	▶	4AM40 42-8DN00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8DN00-0EB0		1.000	4.800
0.4	1.44	B	4AM46 42-8DN00-0EB0		1.500	5.800
0.5	2	B	4AM48 42-8DN00-0EB0		1.500	7.400
Degree of protection IP23						
0.057	0.19	B	4AM32 42-8DN00-0ECO		0.340	2.800
0.09	0.31	B	4AM34 42-8DN00-0ECO		0.360	3.400
0.145	0.49	B	4AM38 42-8DN00-0ECO		0.450	5.700
0.225	0.85	B	4AM40 42-8DN00-0ECO		0.820	6.800
0.268	1.12	B	4AM43 42-8DN00-0ECO		1.000	7.700
0.34	1.44	B	4AM46 42-8DN00-0ECO		1.500	8.700
0.425	2	B	4AM48 42-8DN00-0ECO		1.500	10.300
0.535	2.35	B	4AM52 42-8DN00-0ECO		2.400	11.500
0.68	3.4	B	4AM55 42-8DN00-0ECO		2.600	14.900
0.85	5	B	4AM57 42-8DN00-0ECO		2.800	17.900
Degree of protection IP54						
0.05	0.19	B	4AM32 42-8DN00-0EDO		0.340	2.800
0.08	0.31	B	4AM34 42-8DN00-0EDO		0.360	3.400
0.128	0.49	B	4AM38 42-8DN00-0EDO		0.450	5.700
0.2	0.85	B	4AM40 42-8DN00-0EDO		0.820	6.800
0.236	1.12	B	4AM43 42-8DN00-0EDO		1.000	7.700
0.3	1.44	B	4AM46 42-8DN00-0EDO		1.500	8.700
0.375	2	B	4AM48 42-8DN00-0EDO		1.500	10.300
0.475	2.35	B	4AM52 42-8DN00-0EDO		2.400	11.500
0.6	3.4	B	4AM55 42-8DN00-0EDO		2.600	14.900
0.75	5	B	4AM57 42-8DN00-0EDO		2.800	17.900

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers



SIRIUS 4AM
safety, mains and control transformers

In multi-voltage version

Rated input voltage U_{1N}
550-525-500-480-460-440-415-400-380-230-208 V,
rated output voltage U_{2N} 42 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$ ¹⁾	DT ²⁾	Screw terminals/ flat connectors	 	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version³⁾						
0.063	0.19	B	4AM32 42-8DV00-0EA0		0.340	1.500
0.1	0.31	B	4AM34 42-8DV00-0EA0		0.360	2.100
0.16	0.49	B	4AM38 42-8DV00-0EA0		0.450	2.800
0.25	0.85	B	4AM40 42-8DV00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8DV00-0EA0		1.000	4.800
0.4	1.44	B	4AM46 42-8DV00-0EA0		1.500	5.800
0.5	2	B	4AM48 42-8DV00-0EA0		1.500	7.400
0.63	2.35	B	4AM52 42-8DV00-0EA0		2.400	8.600
0.8	3.4	B	4AM55 42-8DV00-0EA0		2.600	12.000
1	5	B	4AM57 42-8DV00-0EA0		2.800	15.000
Degree of protection IP00, standard rail mounting³⁾						
0.063	0.19	B	4AM32 42-8DV00-0EA0		0.340	1.500
0.1	0.31	B	4AM34 42-8DV00-0EA0		0.360	2.100
0.16	0.49	B	4AM38 42-8DV00-0EA0		0.450	2.800
0.25	0.85	B	4AM40 42-8DV00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8DV00-0EB0		1.000	4.800
0.4	1.44	B	4AM46 42-8DV00-0EB0		1.500	5.800
0.5	2	B	4AM48 42-8DV00-0EB0		1.500	7.400
Degree of protection IP23						
0.057	0.19	B	4AM32 42-8DV00-0EC0		0.340	2.800
0.09	0.31	B	4AM34 42-8DV00-0EC0		0.360	3.400
0.145	0.49	B	4AM38 42-8DV00-0EC0		0.450	5.700
0.225	0.85	B	4AM40 42-8DV00-0EC0		0.820	6.800
0.268	1.12	B	4AM43 42-8DV00-0EC0		1.000	7.700
0.34	1.44	B	4AM46 42-8DV00-0EC0		1.500	8.700
0.425	2	B	4AM48 42-8DV00-0EC0		1.500	10.300
0.535	2.35	B	4AM52 42-8DV00-0EC0		2.400	11.500
0.68	3.4	B	4AM55 42-8DV00-0EC0		2.600	14.900
0.85	5	B	4AM57 42-8DV00-0EC0		2.800	17.900
Degree of protection IP54						
0.05	0.19	B	4AM32 42-8DV00-0ED0		0.340	2.800
0.08	0.31	B	4AM34 42-8DV00-0ED0		0.360	3.400
0.128	0.49	B	4AM38 42-8DV00-0ED0		0.450	5.700
0.2	0.85	B	4AM40 42-8DV00-0ED0		0.820	6.800
0.236	1.12	B	4AM43 42-8DV00-0ED0		1.000	7.700
0.3	1.44	B	4AM46 42-8DV00-0ED0		1.500	8.700
0.375	2	B	4AM48 42-8DV00-0ED0		1.500	10.300
0.475	2.35	B	4AM52 42-8DV00-0ED0		2.400	11.500
0.6	3.4	B	4AM55 42-8DV00-0ED0		2.600	14.900
0.75	5	B	4AM57 42-8DV00-0ED0		2.800	17.900

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers



SIRIUS 4AM safety, mains and control transformers

In multi-voltage version

Rated input voltage U_{1N}
600-575-550-525-500-480-460-440-415-400-240-230 V,
rated output voltage U_{2N} 24 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$ ¹⁾	DT ²⁾	Screw terminals/ flat connectors	 	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version³⁾						
0.063	0.19	▶	4AM32 42-8EN00-0EA0		0.340	1.500
0.1	0.31	▶	4AM34 42-8EN00-0EA0		0.360	2.100
0.16	0.49	▶	4AM38 42-8EN00-0EA0		0.450	2.800
0.25	0.85	▶	4AM40 42-8EN00-0EA0		0.820	3.900
0.315	1.12	▶	4AM43 42-8EN00-0EA0		1.000	4.800
0.4	1.44	▶	4AM46 42-8EN00-0EA0		1.500	5.800
0.5	2	▶	4AM48 42-8EN00-0EA0		1.500	7.400
0.63	2.35	▶	4AM52 42-8EN00-0EA0		2.400	8.600
0.8	3.4	B	4AM55 42-8EN00-0EA0		2.600	12.000
1	5	B	4AM57 42-8EN00-0EA0		2.800	15.000
Degree of protection IP00, standard rail mounting³⁾						
0.063	0.19	▶	4AM32 42-8EN00-0EA0		0.340	1.500
0.1	0.31	▶	4AM34 42-8EN00-0EA0		0.360	2.100
0.16	0.49	▶	4AM38 42-8EN00-0EA0		0.450	2.800
0.25	0.85	▶	4AM40 42-8EN00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8EN00-0EB0		1.000	4.800
0.4	1.44	B	4AM46 42-8EN00-0EB0		1.500	5.800
0.5	2	B	4AM48 42-8EN00-0EB0		1.240	7.400
Degree of protection IP23						
0.057	0.19	B	4AM32 42-8EN00-0ECO		0.340	2.800
0.09	0.31	B	4AM34 42-8EN00-0ECO		0.360	3.400
0.145	0.49	B	4AM38 42-8EN00-0ECO		0.450	5.700
0.225	0.85	B	4AM40 42-8EN00-0ECO		0.820	6.800
0.268	1.12	B	4AM43 42-8EN00-0ECO		1.000	7.700
0.34	1.44	B	4AM46 42-8EN00-0ECO		1.500	8.700
0.425	2	B	4AM48 42-8EN00-0ECO		1.500	10.300
0.535	2.35	B	4AM52 42-8EN00-0ECO		2.400	11.500
0.68	3.4	B	4AM55 42-8EN00-0ECO		2.600	14.900
0.85	5	B	4AM57 42-8EN00-0ECO		2.800	17.900
Degree of protection IP54						
0.05	0.19	B	4AM32 42-8EN00-0EDO		0.340	2.800
0.08	0.31	B	4AM34 42-8EN00-0EDO		0.360	3.400
0.128	0.49	B	4AM38 42-8EN00-0EDO		0.450	5.700
0.2	0.85	B	4AM40 42-8EN00-0EDO		0.820	6.800
0.236	1.12	B	4AM43 42-8EN00-0EDO		1.000	7.700
0.3	1.44	B	4AM46 42-8EN00-0EDO		1.500	8.700
0.375	2	B	4AM48 42-8EN00-0EDO		1.500	10.300
0.475	2.35	B	4AM52 42-8EN00-0EDO		2.400	11.500
0.6	3.4	B	4AM55 42-8EN00-0EDO		2.600	14.900
0.75	5	B	4AM57 42-8EN00-0EDO		2.800	17.900

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers



SIRIUS 4AM
 safety, mains and control transformers

In multi-voltage version

Rated input voltage U_{1N}
 600-575-550-525-500-480-460-440-415-400-240-230 V,
 rated output voltage U_{2N} 42 V



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals/ flat connectors	 	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version³⁾						
0.063	0.19	B	4AM32 42-8EV00-0EA0		0.340	1.500
0.1	0.31	B	4AM34 42-8EV00-0EA0		0.360	2.100
0.16	0.49	B	4AM38 42-8EV00-0EA0		0.450	2.800
0.25	0.85	B	4AM40 42-8EV00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8EV00-0EA0		1.000	4.800
0.4	1.44	B	4AM46 42-8EV00-0EA0		1.500	5.800
0.5	2	B	4AM48 42-8EV00-0EA0		1.500	7.400
0.63	2.35	B	4AM52 42-8EV00-0EA0		2.400	8.600
0.8	3.4	B	4AM55 42-8EV00-0EA0		2.600	12.000
1	5	B	4AM57 42-8EV00-0EA0		2.800	15.000
Degree of protection IP00, standard rail mounting³⁾						
0.063	0.19	B	4AM32 42-8EV00-0EA0		0.340	1.500
0.1	0.31	B	4AM34 42-8EV00-0EA0		0.360	2.100
0.16	0.49	B	4AM38 42-8EV00-0EA0		0.450	2.800
0.25	0.85	B	4AM40 42-8EV00-0EA0		0.820	3.900
0.315	1.12	B	4AM43 42-8EV00-0EB0		1.000	4.800
0.4	1.44	B	4AM46 42-8EV00-0EB0		1.500	5.800
0.5	2	B	4AM48 42-8EV00-0EB0		1.500	7.400
Degree of protection IP23						
0.057	0.19	B	4AM32 42-8EV00-0EC0		0.340	2.800
0.09	0.31	B	4AM34 42-8EV00-0EC0		0.360	3.400
0.145	0.49	B	4AM38 42-8EV00-0EC0		0.450	5.700
0.225	0.85	B	4AM40 42-8EV00-0EC0		0.820	6.800
0.268	1.12	B	4AM43 42-8EV00-0EC0		1.000	7.700
0.34	1.44	B	4AM46 42-8EV00-0EC0		1.500	8.700
0.425	2	B	4AM48 42-8EV00-0EC0		1.500	10.300
0.535	2.35	B	4AM52 42-8EV00-0EC0		2.400	11.500
0.68	3.4	B	4AM55 42-8EV00-0EC0		2.600	14.900
0.85	5	B	4AM57 42-8EV00-0EC0		2.800	17.900
Degree of protection IP54						
0.05	0.19	B	4AM32 42-8EV00-0ED0		0.340	2.800
0.08	0.31	B	4AM34 42-8EV00-0ED0		0.360	3.400
0.128	0.49	B	4AM38 42-8EV00-0ED0		0.450	5.700
0.2	0.85	B	4AM40 42-8EV00-0ED0		0.820	6.800
0.236	1.12	B	4AM43 42-8EV00-0ED0		1.000	7.700
0.3	1.44	B	4AM46 42-8EV00-0ED0		1.500	8.700
0.375	2	B	4AM48 42-8EV00-0ED0		1.500	10.300
0.475	2.35	B	4AM52 42-8EV00-0ED0		2.400	11.500
0.6	3.4	B	4AM55 42-8EV00-0ED0		2.600	14.900
0.75	5	B	4AM57 42-8EV00-0ED0		2.800	17.900

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

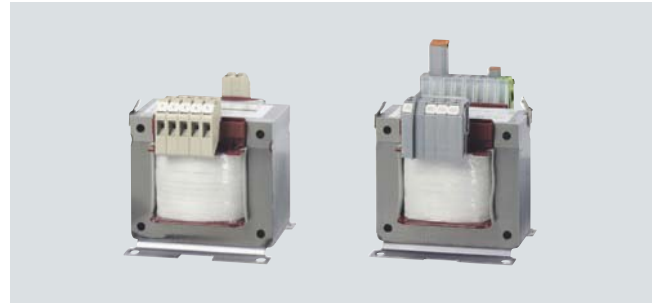
Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM safety and mains transformers

Overview

- According to EN 61558-2-6, -2-1
- **c** **RU** **US**
- $t_a = 40 \text{ °C/B}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54



4AM with screw/flat connectors (left) and with Cage Clamp terminals (right)

Selection and ordering data

With one input voltage

Rated input voltage $U_{1N} 230 \text{ V} \pm 5 \%$,
rated output voltage $U_{2N} 24 \text{ V}$



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating P_{short} kVA	DT ¹⁾	Screw terminals/ flat connectors			Cage Clamp terminals					
			Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Degree of protection IP00, standard version											
0.025	--	▶	4AM23 42-4TN00-0EA0		0.110	0.600	B	4AM23 42-4TN00-0EA1		0.110	0.600
0.04	--	▶	4AM26 42-4TN00-0EA0		0.150	0.800	B	4AM26 42-4TN00-0EA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	▶	4AM23 42-4TN00-0EB0		0.110	0.600	B	4AM23 42-4TN00-0EB1		0.110	0.600
0.04	--	▶	4AM26 42-4TN00-0EB0		0.150	0.800	B	4AM26 42-4TN00-0EB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-4TN00-0EC0		0.110	1.900	B	4AM23 42-4TN00-0EC1		0.110	1.900
0.036	--	B	4AM26 42-4TN00-0EC0		0.150	2.100	B	4AM26 42-4TN00-0EC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-4TN00-0ED0		0.110	1.900	B	4AM23 42-4TN00-0ED1		0.110	1.900
0.03	--	B	4AM26 42-4TN00-0ED0		0.150	2.100	B	4AM26 42-4TN00-0ED1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

Rated input voltage $U_{1N} 230 \text{ V} \pm 5 \%$,
rated output voltage $U_{2N} 42 \text{ V}$



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating P_{short} kVA	DT ¹⁾	Screw terminals/ flat connectors			Cage Clamp terminals					
			Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-4TV00-0EA0		0.110	0.600	B	4AM23 42-4TV00-0EA1		0.110	0.600
0.04	--	B	4AM26 42-4TV00-0EA0		0.150	0.800	B	4AM26 42-4TV00-0EA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-4TV00-0EB0		0.110	0.600	B	4AM23 42-4TV00-0EB1		0.110	0.600
0.04	--	B	4AM26 42-4TV00-0EB0		0.150	0.800	B	4AM26 42-4TV00-0EB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-4TV00-0EC0		0.110	1.900	B	4AM23 42-4TV00-0EC1		0.110	1.900
0.036	--	B	4AM26 42-4TV00-0EC0		0.150	2.100	B	4AM26 42-4TV00-0EC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-4TV00-0ED0		0.110	1.900	B	4AM23 42-4TV00-0ED1		0.110	1.900
0.03	--	B	4AM26 42-4TV00-0ED0		0.150	2.100	B	4AM26 42-4TV00-0ED1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM
 safety and mains transformers

With one input voltage

 Rated input voltage U_{1N} 400 V \pm 5 %,
 rated output voltage U_{2N} 24 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals			
			Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
kVA	kVA											
Degree of protection IP00, standard version												
0.025	--	▶	4AM23 42-5AN00-0EA0		0.110	0.600	B	4AM23 42-5AN00-0EA1		0.110	0.600	
0.04	--	▶	4AM26 42-5AN00-0EA0		0.150	0.800	B	4AM26 42-5AN00-0EA1		0.150	0.800	
Degree of protection IP00, standard rail mounting												
0.025	--	B	4AM23 42-5AN00-0EB0		0.110	0.600	B	4AM23 42-5AN00-0EB1		0.110	0.600	
0.04	--	B	4AM26 42-5AN00-0EB0		0.150	0.800	B	4AM26 42-5AN00-0EB1		0.150	0.800	
Degree of protection IP23												
0.023	--	B	4AM23 42-5AN00-0EC0		0.110	1.900	B	4AM23 42-5AN00-0EC1		0.110	1.900	
0.036	--	B	4AM26 42-5AN00-0EC0		0.150	2.100	B	4AM26 42-5AN00-0EC1		0.150	2.100	
Degree of protection IP54												
0.02	--	B	4AM23 42-5AN00-0ED0		0.110	1.900	B	4AM23 42-5AN00-0ED1		0.110	1.900	
0.03	--	B	4AM26 42-5AN00-0ED0		0.150	2.100	B	4AM26 42-5AN00-0ED1		0.150	2.100	

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

 Rated input voltage U_{1N} 400 V \pm 5 %,
 rated output voltage U_{2N} 42 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals			
			Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
kVA	kVA											
Degree of protection IP00, standard version												
0.025	--	B	4AM23 42-5AV00-0EA0		0.110	0.600	B	4AM23 42-5AV00-0EA1		0.110	0.600	
0.04	--	B	4AM26 42-5AV00-0EA0		0.150	0.800	B	4AM26 42-5AV00-0EA1		0.150	0.800	
Degree of protection IP00, standard rail mounting												
0.025	--	B	4AM23 42-5AV00-0EB0		0.110	0.600	B	4AM23 42-5AV00-0EB1		0.110	0.600	
0.04	--	B	4AM26 42-5AV00-0EB0		0.150	0.800	B	4AM26 42-5AV00-0EB1		0.150	0.800	
Degree of protection IP23												
0.023	--	B	4AM23 42-5AV00-0EC0		0.110	1.900	B	4AM23 42-5AV00-0EC1		0.110	1.900	
0.036	--	B	4AM26 42-5AV00-0EC0		0.150	2.100	B	4AM26 42-5AV00-0EC1		0.150	2.100	
Degree of protection IP54												
0.02	--	B	4AM23 42-5AV00-0ED0		0.110	1.900	B	4AM23 42-5AV00-0ED1		0.110	1.900	
0.03	--	B	4AM26 42-5AV00-0ED0		0.150	2.100	B	4AM26 42-5AV00-0ED1		0.150	2.100	

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM safety and mains transformers

With one input voltage

Rated input voltage U_{1N} 440 V \pm 5 %,
rated output voltage U_{2N} 24 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ kVA	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5CN00-0EA0		0.110	0.600	B	4AM23 42-5CN00-0EA1		0.110	0.600
0.04	--	B	4AM26 42-5CN00-0EA0		0.150	0.800	B	4AM26 42-5CN00-0EA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5CN00-0EB0		0.110	0.600	B	4AM23 42-5CN00-0EB1		0.110	0.600
0.04	--	B	4AM26 42-5CN00-0EB0		0.150	0.800	B	4AM26 42-5CN00-0EB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5CN00-0EC0		0.110	1.900	B	4AM23 42-5CN00-0EC1		0.110	1.900
0.036	--	B	4AM26 42-5CN00-0EC0		0.150	2.100	B	4AM26 42-5CN00-0EC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5CN00-0ED0		0.110	1.900	B	4AM23 42-5CN00-0ED1		0.110	1.900
0.03	--	B	4AM26 42-5CN00-0ED0		0.150	2.100	B	4AM26 42-5CN00-0ED1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

Rated input voltage U_{1N} 440 V \pm 5 %,
rated output voltage U_{2N} 42 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ kVA	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5CV00-0EA0		0.110	0.600	B	4AM23 42-5CV00-0EA1		0.110	0.600
0.04	--	B	4AM26 42-5CV00-0EA0		0.150	0.800	B	4AM26 42-5CV00-0EA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5CV00-0EB0		0.110	0.600	B	4AM23 42-5CV00-0EB1		0.110	0.600
0.04	--	B	4AM26 42-5CV00-0EB0		0.150	0.800	B	4AM26 42-5CV00-0EB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5CV00-0EC0		0.110	1.900	B	4AM23 42-5CV00-0EC1		0.110	1.900
0.036	--	B	4AM26 42-5CV00-0EC0		0.150	2.100	B	4AM26 42-5CV00-0EC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5CV00-0ED0		0.110	1.900	B	4AM23 42-5CV00-0ED1		0.110	1.900
0.03	--	B	4AM26 42-5CV00-0ED0		0.150	2.100	B	4AM26 42-5CV00-0ED1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM
 safety and mains transformers

With one input voltage

 Rated input voltage U_{1N} 500 V \pm 5 %,
 rated output voltage U_{2N} 24 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx.	Total weight per PU approx.	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
			Order No.	Price per PU				Order No.	Price per PU		
kVA	kVA				kg	kg			kg	kg	
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5FN00-0EA0		0.110	0.600	B	4AM23 42-5FN00-0EA1		0.110	0.600
0.04	--	B	4AM26 42-5FN00-0EA0		0.150	0.800	B	4AM26 42-5FN00-0EA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5FN00-0EB0		0.110	0.600	B	4AM23 42-5FN00-0EB1		0.110	0.600
0.04	--	B	4AM26 42-5FN00-0EB0		0.150	0.800	B	4AM26 42-5FN00-0EB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5FN00-0EC0		0.110	1.900	B	4AM23 42-5FN00-0EC1		0.110	1.900
0.036	--	B	4AM26 42-5FN00-0EC0		0.150	2.100	B	4AM26 42-5FN00-0EC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5FN00-0ED0		0.110	1.900	B	4AM23 42-5FN00-0ED1		0.110	1.900
0.03	--	B	4AM26 42-5FN00-0ED0		0.150	2.100	B	4AM26 42-5FN00-0ED1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

 Rated input voltage U_{1N} 500 V \pm 5 %,
 rated output voltage U_{2N} 42 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx.	Total weight per PU approx.	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
			Order No.	Price per PU				Order No.	Price per PU		
kVA	kVA				kg	kg			kg	kg	
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5FV00-0EA0		0.110	0.600	B	4AM23 42-5FV00-0EA1		0.110	0.600
0.04	--	B	4AM26 42-5FV00-0EA0		0.150	0.800	B	4AM26 42-5FV00-0EA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5FV00-0EB0		0.110	0.600	B	4AM23 42-5FV00-0EB1		0.110	0.600
0.04	--	B	4AM26 42-5FV00-0EB0		0.150	0.800	B	4AM26 42-5FV00-0EB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5FV00-0EC0		0.110	1.900	B	4AM23 42-5FV00-0EC1		0.110	1.900
0.036	--	B	4AM26 42-5FV00-0EC0		0.150	2.100	B	4AM26 42-5FV00-0EC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5FV00-0ED0		0.110	1.900	B	4AM23 42-5FV00-0ED1		0.110	1.900
0.03	--	B	4AM26 42-5FV00-0ED0		0.150	2.100	B	4AM26 42-5FV00-0ED1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT isolating, control and mains transformers

Overview

- According to EN 61558-2-4, -2-2, -2-1
- **cULus**¹⁾
- 4AM: $t_a = 40\text{ °C/B}$, 4AT: $t_a = 55\text{ °C/H}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54



4AM with screw/flat connectors (left) and 4AT with screw terminals (right)



¹⁾ **cULus** approvals for voltages $\leq 600\text{ V}$ (excluding tappings).

Selection and ordering data

With one input voltage

Rated input voltage $U_{1N} 230\text{ V} \pm 5\%$,
rated output voltage $U_{2N} 110\text{ V}$
Degree of protection IP00



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$ ¹⁾	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
			Order No.	Price per PU				Order No.	Price per PU		
kVA	kVA				kg	kg				kg	kg
Degree of protection IP00, standard version⁴⁾											
0.063	0.19		▶ 4AM32 42-4TJ10-0FA0		0.240	1.400	B	4AM32 42-4TJ10-0FA1		0.240	1.400
0.1	0.31		▶ 4AM34 42-4TJ10-0FA0		0.260	2.000	B	4AM34 42-4TJ10-0FA1		0.260	2.000
0.16	0.49		▶ 4AM38 42-4TJ10-0FA0		0.320	2.700	▶	4AM38 42-4TJ10-0FA1		0.320	2.700
0.25	0.85		▶ 4AM40 42-4TJ10-0FA0		0.590	3.700	B	4AM40 42-4TJ10-0FA1		0.590	3.700
0.315	1.12		▶ 4AM43 42-4TJ10-0FA0		0.670	4.500	B	4AM43 42-4TJ10-0FA1		0.670	4.500
0.4	1.44		▶ 4AM46 42-4TJ10-0FA0		1.100	5.400	B	4AM46 42-4TJ10-0FA1		1.100	5.400
0.5	2		▶ 4AM48 42-4TJ10-0FA0		1.100	7.000	B	4AM48 42-4TJ10-0FA1		1.100	7.000
0.63	2.35		▶ 4AM52 42-4TJ10-0FA0		1.700	7.900	B	4AM52 42-4TJ10-0FA1		1.700	7.900
0.8	3.4		▶ 4AM55 42-4TJ10-0FA0		1.900	11.000	B	4AM55 42-4TJ10-0FA1		1.900	11.000
1	5		▶ 4AM57 42-4TJ10-0FA0		2.000	14.000	B	4AM57 42-4TJ10-0FA1		2.000	14.000
1.6	7.3	B	▶ 4AM61 42-4TJ10-0FA0		4.100	19.000	B	4AM61 42-4TJ10-0FA1		4.100	19.000
2	9.7	B	▶ 4AM64 42-4TJ10-0FA0		4.700	23.000	B	4AM64 42-4TJ10-0FA1		4.700	23.000
2.5	13.3	B	▶ 4AM65 42-4TJ10-0FA0		6.400	29.000	B	4AM65 42-4TJ10-0FA1		6.400	29.000
4	16	C	▶ 4AT30 32-4TJ10-0FA0		9.900	30.300	--	--		--	--
5	18.5	C	▶ 4AT36 12-4TJ10-0FA0		6.900	33.700	--	--		--	--
6.3	22.5	C	▶ 4AT36 32-4TJ10-0FA0		11.300	39.600	--	--		--	--
8	28.5	C	▶ 4AT39 12-4TJ10-0FA0		12.800	47.900	--	--		--	--
10	30	C	▶ 4AT39 32-4TJ10-0FA0		22.100	57.100	--	--		--	--
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19		▶ 4AM32 42-4TJ10-0FA0		0.240	1.400	B	4AM32 42-4TJ10-0FA1		0.240	1.400
0.1	0.31		▶ 4AM34 42-4TJ10-0FA0		0.260	2.000	B	4AM34 42-4TJ10-0FA1		0.260	2.000
0.16	0.49		▶ 4AM38 42-4TJ10-0FA0		0.320	2.700	▶	4AM38 42-4TJ10-0FA1		0.320	2.700
0.25	0.85		▶ 4AM40 42-4TJ10-0FA0		0.590	3.700	B	4AM40 42-4TJ10-0FA1		0.590	3.700
0.315	1.12	B	▶ 4AM43 42-4TJ10-0FB0		0.670	4.500	B	4AM43 42-4TJ10-0FB1		0.670	4.500
0.4	1.44	B	▶ 4AM46 42-4TJ10-0FB0		1.100	5.400	B	4AM46 42-4TJ10-0FB1		1.100	5.400
0.5	2	B	▶ 4AM48 42-4TJ10-0FB0		1.100	7.000	B	4AM48 42-4TJ10-0FB1		1.100	7.000

For degrees of protection IP23 and IP54 see page 10/25.

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
isolating, control and mains transformers

With one input voltage

Rated input voltage U_{1N} 230 V \pm 5 %,

rated output voltage U_{2N} 110 V

Degree of protection IP23, IP54



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating P_{short} 1)	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
			Order No.	Price per PU				Order No.	Price per PU		
kVA	kVA				kg	kg				kg	kg
Degree of protection IP23											
0.057	0.19	B	4AM32 42-4TJ10-0FC0		0.240	2.700	B	4AM32 42-4TJ10-0FC1		0.240	2.700
0.09	0.31	B	4AM34 42-4TJ10-0FC0		0.260	3.300	B	4AM34 42-4TJ10-0FC1		0.260	3.300
0.145	0.49	B	4AM38 42-4TJ10-0FC0		0.320	5.600	B	4AM38 42-4TJ10-0FC1		0.320	5.600
0.225	0.85	B	4AM40 42-4TJ10-0FC0		0.590	6.600	B	4AM40 42-4TJ10-0FC1		0.590	6.600
0.268	1.12	B	4AM43 42-4TJ10-0FC0		0.670	7.400	B	4AM43 42-4TJ10-0FC1		0.670	7.400
0.34	1.44	B	4AM46 42-4TJ10-0FC0		1.100	8.300	B	4AM46 42-4TJ10-0FC1		1.100	8.300
0.425	2	B	4AM48 42-4TJ10-0FC0		1.100	9.900	B	4AM48 42-4TJ10-0FC1		1.100	9.900
0.535	2.35	B	4AM52 42-4TJ10-0FC0		1.700	10.800	B	4AM52 42-4TJ10-0FC1		1.700	10.800
0.68	3.4	B	4AM55 42-4TJ10-0FC0		1.900	13.900	B	4AM55 42-4TJ10-0FC1		1.900	13.900
0.85	5	B	4AM57 42-4TJ10-0FC0		2.000	16.900	B	4AM57 42-4TJ10-0FC1		2.000	16.900
1.36	7.3	B	4AM61 42-4TJ10-0FC0		4.100	26.700	B	4AM61 42-4TJ10-0FC1		4.100	26.700
1.7	9.7	B	4AM64 42-4TJ10-0FC0		4.700	30.700	B	4AM64 42-4TJ10-0FC1		4.700	30.700
2.13	13.3	B	4AM65 42-4TJ10-0FC0		6.400	36.700	B	4AM65 42-4TJ10-0FC1		6.400	36.700
3.6	16	C	4AT30 32-4TJ10-0FC0		9.900	38.000	--				
4.5	18.5	C	4AT36 12-4TJ10-0FC0		6.900	41.400	--				
5.6	22.5	C	4AT36 32-4TJ10-0FC0		11.300	47.300	--				
7.1	28.5	C	4AT39 12-4TJ10-0FC0		12.800	61.800	--				
9	30	C	4AT39 32-4TJ10-0FC0		22.100	71.000	--				
Degree of protection IP54											
0.05	0.19	B	4AM32 42-4TJ10-0FD0		0.240	2.700	B	4AM32 42-4TJ10-0FD1		0.240	2.700
0.08	0.31	B	4AM34 42-4TJ10-0FD0		0.260	3.300	B	4AM34 42-4TJ10-0FD1		0.260	3.300
0.128	0.49	B	4AM38 42-4TJ10-0FD0		0.320	5.600	B	4AM38 42-4TJ10-0FD1		0.320	5.600
0.2	0.85	B	4AM40 42-4TJ10-0FD0		0.590	6.600	B	4AM40 42-4TJ10-0FD1		0.590	6.600
0.236	1.12	B	4AM43 42-4TJ10-0FD0		0.670	7.400	B	4AM43 42-4TJ10-0FD1		0.670	7.400
0.3	1.44	B	4AM46 42-4TJ10-0FD0		1.100	8.300	B	4AM46 42-4TJ10-0FD1		1.100	8.300
0.375	2	B	4AM48 42-4TJ10-0FD0		1.100	9.900	B	4AM48 42-4TJ10-0FD1		1.100	9.900
0.475	2.35	B	4AM52 42-4TJ10-0FD0		1.700	10.800	B	4AM52 42-4TJ10-0FD1		1.700	10.800
0.6	3.4	B	4AM55 42-4TJ10-0FD0		1.900	13.900	B	4AM55 42-4TJ10-0FD1		1.900	13.900
0.75	5	B	4AM57 42-4TJ10-0FD0		2.000	16.900	B	4AM57 42-4TJ10-0FD1		2.000	16.900
1.2	7.3	B	4AM61 42-4TJ10-0FD0		4.100	26.700	B	4AM61 42-4TJ10-0FD1		4.100	26.700
1.5	9.7	B	4AM64 42-4TJ10-0FD0		4.700	30.700	B	4AM64 42-4TJ10-0FD1		4.700	30.700
1.875	13.3	B	4AM65 42-4TJ10-0FD0		6.400	36.700	B	4AM65 42-4TJ10-0FD1		6.400	36.700
3.15	16	C	4AT30 32-4TJ10-0FD0		9.900	38.000	--				
4	18.5	C	4AT36 12-4TJ10-0FD0		6.900	41.400	--				
5	22.5	C	4AT36 32-4TJ10-0FD0		11.300	47.300	--				
6.3	28.5	C	4AT39 12-4TJ10-0FD0		12.800	61.800	--				
8	30	C	4AT39 32-4TJ10-0FD0		22.100	71.000	--				

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) The 4AT types are only supplied with screw terminals.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT isolating, control and mains transformers

With one input voltage

Rated input voltage U_{1N} 230 V \pm 5 %,
rated output voltage U_{2N} 2 \times 115 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version⁴⁾						
0.063	0.19	B	4AM32 42-4TD40-0FA0		0.240	1.400
0.1	0.31	B	4AM34 42-4TD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-4TD40-0FA0		0.350	2.700
0.25	0.85	B	4AM40 42-4TD40-0FA0		0.590	3.700
0.315	1.12	B	4AM43 42-4TD40-0FA0		0.670	4.500
0.4	1.44	B	4AM46 42-4TD40-0FA0		1.100	5.400
0.5	2	B	4AM48 42-4TD40-0FA0		1.100	7.000
0.63	2.35	B	4AM52 42-4TD40-0FA0		1.170	7.900
0.8	3.4	B	4AM55 42-4TD40-0FA0		1.900	11.000
1	5	B	4AM57 42-4TD40-0FA0		2.000	14.000
1.6	7.3	B	4AM61 42-4TD40-0FA0		4.320	19.000
2	9.7	B	4AM64 42-4TD40-0FA0		4.700	23.000
2.5	13.3	B	4AM65 42-4TD40-0FA0		6.400	29.000
4	16	C	4AT30 32-4TD40-0FA0		9.900	30.300
5	18.5	C	4AT36 12-4TD40-0FA0		6.900	33.700
6.3	22.5	C	4AT36 32-4TD40-0FA0		11.300	39.600
8	28.5	C	4AT39 12-4TD40-0FA0		12.800	47.900
10	30	C	4AT39 32-4TD40-0FA0		22.100	57.100
Degree of protection IP00, standard rail mounting⁴⁾						
0.063	0.19	B	4AM32 42-4TD40-0FA0		0.240	1.400
0.1	0.31	B	4AM34 42-4TD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-4TD40-0FA0		0.350	2.700
0.25	0.85	B	4AM40 42-4TD40-0FA0		0.590	3.700
0.315	1.12	B	4AM43 42-4TD40-0FB0		0.740	4.500
0.4	1.44	B	4AM46 42-4TD40-0FB0		1.100	5.400
0.5	2	B	4AM48 42-4TD40-0FB0		1.100	7.000
Degree of protection IP23						
0.057	0.19	B	4AM32 42-4TD40-0FC0		0.240	2.700
0.09	0.31	B	4AM34 42-4TD40-0FC0		0.260	3.300
0.145	0.49	B	4AM38 42-4TD40-0FC0		0.320	5.600
0.225	0.85	B	4AM40 42-4TD40-0FC0		0.590	6.600
0.268	1.12	B	4AM43 42-4TD40-0FC0		0.670	7.400
0.34	1.44	B	4AM46 42-4TD40-0FC0		1.100	8.300
0.425	2	B	4AM48 42-4TD40-0FC0		1.100	9.900
0.535	2.35	B	4AM52 42-4TD40-0FC0		1.700	10.800
0.68	3.4	B	4AM55 42-4TD40-0FC0		1.900	13.900
0.85	5	B	4AM57 42-4TD40-0FC0		2.000	16.900
1.36	7.3	B	4AM61 42-4TD40-0FC0		4.100	26.700
1.7	9.7	B	4AM64 42-4TD40-0FC0		4.700	30.700
2.13	13.3	B	4AM65 42-4TD40-0FC0		6.400	36.700
3.6	16	C	4AT30 32-4TD40-0FC0		9.900	38.000
4.5	18.5	C	4AT36 12-4TD40-0FC0		6.900	41.400
5.6	22.5	C	4AT36 32-4TD40-0FC0		11.300	47.300
7.1	28.5	C	4AT39 12-4TD40-0FC0		12.800	61.800
9	30	C	4AT39 32-4TD40-0FC0		22.100	71.000
Degree of protection IP54						
0.05	0.19	B	4AM32 42-4TD40-0FD0		0.240	2.700
0.08	0.31	B	4AM34 42-4TD40-0FD0		0.260	3.300
0.128	0.49	B	4AM38 42-4TD40-0FD0		0.320	5.600
0.2	0.85	B	4AM40 42-4TD40-0FD0		0.590	6.600
0.236	1.12	B	4AM43 42-4TD40-0FD0		0.670	7.400
0.3	1.44	B	4AM46 42-4TD40-0FD0		1.100	8.300
0.375	2	B	4AM48 42-4TD40-0FD0		1.100	9.900
0.475	2.35	B	4AM52 42-4TD40-0FD0		1.700	10.800
0.6	3.4	B	4AM55 42-4TD40-0FD0		1.900	13.900
0.75	5	B	4AM57 42-4TD40-0FD0		2.000	16.900
1.2	7.3	B	4AM61 42-4TD40-0FD0		4.100	26.700
1.5	9.7	B	4AM64 42-4TD40-0FD0		4.700	30.700
1.875	13.3	B	4AM65 42-4TD40-0FD0		6.400	36.700
3.15	16	C	4AT30 32-4TD40-0FD0		9.900	38.000
4	18.5	C	4AT36 12-4TD40-0FD0		6.900	41.400
5	22.5	C	4AT36 32-4TD40-0FD0		11.300	47.300
6.3	28.5	C	4AT39 12-4TD40-0FD0		12.800	61.800
8	30	C	4AT39 32-4TD40-0FD0		22.100	71.000

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
 isolating, control and mains transformers

With one input voltage

 Rated input voltage $U_{1N} 230 V \pm 5 \%$,
 rated output voltage $U_{2N} 230 V$

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾	Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA			kg	kg			kg	kg
Degree of protection IP00, standard version⁴⁾									
0.063	0.19	▶	4AM32 42-4TT10-OFA0	0.240	1.400	B	4AM32 42-4TT10-OFA1	0.240	1.400
0.1	0.31	▶	4AM34 42-4TT10-OFA0	0.260	2.000	B	4AM34 42-4TT10-OFA1	0.260	2.000
0.16	0.49	▶	4AM38 42-4TT10-OFA0	0.320	2.700	B	4AM38 42-4TT10-OFA1	0.320	2.700
0.25	0.85	▶	4AM40 42-4TT10-OFA0	0.590	3.700	B	4AM40 42-4TT10-OFA1	0.590	3.700
0.315	1.12	▶	4AM43 42-4TT10-OFA0	0.670	4.500	B	4AM43 42-4TT10-OFA1	0.670	4.500
0.4	1.44	▶	4AM46 42-4TT10-OFA0	1.100	5.400	B	4AM46 42-4TT10-OFA1	1.100	5.400
0.5	2	▶	4AM48 42-4TT10-OFA0	1.100	7.000	B	4AM48 42-4TT10-OFA1	1.100	7.000
0.63	2.35	▶	4AM52 42-4TT10-OFA0	1.700	7.900	B	4AM52 42-4TT10-OFA1	1.700	7.900
0.8	3.4	▶	4AM55 42-4TT10-OFA0	1.900	11.000	B	4AM55 42-4TT10-OFA1	1.900	11.000
1	5	▶	4AM57 42-4TT10-OFA0	2.000	14.000	B	4AM57 42-4TT10-OFA1	2.000	14.000
1.6	7.3	▶	4AM61 42-4TT10-OFA0	4.100	19.000	B	4AM61 42-4TT10-OFA1	4.100	19.000
2	9.7	▶	4AM64 42-4TT10-OFA0	4.700	23.000	B	4AM64 42-4TT10-OFA1	4.700	23.000
2.5	13.3	▶	4AM65 42-4TT10-OFA0	6.400	29.000	B	4AM65 42-4TT10-OFA1	6.400	29.000
4	16	▶	4AT30 32-4TT10-OFA0	9.900	30.300	--	--	--	--
5	18.5	C	4AT36 12-4TT10-OFA0	6.900	33.700	--	--	--	--
6.3	22.5	C	4AT36 32-4TT10-OFA0	11.300	39.600	--	--	--	--
8	28.5	C	4AT39 12-4TT10-OFA0	12.800	47.900	--	--	--	--
10	30	C	4AT39 32-4TT10-OFA0	22.100	57.100	--	--	--	--
Degree of protection IP00, standard rail mounting⁴⁾									
0.063	0.19	▶	4AM32 42-4TT10-OFA0	0.240	1.400	B	4AM32 42-4TT10-OFA1	0.240	1.400
0.1	0.31	▶	4AM34 42-4TT10-OFA0	0.260	2.000	B	4AM34 42-4TT10-OFA1	0.260	2.000
0.16	0.49	▶	4AM38 42-4TT10-OFA0	0.320	2.700	B	4AM38 42-4TT10-OFA1	0.320	2.700
0.25	0.85	▶	4AM40 42-4TT10-OFA0	0.590	3.700	B	4AM40 42-4TT10-OFA1	0.590	3.700
0.315	1.12	B	4AM43 42-4TT10-OFB0	0.670	4.500	B	4AM43 42-4TT10-OFB1	0.670	4.500
0.4	1.44	B	4AM46 42-4TT10-OFB0	1.100	5.400	B	4AM46 42-4TT10-OFB1	1.100	5.400
0.5	2	B	4AM48 42-4TT10-OFB0	1.100	7.000	B	4AM48 42-4TT10-OFB1	1.100	7.000
Degree of protection IP23									
0.057	0.19	B	4AM32 42-4TT10-0FC0	0.240	2.700	B	4AM32 42-4TT10-0FC1	0.240	2.700
0.09	0.31	B	4AM34 42-4TT10-0FC0	0.260	3.300	B	4AM34 42-4TT10-0FC1	0.260	3.300
0.145	0.49	B	4AM38 42-4TT10-0FC0	0.320	5.600	B	4AM38 42-4TT10-0FC1	0.320	5.600
0.225	0.85	B	4AM40 42-4TT10-0FC0	0.590	6.600	B	4AM40 42-4TT10-0FC1	0.590	6.600
0.268	1.12	B	4AM43 42-4TT10-0FC0	0.670	7.400	B	4AM43 42-4TT10-0FC1	0.670	7.400
0.34	1.44	B	4AM46 42-4TT10-0FC0	1.100	8.300	B	4AM46 42-4TT10-0FC1	1.100	8.300
0.425	2	B	4AM48 42-4TT10-0FC0	1.100	9.900	B	4AM48 42-4TT10-0FC1	1.100	9.900
0.535	2.35	B	4AM52 42-4TT10-0FC0	1.700	10.800	B	4AM52 42-4TT10-0FC1	1.700	10.800
0.68	3.4	B	4AM55 42-4TT10-0FC0	1.900	13.900	B	4AM55 42-4TT10-0FC1	1.900	13.900
0.85	5	B	4AM57 42-4TT10-0FC0	2.000	16.900	B	4AM57 42-4TT10-0FC1	2.000	16.900
1.36	7.3	B	4AM61 42-4TT10-0FC0	4.100	26.700	B	4AM61 42-4TT10-0FC1	4.100	26.700
1.7	9.7	B	4AM64 42-4TT10-0FC0	4.700	30.700	B	4AM64 42-4TT10-0FC1	4.700	30.700
2.13	13.3	B	4AM65 42-4TT10-0FC0	6.400	36.700	B	4AM65 42-4TT10-0FC1	6.400	36.700
3.6	16	C	4AT30 32-4TT10-0FC0	9.900	38.000	--	--	--	--
4.5	18.5	C	4AT36 12-4TT10-0FC0	6.900	41.400	--	--	--	--
5.6	22.5	C	4AT36 32-4TT10-0FC0	11.300	47.300	--	--	--	--
7.1	28.5	C	4AT39 12-4TT10-0FC0	12.800	61.800	--	--	--	--
9	30	C	4AT39 32-4TT10-0FC0	22.100	71.000	--	--	--	--
Degree of protection IP54									
0.05	0.19	B	4AM32 42-4TT10-0FD0	0.240	2.700	B	4AM32 42-4TT10-0FD1	0.240	2.700
0.08	0.31	B	4AM34 42-4TT10-0FD0	0.260	3.300	B	4AM34 42-4TT10-0FD1	0.260	3.300
0.128	0.49	B	4AM38 42-4TT10-0FD0	0.320	5.600	B	4AM38 42-4TT10-0FD1	0.320	5.600
0.2	0.85	B	4AM40 42-4TT10-0FD0	0.590	6.600	B	4AM40 42-4TT10-0FD1	0.590	6.600
0.236	1.12	B	4AM43 42-4TT10-0FD0	0.670	7.400	B	4AM43 42-4TT10-0FD1	0.670	7.400
0.3	1.44	B	4AM46 42-4TT10-0FD0	1.100	8.300	B	4AM46 42-4TT10-0FD1	1.100	8.300
0.375	2	B	4AM48 42-4TT10-0FD0	1.100	9.900	B	4AM48 42-4TT10-0FD1	1.100	9.900
0.475	2.35	B	4AM52 42-4TT10-0FD0	1.700	10.800	B	4AM52 42-4TT10-0FD1	1.700	10.800
0.6	3.4	B	4AM55 42-4TT10-0FD0	1.900	13.900	B	4AM55 42-4TT10-0FD1	1.830	13.900
0.75	5	B	4AM57 42-4TT10-0FD0	2.000	16.900	B	4AM57 42-4TT10-0FD1	2.000	16.900
1.2	7.3	B	4AM61 42-4TT10-0FD0	4.100	26.700	B	4AM61 42-4TT10-0FD1	4.100	26.700
1.5	9.7	B	4AM64 42-4TT10-0FD0	4.700	30.700	B	4AM64 42-4TT10-0FD1	4.700	30.700
1.875	13.3	B	4AM65 42-4TT10-0FD0	6.400	36.700	B	4AM65 42-4TT10-0FD1	6.400	36.700
3.15	16	C	4AT30 32-4TT10-0FD0	9.900	38.000	--	--	--	--
4	18.5	C	4AT36 12-4TT10-0FD0	6.900	41.400	--	--	--	--
5	22.5	C	4AT36 32-4TT10-0FD0	11.300	47.300	--	--	--	--
6.3	28.5	C	4AT39 12-4TT10-0FD0	12.800	61.800	--	--	--	--
8	30	C	4AT39 32-4TT10-0FD0	22.100	71.000	--	--	--	--

 1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) The 4AT types are only supplied with screw terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT isolating, control and mains transformers

With one input voltage

Rated input voltage $U_{1N} 400 V \pm 5 \%$,
rated output voltage $U_{2N} 110 V$



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version⁴⁾											
0.063	0.19	▶	4AM32 42-5AJ10-0FA0		0.240	1.400	B	4AM32 42-5AJ10-0FA1		0.240	1.400
0.1	0.31	▶	4AM34 42-5AJ10-0FA0		0.260	2.000	B	4AM34 42-5AJ10-0FA1		0.260	2.000
0.16	0.49	▶	4AM38 42-5AJ10-0FA0		0.320	2.700	B	4AM38 42-5AJ10-0FA1		0.320	2.700
0.25	0.85	▶	4AM40 42-5AJ10-0FA0		0.590	3.700	B	4AM40 42-5AJ10-0FA1		0.590	3.700
0.315	1.12	▶	4AM43 42-5AJ10-0FA0		0.670	4.500	B	4AM43 42-5AJ10-0FA1		0.670	4.500
0.4	1.44	▶	4AM46 42-5AJ10-0FA0		1.100	5.400	B	4AM46 42-5AJ10-0FA1		1.100	5.400
0.5	2	▶	4AM48 42-5AJ10-0FA0		1.100	7.000	B	4AM48 42-5AJ10-0FA1		1.100	7.000
0.63	2.35	▶	4AM52 42-5AJ10-0FA0		1.700	7.900	B	4AM52 42-5AJ10-0FA1		1.700	7.900
0.8	3.4	▶	4AM55 42-5AJ10-0FA0		1.900	11.000	B	4AM55 42-5AJ10-0FA1		1.900	11.000
1	5	▶	4AM57 42-5AJ10-0FA0		2.000	14.000	B	4AM57 42-5AJ10-0FA1		2.000	14.000
1.6	7.3	▶	4AM61 42-5AJ10-0FA0		4.100	19.000	B	4AM61 42-5AJ10-0FA1		4.100	19.000
2	9.7	▶	4AM64 42-5AJ10-0FA0		4.700	23.000	B	4AM64 42-5AJ10-0FA1		4.700	23.000
2.5	13.3	▶	4AM65 42-5AJ10-0FA0		6.400	29.000	B	4AM65 42-5AJ10-0FA1		6.400	29.000
4	16	C	4AT30 32-5AJ10-0FA0		9.900	30.300	--				
5	18.5	C	4AT36 12-5AJ10-0FA0		6.900	33.700	--				
6.3	22.5	C	4AT36 32-5AJ10-0FA0		11.300	39.600	--				
8	28.5	C	4AT39 12-5AJ10-0FA0		12.800	47.900	--				
10	30	C	4AT39 32-5AJ10-0FA0		22.100	57.100	--				
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19	▶	4AM32 42-5AJ10-0FA0		0.240	1.400	B	4AM32 42-5AJ10-0FA1		0.240	1.400
0.1	0.31	▶	4AM34 42-5AJ10-0FA0		0.260	2.000	B	4AM34 42-5AJ10-0FA1		0.260	2.000
0.16	0.49	▶	4AM38 42-5AJ10-0FA0		0.320	2.700	B	4AM38 42-5AJ10-0FA1		0.320	2.700
0.25	0.85	▶	4AM40 42-5AJ10-0FA0		0.590	3.700	B	4AM40 42-5AJ10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5AJ10-0FB0		0.670	4.500	B	4AM43 42-5AJ10-0FB1		0.670	4.500
0.4	1.44	B	4AM46 42-5AJ10-0FB0		1.100	5.400	B	4AM46 42-5AJ10-0FB1		1.100	5.400
0.5	2	B	4AM48 42-5AJ10-0FB0		1.100	7.000	B	4AM48 42-5AJ10-0FB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5AJ10-0FC0		0.240	2.700	B	4AM32 42-5AJ10-0FC1		0.240	2.700
0.09	0.31	B	4AM34 42-5AJ10-0FC0		0.260	3.300	B	4AM34 42-5AJ10-0FC1		0.260	3.300
0.145	0.49	B	4AM38 42-5AJ10-0FC0		0.320	5.600	B	4AM38 42-5AJ10-0FC1		0.320	5.600
0.225	0.85	B	4AM40 42-5AJ10-0FC0		0.590	6.600	B	4AM40 42-5AJ10-0FC1		0.590	6.600
0.268	1.12	B	4AM43 42-5AJ10-0FC0		0.670	7.400	B	4AM43 42-5AJ10-0FC1		0.670	7.400
0.34	1.44	B	4AM46 42-5AJ10-0FC0		1.100	8.300	B	4AM46 42-5AJ10-0FC1		1.100	8.300
0.425	2	B	4AM48 42-5AJ10-0FC0		1.100	9.900	B	4AM48 42-5AJ10-0FC1		1.100	9.900
0.535	2.35	B	4AM52 42-5AJ10-0FC0		1.700	10.800	B	4AM52 42-5AJ10-0FC1		1.700	10.800
0.68	3.4	B	4AM55 42-5AJ10-0FC0		1.900	13.900	B	4AM55 42-5AJ10-0FC1		1.900	13.900
0.85	5	B	4AM57 42-5AJ10-0FC0		2.000	16.900	B	4AM57 42-5AJ10-0FC1		2.000	16.900
1.36	7.3	B	4AM61 42-5AJ10-0FC0		4.100	26.700	B	4AM61 42-5AJ10-0FC1		4.100	26.700
1.7	9.7	B	4AM64 42-5AJ10-0FC0		4.700	30.700	B	4AM64 42-5AJ10-0FC1		4.700	30.700
2.13	13.3	B	4AM65 42-5AJ10-0FC0		6.400	36.700	B	4AM65 42-5AJ10-0FC1		6.400	36.700
3.6	16	C	4AT30 32-5AJ10-0FC0		9.900	38.000	--				
4.5	18.5	C	4AT36 12-5AJ10-0FC0		6.900	41.400	--				
5.6	22.5	C	4AT36 32-5AJ10-0FC0		11.300	47.300	--				
7.1	28.5	C	4AT39 12-5AJ10-0FC0		12.800	61.800	--				
9	30	C	4AT39 32-5AJ10-0FC0		22.100	71.000	--				
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5AJ10-0FD0		0.240	2.700	B	4AM32 42-5AJ10-0FD1		0.240	2.700
0.08	0.31	B	4AM34 42-5AJ10-0FD0		0.260	3.300	B	4AM34 42-5AJ10-0FD1		0.260	3.300
0.128	0.49	B	4AM38 42-5AJ10-0FD0		0.320	5.600	B	4AM38 42-5AJ10-0FD1		0.320	5.600
0.2	0.85	B	4AM40 42-5AJ10-0FD0		0.590	6.600	B	4AM40 42-5AJ10-0FD1		0.590	6.600
0.236	1.12	B	4AM43 42-5AJ10-0FD0		0.670	7.400	B	4AM43 42-5AJ10-0FD1		0.670	7.400
0.3	1.44	B	4AM46 42-5AJ10-0FD0		1.100	8.300	B	4AM46 42-5AJ10-0FD1		1.100	8.300
0.375	2	B	4AM48 42-5AJ10-0FD0		1.100	9.900	B	4AM48 42-5AJ10-0FD1		1.100	9.900
0.475	2.35	B	4AM52 42-5AJ10-0FD0		1.700	10.800	B	4AM52 42-5AJ10-0FD1		1.700	10.800
0.6	3.4	B	4AM55 42-5AJ10-0FD0		1.900	13.900	B	4AM55 42-5AJ10-0FD1		1.900	13.900
0.75	5	B	4AM57 42-5AJ10-0FD0		2.000	16.900	B	4AM57 42-5AJ10-0FD1		2.000	16.900
1.2	7.3	B	4AM61 42-5AJ10-0FD0		4.100	26.700	B	4AM61 42-5AJ10-0FD1		4.100	26.700
1.5	9.7	B	4AM64 42-5AJ10-0FD0		4.700	30.700	B	4AM64 42-5AJ10-0FD1		4.700	30.700
1.875	13.3	B	4AM65 42-5AJ10-0FD0		6.400	36.700	B	4AM65 42-5AJ10-0FD1		6.400	36.700
3.15	16	C	4AT30 32-5AJ10-0FD0		9.900	38.000	--				
4	18.5	C	4AT36 12-5AJ10-0FD0		6.900	41.400	--				
5	22.5	C	4AT36 32-5AJ10-0FD0		11.300	47.300	--				
6.3	28.5	C	4AT39 12-5AJ10-0FD0		12.800	61.800	--				
8	30	C	4AT39 32-5AJ10-0FD0		22.100	71.000	--				

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) The 4AT types are only supplied with screw terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
 isolating, control and mains transformers

With one input voltage

 Rated input voltage U_{1N} 400 V \pm 5 %,
 rated output voltage U_{2N} 2 \times 115 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}$ ¹⁾	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version⁴⁾						
0.063	0.19	B	4AM32 42-5AD40-0FA0		0.300	1.400
0.1	0.31	B	4AM34 42-5AD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-5AD40-0FA0		0.360	2.700
0.25	0.85	B	4AM40 42-5AD40-0FA0		0.650	3.700
0.315	1.12	B	4AM43 42-5AD40-0FA0		0.670	4.500
0.4	1.44	B	4AM46 42-5AD40-0FA0		1.100	5.400
0.5	2	B	4AM48 42-5AD40-0FA0		1.100	7.000
0.63	2.35	B	4AM52 42-5AD40-0FA0		1.700	7.900
0.8	3.4	B	4AM55 42-5AD40-0FA0		1.900	11.000
1	5	B	4AM57 42-5AD40-0FA0		2.000	14.000
1.6	7.3	B	4AM61 42-5AD40-0FA0		4.100	19.000
2	9.7	B	4AM64 42-5AD40-0FA0		4.700	23.000
2.5	13.3	B	4AM65 42-5AD40-0FA0		6.400	29.000
4	16	C	4AT30 32-5AD40-0FA0		9.900	30.300
5	18.5	C	4AT36 12-5AD40-0FA0		6.900	33.700
6.3	22.5	C	4AT36 32-5AD40-0FA0		11.300	39.600
8	28.5	C	4AT39 12-5AD40-0FA0		12.800	47.900
10	30	C	4AT39 32-5AD40-0FA0		22.100	57.100
Degree of protection IP00, standard rail mounting⁴⁾						
0.063	0.19	B	4AM32 42-5AD40-0FA0		0.300	1.400
0.1	0.31	B	4AM34 42-5AD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-5AD40-0FA0		0.360	2.700
0.25	0.85	B	4AM40 42-5AD40-0FA0		0.650	3.700
0.315	1.12	B	4AM43 42-5AD40-0FB0		0.670	4.500
0.4	1.44	B	4AM46 42-5AD40-0FB0		1.100	5.400
0.5	2	B	4AM48 42-5AD40-0FB0		1.100	7.000
Degree of protection IP23						
0.057	0.19	B	4AM32 42-5AD40-0FC0		0.240	2.700
0.09	0.31	B	4AM34 42-5AD40-0FC0		0.260	3.300
0.145	0.49	B	4AM38 42-5AD40-0FC0		0.320	5.600
0.225	0.85	B	4AM40 42-5AD40-0FC0		0.590	6.600
0.268	1.12	B	4AM43 42-5AD40-0FC0		0.670	7.400
0.34	1.44	B	4AM46 42-5AD40-0FC0		1.100	8.300
0.425	2	B	4AM48 42-5AD40-0FC0		1.100	9.900
0.535	2.35	B	4AM52 42-5AD40-0FC0		1.700	10.800
0.68	3.4	B	4AM55 42-5AD40-0FC0		1.900	13.900
0.85	5	B	4AM57 42-5AD40-0FC0		2.000	16.900
1.36	7.3	B	4AM61 42-5AD40-0FC0		4.100	26.700
1.7	9.7	B	4AM64 42-5AD40-0FC0		4.700	30.700
2.13	13.3	B	4AM65 42-5AD40-0FC0		6.400	36.700
3.6	16	C	4AT30 32-5AD40-0FC0		9.900	38.000
4.5	18.5	C	4AT36 12-5AD40-0FC0		6.900	41.400
5.6	22.5	C	4AT36 32-5AD40-0FC0		11.300	47.300
7.1	28.5	C	4AT39 12-5AD40-0FC0		12.800	61.800
9	30	C	4AT39 32-5AD40-0FC0		22.100	71.000
Degree of protection IP54						
0.05	0.19	B	4AM32 42-5AD40-0FD0		0.240	2.700
0.08	0.31	B	4AM34 42-5AD40-0FD0		0.260	3.300
0.128	0.49	B	4AM38 42-5AD40-0FD0		0.320	5.600
0.2	0.85	B	4AM40 42-5AD40-0FD0		0.590	6.600
0.236	1.12	B	4AM43 42-5AD40-0FD0		0.670	7.400
0.3	1.44	B	4AM46 42-5AD40-0FD0		1.100	8.300
0.375	2	B	4AM48 42-5AD40-0FD0		1.100	9.900
0.475	2.35	B	4AM52 42-5AD40-0FD0		1.700	10.800
0.6	3.4	B	4AM55 42-5AD40-0FD0		1.900	13.900
0.75	5	B	4AM57 42-5AD40-0FD0		2.000	16.900
1.2	7.3	B	4AM61 42-5AD40-0FD0		4.100	26.700
1.5	9.7	B	4AM64 42-5AD40-0FD0		4.700	30.700
1.875	13.3	B	4AM65 42-5AD40-0FD0		6.400	36.700
3.15	16	C	4AT30 32-5AD40-0FD0		9.900	38.000
4	18.5	C	4AT36 12-5AD40-0FD0		6.900	41.400
5	22.5	C	4AT36 32-5AD40-0FD0		11.300	47.300
6.3	28.5	C	4AT39 12-5AD40-0FD0		12.800	61.800
8	30	C	4AT39 32-5AD40-0FD0		22.100	71.000

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT isolating, control and mains transformers

With one input voltage

Rated input voltage U_{1N} 400 V \pm 5 %,
rated output voltage U_{2N} 230 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾ Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Degree of protection IP00, standard version⁴⁾											
0.063	0.19		4AM32 42-5AT10-OFA0		0.240	1.400	B	4AM32 42-5AT10-OFA1		0.240	1.400
0.1	0.31		4AM34 42-5AT10-OFA0		0.260	2.000	B	4AM34 42-5AT10-OFA1		0.260	2.000
0.16	0.49		4AM38 42-5AT10-OFA0		0.320	2.700	B	4AM38 42-5AT10-OFA1		0.320	2.700
0.25	0.85		4AM40 42-5AT10-OFA0		0.590	3.700	B	4AM40 42-5AT10-OFA1		0.590	3.700
0.315	1.12		4AM43 42-5AT10-OFA0		0.670	4.500	B	4AM43 42-5AT10-OFA1		0.670	4.500
0.4	1.44		4AM46 42-5AT10-OFA0		1.100	5.400	B	4AM46 42-5AT10-OFA1		1.100	5.400
0.5	2		4AM48 42-5AT10-OFA0		1.100	7.000	B	4AM48 42-5AT10-OFA1		1.100	7.000
0.63	2.35		4AM52 42-5AT10-OFA0		1.700	7.900	B	4AM52 42-5AT10-OFA1		1.700	7.900
0.8	3.4		4AM55 42-5AT10-OFA0		1.900	11.000	B	4AM55 42-5AT10-OFA1		1.900	11.000
1	5		4AM57 42-5AT10-OFA0		2.000	14.000	B	4AM57 42-5AT10-OFA1		2.000	14.000
1.6	7.3		4AM61 42-5AT10-OFA0		4.100	19.000	B	4AM61 42-5AT10-OFA1		4.100	19.000
2	9.7		4AM64 42-5AT10-OFA0		4.700	23.000	B	4AM64 42-5AT10-OFA1		4.700	23.000
2.5	13.3		4AM65 42-5AT10-OFA0		6.400	29.000	B	4AM65 42-5AT10-OFA1		6.400	29.000
4	16		4AT30 32-5AT10-OFA0		9.900	30.300					
5	18.5		4AT36 12-5AT10-OFA0		6.900	33.700					
6.3	22.5		4AT36 32-5AT10-OFA0		11.300	37.000					
8	28.5	C	4AT39 12-5AT10-OFA0		12.800	47.900					
10	30		4AT39 32-5AT10-OFA0		22.100	57.100					
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19		4AM32 42-5AT10-OFA0		0.240	1.400	B	4AM32 42-5AT10-OFA1		0.240	1.400
0.1	0.31		4AM34 42-5AT10-OFA0		0.260	2.000	B	4AM34 42-5AT10-OFA1		0.260	2.000
0.16	0.49		4AM38 42-5AT10-OFA0		0.320	2.700	B	4AM38 42-5AT10-OFA1		0.320	2.700
0.25	0.85		4AM40 42-5AT10-OFA0		0.590	3.700	B	4AM40 42-5AT10-OFA1		0.590	3.700
0.315	1.12	B	4AM43 42-5AT10-OFB0		0.670	4.500	B	4AM43 42-5AT10-OFB1		0.670	4.500
0.4	1.44		4AM46 42-5AT10-OFB0		1.100	5.400	B	4AM46 42-5AT10-OFB1		1.100	5.400
0.5	2		4AM48 42-5AT10-OFB0		1.100	7.000	B	4AM48 42-5AT10-OFB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5AT10-OFC0		0.240	2.700	B	4AM32 42-5AT10-OFC1		0.240	2.700
0.09	0.31	B	4AM34 42-5AT10-OFC0		0.260	3.300	B	4AM34 42-5AT10-OFC1		0.260	3.300
0.145	0.49	B	4AM38 42-5AT10-OFC0		0.320	5.600	B	4AM38 42-5AT10-OFC1		0.320	5.600
0.225	0.85	B	4AM40 42-5AT10-OFC0		0.590	6.600	B	4AM40 42-5AT10-OFC1		0.590	6.600
0.268	1.12	B	4AM43 42-5AT10-OFC0		0.670	7.400	B	4AM43 42-5AT10-OFC1		0.670	7.400
0.34	1.44	B	4AM46 42-5AT10-OFC0		1.100	8.300	B	4AM46 42-5AT10-OFC1		1.100	8.300
0.425	2	B	4AM48 42-5AT10-OFC0		1.100	9.900	B	4AM48 42-5AT10-OFC1		1.100	9.900
0.535	2.35	B	4AM52 42-5AT10-OFC0		1.700	10.800	B	4AM52 42-5AT10-OFC1		1.700	10.800
0.68	3.4	B	4AM55 42-5AT10-OFC0		1.900	13.900	B	4AM55 42-5AT10-OFC1		1.900	13.900
0.85	5	B	4AM57 42-5AT10-OFC0		2.000	16.900	B	4AM57 42-5AT10-OFC1		2.000	16.900
1.36	7.3	B	4AM61 42-5AT10-OFC0		4.100	26.700	B	4AM61 42-5AT10-OFC1		4.100	26.700
1.7	9.7	B	4AM64 42-5AT10-OFC0		4.700	30.700	B	4AM64 42-5AT10-OFC1		4.700	30.700
2.13	13.3	B	4AM65 42-5AT10-OFC0		6.400	36.700	B	4AM65 42-5AT10-OFC1		6.400	36.700
3.6	16	C	4AT30 32-5AT10-OFC0		9.900	38.000					
4.5	18.5	C	4AT36 12-5AT10-OFC0		6.900	41.400					
5.6	22.5	C	4AT36 32-5AT10-OFC0		11.300	47.300					
7.1	28.5	C	4AT39 12-5AT10-OFC0		12.800	61.800					
9	30	C	4AT39 32-5AT10-OFC0		22.100	71.000					
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5AT10-OFD0		0.240	2.700	B	4AM32 42-5AT10-OFD1		0.240	2.700
0.08	0.31	B	4AM34 42-5AT10-OFD0		0.260	3.300	B	4AM34 42-5AT10-OFD1		0.260	3.300
0.128	0.49	B	4AM38 42-5AT10-OFD0		0.320	5.600	B	4AM38 42-5AT10-OFD1		0.320	5.600
0.2	0.85	B	4AM40 42-5AT10-OFD0		0.590	6.600	B	4AM40 42-5AT10-OFD1		0.590	6.600
0.236	1.12	B	4AM43 42-5AT10-OFD0		0.670	7.400	B	4AM43 42-5AT10-OFD1		0.670	7.400
0.3	1.44	B	4AM46 42-5AT10-OFD0		1.100	8.300	B	4AM46 42-5AT10-OFD1		1.100	8.300
0.375	2	B	4AM48 42-5AT10-OFD0		1.100	9.900	B	4AM48 42-5AT10-OFD1		1.100	9.900
0.475	2.35	B	4AM52 42-5AT10-OFD0		1.700	10.800	B	4AM52 42-5AT10-OFD1		1.700	10.800
0.6	3.4	B	4AM55 42-5AT10-OFD0		1.900	13.900	B	4AM55 42-5AT10-OFD1		1.900	13.900
0.75	5	B	4AM57 42-5AT10-OFD0		2.000	16.900	B	4AM57 42-5AT10-OFD1		2.000	16.900
1.2	7.3	B	4AM61 42-5AT10-OFD0		4.100	26.700	B	4AM61 42-5AT10-OFD1		4.100	26.700
1.5	9.7	B	4AM64 42-5AT10-OFD0		4.700	30.700	B	4AM64 42-5AT10-OFD1		4.700	30.700
1.875	13.3	B	4AM65 42-5AT10-OFD0		6.400	36.700	B	4AM65 42-5AT10-OFD1		6.400	36.700
3.15	16	C	4AT30 32-5AT10-OFD0		9.900	38.000					
4	18.5	C	4AT36 12-5AT10-OFD0		6.900	41.400					
5	22.5	C	4AT36 32-5AT10-OFD0		11.300	47.300					
6.3	28.5	C	4AT39 12-5AT10-OFD0		12.800	61.800					
8	30	C	4AT39 32-5AT10-OFD0		22.100	71.000					

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) The 4AT types are only supplied with screw terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
 isolating, control and mains transformers

With one input voltage

 Rated input voltage U_{1N} 440 V ± 5 %,
 rated output voltage U_{2N} 110 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals ^{3)/} flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
Degree of protection IP00, standard version⁴⁾											
0.063	0.19	B	4AM32 42-5CJ10-0FA0		0.240	1.400	B	4AM32 42-5CJ10-0FA1		0.240	1.400
0.1	0.31	B	4AM34 42-5CJ10-0FA0		0.260	2.000	B	4AM34 42-5CJ10-0FA1		0.260	2.000
0.16	0.49	B	4AM38 42-5CJ10-0FA0		0.320	2.700	B	4AM38 42-5CJ10-0FA1		0.320	2.700
0.25	0.85	B	4AM40 42-5CJ10-0FA0		0.590	3.700	B	4AM40 42-5CJ10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5CJ10-0FA0		0.670	4.500	B	4AM43 42-5CJ10-0FA1		0.670	4.500
0.4	1.44	B	4AM46 42-5CJ10-0FA0		1.100	5.400	B	4AM46 42-5CJ10-0FA1		1.100	5.400
0.5	2	B	4AM48 42-5CJ10-0FA0		1.100	7.000	B	4AM48 42-5CJ10-0FA1		1.100	7.000
0.63	2.35	B	4AM52 42-5CJ10-0FA0		1.700	7.900	B	4AM52 42-5CJ10-0FA1		1.700	7.900
0.8	3.4	B	4AM55 42-5CJ10-0FA0		1.900	11.000	B	4AM55 42-5CJ10-0FA1		1.900	11.000
1	5	B	4AM57 42-5CJ10-0FA0		2.000	14.000	B	4AM57 42-5CJ10-0FA1		2.000	14.000
1.6	7.3	B	4AM61 42-5CJ10-0FA0		4.100	19.000	B	4AM61 42-5CJ10-0FA1		4.100	19.000
2	9.7	B	4AM64 42-5CJ10-0FA0		4.700	23.000	B	4AM64 42-5CJ10-0FA1		4.700	23.000
2.5	13.3	B	4AM65 42-5CJ10-0FA0		6.400	29.000	B	4AM65 42-5CJ10-0FA1		6.400	29.000
4	16	C	4AT30 32-5CJ10-0FA0		9.900	30.300	--	--		--	--
5	18.5	C	4AT36 12-5CJ10-0FA0		6.900	33.700	--	--		--	--
6.3	22.5	C	4AT36 32-5CJ10-0FA0		11.300	39.600	--	--		--	--
8	28.5	C	4AT39 12-5CJ10-0FA0		12.800	47.600	--	--		--	--
10	30	C	4AT39 32-5CJ10-0FA0		22.100	57.100	--	--		--	--
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19	B	4AM32 42-5CJ10-0FA0		0.240	1.400	B	4AM32 42-5CJ10-0FA1		0.240	1.400
0.1	0.31	B	4AM34 42-5CJ10-0FA0		0.260	2.000	B	4AM34 42-5CJ10-0FA1		0.260	2.000
0.16	0.49	B	4AM38 42-5CJ10-0FA0		0.320	2.700	B	4AM38 42-5CJ10-0FA1		0.320	2.700
0.25	0.85	B	4AM40 42-5CJ10-0FA0		0.590	3.700	B	4AM40 42-5CJ10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5CJ10-0FB0		0.670	4.500	B	4AM43 42-5CJ10-0FB1		0.670	4.500
0.4	1.44	B	4AM46 42-5CJ10-0FB0		1.100	5.400	B	4AM46 42-5CJ10-0FB1		1.100	5.400
0.5	2	B	4AM48 42-5CJ10-0FB0		1.100	7.000	B	4AM48 42-5CJ10-0FB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5CJ10-0FC0		0.240	2.700	B	4AM32 42-5CJ10-0FC1		0.240	2.700
0.09	0.31	B	4AM34 42-5CJ10-0FC0		0.260	3.300	B	4AM34 42-5CJ10-0FC1		0.260	3.300
0.145	0.49	B	4AM38 42-5CJ10-0FC0		0.320	5.600	B	4AM38 42-5CJ10-0FC1		0.320	5.600
0.225	0.85	B	4AM40 42-5CJ10-0FC0		0.590	6.600	B	4AM40 42-5CJ10-0FC1		0.590	6.600
0.268	1.12	B	4AM43 42-5CJ10-0FC0		0.670	7.400	B	4AM43 42-5CJ10-0FC1		0.670	7.400
0.34	1.44	B	4AM46 42-5CJ10-0FC0		1.100	8.300	B	4AM46 42-5CJ10-0FC1		1.100	8.300
0.425	2	B	4AM48 42-5CJ10-0FC0		1.100	9.900	B	4AM48 42-5CJ10-0FC1		1.100	9.900
0.535	2.35	B	4AM52 42-5CJ10-0FC0		1.700	10.800	B	4AM52 42-5CJ10-0FC1		1.700	10.800
0.68	3.4	B	4AM55 42-5CJ10-0FC0		1.900	13.900	B	4AM55 42-5CJ10-0FC1		1.900	13.900
0.85	5	B	4AM57 42-5CJ10-0FC0		2.000	16.900	B	4AM57 42-5CJ10-0FC1		2.000	16.900
1.36	7.3	B	4AM61 42-5CJ10-0FC0		4.100	26.700	B	4AM61 42-5CJ10-0FC1		4.100	26.700
1.7	9.7	B	4AM64 42-5CJ10-0FC0		4.700	30.700	B	4AM64 42-5CJ10-0FC1		4.700	30.700
2.13	13.3	B	4AM65 42-5CJ10-0FC0		6.400	36.700	B	4AM65 42-5CJ10-0FC1		6.400	36.700
3.6	16	C	4AT30 32-5CJ10-0FC0		9.900	38.000	--	--		--	--
4.5	18.5	C	4AT36 12-5CJ10-0FC0		6.900	41.400	--	--		--	--
5.6	22.5	C	4AT36 32-5CJ10-0FC0		11.300	47.300	--	--		--	--
7.1	28.5	C	4AT39 12-5CJ10-0FC0		12.800	61.800	--	--		--	--
9	30	C	4AT39 32-5CJ10-0FC0		22.100	71.000	--	--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5CJ10-0FD0		0.240	2.700	B	4AM32 42-5CJ10-0FD1		0.240	2.700
0.08	0.31	B	4AM34 42-5CJ10-0FD0		0.260	3.300	B	4AM34 42-5CJ10-0FD1		0.260	3.300
0.128	0.49	B	4AM38 42-5CJ10-0FD0		0.320	5.600	B	4AM38 42-5CJ10-0FD1		0.320	5.600
0.2	0.85	B	4AM40 42-5CJ10-0FD0		0.590	6.600	B	4AM40 42-5CJ10-0FD1		0.590	6.600
0.236	1.12	B	4AM43 42-5CJ10-0FD0		0.670	7.400	B	4AM43 42-5CJ10-0FD1		0.670	7.400
0.3	1.44	B	4AM46 42-5CJ10-0FD0		1.100	8.300	B	4AM46 42-5CJ10-0FD1		1.100	8.300
0.375	2	B	4AM48 42-5CJ10-0FD0		1.100	9.900	B	4AM48 42-5CJ10-0FD1		1.100	9.900
0.475	2.35	B	4AM52 42-5CJ10-0FD0		1.700	10.800	B	4AM52 42-5CJ10-0FD1		1.700	10.800
0.6	3.4	B	4AM55 42-5CJ10-0FD0		1.900	13.900	B	4AM55 42-5CJ10-0FD1		1.900	13.900
0.75	5	B	4AM57 42-5CJ10-0FD0		2.000	16.900	B	4AM57 42-5CJ10-0FD1		2.000	16.900
1.2	7.3	B	4AM61 42-5CJ10-0FD0		4.100	26.700	B	4AM61 42-5CJ10-0FD1		4.100	26.700
1.5	9.7	B	4AM64 42-5CJ10-0FD0		4.700	30.700	B	4AM64 42-5CJ10-0FD1		4.700	30.700
1.875	13.3	B	4AM65 42-5CJ10-0FD0		6.400	36.700	B	4AM65 42-5CJ10-0FD1		6.400	36.700
3.15	16	C	4AT30 32-5CJ10-0FD0		9.900	38.000	--	--		--	--
4	18.5	C	4AT36 12-5CJ10-0FD0		6.900	41.400	--	--		--	--
5	22.5	C	4AT36 32-5CJ10-0FD0		11.300	47.300	--	--		--	--
6.3	28.5	C	4AT39 12-5CJ10-0FD0		12.800	61.800	--	--		--	--
8	30	C	4AT39 32-5CJ10-0FD0		22.100	71.000	--	--		--	--

¹⁾ For $p.f. = 0.5$ and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT isolating, control and mains transformers

With one input voltage

Rated input voltage U_{1N} 440 V \pm 5 %,
rated output voltage U_{2N} 2 \times 115 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals ^{3)/} flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version⁴⁾						
0.063	0.19	B	4AM32 42-5CD40-0FA0		0.240	1.400
0.1	0.31	B	4AM34 42-5CD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-5CD40-0FA0		0.320	2.700
0.25	0.85	B	4AM40 42-5CD40-0FA0		0.590	3.700
0.315	1.12	B	4AM43 42-5CD40-0FA0		0.670	4.500
0.4	1.44	B	4AM46 42-5CD40-0FA0		1.100	5.400
0.5	2	B	4AM48 42-5CD40-0FA0		1.100	7.000
0.63	2.35	B	4AM52 42-5CD40-0FA0		1.700	7.900
0.8	3.4	B	4AM55 42-5CD40-0FA0		1.900	11.000
1	5	B	4AM57 42-5CD40-0FA0		2.000	14.000
1.6	7.3	B	4AM61 42-5CD40-0FA0		4.100	19.000
2	9.7	B	4AM64 42-5CD40-0FA0		4.700	23.000
2.5	13.3	B	4AM65 42-5CD40-0FA0		6.400	29.000
4	16	C	4AT30 32-5CD40-0FA0		9.900	30.300
5	18.5	C	4AT36 12-5CD40-0FA0		6.900	33.700
6.3	22.5	C	4AT36 32-5CD40-0FA0		11.300	39.600
8	28.5	C	4AT39 12-5CD40-0FA0		12.800	47.900
10	30	C	4AT39 32-5CD40-0FA0		22.100	57.100
Degree of protection IP00, standard rail mounting⁴⁾						
0.063	0.19	B	4AM32 42-5CD40-0FA0		0.240	1.400
0.1	0.31	B	4AM34 42-5CD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-5CD40-0FA0		0.320	2.700
0.25	0.85	B	4AM40 42-5CD40-0FA0		0.590	3.700
0.315	1.12	B	4AM43 42-5CD40-0FB0		0.670	4.500
0.4	1.44	B	4AM46 42-5CD40-0FB0		1.100	5.400
0.5	2	B	4AM48 42-5CD40-0FB0		1.100	7.000
Degree of protection IP23						
0.057	0.19	B	4AM32 42-5CD40-0FC0		0.240	2.700
0.09	0.31	B	4AM34 42-5CD40-0FC0		0.260	3.300
0.145	0.49	B	4AM38 42-5CD40-0FC0		0.320	5.600
0.225	0.85	B	4AM40 42-5CD40-0FC0		0.590	6.600
0.268	1.12	B	4AM43 42-5CD40-0FC0		0.670	7.400
0.34	1.44	B	4AM46 42-5CD40-0FC0		1.100	8.300
0.425	2	B	4AM48 42-5CD40-0FC0		1.100	9.900
0.535	2.35	B	4AM52 42-5CD40-0FC0		1.700	10.800
0.68	3.4	B	4AM55 42-5CD40-0FC0		1.900	13.900
0.85	5	B	4AM57 42-5CD40-0FC0		2.000	16.900
1.36	7.3	B	4AM61 42-5CD40-0FC0		4.100	26.700
1.7	9.7	B	4AM64 42-5CD40-0FC0		4.700	30.700
2.13	13.3	B	4AM65 42-5CD40-0FC0		6.400	36.700
3.6	16	C	4AT30 32-5CD40-0FC0		9.900	38.000
4.5	18.5	C	4AT36 12-5CD40-0FC0		6.900	41.400
5.6	22.5	C	4AT36 32-5CD40-0FC0		11.300	47.300
7.1	28.5	C	4AT39 12-5CD40-0FC0		12.800	61.800
9	30	C	4AT39 32-5CD40-0FC0		22.100	71.000
Degree of protection IP54						
0.05	0.19	B	4AM32 42-5CD40-0FD0		0.240	2.700
0.08	0.31	B	4AM34 42-5CD40-0FD0		0.260	3.300
0.128	0.49	B	4AM38 42-5CD40-0FD0		0.320	5.600
0.2	0.85	B	4AM40 42-5CD40-0FD0		0.590	6.600
0.236	1.12	B	4AM43 42-5CD40-0FD0		0.670	7.400
0.3	1.44	B	4AM46 42-5CD40-0FD0		1.100	8.300
0.375	2	B	4AM48 42-5CD40-0FD0		1.100	9.900
0.475	2.35	B	4AM52 42-5CD40-0FD0		1.700	10.800
0.6	3.4	B	4AM55 42-5CD40-0FD0		1.900	13.900
0.75	5	B	4AM57 42-5CD40-0FD0		2.000	16.900
1.2	7.3	B	4AM61 42-5CD40-0FD0		4.100	26.700
1.5	9.7	B	4AM64 42-5CD40-0FD0		4.700	30.700
1.875	13.3	B	4AM65 42-5CD40-0FD0		6.400	36.700
3.15	16	C	4AT30 32-5CD40-0FD0		9.900	38.000
4	18.5	C	4AT36 12-5CD40-0FD0		6.900	41.400
5	22.5	C	4AT36 32-5CD40-0FD0		11.300	47.300
6.3	28.5	C	4AT39 12-5CD40-0FD0		12.800	61.800
8	30	C	4AT39 32-5CD40-0FD0		22.100	71.000

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
 isolating, control and mains transformers

With one input voltage

 Rated input voltage $U_{1N} 440 V \pm 5 \%$,
 rated output voltage $U_{2N} 230 V$

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short. 1)}$	DT ²⁾	Screw terminals ^{3)/} flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA				kg	kg				kg	kg
Degree of protection IP00, standard version⁴⁾											
0.063	0.19		4AM32 42-5CT10-0FA0		0.240	1.400	B	4AM32 42-5CT10-0FA1		0.240	1.400
0.1	0.31		4AM34 42-5CT10-0FA0		0.260	2.000	B	4AM34 42-5CT10-0FA1		0.260	2.000
0.16	0.49		4AM38 42-5CT10-0FA0		0.320	2.700	B	4AM38 42-5CT10-0FA1		0.320	2.700
0.25	0.85		4AM40 42-5CT10-0FA0		0.590	3.700	B	4AM40 42-5CT10-0FA1		0.590	3.700
0.315	1.12		4AM43 42-5CT10-0FA0		0.670	4.500	B	4AM43 42-5CT10-0FA1		0.670	4.500
0.4	1.44		4AM46 42-5CT10-0FA0		1.100	5.400	B	4AM46 42-5CT10-0FA1		1.100	5.400
0.5	2		4AM48 42-5CT10-0FA0		1.100	7.000	B	4AM48 42-5CT10-0FA1		1.100	7.000
0.63	2.35		4AM52 42-5CT10-0FA0		1.700	7.900	B	4AM52 42-5CT10-0FA1		1.700	7.900
0.8	3.4		4AM55 42-5CT10-0FA0		1.900	11.000	B	4AM55 42-5CT10-0FA1		1.900	11.000
1	5		4AM57 42-5CT10-0FA0		2.000	14.000	B	4AM57 42-5CT10-0FA1		2.000	14.000
1.6	7.3		4AM61 42-5CT10-0FA0		4.100	19.000	B	4AM61 42-5CT10-0FA1		4.100	19.000
2	9.7		4AM64 42-5CT10-0FA0		4.700	23.000	B	4AM64 42-5CT10-0FA1		4.700	23.000
2.5	13.3	B	4AM65 42-5CT10-0FA0		6.400	29.000	B	4AM65 42-5CT10-0FA1		6.400	29.000
4	16	C	4AT30 32-5CT10-0FA0		9.900	30.300	--				
5	18.5	C	4AT36 12-5CT10-0FA0		6.900	33.700	--				
6.3	22.5	C	4AT36 32-5CT10-0FA0		11.300	39.600	--				
8	28.5	C	4AT39 12-5CT10-0FA0		12.800	47.900	--				
10	30	C	4AT39 32-5CT10-0FA0		22.100	57.100	--				
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19		4AM32 42-5CT10-0FA0		0.240	1.400	B	4AM32 42-5CT10-0FA1		0.240	1.400
0.1	0.31		4AM34 42-5CT10-0FA0		0.260	2.000	B	4AM34 42-5CT10-0FA1		0.260	2.000
0.16	0.49		4AM38 42-5CT10-0FA0		0.320	2.700	B	4AM38 42-5CT10-0FA1		0.320	2.700
0.25	0.85		4AM40 42-5CT10-0FA0		0.590	3.700	B	4AM40 42-5CT10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5CT10-0FB0		0.670	4.500	B	4AM43 42-5CT10-0FB1		0.670	4.500
0.4	1.44	B	4AM46 42-5CT10-0FB0		1.100	5.400	B	4AM46 42-5CT10-0FB1		1.100	5.400
0.5	2	B	4AM48 42-5CT10-0FB0		1.100	7.000	B	4AM48 42-5CT10-0FB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5CT10-0FC0		0.240	2.700	B	4AM32 42-5CT10-0FC1		0.240	2.700
0.09	0.31	B	4AM34 42-5CT10-0FC0		0.260	3.300	B	4AM34 42-5CT10-0FC1		0.260	3.300
0.145	0.49	B	4AM38 42-5CT10-0FC0		0.320	5.600	B	4AM38 42-5CT10-0FC1		0.320	5.600
0.225	0.85	B	4AM40 42-5CT10-0FC0		0.590	6.600	B	4AM40 42-5CT10-0FC1		0.590	6.600
0.268	1.12	B	4AM43 42-5CT10-0FC0		0.670	7.400	B	4AM43 42-5CT10-0FC1		0.670	7.400
0.34	1.44	B	4AM46 42-5CT10-0FC0		1.100	8.300	B	4AM46 42-5CT10-0FC1		1.100	8.300
0.425	2	B	4AM48 42-5CT10-0FC0		1.100	9.900	B	4AM48 42-5CT10-0FC1		1.100	9.900
0.535	2.35	B	4AM52 42-5CT10-0FC0		1.700	10.800	B	4AM52 42-5CT10-0FC1		1.700	10.800
0.68	3.4	B	4AM55 42-5CT10-0FC0		1.900	13.900	B	4AM55 42-5CT10-0FC1		1.900	13.900
0.85	5	B	4AM57 42-5CT10-0FC0		2.000	16.900	B	4AM57 42-5CT10-0FC1		2.000	16.900
1.36	7.3	B	4AM61 42-5CT10-0FC0		4.100	26.700	B	4AM61 42-5CT10-0FC1		4.100	26.700
1.7	9.7	B	4AM64 42-5CT10-0FC0		4.700	30.700	B	4AM64 42-5CT10-0FC1		4.700	30.700
2.13	13.3	B	4AM65 42-5CT10-0FC0		6.400	36.700	B	4AM65 42-5CT10-0FC1		6.400	36.700
3.6	16	C	4AT30 32-5CT10-0FC0		9.900	38.000	--				
4.5	18.5	C	4AT36 12-5CT10-0FC0		6.900	41.400	--				
5.6	22.5	C	4AT36 32-5CT10-0FC0		11.300	47.300	--				
7.1	28.5	C	4AT39 12-5CT10-0FC0		12.800	61.800	--				
9	30	C	4AT39 32-5CT10-0FC0		22.100	71.000	--				
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5CT10-0FD0		0.240	2.700	B	4AM32 42-5CT10-0FD1		0.240	2.700
0.08	0.31	B	4AM34 42-5CT10-0FD0		0.260	3.300	B	4AM34 42-5CT10-0FD1		0.260	3.300
0.128	0.49	B	4AM38 42-5CT10-0FD0		0.320	5.600	B	4AM38 42-5CT10-0FD1		0.320	5.600
0.2	0.85	B	4AM40 42-5CT10-0FD0		0.590	6.600	B	4AM40 42-5CT10-0FD1		0.590	6.600
0.236	1.12	B	4AM43 42-5CT10-0FD0		0.670	7.400	B	4AM43 42-5CT10-0FD1		0.670	7.400
0.3	1.44	B	4AM46 42-5CT10-0FD0		1.100	8.300	B	4AM46 42-5CT10-0FD1		1.100	8.300
0.375	2	B	4AM48 42-5CT10-0FD0		1.100	9.900	B	4AM48 42-5CT10-0FD1		1.100	9.900
0.475	2.35	B	4AM52 42-5CT10-0FD0		1.700	10.800	B	4AM52 42-5CT10-0FD1		1.700	10.800
0.6	3.4	B	4AM55 42-5CT10-0FD0		1.900	13.900	B	4AM55 42-5CT10-0FD1		1.900	13.900
0.75	5	B	4AM57 42-5CT10-0FD0		2.000	16.900	B	4AM57 42-5CT10-0FD1		2.000	16.900
1.2	7.3	B	4AM61 42-5CT10-0FD0		4.100	26.700	B	4AM61 42-5CT10-0FD1		4.100	26.700
1.5	9.7	B	4AM64 42-5CT10-0FD0		4.700	30.700	B	4AM64 42-5CT10-0FD1		4.700	30.700
1.875	13.3	B	4AM65 42-5CT10-0FD0		6.400	36.700	B	4AM65 42-5CT10-0FD1		6.400	36.700
3.15	16	C	4AT30 32-5CT10-0FD0		9.900	38.000	--				
4	18.5	C	4AT36 12-5CT10-0FD0		6.900	41.400	--				
5	22.5	C	4AT36 32-5CT10-0FD0		11.300	47.300	--				
6.3	28.5	C	4AT39 12-5CT10-0FD0		12.800	61.800	--				
8	30	C	4AT39 32-5CT10-0FD0		22.100	71.000	--				

 1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) The 4AT types are only supplied with screw terminals.

4) For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT isolating, control and mains transformers

With one input voltage

Rated input voltage U_{1N} 500 V \pm 5 %,
rated output voltage U_{2N} 110 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}^{1)}$ kVA	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾ Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Degree of protection IP00, standard version⁴⁾											
0.063	0.19	B	4AM32 42-5FJ10-0FA0		0.240	1.400	B	4AM32 42-5FJ10-0FA1		0.300	1.400
0.1	0.31	B	4AM34 42-5FJ10-0FA0		0.260	2.000	B	4AM34 42-5FJ10-0FA1		0.260	2.000
0.16	0.49	B	4AM38 42-5FJ10-0FA0		0.340	2.700	B	4AM38 42-5FJ10-0FA1		0.320	2.700
0.25	0.85	B	4AM40 42-5FJ10-0FA0		0.590	3.700	B	4AM40 42-5FJ10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5FJ10-0FA0		0.670	4.500	B	4AM43 42-5FJ10-0FA1		0.670	4.500
0.4	1.44	B	4AM46 42-5FJ10-0FA0		1.100	5.400	B	4AM46 42-5FJ10-0FA1		1.100	5.400
0.5	2	B	4AM48 42-5FJ10-0FA0		1.100	7.000	B	4AM48 42-5FJ10-0FA1		1.100	7.000
0.63	2.35	B	4AM52 42-5FJ10-0FA0		1.700	7.900	B	4AM52 42-5FJ10-0FA1		1.700	7.900
0.8	3.4	B	4AM55 42-5FJ10-0FA0		1.900	11.000	B	4AM55 42-5FJ10-0FA1		1.900	11.000
1	5	B	4AM57 42-5FJ10-0FA0		2.000	14.000	B	4AM57 42-5FJ10-0FA1		2.000	14.000
1.6	7.3	B	4AM61 42-5FJ10-0FA0		4.100	19.000	B	4AM61 42-5FJ10-0FA1		4.100	19.000
2	9.7	B	4AM64 42-5FJ10-0FA0		4.700	23.000	B	4AM64 42-5FJ10-0FA1		4.700	23.000
2.5	13.3	B	4AM65 42-5FJ10-0FA0		6.400	29.000	B	4AM65 42-5FJ10-0FA1		6.400	29.000
4	16	C	4AT30 32-5FJ10-0FA0		9.900	30.300	--	--		--	--
5	18.5	C	4AT36 12-5FJ10-0FA0		6.900	33.700	--	--		--	--
6.3	22.5	C	4AT36 32-5FJ10-0FA0		11.300	39.600	--	--		--	--
8	28.5	C	4AT39 12-5FJ10-0FA0		12.800	47.900	--	--		--	--
10	30	C	4AT39 32-5FJ10-0FA0		22.100	57.100	--	--		--	--
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19	B	4AM32 42-5FJ10-0FA0		0.240	1.400	B	4AM32 42-5FJ10-0FA1		0.300	1.400
0.1	0.31	B	4AM34 42-5FJ10-0FA0		0.260	2.000	B	4AM34 42-5FJ10-0FA1		0.260	2.000
0.16	0.49	B	4AM38 42-5FJ10-0FA0		0.340	2.700	B	4AM38 42-5FJ10-0FA1		0.320	2.700
0.25	0.85	B	4AM40 42-5FJ10-0FA0		0.590	3.700	B	4AM40 42-5FJ10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5FJ10-0FB0		0.670	4.500	B	4AM43 42-5FJ10-0FB1		0.670	4.500
0.4	1.44	B	4AM46 42-5FJ10-0FB0		1.100	5.400	B	4AM46 42-5FJ10-0FB1		1.100	5.400
0.5	2	B	4AM48 42-5FJ10-0FB0		1.100	7.000	B	4AM48 42-5FJ10-0FB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5FJ10-0FC0		0.240	2.700	B	4AM32 42-5FJ10-0FC1		0.240	2.700
0.09	0.31	B	4AM34 42-5FJ10-0FC0		0.260	3.300	B	4AM34 42-5FJ10-0FC1		0.260	3.300
0.145	0.49	B	4AM38 42-5FJ10-0FC0		0.320	5.600	B	4AM38 42-5FJ10-0FC1		0.320	5.600
0.225	0.85	B	4AM40 42-5FJ10-0FC0		0.590	6.600	B	4AM40 42-5FJ10-0FC1		0.590	6.600
0.268	1.12	B	4AM43 42-5FJ10-0FC0		0.670	7.400	B	4AM43 42-5FJ10-0FC1		0.670	7.400
0.34	1.44	B	4AM46 42-5FJ10-0FC0		1.100	8.300	B	4AM46 42-5FJ10-0FC1		1.100	8.300
0.425	2	B	4AM48 42-5FJ10-0FC0		1.100	9.900	B	4AM48 42-5FJ10-0FC1		1.100	9.900
0.535	2.35	B	4AM52 42-5FJ10-0FC0		1.700	10.800	B	4AM52 42-5FJ10-0FC1		1.700	10.800
0.68	3.4	B	4AM55 42-5FJ10-0FC0		1.900	13.900	B	4AM55 42-5FJ10-0FC1		1.900	13.900
0.85	5	B	4AM57 42-5FJ10-0FC0		2.000	16.900	B	4AM57 42-5FJ10-0FC1		2.000	16.900
1.36	7.3	B	4AM61 42-5FJ10-0FC0		4.100	26.700	B	4AM61 42-5FJ10-0FC1		4.100	26.700
1.7	9.7	B	4AM64 42-5FJ10-0FC0		4.700	30.700	B	4AM64 42-5FJ10-0FC1		4.700	30.700
2.13	13.3	B	4AM65 42-5FJ10-0FC0		6.400	36.700	B	4AM65 42-5FJ10-0FC1		6.400	36.700
3.6	16	C	4AT30 32-5FJ10-0FC0		9.900	38.000	--	--		--	--
4.5	18.5	C	4AT36 12-5FJ10-0FC0		6.900	41.400	--	--		--	--
5.6	22.5	C	4AT36 32-5FJ10-0FC0		11.300	47.300	--	--		--	--
7.1	28.5	C	4AT39 12-5FJ10-0FC0		12.800	61.800	--	--		--	--
9	30	C	4AT39 32-5FJ10-0FC0		22.100	71.000	--	--		--	--
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5FJ10-0FD0		0.240	2.700	B	4AM32 42-5FJ10-0FD1		0.240	2.700
0.08	0.31	B	4AM34 42-5FJ10-0FD0		0.260	3.300	B	4AM34 42-5FJ10-0FD1		0.260	3.300
0.128	0.49	B	4AM38 42-5FJ10-0FD0		0.320	5.600	B	4AM38 42-5FJ10-0FD1		0.320	5.600
0.2	0.85	B	4AM40 42-5FJ10-0FD0		0.590	6.600	B	4AM40 42-5FJ10-0FD1		0.590	6.600
0.236	1.12	B	4AM43 42-5FJ10-0FD0		0.670	7.400	B	4AM43 42-5FJ10-0FD1		0.670	7.400
0.3	1.44	B	4AM46 42-5FJ10-0FD0		1.100	8.300	B	4AM46 42-5FJ10-0FD1		1.100	8.300
0.375	2	B	4AM48 42-5FJ10-0FD0		1.100	9.900	B	4AM48 42-5FJ10-0FD1		1.100	9.900
0.475	2.35	B	4AM52 42-5FJ10-0FD0		1.700	10.800	B	4AM52 42-5FJ10-0FD1		1.700	10.800
0.6	3.4	B	4AM55 42-5FJ10-0FD0		1.900	13.900	B	4AM55 42-5FJ10-0FD1		1.900	13.900
0.75	5	B	4AM57 42-5FJ10-0FD0		2.000	16.900	B	4AM57 42-5FJ10-0FD1		2.000	16.900
1.2	7.3	B	4AM61 42-5FJ10-0FD0		4.100	26.700	B	4AM61 42-5FJ10-0FD1		4.100	26.700
1.5	9.7	B	4AM64 42-5FJ10-0FD0		4.700	30.700	B	4AM64 42-5FJ10-0FD1		4.700	30.700
1.875	13.3	B	4AM65 42-5FJ10-0FD0		6.400	36.700	B	4AM65 42-5FJ10-0FD1		6.400	36.700
3.15	16	C	4AT30 32-5FJ10-0FD0		9.900	38.000	--	--		--	--
4	18.5	C	4AT36 12-5FJ10-0FD0		6.900	41.400	--	--		--	--
5	22.5	C	4AT36 32-5FJ10-0FD0		11.300	47.300	--	--		--	--
6.3	28.5	C	4AT39 12-5FJ10-0FD0		12.800	61.800	--	--		--	--
8	30	C	4AT39 32-5FJ10-0FD0		22.100	71.000	--	--		--	--

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers


Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
 isolating, control and mains transformers

With one input voltage

 Rated input voltage U_{1N} 500 V \pm 5 %,
 rated output voltage U_{2N} 2 \times 115 V

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}$ ¹⁾	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version⁴⁾						
0.063	0.19	B	4AM32 42-5FD40-0FA0		0.240	1.400
0.1	0.31	B	4AM34 42-5FD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-5FD40-0FA0		0.320	2.700
0.25	0.85	B	4AM40 42-5FD40-0FA0		0.590	3.700
0.315	1.12	B	4AM43 42-5FD40-0FA0		0.670	4.500
0.4	1.44	B	4AM46 42-5FD40-0FA0		1.100	5.400
0.5	2	B	4AM48 42-5FD40-0FA0		1.100	7.000
0.63	2.35	B	4AM52 42-5FD40-0FA0		1.700	7.900
0.8	3.4	B	4AM55 42-5FD40-0FA0		1.900	11.000
1	5	B	4AM57 42-5FD40-0FA0		2.000	14.000
1.6	7.3	B	4AM61 42-5FD40-0FA0		4.100	19.000
2	9.7	B	4AM64 42-5FD40-0FA0		4.700	23.000
2.5	13.3	B	4AM65 42-5FD40-0FA0		6.400	29.000
4	16	C	4AT30 32-5FD40-0FA0		9.900	30.300
5	18.5	C	4AT36 12-5FD40-0FA0		6.900	33.700
6.3	22.5	C	4AT36 32-5FD40-0FA0		11.300	39.600
8	28.5	C	4AT39 12-5FD40-0FA0		12.800	47.900
10	30	C	4AT39 32-5FD40-0FA0		22.100	57.100
Degree of protection IP00, standard rail mounting⁴⁾						
0.063	0.19	B	4AM32 42-5FD40-0FA0		0.240	1.400
0.1	0.31	B	4AM34 42-5FD40-0FA0		0.260	2.000
0.16	0.49	B	4AM38 42-5FD40-0FA0		0.320	2.700
0.25	0.85	B	4AM40 42-5FD40-0FA0		0.590	3.700
0.315	1.12	B	4AM43 42-5FD40-0FB0		0.670	4.500
0.4	1.44	B	4AM46 42-5FD40-0FB0		1.100	5.400
0.5	2	B	4AM48 42-5FD40-0FB0		1.100	7.000
Degree of protection IP23						
0.057	0.19	B	4AM32 42-5FD40-0FC0		0.240	2.700
0.09	0.31	B	4AM34 42-5FD40-0FC0		0.260	3.300
0.145	0.49	B	4AM38 42-5FD40-0FC0		0.320	5.600
0.225	0.85	B	4AM40 42-5FD40-0FC0		0.590	6.600
0.268	1.12	B	4AM43 42-5FD40-0FC0		0.670	7.400
0.34	1.44	B	4AM46 42-5FD40-0FC0		1.100	8.300
0.425	2	B	4AM48 42-5FD40-0FC0		1.100	9.900
0.535	2.35	B	4AM52 42-5FD40-0FC0		1.700	10.800
0.68	3.4	B	4AM55 42-5FD40-0FC0		1.900	13.900
0.85	5	B	4AM57 42-5FD40-0FC0		2.000	16.900
1.36	7.3	B	4AM61 42-5FD40-0FC0		4.100	26.700
1.7	9.7	B	4AM64 42-5FD40-0FC0		4.700	30.700
2.13	13.3	B	4AM65 42-5FD40-0FC0		6.400	36.700
3.6	16	C	4AT30 32-5FD40-0FC0		9.900	38.000
4.5	18.5	C	4AT36 12-5FD40-0FC0		6.900	41.400
5.6	22.5	C	4AT36 32-5FD40-0FC0		11.300	47.300
7.1	28.5	C	4AT39 12-5FD40-0FC0		12.800	61.800
9	30	C	4AT39 32-5FD40-0FC0		22.100	71.000
Degree of protection IP54						
0.05	0.19	B	4AM32 42-5FD40-0FD0		0.240	2.700
0.08	0.31	B	4AM34 42-5FD40-0FD0		0.260	3.300
0.128	0.49	B	4AM38 42-5FD40-0FD0		0.320	5.600
0.2	0.85	B	4AM40 42-5FD40-0FD0		0.590	6.600
0.236	1.12	B	4AM43 42-5FD40-0FD0		0.670	7.400
0.3	1.44	B	4AM46 42-5FD40-0FD0		1.100	8.300
0.375	2	B	4AM48 42-5FD40-0FD0		1.100	9.900
0.475	2.35	B	4AM52 42-5FD40-0FD0		1.700	10.800
0.6	3.4	B	4AM55 42-5FD40-0FD0		1.900	13.900
0.75	5	B	4AM57 42-5FD40-0FD0		2.000	16.900
1.2	7.3	B	4AM61 42-5FD40-0FD0		4.100	26.700
1.5	9.7	B	4AM64 42-5FD40-0FD0		4.700	30.700
1.875	13.3	B	4AM65 42-5FD40-0FD0		6.400	36.700
3.15	16	C	4AT30 32-5FD40-0FD0		9.900	38.000
4	18.5	C	4AT36 12-5FD40-0FD0		6.900	41.400
5	22.5	C	4AT36 32-5FD40-0FD0		11.300	47.300
6.3	28.5	C	4AT39 12-5FD40-0FD0		12.800	61.800
8	30	C	4AT39 32-5FD40-0FD0		22.100	71.000

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
isolating, control and mains transformers

With one input voltage

Rated input voltage U_{1N} 500 V \pm 5 %,
rated output voltage U_{2N} 230 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}^1)$ kVA	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾ Order No.	Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals Order No.	Cu weight per PU approx. kg	Total weight per PU approx. kg
Degree of protection IP00, standard version⁴⁾									
0.063	0.19	▶	4AM32 42-5FT10-OFA0	0.240	1.400	B	4AM32 42-5FT10-OFA1	0.240	1.400
0.1	0.31	▶	4AM34 42-5FT10-OFA0	0.260	2.000	B	4AM34 42-5FT10-OFA1	0.260	2.000
0.16	0.49	▶	4AM38 42-5FT10-OFA0	0.320	2.700	B	4AM38 42-5FT10-OFA1	0.320	2.700
0.25	0.85	▶	4AM40 42-5FT10-OFA0	0.590	3.700	B	4AM40 42-5FT10-OFA1	0.590	3.700
0.315	1.12	▶	4AM43 42-5FT10-OFA0	0.670	4.500	B	4AM43 42-5FT10-OFA1	0.670	4.500
0.4	1.44	▶	4AM46 42-5FT10-OFA0	1.100	5.400	B	4AM46 42-5FT10-OFA1	1.100	5.400
0.5	2	▶	4AM48 42-5FT10-OFA0	1.100	7.000	B	4AM48 42-5FT10-OFA1	1.100	7.000
0.63	2.35	▶	4AM52 42-5FT10-OFA0	1.700	7.900	B	4AM52 42-5FT10-OFA1	1.700	7.900
0.8	3.4	▶	4AM55 42-5FT10-OFA0	1.900	11.000	B	4AM55 42-5FT10-OFA1	1.800	11.000
1	5	▶	4AM57 42-5FT10-OFA0	2.000	14.000	B	4AM57 42-5FT10-OFA1	2.000	14.000
1.6	7.3	▶	4AM61 42-5FT10-OFA0	4.100	19.000	B	4AM61 42-5FT10-OFA1	4.100	19.000
2	9.7	▶	4AM64 42-5FT10-OFA0	4.700	23.000	B	4AM64 42-5FT10-OFA1	4.700	23.000
2.5	13.3	▶	4AM65 42-5FT10-OFA0	6.400	29.000	B	4AM65 42-5FT10-OFA1	6.400	29.000
4	16	▶	4AT30 32-5FT10-OFA0	9.900	30.300	--			
5	18.5	C	4AT36 12-5FT10-OFA0	6.900	33.700	--			
6.3	22.5	C	4AT36 32-5FT10-OFA0	11.300	39.600	--			
8	28.5	C	4AT39 12-5FT10-OFA0	12.800	47.900	--			
10	30	C	4AT39 32-5FT10-OFA0	22.100	57.100	--			
Degree of protection IP00, standard rail mounting⁴⁾									
0.063	0.19	▶	4AM32 42-5FT10-OFA0	0.240	1.400	B	4AM32 42-5FT10-OFA1	0.240	1.400
0.1	0.31	▶	4AM34 42-5FT10-OFA0	0.260	2.000	B	4AM34 42-5FT10-OFA1	0.260	2.000
0.16	0.49	▶	4AM38 42-5FT10-OFA0	0.320	2.700	B	4AM38 42-5FT10-OFA1	0.320	2.700
0.25	0.85	▶	4AM40 42-5FT10-OFA0	0.590	3.700	B	4AM40 42-5FT10-OFA1	0.590	3.700
0.315	1.12	B	4AM43 42-5FT10-OFB0	0.670	4.500	B	4AM43 42-5FT10-OFB1	0.670	4.500
0.4	1.44	B	4AM46 42-5FT10-OFB0	1.100	5.400	B	4AM46 42-5FT10-OFB1	1.100	5.400
0.5	2	B	4AM48 42-5FT10-OFB0	1.100	7.000	B	4AM48 42-5FT10-OFB1	1.040	7.000
Degree of protection IP23									
0.057	0.19	B	4AM32 42-5FT10-0FC0	0.240	2.700	B	4AM32 42-5FT10-0FC1	0.240	2.700
0.09	0.31	B	4AM34 42-5FT10-0FC0	0.260	3.300	B	4AM34 42-5FT10-0FC1	0.260	3.300
0.145	0.49	B	4AM38 42-5FT10-0FC0	0.320	5.600	B	4AM38 42-5FT10-0FC1	0.320	5.600
0.225	0.85	B	4AM40 42-5FT10-0FC0	0.590	6.600	B	4AM40 42-5FT10-0FC1	0.590	6.600
0.268	1.12	B	4AM43 42-5FT10-0FC0	0.670	7.400	B	4AM43 42-5FT10-0FC1	0.670	7.400
0.34	1.44	B	4AM46 42-5FT10-0FC0	1.100	8.300	B	4AM46 42-5FT10-0FC1	1.100	8.300
0.425	2	B	4AM48 42-5FT10-0FC0	1.100	9.900	B	4AM48 42-5FT10-0FC1	1.100	9.900
0.535	2.35	B	4AM52 42-5FT10-0FC0	1.700	10.800	B	4AM52 42-5FT10-0FC1	1.700	10.800
0.68	3.4	B	4AM55 42-5FT10-0FC0	1.900	13.900	B	4AM55 42-5FT10-0FC1	1.900	13.900
0.85	5	B	4AM57 42-5FT10-0FC0	2.000	16.900	B	4AM57 42-5FT10-0FC1	2.000	16.900
1.36	7.3	B	4AM61 42-5FT10-0FC0	4.100	26.700	B	4AM61 42-5FT10-0FC1	4.100	26.700
1.7	9.7	B	4AM64 42-5FT10-0FC0	4.700	30.700	B	4AM64 42-5FT10-0FC1	4.700	30.700
2.13	13.3	B	4AM65 42-5FT10-0FC0	6.400	36.700	B	4AM65 42-5FT10-0FC1	6.400	36.700
3.6	16	C	4AT30 32-5FT10-0FC0	9.900	38.000	--			
4.5	18.5	C	4AT36 12-5FT10-0FC0	6.900	41.400	--			
5.6	22.5	C	4AT36 32-5FT10-0FC0	11.300	47.300	--			
7.1	28.5	C	4AT39 12-5FT10-0FC0	12.800	61.800	--			
9	30	C	4AT39 32-5FT10-0FC0	22.100	71.000	--			
Degree of protection IP54									
0.05	0.19	B	4AM32 42-5FT10-0FD0	0.240	2.700	B	4AM32 42-5FT10-0FD1	0.240	2.700
0.08	0.31	B	4AM34 42-5FT10-0FD0	0.260	3.300	B	4AM34 42-5FT10-0FD1	0.260	3.300
0.128	0.49	B	4AM38 42-5FT10-0FD0	0.320	5.600	B	4AM38 42-5FT10-0FD1	0.320	5.600
0.2	0.85	B	4AM40 42-5FT10-0FD0	0.590	6.600	B	4AM40 42-5FT10-0FD1	0.590	6.600
0.236	1.12	B	4AM43 42-5FT10-0FD0	0.670	7.400	B	4AM43 42-5FT10-0FD1	0.670	7.400
0.3	1.44	B	4AM46 42-5FT10-0FD0	1.100	8.300	B	4AM46 42-5FT10-0FD1	1.100	8.300
0.375	2	B	4AM48 42-5FT10-0FD0	1.100	9.900	B	4AM48 42-5FT10-0FD1	1.100	9.900
0.475	2.35	B	4AM52 42-5FT10-0FD0	1.700	10.800	B	4AM52 42-5FT10-0FD1	1.700	10.800
0.6	3.4	B	4AM55 42-5FT10-0FD0	1.900	13.900	B	4AM55 42-5FT10-0FD1	1.900	13.900
0.75	5	B	4AM57 42-5FT10-0FD0	2.000	16.900	B	4AM57 42-5FT10-0FD1	2.000	16.900
1.2	7.3	B	4AM61 42-5FT10-0FD0	4.100	26.700	B	4AM61 42-5FT10-0FD1	4.100	26.700
1.5	9.7	B	4AM64 42-5FT10-0FD0	4.700	30.700	B	4AM64 42-5FT10-0FD1	4.700	30.700
1.875	13.3	B	4AM65 42-5FT10-0FD0	6.400	36.700	B	4AM65 42-5FT10-0FD1	6.400	36.700
3.15	16	C	4AT30 32-5FT10-0FD0	9.900	38.000	--			
4	18.5	C	4AT36 12-5FT10-0FD0	6.900	41.400	--			
5	22.5	C	4AT36 32-5FT10-0FD0	11.300	47.300	--			
6.3	28.5	C	4AT39 12-5FT10-0FD0	12.800	61.800	--			
8	30	C	4AT39 32-5FT10-0FD0	22.100	71.000	--			

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
 isolating, control and mains transformers

With one input voltage

 Rated input voltage $U_{1N} 660 V \pm 5 \%^{1)}$,
 rated output voltage $U_{2N} 230 V$

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}^{2)}$	DT ³⁾	Screw terminals/ flat connectors		Cu weight per PU approx.	Total weight per PU approx.	DT ³⁾	Cage Clamp terminals		Cu weight per PU approx.	Total weight per PU approx.
			Order No.	Price per PU				Order No.	Price per PU		
kVA	kVA				kg	kg			kg	kg	
Degree of protection IP00, standard version⁴⁾											
0.063	0.19	B	4AM32 42-5LT10-OFA0		0.240	1.400	B	4AM32 42-5LT10-OFA1		0.240	1.400
0.1	0.31	B	4AM34 42-5LT10-OFA0		0.300	2.000	B	4AM34 42-5LT10-OFA1		0.260	2.000
0.16	0.49	B	4AM38 42-5LT10-OFA0		0.320	2.700	B	4AM38 42-5LT10-OFA1		0.320	2.700
0.25	0.85	B	4AM40 42-5LT10-OFA0		0.680	3.700	B	4AM40 42-5LT10-OFA1		0.590	3.700
0.315	1.12	B	4AM43 42-5LT10-OFA0		0.670	4.500	B	4AM43 42-5LT10-OFA1		0.670	4.500
0.4	1.44	B	4AM46 42-5LT10-OFA0		1.100	5.400	B	4AM46 42-5LT10-OFA1		1.100	5.400
0.5	2	B	4AM48 42-5LT10-OFA0		1.100	7.000	B	4AM48 42-5LT10-OFA1		1.100	7.000
0.63	2.35	B	4AM52 42-5LT10-OFA0		1.700	7.900	B	4AM52 42-5LT10-OFA1		1.700	7.900
0.8	3.4	B	4AM55 42-5LT10-OFA0		1.900	11.000	B	4AM55 42-5LT10-OFA1		1.900	11.000
1	5	B	4AM57 42-5LT10-OFA0		2.000	14.000	B	4AM57 42-5LT10-OFA1		2.000	14.000
1.6	7.3	B	4AM61 42-5LT10-OFA0		4.300	19.000	B	4AM61 42-5LT10-OFA1		4.100	19.000
2	9.7	B	4AM64 42-5LT10-OFA0		4.700	23.000	B	4AM64 42-5LT10-OFA1		4.700	23.000
2.5	13.3	B	4AM65 42-5LT10-OFA0		6.400	29.000	B	4AM65 42-5LT10-OFA1		6.400	29.000
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19	B	4AM32 42-5LT10-OFA0		0.240	1.400	B	4AM32 42-5LT10-OFA1		0.240	1.400
0.1	0.31	B	4AM34 42-5LT10-OFA0		0.300	2.000	B	4AM34 42-5LT10-OFA1		0.260	2.000
0.16	0.49	B	4AM38 42-5LT10-OFA0		0.320	2.700	B	4AM38 42-5LT10-OFA1		0.320	2.700
0.25	0.85	B	4AM40 42-5LT10-OFA0		0.680	3.700	B	4AM40 42-5LT10-OFA1		0.590	3.700
0.315	1.12	B	4AM43 42-5LT10-OFB0		0.670	4.500	B	4AM43 42-5LT10-OFB1		0.670	4.500
0.4	1.44	B	4AM46 42-5LT10-OFB0		1.100	5.400	B	4AM46 42-5LT10-OFB1		1.100	5.400
0.5	2	B	4AM48 42-5LT10-OFB0		1.100	7.000	B	4AM48 42-5LT10-OFB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5LT10-OFC0		0.240	2.700	B	4AM32 42-5LT10-OFC1		0.240	2.700
0.09	0.31	B	4AM34 42-5LT10-OFC0		0.260	3.300	B	4AM34 42-5LT10-OFC1		0.260	3.300
0.145	0.49	B	4AM38 42-5LT10-OFC0		0.320	5.600	B	4AM38 42-5LT10-OFC1		0.320	5.600
0.225	0.85	B	4AM40 42-5LT10-OFC0		0.590	6.600	B	4AM40 42-5LT10-OFC1		0.590	6.600
0.268	1.12	B	4AM43 42-5LT10-OFC0		0.670	7.400	B	4AM43 42-5LT10-OFC1		0.670	7.400
0.34	1.44	B	4AM46 42-5LT10-OFC0		1.100	8.300	B	4AM46 42-5LT10-OFC1		1.100	8.300
0.425	2	B	4AM48 42-5LT10-OFC0		1.100	9.900	B	4AM48 42-5LT10-OFC1		1.100	9.900
0.535	2.35	B	4AM52 42-5LT10-OFC0		1.700	10.800	B	4AM52 42-5LT10-OFC1		1.700	10.800
0.68	3.4	B	4AM55 42-5LT10-OFC0		1.900	13.900	B	4AM55 42-5LT10-OFC1		1.900	13.900
0.85	5	B	4AM57 42-5LT10-OFC0		2.000	16.900	B	4AM57 42-5LT10-OFC1		2.000	16.900
1.36	7.3	B	4AM61 42-5LT10-OFC0		4.100	26.700	B	4AM61 42-5LT10-OFC1		4.100	26.700
1.7	9.7	B	4AM64 42-5LT10-OFC0		4.700	30.700	B	4AM64 42-5LT10-OFC1		4.700	30.700
2.13	13.3	B	4AM65 42-5LT10-OFC0		6.400	36.700	B	4AM65 42-5LT10-OFC1		6.400	36.700
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5LT10-OFD0		0.240	2.700	B	4AM32 42-5LT10-OFD1		0.240	2.700
0.08	0.31	B	4AM34 42-5LT10-OFD0		0.300	3.300	B	4AM34 42-5LT10-OFD1		0.260	3.300
0.128	0.49	B	4AM38 42-5LT10-OFD0		0.320	5.600	B	4AM38 42-5LT10-OFD1		0.320	5.600
0.2	0.85	B	4AM40 42-5LT10-OFD0		0.590	6.600	B	4AM40 42-5LT10-OFD1		0.590	6.600
0.236	1.12	B	4AM43 42-5LT10-OFD0		0.670	7.400	B	4AM43 42-5LT10-OFD1		0.670	7.400
0.3	1.44	B	4AM46 42-5LT10-OFD0		1.100	8.300	B	4AM46 42-5LT10-OFD1		1.100	8.300
0.375	2	B	4AM48 42-5LT10-OFD0		1.100	9.900	B	4AM48 42-5LT10-OFD1		1.100	9.900
0.475	2.35	B	4AM52 42-5LT10-OFD0		1.700	10.800	B	4AM52 42-5LT10-OFD1		1.700	10.800
0.6	3.4	B	4AM55 42-5LT10-OFD0		1.900	13.900	B	4AM55 42-5LT10-OFD1		1.900	13.900
0.75	5	B	4AM57 42-5LT10-OFD0		2.000	16.900	B	4AM57 42-5LT10-OFD1		2.000	16.900
1.2	7.3	B	4AM61 42-5LT10-OFD0		4.100	26.700	B	4AM61 42-5LT10-OFD1		4.100	26.700
1.5	9.7	B	4AM64 42-5LT10-OFD0		4.700	30.700	B	4AM64 42-5LT10-OFD1		4.700	30.700
1.875	13.3	B	4AM65 42-5LT10-OFD0		6.400	36.700	B	4AM65 42-5LT10-OFD1		6.400	36.700

¹⁾ Without cULus approval.

²⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

³⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT isolating, control and mains transformers

With one input voltage

Rated input voltage $U_{1N} 690 V \pm 5 \%^{1)}$,
rated output voltage $U_{2N} 230 V$



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating $P_{short.}^{2)}$ kVA	DT ³⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ³⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version⁴⁾											
0.063	0.19	B	4AM32 42-5MT10-0FA0		0.240	1.400	B	4AM32 42-5MT10-0FA1		0.240	1.400
0.1	0.31	B	4AM34 42-5MT10-0FA0		0.260	2.000	B	4AM34 42-5MT10-0FA1		0.320	2.000
0.16	0.49	B	4AM38 42-5MT10-0FA0		0.320	2.700	B	4AM38 42-5MT10-0FA1		0.320	2.700
0.25	0.85	B	4AM40 42-5MT10-0FA0		0.590	3.700	B	4AM40 42-5MT10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5MT10-0FA0		0.670	4.500	B	4AM43 42-5MT10-0FA1		0.670	4.500
0.4	1.44	B	4AM46 42-5MT10-0FA0		1.100	5.400	B	4AM46 42-5MT10-0FA1		1.100	5.400
0.5	2	B	4AM48 42-5MT10-0FA0		1.100	7.000	B	4AM48 42-5MT10-0FA1		1.100	7.000
0.63	2.35	B	4AM52 42-5MT10-0FA0		1.700	7.900	B	4AM52 42-5MT10-0FA1		1.700	7.900
0.8	3.4	B	4AM55 42-5MT10-0FA0		1.900	11.000	B	4AM55 42-5MT10-0FA1		1.900	11.000
1	5	B	4AM57 42-5MT10-0FA0		2.000	14.000	B	4AM57 42-5MT10-0FA1		2.000	14.000
1.6	7.3	B	4AM61 42-5MT10-0FA0		4.100	19.000	B	4AM61 42-5MT10-0FA1		4.100	19.000
2	9.7	B	4AM64 42-5MT10-0FA0		4.700	23.000	B	4AM64 42-5MT10-0FA1		4.700	23.000
2.5	13.3	B	4AM65 42-5MT10-0FA0		6.400	29.000	B	4AM65 42-5MT10-0FA1		6.400	29.000
Degree of protection IP00, standard rail mounting⁴⁾											
0.063	0.19	B	4AM32 42-5MT10-0FA0		0.240	1.400	B	4AM32 42-5MT10-0FA1		0.240	1.400
0.1	0.31	B	4AM34 42-5MT10-0FA0		0.260	2.000	B	4AM34 42-5MT10-0FA1		0.320	2.000
0.16	0.49	B	4AM38 42-5MT10-0FA0		0.320	2.700	B	4AM38 42-5MT10-0FA1		0.320	2.700
0.25	0.85	B	4AM40 42-5MT10-0FA0		0.590	3.700	B	4AM40 42-5MT10-0FA1		0.590	3.700
0.315	1.12	B	4AM43 42-5MT10-0FB0		0.720	4.500	B	4AM43 42-5MT10-0FB1		0.670	4.500
0.4	1.44	B	4AM46 42-5MT10-0FB0		1.100	5.400	B	4AM46 42-5MT10-0FB1		1.100	5.400
0.5	2	B	4AM48 42-5MT10-0FB0		1.100	7.000	B	4AM48 42-5MT10-0FB1		1.100	7.000
Degree of protection IP23											
0.057	0.19	B	4AM32 42-5MT10-0FC0		0.240	2.700	B	4AM32 42-5MT10-0FC1		0.240	2.700
0.09	0.31	B	4AM34 42-5MT10-0FC0		0.260	3.300	B	4AM34 42-5MT10-0FC1		0.260	3.300
0.145	0.49	B	4AM38 42-5MT10-0FC0		0.320	5.600	B	4AM38 42-5MT10-0FC1		0.320	5.600
0.225	0.85	B	4AM40 42-5MT10-0FC0		0.590	6.600	B	4AM40 42-5MT10-0FC1		0.590	6.600
0.268	1.12	B	4AM43 42-5MT10-0FC0		0.670	7.400	B	4AM43 42-5MT10-0FC1		0.670	7.400
0.34	1.44	B	4AM46 42-5MT10-0FC0		1.100	8.300	B	4AM46 42-5MT10-0FC1		1.100	8.300
0.425	2	B	4AM48 42-5MT10-0FC0		1.100	9.900	B	4AM48 42-5MT10-0FC1		1.100	9.900
0.535	2.35	B	4AM52 42-5MT10-0FC0		1.700	10.800	B	4AM52 42-5MT10-0FC1		1.700	10.800
0.68	3.4	B	4AM55 42-5MT10-0FC0		1.900	13.900	B	4AM55 42-5MT10-0FC1		1.900	13.900
0.85	5	B	4AM57 42-5MT10-0FC0		2.000	16.900	B	4AM57 42-5MT10-0FC1		2.000	16.900
1.36	7.3	B	4AM61 42-5MT10-0FC0		4.100	26.700	B	4AM61 42-5MT10-0FC1		4.100	26.700
1.7	9.7	B	4AM64 42-5MT10-0FC0		4.700	30.700	B	4AM64 42-5MT10-0FC1		4.700	30.700
2.13	13.3	B	4AM65 42-5MT10-0FC0		6.400	36.700	B	4AM65 42-5MT10-0FC1		6.400	36.700
Degree of protection IP54											
0.05	0.19	B	4AM32 42-5MT10-0FD0		0.240	2.700	B	4AM32 42-5MT10-0FD1		0.240	2.700
0.08	0.31	B	4AM34 42-5MT10-0FD0		0.260	3.300	B	4AM34 42-5MT10-0FD1		0.260	3.300
0.128	0.49	B	4AM38 42-5MT10-0FD0		0.320	5.600	B	4AM38 42-5MT10-0FD1		0.320	5.600
0.2	0.85	B	4AM40 42-5MT10-0FD0		0.590	6.600	B	4AM40 42-5MT10-0FD1		0.590	6.600
0.236	1.12	B	4AM43 42-5MT10-0FD0		0.670	7.400	B	4AM43 42-5MT10-0FD1		0.670	7.400
0.3	1.44	B	4AM46 42-5MT10-0FD0		1.100	8.300	B	4AM46 42-5MT10-0FD1		1.100	8.300
0.375	2	B	4AM48 42-5MT10-0FD0		1.100	9.900	B	4AM48 42-5MT10-0FD1		1.100	9.900
0.475	2.35	B	4AM52 42-5MT10-0FD0		1.700	10.800	B	4AM52 42-5MT10-0FD1		1.700	10.800
0.6	3.4	B	4AM55 42-5MT10-0FD0		1.900	13.900	B	4AM55 42-5MT10-0FD1		1.900	13.900
0.75	5	B	4AM57 42-5MT10-0FD0		2.000	16.900	B	4AM57 42-5MT10-0FD1		2.000	16.900
1.2	7.3	B	4AM61 42-5MT10-0FD0		4.100	26.700	B	4AM61 42-5MT10-0FD1		4.100	26.700
1.5	9.7	B	4AM64 42-5MT10-0FD0		4.700	30.700	B	4AM64 42-5MT10-0FD1		4.700	30.700
1.875	13.3	B	4AM65 42-5MT10-0FD0		6.400	36.700	B	4AM65 42-5MT10-0FD1		6.400	36.700

¹⁾ Without **ce** approval.

²⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

³⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
isolating, control and mains transformers

For European voltages

Rated input voltage U_{1N} 400/230 V ±15 V,
rated output voltage U_{2N} 2 × 115 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	Short-time rating P_{short} ¹⁾ kVA	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾ Order No.	Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Cage Clamp terminals Order No.	Cu weight per PU approx. kg	Total weight per PU approx. kg
Degree of protection IP00, standard version⁴⁾									
0.063	0.19		4AM32 42-8JD40-0FA0	0.340	1.500	B	4AM32 42-8JD40-0FA1	0.340	1.500
0.1	0.31		4AM34 42-8JD40-0FA0	0.360	2.100	B	4AM34 42-8JD40-0FA1	0.360	2.100
0.16	0.49		4AM38 42-8JD40-0FA0	0.450	2.800	B	4AM38 42-8JD40-0FA1	0.450	2.800
0.25	0.85		4AM40 42-8JD40-0FA0	0.820	3.900	B	4AM40 42-8JD40-0FA1	0.820	3.900
0.315	1.12		4AM43 42-8JD40-0FA0	1.000	4.800	B	4AM43 42-8JD40-0FA1	1.000	4.800
0.4	1.44		4AM46 42-8JD40-0FA0	1.500	5.800	B	4AM46 42-8JD40-0FA1	1.500	5.800
0.5	2		4AM48 42-8JD40-0FA0	1.500	7.400	B	4AM48 42-8JD40-0FA1	1.500	7.400
0.63	2.35		4AM52 42-8JD40-0FA0	2.400	8.600		--		
0.8	3.4		4AM55 42-8JD40-0FA0	2.600	12.000		--		
1	5		4AM57 42-8JD40-0FA0	2.800	15.000		--		
1.6	7.3		4AM61 42-8JD40-0FA0	5.700	20.000		--		
2	9.7		4AM64 42-8JD40-0FA0	6.500	24.000		--		
2.5	13.3		4AM65 42-8JD40-0FA0	8.900	32.000		--		
4	17.8	C	4AT30 32-8JD40-0FA0	9.200	29.000		--		
5	19	C	4AT36 12-8JD40-0FA0	7.300	35.000		--		
6.3	24.5	C	4AT36 32-8JD40-0FA0	14.700	46.000		--		
8	31.1	C	4AT39 12-8JD40-0FA0	13.900	49.000		--		
10	36.4	C	4AT39 32-8JD40-0FA0	28.400	67.000		--		
Degree of protection IP00, standard rail mounting⁴⁾									
0.063	0.19		4AM32 42-8JD40-0FA0	0.340	1.500	B	4AM32 42-8JD40-0FA1	0.340	1.500
0.1	0.31		4AM34 42-8JD40-0FA0	0.360	2.100	B	4AM34 42-8JD40-0FA1	0.360	2.100
0.16	0.49		4AM38 42-8JD40-0FA0	0.450	2.800	B	4AM38 42-8JD40-0FA1	0.450	2.800
0.25	0.85		4AM40 42-8JD40-0FA0	0.820	3.900	B	4AM40 42-8JD40-0FA1	0.820	3.900
0.315	1.12	B	4AM43 42-8JD40-0FB0	1.000	4.800	B	4AM43 42-8JD40-0FB1	1.000	4.800
0.4	1.44	B	4AM46 42-8JD40-0FB0	1.500	5.800	B	4AM46 42-8JD40-0FB1	1.500	5.800
0.5	2	B	4AM48 42-8JD40-0FB0	1.500	7.400	B	4AM48 42-8JD40-0FB1	1.500	7.400
Degree of protection IP23									
0.057	0.19	B	4AM32 42-8JD40-0FC0	0.340	2.800	B	4AM32 42-8JD40-0FC1	0.340	2.800
0.09	0.31	B	4AM34 42-8JD40-0FC0	0.360	3.400	B	4AM34 42-8JD40-0FC1	0.360	3.400
0.145	0.49	B	4AM38 42-8JD40-0FC0	0.450	5.700	B	4AM38 42-8JD40-0FC1	0.450	5.700
0.225	0.85	B	4AM40 42-8JD40-0FC0	0.820	6.800	B	4AM40 42-8JD40-0FC1	0.820	6.800
0.268	1.12	B	4AM43 42-8JD40-0FC0	1.000	7.700	B	4AM43 42-8JD40-0FC1	1.000	7.700
0.34	1.44	B	4AM46 42-8JD40-0FC0	1.500	8.700	B	4AM46 42-8JD40-0FC1	1.500	8.700
0.425	2	B	4AM48 42-8JD40-0FC0	1.500	10.300	B	4AM48 42-8JD40-0FC1	1.500	10.300
0.535	2.35	B	4AM52 42-8JD40-0FC0	2.400	11.500		--		
0.68	3.4	B	4AM55 42-8JD40-0FC0	2.600	14.900		--		
0.85	5	B	4AM57 42-8JD40-0FC0	2.800	17.900		--		
1.36	7.3	B	4AM61 42-8JD40-0FC0	5.700	27.700		--		
1.7	9.7	B	4AM64 42-8JD40-0FC0	6.500	31.700		--		
2.13	13.3	B	4AM65 42-8JD40-0FC0	8.900	39.700		--		
3.6	17.8	C	4AT30 32-8JD40-0FC0	9.300	36.700		--		
4.5	19	C	4AT36 12-8JD40-0FC0	7.300	42.700		--		
5.6	24.5	C	4AT36 32-8JD40-0FC0	12.200	48.700		--		
7.1	31.1	C	4AT39 12-8JD40-0FC0	14.000	62.900		--		
9	36.4	C	4AT39 32-8JD40-0FC0	23.700	72.900		--		
Degree of protection IP54									
0.05	0.19	B	4AM32 42-8JD40-0FD0	0.340	2.800	B	4AM32 42-8JD40-0FD1	0.340	2.800
0.08	0.31	B	4AM34 42-8JD40-0FD0	0.360	3.400	B	4AM34 42-8JD40-0FD1	0.360	3.400
0.128	0.49	B	4AM38 42-8JD40-0FD0	0.450	5.700	B	4AM38 42-8JD40-0FD1	0.450	5.700
0.2	0.85	B	4AM40 42-8JD40-0FD0	0.820	6.800	B	4AM40 42-8JD40-0FD1	0.820	6.800
0.236	1.12	B	4AM43 42-8JD40-0FD0	1.000	7.700	B	4AM43 42-8JD40-0FD1	1.000	7.700
0.3	1.44	B	4AM46 42-8JD40-0FD0	1.500	8.700	B	4AM46 42-8JD40-0FD1	1.500	8.700
0.375	2	B	4AM48 42-8JD40-0FD0	1.500	10.300	B	4AM48 42-8JD40-0FD1	1.500	10.300
0.475	2.35	B	4AM52 42-8JD40-0FD0	2.400	11.500		--		
0.6	3.4	B	4AM55 42-8JD40-0FD0	2.600	14.900		--		
0.75	5	B	4AM57 42-8JD40-0FD0	2.800	17.900		--		
1.2	7.3	B	4AM61 42-8JD40-0FD0	5.700	27.700		--		
1.5	9.7	B	4AM64 42-8JD40-0FD0	6.500	31.700		--		
1.875	13.3	B	4AM65 42-8JD40-0FD0	8.900	39.700		--		
3.15	17.8	C	4AT30 32-8JD40-0FD0	9.300	36.700		--		
4	19	C	4AT36 12-8JD40-0FD0	7.300	42.700		--		
5	24.5	C	4AT36 32-8JD40-0FD0	12.200	48.700		--		
6.3	31.1	C	4AT39 12-8JD40-0FD0	14.000	62.900		--		
8	36.4	C	4AT39 32-8JD40-0FD0	23.700	72.900		--		

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers


SIRIUS 4AM, 4AT isolating, control and mains transformers

In multi-voltage version

Rated input voltage U_{1N}
550-525-500-480-460-440-415-400-380-230-208 V,
rated output voltage U_{2N} 2 × 115 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.1)}$	DT ²⁾	Screw terminals ^{3)/} flat connectors ³⁾		Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg	kg
Degree of protection IP00, standard version⁴⁾						
0.063	0.19	▶	4AM32 42-8DD40-0FA0		0.340	1.500
0.1	0.31	▶	4AM34 42-8DD40-0FA0		0.360	2.100
0.16	0.49	▶	4AM38 42-8DD40-0FA0		0.450	2.800
0.25	0.85	▶	4AM40 42-8DD40-0FA0		0.820	3.900
0.315	1.12	▶	4AM43 42-8DD40-0FA0		1.000	4.800
0.4	1.44	▶	4AM46 42-8DD40-0FA0		1.500	5.800
0.5	2	▶	4AM48 42-8DD40-0FA0		1.500	7.400
0.63	2.35	▶	4AM52 42-8DD40-0FA0		2.400	8.600
0.8	3.4	▶	4AM55 42-8DD40-0FA0		2.600	12.000
1	5	▶	4AM57 42-8DD40-0FA0		2.800	15.000
1.6	7.3	▶	4AM61 42-8DD40-0FA0		5.700	20.000
2	9.7	▶	4AM64 42-8DD40-0FA0		6.500	24.000
2.5	13.3	▶	4AM65 42-8DD40-0FA0		8.900	32.000
4	17.8	▶	4AT30 32-8DD40-0FA0		9.300	29.000
5	19	▶	4AT36 12-8DD40-0FA0		7.300	35.000
6.3	24.5	▶	4AT36 32-8DD40-0FA0		12.200	41.000
8	31.1	C	4AT39 12-8DD40-0FA0		13.900	49.000
10	36.4	C	4AT39 32-8DD40-0FA0		23.700	59.000
Degree of protection IP00, standard rail mounting⁴⁾						
0.063	0.19	▶	4AM32 42-8DD40-0FA0		0.340	1.500
0.1	0.31	▶	4AM34 42-8DD40-0FA0		0.360	2.100
0.16	0.49	▶	4AM38 42-8DD40-0FA0		0.450	2.800
0.25	0.85	▶	4AM40 42-8DD40-0FA0		0.820	3.900
0.315	1.12	B	4AM43 42-8DD40-0FB0		1.000	4.800
0.4	1.44	B	4AM46 42-8DD40-0FB0		1.500	5.800
0.5	2	B	4AM48 42-8DD40-0FB0		1.500	7.400
Degree of protection IP23						
0.057	0.19	B	4AM32 42-8DD40-0FC0		0.340	2.800
0.09	0.31	B	4AM34 42-8DD40-0FC0		0.360	3.400
0.145	0.49	B	4AM38 42-8DD40-0FC0		0.450	5.700
0.225	0.85	B	4AM40 42-8DD40-0FC0		0.820	6.800
0.268	1.12	B	4AM43 42-8DD40-0FC0		1.000	7.700
0.34	1.44	B	4AM46 42-8DD40-0FC0		1.500	8.700
0.425	2	B	4AM48 42-8DD40-0FC0		1.500	10.300
0.535	2.35	B	4AM52 42-8DD40-0FC0		2.400	11.500
0.68	3.4	B	4AM55 42-8DD40-0FC0		2.600	14.900
0.85	5	B	4AM57 42-8DD40-0FC0		2.800	17.900
1.36	7.3	B	4AM61 42-8DD40-0FC0		5.700	27.700
1.7	9.7	B	4AM64 42-8DD40-0FC0		6.500	31.700
2.13	13.3	B	4AM65 42-8DD40-0FC0		8.900	39.700
3.6	17.8	C	4AT30 32-8DD40-0FC0		9.300	36.700
4.5	19	C	4AT36 12-8DD40-0FC0		7.300	42.700
5.6	24.5	C	4AT36 32-8DD40-0FC0		12.200	48.700
7.1	31.1	C	4AT39 12-8DD40-0FC0		13.900	62.900
9	36.4	C	4AT39 32-8DD40-0FC0		23.700	72.900
Degree of protection IP54						
0.05	0.19	B	4AM32 42-8DD40-0FD0		0.340	2.800
0.08	0.31	B	4AM34 42-8DD40-0FD0		0.360	3.400
0.128	0.49	B	4AM38 42-8DD40-0FD0		0.450	5.700
0.2	0.85	B	4AM40 42-8DD40-0FD0		0.820	6.800
0.236	1.12	B	4AM43 42-8DD40-0FD0		1.000	7.700
0.3	1.44	B	4AM46 42-8DD40-0FD0		1.500	8.700
0.375	2	B	4AM48 42-8DD40-0FD0		1.500	10.300
0.475	2.35	B	4AM52 42-8DD40-0FD0		2.400	11.500
0.6	3.4	B	4AM55 42-8DD40-0FD0		2.600	14.900
0.75	5	B	4AM57 42-8DD40-0FD0		2.800	17.900
1.2	7.3	B	4AM61 42-8DD40-0FD0		5.700	27.700
1.5	9.7	B	4AM64 42-8DD40-0FD0		6.500	31.700
1.875	13.3	B	4AM65 42-8DD40-0FD0		8.900	39.700
3.15	17.8	C	4AT30 32-8DD40-0FD0		9.300	36.700
4	19	C	4AT36 12-8DD40-0FD0		7.300	42.700
5	24.5	C	4AT36 32-8DD40-0FD0		12.200	48.700
6.3	31.1	C	4AT39 12-8DD40-0FD0		13.900	62.900
8	36.4	C	4AT39 32-8DD40-0FD0		23.700	72.900

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT
 isolating, control and mains transformers

In multi-voltage version

Rated input voltage U_{1N}
 600-575-550-525-500-480-460-440-415-400-240-230 V,
 rated output voltage U_{2N} 2 × 115 V



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals ^{3)/} flat connectors ³⁾	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU	kg
Degree of protection IP00, standard version⁴⁾					
0.063	0.19	▶	4AM32 42-8ED40-0FA0	0.340	1.500
0.1	0.31	▶	4AM34 42-8ED40-0FA0	0.360	2.100
0.16	0.49	▶	4AM38 42-8ED40-0FA0	0.450	2.800
0.25	0.85	▶	4AM40 42-8ED40-0FA0	0.820	3.900
0.315	1.12	▶	4AM43 42-8ED40-0FA0	1.000	4.800
0.4	1.44	▶	4AM46 42-8ED40-0FA0	1.500	5.800
0.5	2	▶	4AM48 42-8ED40-0FA0	1.500	7.400
0.63	2.35	▶	4AM52 42-8ED40-0FA0	2.400	8.600
0.8	3.4	▶	4AM55 42-8ED40-0FA0	2.600	12.000
1	5	▶	4AM57 42-8ED40-0FA0	2.800	15.000
1.6	7.3	▶	4AM61 42-8ED40-0FA0	5.700	20.000
2	9.7	▶	4AM64 42-8ED40-0FA0	6.500	24.000
2.5	13.3	▶	4AM65 42-8ED40-0FA0	8.900	32.000
4	17.8	▶	4AT30 32-8ED40-0FA0	9.300	29.000
5	19	C	4AT36 12-8ED40-0FA0	7.300	35.000
6.3	24.5	C	4AT36 32-8ED40-0FA0	12.200	41.000
8	31.1	C	4AT39 12-8ED40-0FA0	13.900	49.000
10	36.4	C	4AT39 32-8ED40-0FA0	23.700	59.000
Degree of protection IP00, standard rail mounting⁴⁾					
0.063	0.19	▶	4AM32 42-8ED40-0FA0	0.340	1.500
0.1	0.31	▶	4AM34 42-8ED40-0FA0	0.360	2.100
0.16	0.49	▶	4AM38 42-8ED40-0FA0	0.450	2.800
0.25	0.85	▶	4AM40 42-8ED40-0FA0	0.820	3.900
0.315	1.12	B	4AM43 42-8ED40-0FB0	1.000	4.800
0.4	1.44	B	4AM46 42-8ED40-0FB0	1.500	5.800
0.5	2	B	4AM48 42-8ED40-0FB0	1.500	7.400
Degree of protection IP23					
0.057	0.19	B	4AM32 42-8ED40-0FC0	0.340	2.800
0.09	0.31	B	4AM34 42-8ED40-0FC0	0.360	3.400
0.145	0.49	B	4AM38 42-8ED40-0FC0	0.450	5.700
0.225	0.85	B	4AM40 42-8ED40-0FC0	0.820	6.800
0.268	1.12	B	4AM43 42-8ED40-0FC0	1.000	7.700
0.34	1.44	B	4AM46 42-8ED40-0FC0	1.500	8.700
0.425	2	B	4AM48 42-8ED40-0FC0	1.500	10.300
0.535	2.35	B	4AM52 42-8ED40-0FC0	2.400	11.500
0.68	3.4	B	4AM55 42-8ED40-0FC0	2.600	14.900
0.85	5	B	4AM57 42-8ED40-0FC0	2.800	17.900
1.36	7.3	B	4AM61 42-8ED40-0FC0	4.600	27.700
1.7	9.7	B	4AM64 42-8ED40-0FC0	6.500	31.700
2.13	13.3	B	4AM65 42-8ED40-0FC0	8.900	39.700
3.6	17.8	C	4AT30 32-8ED40-0FC0	9.300	36.700
4.5	19	C	4AT36 12-8ED40-0FC0	7.300	42.700
5.6	24.5	C	4AT36 32-8ED40-0FC0	12.200	48.700
7.1	31.1	C	4AT39 12-8ED40-0FC0	13.900	62.900
9	36.4	C	4AT39 32-8ED40-0FC0	23.700	72.900
Degree of protection IP23					
0.05	0.19	B	4AM32 42-8ED40-0FD0	0.340	2.800
0.08	0.31	B	4AM34 42-8ED40-0FD0	0.360	3.400
0.128	0.49	B	4AM38 42-8ED40-0FD0	0.450	5.700
0.2	0.85	B	4AM40 42-8ED40-0FD0	0.820	6.800
0.236	1.12	B	4AM43 42-8ED40-0FD0	1.000	7.700
0.3	1.44	B	4AM46 42-8ED40-0FD0	1.500	8.700
0.375	2	B	4AM48 42-8ED40-0FD0	1.500	10.300
0.475	2.35	B	4AM52 42-8ED40-0FD0	2.400	11.500
0.6	3.4	B	4AM55 42-8ED40-0FD0	2.600	14.900
0.75	5	B	4AM57 42-8ED40-0FD0	2.800	17.900
1.2	7.3	B	4AM61 42-8ED40-0FD0	5.700	27.700
1.5	9.7	B	4AM64 42-8ED40-0FD0	6.500	31.700
1.875	13.3	B	4AM65 42-8ED40-0FD0	8.900	39.700
3.15	17.8	C	4AT30 32-8ED40-0FD0	9.300	36.700
4	19	C	4AT36 12-8ED40-0FD0	7.300	42.700
5	24.5	C	4AT36 32-8ED40-0FD0	12.200	48.700
6.3	31.1	C	4AT39 12-8ED40-0FD0	13.900	62.900
8	36.4	C	4AT39 32-8ED40-0FD0	23.700	72.900

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AT types are only supplied with screw terminals.

⁴⁾ For types 4AM32 to 4AM40, standard rail mounting is integrated in the standard version.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM isolating and mains transformers

Overview

- According to EN 61558-2-4, -2-1
- **cULus**¹⁾
- $t_a = 40 \text{ °C/B}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54



¹⁾ **cULus** approvals for voltages $\leq 600 \text{ V}$ (excluding tappings) and degree of protection IP00.



4AM with screw/flat connectors (left) and with Cage Clamp terminals (right)

Selection and ordering data

With one input voltage

Rated input voltage $U_{1N} 230 \text{ V} \pm 5 \%$,
rated output voltage $U_{2N} 110 \text{ V}$

cULus,

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-4TJ10-0FA0		0.110	0.600	B	4AM23 42-4TJ10-0FA1		0.110	0.600
0.04	--	B	4AM26 42-4TJ10-0FA0		0.150	0.800	B	4AM26 42-4TJ10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-4TJ10-0FB0		0.110	0.600	B	4AM23 42-4TJ10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-4TJ10-0FB0		0.150	0.800	B	4AM26 42-4TJ10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-4TJ10-0FC0		0.110	1.900	B	4AM23 42-4TJ10-0FC1		0.110	1.900
0.036	--	B	4AM26 42-4TJ10-0FC0		0.150	2.100	B	4AM26 42-4TJ10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-4TJ10-0FD0		0.110	1.900	B	4AM23 42-4TJ10-0FD1		0.110	1.900
0.03	--	B	4AM26 42-4TJ10-0FD0		0.150	2.100	B	4AM26 42-4TJ10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

Rated input voltage $U_{1N} 230 \text{ V} \pm 5 \%$,
rated output voltage $U_{2N} 230 \text{ V}$

cULus,

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--		4AM23 42-4TT10-0FA0		0.110	0.600	B	4AM23 42-4TT10-0FA1		0.110	0.600
0.04	--		4AM26 42-4TT10-0FA0		0.150	0.800	B	4AM26 42-4TT10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-4TT10-0FB0		0.110	0.600	B	4AM23 42-4TT10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-4TT10-0FB0		0.150	0.800	B	4AM26 42-4TT10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-4TT10-0FC0		0.110	1.900	B	4AM23 42-4TT10-0FC1		0.110	1.900
0.036	--	B	4AM26 42-4TT10-0FC0		0.150	2.100	B	4AM26 42-4TT10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-4TT10-0FD0		0.110	1.900	B	4AM23 42-4TT10-0FD1		0.110	1.900
0.03	--	B	4AM26 42-4TT10-0FD0		0.150	2.100	B	4AM26 42-4TT10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM isolating and mains transformers

With one input voltage

Rated input voltage U_{1N} 400 V \pm 5 %,
rated output voltage U_{2N} 110 V

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5AJ10-0FA0		0.110	0.600	B	4AM23 42-5AJ10-0FA1		0.110	0.600
0.04	--	B	4AM26 42-5AJ10-0FA0		0.150	0.800	B	4AM26 42-5AJ10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5AJ10-0FB0		0.110	0.600	B	4AM23 42-5AJ10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-5AJ10-0FB0		0.150	0.800	B	4AM26 42-5AJ10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5AJ10-0FC0		0.110	1.900	B	4AM23 42-5AJ10-0FC1		0.110	1.900
0.036	--	B	4AM26 42-5AJ10-0FC0		0.150	2.100	B	4AM26 42-5AJ10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5AJ10-0FD0		0.110	1.900	B	4AM23 42-5AJ10-0FD1		0.110	1.900
0.03	--	B	4AM26 42-5AJ10-0FD0		0.150	2.100	B	4AM26 42-5AJ10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

Rated input voltage U_{1N} 400 V \pm 5 %,
rated output voltage U_{2N} 230 V

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--		4AM23 42-5AT10-0FA0		0.110	0.600	B	4AM23 42-5AT10-0FA1		0.110	0.600
0.04	--		4AM26 42-5AT10-0FA0		0.150	0.800	B	4AM26 42-5AT10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5AT10-0FB0		0.110	0.600	B	4AM23 42-5AT10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-5AT10-0FB0		0.150	0.800	B	4AM26 42-5AT10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5AT10-0FC0		0.110	1.900	B	4AM23 42-5AT10-0FC1		0.110	1.900
0.036	--	B	4AM26 42-5AT10-0FC0		0.160	2.100	B	4AM26 42-5AT10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5AT10-0FD0		0.110	1.900	B	4AM23 42-5AT10-0FD1		0.110	1.900
0.03	--	B	4AM26 42-5AT10-0FD0		0.150	2.100	B	4AM26 42-5AT10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM isolating and mains transformers

With one input voltage

Rated input voltage U_{1N} 440 V \pm 5 %,
rated output voltage U_{2N} 110 V

us, , ,

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
kVA	kVA										
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5CJ10-0FA0		0.110	0.600	B	4AM23 42-5CJ10-0FA1		0.110	0.600
0.04	--	B	4AM26 42-5CJ10-0FA0		0.150	0.800	B	4AM26 42-5CJ10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5CJ10-0FB0		0.110	0.600	B	4AM23 42-5CJ10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-5CJ10-0FB0		0.150	0.800	B	4AM26 42-5CJ10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5CJ10-0FC0		0.110	1.900	B	4AM23 42-5CJ10-0FC1		0.110	1.900
0.036	--	B	4AM26 42-5CJ10-0FC0		0.150	2.100	B	4AM26 42-5CJ10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5CJ10-0FD0		0.110	1.900	B	4AM23 42-5CJ10-0FD1		0.110	1.900
0.03	--	B	4AM26 42-5CJ10-0FD0		0.150	2.100	B	4AM26 42-5CJ10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

Rated input voltage U_{1N} 440 V \pm 5 %,
rated output voltage U_{2N} 230 V

us, , ,

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
kVA	kVA										
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5CT10-0FA0		0.110	0.600	C	4AM23 42-5CT10-0FA1		0.110	0.600
0.04	--	C	4AM26 42-5CT10-0FA0		0.150	0.800	C	4AM26 42-5CT10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5CT10-0FB0		0.110	0.600	C	4AM23 42-5CT10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-5CT10-0FB0		0.150	0.800	C	4AM26 42-5CT10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5CT10-0FC0		0.110	1.900	C	4AM23 42-5CT10-0FC1		0.110	1.900
0.036	--	B	4AM26 42-5CT10-0FC0		0.150	2.100	C	4AM26 42-5CT10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	C	4AM23 42-5CT10-0FD0		0.110	1.900	C	4AM23 42-5CT10-0FD1		0.110	1.900
0.03	--	C	4AM26 42-5CT10-0FD0		0.150	2.100	C	4AM26 42-5CT10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM isolating and mains transformers

With one input voltage

Rated input voltage U_{1N} 500 V \pm 5 %,
rated output voltage U_{2N} 110 V

c  us, 

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5FJ10-0FA0		0.110	0.600	B	4AM23 42-5FJ10-0FA1		0.110	0.600
0.04	--	B	4AM26 42-5FJ10-0FA0		0.150	0.800	B	4AM26 42-5FJ10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	B	4AM23 42-5FJ10-0FB0		0.110	0.600	B	4AM23 42-5FJ10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-5FJ10-0FB0		0.150	0.800	B	4AM26 42-5FJ10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	B	4AM23 42-5FJ10-0FC0		0.110	1.900	B	4AM23 42-5FJ10-0FC1		0.110	1.900
0.036	--	B	4AM26 42-5FJ10-0FC0		0.150	2.100	B	4AM26 42-5FJ10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	B	4AM23 42-5FJ10-0FD0		0.110	1.900	B	4AM23 42-5FJ10-0FD1		0.110	1.900
0.03	--	B	4AM26 42-5FJ10-0FD0		0.150	2.100	B	4AM26 42-5FJ10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

Rated input voltage U_{1N} 500 V \pm 5 %,
rated output voltage U_{2N} 230 V

c  us, 

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{shortt.}$	DT ¹⁾	Screw terminals/ flat connectors		Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Cage Clamp terminals		Cu weight per PU approx. kg	Total weight per PU approx. kg
			Order No.	Price per PU				Order No.	Price per PU		
Degree of protection IP00, standard version											
0.025	--	B	4AM23 42-5FT10-0FA0		0.110	0.600	C	4AM23 42-5FT10-0FA1		0.110	0.600
0.04	--	B	4AM26 42-5FT10-0FA0		0.150	0.800	C	4AM26 42-5FT10-0FA1		0.150	0.800
Degree of protection IP00, standard rail mounting											
0.025	--	C	4AM23 42-5FT10-0FB0		0.110	0.600	C	4AM23 42-5FT10-0FB1		0.110	0.600
0.04	--	B	4AM26 42-5FT10-0FB0		0.160	0.800	C	4AM26 42-5FT10-0FB1		0.150	0.800
Degree of protection IP23											
0.023	--	C	4AM23 42-5FT10-0FC0		0.110	1.900	C	4AM23 42-5FT10-0FC1		0.110	1.900
0.036	--	C	4AM26 42-5FT10-0FC0		0.150	2.100	B	4AM26 42-5FT10-0FC1		0.150	2.100
Degree of protection IP54											
0.02	--	C	4AM23 42-5FT10-0FD0		0.110	1.900	C	4AM23 42-5FT10-0FD1		0.110	1.900
0.03	--	C	4AM26 42-5FT10-0FD0		0.150	2.100	C	4AM26 42-5FT10-0FD1		0.150	2.100

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM isolating and mains transformers

With one input voltage

Rated input voltage U_{1N} 660 V \pm 5 %¹⁾,
rated output voltage U_{2N} 230 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$	DT ²⁾	Screw terminals/ flat connectors			Cage Clamp terminals						
			Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
kVA	kVA											
Degree of protection IP00, standard version												
0.025	--	B	4AM23 42-5LT10-0FA0		0.110	0.600	B	4AM23 42-5LT10-0FA1		0.110	0.600	
0.04	--	B	4AM26 42-5LT10-0FA0		0.150	0.800	B	4AM26 42-5LT10-0FA1		0.150	0.800	
Degree of protection IP00, standard rail mounting												
0.025	--	B	4AM23 42-5LT10-0FB0		0.110	0.600	B	4AM23 42-5LT10-0FB1		0.110	0.600	
0.04	--	B	4AM26 42-5LT10-0FB0		0.150	0.800	B	4AM26 42-5LT10-0FB1		0.150	0.800	
Degree of protection IP23												
0.023	--	B	4AM23 42-5LT10-0FC0		0.110	1.900	B	4AM23 42-5LT10-0FC1		0.110	1.900	
0.036	--	B	4AM26 42-5LT10-0FC0		0.150	2.100	B	4AM26 42-5LT10-0FC1		0.150	2.100	
Degree of protection IP54												
0.02	--	B	4AM23 42-5LT10-0FD0		0.110	1.900	B	4AM23 42-5LT10-0FD1		0.110	1.900	
0.03	--	B	4AM26 42-5LT10-0FD0		0.150	2.100	B	4AM26 42-5LT10-0FD1		0.150	2.100	

¹⁾ Without **c9Aus** approval.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

With one input voltage

Rated input voltage U_{1N} 690 V \pm 5 %¹⁾,
rated output voltage U_{2N} 230 V



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	Short-time rating $P_{short.}$	DT ²⁾	Screw terminals/ flat connectors			Cage Clamp terminals						
			Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ²⁾	Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
kVA	kVA											
Degree of protection IP00, standard version												
0.025	--	B	4AM23 42-5MT10-0FA0		0.110	0.600	B	4AM23 42-5MT10-0FA1		0.110	0.600	
0.04	--	B	4AM26 42-5MT10-0FA0		0.150	0.800	B	4AM26 42-5MT10-0FA1		0.150	0.800	
Degree of protection IP00, standard rail mounting												
0.025	--	B	4AM23 42-5MT10-0FB0		0.110	0.600	B	4AM23 42-5MT10-0FB1		0.110	0.600	
0.04	--	B	4AM26 42-5MT10-0FB0		0.150	0.800	B	4AM26 42-5MT10-0FB1		0.150	0.800	
Degree of protection IP23												
0.023	--	B	4AM23 42-5MT10-0FC0		0.110	1.900	B	4AM23 42-5MT10-0FC1		0.110	1.900	
0.036	--	B	4AM26 42-5MT10-0FC0		0.150	2.100	B	4AM26 42-5MT10-0FC1		0.150	2.100	
Degree of protection IP54												
0.02	--	B	4AM23 42-5MT10-0FD0		0.110	1.900	B	4AM23 42-5MT10-0FD1		0.110	1.900	
0.03	--	B	4AM26 42-5MT10-0FD0		0.150	2.100	B	4AM26 42-5MT10-0FD1		0.150	2.100	

¹⁾ Without **c9Aus** approval.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

**SIRIUS 4AT isolating transformers
for the supply of medical premises**

Overview

- According to EN 61558-2-15
- Protection class I
- With static shield between the primary and secondary winding with insulated connection
- With thermistor transformer protection for warning of thermal overload¹⁾
- With central tap for insulation monitoring
- Short-circuit voltage $u_z \leq 3\%$
- No-load supply current $i_0 \leq 3\%$
- Inrush current max. $8 \times I_{1N}$
- $t_a = 55\text{ °C/H}$



4AT special version for medical premises

¹⁾ 3RN releases for PTC sensors must be ordered separately, see Chapter 7, "Monitoring and Control Devices".

Selection and ordering data



Rated power P_n	Voltage rise during no-load operation u_A	Rated voltages		Secondary-side short-circuit protection for the transformer with motor starter protector		DT ¹⁾	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
		Input U_{1N}	Output U_{2N}	Type	Set value								
kVA	%	V	V		A							kg	kg
Degree of protection IP00													
2.5	3.6	230	230-115	3RV10 21-4CA10	21	C	4AT30 12-1TA71-3MA0		1	1 unit	104	7.400	25.500
3.15	3.6	230	230-115	3RV10 31-4EA10	26	C	4AT36 02-1TA71-3MA0		1	1 unit	104	6.800	33.000
4	3.6	230	230-115	3RV10 31-4EA10	29	C	4AT36 12-1TA71-3MA0		1	1 unit	104	9.400	36.000
5	3.6	230	230-115	3RV10 31-4FA10	36	C	4AT39 02-1TA71-3MA0		1	1 unit	104	9.700	45.000
6.3	3.6	230	230-115	3RV10 31-4GA10	40	C	4AT39 12-1TA71-3MA0		1	1 unit	104	13.800	49.000
8	3.7	230	230-115	3RV10 41-4JA10	49	C	4AT43 02-1TA71-3MA0		1	1 unit	104	12.600	63.000
10	2.5	230	230-115	3RV10 41-4KA10	61	C	4AT43 12-1TA71-3MA0		1	1 unit	104	19.600	70.000
Degree of protection IP23													
2.5	3.6	230	230-115	3RV10 21-4CA10	21	C	4AT30 12-1TA71-3MC0		1	1 unit	104	7.400	33.500
3.15	3.6	230	230-115	3RV10 31-4EA10	26	C	4AT36 02-1TA71-3MC0		1	1 unit	104	6.800	41.000
4	3.7	230	230-115	3RV10 31-4EA10	29	D	4AT36 12-1TA71-3MC0		1	1 unit	104	9.400	44.000
5	3.6	230	230-115	3RV10 31-4FA10	36	C	4AT39 02-1TA71-3MC0		1	1 unit	104	9.700	59.000
6.3	3.9	230	230-115	3RV10 31-4GA10	40	C	4AT39 12-1TA71-3MC0		1	1 unit	104	13.800	63.000
8	3.7	230	230-115	3RV10 41-4JA10	49	C	4AT43 02-1TA71-3MC0		1	1 unit	104	12.400	77.000
10	2.5	230	230-115	3RV10 41-4KA10	61	C	4AT43 12-1TA71-3MC0		1	1 unit	104	19.600	84.000

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AM, 4AT transformers with selectable voltages

Overview

- 4AM and 4AT transformers configured as isolating, control and mains transformers according to EN 61558-2-4, -2-2, -2-1 or as safety, control and mains transformers according to EN 61558-2-6, -2-2, -2-1, or as autotransformers according to EN 61558-2-13 with selectable input and output voltages in the performance range from 0.025 kVA to 16 kVA (for autotransformers the type rating is always quoted) and additional options
- **cULus**¹⁾
- 4AM: $t_a = 40\text{ °C/B}$, 4AT: $t_a = 55\text{ °C/H}$
- Standard vector group: li0, for autotransformer: la0



¹⁾ The enclosures for the 4AM23 4 to 4AT43 2 transformers are **cULus**-approved.



4AM (left) and 4AT30 3 to 4AT43 2 (right)

Selection and ordering data



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power ¹⁾ P _n with degree of protection				Short-time rating ²⁾ P _{short}	Selectable rated voltages U _{1N} , U _{2N}	DT ³⁾	Order No. stem	Basic price per PU	Additional price for standard options							Cu weight ⁵⁾ per PU approx. kg	Transformer weight ⁵⁾ per PU approx. kg	Total weight ⁵⁾ including enclosure per PU approx. kg
IP00	IP23	IP54	kVA						kVA	kVA	kVA	Two tappings in the range ±5% of the rated input or output voltage for constant power	One tapping on the input or output side for falling power	One additional separate winding on the input or output side	Shield winding (connection routed to terminal). Not possible for autotransformers.			
4AM transformers																		
0.025	0.023	0.02	--	12 ... 690 V, with cULus max. 600 V (excluding tappings)	B	4AM23 4		x	x	x	x	x		0.110	0.600	1.900		
0.04	0.036	0.03	--		B	4AM26 4		x	x	x	x	x		0.150	0.800	2.100		
0.063	0.057	0.05	0.19		B	4AM32 4		x	x	x	x	None		0.240	1.400	2.700		
0.1	0.09	0.08	0.31		B	4AM34 4		x	x	x	x	None		0.260	2.000	3.300		
0.16	0.145	0.128	0.49	12 ... 690 V, with cULus max. 600 V (excluding tappings)	B	4AM38 4		x	x	x	x	None		0.320	2.700	5.600		
0.25	0.225	0.2	0.85		B	4AM40 4		x	x	x	x	None		0.590	3.700	6.600		
0.315	0.268	0.236	1.12		B	4AM43 4		x	x	x	x	x		0.670	4.500	7.400		
0.4	0.34	0.3	1.44		B	4AM46 4		x	x	x	x	x		1.100	5.400	8.300		
0.5	0.425	0.375	2	12 ... 690 V, with cULus max. 600 V (excluding tappings)	B	4AM48 4		x	x	x	x	x		1.100	7.000	9.900		
0.63	0.535	0.475	2.35		B	4AM52 4		x	x	x	x	--		1.700	7.900	10.800		
0.8	0.68	0.6	3.4		B	4AM55 4		x	x	x	x	--		1.900	11.000	13.900		
1	0.85	0.75	5		B	4AM57 4		x	x	x	x	--		2.000	14.000	16.900		
1.6	1.36	1.2	7.3	12 ... 690 V, with cULus max. 600 V (excluding tappings)	B	4AM61 4		x	x	x	x	--		4.100	19.000	26.700		
2	1.7	1.5	9.7		B	4AM64 4		x	x	x	x	--		4.700	23.000	30.700		
2.5	2.13	1.88	13.3		B	4AM65 4		x	x	x	x	--		6.400	29.000	36.700		
4AT transformers																		
4	3.6	3.15	17.8	24 ... 690 V, with cULus max. 600 V (excluding tappings)	B	4AT30 3		x	x	x	x	--		6.600	27.000	34.700		
5	4.5	4	19		B	4AT36 1		x	x	x	x	--		5.200	32.000	39.700		
6.3	5.6	5	24.5		B	4AT36 3		x	x	x	x	--		8.700	37.000	44.700		
8	7.1	6.3	31.1	24 ... 690 V, with cULus max. 600 V (excluding tappings)	B	4AT39 1		x	x	x	x	--		9.900	45.000	58.900		
10	9	8	36.4		B	4AT39 3		x	x	x	x	--		17.000	52.000	65.900		
11.2	10	--	48.3		B	4AT43 0		x	x	x	x	--		12.000	62.000	75.900		
12.5	11.2	--	53.8		B	4AT43 1		x	x	x	x	--		15.000	65.200	79.100		
14	12.5	--	58.7		B	4AT43 2		x	x	x	x	--		19.000	69.300	83.200		
16	14	--	81.2		B	4AT45 0		x	x	x	x	--		16.000	83.200	127.200		

Additional prices for degree of protection IP00, IP23 and IP54, see page 10/49.

Before ordering, please ask for the complete Order No. (see page 10/4 for the inquiry/order address).

x = Additional price

-- = Not available

¹⁾ For autotransformers the type rating is always quoted.

²⁾ The specified rating is a typical maximum short-time rating at p.f. = 0.5.

³⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

⁴⁾ Types 4AM32 4 to 4AM40 4 have integrated standard rail mounting.

⁵⁾ The actual copper weight is listed in the price notice or the quotation; the transformer weight and total weight is reduced/increased by the difference.

Single-Phase Transformers

Safety, Isolating, Control and Mains Transformers

**SIRIUS 4AM, 4AT transformers
with selectable voltages**

 Options for the enclosures of single-phase transformers
 ≤16 kVA in degree of protection IP00, IP23 or IP54


Order No. stem	Rated power with degree of protection ²⁾			Short-time rating $P_{short.}$ kVA	Degree of protection IP00, standard version	Additional price for the options			PU (UNIT, SET, M)	PS*	PG
	IP00, standard version P_n kVA	IP23 P_n kVA	IP54 P_n kVA			Degree of protection IP23	Degree of protection IP54				
4AM transformers											
4AM23 4	0.025	0.023	0.02	--	None	x	x	1	1 unit	104	
4AM26 4	0.04	0.036	0.032	--	None	x	x	1	1 unit	104	
4AM32 4	0.063	0.057	0.05	0.19	None	x	x	1	1 unit	104	
4AM34 4	0.1	0.09	0.08	0.31	None	x	x	1	1 unit	104	
4AM38 4	0.16	0.145	0.128	0.49	None	x	x	1	1 unit	104	
4AM40 4	0.25	0.225	0.2	0.85	None	x	x	1	1 unit	104	
4AM43 4	0.315	0.268	0.236	1.12	None	x	x	1	1 unit	104	
4AM46 4	0.4	0.34	0.3	1.44	None	x	x	1	1 unit	104	
4AM48 4	0.5	0.425	0.375	2	None	x	x	1	1 unit	104	
4AM52 4	0.63	0.535	0.475	2.35	None	x	x	1	1 unit	104	
4AM55 4	0.8	0.68	0.6	3.4	None	x	x	1	1 unit	104	
4AM57 4	1	0.85	0.75	5	None	x	x	1	1 unit	104	
4AM61 4	1.6	1.36	1.2	7.3	None	x	x	1	1 unit	104	
4AM64 4	2	1.7	1.5	9.7	None	x	x	1	1 unit	104	
4AM65 4	2.5	2.13	1.875	13.3	None	x	x	1	1 unit	104	
4AT transformers											
4AT30 3	4	3.6	3.15	17.8	None	x	x	1	1 unit	104	
4AT36 1	5	4.5	4	19	None	x	x	1	1 unit	104	
4AT36 3	6.3	5.6	5	24.5	None	x	x	1	1 unit	104	
4AT39 1	8	7.1	6.3	31.1	None	x	x	1	1 unit	104	
4AT39 3	10	9	8	36.4	None	x	x	1	1 unit	104	
4AT43 0	11.2	10	--	48.3	None	x	--	1	1 unit	104	
4AT43 1	12.5	11.2	--	53.8	None	x	--	1	1 unit	104	
4AT43 2	14	12.5	--	58.7	None	x	--	1	1 unit	104	
4AT45 0	16	14	--	81.2	None	x	--	1	1 unit	104	

x = Additional price

-- = Not available

¹⁾ Exception: The enclosure for the 4AT45 0 transformers is not cSIRIUS approved.

²⁾ For autotransformers the type rating is always quoted.

Options

- Cage Clamp terminal; up to 24 V, without additional price
- Fuse terminal:
Device protection fuses for secondary-side short-circuit and overload protection with rated currents ≤ 6.3 A and a rated voltage of max. 440 V AC can be mounted on the 4AM transformers; screw or Cage Clamp terminals possible.

Additional price on request.

- Rating plates made of metal:
One separately packed rating plate made of metal can be supplied per 4AM and 4AT transformer.

Additional price on request.

- Deviations from the standard vector groups Ii0 or Ia0 for autotransformers must be specified when ordering.

Single-Phase Transformers

Power Transformers

General data

Overview

4BT.. transformers

With the right transformer, the right voltage will be available at any conditions.

Our transformers are the right choice for each application: They work reliably, safely and worldwide under a wide range of different conditions.

The 4BT single-phase power transformers can be configured as matching, auto- or converter transformers according to DIN VDE 0532-6 with selectable input and output voltages.

Our transformers provide optimal protection through high permissible ambient temperatures of up to 55 °C.

Benefits

- **UL** approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum: rapid availability

Application

4BT single-phase power transformers are implemented in industrial and building systems and control and distribution and are used to adapt the locally available mains voltage to the operational voltage of the system or its components. They also limit the possible short-circuit currents.

Power transformers with electrical isolation or designed as *autotransformers* are used for adapting machines and systems to the local voltages that are available at the installation site.

Furthermore *power transformers* can be used with electrical devices, for example in communications, medical engineering and domestic appliances. In drive systems, special *converter transformers* are used for voltage matching and *autotransformers* are used with infeed/regenerative feedback modules.

Single-Phase Transformers

Power Transformers

SIRIUS 4BT transformers
with selectable voltages

Overview

- 4BT transformers configured as matching, auto-¹⁾ or converter transformers according to DIN VDE 0532-6 with selectable input and output voltages in the performance range from 18 kVA to 250 kVA from 100 V to 1000 V and additional options
- **cULus**²⁾
- $t_a = 55 \text{ °C/H}$
- Standard vector group: li0, for autotransformer: la0

¹⁾ For autotransformers the type rating is always quoted.

²⁾ **cULus** approvals for voltages $\leq 600 \text{ V}$ (excluding tappings) and degree of protection IP00.



4BT

Selection and ordering data

cULus¹⁾

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power ²⁾ P_n with degree of protection	Selectable rated voltages U_{1N}, U_{2N}		DT ⁴⁾	Order No. stem	Basic price per PU	Additional price for standard options					C_u weight ⁵⁾ per PU approx. kg	Transformer weight ⁵⁾ per PU approx. kg	Total weight ⁵⁾ including enclosure per PU approx. kg
	IP00, IP20, IP23 ³⁾	IP23				Two tappings in the range $\pm 5\%$ of the rated input or output voltage for constant power	One tapping on the input or output side for falling power	One additional separate winding on the input or output side	Shield winding (connection routed to terminal). Not possible for autotransformers.	Installation in protective enclosures IP20, IP23			
kVA	kVA												
18	16	100 ... 1000 V, with cULus $\leq 600 \text{ V}$ (excluding tappings)	C	4BT45 0		x	x	x	x	x	18.500	85.000	129.000
20	18		C	4BT47 0		x	x	x	x	x	16.000	104.000	148.000
22.5	20		C	4BT47 1		x	x	x	x	x	20.500	106.000	150.000
25	22.5		C	4BT47 2		x	x	x	x	x	26.500	112.000	156.000
28	25		D	4BT51 0		x	x	x	x	x	25.000	109.000	160.000
31.5	28	D	4BT52 0		x	x	x	x	x	26.500	122.000	173.000	
35.5	32	D	4BT53 0		x	x	x	x	x	28.000	135.000	186.000	
40	36	D	4BT54 0		x	x	x	x	x	26.000	159.000	220.000	
45	40.5	D	4BT54 1		x	x	x	x	x	33.000	166.000	227.000	
50	45	D	4BT55 0		x	x	x	x	x	34.000	183.000	244.000	
63	56.5	D	4BT56 0		x	x	x	x	x	45.000	214.000	275.000	
80	72	D	4BT58 1		x	x	x	x	x	46.000	259.000	364.000	
100	90	D	4BT59 0		x	x	x	x	x	60.500	302.000	407.000	
125	112.5	D	4BT60 1		x	x	x	x	x	78.000	355.000	460.000	
160	144	D	4BT62 1		x	x	x	x	x	100.000	444.000	579.000	
200	180	D	4BT63 0		x	x	x	x	x	129.000	523.000	658.000	
250	225	D	4BT65 0		x	x	x	x	x	134.500	646.000	781.000	

Before ordering, please ask for the complete Order No. (see page 10/4 for the inquiry/order address).

x = Additional price

¹⁾ **cULus** approvals for voltages $\leq 600 \text{ V}$ (excluding tappings) and degree of protection IP00.

²⁾ For autotransformers the type rating is always quoted.

³⁾ No power reduction for ambient temperatures $\leq 40 \text{ °C}$.

⁴⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

⁵⁾ The actual copper weight is listed in the price notice or the quotation; the transformer weight and total weight is reduced/increased by the difference.

Options

- Thermistor transformer protection for warning and/or disconnection:
The 4BT power transformers can be supplied with thermistor transformer protection for warning and/or disconnection, see note on Technical Information on page 10/1.

PG = 104

For transformer Type	Warning	Disconnection	Additional price for Warning and disconnection
4BT	x	x	x

x = Additional price

- Rating plates made of metal:
One separately packed rating plate made of metal can be supplied per 4BT transformer.

Additional price on request.

- Deviations from the standard vector groups li0 or la0 for autotransformers must be specified when ordering.

Further versions with higher outputs up to 1250 kVA are available on request.

* You can order this quantity or a multiple thereof.

Single-Phase Transformers

Voltage Regulators

4FL voltage regulators, transformer type

Overview



4FL

- According to DIN VDE 0552
- Degree of protection IP21
- $t_a = 40\text{ °C/E}$

Application

The 4FL transformer-type voltage regulators are used as voltage stabilizers on supply systems with varying voltages. On the output of the voltage regulator, a constant voltage is available for the load which creates a constant machine performance which is immune to variations in the supply system.

Selection and ordering data

Rated voltage: PRI = SEC: 230 V, 50 Hz to 60 Hz

Settling time s	Rated power P_n kVA	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx. kg	Total weight per PU approx. kg
Control range for input voltage: +10 % to -10 %									
1.5	2.2	D	4FL13 00-2CN		1	1 unit	114	1.300	25.000
1.5	3.6	X	4FL16 00-2CN		1	1 unit	114	1.600	30.000
1.5	5.6	X	4FL22 00-2CN		1	1 unit	114	2.800	35.000
1.5	8.5	D	4FL26 00-2CN		1	1 unit	114	3.500	40.000
1.5	11.5	D	4FL29 00-2CN		1	1 unit	114	5.100	45.000
1.5	17	X	4FL33 00-2CN		1	1 unit	114	8.500	80.000
1.5	22.5	X	4FL37 00-2CN		1	1 unit	114	10.800	90.000
1.5	31.5	X	4FL41 00-2CN		1	1 unit	114	12.600	110.000
1.5	63	X	4FL48 00-2CN		1	1 unit	114	32.200	220.000
Control range for input voltage: +15 % to -15 %									
1.5	1.5	X	4FL11 10-2CN		1	1 unit	114	1.300	25.000
1.5	2.2	D	4FL13 10-2CN		1	1 unit	114	1.600	30.000
1.5	3.6	X	4FL16 10-2CN		1	1 unit	114	2.800	35.000
1.5	5.3	X	4FL21 10-2CN		1	1 unit	114	3.500	40.000
1.5	7	X	4FL24 10-2CN		1	1 unit	114	5.100	45.000
1.5	11	D	4FL28 10-2CN		1	1 unit	114	8.500	80.000
1.5	14	X	4FL30 10-2CN		1	1 unit	114	10.800	90.000
1.5	20	X	4FL34 10-2CN		1	1 unit	114	12.600	110.000
1.5	40	X	4FL44 10-2CN		1	1 unit	114	32.200	220.000
Control range for input voltage: +20 % to -20 %									
1.5	1	D	4FL10 20-2CN		1	1 unit	114	1.300	25.000
1.5	1.6	X	4FL12 20-2CN		1	1 unit	114	1.600	30.000
1.5	2.5	D	4FL14 20-2CN		1	1 unit	114	2.800	35.000
1.5	3.8	X	4FL17 20-2CN		1	1 unit	114	3.500	40.000
1.5	5	X	4FL20 20-2CN		1	1 unit	114	5.100	45.000
1.5	7.5	D	4FL25 20-2CN		1	1 unit	114	8.500	80.000
1.5	10	X	4FL27 20-2CN		1	1 unit	114	10.800	90.000
1.5	14	X	4FL30 20-2CN		1	1 unit	114	12.600	110.000
1.5	28	X	4FL39 20-2CN		1	1 unit	114	32.200	220.000

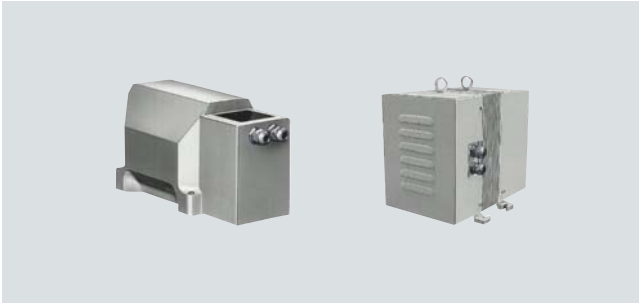
Further versions with higher outputs up to 2000 kVA, voltages up to 1 kV and control ranges up to +/- 30 % are available on request.

Single-Phase Transformers

Voltage Regulators

4FK voltage regulators, magnetic type

Overview



4FK31 to 4FK34 (left) and 4FK35 to 4FK38 (right)

- According to EN 61558, VDE 0570
- Performance range up to 0.06 kVA to 10 kVA
- Input voltage 230 V, +10/-20 %
- Output voltage 230 V, sinusoidal
- Frequency 50 Hz, ± 0.5 %
- Other voltages or frequencies available
- Settling time from 40 ms to 60 ms
- $t_a = 40$ °C
- Degrees of protection: IP00 to IP54, IP65



Benefits

The magnetic-type voltage regulator has the following functions:

- Settling of mains voltage variations
- Maintaining the output voltage at a constant value despite load variations.
- Electrical separation of the output voltage from the input
- Transformation of the input voltage to the required output voltage
- Limitation of the output current in the event of an overload or short-circuit and therefore also limitation of the input current for protection of the other components
- Filtering of high-frequency faults and suppression of voltage peaks
- Filtering of distorted input voltages

Application

The 4FK magnetic-type voltage regulators are used for loads that are supplied with alternating voltage and that are particularly sensitive to voltage variations.

For detailed ordering information contact:

Anfrage@mdexx.com

Three-Phase Transformers

Safety, Isolating, Control and Mains Transformers

General data

Overview

4AP./4AU.. transformers

With the right transformer, the right voltage will be available at any conditions.

Our transformers are the right choice for each application: They work reliably, safely and worldwide under a wide range of different conditions.

The transformers with selectable input and output voltages are configured in user-friendly combinations as:

- Isolating, control and mains transformers according to EN 61558-2-4, -2-2, -2-1 or
- Safety, control and mains transformers according to EN 61558-2-6, -2-2, -2-1 or
- Autotransformers according to EN 61558-2-13

Note:

Mains transformers with ≤ 50 V on the output side are, in the case of SIRIUS transformers, always designed as safety transformers.

SIRIUS transformers provide optimal protection through high permissible ambient temperatures up to 40 °C or 55 °C, a high short-time rating in the case of control transformers, fuseless construction and due to their safety standard "Safety inside" EN 61558.

Benefits

- High short-time rating of the SIRIUS transformers: lower transformer rated power for a large number of contactors
- Suitable for "fuseless construction": The small inrush current means that "circuit breakers for motor protection" can also be used on the primary side
- **cULus** approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum supplied from stock: rapid availability

Application

In industrial machines, process engineering, heating and air-conditioning equipment, etc., for supplying control and signaling circuits, when:

- Several electromagnetic loads (e. g. contactors) have to be controlled
- Control and signaling devices are used outside the control cabinet
- The operational voltage for the loads differs from the available voltage level
- Voltage matching for machines and installations with electrical isolation or as an autotransformer

Generally for voltage matching of electrical devices, e. g. in communications, medical engineering and domestic appliances.

Three-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AP, 4AU
isolating, control and mains transformers

Overview

- According to EN 61558-2-4, -2-2, -2-1
- **cRU**s
- 4AP: $t_a = 40\text{ °C/B}$, 4AU: $t_a = 55\text{ °C/H}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54



4AP20 (left) and 4AU (right)

Selection and ordering data

In two-voltage version

Rated input voltage U_{1N} 3 AC ∇ 500-400 V/ Δ 289-230 V,
rated output voltage U_{2N} 3 AC ∇ 400 V/ Δ 230 V

cRU

Rated power P_n	Short-time rating $P_{short.}^{1)}$	DT ²⁾	Screw terminals ^{3)/} flat connectors ³⁾		PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
kVA	kVA		Order No.	Price per PU				kg	kg
Degree of protection IP00									
0.63	1.8	▶	4AP20 42-8BC40-0HA0	1	1 unit	104	2.700	6.900	
1	3.5	▶	4AP21 42-8BC40-0HA0	1	1 unit	104	3.300	10.800	
1.6	6.9	▶	4AP25 42-8BC40-0HA0	1	1 unit	104	4.100	18.100	
2.5	11	▶	4AP27 42-8BC40-0HA0	1	1 unit	104	4.800	25.800	
4	20	▶	4AP30 42-8BC40-0HA0	1	1 unit	104	9.200	38.500	
6.3	28	▶	4AU30 32-8BC40-0HA0	1	1 unit	104	13.500	43.000	
8	32	▶	4AU36 12-8BC40-0HA0	1	1 unit	104	10.000	53.000	
10	39	▶	4AU36 32-8BC40-0HA0	1	1 unit	104	16.300	60.000	
12.5	49	▶	4AU39 12-8BC40-0HA0	1	1 unit	104	18.000	73.000	
16	55	▶	4AU39 32-8BC40-0HA0	1	1 unit	104	32.800	89.000	
Degree of protection IP23									
0.57	1.8	B	4AP20 42-8BC40-0HC0	1	1 unit	104	2.700	14.600	
0.9	3.5	B	4AP21 42-8BC40-0HC0	1	1 unit	104	3.300	18.500	
1.44	6.9	B	4AP25 42-8BC40-0HC0	1	1 unit	104	4.100	25.800	
2.25	11	B	4AP27 42-8BC40-0HC0	1	1 unit	104	4.800	33.500	
3.2	20	B	4AP30 42-8BC40-0HC0	1	1 unit	104	9.200	46.200	
5	28	C	4AU30 32-8BC40-0HC0	1	1 unit	104	13.500	50.700	
6.3	32	C	4AU36 12-8BC40-0HC0	1	1 unit	104	10.000	66.900	
8	39	C	4AU36 32-8BC40-0HC0	1	1 unit	104	16.300	73.900	
10	49	C	4AU39 12-8BC40-0HC0	1	1 unit	104	18.000	86.900	
12.5	55	C	4AU39 32-8BC40-0HC0	1	1 unit	104	32.800	102.000	
Degree of protection IP54									
0.44	1.8	B	4AP20 42-8BC40-0HD0	1	1 unit	104	2.700	14.600	
0.8	3.5	B	4AP21 42-8BC40-0HD0	1	1 unit	104	3.300	18.500	
1.12	6.9	B	4AP25 42-8BC40-0HD0	1	1 unit	104	4.100	25.800	
2	11	B	4AP27 42-8BC40-0HD0	1	1 unit	104	4.800	33.500	
2.8	20	B	4AP30 42-8BC40-0HD0	1	1 unit	104	9.200	46.200	
4.4	28	C	4AU30 32-8BC40-0HD0	1	1 unit	104	13.500	50.700	
5.6	32	C	4AU36 12-8BC40-0HD0	1	1 unit	104	10.000	66.900	
7.1	39	C	4AU36 32-8BC40-0HD0	1	1 unit	104	16.300	73.900	
8.8	49	C	4AU39 12-8BC40-0HD0	1	1 unit	104	18.000	86.900	
11.2	55	C	4AU39 32-8BC40-0HD0	1	1 unit	104	32.800	102.000	

¹⁾ For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

³⁾ The 4AU transformers are only supplied with screw terminals.

Three-Phase Transformers


Safety, Isolating, Control and Mains Transformers

SIRIUS 4AP, 4AU isolating, control and mains transformers

In multi-voltage version

Rated input voltage U_{1N} 3 AC ∇ 520-500-480-460-440-420-400-380-360 V/ Δ 300-289-277-266-254-240-230-220-208 V,
rated output voltage U_{2N} 3 AC ∇ 400 V/ Δ 230 V



Rated power P_n kVA	Short-time rating $P_{short.}$ ¹⁾ kVA	DT ²⁾	Screw terminals ³⁾ / flat connectors ³⁾ Order No.		PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx. kg	Total weight per PU approx. kg
Degree of protection IP00									
0.63	1.8	B	4AP20 42-8CC40-0HA0		1	1 unit	104	2.800	7.100
1	3.5	B	4AP21 42-8CC40-0HA0		1	1 unit	104	2.900	10.400
1.6	6.9	B	4AP25 42-8CC40-0HA0		1	1 unit	104	4.800	19.700
2.5	11	B	4AP27 42-8CC40-0HA0		1	1 unit	104	5.200	27.000
4	20	B	4AP30 42-8CC40-0HA0		1	1 unit	104	9.400	39.400
6.3	28	C	4AU30 32-8CC40-0HA0		1	1 unit	104	16.000	47.000
8	32	C	4AU36 12-8CC40-0HA0		1	1 unit	104	13.000	56.000
10	39	C	4AU36 32-8CC40-0HA0		1	1 unit	104	21.000	65.000
12.5	49	C	4AU39 12-8CC40-0HA0		1	1 unit	104	24.000	78.000
16	55	C	4AU39 32-8CC40-0HA0		1	1 unit	104	43.000	99.000
Degree of protection IP23									
0.57	1.8	B	4AP20 42-8CC40-0HC0		1	1 unit	104	2.800	14.800
0.9	3.5	B	4AP21 42-8CC40-0HC0		1	1 unit	104	2.900	17.900
1.44	6.9	B	4AP25 42-8CC40-0HC0		1	1 unit	104	4.800	27.400
2.25	11	B	4AP27 42-8CC40-0HC0		1	1 unit	104	5.200	34.700
3.2	20	B	4AP30 42-8CC40-0HC0		1	1 unit	104	9.400	47.100
5	28	C	4AU30 32-8CC40-0HC0		1	1 unit	104	16.000	54.700
6.3	32	C	4AU36 12-8CC40-0HC0		1	1 unit	104	13.000	69.900
8	39	C	4AU36 32-8CC40-0HC0		1	1 unit	104	21.000	78.900
10	49	C	4AU39 12-8CC40-0HC0		1	1 unit	104	24.000	91.900
12.5	55	C	4AU39 32-8CC40-0HC0		1	1 unit	104	43.000	112.900
Degree of protection IP54									
0.44	1.8	B	4AP20 42-8CC40-0HD0		1	1 unit	104	2.800	14.800
0.8	3.5	B	4AP21 42-8CC40-0HD0		1	1 unit	104	2.900	18.100
1.12	6.9	B	4AP25 42-8CC40-0HD0		1	1 unit	104	4.800	27.000
2	11	B	4AP27 42-8CC40-0HD0		1	1 unit	104	5.200	34.700
2.8	20	B	4AP30 42-8CC40-0HD0		1	1 unit	104	9.400	47.100
4.4	28	C	4AU30 32-8CC40-0HD0		1	1 unit	104	16.000	54.700
5.6	32	C	4AU36 12-8CC40-0HD0		1	1 unit	104	13.000	69.900
7.1	39	C	4AU36 32-8CC40-0HD0		1	1 unit	104	21.000	78.900
8.8	49	C	4AU39 12-8CC40-0HD0		1	1 unit	104	24.000	91.900
11.2	55	C	4AU39 32-8CC40-0HD0		1	1 unit	104	43.000	112.900

1) For p.f. = 0.5 and $U_2 = 0.95 \times U_{2N}$.

2) The delivery time class depends on the quantity, see page 10/4 "Options".

3) The 4AU transformers are only supplied with screw terminals.

Three-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AP isolating and mains transformers

Overview

- According to EN 61558-2-4, -2-1
- **cRU**s
- $t_a = 40 \text{ °C/B}$
- AC 50/60 Hz
- Degree of protection IP00, IP23 and IP54



4AP17

Selection and ordering data

In two-voltage version

Rated input voltage U_{1N} 3 AC ∇ 500-400 V/ Δ 289-230 V,
rated output voltage U_{2N} 3 AC ∇ 400 V/ Δ 230 V

cRUs,

Rated power P_n kVA	DT ¹⁾	Screw terminals/ flat connectors Order No.	 Price per PU	PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx. kg	Total weight per PU approx. kg
Degree of protection IP00								
0.16	▶	4AP17 42-8BC40-0HA0		1	1 unit	104	0.800	3.100
0.25	B	4AP18 42-8BC40-0HA0		1	1 unit	104	1.300	4.200
0.4	▶	4AP19 42-8BC40-0HA0		1	1 unit	104	1.200	5.400
Degree of protection IP23								
0.14	B	4AP17 42-8BC40-0HC0		1	1 unit	104	0.800	6.000
0.23	B	4AP18 42-8BC40-0HC0		1	1 unit	104	1.300	7.100
0.36	B	4AP19 42-8BC40-0HC0		1	1 unit	104	1.200	8.300
Degree of protection IP54								
0.11	B	4AP17 42-8BC40-0HD0		1	1 unit	104	0.800	6.000
0.2	B	4AP18 42-8BC40-0HD0		1	1 unit	104	1.300	7.100
0.32	B	4AP19 42-8BC40-0HD0		1	1 unit	104	1.200	8.300

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AP, 4AU transformers with selectable voltages

Overview

- 4AP and 4AU transformers configured as isolating, control and mains transformers according to EN 61558-2-4, -2-2, -2-1 or as safety, control and mains transformers according to EN 61558-2-6, -2-2, -2-1, or as autotransformers according to EN 61558-2-13 with selectable input and output voltages in the performance range from 0.025 kVA to 16 kVA (for autotransformers the type rating is always quoted) and additional options
- **c_{RU}s**
- 4AP: $t_a = 40\text{ °C/B}$, 4AU: $t_a = 55\text{ °C/H}$
- Standard vector group: Dyn5, for autotransformer: Ya0



4AP20 (left) and 4AU (right)



Selection and ordering data



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power ¹⁾ P_n with degree of protection			Short-time rating ²⁾ P_{short}	Selectable rated voltages U_{1N}, U_{2N}	DT ³⁾	Order No. stem	Basic price per PU	Additional price for standard options				Cu weight ⁵⁾ per PU approx. kg	Transformer weight ⁵⁾ per PU approx. kg	Total weight ⁵⁾ including enclosure per PU approx. kg
IP00	IP23	IP54						Two tappings in the range $\pm 5\%$ of the rated input or output voltage for constant output	One tapping on the input or output side for falling power; neutral point connected to terminal ⁴⁾	One additional separate winding on the input or output side	Shield winding (connection routed to terminal). This is not possible for autotransformers.			
kVA	kVA	kVA	kVA											
4AP transformers														
0.16	0.14	0.11	--	12 ... 690 V,	B	4AP17 4		x	x	x	x	0.700	3.100	6.000
0.25	0.23	0.2	--	(line-to-line voltage U_L) Y or Δ	B	4AP18 4		x	x	x	x	1.250	4.400	7.300
0.4	0.35	0.32	--	for c _{RU} s	B	4AP19 4		x	x	x	x	1.100	5.400	8.300
0.63	0.57	0.44	1.8	max. 600 V	B	4AP20 4		x	x	x	x	2.800	7.100	14.800
1	0.9	0.8	3.5	(excluding tap-pings)	B	4AP21 4		x	x	x	x	3.300	10.700	18.400
1.6	1.44	1.12	6.9		B	4AP25 4		x	x	x	x	3.700	17.700	25.400
2.5	2.25	2	11		B	4AP27 4		x	x	x	x	4.800	23.800	31.500
4	3.2	2.8	20		B	4AP30 4		x	x	x	x	8.000	34.300	42.000
5	4	3.5	25		B	4AP30 5		x	x	x	x	12.700	39.700	47.400
4AU transformers														
6.3	5	4.4	28	24 ... 690 V,	B	4AU30 3		x	x	x	x	11.600	42.000	49.700
8	6.8	5.6	31.5	(line-to-line voltage U_L) Y or Δ	B	4AU36 1		x	x	x	x	10.000	52.000	65.900
10	8	7.1	39	for c _{RU} s	B	4AU36 3		x	x	x	x	15.000	57.000	70.900
12.5	10	8.8	49	max. 600 V	B	4AU39 1		x	x	x	x	17.200	67.000	80.900
16	12.5	11.2	55	(excluding tap-pings)	B	4AU39 3		x	x	x	x	30.000	81.000	94.900

Additional prices for degree of protection IP00, IP23 and IP54, see page 10/59.

Before ordering, please ask for the complete Order No. (see page 10/4 for the inquiry/order address).

x = Additional price

1) For autotransformers the type rating is always quoted.

2) The specified rating is a typical maximum short-time rating at p.f. = 0.5.

3) The delivery time class depends on the quantity, see page 10/4 "Options".

4) With three-phase transformers, an additional price is charged for neutral point connected to terminal 1/3.

5) The actual copper weight is listed in the price notice or the quotation; the transformer weight and total weight is reduced/increased by the difference.

Three-Phase Transformers

Safety, Isolating, Control and Mains Transformers

**SIRIUS 4AP, 4AU transformers
with selectable voltages**

Options for the enclosures of three-phase transformers ≤ 16 kVA in degree of protection IP00, IP23 or IP54

Siemens

Order No. stem	Rated power ¹⁾			Short-time rating P_{short} kVA	Additional price for the options			PU (UNIT, SET, M)	PS*	PG
	Degree of protection IP00, standard version P_n kVA	Degree of protection IP23 P_n kVA	Degree of protection IP54 P_n kVA		Degree of protection IP00, standard version	Degree of protection IP23	Degree of protection IP54			
4AP transformers										
4AP17 4	0.16	0.14	0.11	--	None	x	x	1	1 unit	104
4AP18 4	0.25	0.23	0.2	--	None	x	x	1	1 unit	104
4AP19 4	0.4	0.35	0.32	--	None	x	x	1	1 unit	104
4AP20 4	0.63	0.57	0.44	1.8	None	x	x	1	1 unit	104
4AP21 4	1	0.9	0.8	3.5	None	x	x	1	1 unit	104
4AP25 4	1.6	1.44	1.12	6.9	None	x	x	1	1 unit	104
4AP27 4	2.5	2.25	2	11	None	x	x	1	1 unit	104
4AP30 4	4	3.2	2.8	20	None	x	x	1	1 unit	104
4AP30 5	5	4	3.5	25	None	x	x	1	1 unit	104
4AU transformers										
4AU30 3	6.3	5	4.4	28	None	x	x	1	1 unit	104
4AU36 1	8	6.8	5.6	31.5	None	x	x	1	1 unit	104
4AU36 3	10	8	7.1	39	None	x	x	1	1 unit	104
4AU39 1	12.5	10	8.8	49	None	x	x	1	1 unit	104
4AU39 3	16	12.5	11.2	55	None	x	x	1	1 unit	104

Please inquire about other transformer enclosures.

x = Additional price

¹⁾ For autotransformers the type rating is always quoted.

Options


- Rating plates made of metal:
One separately packed rating plate made of metal can be supplied per 4AP transformer.
Additional price on request.
- Deviations from the standard vector groups Dyn5 or Ya0 for autotransformers must be specified when ordering.

Three-Phase Transformers

Safety, Isolating, Control and Mains Transformers

SIRIUS 4AP, 4AU autotransformers for mains matching

Overview

- Shared input and output windings without electrical separation
- Enable the voltage matching of electrical loads
- Designed for uninterrupted duty (100 % duty ratio)
- Vector group YNa0
- 4AP: $t_a = 50\text{ °C}$ (T50/B), 4AU: $t_a = 55\text{ °C}$ (T55/H)
- **c**  **us**



4AP (left) and 4AU (right)

Selection and ordering data

Rated input voltage U_{1N} 3 AC 480-460-440-415-380 V, 50 ... 60 Hz,
rated output voltage U_{2N} 3 AC 400 V

c  **us**, 

Rated power P_n	Power loss approx.	DT ¹⁾	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
kVA	W							kg	kg

Rated power figures are nominal and refer to the input voltage of 480 V.

Higher power values for the other input voltages can be found in the table in the technical specifications, see note on [Technical Information on page 10/1](#).

Degree of protection IP00									
5	86	▶	4AP21 42-8HA20-2XA0		1	1 unit	104	3.300	11.000
9.1	130	B	4AP25 52-8HA20-2XA0		1	1 unit	104	6.000	20.000
12.5	155	B	4AP27 42-8HA20-2XA0		1	1 unit	104	5.400	25.000
16	160	B	4AP27 52-8HA20-2XA0		1	1 unit	104	6.000	30.000
22.5	210	B	4AP30 52-8HA20-2XA0		1	1 unit	104	13.000	42.000
31.5	290	C	4AU30 32-8HA20-2XA0		1	1 unit	104	11.600	42.000
50	480	C	4AU36 32-8HA20-2XA0		1	1 unit	104	14.000	57.000
Degree of protection IP23									
4.5	70	C	4AP21 42-8HA20-2XC0		1	1 unit	104	3.300	18.700
8.2	100	B	4AP25 52-8HA20-2XC0		1	1 unit	104	6.000	27.700
11.3	125	B	4AP27 42-8HA20-2XC0		1	1 unit	104	5.400	32.700
14.4	120	B	4AP27 52-8HA20-2XC0		1	1 unit	104	10.400	37.700
18	156	C	4AP30 52-8HA20-2XC0		1	1 unit	104	13.000	49.700
25.2	205	C	4AU30 32-8HA20-2XC0		1	1 unit	104	11.600	49.700
40	335	C	4AU36 32-8HA20-2XC0		1	1 unit	104	14.000	70.900
Degree of protection IP54									
4	60	B	4AP21 42-8HA20-2XD0		1	1 unit	104	3.300	18.700
7.3	90	B	4AP25 52-8HA20-2XD0		1	1 unit	104	6.000	27.700
10	110	C	4AP27 42-8HA20-2XD0		1	1 unit	104	5.400	32.700
12.8	105	B	4AP27 52-8HA20-2XD0		1	1 unit	104	10.400	37.700
15.8	135	B	4AP30 52-8HA20-2XD0		1	1 unit	104	13.000	49.700
22.1	170	C	4AU30 32-8HA20-2XD0		1	1 unit	104	11.600	49.700
35	274	C	4AU36 32-8HA20-2XD0		1	1 unit	104	14.000	85.000

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Safety, Isolating, Control and Mains Transformers

**SIRIUS 4AP, 4AU autotransformers
for mains matching**

Rated input voltage U_{1N} 3 AC 480-460-440-415-400 (380)¹⁾ V, 50 ... 60 Hz,
rated output voltage U_{2N} 3 AC 230 (220)¹⁾ V



Rated power P_n	Power loss approx.	DT ²⁾	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
kVA	W							kg	kg
Degree of protection IP00									
5	140	B	4AP27 42-8JT10-2XA0		1	1 unit	104	5.000	25.000
9.1	210	B	4AP30 52-8JT10-2XA0		1	1 unit	104	14.000	41.000
12.5	275	C	4AU30 32-8JT10-2XA0		1	1 unit	104	12.300	42.000
16	380	C	4AU36 12-8JT10-2XA0		1	1 unit	104	11.000	53.000
22.5	390	C	4AU36 42-8JT10-2XA0		1	1 unit	104	23.000	65.000
31.5	480	C	4AU39 32-8JT10-2XA0		1	1 unit	104	34.000	85.000
Degree of protection IP23									
4.5	125	B	4AP27 42-8JT10-2XC0		1	1 unit	104	5.000	32.700
7.3	140	B	4AP30 52-8JT10-2XC0		1	1 unit	104	14.000	48.700
10	190	C	4AU30 32-8JT10-2XC0		1	1 unit	104	12.300	49.700
12.8	265	C	4AU36 12-8JT10-2XC0		1	1 unit	104	11.000	66.900
18	270	C	4AU36 42-8JT10-2XC0		1	1 unit	104	23.000	78.900
25.2	330	C	4AU39 32-8JT10-2XC0		1	1 unit	104	34.000	98.900
Degree of protection IP54									
4	110	B	4AP27 42-8JT10-2XD0		1	1 unit	104	5.000	32.700
6.4	120	B	4AP30 52-8JT10-2XD0		1	1 unit	104	14.000	48.700
8.8	160	C	4AU30 32-8JT10-2XD0		1	1 unit	104	12.300	49.700
11.2	220	C	4AU36 12-8JT10-2XD0		1	1 unit	104	11.000	66.900
15.8	225	C	4AU36 42-8JT10-2XD0		1	1 unit	104	23.000	78.900
22.1	280	C	4AU39 32-8JT10-2XD0		1	1 unit	104	34.000	98.900

¹⁾ Operating with 380 V AC three-phase at the input terminals results in an output voltage of 220 V AC three-phase.

²⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

General data

Overview

4BU.. transformers

With the right transformer, the right voltage will be available at any conditions.

Our transformers are the right choice for each application: They work reliably, safely and worldwide under a wide range of different conditions.

4BU three-phase power transformers:

- Are available as matching transformers with one input/output voltage according to DIN VDE 0532-6
- Can be configured as matching, auto- or converter transformers according to DIN VDE 0532-6 with selectable input and output voltages.

Our transformers provide optimal protection through high permissible ambient temperatures of up to 40 °C or 55 °C.

Benefits

- **UL** approvals for the USA and Canada: can be used worldwide without any problems
- Comprehensive type spectrum: rapid availability

Application

4BU three-phase power transformers are implemented in industrial and building systems and control and distribution and are used to adapt the locally available mains voltage to the operational voltage of the system or its components. They also limit the possible short-circuit currents.

Power transformers with electrical isolation or designed as *autotransformers* are used for adapting machines and systems to the local voltages that are available at the installation site.

Furthermore *power transformers* can be used with electrical devices, for example in communications, medical engineering and domestic appliances. In drive systems, special *converter transformers* are used for voltage matching and *autotransformers* are used with infeed/regenerative feedback modules.

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

Overview

- DIN VDE 0532-6
- AC 50/60 Hz
- Δ or Y (see Selection and ordering data)
- $t_a = 40\text{ }^\circ\text{C}/\text{H}$ or $t_a = 55\text{ }^\circ\text{C}/\text{H}$
(see Selection and ordering data)
- Degree of protection IP00



4BU

Selection and ordering data

With one input voltage

Rated input voltage U_{1N} 3 AC 400 V, 400 V \pm 5 %,
rated output voltage U_{2N} 3 AC Y 208 V,
 $t_a = 40\text{ }^\circ\text{C}/\text{H}$

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	DT ¹⁾	Vector group Dyn5				DT ¹⁾	Vector group Yyn0			
		Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.		Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
kVA				kg	kg			kg	kg	
Rated input voltage U_{1N} 3 AC 400 V										
18	C	4BU43 32-2AR10-2DA0		20.700	110.000	C	4BU43 32-2AR10-2CA0	20.700	110.000	
20	C	4BU43 42-2AR10-2DA0		25.000	103.000	C	4BU43 42-2AR10-2CA0	25.000	103.000	
22.5	C	4BU43 52-2AR10-2DA0		33.000	112.000	C	4BU43 52-2AR10-2CA0	33.000	112.000	
25	D	4BU45 32-2AR10-2DA0		24.000	129.000	C	4BU45 32-2AR10-2CA0	26.320	140.000	
28	D	4BU45 42-2AR10-2DA0		31.500	136.000	D	4BU45 42-2AR10-2CA0	31.500	136.000	
31.5	C	4BU47 32-2AR10-2DA0		28.000	163.000	D	4BU47 32-2AR10-2CA0	28.000	163.000	
35.5	D	4BU47 42-2AR10-2DA0		37.000	171.000	D	4BU47 42-2AR10-2CA0	37.000	171.000	
40	D	4BU47 52-2AR10-2DA0		48.500	184.000	D	4BU47 52-2AR10-2CA0	48.500	184.000	
45	D	4BU52 32-2AR10-2DA0		45.000	181.000	D	4BU52 32-2AR10-2CA0	45.000	181.000	
50	D	4BU53 32-2AR10-2DA0		48.000	201.000	D	4BU53 32-2AR10-2CA0	48.000	201.000	
56	D	4BU53 42-2AR10-2DA0		62.000	214.000	D	4BU53 42-2AR10-2CA0	62.000	214.000	
63	D	4BU54 32-2AR10-2DA0		43.000	258.000	D	4BU54 32-2AR10-2CA0	43.000	258.000	
71	D	4BU54 42-2AR10-2DA0		56.000	271.000	D	4BU54 42-2AR10-2CA0	56.000	271.000	
80	D	4BU55 32-2AR10-2DA0		60.000	301.000	D	4BU55 32-2AR10-2CA0	60.000	301.000	
91	D	4BU56 32-2AR10-2DA0		63.000	338.000	D	4BU56 32-2AR10-2CA0	63.000	338.000	
100	D	4BU56 42-2AR10-2DA0		78.000	352.000	D	4BU56 42-2AR10-2CA0	78.000	352.000	
112	X	4BU58 32-2AR10-2DA0		56.000	420.000	X	4BU58 32-2AR10-2CA0	56.000	420.000	
125	X	4BU58 42-2AR10-2DA0		70.500	434.000	X	4BU58 42-2AR10-2CA0	70.500	434.000	
140	X	4BU58 52-2AR10-2DA0		90.000	454.000	X	4BU58 52-2AR10-2CA0	90.000	454.000	
160	X	4BU59 32-2AR10-2DA0		96.000	508.000	X	4BU59 32-2AR10-2CA0	96.000	508.000	
180	X	4BU60 32-2AR10-2DA0		98.000	571.000	X	4BU60 32-2AR10-2CA0	98.000	571.000	
Rated input voltage U_{1N} 3 AC 400 V \pm 5 %										
18	C	4BU43 32-5AR10-2DA0		21.000	101.000	C	4BU43 32-5AR10-2CA0	21.000	101.000	
20	C	4BU43 42-5AR10-2DA0		27.000	105.000	C	4BU43 42-5AR10-2CA0	27.000	105.000	
22.5	C	4BU43 52-5AR10-2DA0		36.000	115.000	C	4BU43 52-5AR10-2CA0	36.000	115.000	
25	D	4BU45 32-5AR10-2DA0		26.000	131.000	D	4BU45 32-5AR10-2CA0	26.000	131.000	
28	C	4BU45 42-5AR10-2DA0		34.000	139.000	D	4BU45 42-5AR10-2CA0	34.000	139.000	
31.5	D	4BU47 32-5AR10-2DA0		30.500	166.000	D	4BU47 32-5AR10-2CA0	30.500	166.000	
35.5	D	4BU47 42-5AR10-2DA0		40.000	174.000	D	4BU47 42-5AR10-2CA0	40.000	174.000	
40	D	4BU47 52-5AR10-2DA0		52.500	188.000	D	4BU47 52-5AR10-2CA0	52.500	188.000	
45	D	4BU52 32-5AR10-2DA0		49.000	185.000	D	4BU52 32-5AR10-2CA0	49.000	185.000	
50	D	4BU53 32-5AR10-2DA0		52.000	205.000	D	4BU53 32-5AR10-2CA0	52.000	205.000	
56	D	4BU53 42-5AR10-2DA0		67.000	219.000	D	4BU53 42-5AR10-2CA0	67.000	219.000	
63	D	4BU54 32-5AR10-2DA0		46.500	262.000	D	4BU54 32-5AR10-2CA0	46.500	262.000	
71	D	4BU54 42-5AR10-2DA0		60.500	276.000	D	4BU54 42-5AR10-2CA0	60.500	276.000	
80	D	4BU55 32-5AR10-2DA0		65.000	306.000	D	4BU55 32-5AR10-2CA0	65.000	306.000	
91	D	4BU56 32-5AR10-2DA0		68.000	343.000	D	4BU56 32-5AR10-2CA0	68.000	343.000	
100	D	4BU56 42-5AR10-2DA0		84.500	359.000	D	4BU56 42-5AR10-2CA0	84.500	359.000	
112	X	4BU58 32-5AR10-2DA0		60.500	425.000	X	4BU58 32-5AR10-2CA0	60.500	425.000	
125	X	4BU58 42-5AR10-2DA0		76.500	440.000	X	4BU58 42-5AR10-2CA0	76.500	440.000	
140	X	4BU58 52-5AR10-2DA0		97.500	462.000	X	4BU58 52-5AR10-2CA0	97.500	462.000	
160	X	4BU59 32-5AR10-2DA0		104.000	516.000	X	4BU59 32-5AR10-2CA0	104.000	516.000	
180	X	4BU60 32-5AR10-2DA0		106.000	579.000	X	4BU60 32-5AR10-2CA0	106.000	579.000	

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage U_{1N} 3 AC 440 V, 440 V ± 5 %,
 rated output voltage U_{2N} 3 AC Y 208 V,
 $t_a = 40$ °C/H

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 440 V												
18	C	4BU43 32-2CR10-2DA0			19.500	99.000	C	4BU43 32-2CR10-2CA0			19.500	99.000
20	C	4BU43 42-2CR10-2DA0			25.000	103.000	C	4BU43 42-2CR10-2CA0			25.000	103.000
22.5	C	4BU43 52-2CR10-2DA0			33.000	112.000	C	4BU43 52-2CR10-2CA0			33.000	112.000
25	D	4BU45 32-2CR10-2DA0			24.000	129.000	D	4BU45 32-2CR10-2CA0			24.000	129.000
28	D	4BU45 42-2CR10-2DA0			31.500	136.000	D	4BU45 42-2CR10-2CA0			31.500	136.000
31.5	D	4BU47 32-2CR10-2DA0			28.000	163.000	D	4BU47 32-2CR10-2CA0			28.000	163.000
35.5	D	4BU47 42-2CR10-2DA0			37.000	171.000	D	4BU47 42-2CR10-2CA0			37.000	171.000
40	D	4BU47 52-2CR10-2DA0			48.500	184.000	D	4BU47 52-2CR10-2CA0			48.500	184.000
45	D	4BU52 32-2CR10-2DA0			45.000	181.000	D	4BU52 32-2CR10-2CA0			45.000	181.000
50	D	4BU53 32-2CR10-2DA0			48.000	201.000	D	4BU53 32-2CR10-2CA0			48.000	201.000
56	D	4BU53 42-2CR10-2DA0			62.000	214.000	D	4BU53 42-2CR10-2CA0			62.000	214.000
63	D	4BU54 32-2CR10-2DA0			43.000	258.000	D	4BU54 32-2CR10-2CA0			43.000	258.000
71	D	4BU54 42-2CR10-2DA0			56.000	271.000	D	4BU54 42-2CR10-2CA0			56.000	271.000
80	D	4BU55 32-2CR10-2DA0			60.000	301.000	D	4BU55 32-2CR10-2CA0			60.000	301.000
91	D	4BU56 32-2CR10-2DA0			63.000	338.000	D	4BU56 32-2CR10-2CA0			63.000	338.000
100	D	4BU56 42-2CR10-2DA0			78.000	352.000	D	4BU56 42-2CR10-2CA0			78.000	352.000
112	X	4BU58 32-2CR10-2DA0			56.000	420.000	X	4BU58 32-2CR10-2CA0			56.000	420.000
125	X	4BU58 42-2CR10-2DA0			70.500	434.000	X	4BU58 42-2CR10-2CA0			70.500	434.000
140	X	4BU58 52-2CR10-2DA0			90.000	454.000	X	4BU58 52-2CR10-2CA0			90.000	454.000
160	X	4BU59 32-2CR10-2DA0			96.000	508.000	X	4BU59 32-2CR10-2CA0			96.000	508.000
180	X	4BU60 32-2CR10-2DA0			98.000	571.000	X	4BU60 32-2CR10-2CA0			98.000	571.000
Rated input voltage U_{1N} 3 AC 440 V ± 5 %												
18	C	4BU43 32-5CR10-2DA0			21.000	101.000	C	4BU43 32-5CR10-2CA0			21.000	101.000
20	C	4BU43 42-5CR10-2DA0			27.000	105.000	C	4BU43 42-5CR10-2CA0			27.000	105.000
22.5	C	4BU43 52-5CR10-2DA0			36.000	115.000	C	4BU43 52-5CR10-2CA0			36.000	115.000
25	D	4BU45 32-5CR10-2DA0			26.000	131.000	D	4BU45 32-5CR10-2CA0			26.000	131.000
28	D	4BU45 42-5CR10-2DA0			34.000	139.000	D	4BU45 42-5CR10-2CA0			34.000	139.000
31.5	D	4BU47 32-5CR10-2DA0			30.500	166.000	D	4BU47 32-5CR10-2CA0			30.500	166.000
35.5	D	4BU47 42-5CR10-2DA0			40.000	174.000	D	4BU47 42-5CR10-2CA0			40.000	174.000
40	D	4BU47 52-5CR10-2DA0			52.500	188.000	D	4BU47 52-5CR10-2CA0			52.500	188.000
45	D	4BU52 32-5CR10-2DA0			49.000	185.000	D	4BU52 32-5CR10-2CA0			49.000	185.000
50	D	4BU53 32-5CR10-2DA0			52.000	205.000	D	4BU53 32-5CR10-2CA0			52.000	205.000
56	D	4BU53 42-5CR10-2DA0			67.000	219.000	D	4BU53 42-5CR10-2CA0			67.000	219.000
63	D	4BU54 32-5CR10-2DA0			46.500	262.000	D	4BU54 32-5CR10-2CA0			46.500	262.000
71	D	4BU54 42-5CR10-2DA0			60.500	276.000	D	4BU54 42-5CR10-2CA0			60.500	276.000
80	D	4BU55 32-5CR10-2DA0			65.000	306.000	D	4BU55 32-5CR10-2CA0			65.000	306.000
91	D	4BU56 32-5CR10-2DA0			68.000	343.000	D	4BU56 32-5CR10-2CA0			68.000	343.000
100	D	4BU56 42-5CR10-2DA0			84.500	359.000	D	4BU56 42-5CR10-2CA0			84.500	359.000
112	X	4BU58 32-5CR10-2DA0			60.500	425.000	X	4BU58 32-5CR10-2CA0			60.500	425.000
125	X	4BU58 42-5CR10-2DA0			76.500	440.000	X	4BU58 42-5CR10-2CA0			76.500	440.000
140	X	4BU58 52-5CR10-2DA0			97.500	462.000	X	4BU58 52-5CR10-2CA0			97.500	462.000
160	X	4BU59 32-5CR10-2DA0			104.000	516.000	X	4BU59 32-5CR10-2CA0			104.000	516.000
180	X	4BU60 32-5CR10-2DA0			106.000	579.000	X	4BU60 32-5CR10-2CA0			106.000	579.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage U_{1N} 3 AC 480 V, 480 V \pm 5 %,
rated output voltage U_{2N} 3 AC \sphericalangle 208 V,
 $t_a = 40$ °C/H

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 480 V												
18	C	4BU43 32-2ER10-2DA0			19.500	99.000	C	4BU43 32-2ER10-2CA0			19.500	99.000
20	C	4BU43 42-2ER10-2DA0			25.000	103.000	C	4BU43 42-2ER10-2CA0			25.000	103.000
22.5	C	4BU43 52-2ER10-2DA0			33.000	112.000	C	4BU43 52-2ER10-2CA0			33.000	112.000
25	C	4BU45 32-2ER10-2DA0			24.000	129.000	D	4BU45 32-2ER10-2CA0			24.000	129.000
28	D	4BU45 42-2ER10-2DA0			31.500	136.000	D	4BU45 42-2ER10-2CA0			31.500	136.000
31.5	C	4BU47 32-2ER10-2DA0			28.000	163.000	D	4BU47 32-2ER10-2CA0			28.000	163.000
35.5	D	4BU47 42-2ER10-2DA0			37.000	171.000	D	4BU47 42-2ER10-2CA0			37.000	171.000
40	D	4BU47 52-2ER10-2DA0			48.500	184.000	D	4BU47 52-2ER10-2CA0			48.500	184.000
45	D	4BU52 32-2ER10-2DA0			45.000	181.000	D	4BU52 32-2ER10-2CA0			45.000	181.000
50	D	4BU53 32-2ER10-2DA0			48.000	201.000	D	4BU53 32-2ER10-2CA0			48.000	201.000
56	D	4BU53 42-2ER10-2DA0			62.000	214.000	D	4BU53 42-2ER10-2CA0			62.000	214.000
63	D	4BU54 32-2ER10-2DA0			43.000	258.000	D	4BU54 32-2ER10-2CA0			43.000	258.000
71	D	4BU54 42-2ER10-2DA0			56.000	271.000	D	4BU54 42-2ER10-2CA0			56.000	271.000
80	D	4BU55 32-2ER10-2DA0			60.000	301.000	D	4BU55 32-2ER10-2CA0			60.000	301.000
91	D	4BU56 32-2ER10-2DA0			63.000	338.000	D	4BU56 32-2ER10-2CA0			63.000	338.000
100	D	4BU56 42-2ER10-2DA0			78.000	352.000	D	4BU56 42-2ER10-2CA0			78.000	352.000
112	X	4BU58 32-2ER10-2DA0			56.000	420.000	X	4BU58 32-2ER10-2CA0			56.000	420.000
125	X	4BU58 42-2ER10-2DA0			70.500	434.000	X	4BU58 42-2ER10-2CA0			70.500	434.000
140	X	4BU58 52-2ER10-2DA0			90.000	454.000	X	4BU58 52-2ER10-2CA0			90.000	454.000
160	X	4BU59 32-2ER10-2DA0			96.000	508.000	X	4BU59 32-2ER10-2CA0			96.000	508.000
180	X	4BU60 32-2ER10-2DA0			98.000	571.000	X	4BU60 32-2ER10-2CA0			98.000	571.000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %												
18	C	4BU43 32-5ER10-2DA0			21.000	101.000	C	4BU43 32-5ER10-2CA0			21.000	101.000
20	C	4BU43 42-5ER10-2DA0			27.000	105.000	C	4BU43 42-5ER10-2CA0			27.000	105.000
22.5	C	4BU43 52-5ER10-2DA0			36.000	115.000	C	4BU43 52-5ER10-2CA0			36.000	115.000
25	D	4BU45 32-5ER10-2DA0			26.000	131.000	D	4BU45 32-5ER10-2CA0			26.000	131.000
28	D	4BU45 42-5ER10-2DA0			34.000	139.000	D	4BU45 42-5ER10-2CA0			34.000	139.000
31.5	D	4BU47 32-5ER10-2DA0			30.500	166.000	D	4BU47 32-5ER10-2CA0			30.500	166.000
35.5	D	4BU47 42-5ER10-2DA0			40.000	174.000	D	4BU47 42-5ER10-2CA0			40.000	174.000
40	D	4BU47 52-5ER10-2DA0			52.500	188.000	D	4BU47 52-5ER10-2CA0			52.500	188.000
45	D	4BU52 32-5ER10-2DA0			49.000	185.000	D	4BU52 32-5ER10-2CA0			49.000	185.000
50	D	4BU53 32-5ER10-2DA0			52.000	205.000	D	4BU53 32-5ER10-2CA0			52.000	205.000
56	D	4BU53 42-5ER10-2DA0			67.000	219.000	D	4BU53 42-5ER10-2CA0			67.000	219.000
63	D	4BU54 32-5ER10-2DA0			46.500	262.000	D	4BU54 32-5ER10-2CA0			46.500	262.000
71	D	4BU54 42-5ER10-2DA0			60.500	276.000	D	4BU54 42-5ER10-2CA0			60.500	276.000
80	D	4BU55 32-5ER10-2DA0			65.000	306.000	D	4BU55 32-5ER10-2CA0			65.000	306.000
91	D	4BU56 32-5ER10-2DA0			68.000	343.000	D	4BU56 32-5ER10-2CA0			68.000	343.000
100	D	4BU56 42-5ER10-2DA0			84.500	359.000	D	4BU56 42-5ER10-2CA0			84.500	359.000
112	X	4BU58 32-5ER10-2DA0			60.500	425.000	X	4BU58 32-5ER10-2CA0			60.500	425.000
125	X	4BU58 42-5ER10-2DA0			76.500	440.000	X	4BU58 42-5ER10-2CA0			76.500	440.000
140	X	4BU58 52-5ER10-2DA0			97.500	462.000	X	4BU58 52-5ER10-2CA0			97.500	462.000
160	X	4BU59 32-5ER10-2DA0			104.000	516.000	X	4BU59 32-5ER10-2CA0			104.000	516.000
180	X	4BU60 32-5ER10-2DA0			106.000	579.000	X	4BU60 32-5ER10-2CA0			106.000	579.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage U_{1N} 3 AC 400 V, 400 V \pm 5 %,
rated output voltage U_{2N} 3 AC ∇ 400 V,
 $t_a = 40$ °C/H

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 400 V												
18	C	4BU43 32-2AA20-2DA0			20.220	110.000	C	4BU43 32-2AA20-2CA0			19.500	99.000
20	C	4BU43 42-2AA20-2DA0			26.500	103.000	C	4BU43 42-2AA20-2CA0			25.000	103.000
22.5	C	4BU43 52-2AA20-2DA0			33.000	112.000	C	4BU43 52-2AA20-2CA0			33.000	112.000
25	C	4BU45 32-2AA20-2DA0			24.000	129.000	C	4BU45 32-2AA20-2CA0			24.000	129.000
28	C	4BU45 42-2AA20-2DA0			31.500	136.000	D	4BU45 42-2AA20-2CA0			31.500	136.000
31.5	D	4BU47 32-2AA20-2DA0			28.000	163.000	D	4BU47 32-2AA20-2CA0			28.000	163.000
35.5	D	4BU47 42-2AA20-2DA0			37.000	171.000	D	4BU47 42-2AA20-2CA0			37.000	171.000
40	C	4BU47 52-2AA20-2DA0			48.500	184.000	C	4BU47 52-2AA20-2CA0			48.500	184.000
45	D	4BU52 32-2AA20-2DA0			50.600	200.000	D	4BU52 32-2AA20-2CA0			45.000	181.000
50	D	4BU53 32-2AA20-2DA0			48.000	201.000	D	4BU53 32-2AA20-2CA0			48.000	201.000
56	D	4BU53 42-2AA20-2DA0			66.000	214.000	D	4BU53 42-2AA20-2CA0			62.000	214.000
63	D	4BU54 32-2AA20-2DA0			43.000	258.000	D	4BU54 32-2AA20-2CA0			49.500	290.000
71	D	4BU54 42-2AA20-2DA0			56.000	271.000	D	4BU54 42-2AA20-2CA0			56.000	271.000
80	D	4BU55 32-2AA20-2DA0			60.000	310.000	D	4BU55 32-2AA20-2CA0			60.000	301.000
91	D	4BU56 32-2AA20-2DA0			63.000	338.000	D	4BU56 32-2AA20-2CA0			63.000	338.000
100	D	4BU56 42-2AA20-2DA0			78.000	352.000	D	4BU56 42-2AA20-2CA0			78.000	352.000
112	X	4BU58 32-2AA20-2DA0			56.000	420.000	X	4BU58 32-2AA20-2CA0			56.000	420.000
125	D	4BU58 42-2AA20-2DA0			70.500	440.000	X	4BU58 42-2AA20-2CA0			70.500	434.000
140	X	4BU58 52-2AA20-2DA0			90.000	454.000	X	4BU58 52-2AA20-2CA0			90.000	454.000
160	X	4BU59 32-2AA20-2DA0			96.000	508.000	X	4BU59 32-2AA20-2CA0			96.000	508.000
180	X	4BU60 32-2AA20-2DA0			98.000	571.000	X	4BU60 32-2AA20-2CA0			98.000	571.000
Rated input voltage U_{1N} 3 AC 400 V \pm 5 %												
18	C	4BU43 32-5AA20-2DA0			21.000	101.000	C	4BU43 32-5AA20-2CA0			21.000	101.000
20	C	4BU43 42-5AA20-2DA0			28.000	105.000	C	4BU43 42-5AA20-2CA0			27.000	105.000
22.5	C	4BU43 52-5AA20-2DA0			36.000	115.000	C	4BU43 52-5AA20-2CA0			36.000	115.000
25	C	4BU45 32-5AA20-2DA0			29.100	131.000	D	4BU45 32-5AA20-2CA0			26.000	131.000
28	C	4BU45 42-5AA20-2DA0			36.000	139.000	C	4BU45 42-5AA20-2CA0			34.000	139.000
31.5	C	4BU47 32-5AA20-2DA0			32.500	166.000	D	4BU47 32-5AA20-2CA0			30.500	166.000
35.5	C	4BU47 42-5AA20-2DA0			40.000	174.000	D	4BU47 42-5AA20-2CA0			40.000	174.000
40	C	4BU47 52-5AA20-2DA0			54.000	188.000	C	4BU47 52-5AA20-2CA0			52.500	188.000
45	D	4BU52 32-5AA20-2DA0			49.000	185.000	D	4BU52 32-5AA20-2CA0			49.000	185.000
50	D	4BU53 32-5AA20-2DA0			52.000	205.000	D	4BU53 32-5AA20-2CA0			52.000	205.000
56	D	4BU53 42-5AA20-2DA0			66.080	230.000	D	4BU53 42-5AA20-2CA0			67.000	219.000
63	D	4BU54 32-5AA20-2DA0			46.500	262.000	D	4BU54 32-5AA20-2CA0			46.500	262.000
71	D	4BU54 42-5AA20-2DA0			60.500	276.000	D	4BU54 42-5AA20-2CA0			60.500	276.000
80	D	4BU55 32-5AA20-2DA0			65.000	306.000	D	4BU55 32-5AA20-2CA0			65.000	306.000
91	D	4BU56 32-5AA20-2DA0			68.000	343.000	D	4BU56 32-5AA20-2CA0			68.000	343.000
100	D	4BU56 42-5AA20-2DA0			84.500	359.000	D	4BU56 42-5AA20-2CA0			84.500	359.000
112	X	4BU58 32-5AA20-2DA0			60.500	425.000	X	4BU58 32-5AA20-2CA0			60.500	425.000
125	D	4BU58 42-5AA20-2DA0			76.500	440.000	X	4BU58 42-5AA20-2CA0			76.500	440.000
140	X	4BU58 52-5AA20-2DA0			97.500	462.000	X	4BU58 52-5AA20-2CA0			97.500	462.000
160	X	4BU59 32-5AA20-2DA0			104.000	516.000	D	4BU59 32-5AA20-2CA0			104.000	516.000
180	X	4BU60 32-5AA20-2DA0			106.000	579.000	X	4BU60 32-5AA20-2CA0			106.000	579.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage U_{1N} 3 AC 440 V, 440 V \pm 5 %,
 rated output voltage U_{2N} 3 AC \sphericalangle 400 V,
 $t_a = 40$ °C/H

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 440 V												
18	C	4BU43 32-2CA20-2DA0			19.500	99.000	C	4BU43 32-2CA20-2CA0			19.500	99.000
20	C	4BU43 42-2CA20-2DA0			25.000	103.000	C	4BU43 42-2CA20-2CA0			25.000	103.000
22.5	C	4BU43 52-2CA20-2DA0			33.000	112.000	C	4BU43 52-2CA20-2CA0			33.000	112.000
25	D	4BU45 32-2CA20-2DA0			24.000	129.000	D	4BU45 32-2CA20-2CA0			24.000	129.000
28	D	4BU45 42-2CA20-2DA0			31.500	136.000	D	4BU45 42-2CA20-2CA0			31.500	136.000
31.5	D	4BU47 32-2CA20-2DA0			28.000	163.000	D	4BU47 32-2CA20-2CA0			28.000	163.000
35.5	C	4BU47 42-2CA20-2DA0			37.000	171.000	D	4BU47 42-2CA20-2CA0			37.000	171.000
40	D	4BU47 52-2CA20-2DA0			48.500	184.000	D	4BU47 52-2CA20-2CA0			48.500	184.000
45	D	4BU52 32-2CA20-2DA0			45.000	181.000	D	4BU52 32-2CA20-2CA0			45.000	181.000
50	D	4BU53 32-2CA20-2DA0			48.000	201.000	D	4BU53 32-2CA20-2CA0			48.000	201.000
56	D	4BU53 42-2CA20-2DA0			62.000	214.000	D	4BU53 42-2CA20-2CA0			62.000	214.000
63	D	4BU54 32-2CA20-2DA0			43.000	258.000	D	4BU54 32-2CA20-2CA0			43.000	258.000
71	D	4BU54 42-2CA20-2DA0			56.000	271.000	D	4BU54 42-2CA20-2CA0			56.000	271.000
80	D	4BU55 32-2CA20-2DA0			60.000	301.000	D	4BU55 32-2CA20-2CA0			60.000	301.000
91	D	4BU56 32-2CA20-2DA0			63.000	338.000	D	4BU56 32-2CA20-2CA0			63.000	338.000
100	D	4BU56 42-2CA20-2DA0			78.000	352.000	D	4BU56 42-2CA20-2CA0			78.000	352.000
112	D	4BU58 32-2CA20-2DA0			56.000	420.000	X	4BU58 32-2CA20-2CA0			56.000	420.000
125	X	4BU58 42-2CA20-2DA0			70.500	434.000	X	4BU58 42-2CA20-2CA0			70.500	434.000
140	X	4BU58 52-2CA20-2DA0			90.000	454.000	X	4BU58 52-2CA20-2CA0			90.000	454.000
160	X	4BU59 32-2CA20-2DA0			96.000	508.000	X	4BU59 32-2CA20-2CA0			96.000	508.000
180	X	4BU60 32-2CA20-2DA0			98.000	571.000	X	4BU60 32-2CA20-2CA0			98.000	571.000
Rated input voltage U_{1N} 3 AC 440 V \pm 5 %												
18	C	4BU43 32-5CA20-2DA0			21.000	101.000	C	4BU43 32-5CA20-2CA0			21.000	101.000
20	C	4BU43 42-5CA20-2DA0			27.000	105.000	C	4BU43 42-5CA20-2CA0			27.000	105.000
22.5	C	4BU43 52-5CA20-2DA0			36.000	115.000	C	4BU43 52-5CA20-2CA0			36.000	115.000
25	C	4BU45 32-5CA20-2DA0			26.000	131.000	D	4BU45 32-5CA20-2CA0			26.000	131.000
28	D	4BU45 42-5CA20-2DA0			34.000	139.000	D	4BU45 42-5CA20-2CA0			34.000	139.000
31.5	D	4BU47 32-5CA20-2DA0			30.500	166.000	D	4BU47 32-5CA20-2CA0			30.500	166.000
35.5	D	4BU47 42-5CA20-2DA0			40.000	174.000	D	4BU47 42-5CA20-2CA0			40.000	174.000
40	D	4BU47 52-5CA20-2DA0			52.500	188.000	D	4BU47 52-5CA20-2CA0			52.500	188.000
45	D	4BU52 32-5CA20-2DA0			49.000	185.000	D	4BU52 32-5CA20-2CA0			49.000	185.000
50	D	4BU53 32-5CA20-2DA0			52.000	205.000	D	4BU53 32-5CA20-2CA0			52.000	205.000
56	D	4BU53 42-5CA20-2DA0			67.000	219.000	D	4BU53 42-5CA20-2CA0			67.000	219.000
63	D	4BU54 32-5CA20-2DA0			46.500	262.000	D	4BU54 32-5CA20-2CA0			46.500	262.000
71	D	4BU54 42-5CA20-2DA0			60.500	276.000	D	4BU54 42-5CA20-2CA0			60.500	276.000
80	D	4BU55 32-5CA20-2DA0			65.000	306.000	D	4BU55 32-5CA20-2CA0			65.000	306.000
91	D	4BU56 32-5CA20-2DA0			68.000	343.000	D	4BU56 32-5CA20-2CA0			68.000	343.000
100	D	4BU56 42-5CA20-2DA0			84.500	359.000	D	4BU56 42-5CA20-2CA0			84.500	359.000
112	X	4BU58 32-5CA20-2DA0			60.500	425.000	X	4BU58 32-5CA20-2CA0			60.500	425.000
125	X	4BU58 42-5CA20-2DA0			76.500	440.000	X	4BU58 42-5CA20-2CA0			76.500	440.000
140	X	4BU58 52-5CA20-2DA0			97.500	462.000	X	4BU58 52-5CA20-2CA0			97.500	462.000
160	X	4BU59 32-5CA20-2DA0			104.000	516.000	X	4BU59 32-5CA20-2CA0			104.000	516.000
180	X	4BU60 32-5CA20-2DA0			106.000	579.000	X	4BU60 32-5CA20-2CA0			106.000	579.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage U_{1N} 3 AC 480 V, 480 V \pm 5 %,
rated output voltage U_{2N} 3 AC ∇ 400 V,
 $t_a = 40$ °C/H

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 480 V												
18	C	4BU43 32-2EA20-2DA0			19.500	110.000	C	4BU43 32-2EA20-2CA0			19.500	99.000
20	C	4BU43 42-2EA20-2DA0			25.000	103.000	C	4BU43 42-2EA20-2CA0			25.000	103.000
22.5	C	4BU43 52-2EA20-2DA0			35.000	112.000	C	4BU43 52-2EA20-2CA0			33.000	112.000
25	D	4BU45 32-2EA20-2DA0			24.000	129.000	D	4BU45 32-2EA20-2CA0			24.000	129.000
28	D	4BU45 42-2EA20-2DA0			31.500	136.000	D	4BU45 42-2EA20-2CA0			31.500	136.000
31.5	D	4BU47 32-2EA20-2DA0			28.000	163.000	D	4BU47 32-2EA20-2CA0			28.000	163.000
35.5	D	4BU47 42-2EA20-2DA0			37.000	171.000	D	4BU47 42-2EA20-2CA0			37.000	171.000
40	D	4BU47 52-2EA20-2DA0			48.500	184.000	D	4BU47 52-2EA20-2CA0			48.500	184.000
45	D	4BU52 32-2EA20-2DA0			45.000	181.000	D	4BU52 32-2EA20-2CA0			45.000	181.000
50	D	4BU53 32-2EA20-2DA0			48.000	201.000	D	4BU53 32-2EA20-2CA0			48.000	201.000
56	D	4BU53 42-2EA20-2DA0			62.000	214.000	D	4BU53 42-2EA20-2CA0			62.000	214.000
63	D	4BU54 32-2EA20-2DA0			50.700	258.000	D	4BU54 32-2EA20-2CA0			43.000	258.000
71	D	4BU54 42-2EA20-2DA0			56.000	271.000	D	4BU54 42-2EA20-2CA0			56.000	271.000
80	D	4BU55 32-2EA20-2DA0			60.000	301.000	D	4BU55 32-2EA20-2CA0			60.000	301.000
91	D	4BU56 32-2EA20-2DA0			63.000	338.000	D	4BU56 32-2EA20-2CA0			63.000	338.000
100	D	4BU56 42-2EA20-2DA0			78.000	352.000	D	4BU56 42-2EA20-2CA0			78.000	352.000
112	D	4BU58 32-2EA20-2DA0			62.000	420.000	X	4BU58 32-2EA20-2CA0			56.000	420.000
125	X	4BU58 42-2EA20-2DA0			70.500	434.000	X	4BU58 42-2EA20-2CA0			70.500	434.000
140	X	4BU58 52-2EA20-2DA0			90.000	454.000	X	4BU58 52-2EA20-2CA0			90.000	454.000
160	X	4BU59 32-2EA20-2DA0			96.000	508.000	X	4BU59 32-2EA20-2CA0			96.000	508.000
180	X	4BU60 32-2EA20-2DA0			98.000	571.000	X	4BU60 32-2EA20-2CA0			98.000	571.000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %												
18	C	4BU43 32-5EA20-2DA0			21.700	101.000	C	4BU43 32-5EA20-2CA0			21.000	101.000
20	C	4BU43 42-5EA20-2DA0			27.000	105.000	C	4BU43 42-5EA20-2CA0			27.000	105.000
22.5	C	4BU43 52-5EA20-2DA0			37.000	115.000	C	4BU43 52-5EA20-2CA0			36.000	115.000
25	C	4BU45 32-5EA20-2DA0			26.000	131.000	D	4BU45 32-5EA20-2CA0			26.000	131.000
28	D	4BU45 42-5EA20-2DA0			34.000	139.000	D	4BU45 42-5EA20-2CA0			34.000	139.000
31.5	D	4BU47 32-5EA20-2DA0			30.500	166.000	D	4BU47 32-5EA20-2CA0			30.500	166.000
35.5	D	4BU47 42-5EA20-2DA0			40.000	174.000	D	4BU47 42-5EA20-2CA0			40.000	174.000
40	C	4BU47 52-5EA20-2DA0			52.500	188.000	D	4BU47 52-5EA20-2CA0			52.500	188.000
45	D	4BU52 32-5EA20-2DA0			49.000	185.000	D	4BU52 32-5EA20-2CA0			49.000	185.000
50	D	4BU53 32-5EA20-2DA0			52.000	205.000	D	4BU53 32-5EA20-2CA0			52.000	205.000
56	D	4BU53 42-5EA20-2DA0			67.000	219.000	D	4BU53 42-5EA20-2CA0			67.000	219.000
63	D	4BU54 32-5EA20-2DA0			46.500	262.000	D	4BU54 32-5EA20-2CA0			46.500	262.000
71	D	4BU54 42-5EA20-2DA0			60.500	276.000	D	4BU54 42-5EA20-2CA0			60.500	276.000
80	D	4BU55 32-5EA20-2DA0			65.000	306.000	D	4BU55 32-5EA20-2CA0			65.000	306.000
91	D	4BU56 32-5EA20-2DA0			68.000	343.000	D	4BU56 32-5EA20-2CA0			68.000	343.000
100	D	4BU56 42-5EA20-2DA0			84.500	359.000	D	4BU56 42-5EA20-2CA0			84.500	359.000
112	X	4BU58 32-5EA20-2DA0			60.500	425.000	X	4BU58 32-5EA20-2CA0			60.500	425.000
125	X	4BU58 42-5EA20-2DA0			76.500	440.000	X	4BU58 42-5EA20-2CA0			76.500	440.000
140	X	4BU58 52-5EA20-2DA0			97.500	462.000	X	4BU58 52-5EA20-2CA0			97.500	462.000
160	X	4BU59 32-5EA20-2DA0			104.000	516.000	X	4BU59 32-5EA20-2CA0			104.000	516.000
180	X	4BU60 32-5EA20-2DA0			106.000	579.000	X	4BU60 32-5EA20-2CA0			98.000	571.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage U_{1N} 3 AC 480 V, 3 AC 480 V \pm 5 %,
 rated output voltage U_{2N} 3 AC ∇ 208 V,
 $t_a = 55$ °C/H

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 480 V												
18	C	4BU43 32-2ER13-2DA0			21.500	101.000	C	4BU43 32-2ER13-2CA0			21.500	101.000
20	C	4BU43 42-2ER13-2DA0			27.500	106.000	C	4BU43 42-2ER13-2CA0			27.500	106.000
22.5	C	4BU43 52-2ER13-2DA0			37.000	116.000	C	4BU43 52-2ER13-2CA0			37.000	116.000
25	D	4BU45 32-2ER13-2DA0			27.000	132.000	D	4BU45 32-2ER13-2CA0			27.000	132.000
28	D	4BU45 42-2ER13-2DA0			31.500	140.000	D	4BU45 42-2ER13-2CA0			31.500	140.000
31.5	D	4BU47 32-2ER13-2DA0			31.500	167.000	D	4BU47 32-2ER13-2CA0			31.500	167.000
35.5	D	4BU47 42-2ER13-2DA0			41.000	175.000	D	4BU47 42-2ER13-2CA0			41.000	175.000
40	D	4BU47 52-2ER13-2DA0			55.000	190.000	D	4BU47 52-2ER13-2CA0			55.000	190.000
45	D	4BU52 32-2ER13-2DA0			50.500	187.000	D	4BU52 32-2ER13-2CA0			50.500	187.000
50	D	4BU53 32-2ER13-2DA0			53.500	207.000	D	4BU53 32-2ER13-2CA0			53.500	207.000
56	D	4BU53 42-2ER13-2DA0			70.000	222.000	D	4BU53 42-2ER13-2CA0			70.000	222.000
63	D	4BU54 32-2ER13-2DA0			48.000	263.000	D	4BU54 32-2ER13-2CA0			48.000	263.000
71	D	4BU54 42-2ER13-2DA0			62.000	277.000	D	4BU54 42-2ER13-2CA0			62.000	277.000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %												
18	C	4BU43 32-5ER13-2DA0			23.500	103.000	C	4BU43 32-5ER13-2CA0			23.500	103.000
20	C	4BU43 42-5ER13-2DA0			30.000	109.000	C	4BU43 42-5ER13-2CA0			30.000	109.000
22.5	C	4BU43 52-5ER13-2DA0			40.000	119.000	C	4BU43 52-5ER13-2CA0			40.000	119.000
25	D	4BU45 32-5ER13-2DA0			29.500	135.000	D	4BU45 32-5ER13-2CA0			29.500	135.000
28	D	4BU45 42-5ER13-2DA0			38.000	143.000	D	4BU45 42-5ER13-2CA0			38.000	143.000
31.5	D	4BU47 32-5ER13-2DA0			34.000	170.000	D	4BU47 32-5ER13-2CA0			34.000	170.000
35.5	D	4BU47 42-5ER13-2DA0			44.500	179.000	D	4BU47 42-5ER13-2CA0			44.500	179.000
40	D	4BU47 52-5ER13-2DA0			59.500	195.000	D	4BU47 52-5ER13-2CA0			59.500	195.000
45	D	4BU52 32-5ER13-2DA0			54.500	191.000	D	4BU52 32-5ER13-2CA0			54.500	191.000
50	D	4BU53 32-5ER13-2DA0			58.000	212.000	D	4BU53 32-5ER13-2CA0			58.000	212.000
56	D	4BU53 42-5ER13-2DA0			76.000	228.000	D	4BU53 42-5ER13-2CA0			76.000	228.000
63	D	4BU54 32-5ER13-2DA0			52.000	267.000	D	4BU54 32-5ER13-2CA0			52.000	267.000
71	D	4BU54 42-5ER13-2DA0			67.000	282.000	D	4BU54 42-5ER13-2CA0			67.000	282.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage

U_{1N} 3 AC 400 V, 400 V ± 5 %, 440 V, 440 V ± 5 %,
rated output voltage U_{2N} 3 AC Y 400 V,
 $t_a = 55$ °C/H

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n	DT ¹⁾	Vector group Dyn5				DT ¹⁾	Vector group Yyn0			
		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Rated input voltage U_{1N} 3 AC 400 V										
18	D	4BU43 32-2AA23-2DA0		21.500	101.000	C	4BU43 32-2AA23-2CA0		23.000	110.000
20	C	4BU43 42-2AA23-2DA0		27.500	106.000	C	4BU43 42-2AA23-2CA0		27.500	106.000
22.5	C	4BU43 52-2AA23-2DA0		37.000	116.000	C	4BU43 52-2AA23-2CA0		37.000	116.000
25	C	4BU45 32-2AA23-2DA0		28.800	140.000	D	4BU45 32-2AA23-2CA0		27.000	132.000
28	C	4BU45 42-2AA23-2DA0		37.600	140.000	D	4BU45 42-2AA23-2CA0		31.500	140.000
31.5	D	4BU47 32-2AA23-2DA0		31.500	167.000	D	4BU47 32-2AA23-2CA0		31.500	167.000
35.5	C	4BU47 42-2AA23-2DA0		41.000	175.000	D	4BU47 42-2AA23-2CA0		41.000	175.000
40	C	4BU47 52-2AA23-2DA0		55.000	190.000	D	4BU47 52-2AA23-2CA0		55.000	190.000
45	D	4BU52 32-2AA23-2DA0		50.500	187.000	D	4BU52 32-2AA23-2CA0		50.500	187.000
50	D	4BU53 32-2AA23-2DA0		53.500	207.000	D	4BU53 32-2AA23-2CA0		53.500	207.000
56	D	4BU53 42-2AA23-2DA0		70.000	222.000	D	4BU53 42-2AA23-2CA0		70.000	222.000
63	D	4BU54 32-2AA23-2DA0		53.000	290.000	D	4BU54 32-2AA23-2CA0		48.000	263.000
71	D	4BU54 42-2AA23-2DA0		62.000	277.000	D	4BU54 42-2AA23-2CA0		62.000	277.000
Rated input voltage U_{1N} 3 AC 400 V ± 5 %										
18	C	4BU43 32-5AA23-2DA0		23.500	103.000	C	4BU43 32-5AA23-2CA0		23.500	103.000
20	C	4BU43 42-5AA23-2DA0		30.000	109.000	C	4BU43 42-5AA23-2CA0		30.000	109.000
22.5	C	4BU43 52-5AA23-2DA0		40.000	119.000	C	4BU43 52-5AA23-2CA0		40.000	119.000
25	D	4BU45 32-5AA23-2DA0		29.500	135.000	D	4BU45 32-5AA23-2CA0		29.500	135.000
28	C	4BU45 42-5AA23-2DA0		38.000	143.000	D	4BU45 42-5AA23-2CA0		38.000	143.000
31.5	D	4BU47 32-5AA23-2DA0		34.000	170.000	D	4BU47 32-5AA23-2CA0		34.000	170.000
35.5	D	4BU47 42-5AA23-2DA0		44.500	179.000	D	4BU47 42-5AA23-2CA0		44.500	179.000
40	D	4BU47 52-5AA23-2DA0		59.500	195.000	D	4BU47 52-5AA23-2CA0		59.500	195.000
45	D	4BU52 32-5AA23-2DA0		54.500	191.000	D	4BU52 32-5AA23-2CA0		54.500	191.000
50	D	4BU53 32-5AA23-2DA0		58.000	212.000	D	4BU53 32-5AA23-2CA0		58.000	212.000
56	D	4BU53 42-5AA23-2DA0		76.000	228.000	D	4BU53 42-5AA23-2CA0		76.000	228.000
63	D	4BU54 32-5AA23-2DA0		52.000	267.000	D	4BU54 32-5AA23-2CA0		52.000	267.000
71	D	4BU54 42-5AA23-2DA0		67.000	282.000	D	4BU54 42-5AA23-2CA0		67.000	282.000
Rated input voltage U_{1N} 3 AC 440 V										
18	C	4BU43 32-2CA23-2DA0		21.500	101.000	C	4BU43 32-2CA23-2CA0		21.500	101.000
20	C	4BU43 42-2CA23-2DA0		27.500	106.000	C	4BU43 42-2CA23-2CA0		27.500	106.000
22.5	C	4BU43 52-2CA23-2DA0		37.000	116.000	C	4BU43 52-2CA23-2CA0		37.000	116.000
25	D	4BU45 32-2CA23-2DA0		27.000	132.000	D	4BU45 32-2CA23-2CA0		27.000	132.000
28	D	4BU45 42-2CA23-2DA0		31.500	140.000	D	4BU45 42-2CA23-2CA0		31.500	140.000
31.5	D	4BU47 32-2CA23-2DA0		31.500	167.000	D	4BU47 32-2CA23-2CA0		31.500	167.000
35.5	D	4BU47 42-2CA23-2DA0		41.000	175.000	D	4BU47 42-2CA23-2CA0		41.000	175.000
40	D	4BU47 52-2CA23-2DA0		55.000	190.000	D	4BU47 52-2CA23-2CA0		55.000	190.000
45	D	4BU52 32-2CA23-2DA0		50.500	187.000	D	4BU52 32-2CA23-2CA0		50.500	187.000
50	D	4BU53 32-2CA23-2DA0		53.500	207.000	D	4BU53 32-2CA23-2CA0		53.500	207.000
56	D	4BU53 42-2CA23-2DA0		70.000	222.000	D	4BU53 42-2CA23-2CA0		70.000	222.000
63	D	4BU54 32-2CA23-2DA0		48.000	263.000	D	4BU54 32-2CA23-2CA0		48.000	263.000
71	D	4BU54 42-2CA23-2DA0		62.000	277.000	D	4BU54 42-2CA23-2CA0		62.000	277.000
Rated input voltage U_{1N} 3 AC 440 V ± 5 %										
18	C	4BU43 32-5CA23-2DA0		23.500	103.000	C	4BU43 32-5CA23-2CA0		23.500	103.000
20	D	4BU43 42-5CA23-2DA0		30.000	109.000	C	4BU43 42-5CA23-2CA0		30.000	109.000
22.5	C	4BU43 52-5CA23-2DA0		40.000	119.000	C	4BU43 52-5CA23-2CA0		40.000	119.000
25	D	4BU45 32-5CA23-2DA0		29.500	135.000	D	4BU45 32-5CA23-2CA0		29.500	135.000
28	D	4BU45 42-5CA23-2DA0		38.000	143.000	D	4BU45 42-5CA23-2CA0		38.000	143.000
31.5	D	4BU47 32-5CA23-2DA0		34.000	170.000	D	4BU47 32-5CA23-2CA0		34.000	170.000
35.5	D	4BU47 42-5CA23-2DA0		44.500	179.000	D	4BU47 42-5CA23-2CA0		44.500	179.000
40	D	4BU47 52-5CA23-2DA0		59.500	195.000	D	4BU47 52-5CA23-2CA0		59.500	195.000
45	D	4BU52 32-5CA23-2DA0		54.500	191.000	D	4BU52 32-5CA23-2CA0		54.500	191.000
50	D	4BU53 32-5CA23-2DA0		58.000	212.000	D	4BU53 32-5CA23-2CA0		58.000	212.000
56	D	4BU53 42-5CA23-2DA0		76.000	228.000	D	4BU53 42-5CA23-2CA0		76.000	228.000
63	D	4BU54 32-5CA23-2DA0		52.000	267.000	D	4BU54 32-5CA23-2CA0		52.000	267.000
71	D	4BU54 42-5CA23-2DA0		67.000	282.000	D	4BU54 42-5CA23-2CA0		67.000	282.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers

With one input voltage

Rated input voltage U_{1N} 3 AC 480 V, 480 V \pm 5 %,
rated output voltage U_{2N} 3 AC ∇ 400 V,
 $t_a = 55$ °C/H

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0		
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg
Rated input voltage U_{1N} 3 AC 480 V										
18	C	4BU43 32-2EA23-2DA0		21,500	101,000	C	4BU43 32-2EA23-2CA0		21,500	101,000
20	C	4BU43 42-2EA23-2DA0		27,500	106,000	C	4BU43 42-2EA23-2CA0		27,500	106,000
22.5	C	4BU43 52-2EA23-2DA0		37,000	116,000	C	4BU43 52-2EA23-2CA0		37,000	116,000
25	D	4BU45 32-2EA23-2DA0		27,000	132,000	D	4BU45 32-2EA23-2CA0		27,000	132,000
28	D	4BU45 42-2EA23-2DA0		31,500	140,000	D	4BU45 42-2EA23-2CA0		31,500	140,000
31.5	D	4BU47 32-2EA23-2DA0		31,500	167,000	D	4BU47 32-2EA23-2CA0		31,500	167,000
35.5	D	4BU47 42-2EA23-2DA0		41,000	175,000	D	4BU47 42-2EA23-2CA0		41,000	175,000
40	D	4BU47 52-2EA23-2DA0		55,000	190,000	D	4BU47 52-2EA23-2CA0		55,000	190,000
45	D	4BU52 32-2EA23-2DA0		50,500	187,000	D	4BU52 32-2EA23-2CA0		50,500	187,000
50	D	4BU53 32-2EA23-2DA0		53,500	207,000	D	4BU53 32-2EA23-2CA0		53,500	207,000
56	D	4BU53 42-2EA23-2DA0		75,000	222,000	D	4BU53 42-2EA23-2CA0		70,000	222,000
63	D	4BU54 32-2EA23-2DA0		48,000	263,000	D	4BU54 32-2EA23-2CA0		48,000	263,000
71	D	4BU54 42-2EA23-2DA0		62,000	277,000	D	4BU54 42-2EA23-2CA0		62,000	277,000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %										
18	C	4BU43 32-5EA23-2DA0		23,500	103,000	C	4BU43 32-5EA23-2CA0		23,500	103,000
20	C	4BU43 42-5EA23-2DA0		30,000	109,000	C	4BU43 42-5EA23-2CA0		30,000	109,000
22.5	C	4BU43 52-5EA23-2DA0		40,000	119,000	C	4BU43 52-5EA23-2CA0		40,000	119,000
25	D	4BU45 32-5EA23-2DA0		29,500	135,000	D	4BU45 32-5EA23-2CA0		29,500	135,000
28	D	4BU45 42-5EA23-2DA0		38,000	143,000	D	4BU45 42-5EA23-2CA0		38,000	143,000
31.5	D	4BU47 32-5EA23-2DA0		34,000	170,000	D	4BU47 32-5EA23-2CA0		34,000	170,000
35.5	D	4BU47 42-5EA23-2DA0		44,500	179,000	D	4BU47 42-5EA23-2CA0		44,500	179,000
40	D	4BU47 52-5EA23-2DA0		59,500	195,000	D	4BU47 52-5EA23-2CA0		59,500	195,000
45	D	4BU52 32-5EA23-2DA0		54,500	191,000	D	4BU52 32-5EA23-2CA0		54,500	191,000
50	D	4BU53 32-5EA23-2DA0		58,000	212,000	D	4BU53 32-5EA23-2CA0		58,000	212,000
56	D	4BU53 42-5EA23-2DA0		76,000	228,000	D	4BU53 42-5EA23-2CA0		76,000	228,000
63	D	4BU54 32-5EA23-2DA0		52,000	267,000	D	4BU54 32-5EA23-2CA0		52,000	267,000
71	D	4BU54 42-5EA23-2DA0		67,000	282,000	D	4BU54 42-5EA23-2CA0		67,000	282,000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers
with cURus approval

Overview

- DIN VDE 0532-6
- AC 50/60 Hz
- Δ or Y (see Selection and ordering data)
- **cURus**
- $t_a = 40$ °C/H or $t_a = 55$ °C/H
(see Selection and ordering data)
- Degree of protection IP00



4BU

Selection and ordering data

With one input voltage

Rated input voltage U_{1N} 3 AC 400 V, 400 V \pm 5 %,
rated output voltage U_{2N} 3 AC Y 208 V,
 $t_a = 40$ °C/H

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5				DT ¹⁾	Vector group Yyn0			
		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Rated input voltage U_{1N} 3 AC 400 V										
18	C	4BU43 33-2AR10-2DA0		21.500	100.000	C	4BU43 33-2AR10-2CA0		21.500	100.000
20	C	4BU43 43-2AR10-2DA0		27.500	106.000	C	4BU43 43-2AR10-2CA0		27.500	106.000
22.5	C	4BU43 53-2AR10-2DA0		37.000	115.000	C	4BU43 53-2AR10-2CA0		37.000	115.000
25	D	4BU45 33-2AR10-2DA0		27.000	132.000	D	4BU45 33-2AR10-2CA0		27.000	132.000
28	D	4BU45 43-2AR10-2DA0		35.000	140.000	D	4BU45 43-2AR10-2CA0		35.000	140.000
31.5	D	4BU47 33-2AR10-2DA0		31.500	166.000	D	4BU47 33-2AR10-2CA0		31.500	166.000
35.5	D	4BU47 43-2AR10-2DA0		41.000	175.000	D	4BU47 43-2AR10-2CA0		41.000	175.000
40	D	4BU47 53-2AR10-2DA0		55.000	189.000	D	4BU47 53-2AR10-2CA0		55.000	189.000
45	D	4BU52 33-2AR10-2DA0		50.500	187.000	D	4BU52 33-2AR10-2CA0		50.500	187.000
50	D	4BU53 33-2AR10-2DA0		53.500	207.000	D	4BU53 33-2AR10-2CA0		53.500	207.000
56	D	4BU53 43-2AR10-2DA0		69.500	223.000	D	4BU53 43-2AR10-2CA0		69.500	223.000
63	D	4BU54 33-2AR10-2DA0		48.000	263.000	D	4BU54 33-2AR10-2CA0		48.000	263.000
71	D	4BU54 43-2AR10-2DA0		69.800	277.000	D	4BU54 43-2AR10-2CA0		62.000	277.000
80	D	4BU55 33-2AR10-2DA0		66.500	308.000	D	4BU55 33-2AR10-2CA0		66.500	308.000
91	D	4BU56 33-2AR10-2DA0		70.500	347.000	D	4BU56 33-2AR10-2CA0		70.500	347.000
100	D	4BU56 43-2AR10-2DA0		87.000	363.000	D	4BU56 43-2AR10-2CA0		87.000	363.000
112	X	4BU58 33-2AR10-2DA0		61.500	425.000	X	4BU58 33-2AR10-2CA0		61.500	425.000
125	X	4BU58 43-2AR10-2DA0		77.500	442.000	X	4BU58 43-2AR10-2CA0		77.500	442.000
140	X	4BU58 53-2AR10-2DA0		99.000	462.000	X	4BU58 53-2AR10-2CA0		99.000	462.000
160	X	4BU59 33-2AR10-2DA0		106.000	518.000	X	4BU59 33-2AR10-2CA0		106.000	518.000
180	X	4BU60 33-2AR10-2DA0		108.000	581.000	X	4BU60 33-2AR10-2CA0		108.000	581.000
Rated input voltage U_{1N} 3 AC 400 V \pm 5 %										
18	C	4BU43 33-5AR10-2DA0		23.500	102.000	C	4BU43 33-5AR10-2CA0		23.500	102.000
20	C	4BU43 43-5AR10-2DA0		30.000	109.000	C	4BU43 43-5AR10-2CA0		30.000	109.000
22.5	C	4BU43 53-5AR10-2DA0		40.000	118.000	C	4BU43 53-5AR10-2CA0		40.000	118.000
25	D	4BU45 33-5AR10-2DA0		29.500	135.000	D	4BU45 33-5AR10-2CA0		29.500	135.000
28	D	4BU45 43-5AR10-2DA0		38.000	143.000	D	4BU45 43-5AR10-2CA0		38.000	143.000
31.5	D	4BU47 33-5AR10-2DA0		34.000	169.000	D	4BU47 33-5AR10-2CA0		34.000	169.000
35.5	D	4BU47 43-5AR10-2DA0		44.500	179.000	D	4BU47 43-5AR10-2CA0		44.500	179.000
40	D	4BU47 53-5AR10-2DA0		59.500	194.000	D	4BU47 53-5AR10-2CA0		59.500	194.000
45	D	4BU52 33-5AR10-2DA0		54.500	191.000	D	4BU52 33-5AR10-2CA0		54.500	191.000
50	D	4BU53 33-5AR10-2DA0		58.000	212.000	D	4BU53 33-5AR10-2CA0		58.000	212.000
56	D	4BU53 43-5AR10-2DA0		75.000	229.000	D	4BU53 43-5AR10-2CA0		75.000	229.000
63	D	4BU54 33-5AR10-2DA0		52.000	267.000	D	4BU54 33-5AR10-2CA0		52.000	267.000
71	D	4BU54 43-5AR10-2DA0		67.000	282.000	D	4BU54 43-5AR10-2CA0		67.000	282.000
80	D	4BU55 33-5AR10-2DA0		72.000	314.000	D	4BU55 33-5AR10-2CA0		72.000	314.000
91	D	4BU56 33-5AR10-2DA0		76.500	353.000	D	4BU56 33-5AR10-2CA0		76.500	353.000
100	D	4BU56 43-5AR10-2DA0		94.000	370.000	D	4BU56 43-5AR10-2CA0		94.000	370.000
112	X	4BU58 33-5AR10-2DA0		66.500	430.000	X	4BU58 33-5AR10-2CA0		66.500	430.000
125	X	4BU58 43-5AR10-2DA0		84.000	449.000	X	4BU58 43-5AR10-2CA0		84.000	449.000
140	X	4BU58 53-5AR10-2DA0		107.000	470.000	X	4BU58 53-5AR10-2CA0		107.000	470.000
160	X	4BU59 33-5AR10-2DA0		114.500	527.000	X	4BU59 33-5AR10-2CA0		114.500	527.000
180	X	4BU60 33-5AR10-2DA0		117.000	590.000	X	4BU60 33-5AR10-2CA0		117.000	590.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

* You can order this quantity or a multiple thereof.

Three-Phase Transformers

Power Transformers

**SIRIUS 4BU matching transformers
with cURus approval**

With one input voltage

*Rated input voltage U_{1N} 3 AC 440 V, 440 V \pm 5 %,
rated output voltage U_{2N} 3 AC \sphericalangle 208 V,
 $t_a = 40$ °C/H*

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5				DT ¹⁾	Vector group Yyn0			
		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Rated input voltage U_{1N} 3 AC 440 V										
18	C	4BU43 33-2CR10-2DA0		21.500	100.000	C	4BU43 33-2CR10-2CA0		21.500	100.000
20	C	4BU43 43-2CR10-2DA0		27.500	106.000	C	4BU43 43-2CR10-2CA0		27.500	106.000
22.5	C	4BU43 53-2CR10-2DA0		37.000	115.000	C	4BU43 53-2CR10-2CA0		37.000	115.000
25	D	4BU45 33-2CR10-2DA0		27.000	132.000	D	4BU45 33-2CR10-2CA0		27.000	132.000
28	D	4BU45 43-2CR10-2DA0		35.000	140.000	D	4BU45 43-2CR10-2CA0		35.000	140.000
31.5	D	4BU47 33-2CR10-2DA0		31.500	166.000	D	4BU47 33-2CR10-2CA0		31.500	166.000
35.5	D	4BU47 43-2CR10-2DA0		41.000	175.000	D	4BU47 43-2CR10-2CA0		41.000	175.000
40	D	4BU47 53-2CR10-2DA0		55.000	189.000	D	4BU47 53-2CR10-2CA0		55.000	189.000
45	D	4BU52 33-2CR10-2DA0		50.500	187.000	D	4BU52 33-2CR10-2CA0		50.500	187.000
50	D	4BU53 33-2CR10-2DA0		53.500	207.000	D	4BU53 33-2CR10-2CA0		53.500	207.000
56	D	4BU53 43-2CR10-2DA0		69.500	223.000	D	4BU53 43-2CR10-2CA0		69.500	223.000
63	D	4BU54 33-2CR10-2DA0		48.000	263.000	D	4BU54 33-2CR10-2CA0		48.000	263.000
71	D	4BU54 43-2CR10-2DA0		62.000	277.000	D	4BU54 43-2CR10-2CA0		62.000	277.000
80	D	4BU55 33-2CR10-2DA0		66.500	308.000	D	4BU55 33-2CR10-2CA0		66.500	308.000
91	D	4BU56 33-2CR10-2DA0		70.500	347.000	D	4BU56 33-2CR10-2CA0		70.500	347.000
100	D	4BU56 43-2CR10-2DA0		87.000	363.000	D	4BU56 43-2CR10-2CA0		87.000	363.000
112	X	4BU58 33-2CR10-2DA0		61.500	425.000	X	4BU58 33-2CR10-2CA0		61.500	425.000
125	X	4BU58 43-2CR10-2DA0		77.500	442.000	X	4BU58 43-2CR10-2CA0		77.500	442.000
140	X	4BU58 53-2CR10-2DA0		99.000	462.000	X	4BU58 53-2CR10-2CA0		99.000	462.000
160	X	4BU59 33-2CR10-2DA0		106.000	518.000	X	4BU59 33-2CR10-2CA0		106.000	518.000
180	X	4BU60 33-2CR10-2DA0		108.000	581.000	X	4BU60 33-2CR10-2CA0		108.000	581.000
Rated input voltage U_{1N} 3 AC 440 V \pm 5 %										
18	C	4BU43 33-5CR10-2DA0		23.500	102.000	C	4BU43 33-5CR10-2CA0		23.500	102.000
20	C	4BU43 43-5CR10-2DA0		30.000	109.000	C	4BU43 43-5CR10-2CA0		30.000	109.000
22.5	C	4BU43 53-5CR10-2DA0		40.000	118.000	C	4BU43 53-5CR10-2CA0		40.000	118.000
25	D	4BU45 33-5CR10-2DA0		29.500	135.000	D	4BU45 33-5CR10-2CA0		29.500	135.000
28	D	4BU45 43-5CR10-2DA0		38.000	143.000	D	4BU45 43-5CR10-2CA0		38.000	143.000
31.5	D	4BU47 33-5CR10-2DA0		34.000	169.000	D	4BU47 33-5CR10-2CA0		34.000	169.000
35.5	D	4BU47 43-5CR10-2DA0		44.500	179.000	D	4BU47 43-5CR10-2CA0		44.500	179.000
40	D	4BU47 53-5CR10-2DA0		59.500	194.000	D	4BU47 53-5CR10-2CA0		59.500	194.000
45	D	4BU52 33-5CR10-2DA0		54.500	191.000	D	4BU52 33-5CR10-2CA0		54.500	191.000
50	D	4BU53 33-5CR10-2DA0		58.000	212.000	D	4BU53 33-5CR10-2CA0		58.000	212.000
56	D	4BU53 43-5CR10-2DA0		75.000	229.000	D	4BU53 43-5CR10-2CA0		75.000	229.000
63	D	4BU54 33-5CR10-2DA0		52.000	267.000	D	4BU54 33-5CR10-2CA0		52.000	267.000
71	D	4BU54 43-5CR10-2DA0		67.000	282.000	D	4BU54 43-5CR10-2CA0		67.000	282.000
80	D	4BU55 33-5CR10-2DA0		72.000	314.000	D	4BU55 33-5CR10-2CA0		72.000	314.000
91	D	4BU56 33-5CR10-2DA0		76.500	353.000	D	4BU56 33-5CR10-2CA0		76.500	353.000
100	D	4BU56 43-5CR10-2DA0		94.000	370.000	D	4BU56 43-5CR10-2CA0		94.000	370.000
112	X	4BU58 33-5CR10-2DA0		66.500	430.000	X	4BU58 33-5CR10-2CA0		66.500	430.000
125	X	4BU58 43-5CR10-2DA0		84.000	449.000	X	4BU58 43-5CR10-2CA0		84.000	449.000
140	X	4BU58 53-5CR10-2DA0		107.000	470.000	X	4BU58 53-5CR10-2CA0		107.000	470.000
160	X	4BU59 33-5CR10-2DA0		114.500	527.000	X	4BU59 33-5CR10-2CA0		114.500	527.000
180	X	4BU60 33-5CR10-2DA0		117.000	590.000	X	4BU60 33-5CR10-2CA0		117.000	590.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers
with cURus approval

With one input voltage

Rated input voltage U_{1N} 3 AC 480 V, 480 V \pm 5 %,
rated output voltage U_{2N} 3 AC \sphericalangle 208 V,
 $t_a = 40$ °C/H

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5				DT ¹⁾	Vector group Yyn0			
		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Rated input voltage U_{1N} 3 AC 480 V										
18	C	4BU43 33-2ER10-2DA0		21.500	100.000	C	4BU43 33-2ER10-2CA0		21.500	100.000
20	C	4BU43 43-2ER10-2DA0		27.500	106.000	C	4BU43 43-2ER10-2CA0		27.500	106.000
22.5	C	4BU43 53-2ER10-2DA0		37.000	115.000	C	4BU43 53-2ER10-2CA0		37.000	115.000
25	D	4BU45 33-2ER10-2DA0		27.000	132.000	D	4BU45 33-2ER10-2CA0		27.000	132.000
28	D	4BU45 43-2ER10-2DA0		35.000	140.000	D	4BU45 43-2ER10-2CA0		35.000	140.000
31.5	C	4BU47 33-2ER10-2DA0		31.500	166.000	D	4BU47 33-2ER10-2CA0		31.500	166.000
35.5	D	4BU47 43-2ER10-2DA0		41.000	175.000	D	4BU47 43-2ER10-2CA0		41.000	175.000
40	D	4BU47 53-2ER10-2DA0		55.000	189.000	D	4BU47 53-2ER10-2CA0		55.000	189.000
45	D	4BU52 33-2ER10-2DA0		50.500	187.000	D	4BU52 33-2ER10-2CA0		50.500	187.000
50	D	4BU53 33-2ER10-2DA0		53.500	207.000	D	4BU53 33-2ER10-2CA0		53.500	207.000
56	D	4BU53 43-2ER10-2DA0		69.500	223.000	D	4BU53 43-2ER10-2CA0		69.500	223.000
63	D	4BU54 33-2ER10-2DA0		48.000	263.000	D	4BU54 33-2ER10-2CA0		48.000	263.000
71	D	4BU54 43-2ER10-2DA0		62.000	277.000	D	4BU54 43-2ER10-2CA0		62.000	277.000
80	D	4BU55 33-2ER10-2DA0		66.500	308.000	D	4BU55 33-2ER10-2CA0		66.500	308.000
91	D	4BU56 33-2ER10-2DA0		70.500	347.000	D	4BU56 33-2ER10-2CA0		70.500	347.000
100	D	4BU56 43-2ER10-2DA0		87.000	363.000	D	4BU56 43-2ER10-2CA0		87.000	363.000
112	X	4BU58 33-2ER10-2DA0		61.500	425.000	X	4BU58 33-2ER10-2CA0		61.500	425.000
125	X	4BU58 43-2ER10-2DA0		77.500	442.000	X	4BU58 43-2ER10-2CA0		77.500	442.000
140	X	4BU58 53-2ER10-2DA0		99.000	462.000	X	4BU58 53-2ER10-2CA0		99.000	462.000
160	X	4BU59 33-2ER10-2DA0		106.000	518.000	X	4BU59 33-2ER10-2CA0		106.000	518.000
180	X	4BU60 33-2ER10-2DA0		108.000	581.000	X	4BU60 33-2ER10-2CA0		108.000	581.000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %										
18	C	4BU43 33-5ER10-2DA0		23.500	102.000	C	4BU43 33-5ER10-2CA0		23.500	102.000
20	C	4BU43 43-5ER10-2DA0		30.000	109.000	C	4BU43 43-5ER10-2CA0		30.000	109.000
22.5	C	4BU43 53-5ER10-2DA0		40.000	118.000	C	4BU43 53-5ER10-2CA0		40.000	118.000
25	D	4BU45 33-5ER10-2DA0		29.500	135.000	D	4BU45 33-5ER10-2CA0		29.500	135.000
28	D	4BU45 43-5ER10-2DA0		38.000	143.000	D	4BU45 43-5ER10-2CA0		38.000	143.000
31.5	D	4BU47 33-5ER10-2DA0		34.000	169.000	D	4BU47 33-5ER10-2CA0		34.000	169.000
35.5	D	4BU47 43-5ER10-2DA0		44.500	179.000	D	4BU47 43-5ER10-2CA0		44.500	179.000
40	D	4BU47 53-5ER10-2DA0		59.500	194.000	D	4BU47 53-5ER10-2CA0		59.500	194.000
45	D	4BU52 33-5ER10-2DA0		54.500	191.000	D	4BU52 33-5ER10-2CA0		54.500	191.000
50	D	4BU53 33-5ER10-2DA0		58.000	212.000	D	4BU53 33-5ER10-2CA0		58.000	212.000
56	D	4BU53 43-5ER10-2DA0		75.000	229.000	D	4BU53 43-5ER10-2CA0		75.000	229.000
63	D	4BU54 33-5ER10-2DA0		52.000	267.000	D	4BU54 33-5ER10-2CA0		52.000	267.000
71	D	4BU54 43-5ER10-2DA0		67.000	282.000	D	4BU54 43-5ER10-2CA0		67.000	282.000
80	D	4BU55 33-5ER10-2DA0		72.000	314.000	D	4BU55 33-5ER10-2CA0		72.000	314.000
91	D	4BU56 33-5ER10-2DA0		76.500	353.000	D	4BU56 33-5ER10-2CA0		76.500	353.000
100	D	4BU56 43-5ER10-2DA0		94.000	370.000	D	4BU56 43-5ER10-2CA0		94.000	370.000
112	X	4BU58 33-5ER10-2DA0		66.500	430.000	X	4BU58 33-5ER10-2CA0		66.500	430.000
125	X	4BU58 43-5ER10-2DA0		84.000	449.000	X	4BU58 43-5ER10-2CA0		84.000	449.000
140	X	4BU58 53-5ER10-2DA0		107.000	470.000	X	4BU58 53-5ER10-2CA0		107.000	470.000
160	X	4BU59 33-5ER10-2DA0		114.500	527.000	X	4BU59 33-5ER10-2CA0		114.500	527.000
180	X	4BU60 33-5ER10-2DA0		117.000	590.000	X	4BU60 33-5ER10-2CA0		117.000	590.000

More products with higher ratings and degrees of protection
IP20 and IP23 can be found in the interactive Catalog CA 01 and
Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

**SIRIUS 4BU matching transformers
with cURus approval**

With one input voltage

*Rated input voltage U_{1N} 3 AC 400 V, 400 V \pm 5 %,
rated output voltage U_{2N} 3 AC ∇ 400 V,
 $t_a = 40$ °C/H*

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5				DT ¹⁾	Vector group Yyn0			
		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg		Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Rated input voltage U_{1N} 3 AC 400 V										
18	C	4BU43 33-2AA20-2DA0		21.500	100.000	C	4BU43 33-2AA20-2CA0		21.500	100.000
20	C	4BU43 43-2AA20-2DA0		27.500	106.000	C	4BU43 43-2AA20-2CA0		27.500	106.000
22.5	C	4BU43 53-2AA20-2DA0		37.000	115.000	C	4BU43 53-2AA20-2CA0		37.000	115.000
25	D	4BU45 33-2AA20-2DA0		27.000	132.000	D	4BU45 33-2AA20-2CA0		27.000	132.000
28	D	4BU45 43-2AA20-2DA0		35.000	140.000	D	4BU45 43-2AA20-2CA0		35.000	140.000
31.5	D	4BU47 33-2AA20-2DA0		31.500	166.000	D	4BU47 33-2AA20-2CA0		31.500	166.000
35.5	D	4BU47 43-2AA20-2DA0		41.000	175.000	D	4BU47 43-2AA20-2CA0		41.000	175.000
40	D	4BU47 53-2AA20-2DA0		55.000	189.000	D	4BU47 53-2AA20-2CA0		55.000	189.000
45	D	4BU52 33-2AA20-2DA0		50.500	187.000	D	4BU52 33-2AA20-2CA0		50.500	187.000
50	D	4BU53 33-2AA20-2DA0		53.500	207.000	D	4BU53 33-2AA20-2CA0		53.500	207.000
56	D	4BU53 43-2AA20-2DA0		69.500	223.000	D	4BU53 43-2AA20-2CA0		69.500	223.000
63	D	4BU54 33-2AA20-2DA0		48.000	263.000	D	4BU54 33-2AA20-2CA0		48.000	263.000
71	D	4BU54 43-2AA20-2DA0		65.000	277.000	D	4BU54 43-2AA20-2CA0		62.000	277.000
80	D	4BU55 33-2AA20-2DA0		66.500	308.000	D	4BU55 33-2AA20-2CA0		66.500	308.000
91	D	4BU56 33-2AA20-2DA0		70.500	347.000	D	4BU56 33-2AA20-2CA0		70.500	347.000
100	D	4BU56 43-2AA20-2DA0		87.000	363.000	D	4BU56 43-2AA20-2CA0		87.000	363.000
112	X	4BU58 33-2AA20-2DA0		61.500	425.000	X	4BU58 33-2AA20-2CA0		61.500	425.000
125	X	4BU58 43-2AA20-2DA0		77.500	442.000	X	4BU58 43-2AA20-2CA0		77.500	442.000
140	X	4BU58 53-2AA20-2DA0		99.000	462.000	X	4BU58 53-2AA20-2CA0		99.000	462.000
160	X	4BU59 33-2AA20-2DA0		106.000	518.000	X	4BU59 33-2AA20-2CA0		106.000	518.000
180	X	4BU60 33-2AA20-2DA0		108.000	581.000	X	4BU60 33-2AA20-2CA0		108.000	581.000
Rated input voltage U_{1N} 3 AC 400 V \pm 5 %										
18	C	4BU43 33-5AA20-2DA0		23.500	102.000	C	4BU43 33-5AA20-2CA0		23.500	102.000
20	C	4BU43 43-5AA20-2DA0		30.000	120.000	C	4BU43 43-5AA20-2CA0		30.000	109.000
22.5	C	4BU43 53-5AA20-2DA0		40.000	118.000	C	4BU43 53-5AA20-2CA0		40.000	118.000
25	D	4BU45 33-5AA20-2DA0		29.500	135.000	D	4BU45 33-5AA20-2CA0		29.500	135.000
28	D	4BU45 43-5AA20-2DA0		38.000	143.000	D	4BU45 43-5AA20-2CA0		38.000	143.000
31.5	D	4BU47 33-5AA20-2DA0		34.000	169.000	D	4BU47 33-5AA20-2CA0		34.000	169.000
35.5	C	4BU47 43-5AA20-2DA0		44.500	179.000	D	4BU47 43-5AA20-2CA0		44.500	179.000
40	D	4BU47 53-5AA20-2DA0		59.500	194.000	D	4BU47 53-5AA20-2CA0		59.500	194.000
45	D	4BU52 33-5AA20-2DA0		54.500	191.000	D	4BU52 33-5AA20-2CA0		54.500	191.000
50	D	4BU53 33-5AA20-2DA0		58.000	212.000	D	4BU53 33-5AA20-2CA0		58.000	212.000
56	D	4BU53 43-5AA20-2DA0		75.000	229.000	D	4BU53 43-5AA20-2CA0		75.000	229.000
63	D	4BU54 33-5AA20-2DA0		52.000	267.000	D	4BU54 33-5AA20-2CA0		52.000	267.000
71	D	4BU54 43-5AA20-2DA0		67.000	282.000	D	4BU54 43-5AA20-2CA0		67.000	282.000
80	D	4BU55 33-5AA20-2DA0		72.000	314.000	D	4BU55 33-5AA20-2CA0		72.000	314.000
91	D	4BU56 33-5AA20-2DA0		76.500	353.000	D	4BU56 33-5AA20-2CA0		76.500	353.000
100	D	4BU56 43-5AA20-2DA0		94.000	370.000	D	4BU56 43-5AA20-2CA0		94.000	370.000
112	X	4BU58 33-5AA20-2DA0		66.500	430.000	X	4BU58 33-5AA20-2CA0		66.500	430.000
125	X	4BU58 43-5AA20-2DA0		84.000	449.000	X	4BU58 43-5AA20-2CA0		84.000	449.000
140	X	4BU58 53-5AA20-2DA0		107.000	470.000	X	4BU58 53-5AA20-2CA0		107.000	470.000
160	X	4BU59 33-5AA20-2DA0		114.500	527.000	X	4BU59 33-5AA20-2CA0		114.500	527.000
180	X	4BU60 33-5AA20-2DA0		117.000	590.000	X	4BU60 33-5AA20-2CA0		117.000	590.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers
with cURus approval

With one input voltage

Rated input voltage U_{1N} 3 AC 440 V, 3 AC 440 V \pm 5 %,
rated output voltage U_{2N} 3 AC ∇ 400 V,
 $t_a = 40$ °C/H

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 440 V												
18	C	4BU43 33-2CA20-2DA0			21.500	100.000	C	4BU43 33-2CA20-2CA0			21.500	100.000
20	C	4BU43 43-2CA20-2DA0			27.500	106.000	C	4BU43 43-2CA20-2CA0			27.500	106.000
22.5	C	4BU43 53-2CA20-2DA0			37.000	115.000	C	4BU43 53-2CA20-2CA0			37.000	115.000
25	D	4BU45 33-2CA20-2DA0			27.000	132.000	D	4BU45 33-2CA20-2CA0			27.000	132.000
28	D	4BU45 43-2CA20-2DA0			35.000	140.000	D	4BU45 43-2CA20-2CA0			35.000	140.000
31.5	D	4BU47 33-2CA20-2DA0			31.500	166.000	D	4BU47 33-2CA20-2CA0			31.500	166.000
35.5	D	4BU47 43-2CA20-2DA0			41.000	175.000	D	4BU47 43-2CA20-2CA0			41.000	175.000
40	D	4BU47 53-2CA20-2DA0			55.000	189.000	D	4BU47 53-2CA20-2CA0			55.000	189.000
45	D	4BU52 33-2CA20-2DA0			50.500	187.000	D	4BU52 33-2CA20-2CA0			50.500	187.000
50	D	4BU53 33-2CA20-2DA0			53.500	207.000	D	4BU53 33-2CA20-2CA0			53.500	207.000
56	D	4BU53 43-2CA20-2DA0			69.500	223.000	D	4BU53 43-2CA20-2CA0			69.500	223.000
63	D	4BU54 33-2CA20-2DA0			48.000	263.000	D	4BU54 33-2CA20-2CA0			48.000	263.000
71	D	4BU54 43-2CA20-2DA0			62.000	277.000	D	4BU54 43-2CA20-2CA0			62.000	277.000
80	D	4BU55 33-2CA20-2DA0			66.500	308.000	D	4BU55 33-2CA20-2CA0			66.500	308.000
91	D	4BU56 33-2CA20-2DA0			70.500	347.000	D	4BU56 33-2CA20-2CA0			70.500	347.000
100	D	4BU56 43-2CA20-2DA0			87.000	363.000	D	4BU56 43-2CA20-2CA0			87.000	363.000
112	X	4BU58 33-2CA20-2DA0			61.500	425.000	X	4BU58 33-2CA20-2CA0			61.500	425.000
125	X	4BU58 43-2CA20-2DA0			77.500	442.000	X	4BU58 43-2CA20-2CA0			77.500	442.000
140	X	4BU58 53-2CA20-2DA0			99.000	462.000	X	4BU58 53-2CA20-2CA0			99.000	462.000
160	X	4BU59 33-2CA20-2DA0			106.000	518.000	X	4BU59 33-2CA20-2CA0			106.000	518.000
180	X	4BU60 33-2CA20-2DA0			108.000	581.000	X	4BU60 33-2CA20-2CA0			108.000	581.000
Rated input voltage U_{1N} 3 AC 440 V \pm 5 %												
18	C	4BU43 33-5CA20-2DA0			23.500	102.000	C	4BU43 33-5CA20-2CA0			23.500	102.000
20	C	4BU43 43-5CA20-2DA0			30.000	109.000	C	4BU43 43-5CA20-2CA0			30.000	109.000
22.5	C	4BU43 53-5CA20-2DA0			40.000	118.000	C	4BU43 53-5CA20-2CA0			40.000	118.000
25	D	4BU45 33-5CA20-2DA0			29.500	135.000	D	4BU45 33-5CA20-2CA0			29.500	135.000
28	D	4BU45 43-5CA20-2DA0			38.000	143.000	D	4BU45 43-5CA20-2CA0			38.000	143.000
31.5	D	4BU47 33-5CA20-2DA0			34.000	169.000	D	4BU47 33-5CA20-2CA0			34.000	169.000
35.5	D	4BU47 43-5CA20-2DA0			44.500	179.000	D	4BU47 43-5CA20-2CA0			44.500	179.000
40	D	4BU47 53-5CA20-2DA0			59.500	194.000	D	4BU47 53-5CA20-2CA0			59.500	194.000
45	D	4BU52 33-5CA20-2DA0			54.500	191.000	D	4BU52 33-5CA20-2CA0			54.500	191.000
50	D	4BU53 33-5CA20-2DA0			58.000	212.000	D	4BU53 33-5CA20-2CA0			58.000	212.000
56	D	4BU53 43-5CA20-2DA0			75.000	229.000	D	4BU53 43-5CA20-2CA0			75.000	229.000
63	D	4BU54 33-5CA20-2DA0			52.000	267.000	D	4BU54 33-5CA20-2CA0			52.000	267.000
71	D	4BU54 43-5CA20-2DA0			67.000	282.000	D	4BU54 43-5CA20-2CA0			67.000	282.000
80	D	4BU55 33-5CA20-2DA0			72.000	314.000	D	4BU55 33-5CA20-2CA0			72.000	314.000
91	D	4BU56 33-5CA20-2DA0			76.500	353.000	D	4BU56 33-5CA20-2CA0			76.500	353.000
100	D	4BU56 43-5CA20-2DA0			94.000	370.000	D	4BU56 43-5CA20-2CA0			94.000	370.000
112	X	4BU58 33-5CA20-2DA0			66.500	430.000	X	4BU58 33-5CA20-2CA0			66.500	430.000
125	X	4BU58 43-5CA20-2DA0			84.000	449.000	X	4BU58 43-5CA20-2CA0			84.000	449.000
140	X	4BU58 53-5CA20-2DA0			107.000	470.000	X	4BU58 53-5CA20-2CA0			107.000	470.000
160	X	4BU59 33-5CA20-2DA0			114.500	527.000	X	4BU59 33-5CA20-2CA0			114.500	527.000
180	X	4BU60 33-5CA20-2DA0			117.000	590.000	X	4BU60 33-5CA20-2CA0			117.000	590.000

More products with higher ratings and degrees of protection
IP20 and IP23 can be found in the interactive Catalog CA 01 and
Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

**SIRIUS 4BU matching transformers
with cURus approval**

With one input voltage

*Rated input voltage U_{1N} 3 AC 480 V, 480 V \pm 5 %,
rated output voltage U_{2N} 3 AC ∇ 400 V,
 $t_a = 40$ °C/H*

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 480 V												
18	C	4BU43 33-2EA20-2DA0			21.500	100.000	C	4BU43 33-2EA20-2CA0			21.500	100.000
20	C	4BU43 43-2EA20-2DA0			27.500	106.000	C	4BU43 43-2EA20-2CA0			27.500	106.000
22.5	C	4BU43 53-2EA20-2DA0			37.000	115.000	C	4BU43 53-2EA20-2CA0			37.000	115.000
25	D	4BU45 33-2EA20-2DA0			27.000	132.000	D	4BU45 33-2EA20-2CA0			27.000	132.000
28	D	4BU45 43-2EA20-2DA0			35.000	140.000	D	4BU45 43-2EA20-2CA0			35.000	140.000
31.5	C	4BU47 33-2EA20-2DA0			31.500	166.000	D	4BU47 33-2EA20-2CA0			31.500	166.000
35.5	D	4BU47 43-2EA20-2DA0			41.000	175.000	D	4BU47 43-2EA20-2CA0			41.000	175.000
40	D	4BU47 53-2EA20-2DA0			55.000	189.000	D	4BU47 53-2EA20-2CA0			55.000	189.000
45	D	4BU52 33-2EA20-2DA0			50.500	187.000	D	4BU52 33-2EA20-2CA0			50.500	187.000
50	D	4BU53 33-2EA20-2DA0			53.500	207.000	D	4BU53 33-2EA20-2CA0			53.500	207.000
56	D	4BU53 43-2EA20-2DA0			69.500	223.000	D	4BU53 43-2EA20-2CA0			69.500	223.000
63	D	4BU54 33-2EA20-2DA0			48.000	263.000	D	4BU54 33-2EA20-2CA0			48.000	263.000
71	D	4BU54 43-2EA20-2DA0			62.000	277.000	D	4BU54 43-2EA20-2CA0			62.000	277.000
80	D	4BU55 33-2EA20-2DA0			66.500	308.000	D	4BU55 33-2EA20-2CA0			66.500	308.000
91	D	4BU56 33-2EA20-2DA0			70.500	347.000	D	4BU56 33-2EA20-2CA0			70.500	347.000
100	D	4BU56 43-2EA20-2DA0			87.000	363.000	D	4BU56 43-2EA20-2CA0			87.000	363.000
112	X	4BU58 33-2EA20-2DA0			61.500	425.000	X	4BU58 33-2EA20-2CA0			61.500	425.000
125	X	4BU58 43-2EA20-2DA0			77.500	442.000	X	4BU58 43-2EA20-2CA0			77.500	442.000
140	X	4BU58 53-2EA20-2DA0			99.000	462.000	X	4BU58 53-2EA20-2CA0			99.000	462.000
160	X	4BU59 33-2EA20-2DA0			106.000	518.000	D	4BU59 33-2EA20-2CA0			106.000	518.000
180	X	4BU60 33-2EA20-2DA0			108.000	581.000	X	4BU60 33-2EA20-2CA0			108.000	581.000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %												
18	C	4BU43 33-5EA20-2DA0			23.500	115.000	C	4BU43 33-5EA20-2CA0			23.500	102.000
20	C	4BU43 43-5EA20-2DA0			30.000	109.000	C	4BU43 43-5EA20-2CA0			30.000	109.000
22.5	C	4BU43 53-5EA20-2DA0			42.410	120.000	C	4BU43 53-5EA20-2CA0			40.000	118.000
25	C	4BU45 33-5EA20-2DA0			29.500	135.000	D	4BU45 33-5EA20-2CA0			29.500	135.000
28	D	4BU45 43-5EA20-2DA0			38.000	143.000	D	4BU45 43-5EA20-2CA0			38.000	143.000
31.5	D	4BU47 33-5EA20-2DA0			34.000	169.000	D	4BU47 33-5EA20-2CA0			34.000	169.000
35.5	D	4BU47 43-5EA20-2DA0			44.500	179.000	D	4BU47 43-5EA20-2CA0			44.500	179.000
40	C	4BU47 53-5EA20-2DA0			59.500	194.000	D	4BU47 53-5EA20-2CA0			59.500	194.000
45	D	4BU52 33-5EA20-2DA0			54.500	191.000	D	4BU52 33-5EA20-2CA0			54.500	191.000
50	D	4BU53 33-5EA20-2DA0			58.000	212.000	D	4BU53 33-5EA20-2CA0			58.000	212.000
56	D	4BU53 43-5EA20-2DA0			75.000	229.000	D	4BU53 43-5EA20-2CA0			75.000	229.000
63	D	4BU54 33-5EA20-2DA0			52.000	267.000	D	4BU54 33-5EA20-2CA0			52.000	267.000
71	D	4BU54 43-5EA20-2DA0			67.000	282.000	D	4BU54 43-5EA20-2CA0			67.000	282.000
80	D	4BU55 33-5EA20-2DA0			72.000	314.000	D	4BU55 33-5EA20-2CA0			72.000	314.000
91	D	4BU56 33-5EA20-2DA0			76.500	353.000	D	4BU56 33-5EA20-2CA0			76.500	353.000
100	D	4BU56 43-5EA20-2DA0			94.000	370.000	D	4BU56 43-5EA20-2CA0			94.000	370.000
112	X	4BU58 33-5EA20-2DA0			66.500	430.000	X	4BU58 33-5EA20-2CA0			66.500	430.000
125	X	4BU58 43-5EA20-2DA0			84.000	449.000	X	4BU58 43-5EA20-2CA0			84.000	449.000
140	X	4BU58 53-5EA20-2DA0			107.000	470.000	X	4BU58 53-5EA20-2CA0			107.000	470.000
160	X	4BU59 33-5EA20-2DA0			114.500	527.000	X	4BU59 33-5EA20-2CA0			114.500	527.000
180	X	4BU60 33-5EA20-2DA0			117.000	590.000	X	4BU60 33-5EA20-2CA0			117.000	590.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers Power Transformers

SIRIUS 4BU matching transformers
with cURus approval

With one input voltage

Rated input voltage

U_{1N} 3 AC 400 V, 400 V ± 5 %, 440 V, 440 V ± 5 %,
rated output voltage U_{2N} 3 AC Y 208 V,
 $t_a = 55$ °C/H

PU (UNIT, SET, M) =1
PS* =1 unit
PG =104



Rated power P_n	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx.	Total weight per PU approx.	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU	kg				Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.	
kVA												
Rated input voltage U_{1N} 3 AC 400 V												
18	C	4BU43 33-2AR13-2DA0		24.500	103.000	C	4BU43 33-2AR13-2CA0		24.500	103.000		
20	C	4BU43 43-2AR13-2DA0		32.000	110.000	C	4BU43 43-2AR13-2CA0		32.000	110.000		
22.5	C	4BU43 53-2AR13-2DA0		43.000	121.000	C	4BU43 53-2AR13-2CA0		43.000	121.000		
25	D	4BU45 33-2AR13-2DA0		31.000	136.000	D	4BU45 33-2AR13-2CA0		31.000	136.000		
28	D	4BU45 43-2AR13-2DA0		41.000	146.000	D	4BU45 43-2AR13-2CA0		41.000	146.000		
31.5	D	4BU47 33-2AR13-2DA0		36.000	170.000	D	4BU47 33-2AR13-2CA0		36.000	170.000		
35.5	D	4BU47 43-2AR13-2DA0		48.000	182.000	D	4BU47 43-2AR13-2CA0		48.000	182.000		
40	D	4BU47 53-2AR13-2DA0		64.500	199.000	D	4BU47 53-2AR13-2CA0		64.500	199.000		
45	D	4BU52 33-2AR13-2DA0		58.000	194.000	D	4BU52 33-2AR13-2CA0		58.000	194.000		
50	D	4BU53 33-2AR13-2DA0		61.500	215.000	D	4BU53 33-2AR13-2CA0		61.500	215.000		
56	D	4BU53 43-2AR13-2DA0		80.000	233.000	D	4BU53 43-2AR13-2CA0		80.000	233.000		
63	D	4BU54 33-2AR13-2DA0		54.000	269.000	D	4BU54 33-2AR13-2CA0		54.000	269.000		
71	X	4BU54 43-2AR13-2DA0		71.000	286.000	D	4BU54 43-2AR13-2CA0		71.000	286.000		
Rated input voltage U_{1N} 3 AC 400 V ± 5 %												
18	C	4BU43 33-5AR13-2DA0		26.500	105.000	C	4BU43 33-5AR13-2CA0		26.500	105.000		
20	C	4BU43 43-5AR13-2DA0		35.000	113.000	C	4BU43 43-5AR13-2CA0		35.000	113.000		
22.5	C	4BU43 53-5AR13-2DA0		46.500	125.000	C	4BU43 53-5AR13-2CA0		46.500	125.000		
25	D	4BU45 33-5AR13-2DA0		33.500	139.000	D	4BU45 33-5AR13-2CA0		33.500	139.000		
28	D	4BU45 43-5AR13-2DA0		44.500	150.000	D	4BU45 43-5AR13-2CA0		44.500	150.000		
31.5	D	4BU47 33-5AR13-2DA0		39.000	173.000	D	4BU47 33-5AR13-2CA0		39.000	173.000		
35.5	D	4BU47 43-5AR13-2DA0		52.000	186.000	D	4BU47 43-5AR13-2CA0		52.000	186.000		
40	D	4BU47 53-5AR13-2DA0		70.000	206.000	D	4BU47 53-5AR13-2CA0		70.000	206.000		
45	D	4BU52 33-5AR13-2DA0		63.000	199.000	D	4BU52 33-5AR13-2CA0		63.000	199.000		
50	D	4BU53 33-5AR13-2DA0		72.000	220.000	D	4BU53 33-5AR13-2CA0		66.500	220.000		
56	D	4BU53 43-5AR13-2DA0		86.500	240.000	D	4BU53 43-5AR13-2CA0		86.500	240.000		
63	D	4BU54 33-5AR13-2DA0		58.500	274.000	D	4BU54 33-5AR13-2CA0		58.500	274.000		
71	D	4BU54 43-5AR13-2DA0		77.000	292.000	D	4BU54 43-5AR13-2CA0		77.000	292.000		
Rated input voltage U_{1N} 3 AC 440 V												
18	C	4BU43 33-2CR13-2DA0		24.500	103.000	C	4BU43 33-2CR13-2CA0		24.500	103.000		
20	C	4BU43 43-2CR13-2DA0		32.000	110.000	C	4BU43 43-2CR13-2CA0		32.000	110.000		
22.5	C	4BU43 53-2CR13-2DA0		43.000	121.000	C	4BU43 53-2CR13-2CA0		43.000	121.000		
25	D	4BU45 33-2CR13-2DA0		31.000	136.000	D	4BU45 33-2CR13-2CA0		31.000	136.000		
28	D	4BU45 43-2CR13-2DA0		41.000	146.000	D	4BU45 43-2CR13-2CA0		41.000	146.000		
31.5	D	4BU47 33-2CR13-2DA0		36.000	170.000	D	4BU47 33-2CR13-2CA0		36.000	170.000		
35.5	D	4BU47 43-2CR13-2DA0		48.000	182.000	D	4BU47 43-2CR13-2CA0		48.000	182.000		
40	D	4BU47 53-2CR13-2DA0		64.500	199.000	D	4BU47 53-2CR13-2CA0		64.500	199.000		
45	D	4BU52 33-2CR13-2DA0		58.000	194.000	D	4BU52 33-2CR13-2CA0		58.000	194.000		
50	D	4BU53 33-2CR13-2DA0		61.500	215.000	D	4BU53 33-2CR13-2CA0		61.500	215.000		
56	D	4BU53 43-2CR13-2DA0		80.000	233.000	D	4BU53 43-2CR13-2CA0		80.000	233.000		
63	D	4BU54 33-2CR13-2DA0		54.000	269.000	D	4BU54 33-2CR13-2CA0		54.000	269.000		
71	D	4BU54 43-2CR13-2DA0		71.000	286.000	D	4BU54 43-2CR13-2CA0		71.000	286.000		
Rated input voltage U_{1N} 3 AC 440 V ± 5 %												
18	C	4BU43 33-5CR13-2DA0		26.500	105.000	C	4BU43 33-5CR13-2CA0		26.500	105.000		
20	C	4BU43 43-5CR13-2DA0		35.000	113.000	C	4BU43 43-5CR13-2CA0		35.000	113.000		
22.5	C	4BU43 53-5CR13-2DA0		46.500	125.000	C	4BU43 53-5CR13-2CA0		46.500	125.000		
25	D	4BU45 33-5CR13-2DA0		33.500	139.000	D	4BU45 33-5CR13-2CA0		33.500	139.000		
28	D	4BU45 43-5CR13-2DA0		44.500	150.000	D	4BU45 43-5CR13-2CA0		44.500	150.000		
31.5	D	4BU47 33-5CR13-2DA0		39.000	173.000	D	4BU47 33-5CR13-2CA0		39.000	173.000		
35.5	D	4BU47 43-5CR13-2DA0		52.000	186.000	D	4BU47 43-5CR13-2CA0		52.000	186.000		
40	D	4BU47 53-5CR13-2DA0		70.000	206.000	D	4BU47 53-5CR13-2CA0		70.000	206.000		
45	D	4BU52 33-5CR13-2DA0		63.000	199.000	D	4BU52 33-5CR13-2CA0		63.000	199.000		
50	D	4BU53 33-5CR13-2DA0		66.500	220.000	D	4BU53 33-5CR13-2CA0		66.500	220.000		
56	D	4BU53 43-5CR13-2DA0		86.500	240.000	D	4BU53 43-5CR13-2CA0		86.500	240.000		
63	D	4BU54 33-5CR13-2DA0		58.500	274.000	D	4BU54 33-5CR13-2CA0		58.500	274.000		
71	D	4BU54 43-5CR13-2DA0		77.000	292.000	D	4BU54 43-5CR13-2CA0		77.000	292.000		

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

* You can order this quantity or a multiple thereof.

Three-Phase Transformers

Power Transformers

**SIRIUS 4BU matching transformers
with cURus approval**

With one input voltage

*Rated input voltage U_{1N} 3 AC 480 V, 480 V \pm 5 %,
rated output voltage U_{2N} 3 AC \sphericalangle 208 V,
 $t_a = 55$ °C/H*

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 480 V												
18	C	4BU43 33-2ER13-2DA0			24.500	103.000	C	4BU43 33-2ER13-2CA0			24.500	103.000
20	C	4BU43 43-2ER13-2DA0			32.000	110.000	C	4BU43 43-2ER13-2CA0			32.000	110.000
22.5	C	4BU43 53-2ER13-2DA0			43.000	121.000	C	4BU43 53-2ER13-2CA0			43.000	121.000
25	D	4BU45 33-2ER13-2DA0			31.000	136.000	D	4BU45 33-2ER13-2CA0			31.000	136.000
28	D	4BU45 43-2ER13-2DA0			41.000	146.000	D	4BU45 43-2ER13-2CA0			41.000	146.000
31.5	D	4BU47 33-2ER13-2DA0			36.000	170.000	D	4BU47 33-2ER13-2CA0			36.000	170.000
35.5	D	4BU47 43-2ER13-2DA0			48.000	182.000	D	4BU47 43-2ER13-2CA0			48.000	182.000
40	D	4BU47 53-2ER13-2DA0			64.500	199.000	D	4BU47 53-2ER13-2CA0			64.500	199.000
45	D	4BU52 33-2ER13-2DA0			58.000	194.000	D	4BU52 33-2ER13-2CA0			58.000	194.000
50	D	4BU53 33-2ER13-2DA0			61.500	215.000	D	4BU53 33-2ER13-2CA0			61.500	215.000
56	D	4BU53 43-2ER13-2DA0			80.000	233.000	D	4BU53 43-2ER13-2CA0			80.000	233.000
63	D	4BU54 33-2ER13-2DA0			54.000	269.000	D	4BU54 33-2ER13-2CA0			54.000	269.000
71	D	4BU54 43-2ER13-2DA0			71.000	286.000	D	4BU54 43-2ER13-2CA0			71.000	286.000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %												
18	C	4BU43 33-5ER13-2DA0			26.500	105.000	C	4BU43 33-5ER13-2CA0			26.500	105.000
20	C	4BU43 43-5ER13-2DA0			35.000	113.000	C	4BU43 43-5ER13-2CA0			35.000	113.000
22.5	C	4BU43 53-5ER13-2DA0			46.500	125.000	C	4BU43 53-5ER13-2CA0			46.500	125.000
25	D	4BU45 33-5ER13-2DA0			33.500	139.000	D	4BU45 33-5ER13-2CA0			33.500	139.000
28	D	4BU45 43-5ER13-2DA0			44.500	150.000	D	4BU45 43-5ER13-2CA0			44.500	150.000
31.5	D	4BU47 33-5ER13-2DA0			39.000	173.000	D	4BU47 33-5ER13-2CA0			39.000	173.000
35.5	D	4BU47 43-5ER13-2DA0			52.000	186.000	D	4BU47 43-5ER13-2CA0			52.000	186.000
40	D	4BU47 53-5ER13-2DA0			70.000	206.000	D	4BU47 53-5ER13-2CA0			70.000	206.000
45	D	4BU52 33-5ER13-2DA0			63.000	199.000	D	4BU52 33-5ER13-2CA0			63.000	199.000
50	D	4BU53 33-5ER13-2DA0			66.500	220.000	D	4BU53 33-5ER13-2CA0			66.500	220.000
56	D	4BU53 43-5ER13-2DA0			86.500	240.000	D	4BU53 43-5ER13-2CA0			86.500	240.000
63	D	4BU54 33-5ER13-2DA0			58.500	274.000	D	4BU54 33-5ER13-2CA0			58.500	274.000
71	D	4BU54 43-5ER13-2DA0			77.000	292.000	D	4BU54 43-5ER13-2CA0			77.000	292.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU matching transformers
with cURus approval

With one input voltage

Rated input voltage

U_{1N} 3 AC 400 V, 400 V \pm 5 %, 440 V, 440 V \pm 5 %,

rated output voltage U_{2N} 3 AC Y 400 V,

$t_a = 55$ °C/H

 cURus

PU (UNIT, SET, M) = 1

PS* = 1 unit

PG = 104

Rated power P_n	DT ¹⁾	Vector group Dyn5				DT ¹⁾	Vector group Yyn0			
		Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.		Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
kVA				kg	kg			kg	kg	
Rated input voltage U_{1N} 3 AC 400 V										
18	C	4BU43 33-2AA23-2DA0		24.500	105.000	C	4BU43 33-2AA23-2CA0	24.500	103.000	
20	C	4BU43 43-2AA23-2DA0		32.000	110.000	C	4BU43 43-2AA23-2CA0	32.000	110.000	
22.5	C	4BU43 53-2AA23-2DA0		43.000	121.000	C	4BU43 53-2AA23-2CA0	43.000	121.000	
25	D	4BU45 33-2AA23-2DA0		31.000	136.000	D	4BU45 33-2AA23-2CA0	31.000	136.000	
28	C	4BU45 43-2AA23-2DA0		41.000	146.000	D	4BU45 43-2AA23-2CA0	41.000	146.000	
31.5	D	4BU47 33-2AA23-2DA0		36.000	170.000	D	4BU47 33-2AA23-2CA0	36.000	170.000	
35.5	D	4BU47 43-2AA23-2DA0		48.000	182.000	D	4BU47 43-2AA23-2CA0	48.000	182.000	
40	D	4BU47 53-2AA23-2DA0		64.500	199.000	D	4BU47 53-2AA23-2CA0	64.500	199.000	
45	D	4BU52 33-2AA23-2DA0		58.000	194.000	D	4BU52 33-2AA23-2CA0	58.000	194.000	
50	D	4BU53 33-2AA23-2DA0		61.500	215.000	D	4BU53 33-2AA23-2CA0	61.500	215.000	
56	D	4BU53 43-2AA23-2DA0		80.000	233.000	D	4BU53 43-2AA23-2CA0	80.000	233.000	
63	D	4BU54 33-2AA23-2DA0		54.000	269.000	D	4BU54 33-2AA23-2CA0	54.000	269.000	
71	D	4BU54 43-2AA23-2DA0		71.000	286.000	D	4BU54 43-2AA23-2CA0	71.000	286.000	
Rated input voltage U_{1N} 3 AC 400 V \pm 5 %										
18	C	4BU43 33-5AA23-2DA0		26.500	105.000	C	4BU43 33-5AA23-2CA0	26.500	105.000	
20	C	4BU43 43-5AA23-2DA0		35.000	113.000	C	4BU43 43-5AA23-2CA0	35.000	113.000	
22.5	C	4BU43 53-5AA23-2DA0		46.500	125.000	C	4BU43 53-5AA23-2CA0	46.500	125.000	
25	D	4BU45 33-5AA23-2DA0		33.500	139.000	D	4BU45 33-5AA23-2CA0	33.500	139.000	
28	D	4BU45 43-5AA23-2DA0		44.500	150.000	D	4BU45 43-5AA23-2CA0	44.500	150.000	
31.5	D	4BU47 33-5AA23-2DA0		39.000	173.000	D	4BU47 33-5AA23-2CA0	39.000	173.000	
35.5	D	4BU47 43-5AA23-2DA0		52.000	186.000	D	4BU47 43-5AA23-2CA0	52.000	186.000	
40	D	4BU47 53-5AA23-2DA0		70.000	206.000	D	4BU47 53-5AA23-2CA0	70.000	206.000	
45	D	4BU52 33-5AA23-2DA0		63.000	199.000	D	4BU52 33-5AA23-2CA0	63.000	199.000	
50	D	4BU53 33-5AA23-2DA0		66.500	220.000	D	4BU53 33-5AA23-2CA0	66.500	220.000	
56	D	4BU53 43-5AA23-2DA0		86.500	240.000	D	4BU53 43-5AA23-2CA0	86.500	240.000	
63	D	4BU54 33-5AA23-2DA0		58.500	274.000	D	4BU54 33-5AA23-2CA0	58.500	274.000	
71	D	4BU54 43-5AA23-2DA0		77.000	292.000	D	4BU54 43-5AA23-2CA0	77.000	292.000	
Rated input voltage U_{1N} 3 AC 440 V										
18	C	4BU43 33-2CA23-2DA0		24.500	103.000	C	4BU43 33-2CA23-2CA0	24.500	103.000	
20	C	4BU43 43-2CA23-2DA0		32.000	110.000	C	4BU43 43-2CA23-2CA0	32.000	110.000	
22.5	C	4BU43 53-2CA23-2DA0		43.000	121.000	C	4BU43 53-2CA23-2CA0	43.000	121.000	
25	D	4BU45 33-2CA23-2DA0		31.000	136.000	D	4BU45 33-2CA23-2CA0	31.000	136.000	
28	D	4BU45 43-2CA23-2DA0		41.000	146.000	D	4BU45 43-2CA23-2CA0	41.000	146.000	
31.5	D	4BU47 33-2CA23-2DA0		36.000	170.000	D	4BU47 33-2CA23-2CA0	36.000	170.000	
35.5	D	4BU47 43-2CA23-2DA0		48.000	182.000	D	4BU47 43-2CA23-2CA0	48.000	182.000	
40	D	4BU47 53-2CA23-2DA0		64.500	199.000	D	4BU47 53-2CA23-2CA0	64.500	199.000	
45	D	4BU52 33-2CA23-2DA0		58.000	194.000	D	4BU52 33-2CA23-2CA0	58.000	194.000	
50	D	4BU53 33-2CA23-2DA0		61.500	215.000	D	4BU53 33-2CA23-2CA0	61.500	215.000	
56	D	4BU53 43-2CA23-2DA0		80.000	233.000	D	4BU53 43-2CA23-2CA0	80.000	233.000	
63	D	4BU54 33-2CA23-2DA0		54.000	269.000	D	4BU54 33-2CA23-2CA0	54.000	269.000	
71	D	4BU54 43-2CA23-2DA0		71.000	286.000	D	4BU54 43-2CA23-2CA0	71.000	286.000	
Rated input voltage U_{1N} 3 AC 440 V \pm 5 %										
18	C	4BU43 33-5CA23-2DA0		26.500	105.000	C	4BU43 33-5CA23-2CA0	26.500	105.000	
20	C	4BU43 43-5CA23-2DA0		35.000	113.000	C	4BU43 43-5CA23-2CA0	35.000	113.000	
22.5	C	4BU43 53-5CA23-2DA0		46.500	125.000	C	4BU43 53-5CA23-2CA0	46.500	125.000	
25	D	4BU45 33-5CA23-2DA0		33.500	139.000	D	4BU45 33-5CA23-2CA0	33.500	139.000	
28	D	4BU45 43-5CA23-2DA0		44.500	150.000	D	4BU45 43-5CA23-2CA0	44.500	150.000	
31.5	D	4BU47 33-5CA23-2DA0		39.000	173.000	D	4BU47 33-5CA23-2CA0	39.000	173.000	
35.5	D	4BU47 43-5CA23-2DA0		52.000	186.000	D	4BU47 43-5CA23-2CA0	52.000	186.000	
40	D	4BU47 53-5CA23-2DA0		70.000	206.000	D	4BU47 53-5CA23-2CA0	70.000	206.000	
45	D	4BU52 33-5CA23-2DA0		63.000	199.000	D	4BU52 33-5CA23-2CA0	63.000	199.000	
50	D	4BU53 33-5CA23-2DA0		66.500	220.000	D	4BU53 33-5CA23-2CA0	66.500	220.000	
56	D	4BU53 43-5CA23-2DA0		86.500	240.000	D	4BU53 43-5CA23-2CA0	86.500	240.000	
63	D	4BU54 33-5CA23-2DA0		58.500	274.000	D	4BU54 33-5CA23-2CA0	58.500	274.000	
71	D	4BU54 43-5CA23-2DA0		77.000	292.000	D	4BU54 43-5CA23-2CA0	77.000	292.000	

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

**SIRIUS 4BU matching transformers
with cURus approval**

With one input voltage

*Rated input voltage U_{1N} 3 AC 480 V, 480 V \pm 5 %,
rated output voltage U_{2N} 3 AC ∇ 400 V,
 $t_a = 55$ °C/H*

cURus

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power P_n kVA	DT ¹⁾	Vector group Dyn5			Cu weight per PU approx. kg	Total weight per PU approx. kg	DT ¹⁾	Vector group Yyn0				
		Order No.	Price per PU					Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	
Rated input voltage U_{1N} 3 AC 480 V												
18	C	4BU43 33-2EA23-2DA0			24.500	103.000	C	4BU43 33-2EA23-2CA0			24.500	103.000
20	C	4BU43 43-2EA23-2DA0			32.000	110.000	C	4BU43 43-2EA23-2CA0			32.000	110.000
22.5	C	4BU43 53-2EA23-2DA0			43.000	121.000	C	4BU43 53-2EA23-2CA0			43.000	121.000
25	D	4BU45 33-2EA23-2DA0			31.000	136.000	D	4BU45 33-2EA23-2CA0			31.000	136.000
28	C	4BU45 43-2EA23-2DA0			43.000	146.000	D	4BU45 43-2EA23-2CA0			41.000	146.000
31.5	D	4BU47 33-2EA23-2DA0			36.000	170.000	D	4BU47 33-2EA23-2CA0			36.000	170.000
35.5	D	4BU47 43-2EA23-2DA0			48.000	182.000	D	4BU47 43-2EA23-2CA0			48.000	182.000
40	D	4BU47 53-2EA23-2DA0			64.500	199.000	D	4BU47 53-2EA23-2CA0			64.500	199.000
45	D	4BU52 33-2EA23-2DA0			58.000	194.000	D	4BU52 33-2EA23-2CA0			58.000	194.000
50	D	4BU53 33-2EA23-2DA0			61.500	215.000	D	4BU53 33-2EA23-2CA0			61.500	215.000
56	D	4BU53 43-2EA23-2DA0			80.000	233.000	D	4BU53 43-2EA23-2CA0			80.000	233.000
63	D	4BU54 33-2EA23-2DA0			54.000	269.000	D	4BU54 33-2EA23-2CA0			54.000	269.000
71	D	4BU54 43-2EA23-2DA0			71.000	286.000	D	4BU54 43-2EA23-2CA0			71.000	286.000
Rated input voltage U_{1N} 3 AC 480 V \pm 5 %												
18	D	4BU43 33-5EA23-2DA0			26.500	105.000	C	4BU43 33-5EA23-2CA0			26.500	105.000
20	C	4BU43 43-5EA23-2DA0			35.000	113.000	C	4BU43 43-5EA23-2CA0			35.000	113.000
22.5	C	4BU43 53-5EA23-2DA0			46.500	125.000	C	4BU43 53-5EA23-2CA0			46.500	125.000
25	D	4BU45 33-5EA23-2DA0			33.500	139.000	D	4BU45 33-5EA23-2CA0			33.500	139.000
28	D	4BU45 43-5EA23-2DA0			44.500	150.000	D	4BU45 43-5EA23-2CA0			44.500	150.000
31.5	D	4BU47 33-5EA23-2DA0			39.000	173.000	D	4BU47 33-5EA23-2CA0			39.000	173.000
35.5	D	4BU47 43-5EA23-2DA0			52.000	186.000	D	4BU47 43-5EA23-2CA0			52.000	186.000
40	D	4BU47 53-5EA23-2DA0			70.000	206.000	D	4BU47 53-5EA23-2CA0			70.000	206.000
45	D	4BU52 33-5EA23-2DA0			63.000	199.000	D	4BU52 33-5EA23-2CA0			63.000	199.000
50	D	4BU53 33-5EA23-2DA0			66.500	220.000	D	4BU53 33-5EA23-2CA0			66.500	220.000
56	D	4BU53 43-5EA23-2DA0			86.500	240.000	D	4BU53 43-5EA23-2CA0			86.500	240.000
63	D	4BU54 33-5EA23-2DA0			58.500	274.000	D	4BU54 33-5EA23-2CA0			58.500	274.000
71	D	4BU54 43-5EA23-2DA0			77.000	292.000	D	4BU54 43-5EA23-2CA0			77.000	292.000

More products with higher ratings and degrees of protection IP20 and IP23 can be found in the interactive Catalog CA 01 and Industry Mall.

¹⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

Three-Phase Transformers

Power Transformers

SIRIUS 4BU transformers
with selectable voltages

Overview

- 4BU power transformers and 4BU power transformers with **cULus** approval configured as matching, auto-¹⁾ or converter transformers with selectable input and output voltages from 100 to 1000 V (line-to-line voltage U_L) Υ or Δ in the performance range from 18 to 400 kVA and additional options
- DIN VDE 0532-6
- **cULus**²⁾ (see Selection and Ordering Data)
- $t_a = 40$ °C/H and optional $t_a = 55$ °C/H
- Standard vector group: Dyn5, for autotransformer: Ya0



4BU

¹⁾ For autotransformers the type rating is always quoted.

²⁾ **cULus** approvals for voltages ≤ 600 V (excluding tappings) and degree of protection IP00.

Selection and ordering data

4BU power transformers

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

Rated power ¹⁾ P_n DT ³⁾		Order No. stem	Basic price per PU	Additional price for standard options						C_u weight ⁵⁾ per PU approx. kg	Transformer weight ⁵⁾ per PU approx. kg	Total weight ⁵⁾ including enclosure per PU approx. kg
IP00, IP20 ²⁾	IP23			Two tappings in the range $\pm 5\%$ of the rated input or output voltage for constant power	One tapping on the input or output side for falling power; neutral point connected to terminal ⁴⁾	One additional separate winding on the input or output side	Shield winding (connection routed to terminal). Not possible for autotransformers	Installation in protective enclosures IP20, IP23	Rated ambient temperature $t_a = 55$ °C/H			
kVA	kVA											
18	16	B	4BU43 32	x	x	x	x	x	x	21.000	101.000	145.000
20	18	B	4BU43 42	x	x	x	x	x	x	27.000	105.000	149.000
22.5	20	B	4BU43 52	x	x	x	x	x	x	36.000	115.000	159.000
25	22.5	C	4BU45 32	x	x	x	x	x	x	26.000	131.000	175.000
28	25	C	4BU45 42	x	x	x	x	x	x	34.000	139.000	183.000
31.5	28	C	4BU47 32	x	x	x	x	x	x	30.500	166.000	210.000
35.5	32	C	4BU47 42	x	x	x	x	x	x	40.000	174.000	218.000
40	36	C	4BU47 52	x	x	x	x	x	x	52.500	188.000	232.000
45	40.5	D	4BU52 32	x	x	x	x	x	x	49.000	185.000	236.000
50	45	D	4BU53 32	x	x	x	x	x	x	52.000	205.000	256.000
56	50	D	4BU53 42	x	x	x	x	x	x	67.000	219.000	270.000
63	56.5	D	4BU54 32	x	x	x	x	x	x	46.500	262.000	323.000
71	63.5	D	4BU54 42	x	x	x	x	x	x	60.500	276.000	337.000
80	72	D	4BU55 32	x	x	x	x	x	x	65.000	306.000	367.000
91	81.5	D	4BU56 32	x	x	x	x	x	x	68.000	343.000	404.000
100	90	D	4BU56 42	x	x	x	x	x	x	84.500	359.000	420.000
112	100.5	D	4BU58 32	x	x	x	x	x	x	60.500	425.000	530.000
125	112.5	D	4BU58 42	x	x	x	x	x	x	76.500	440.000	545.000
140	126	D	4BU58 52	x	x	x	x	x	x	97.500	462.000	567.000
160	144	D	4BU59 32	x	x	x	x	x	x	104.000	516.000	621.000
180	162	D	4BU60 32	x	x	x	x	x	x	106.000	579.000	684.000
200	180	D	4BU62 32	x	x	x	x	x	x	112.000	678.000	813.000
225	202.5	D	4BU62 42	x	x	x	x	x	x	146.000	711.000	846.000
250	225	D	4BU62 52	x	x	x	x	x	x	185.000	751.000	886.000
280	252	D	4BU63 32	x	x	x	x	x	x	187.000	834.000	969.000
315	283.5	D	4BU63 42	x	x	x	x	x	x	244.000	891.000	1026.000
355	319.5	D	4BU64 32	x	x	x	x	x	x	251.000	997.000	1132.000
400	360	D	4BU65 32	x	x	x	x	x	x	280.000	1128.000	1263.000

For other options see page 10/84.

Before ordering, please ask for the complete Order No. (see page 10/4 for the inquiry/order address).

x = Additional price

¹⁾ For autotransformers the type rating is always quoted.

²⁾ No power reduction for ambient temperatures ≤ 40 °C.

³⁾ The delivery time class depends on the quantity, see page 10/4 "Options".

⁴⁾ With three-phase transformers, an additional price is charged for neutral point connected to terminal $1/3$.

⁵⁾ All weights are based on $t_a = 40$ °C/H, at $t_a = 55$ °C/H other weights apply. The actual copper weight is listed in the price notice or the quotation; the transformer weight and total weight is reduced/increased by the difference.

Three-Phase Transformers

Power Transformers

SIRIUS 4BU transformers with selectable voltages

4BU power transformers with **cTus** approval

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 104

cTus¹⁾

Rated power ²⁾ P _n DT ⁴⁾		Order No. stem	Basic price per PU	Additional price for standard options						Cu weight ⁶⁾ per PU approx. kg	Transformer weight ⁶⁾ per PU approx. kg	Total weight ⁶⁾ including enclosure per PU approx. kg
IP00, IP20 ³⁾	IP23			Two tappings in the range ±5 % of the rated input or output voltage for constant power	One tapping on the input or output side for falling power; neutral point connected to terminal ⁶⁾	One additional separate winding on the input or output side	Shield winding (connection routed to terminal). Not possible for autotransformers.	Installation in protective enclosures IP20, IP23	Rated ambient temperature t _a = 55 °C/H			
kVA	kVA								kg	kg	kg	
18	16	B	4BU43 33	x	x	x	x	x	21.500	102.000	146.000	
20	18	B	4BU43 43	x	x	x	x	x	27.500	109.000	153.000	
22.5	20	B	4BU43 53	x	x	x	x	x	37.000	118.000	162.000	
25	22.5	C	4BU45 33	x	x	x	x	x	27.000	135.000	179.000	
28	25	C	4BU45 43	x	x	x	x	x	35.000	143.000	187.000	
31.5	28	C	4BU47 33	x	x	x	x	x	31.500	169.000	213.000	
35.5	32	C	4BU47 43	x	x	x	x	x	41.000	179.000	223.000	
40	36	C	4BU47 53	x	x	x	x	x	55.000	194.000	238.000	
45	40.5	D	4BU52 33	x	x	x	x	x	50.500	191.000	242.000	
50	45	D	4BU53 33	x	x	x	x	x	53.500	212.000	263.000	
56	50	D	4BU53 43	x	x	x	x	x	69.500	229.000	280.000	
63	56.5	D	4BU54 33	x	x	x	x	x	48.000	267.000	328.000	
71	63.5	D	4BU54 43	x	x	x	x	x	62.000	282.000	343.000	
80	72	D	4BU55 33	x	x	x	x	x	66.500	314.000	375.000	
91	81.5	D	4BU56 33	x	x	x	x	x	70.500	353.000	414.000	
100	90	D	4BU56 43	x	x	x	x	x	87.000	370.000	431.000	
112	100.5	D	4BU58 33	x	x	x	x	x	61.500	430.000	535.000	
125	112.5	D	4BU58 43	x	x	x	x	x	77.500	449.000	554.000	
140	126	D	4BU58 53	x	x	x	x	x	99.000	470.000	575.000	
160	144	D	4BU59 33	x	x	x	x	x	106.000	527.000	632.000	
180	162	D	4BU60 33	x	x	x	x	x	108.000	590.000	695.000	
200	180	D	4BU62 33	x	x	x	x	x	117.000	684.000	819.000	
225	202.5	D	4BU62 43	x	x	x	x	x	152.000	732.000	867.000	
250	225	D	4BU62 53	x	x	x	x	x	192.000	775.000	910.000	
280	252	D	4BU63 33	x	x	x	x	x	209.000	872.000	1007.000	
315	283.5	D	4BU63 43	x	x	x	x	x	253.000	920.000	1055.000	
355	319.5	D	4BU64 33	x	x	x	x	x	261.000	1031.000	1166.000	
400	360	D	4BU65 33	x	x	x	x	x	291.000	1154.000	1289.000	

Before ordering, please ask for the complete Order No. (see page 10/4 for the inquiry/order address).

x = Additional price

1) **cTus** approvals for voltages ≤ 600 V (excluding tappings) and degree of protection IP00.

2) For autotransformers the type rating is always quoted.

3) No power reduction for ambient temperatures ≤ 40 °C.

4) The delivery time class depends on the quantity, see page 10/4 "Options".

5) With three-phase transformers, an additional price is charged for neutral point connected to terminal 1/3.

6) All weights are based on t_a = 40 °C/H, at t_a = 55 °C/H other weights apply. The actual copper weight is listed in the price notice or the quotation; the transformer weight and total weight is reduced/increased by the difference.

Options

- Thermistor transformer protection for warning and/or disconnection:
The 4BU power transformers can be supplied with thermistor transformer protection for warning and/or disconnection, see note on [Technical Information on page 10/1](#).

PG = 104

For transformer Type	Additional price for		
	Warning	Disconnection	Warning and disconnection
4BU	x	x	x

x = Additional price

- Rating plates made of metal:
One separately packed rating plate made of metal can be supplied per 4BU transformer.

Additional price on request.

- Deviations from the standard vector groups Dyn5 or Ya0 for autotransformers must be specified when ordering.

Further versions with higher outputs up to 1250 kVA are available on request.

Three-Phase Transformers

Voltage Regulators

4FL voltage regulators, transformer type

Overview



4FL

- According to DIN VDE 0552
- Degree of protection IP21
- $t_a = 40\text{ °C/E}$

Application

The 4FL transformer-type voltage regulators are used as voltage stabilizers on supply systems with varying voltages. On the output of the voltage regulator, a constant voltage is available for the load which creates a constant machine performance which is immune to variations in the supply system.

Selection and ordering data

Rated voltage: PRI = SEC: 400 V, 50 to 60 Hz

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 114

Settling time s	Rated power P_n kVA	DT	For symmetrical mains voltage				For asymmetrical mains voltage				
			Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg	DT	Order No.	Price per PU	Cu weight per PU approx. kg	Total weight per PU approx. kg
Control range for input voltage: +10 to -10 %											
1.5	6.8	X	4FL23 01-3CN		3.900	80.000	X	4FL23 02-3CN		3.900	80.000
1.5	11	D	4FL28 01-3CN		4.800	80.000	X	4FL28 02-3CN		4.800	80.000
1.5	17	X	4FL33 01-3CN		8.400	90.000	X	4FL33 02-3CN		8.400	90.000
1.5	25	X	4FL38 01-3CN		10.500	110.000	X	4FL38 02-3CN		10.500	110.000
1.5	34	X	4FL43 01-3CN		15.300	150.000	X	4FL43 02-3CN		15.300	150.000
1.5	51	D	4FL46 01-3CN		25.500	210.000	X	4FL46 02-3CN		25.500	210.000
1.5	68	X	4FL49 01-3CN		32.400	240.000	X	4FL49 02-3CN		32.400	240.000
2.5	95	X	4FL51 01-3CN		47.200	320.000	X	4FL51 02-3CN		47.200	320.000
2.5	190	X	4FL53 01-3CN		80.800	400.000	X	4FL53 02-3CN		80.800	400.000
Control range for input voltage: +15 to -15 %											
1.5	4.2	X	4FL18 11-3CN		3.900	80.000	X	4FL18 12-3CN		3.900	80.000
1.5	7	X	4FL24 11-3CN		4.800	80.000	X	4FL24 12-3CN		4.800	80.000
1.5	11	X	4FL28 11-3CN		8.400	90.000	D	4FL28 12-3CN		8.400	90.000
1.5	16	X	4FL32 11-3CN		10.500	110.000	X	4FL32 12-3CN		10.500	110.000
1.5	21	X	4FL35 11-3CN		15.300	150.000	X	4FL35 12-3CN		15.300	150.000
1.5	32	X	4FL42 11-3CN		25.500	210.000	X	4FL42 12-3CN		25.500	210.000
1.5	42	X	4FL45 11-3CN		32.400	240.000	X	4FL45 12-3CN		32.400	240.000
2.5	60	X	4FL47 11-3CN		47.200	320.000	D	4FL47 12-3CN		47.200	320.000
2.5	110	D	4FL52 11-3CN		80.800	400.000	D	4FL52 12-3CN		80.800	400.000
Control range for input voltage: +20 to -20 %											
1.5	3	X	4FL15 21-3CN		3.900	80.000	X	4FL15 22-3CN		3.900	80.000
1.5	4.8	D	4FL19 21-3CN		4.800	80.000	X	4FL19 22-3CN		4.800	80.000
1.5	7.5	X	4FL25 21-3CN		8.400	90.000	X	4FL25 22-3CN		8.400	90.000
1.5	11	X	4FL28 21-3CN		10.500	110.000	X	4FL28 22-3CN		10.500	110.000
1.5	15	X	4FL31 21-3CN		15.300	150.000	X	4FL31 22-3CN		15.300	150.000
1.5	22.5	X	4FL37 21-3CN		25.500	210.000	D	4FL37 22-3CN		25.500	210.000
1.5	30	X	4FL40 21-3CN		32.400	240.000	X	4FL40 22-3CN		32.400	240.000
2.5	42	X	4FL45 21-3CN		48.900	320.000	X	4FL45 22-3CN		51.500	320.000
2.5	84	X	4FL50 21-3CN		82.600	400.000	X	4FL50 22-3CN		84.600	400.000

Further versions with higher outputs up to 2000 kVA, voltages up to 1 kVA and control ranges up to +/- 30 % are available on request.

Three-Phase Transformers

Notes



Power Supplies



11/2 Introduction

Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

- 11/4 General data
 - 11/5 SIRIUS 4AV2, 4AV4 power supplies, filtered, single-phase
 - 11/7 SIRIUS 4AV3, 4AV5 power supplies, filtered, three-phase
- Unfiltered for Supply of General Loads
- 11/9 SIRIUS 4AV98 power supplies, unfiltered, single-phase
 - 11/10 SIRIUS 4AV96 power supplies, unfiltered, three-phase

Stabilized Power Supplies

SITOP 6EP Power Supplies

- 11/11 LOGO!Power, single-phase
- 11/12 SITOP smart, single-phase and three-phase
- 11/13 SITOP modular basic units 24 V, single-phase, two-phase and three-phase
- 11/14 Expansion modules
- 11/15 DC-UPS uninterruptible power supplies

Technical Information

can be found at
www.siemens.com/industrial-controls/support

under Product List:
 - Technical Specifications

under Entry List:
 - Updates
 - Downloads
 - FAQ
 - Manuals
 - Characteristic curves
 - Certificates

and at
www.siemens.com/industrial-controls/configurators
 - Configurators

Introduction

Overview

4AV non-stabilized power supplies



		4AV21/23	4AV20/22/24/26	4AV4	4AV3	4AV5
Filtered for supply of electronic controls						
Ripple		< 5 %	< 5 %	< 5 %	< 5 %	< 5 %
Phase		1	1	1	3	3
Rated input voltage	V AC	115 ... 415	115 ... 415	230 ... 415	200 ... 600	400 ... 415
Rated output voltage	V DC	24	24	24	24	24
acc. to EN 61131-2 suitable for SIMATIC systems						
Rated output current	A	1 ... 4.2	2.5 ... 18	1.5 ... 10	15 ... 180	25, 35
Connection		Screw terminals/ flat connectors	Screw terminals/ flat connectors or Cage Clamp terminals	Screw terminals/ flat connectors or Cage Clamp terminals	Screw terminals/ flat connectors	Screw terminals/ flat connectors
Mounting		Standard rail mount- ing	Screw and/or standard rail mounting	Screw and/or standard rail mounting	Screw mounting	Screw mounting
cULus approval at 60 °C		Yes	Yes	No	Partially	No
Page		11/5	11/6	11/6	11/7, 11/8	11/7



		4AV98	4AV96
Unfiltered for supply of general loads			
Ripple		48.3 %	< 5 %
Phase		1	3
Rated input voltage	V AC	230 or 400	400
Rated output voltage	V DC	24	30-27-24
Rated output current/ rated power		50 ... 500 W	4 ... 25 A
Connection		Screw/flat connectors	Screw/flat connectors
Mounting		Screw mounting	Screw mounting
cULus approval		No	No
Page		11/9	11/10

6EP stabilized power supplies



		6EP1 LOGO!Power	6EP1 SITOP smart	6EP1 SITOP modular	6EP1 SITOP uninterruptible
Phase		1	1, 3	1, 2, 3	1
Rated input voltage	V	100 ... 240 AC	48 ... 220 DC, 120 ... 230 AC, 120/230 AC, 3 AC 400 ... 500	120/230 ... 500 AC, 120/230 AC, 3 AC 400 ... 500	24 DC
Rated output voltage	V DC	5, 12, 15, 24	24, 48, 3 ... 52	24	24
Rated output current	A	1.3 ... 6.3	0.375 ... 10	5 ... 40	6, 15, 40
Connection		Screw terminals	Screw terminals	Screw terminals	Screw terminals
Mounting		Standard rail mount- ing	Standard rail mounting	Standard rail mounting	Standard rail mounting
Approval		UL, cUL	UL, cUL	UL, cUL	UL, cUL
Page		11/11	11/12	11/13	11/15, 11/16

Further products for power supplies can be found in Catalog KT 10.1 or on the Internet at www.siemens.com/sirius-supplying and www.siemens.com/sitop.

Options

Delivery time class DT

The delivery time classes are specified in the selection tables in front of the order numbers.

The standard transport time for Germany is 1 day (see "Explanations" on page 4).

The delivery time class for 6EP1 power supplies does not depend on the quantity.

The quoted delivery time class for the 4AV power supplies is applicable to an order quantity of up to 5 units.

► Preferred type

This delivery time class applies with the degree of protection IP00, i. e. these units can be supplied immediately from stock¹⁾ and will be dispatched within 24 hours. The transport times depend on the destination and the mode of delivery.

Delivery time class B is applicable to an order quantity of 6 units and more.

Delivery time class A

The ordered units will be dispatched within 2 working days.

Delivery time class B is applicable to an order quantity of 6 units and more.

Delivery time class B

The ordered units will be dispatched within 1 week.

Delivery time class C is applicable to an order quantity of 6 units and more.

Delivery time class C

The ordered units will be dispatched within 3 weeks.

Delivery time class D is applicable to an order quantity of 6 units and more.

Delivery time class D

The ordered units, including enclosure and additional options, will be dispatched within 6 weeks.

Orders of power supplies with selectable input and output voltages

Please send your selection by e-mail with the basic Order No. and the required options specified in plain text to:

Anfrage@mdexx.com

In response you will receive the complete Order No. after completing your order.

Ordering power supplies in customized versions or with special applications

Inquiries for customized power supplies not found in our catalog should be sent to:

Anfrage@mdexx.com

or by fax to: +49 (0)421/5125 333.

In reply you will receive the complete Order No. which should be quoted in your order.

¹⁾ This is based on commercially available orders – normal order!

More information

More information about power supplies, transformers, fans, reactors and filters can be found on the Internet at

www.siemens.com/sirius-supplying

For products and information on

- Reactors and filters, see Catalog LV 60, Order No.: E86060-K2803-A101-A5-7600
- 2CC and 2CQ axial fans, see Catalog LV 65, Order No.: E86060-K1865-A101-A1-7600

Transformers for converter systems from Siemens can be found in the following catalogs:

Catalog NC 60, SINUMERIK & SIMODRIVE
Order No.: E86060-K4460-A101-B3-7600

Catalog DA 65.10, SIMOVERT MASTERDRIVES Vector Control
Order No.: E86060-K5165-A101-A3-7600

Catalog DA 65.11, SIMOVERT MASTERDRIVES Motion Control
Order No.: E86060-K5165-A111-A3-7600

4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

General data

Overview

4AV2, 4AV3, 4AV4 and 4AV5 power supplies deliver a non-stabilized DC voltage of 24 V DC based on single-phase or three-phase safety transformers with downstream rectifiers and capacitor filtering.

Note



Screw terminals



Cage Clamp terminals



Flat connectors

The terminals are indicated in the selection and ordering data by orange backgrounds.

Benefits

The rugged construction of the 4AV units makes them extremely reliable. They are extremely stable when confronted with external mains failures and have a damping effect on electromagnetic interference. They are also highly suitable for supplying capacitive loads, because when the loads are connected only minimal voltage dips occur.

Application

The 4AV2, 4AV3, 4AV4 and 4AV5 units are used for:

- Supplying general electrical loads
- Supplying control circuits
- Power supply to electronic controllers They comply with the requirements of EN 61131-2 "Programmable controllers – equipment specifications and tests" and are suitable for SIMATIC or other systems.

Rated power and rated current

The specifications in the selection tables are based on fixed reference conditions in which the devices have the rated power or rated current:

- Uninterrupted duty P_n
- Frequency AC 50 Hz ... 60 Hz
- Installation height up to 1000 m above sea level
- Degree of protection IP00
- Ambient temperature t_a .

Ambient conditions

The units are designed for mounting in enclosed controllers and electronics cabinets. They are climate-proof for installation in rooms with an external climate according to DIN 50010.

Limit values:

- Ambient temperature with rated power and rated current for types:
 - 4AV2 and 4AV3: Up to +60 °C
 - 4AV4 and 4AV5: Up to +40 °C
 - Minimum value for all types: -25 °C.
- Relative air humidity:
 - At +40 °C occasionally up to 100 %
 - Annual average up to 80 %
 - Occasional condensation possible.

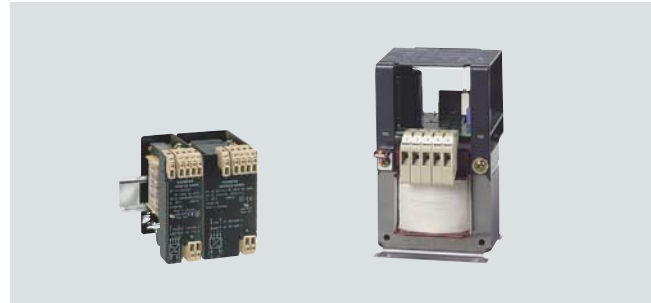
4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

SIRIUS 4AV2, 4AV4 power supplies,
filtered, single-phase

Overview

- Rated output voltage U_{2N} 24 V DC according to EN 61131-2¹⁾ and SIMATIC at input voltage +6 % to -10 % and load 0 % to 100 %
- Safety transformer according to EN 61558-2-6
- 4AV21, 4AV23: **c** **us** at 60 °C, **U**;
4AV20, 4AV22, 4AV24, 4AV26: **c** **us** at 60 °C, **U**;
4AV41: **U**
- 4AV2: $t_a = \text{max. } 60 \text{ °C/B}$,
4AV41: $t_a = 40 \text{ °C/B}$
- Varistor suppressor circuit
- Status LED
- EMC according to EN 62041:
 - 4AV2: Suitable for connection to the public supply (residential environments) and industrial networks (industrial environments):
 - 4AV4: Suitable for connection to industrial networks (industrial environments)
- Ripple < 5 %



4AV21, 4AV23 (left) and 4AV20, 4AV22 to 4AV24 (right)

¹⁾ EN 61131-2: equipment specification for power supply and interface for programmable controllers. For limit values for 24 V DC see note on [Technical Information on page 11/1](#).

Selection and ordering data

Rated input voltage U_{1N} ¹⁾ 230 (240)-115 (120) V,
rated output voltage U_{2N} 24 V DC

c **us**, **U**

PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		DT ²⁾	Screw terminals/ flat connectors	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
60 °C/B	40 °C/B	Order No.				
EN 61558	EN 61558					
DC A	DC A				kg	kg
Integrated standard rail mounting						
1	1.2	▶	4AV21 02-2EB00-0A		0.600	1.500
3.5	4.2	▶	4AV23 02-2EB00-0A		0.900	2.500

¹⁾ During operation at the mains voltages listed in brackets, the upper limit for 24 V DC according to EN 61131-2 at +6 % mains voltage is met for a basic load of 10 %. Under no-load operation, 30.6 V can be achieved.

²⁾ The delivery time class depends on the quantity, [see page 11/3 "Options"](#).

Rated input voltage U_{1N} ¹⁾ 400 (415) V,
rated output voltage U_{2N} 24 V DC

c **us**, **U**

PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		DT ²⁾	Screw terminals/ flat connectors	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
60 °C/B	40 °C/B	Order No.				
EN 61558	EN 61558					
DC A	DC A				kg	kg
Integrated standard rail mounting						
1	1.2	▶	4AV21 06-2EB00-0A		0.600	1.500
3.5	4.2	▶	4AV23 06-2EB00-0A		0.900	2.500

¹⁾ During operation at the mains voltages listed in brackets, the upper limit for 24 V DC according to EN 61131-2 at +6 % mains voltage is met for a basic load of 10 %. Under no-load operation, 30.6 V can be achieved.

²⁾ The delivery time class depends on the quantity, [see page 11/3 "Options"](#).

4AV Non-Stabilized Power Supplies



Filtered for Supply of Electronic Controls

**SIRIUS 4AV2, 4AV4 power supplies,
filtered, single-phase**

Rated input voltage U_{1N} ¹⁾
400 (415)-230 (240) V with tapping ± 15 V,
rated output voltage U_{2N} 24 V DC

4AV2: ; 4AV41: 

PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		DT ²⁾	Screw terminals/ flat connectors 		Cu weight per PU approx.	Total weight per PU approx.	DT ²⁾	Cage Clamp terminals 		Cu weight per PU approx.	Total weight per PU approx.
60 °C/B	40 °C/B		Order No.	Price per PU			Order No.	Price per PU			
EN 61558	EN 61558				kg	kg			kg	kg	
DC A	DC A										
Screw mounting³⁾											
2.5	3	▶	4AV20 00-2EB00-0A		0.620	2.300 B	4AV20 00-2EB00-1A		0.620	2.300	
5	6	▶▶	4AV22 00-2EB00-0A		0.600	4.900 ▶	4AV22 00-2EB00-1A		0.600	4.900	
10	12	▶▶▶	4AV24 00-2EB00-0A		0.900	7.500 ▶▶	4AV24 00-2EB00-1A		0.900	7.500	
15	18	▶▶▶▶	4AV26 00-2EB00-0A		2.300	9.800 B	4AV26 00-2EB00-1A		2.300	9.800	
--	1.5	▶	4AV41 01-2EB00-0A		0.300	1.400 B	4AV41 01-2EB00-1A		0.300	1.400	
--	3	▶▶	4AV41 03-2EB00-0A		0.310	2.300 ▶	4AV41 03-2EB00-1A		0.310	2.300	
--	6	▶▶▶	4AV41 06-2EB00-0A		0.510	4.000 ▶▶	4AV41 06-2EB00-1A		0.510	4.000	
--	10	▶▶▶▶	4AV41 10-2EB00-0A		1.100	5.300 B	4AV41 10-2EB00-1A		1.100	5.300	
Standard rail mounting											
2.5	3	▶	4AV20 00-2EB00-0A		0.620	2.300 B	4AV20 00-2EB00-1A		0.620	2.300	
5	6	▶▶	4AV22 00-2EB00-0B		0.600	4.900 B	4AV22 00-2EB00-1B		0.600	4.900	
10	12	B	4AV24 00-2EB00-0B		0.900	7.500 B	4AV24 00-2EB00-1B		0.900	7.500	
--	1.5	B	4AV41 01-2EB00-0B		0.300	1.400 B	4AV41 01-2EB00-1B		0.300	1.400	
--	3	B	4AV41 03-2EB00-0A		0.310	2.300 ▶	4AV41 03-2EB00-1A		0.310	2.300	
--	6	B	4AV41 06-2EB00-0A		0.510	4.000 ▶▶	4AV41 06-2EB00-1A		0.510	4.000	
--	10	B	4AV41 10-2EB00-0B		1.100	5.300 B	4AV41 10-2EB00-1B		1.110	5.300	

1) During operation at the mains voltages listed in brackets, the upper limit for 24 V DC according to EN 61131-2 at +6 % mains voltage is met for a basic load of 10 %. Under no-load operation with types 4AV4 31.4 V can be achieved.



2) The delivery time class depends on the quantity, see page 11/3 "Options".

3) Types 4AV20, 4AV41 03 and 4AV41 06 are equipped with an integrated standard rail mounting as standard.

Rated input voltage U_{1N} 400 (415)-230 (240)-115 (120) V,
rated output voltage U_{2N} 24 V DC

; 

PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		DT ¹⁾	Screw terminals/ flat connectors 		Cu weight per PU approx.	Total weight per PU approx.	DT ¹⁾	Cage Clamp terminals 		Cu weight per PU approx.	Total weight per PU approx.
60 °C/B	40 °C/B		Order No.	Price per PU			Order No.	Price per PU			
EN 61558	EN 61558				kg	kg			kg	kg	
DC A	DC A										
Screw mounting²⁾											
2.5	3	▶	4AV20 01-2EB00-0A		0.620	2.300 B	4AV20 01-2EB00-1A		0.620	2.300	
5	6	▶▶	4AV22 01-2EB00-0A		0.600	4.900 B	4AV22 01-2EB00-1A		0.600	4.900	
10	12	▶▶▶	4AV24 01-2EB00-0A		0.900	7.500 B	4AV24 01-2EB00-1A		0.900	7.500	
15	18	▶▶▶▶	4AV26 01-2EB00-0A		2.300	9.800 B	4AV26 01-2EB00-1A		2.300	9.800	
Standard rail mounting											
2.5	3	▶	4AV20 01-2EB00-0A		0.620	2.300 B	4AV20 01-2EB00-1A		0.620	2.300	
5	6	B	4AV22 01-2EB00-0B		0.600	4.900 B	4AV22 01-2EB00-1B		0.600	4.900	
10	12	B	4AV24 01-2EB00-0B		0.900	7.500 B	4AV24 01-2EB00-1B		0.900	7.500	

1) The delivery time class depends on the quantity, see page 11/3 "Options".



2) Types 4AV20 are equipped with an integrated standard rail mounting as standard.

4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

SIRIUS 4AV3, 4AV5 power supplies,
filtered, three-phase

Overview

- Rated output voltage U_{2N} 24 V DC according to EN 61131-2¹⁾ and SIMATIC at input voltage +6 % to -10 % and load 0 % to 100 %
- Safety transformer according to EN 61558-2-6
- 4AV30 to 4AV35: **c** **us** at 60 °C, ; 4AV36, 4AV38, 4AV51: 
- 4AV3: $t_a = \max. 60$ °C/B, 4AV51: $t_a = 40$ °C/B
- Varistor suppressor circuit
- Status LED
- EMC according to EN 62041:
 - 4AV3: suitable for connection to the public supply (residential environments) and industrial networks (industrial environments)
 - 4AV5: suitable for connection to industrial networks (industrial environments)
- Ripple < 5 %



4AV30 to 4AV33 (left) and 4AV38 (right)


¹⁾ EN 61131-2: equipment specification for power supply and interface for programmable controllers. For limit values for 24 V DC see note on [Technical Information on page 11/1](#).

Selection and ordering data

Rated input voltage U_{1N} ∇ 400 (415) V
with tapping ± 20 V, Δ 230 V with tapping ± 10 V,
rated output voltage U_{2N} 24 V DC

c **us**, 

PU (UNIT, SET, M)=1
PS* =1 unit
PG =104


Rated output current I_d		Additional capacitance	Ripple	Backup time at $U_1 = U_{1N} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors 	Cu weight per PU approx.	Total weight per PU approx.
60 °C/B EN 61558 c us	40 °C/B EN 61558							
DC A	DC A	μ F	%	ms		Price per PU	kg	kg
Standard version								
10	12	--	< 5	--	▶	4AV30 00-2EB00-0A	1.600	5.000
15	18	--	< 5	--	▶▶	4AV31 00-2EB00-0A	1.600	6.500
20	24	--	< 5	--	▶▶▶	4AV32 00-2EB00-0A	2.400	8.000
30	36	--	< 5	--	▶▶▶▶	4AV33 00-2EB00-0A	2.600	11.000
40	48	--	< 5	--	▶▶▶▶▶	4AV34 00-2FB00-0A	4.900	17.000
50	60	--	< 5	--	▶▶▶▶▶▶	4AV35 00-2FB00-0A	4.100	21.000
Additional capacitors (aluminum electrolyte)								
10	12	10000	2	1	B	4AV30 00-2EB00-0C	1.600	5.200
15	18	10000	3	0.6	B	4AV31 00-2EB00-0C	1.600	6.700
20	24	10000	3	0.4	B	4AV32 00-2EB00-0C	2.400	8.200
30	36	10000	4	0.7	B	4AV33 00-2EB00-0C	2.600	11.200
40	48	10000	3	0.7	B	4AV34 00-2FB00-0C	4.900	17.200
50	60	10000	4	0.3	B	4AV35 00-2FB00-0C	4.100	21.200

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Rated input voltage U_{1N} 400 (415) V
with tapping ± 20 V,
rated output voltage U_{2N} 24 V DC



PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		Ripple	DT ¹⁾	Screw terminals/ flat connectors 	Cu weight per PU approx.	Total weight per PU approx.
60 °C/B EN 61558	40 °C/B EN 61558					
DC A	DC A	%		Price per PU	kg	kg
Standard version						
--	25	< 5	▶	4AV51 25-2EB00-0A	2.000	10.300
--	35	< 5	▶▶	4AV51 35-2EB00-0A	3.400	14.500

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

4AV Non-Stabilized Power Supplies

Filtered for Supply of Electronic Controls

**SIRIUS 4AV3, 4AV5 power supplies,
filtered, three-phase**

Rated input voltage U_{1N} 500-400 (415) V,
rated output voltage U_{2N} 24 V DC



PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		Additional capacitance	Ripple	Backup time at $U_1 = U_{1N} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
60 °C/B EN 61558	40 °C/B EN 61558									
DC A	DC A	μF	%	ms				kg	kg	
Standard version										
15	18	--	< 5	--	▶		4AV31 01-2EB00-0A		1.600	6.500
30	36	--	< 5	--	▶		4AV33 01-2EB00-0A		2.600	11.000
50	60	--	< 5	--	▶		4AV35 01-2FB00-0A		4.100	21.000
Additional capacitors (aluminum electrolyte)										
15	18	10000	3	0.6	B		4AV31 01-2EB00-0C		1.600	6.700
30	36	10000	4	0.7	B		4AV33 01-2EB00-0C		2.600	11.200
50	60	10000	4	0.3	B		4AV35 01-2FB00-0C		4.100	21.200

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Rated input voltage U_{1N} 500-400 (415) V,
rated output voltage U_{2N} 24 V DC



PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		Additional capacitance	Ripple	Backup time at $U_1 = U_{1N} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
60 °C/B EN 61558	40 °C/B EN 61558									
DC A	DC A	μF	%	ms				kg	kg	
Standard versions (unfiltered)										
80	96	--	< 5	--	▶		4AV36 01-2EB00-0A		8.600	32.000
150	180	--	< 5	--	▶		4AV38 01-2EB00-0A		14.400	46.000
Additional capacitors (aluminum electrolyte)										
80	96	2 × 10000	4	0.2	B		4AV36 01-2EB00-0C		8.600	32.400
150	180	3 × 10000	4	0.2	B		4AV38 01-2EB00-0C		14.400	46.600

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Rated input voltage U_{1N}
575 (600)-500-460 (480)-400 (415)-230 (240)-200 V,
rated output voltage U_{2N} 24 V DC



PU (UNIT, SET, M)=1
PS* =1 unit
PG =104

Rated output current I_d		Additional capacitance	Ripple	Backup time at $U_1 = U_{1N} - 10\%$	DT ¹⁾	Screw terminals/ flat connectors	Order No.	Price per PU	Cu weight per PU approx.	Total weight per PU approx.
60 °C/B EN 61558	40 °C/B EN 61558									
DC A	DC A	μF	%	ms				kg	kg	
Standard version										
9	11	--	< 5	--	▶		4AV30 02-2EB00-0A		1.600	5.000
13.5	16	--	< 5	--	▶		4AV31 02-2EB00-0A		1.600	6.500
18	21.5	--	< 5	--	▶		4AV32 02-2EB00-0A		2.400	8.000
27	32.5	--	< 5	--	▶		4AV33 02-2EB00-0A		2.600	11.000
36	43	--	< 5	--	▶		4AV34 02-2FB00-0A		4.900	17.000
45	54	--	< 5	--	▶		4AV35 02-2FB00-0A		4.100	21.000
Additional capacitors (aluminum electrolyte)										
9	11	10000	2	1	B		4AV30 02-2EB00-0C		1.600	5.200
13.5	16	10000	3	0.6	B		4AV31 02-2EB00-0C		1.600	6.700
18	21.5	10000	3	0.4	B		4AV32 02-2EB00-0C		2.400	8.200
27	32.5	10000	4	0.7	B		4AV33 02-2EB00-0C		2.600	11.200
36	43	10000	3	0.7	B		4AV34 02-2FB00-0C		4.900	17.200
45	54	10000	4	0.3	B		4AV35 02-2FB00-0C		4.100	21.200

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".


4AV Non-Stabilized Power Supplies

Unfiltered for Supply of General Loads

SIRIUS 4AV98 power supplies,
unfiltered, single-phase

Overview

The 4AV98 power supplies comprise single-phase safety transformers according to EN 61558-2-6 with downstream bridge connection rectifiers without capacitor filtering.

- Rated output voltage U_d 24 V DC
- Safety transformer according to EN 61558-2-6
- 
- $t_a = 50$ °C/B
- Varistor suppressor circuit
- Short-circuit and overload protection on the output side with top-mounted fuse
- Ripple 48 %



4AV98

Application

The single-phase 4AV98 devices are especially suitable for supplying resistive and inductive loads whose operational voltages place no special demands with regard to ripple.

Rated power and rated current

The specifications in the selection tables are based on fixed reference conditions in which the devices have the rated power or rated current:

- Uninterrupted duty P_n
- Frequency AC 50 Hz ... 60 Hz
- Installation height up to 1000 m above sea level
- Degree of protection IP00
- Ambient temperature t_a .

Ambient conditions

The devices are climate-proof for installation in rooms with an external climate to DIN 50010.


Limit values:

- Ambient temperature
 - At rated power or rated current: +50 °C
 - Minimum value: -25 °C.
- Relative air humidity
 - At +40 °C occasionally up to 100 %
 - Annual average up to 80 %
 - Occasional condensation possible.

Selection and ordering data

Rated input voltage U_{1N} 230 V,
rated output voltage U_d 24 V DC




Rated power P_n	Voltage rise during no-load operation u_A	DT ¹⁾	Screw terminals/ flat connectors		PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
			Order No.						
50	24	▶	4AV98 06-4CB00-2N		1	1 unit	104	0.200	0.900
80	18	▶	4AV98 06-5CB00-2N		1	1 unit	104	0.030	1.600
125	14	▶	4AV98 06-6CB00-2N		1	1 unit	104	0.400	2.300
200	11	B	4AV98 06-7CB00-2N		1	1 unit	104	0.600	3.300
315	10	C	4AV98 06-8CB00-2N		1	1 unit	104	1.100	4.900
500	9	C	4AV98 00-5CB00-2N		1	1 unit	104	1.700	10.000

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Rated input voltage U_{1N} 400 V,
rated output voltage U_d 24 V DC



Rated power P_n	Voltage rise during no-load operation u_A	DT ¹⁾	Screw terminals/ flat connectors		PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
			Order No.						
50	24	▶	4AV98 07-0CB00-2N		1	1 unit	104	0.200	0.900
80	18	C	4AV98 07-1CB00-2N		1	1 unit	104	0.300	1.600
125	14	▶	4AV98 07-2CB00-2N		1	1 unit	104	0.400	2.300
200	11	▶	4AV98 07-3CB00-2N		1	1 unit	104	0.600	3.300
315	10	C	4AV98 07-4CB00-2N		1	1 unit	104	1.100	4.900
500	9	C	4AV98 02-5CB00-2N		1	1 unit	104	1.700	10.000

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

* You can order this quantity or a multiple thereof.


4AV Non-Stabilized Power Supplies

Unfiltered for Supply of General Loads

**SIRIUS 4AV96 power supplies,
unfiltered, three-phase**

Overview

The 4AV96 power supplies comprise three-phase safety transformers according to EN 61558-2-6 with downstream bridge connection rectifiers without capacitor filtering.

- Rated output voltage U_d 30-27-24 V DC
- Safety transformer according to EN 61558-2-6
- 
- $t_a = 50$ °C/B
- Shield winding between input and output winding
- Varistor suppressor circuit
- Designed and approved according to VW equipment specification
- Ripple < 5 %



4AV96

Application

VW approval

The 4AV96 three-phase units are designed and approved in accordance with the VW equipment specifications.

Rated power and rated current

The specifications in the selection tables are based on fixed reference conditions in which the devices have the rated power or rated current:

- Uninterrupted duty P_n
- Frequency AC 50 Hz ... 60 Hz
- Installation height up to 1000 m above sea level
- Degree of protection IP00
- Ambient temperature t_a .

Ambient conditions

The devices are climate-proof for installation in rooms with an external climate to DIN 50010.


Limit values:

- Ambient temperature
 - At rated power or rated current: +50 °C
 - Minimum value: -25 °C.
- Relative air humidity
 - At +40 °C occasionally up to 100 %
 - Annual average up to 80 %
 - Occasional condensation possible.

Selection and ordering data

Rated input voltage U_{1N} 400 V with tapping ± 5 %, rated output voltage U_d DC 30-27-24 V



Rated output current I_d	Voltage rise during no-load operation u_A	Primary-side short-circuit and overload protection for the rectifier with motor starter protector		VW material No.	DT ¹⁾	Screw terminals/ flat connectors		PU (UNIT, SET, M)	PS*	PG	Cu weight per PU approx.	Total weight per PU approx.
		Type	Set value at 400 V AC									
DC A	V	A									kg	kg
4	3.5	3RV10 11-0EA10	0.28	6142	▶	4AV96 04-1CB00-2N		1	1 unit	104	0.800	3.500
12	3.3	3RV10 11-0JA10	0.8	6141	▶	4AV96 04-5CB00-2N		1	1 unit	104	1.400	6.900
25	3.1	3RV10 11-1CA10	1.8	6145	▶	4AV96 04-2CB00-2N		1	1 unit	104	2.500	10.600

¹⁾ The delivery time class depends on the quantity, see page 11/3 "Options".

Overview

With LOGO!Power power supplies it is possible not only for 24 V loads to benefit from the advantages of a stabilized power supply - loads with a 5 V, 12 V and 15 V supply voltage can now do likewise. For each of these three voltages there are two levels of current available, and for 24 V there is even a 4 A version in a width of only 90 mm.

The primary switched power supplies can be used for a wide range of different applications: In automation systems for industry and buildings, solar technology, measurement and closed-loop control, sensors, for supplying electronic circuits in TTL technology, etc.

Advantages of LOGO!Power power supplies:

- 2 performance classes, each with 5 V, 12 V and 15 V; 3 performance classes with 24 V
- Compact design with a width of 54 mm, 72 mm or 90 mm
- Flat step profile, ideal also for mounting in small distribution boards
- Design adapted to LOGO!
- Constant current in case of overloading, for reliable connection of difficult loads such as DC/DC converters and motors
- Large setting range for the output voltage, using potentiometers which are easy to reach from the front
- Green LED indicator for "output voltage OK"
- For universal use – in industry and public low-voltage systems – worldwide
- Wide range input from 85 V AC to 264 V AC for virtually any network in the world
- Large temperature range from –20 °C to +55 °C for universal use
- High EMC standards
- Extensive approvals and certifications according to CE, UL/cUL, FM and shipbuilding (GL and ABS)
- Constant stabilized output voltage protects connected loads
- Parallel switching option permitted to increase performance

Selection and ordering data

Version	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Power supplies 5 V											
3 A	100 ... 240 V AC (85 ... 264 V)	5 V DC $\pm 3\%$	3 A	54 x 90 x 55	▶	6EP1 311-1SH02		1	1 unit	401	0.170
6.3 A	100 ... 240 V AC (85 ... 264 V)	5 V DC $\pm 3\%$	6.3 A	72 x 90 x 55	▶	6EP1 311-1SH12		1	1 unit	401	0.250
Power supplies 12 V											
1.9 A	100 ... 240 V AC (85 ... 264 V)	12 V DC $\pm 3\%$	1.9 A	54 x 90 x 55	▶	6EP1 321-1SH02		1	1 unit	401	0.170
4.5 A	100 ... 240 V AC (85 ... 264 V)	12 V DC $\pm 3\%$	4.5 A	72 x 90 x 55	▶	6EP1 322-1SH02		1	1 unit	401	0.250
Power supplies 15 V											
1.9 A	100 ... 240 V AC (85 ... 264 V)	15 V DC $\pm 3\%$	1.9 A	54 x 90 x 55	▶	6EP1 351-1SH02		1	1 unit	401	0.170
4 A	100 ... 240 V AC (85 ... 264 V)	15 V DC $\pm 3\%$	4 A	72 x 90 x 55	▶	6EP1 352-1SH02		1	1 unit	401	0.250
Power supplies 24 V											
1.3 A	100 ... 240 V AC (85 ... 264 V)	24 V DC $\pm 3\%$	1.3 A	54 x 90 x 55	▶	6EP1 331-1SH02		1	1 unit	401	0.170
2.5 A	100 ... 240 V AC (85 ... 264 V)	24 V DC $\pm 3\%$	2.5 A	72 x 90 x 55	▶	6EP1 332-1SH42		1	1 unit	401	0.250
4 A	100 ... 240 V AC (85 ... 264 V)	24 V DC $\pm 3\%$	4 A	90 x 90 x 55	▶	6EP1 332-1SH51		1	1 unit	401	0.340



Enclosure
54 mm wide



Enclosure
72 mm wide



Enclosure
90 mm wide

For other units and versions, see Catalog KT 10.1.

Stabilized Power Supplies

SITOP 6EP Power Supplies

SITOP smart single-phase and three-phase




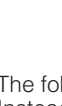

Overview

Small in size, big in performance. SITOP smart requires little room on the standard mounting rail and offers high functionality at an attractive price. With its good-natured overload behavior, even loads with a high inrush current can be smoothly switched on. If required, 50 % extra power can be supplied for a duration of 5 s. In addition, the single-phase versions will permanently supply 120 % of the rated power provided the ambient temperature does not exceed 45 °C.





- For 24 V standard applications from 2.5 A to 10 A
- Compact design with a width of only 32.5 mm, 50 mm and 70 mm for a small mounting surface, no side clearances required for mounting
- Easy standard rail mounting

- Smooth switching on of loads with high inrush current such as DC/DC converters and motors
- More performance thanks to permanent 120 % of rated power up to an ambient temperature of 45 °C
- Large setting range for output voltage up to 28 V, using potentiometers which are easy to reach from the front
- Parallel switching option to increase performance
- Extensive certifications according to UL, CSA, GL (Germanischer Lloyd) and ATEX directives (Atmosphère Explosible)
- For universal use – in industry and public low-voltage systems – worldwide
- Can be combined with SITOP expansion modules and the uninterruptible power supplies

Selection and ordering data

Design	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Power supplies 24 V											
Limitation of input current harmonics according to EN 61000-3-2											
 6EP1 332-2BA10	2.5 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	2 A	32.5 x 125 x 125 ▶	6EP1 332-2BA10		1 1 unit		404	0.320
Limitation of input current harmonics according to EN 61000-3-2											
 6EP1 333-2A10	5 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	5 A	50 x 125 x 125 ▶	6EP1 333-2BA01		1 1 unit		404	0.500
 6EP1 333-2AA10	5 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	5 A	50 x 125 x 125 ▶	6EP1 333-2AA01		1 1 unit		404	0.500
Limitation of input current harmonics according to EN 61000-3-2											
 6EP1 334-2A01	10 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	10 A	70 x 125 x 125 ▶	6EP1 334-2BA01		1 1 unit		404	0.800
 6EP1 334-2AA01	10 A	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	24 V DC ± 3 %	10 A	70 x 125 x 125 ▶	6EP1 334-2AA01		1 1 unit		404	0.750

The following SITOP versions provide standard solutions for small power requirements and applications with unusual voltages. Instead of the usual 24 V, the three-phase 48-V power supply double the voltage for powerful loads.

Design	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Power supplies 24 V											
 6EP1 731-2BA00, 6EP1 331-2BA10	0.375 A	48 ... 220 V DC (30 ... 264 V DC, 30 ... 187 V AC)	24 V DC ± 3 %	0.375 A	22.5 x 80 x 91 ▶	6EP1 731-2BA00		1 1 unit		400	0.140
 6EP1 331-2BA10	0.5 A	120 ... 230 V AC (93 ... 264 V AC)	24 V DC ± 3 %	0.5 A	22.5 x 80 x 91 ▶	6EP1 331-2BA10		1 1 unit		400	0.110
Power supplies 3 ... 52 V											
Limitation of input current harmonics according to EN 61000-3-2; adjustable output voltage 3 ... 52 V, output max. 10 A or 120 W											
 6EP1 353-2BA00	max. 10 A or 120 W	120/230 V AC (85 ... 132 V/ 170 ... 264 V)	3 ... 52 V DC ± 1 %	10 A	75 x 125 x 125 ▶	6EP1 353-2BA00		1 1 unit		404	0.900
Power supplies 48 V											
Limitation of input current harmonics according to EN 61000-3-2											
 6EP1 456-2BA00	10 A	3 AC 400 ... 500 V (360 ... 550 V)	48 V DC ± 3 %	10 A	70 x 125 x 125 A	6EP1 456-2BA00		1 1 unit		404	1.200

For other units and versions, see Catalog KT 10.1.

Stabilized Power Supplies

SITOP 6EP Power Supplies

SITOP modular basic units 24 V,
single-phase, two-phase and three-phase

Overview







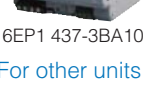

Compact basic units for single-phase, two-phase or three-phase connections and output currents from 5 A to 40 A form the basis of the stabilized 24 V supply. Depending on the requirements, SITOP expansion modules can be connected in addition.

The compact design of the primary switched power supply requires only a small mounting surface. The rugged metal enclosure is also suitable for the harshest industrial applications. The standard mounting rail fixture is made likewise of metal. Mounting is therefore fast, easy and vibration-proof. Reliability and quality are further characteristics of the electronic design.

The large input voltage range and the international certifications enable operation in virtually any network worldwide. The single-phase basic units 5 A and 10 A have an ultra-wide input range up to 550 V, which even enables connection to 2 phases.

- Rugged metal enclosure for standard rail mounting
- 5 A and 10 A units with ultra-wide input range up to 500 V AC for single-phase and two-phase operation
- 20 A and 40 A units with wide input range for single-phase or three-phase connection.
- Limitation of input current harmonics according to EN 61 000-3-2; (except 6EP1 337-3BA00)
- Adjustable output voltage up to 28.8 V
- 3-way status LED
- Selectable short-circuit response, constant current or latching disconnection
- Changeover for parallel operation
- 20 A and 40 A units with single-phase and three-phase connection and new 20 A and 40 A units in compact design (70 mm or 150 mm wide)
- Can be combined with SITOP expansion modules and the uninterruptible power supplies

Selection and ordering data

	Version	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Power supplies 24 V												
	5 A	120/230 ... 500 V AC (85 ... 264 V/ 176 ... 550 V)	24 V DC $\pm 3\%$	5 A	70 x 125 x 125	▶	6EP1 333-3BA00		1	1 unit	405	1.200
6EP1 331-3BA00												
	10 A	120/230 ... 500 V AC (85 ... 264 V/ 176 ... 550 V)	24 V DC $\pm 3\%$	10 A	90 x 125 x 125	▶	6EP1 334-3BA00		1	1 unit	405	1.400
6EP1 334-3BA00												
	20 A	120/230 V AC (85 ... 132 V/ 176 ... 264 V)	24 V DC $\pm 3\%$	20 A	160 x 125 x 125	▶	6EP1 336-3BA00		1	1 unit	405	2.200
6EP1 336-3BA00												
	20 A	3 AC 400 ... 500 V (320 ... 575 V)	24 V DC $\pm 3\%$	20 A	160 x 125 x 125	▶	6EP1 436-3BA00		1	1 unit	405	2.000
6EP1 436-3BA00												
	20 A	3 AC 400 ... 500 V (320 ... 575 V)	24 V DC $\pm 3\%$	20 A	70 x 125 x 125	D	6EP1 436-3BA10		1	1 unit	405	1.200
6EP1 436-3BA10												
	40 A	120/230 V AC (85 ... 132 V/ 176 ... 264 V)	24 V DC $\pm 3\%$	40 A	240 x 125 x 125	▶	6EP1 337-3BA00		1	1 unit	405	2.900
6EP1 337-3BA00												
	40 A	3 AC 400 ... 500 V (320 ... 575 V)	24 V DC $\pm 3\%$	40 A	150 x 125 x 150	C	6EP1 437-3BA10		1	1 unit	405	3.400
6EP1 437-3BA10												
	40 A	3 AC 400 ... 500 V (320 ... 550 V)	24 V DC $\pm 3\%$	40 A	240 x 125 x 125	▶	6EP1 437-3BA00		1	1 unit	405	3.200
6EP1 437-3BA00												

For other units and versions, see Catalog KT 10.1.

Stabilized Power Supplies

SITOP 6EP Power Supplies

Expansion modules

Overview

The SITOP expansion modules offer further functions:

The signaling module can be snapped onto the side of the basic unit; with floating signaling contacts "Output voltage OK" and "Ready"; with signal input for remote ON/OFF switching of the basic unit.

The redundancy module uses diodes to disconnect the basic units from one another so that a redundant 24 V power supply can be constructed.

The two SITOP PSE200U selectivity modules and the SITOP select diagnostics module are used in combination with 24 V power supplies for distributing the load current among up





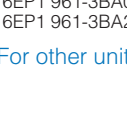

to 4 current branches per module and for monitoring the individual partial currents. Overloads or short-circuits in individual branches are selectively switched off and the remaining load current paths remain unaffected. Individually adjustable rated current, LED, group alarm contact, standard rail mounting.

The buffer module bridges mains interruptions in the range of milliseconds. 100 ms at 40 A, 800 ms at 5 A, up to max. 3 s at low load current; standard rail mounting in any part of the control cabinet.

Power supplies and expansion modules with

- an ambient temperature of 0 °C to +60 °C.

Selection and ordering data

	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Signaling modules										
	--	--	--	25 x 125 x 125	▶	6EP1 961-3BA10		1	1 unit	405	0.150
	Redundancy modules										
	24 V DC (24 ... 28.8 V)	U_e – approx. 0.5 V	20 A	70 x 125 x 125	▶	6EP1 961-3BA20		1	1 unit	408	1.000
	SITOP PSE200U selectivity modules										
	24 V DC (22 ... 30 V)	--	4 x 3 A (0.5 ... 3 A)	72 x 80 x 72	A	6EP1 961-2BA10		1	1 unit	406	0.170
	24 V DC (22 ... 30 V)	--	4 x 10 A (0.5 ... 10 A)	72 x 80 x 72	A	6EP1 961-2BA20		1	1 unit	406	0.220
	SITOP select diagnostics modules										
	24 V DC	--	4 x 10 A (2 ... 10 A)	72 x 90 x 90	▶	6EP1 961-2BA00		1	1 unit	406	0.400
	Buffer modules										
	24 V DC (24 ... 28.8 V)	U_e – approx. 1 V	40 A	70 x 125 x 125	A	6EP1 961-3BA01		1	1 unit	400	1.200
	6EP1 961-3BA01, 6EP1 961-3BA20										

For other units and versions, see Catalog KT 10.1.

Overview

To combat prolonged mains failures the 24 V SITOP power supply units can be upgraded into a DC-UPS uninterruptible power supply.




SITOP offers two systems for this purpose: with battery modules which provide a buffer in the hour range and with capacitors for a 24 V buffer in the minute range.



The combination is used for example in machine-tool building, in the textile industry, on all types of production lines and filling plants, and in conjunction with 24 V industrial PCs. They prevent the negative consequences which often result from mains failures.

For the SIMATIC IPC this means that all running applications, including the operating system, can be shut down under stabilized conditions.

The DC-UPS 24 V uninterruptible power supply with battery modules is comprised of DC-USV modules with 6 A, 15 A or 40 A output current and the battery modules 1.2 Ah, 3.2 Ah, 7 Ah and 12 Ah (containing lead rechargeable batteries with corrosion-resistant lead-calcium high-performance grid plates and glass fiber fleece) and 2.5 Ah (containing "high-temperature rechargeable batteries" type Reinblei).

Selection and ordering data

Version	Input Rated voltage U_e Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
DC UPS modules													
 6EP1 931-2.C..	6 A With serial interface With USB interface	24 V DC (22 ... 29 V)	24 V DC (mains operation: 21.5 ... 28.5 V, battery operation: 27.0 ... 18.5 V)	6 A	50 x 125 x 125 ▶ 50 x 125 x 125 ▶ 50 x 125 x 125 ▶	6EP1 931-2DC21		1 1 unit	407	0.400			
						6EP1 931-2DC31					1 1 unit	407	0.450
						6EP1 931-2DC42							
 6EP1 931-2EC..	15 A With serial interface With USB interface	24 V DC (22 ... 29 V)	24 V DC (mains operation: 21.5 ... 28.5 V, battery operation: 27.0 V ... 18.5 V)	15 A	50 x 125 x 125 ▶ 50 x 125 x 125 ▶ 50 x 125 x 125 ▶	6EP1 931-2EC21		1 1 unit	407	0.400			
						6EP1 931-2EC31					1 1 unit	407	0.450
						6EP1 931-2EC42							
 6EP1 931-2FC..	40 A With USB interface	24 V DC (22 ... 29 V)	24 V DC (mains operation: 21.5 ... 28.5 V, battery operation: 27.0 ... 18.5 V)	40 A	102 x 125 x 125 ▶ 102 x 125 x 125 ▶	6EP1 931-2FC21		1 1 unit	407	1.100			
						6EP1 931-2FC42							

Version	Charging voltage at +25 °C U_{Charge}	Output Rated voltage U_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg						
Battery modules																
<i>For DC-UPS modules 6 A and 15 A</i>																
 6EP1 935-6MC01	1.2 Ah	27.0 V DC	24 V DC (end of charge voltage: 27.0 V, exhaustive discharge protection: 18.5 V)	96 x 106 x 108 ▶	6EP1 935-6MC01		1 1 unit	407	1.650							
					2.5 Ah/ high temperature rechargeable battery					27.7 V DC	24 V DC (end of charge voltage: 27.7 V, exhaustive discharge protection: 18.5 V)	265 x 151 x 91 ▶	6EP1 935-6MD31	1 1 unit	407	3.800
													3.2 Ah			
<i>For DC-UPS modules 6 A to 40 A</i>																
 6EP1 935-6ME21	7 Ah	27.0 V DC	24 V DC (end of charge voltage: 27.0 V, exhaustive discharge protection: 18.5 V)	186 x 168 x 121 ▶	6EP1 935-6ME21		1 1 unit	407	6.000							
	12 Ah	27.0 V DC	24 V DC (end of charge voltage: 27.0 V, exhaustive discharge protection: 18.5 V)	253 x 168 x 121 ▶	6EP1 935-6MF01		1 1 unit	407	9.000							

* You can order this quantity or a multiple thereof.

Stabilized Power Supplies

SITOP 6EP Power Supplies

DC-UPS uninterruptible power supplies

The maintenance-free SITOP UPS500 with capacitors are especially suited as buffers for use at high ambient temperatures.

The highly capacitive double-layer capacitors store enough energy to shut down PC-based systems safely. Another advantage of the double-layer capacitors is their shorter charging times.

For flexible deployment the SITOP UPS500S 15 A basic unit comes in a 2.5 kW and 5 kW version. For longer buffer times it is possible to attach up to three SITOP UPS501S expansion modules with 5 kW.

Version	Input Rated voltage U_a Rated	Output Rated voltage U_a Rated	Rated current I_a Rated	Dimensions (W x H x D) mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SITOP UPS500S, basic units 15 A											
2.5 kW	24 V DC	24 V DC	15.2 A +	120 x 125 x 125 A		6EP1 933-2EC41		1	1 unit	407	1.000
5 kW	(22 ... 29 V) power supply through SITOP 24 V DC	$\pm 3\%$	approx. 2.3 A (charging mode)	120 x 125 x 125 A		6EP1 933-2EC51		1	1 unit	407	1.200
SITOP UPS501 expansion modules											
5 kW	Supply through basic unit	--	--	120 x 125 x 125 A		6EP1 935-5PG01		1	1 unit	407	0.700



6EP1 933-2EC41,
6EP1 935-5PG01

For other units and versions, see Catalog KT 10.1.

Planning, Configuration and Visualizing for SIRIUS



	Introduction
12/2	- Overview
	Soft Starter ES
12/4	- Overview
12/5	- Selection and ordering data
	Motor Starter ES
12/7	- Overview
12/8	- Selection and ordering data
	SIMOCODE ES
12/10	- Overview
12/12	- Selection and ordering data
	SIMOCODE pro function block library for SIMATIC PCS 7
12/14	- Overview
12/14	- Selection and ordering data
	Modular Safety System ES
12/15	- Overview
12/17	- Selection and ordering data
	ECOFAST ES
12/18	- Overview
12/18	- Selection and ordering data
	Technical Information
	can be found at www.siemens.com/industrial-controls/support
	under Product List: - Technical Specifications
	under Entry List: - Updates - Downloads - FAQ - Manuals - Characteristic curves - Certificates
	and at www.siemens.com/industrial-controls/configurators - Configurators

Introduction

Overview



SIRIUS ES engineering software (E-SW)

The programs of the SIRIUS ES software family enable:

- Clearly arranged configuring of device functions and their parameters – online and offline
- Efficient diagnostics functions and display of the most important measured values
- Time savings through shorter startup times.

The SIRIUS ES programs such as Motor Starter ES, Soft Starter ES and SIMOCODE ES are available in three versions which differ in user-friendliness, scope of functions and price (for details see the descriptions of the individual products).

SIRIUS ES	Basic	Standard	Premium
Local interface on the device (system interface)	✓	✓	✓
Basic functions for parameterizing the devices			
• Parameter assignment	✓	✓	✓
• Operating	✓	✓	✓
• Diagnostics	✓	✓	✓
• Test	✓	✓	✓
Standard functionality			
• Parameterizing with the integrated graphics editor ¹⁾	--	✓	✓
• Creating typicals	--	✓	✓
• Exporting parameters	--	✓	✓
Complete functionality			
• Group functions	--	--	✓
• S7 Routing	--	--	✓
• Teleservice through MPI	--	--	✓
• STEP7 Object Manager	--	--	✓
PROFIBUS interface	--	--	✓

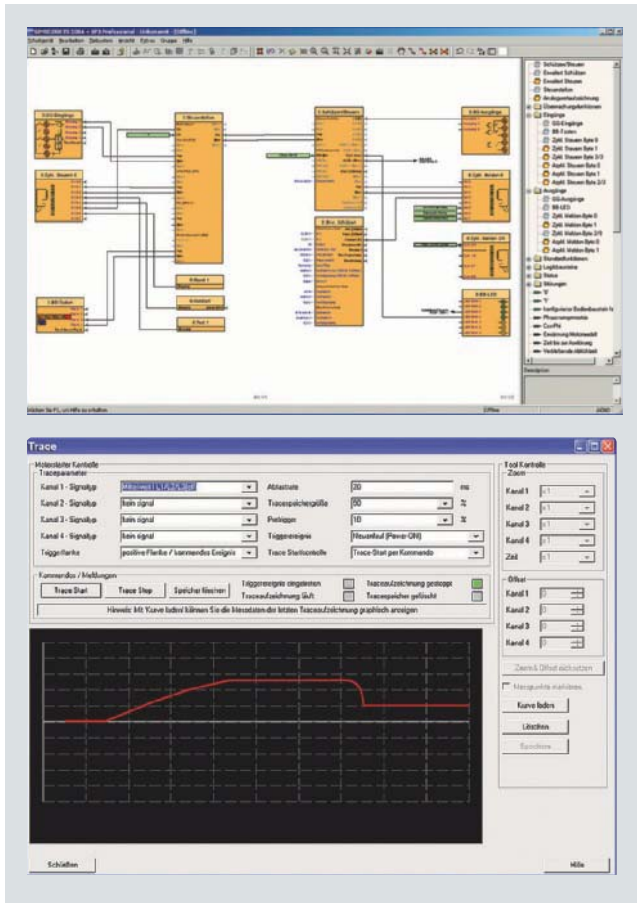
✓ Function available

-- Function not available

¹⁾ Depending on SIRIUS ES program.

In addition to device-specific parameterization, the programs of the SIRIUS ES software family also provide the following functionality in a uniform look and feel. These functions are available in many SIRIUS ES programs.

- Standards-conform printouts
The programs of the SIRIUS ES software family greatly simplify machine documentation. Parameterization printouts according to EN ISO 7200 are possible. The elements to be printed are easy to select and compile as required.
- Easy creation of typicals
Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e. g. by the startup engineer.
- Group function
For the user-friendly parameterization of numerous devices or applications of the same type, the programs of the SIRIUS ES software family offer a group function which enables the parameterization of several devices to be read out or written through PROFIBUS. In conjunction with typicals it is even possible to selectively adapt the same parameters in any number of parameterizations.
- Teleservice through MPI
The premium versions of the SIRIUS ES software families support the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.



Efficient engineering and startup with graphic interfaces and diagnostics options

Types of delivery and license

The programs of the SIRIUS ES software family are available as follows:

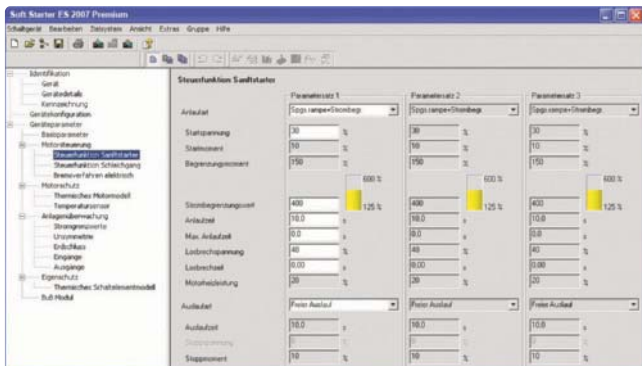
- Floating license – the license for any one user at any one time
 - Authorizes any one user
 - Independent of the number of installations (unlike the single license which is allowed to be installed once only)
 - Only the actual use of the program has to be licensed
 - Trial license (free use of all program functions for 14 days for test and evaluation purposes, included on every product CD, available in the download file of the SIRIUS ES program in the Service&Support portal).

Following delivery versions are available in addition for the programs of the SIRIUS ES software family:

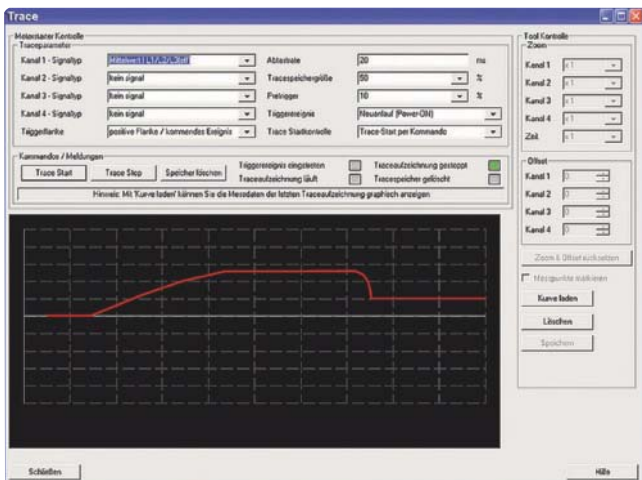
- Upgrade
 - Upgrade from an old to a new version with expanded functions, e. g. upgrade from Motor Starter ES 2006 to Motor Starter ES 2007
- Powerpack
 - Special pack for switching within the same software version to a more powerful version with more functionality, e. g. Powerpack Motor Starter ES 2007 for switching from Standard to Premium
- Software Update Service
 - To keep you up to date at all times we offer a special service which supplies you automatically with all service packs and upgrades

Soft Starter ES

Overview



Easy and clearly arranged parameter setting of the 3RW44 soft starter with Soft Starter ES 2007



Graphic presentation of measured values with the trace function (oscilloscope function) of Soft Starter ES 2007 Standard and Premium

Soft Starter ES 2007

The Soft Starter ES software permits the quick and easy parameterization, monitoring and diagnostics of SIRIUS 3RW44 High-Feature soft starters for service purposes. The device parameters can be configured directly on the PC and transferred to the soft starter through a serial cable or an optional PROFIBUS interface.

The advantages of Soft Starter ES:

- Clearly arranged configuring of device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (in the Soft Starter ES Standard and Premium software versions)

Efficient engineering with new program versions

The Soft Starter ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

Soft Starter ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Creating typicals	--	✓ ¹⁾	✓
Exporting parameters	--	✓	✓
Comparison functions	--	✓	✓
Standards-conform printout according to EN ISO 7200	--	✓	✓
Service data (slave pointer, statistics data)	--	✓	✓
Access through PROFIBUS	--	--	✓
Group functions	--	--	✓
Teleservice through MPI	--	--	✓
S7 Routing	--	--	✓
STEP7 Object Manager	--	--	✓

✓ Function available

-- Function not available

¹⁾ Typicals with Service Pack 1 and higher.

More functions

- Standards-conform printouts
The software tool greatly simplifies machine documentation. Parameterization printouts according to EN ISO 7200 are possible. The elements to be printed are easy to select and compile as required.
- Easy creation of typicals
Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e. g. by the startup engineer.
- Group function
For the user-friendly parameterization of numerous devices or applications of the same type, the programs of the SIRIUS ES software family offer a group function which enables the parameterization of several devices to be read out or written through PROFIBUS. In conjunction with typicals it is even possible to selectively adapt the same parameters in any number of parameterizations.
- Teleservice through MPI
The Soft Starter ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Soft Starter ES

Types of delivery and license

Soft Starter ES is available as follows:

- Floating license – the license for any one user at any one time
 - Authorizes any one user
 - Independent of the number of installations (unlike the single license which is allowed to be installed once only)
 - Only the actual use of the program has to be licensed
 - Trial license (free use of all program functions for 14 days for test and evaluation purposes, included on every product CD, available in the download file of the SIRIUS ES program in the Service&Support portal).

Following delivery versions are available in addition for Soft Starter ES 2007:

- Upgrade
Upgrade from an old to a new version with expanded functions, e. g. upgrade from Soft Starter ES 2006 to Soft Starter ES 2007

- Powerpack
Special pack for switching within the same software version to a more powerful version with more functionality, e. g. Powerpack Soft Starter ES 2007 for switching from Standard to Premium
- Software Update Service
To keep you up to date at all times we offer a special service which supplies you automatically with all service packs and upgrades

New licensing procedure

To make licensing easier, the three versions of Soft Starter ES are available with immediate effect with the following license:

14 day trial license for Premium functions: for test and evaluation purposes, included on every product CD, available also in the download file of the SIRIUS Soft Starter ES 2007 program in the Service&Support portal.

System requirements

Soft Starter ES 2007 parameterization, start-up and diagnostics software for the SIRIUS 3RW44 soft starter	Basic/Standard	Premium
	Firmware version \geq *E04* ¹⁾	Firmware version \geq *E06* ²⁾
Operating system	Windows XP Professional (Service Pack 2), Windows Vista Ultimate 32/Business 32 ³⁾	
Processor	\geq Pentium 800 MHz/ \geq 1 GHz (Windows Vista)	
RAM	\geq 512 MB/ \geq 1 GB (Windows Vista)	
Free space on hard disk	\geq 150 MB	
CD-ROM/DVD drive	Yes (only when installing from CD)	
Serial interface (COM)	Yes	
PC cable/parameterization cable/connection cable	Yes	
PROFIBUS communication module (optional)	--	Yes

¹⁾ SIRIUS 3RW44 with firmware version \geq *E04*. Installed in starters delivered after December 2005.

²⁾ SIRIUS 3RW44 with firmware version \geq *E06*. Installed in starters delivered after May 2006.

³⁾ Windows Vista Ultimate 32/Business 32 with Soft Starter ES 2007 + Service Pack 1 and higher.

Selection and ordering data

Soft Starter ES parameterization and service software for SIRIUS 3RW44 soft starters

- Can be run under WIN XP PROF/ Windows Vista Ultimate 32/Business 32
- Without PC cable

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Soft Starter ES 2007 Basic

Floating license for one user

E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface

- License key on USB stick, Class A, including CD

B	3ZS1 313-4CC10-0YA5	1	1 unit	131	0.230
---	----------------------------	---	--------	-----	-------

Planning, Configuration and Visualizing for SIRIUS

Soft Starter ES

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Soft Starter ES 2007 Standard

Floating license for one user

E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface

- License key on USB stick, Class A, including CD

B **3ZS1 313-5CC10-0YA5** 1 1 unit 131 0.230

Upgrade for Soft Starter ES 2006

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface

B **3ZS1 313-5CC10-0YE5** 1 1 unit 131 0.230

Powerpack for Soft Starter ES 2007 Basic

Floating license for one user, E-SW, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface

B **3ZS1 313-5CC10-0YD5** 1 1 unit 131 0.230

Software Update Service

For one year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface

▶ **3ZS1 313-5CC10-0YL5** 1 1 unit 131 0.230

Soft Starter ES 2007 Premium

Floating license for one user

E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface or PROFIBUS

- License key on USB stick, Class A, including CD

B **3ZS1 313-6CC10-0YA5** 1 1 unit 131 0.230

Upgrade for Soft Starter ES 2006

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface or PROFIBUS

B **3ZS1 313-6CC10-0YE5** 1 1 unit 131 0.230

Powerpack for Soft Starter ES 2007 Standard

Floating license for one user, E-SW, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface or PROFIBUS

▶ **3ZS1 313-6CC10-0YD5** 1 1 unit 131 0.230

Software Update Service

For 1 year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface or PROFIBUS

▶ **3ZS1 313-6CC10-0YL5** 1 1 unit 131 0.230

Accessories

PC cable for PC/PG communication,

Through the system interface on the device, for connecting to the serial interface on the PC/PG

A **3UF7 940-0AA00-0** 1 1 unit 131 0.150

Optional PROFIBUS communication module for SIRIUS 3RW44

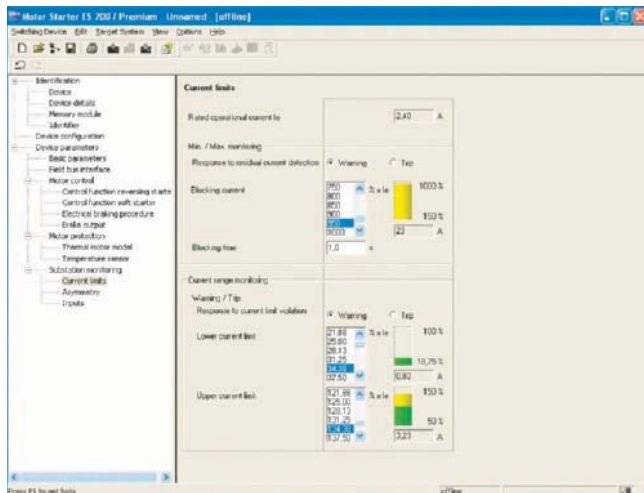
A **3RW4 900-0KC00** 1 1 unit 131 0.320

USB/serial adapters

To connect a serial PC cable (for connection to the serial PC interface/RS 232), we recommend using 3RK3 modular safety system, 3RW44 soft starter, ET 200S/ECCOFAST/ET 200pro motor starter, AS-i safety monitor and AS-i analyzer in conjunction with SIMOCODE pro 3UF7

B **3UF7 946-0AA00-0** 1 1 unit 131 0.150

Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

Motor Starter ES 2007

Motor Starter ES is used for start-up, parameterization, diagnostics, documentation and the preventative maintenance of the motor starters of the SIMATIC ET 200S, ET 200pro, ECOFAST and M200D product families.

Interfacing is performed

- Through the local interface on the device
- With PROFIBUS DP V1 capable motor starters from any point in PROFIBUS or in PROFINET (applies for ET 200pro/ECOFAST/M200D)
- With PROFIBUS-capable motor starters from any point in PROFINET or PROFIBUS (applies for M200D).

Using Motor Starter ES, the communication-capable motor starters are easily parameterized during start-up, monitored during normal operation and successfully diagnosed for service purposes. Preventative maintenance is supported by a function for reading out diverse statistical data (e. g. operating hours, operating cycles, cut-off currents, etc.). The user is supported during these procedures with comprehensive Help functions and plain text displays.

The advantages of Motor Starter ES:

- Clearly arranged configuring of device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (in the Motor Starter ES Standard and Premium software versions for M200D, PROFIBUS and PROFINET).

Motor Starter ES can either be used as a stand-alone program or it can be integrated into STEP 7 via an object manager.

Efficient engineering with new program versions

The Motor Starter ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

Motor Starter ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	--	✓	✓
Creating typicals	--	✓ ¹⁾	✓ ¹⁾
Comparison functions	--	✓	✓
Standards-conform printout according to EN ISO 7200	--	✓	✓
Service data (slave pointer, statistics data)	--	✓	✓
Access through PROFIBUS	--	--	✓
Access through PROFINET	--	--	✓ ²⁾
S7 Routing	--	--	✓
Teleservice through MPI	--	--	✓
STEP 7 object manager	--	--	✓
Trace function	--	✓ ²⁾	✓ ²⁾

✓ Function available -- Function not available

¹⁾ Typicals with Service Pack 1 and higher.

²⁾ Trace function and access through PROFINET Service Pack 2 and higher.

Motor Starter ES	Basic	Standard	Premium
ET 200S High Feature PROFIBUS IM	✓	✓	--
ET 200S High Feature PROFINET IM	✓	✓	--
ECOFAST AS-Interface High Feature	✓	✓	--
ECOFAST PROFIBUS	✓	✓	✓
ET 200pro PROFIBUS IM	✓	✓	✓
ET 200pro PROFINET IM	✓	✓	✓
M200D AS-Interface Standard	✓ ¹⁾	✓ ¹⁾²⁾	--
M200D PROFIBUS	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
M200D PROFINET	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾

✓ Function available -- Function not available

¹⁾ With Service Pack 2 and higher.

²⁾ Trace function is not supported.

More functions

- Standards-conform printouts
The software tool greatly simplifies machine documentation. Parameterization printouts according to EN ISO 7200 are possible. The elements to be printed are easy to select and compile as required.
- Easy creation of typicals
Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e. g. by the startup engineer.
- Teleservice through MPI
The Motor Starter ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Motor Starter ES

Types of delivery and license

Motor Starter ES is available as follows:

- Floating license – the license for any one user at any one time
 - Authorizes any one user
 - Independent of the number of installations (unlike the single license which is allowed to be installed once only)
 - Only the actual use of the program has to be licensed
 - Trial license (free use of all program functions for 14 days for test and evaluation purposes, included on every product CD, available in the download file of the SIRIUS ES program in the Service&Support portal).

Following delivery versions are available in addition for Motor Starter ES 2007:

- Upgrade
Upgrade from an old to a new version with expanded functions, e. g. upgrade from Motor Starter ES 2006 to Motor Starter ES 2007

- Powerpack
Special pack for switching within the same software version to a more powerful version with more functionality, e. g. Powerpack Motor Starter ES 2007 for switching from Standard to Premium
- Software Update Service
To keep you up to date at all times we offer a special service which supplies you automatically with all service packs and upgrades

System requirements

Parameterization, start-up and diagnostics software Motor Starter ES 2007

For ECOFAST Motor Starter, SIMATIC ET 200S High-Feature Starter, SIMATIC ET 200pro Starter and M200D (AS-I Standard, PROFIBUS, PROFINET)

Operating system	Windows XP Professional (Service Pack 2, Service Pack 3 ¹⁾), Windows Vista Ultimate 32/Business 32 ²⁾ (Service Pack 1 ³⁾)
Processor	≥ Pentium 800 MHz/≥ 1 GHz (Windows Vista)
RAM	≥ 512 MB/≥ 1 GB (Windows Vista)
Monitor resolution	≥ 1024 x 768
Free space on hard disk⁴⁾	≥ 400 MB
CD-ROM/DVD drive	Yes (only when installing from CD)
Serial interface (COM)	Yes
PC cable/parameterization cable/connection cable	Yes
PROFIBUS card/PROFIBUS processor	Optional, for parameterization and diagnostics through PROFIBUS
Ethernet interface/PROFINET card	Optional, for parameterization and diagnostics through PROFINET

1) Windows XP Professional Service Pack 3 with Motor Starter ES 2007 + SP2 and higher.

2) Windows Vista Ultimate 32/Business 32 with Motor Starter ES 2007 + SP1 and higher.

3) Windows Vista Ultimate 32/Business 32 Service Pack 1 with Motor Starter ES 2007 + SP2 and higher.

4) Allow for additional free space, e. g. for swap-out files.

Selection and ordering data

Parameterization, start-up and diagnostics software Motor Starter ES 2007

For ECOFAST Motor Starter, SIMATIC ET 200S High Feature Starter, SIMATIC ET 200pro Starter and M200D (AS-I Standard, PROFIBUS, PROFINET)

- Can be run under WIN XP PROF/
Windows Vista Ultimate 32/Business 32
- Without PC cable

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Motor Starter ES 2007 Basic

Floating license for one user

E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface

- License key on USB stick, Class A, including CD

B	3ZS1 310-4CC10-0YA5	1	1 unit	121	0.230
---	----------------------------	---	--------	-----	-------

Planning, Configuration and Visualizing for SIRIUS

Motor Starter ES

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Motor Starter ES 2007 Standard

Floating license for one user

E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface

- License key on USB stick, Class A, including CD

B **3ZS1 310-5CC10-0YA5** 1 1 unit 121 0.230

Upgrade for Motor Starter ES 2006

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface

B **3ZS1 310-5CC10-0YE5** 1 1 unit 121 0.230

Powerpack for Motor Starter ES 2007 Basic

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface

B **3ZS1 310-5CC10-0YD5** 1 1 unit 121 0.230

Software Update Service

For one year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface

B **3ZS1 310-5CC10-0YL5** 1 1 unit 121 0.230

Motor Starter ES 2007 Premium

Floating license for one user

E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface or PROFIBUS

- License key on USB stick, Class A, including CD

B **3ZS1 310-6CC10-0YA5** 1 1 unit 121 0.230

Upgrade for Motor Starter ES 2006

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface or PROFIBUS

B **3ZS1 310-6CC10-0YE5** 1 1 unit 121 0.230

Powerpack for Motor Starter ES 2007 Standard

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface or PROFIBUS

B **3ZS1 310-6CC10-0YD5** 1 1 unit 121 0.230

Software Update Service

For 1 year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface or PROFIBUS

B **3ZS1 310-6CC10-0YL5** 1 1 unit 121 0.230

Accessories

For ET 200S High Feature motor starters

- Control module 2DI DC 24 V COM, for ET 200S High-Feature starter, Failsafe Starter A
- LOGO! PC cables

A **3RK1 903-0CH10** 1 1 unit 121 0.025

A **6ED1 057-1AA00-0BA0** 1 1 unit 200 0.168

For ET 200pro motor starters

- RS 232 interface cable, serial data connection between ET 200pro MS/FC and laptop/PC/PG or MS

B **3RK1 922-2BP00** 1 1 unit 121 0.330

For ECOFAST High Feature motor starters (interface cable)

- PC cables

B **3RK1 911-0BN20** 1 1 unit 121 0.162

USB/serial adapters

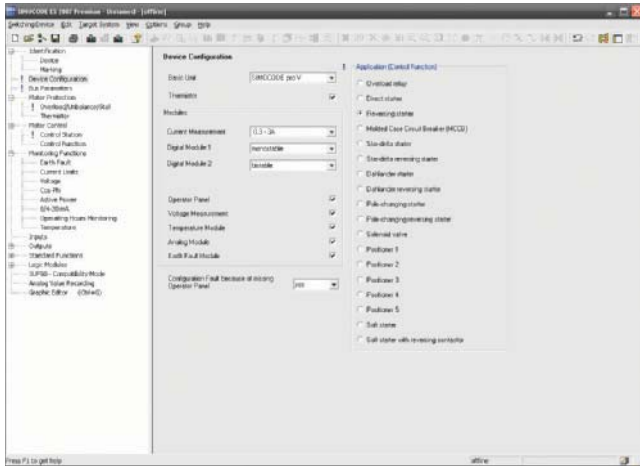
To connect a serial PC cable (for connection to the serial PC interface/RS 232), we recommend using 3RK3 modular safety system, 3RW44 soft starter, ET 200S/ECOFAST/ET 200pro motor starter, AS-i safety monitor, AS-i analyzer in conjunction with SIMOCODE pro 3UF7

B **3UF7 946-0AA00-0** 1 1 unit 131 0.150

SIMOCODE ES

Overview

SIMOCODE ES: the uniform software for more plant availability



Selection of predefined control functions SIMOCODE ES

SIMOCODE ES is the central software for SIMOCODE pro start-up, operation and diagnostics. Unnecessary plant downtimes can be consistently prevented, for example by changing parameters online during operation. Control functions, protection functions and the wiring of the control circuit are implemented in SIMOCODE pro by predefined control functions and can be readily configured using SIMOCODE ES.

SIMOCODE ES is available in three different versions

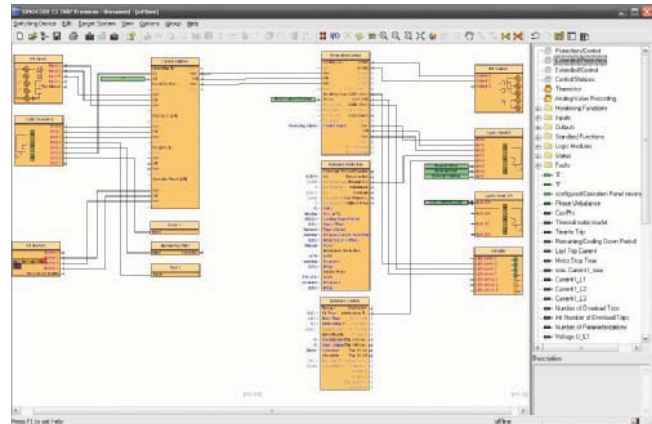
The user can choose between three different versions of SIMOCODE ES: SIMOCODE ES Basic, SIMOCODE ES Standard and SIMOCODE ES Premium. While SIMOCODE ES Basic is a powerful tool for startup or maintenance personnel, SIMOCODE ES Standard and Premium are the perfect tools for engineers or configurers on account of their larger scope of functions and integrated graphics editor. Unlike the Standard version, SIMOCODE ES Premium also permits parameterization and diagnostics through PROFIBUS. Indication of all operating, service and diagnostics data supplies important information about the current state of the motor and plant at all times – everywhere on the PROFIBUS.

Object manager for SIMATIC S7

The object manager is a component of SIMOCODE ES Premium. Thanks to this software tool, SIMOCODE ES is totally integrated in SIMATIC S7. If the two software packages are installed on the PG/PC with which the SIMATIC S7 hardware configuration is performed, then SIMOCODE ES can be called up directly from STEP 7.

Integrated graphics editor: parameterizing by Drag&Drop

The graphics editor is a part of SIMOCODE ES Standard and SIMOCODE ES Premium. It adds to the parameterizing interface a powerful tool which enables the easy parameterization of devices by Drag&Drop. The extremely compact documentation of all configured parameters is possible, as is the graphic online presentation of the configured device functions including all signal states during operation.



Easy and ergonomic parameterizing with the graphics editor

Trend display of measured values

With this online function, SIMOCODE ES Standard or Premium can present the trend of up to five different measured values. It is thus possible for example to record and evaluate the start-up characteristic of a motor or its behavior in different load conditions.



Trend displays of measured values in SIMOCODE ES

SIMOCODE ES	Basic	Standard	Premium
Access through the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Test	✓	✓	✓
Service data	✓	✓	✓
Parameterizing with the integrated graphics editor	--	✓	✓
Creating typicals	--	✓	✓
Exporting parameters	--	✓	✓
Comparison functions	--	✓	✓
Trend display of measured values	--	✓	✓
Parameter comparison	--	✓	✓
Analog value recording ¹⁾	--	✓	✓
Standards-conform printout according to EN ISO 7200	--	✓	✓
Group functions	--	--	✓
Access through PROFIBUS	--	--	✓
Teleservice through MPI	--	--	✓
S7 Routing	--	--	✓
STEP7 Object Manager	--	--	✓

✓ Function available

-- Function not available

¹⁾ For SIMOCODE pro V.

More functions

In addition to device-specific parameterization, SIMOCODE ES 2007 also offers the following functionality in a uniform look and feel. These functions are available in many SIRIUS ES programs.

- Standards-conform printouts
The software tool greatly simplifies machine documentation. Parameterization printouts according to EN ISO 7200 are possible. The elements to be printed are easy to select and compile as required.
- Easy creation of typicals
Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e. g. by the startup engineer.
- Group function
For the user-friendly parameterization of numerous devices or applications of the same type, the programs of the SIRIUS ES software family offer the group function which enables the parameterization of several devices to be read out or written through PROFIBUS. In conjunction with typicals it is even possible to selectively adapt the same parameters in any number of parameterizations.
- Teleservice through MPI
The Motor Starter ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Types of delivery and license

SIMOCODE ES is available as follows:

- Floating license – the license for any one user at any one time
 - Authorizes any one user
 - Independent of the number of installations (unlike the single license which is allowed to be installed once only)
 - Only the actual use of the program has to be licensed
 - Trial license (free use of all program functions for 14 days for test and evaluation purposes, included on every product CD, available in the download file of the SIRIUS ES program in the Service&Support portal).

Following delivery versions are available in addition for SIMOCODE ES 2007:

- Upgrade
Upgrade from an old to a new version with expanded functions, e. g. upgrade from SIMOCODE ES 2004 to SIMOCODE ES 2007
- Powerpack
Special pack for switching within the same software version to a more powerful version with more functionality, e. g. Powerpack SIMOCODE ES 2007 for switching from Standard to Premium
- Software Update Service
To keep you up to date at all times we offer a special service which supplies you automatically with all service packs and upgrades

Planning, Configuration and Visualizing for SIRIUS

SIMOCODE ES

System requirements

SIMOCODE ES 2007 parameterization, start-up and diagnostics software for SIMOCODE pro	
Operating system	Windows XP Professional (Service Pack 2), Windows Vista Ultimate 32/Business 32 ¹⁾
Processor	≥ Pentium 800 MHz/≥ 1 GHz (Windows Vista)
RAM	≥ 512 MB/≥ 1 GB (Windows Vista)
Monitor resolution	≥ 1024 x 768
Free space on hard disk	≥ 280 MB
CD-ROM/DVD drive	Yes (only when installing from CD)
Serial interface (COM)	Yes
PC cable/parameterization cable/connection cable	Yes
PROFIBUS card/PROFIBUS processor	Optional, for parameterization and diagnostics through PROFIBUS

¹⁾ Windows Vista Ultimate 32/Business 32 with SIMOCODE ES 2007 + Service Pack 1 and higher.

Selection and ordering data

Parameterization and service software for SIMOCODE pro 3UF7

- Can be run under WIN XP PROF/
Windows Vista Ultimate 32/Business 32
- Without PC cable

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIMOCODE ES 2007 Basic							
Floating license for one user							
E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface							
• License key on USB stick, Class A, including CD ▶		3ZS1 312-4CC10-0YA5		1	1 unit	131	0.230
SIMOCODE ES 2007 Standard							
Floating license for one user							
E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface							
• License key on USB stick, Class A, including CD ▶		3ZS1 312-5CC10-0YA5		1	1 unit	131	0.230
Upgrade for SIMOCODE ES 2004 and later ▶		3ZS1 312-5CC10-0YE5		1	1 unit	131	0.230
Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface							
Powerpack for SIMOCODE ES 2007 Basic ▶		3ZS1 312-5CC10-0YD5		1	1 unit	131	0.230
Floating license for one user, E-SW, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface							
Software Update Service ▶		3ZS1 312-5CC10-0YL5		1	1 unit	131	0.230
For one year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface							

Planning, Configuration and Visualizing for SIRIUS

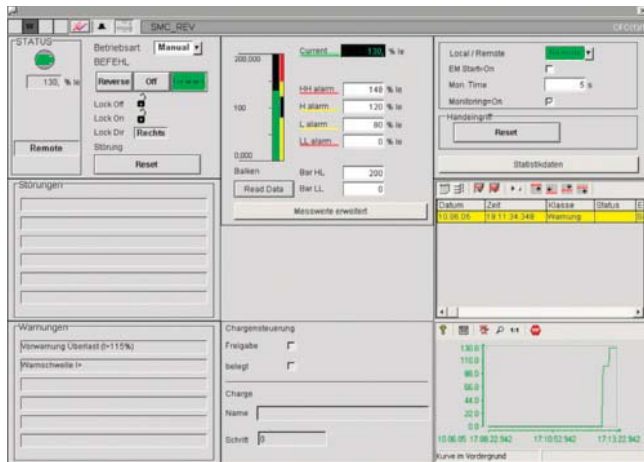
SIMOCODE ES

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIMOCODE ES 2007 Premium							
Floating license for one user							
E-SW, software and documentation on CD, 3 languages (German/English/French), communication through system interface or PROFIBUS							
• License key on USB stick, Class A, including CD ▶							
		3ZS1 312-6CC10-0YA5		1	1 unit	131	0.230
Upgrade for SIMOCODE ES 2004 and later ▶							
		3ZS1 312-6CC10-0YE5		1	1 unit	131	0.230
Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface or PROFIBUS							
Powerpack for SIMOCODE ES 2007 Standard ▶							
		3ZS1 312-6CC10-0YD5		1	1 unit	131	0.230
Floating license for one user, E-SW, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface or PROFIBUS							
Software Update Service ▶							
		3ZS1 312-6CC10-0YL5		1	1 unit	131	0.230
For 1 year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface or PROFIBUS							
Accessories							
PC cables for PC/PG communication A							
		3UF7 940-0AA00-0		1	1 unit	131	0.150
Through the system interface on the device, for connecting to the serial interface on the PC/PG							
USB/serial adapters B							
		3UF7 946-0AA00-0		1	1 unit	131	0.150
To connect a serial PC cable (for connection to the serial PC interface/RS 232), we recommend using 3RK3 modular safety system, 3RW44 soft starter, ET 200S/ECOFAST/ET 200pro motor starter, AS-i safety monitor and AS-i analyzer in conjunction with SIMOCODE pro 3UF7							

Planning, Configuration and Visualizing for SIRIUS

SIMOCODE pro function block library for SIMATIC PCS 7

Overview



SIMOCODE pro function block library for SIMATIC PCS 7

SIMOCODE pro function block library for SIMATIC PCS 7

The SIMOCODE pro PCS 7 function block library can be used for simple and easy integration of SIMOCODE pro into the SIMATIC PCS 7 process control system. The SIMOCODE pro PCS 7 function block library contains the diagnostics and driver blocks corresponding with the diagnostics and driver concept of SIMATIC PCS 7 as well as the elements (symbols and faceplate) required for operator control and process monitoring.

The application is integrated by graphic interconnection using the CFC Editor. The technological and signal processing functions of the SIMOCODE pro PCS 7 function block library are based on the SIMATIC PCS 7 standard libraries (driver blocks, technological blocks) and are optimally tailored to SIMOCODE pro.

Users who previously configured motor feeder circuits using conventional technology by means of signal blocks and motor or valve blocks, can now easily switch to the SIMOCODE pro PCS 7 function block library.

Types of delivery and license

The SIMOCODE pro PCS 7 function block library supplied on CD-ROM allows the user to run the required engineering software on the engineering station (single license) including the runtime software for executing the AS modules in an automation system (single license). If the AS modules are to be used in additional automation systems, the corresponding number of runtime licenses are required which are supplied without a data carrier.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

SIMOCODE pro function block library for SIMATIC PCS 7



3UF7 982-0AA00-0

SIMOCODE pro function block library for SIMATIC PCS 7

Scope of supply:
AS modules and faceplates for integrating SIMOCODE pro into the PCS 7 process control system,
for PCS 7 Version V6.0 engineering software for one engineering station (single license) including runtime software for execution of the AS module in an automation system (single license), German/English/French,
Type of delivery:
CD incl. electronic documentation

• For PCS 7 Version V 6.0	A	3UF7 982-0AA00-0		1	1 unit	131	0.240
• For PCS 7 Version V 6.1	A	3UF7 982-0AA02-0		1	1 unit	131	0.240
• For PCS 7 Version V 7.0	A	3UF7 982-0AA10-0		1	1 unit	131	0.240

AS modules for integrating SIMOCODE pro in the PCS 7 process control system

Runtime software for execution of the AS module in an automation system (single license), Type of delivery:
License without software and documentation

• For PCS 7 Version V 6.x	A	3UF7 982-0AA01-0		1	1 unit	131	0.001
• For PCS 7 Version V 7.x	A	3UF7 982-0AA11-0		1	1 unit	131	0.001

Upgrade for the PCS 7 function block library SIMOCODE pro, V 6.0 or V 6.1 to version SIMOCODE pro V 7.0

for integrating SIMOCODE pro into the PCS 7 process control system,
for PCS 7 Version V 7.0 (single license), German/English/French,
Type of delivery:
CD incl. electronic documentation

	A	3UF7 982-0AA13-0		1	1 unit	131	0.240
--	---	-------------------------	--	---	--------	-----	-------

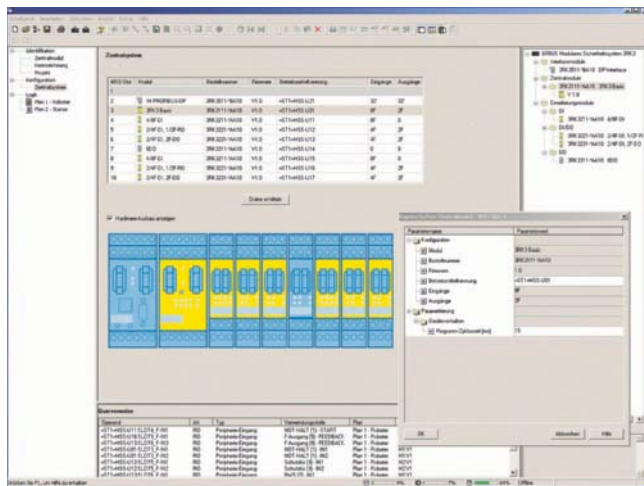
Overview

Modular Safety System ES: the uniform software for the modular safety system

Modular Safety System ES is the engineering software for the configuration, start-up and diagnostics of the 3RK3 modular safety system. The software combines the configuring of the hardware, the programming of the safety functions, and the testing and diagnostics of the safety system.

Hardware configuration

The configuration defines the system's hardware layout. It lays down which modules are used in the system: A central module as a safe control system including onboard peripherals, expansion modules with inputs and outputs, an interface module for connecting to PROFIBUS. For better clarity the layout is shown in a graphic presentation. For each module it is optionally possible to issue an equipment ID which is shown in the logic diagram for identification of the inputs and outputs.



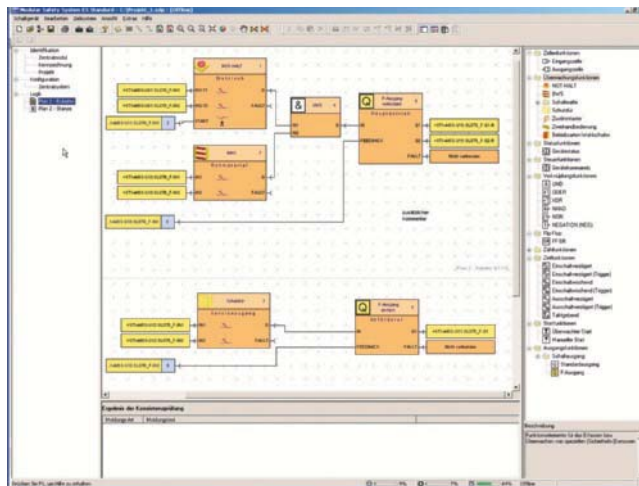
Definition of the hardware layout

Graphic parameterizing of the safety logic by Drag & Drop

The functionality of the safety logic is laid down with a graphics editor designed for intuitive operation. Safe monitoring functions (EMERGENCY-STOP, non-contact protective devices/light arrays, protective doors, etc.), output functions and logic functions (AND/OR operations, counting function, time functions, etc.), non-safety-orientated input/output functions, device status functions and control functions can be dragged from the extensive functions catalog onto the work interface by Drag&Drop. Depending on the version, each function has several input and output connecting points through which the functions can be interconnected by simple mouse clicks. Double-clicking on a function symbol opens the related features dialog window in which all the parameters can be displayed and configured: Scope of the function's inputs and outputs, configuring the channel type (one-channel/two-channel, NC contact/NO contact), activating the crossover monitoring, defining start options, assigning the hardware inputs and outputs, etc. Of course each function can be issued with an individual name so that e. g. the position of a safety switch in the plant can be documented.

The safety logic can be divided into several diagrams in order to enable structured processing of the entire plant. The user can freely position the functions on a quasi infinitely large drawing board, whereby the connecting lines are drawn automatically. If there is not enough space, more pages are automatically added to the diagram in horizontal or vertical direction. Connecting lines extending over several pages are automatically issued with cross-references during print-out. If required in the interest of clarity, the user can divide a connecting line manually into two segments, whereby the mutual reference is marked by reference arrows. For further documentation, freely compilable comment texts can be placed at any point in the diagram. Every point in the logic diagram can be processed with ease by dragging and zooming.

Every project can be saved as a file and be password-protected from unauthorized access.



Processing the safety functions with the graphics editor

User prompting during start-up and maintenance

To start up the 3RK3 modular safety system, the created project file is loaded into the device. This requires the serial interface (COM) of the PC to be connected with a special connection cable to the device. Access to the device can be password-protected.

After the project is loaded, the user switches the device by means of the software from configuring mode to test mode in which the safety functions are tested.

Activating the diagnostics shows the status of the individual functions in the graphic logic diagram by means of different colors and symbols. In addition, the signal status of each input and output can be manually overwritten ("forcing").

If the test is completed successfully, the user releases the configuration and switches the device to protection mode, in which case "forcing" is automatically deactivated.

Service personnel can activate the graphic diagnostics in protection mode as well. The I&M (Identification & Maintenance) data saved in the device facilitate maintenance.

Modular Safety System ES

Modular Safety System ES	Basic	Standard
Access through the local interface on the device	✓	✓
Parameter assignment	✓	✓
Operating	✓	✓
Diagnostics	✓	✓
Test	✓	✓
Integrated graphics editor	✓	✓
Importing/exporting parameters		✓
Comparison functions		✓
Comfort functions		✓
Terminal designator		✓
Work on sub-diagrams		✓
Standards-conform printout according to EN ISO 7200	✓	✓

✓ Function available

-- Function not available

More functions

- The program interface language can be switched during use between German, English and French.
- A context-sensitive help function provides useful assistance with questions concerning the use of the program.
- A consistency check informs clearly about function assignment errors; checks are carried out automatically when a project is saved and during the configuration test, but they can also be initially manually.
- Lists of symbols and cross-references can be issued output for effective processing of the project file.
- Standards-conform printouts:
The programs of the SIRIUS ES software family make machine documentation far easier. They enable parameterization printouts according to EN ISO 7200. The elements to be printed are easy to select and group as required.

System requirements

Modular Safety System ES 2008 parameterization, start-up and diagnostics software for the 3RK3 modular safety system	
Operating system	Windows XP Professional (Service Pack 2), Windows Vista Ultimate 32/Business 32
Processor	≥ Pentium 800 MHz/≥ 1 GHz (Windows Vista)
RAM	≥ 512 MB/≥ 1 GB (Windows Vista)
Monitor resolution	≥ 1024 x 768
Free space on hard disk	≥ 280 MB
CD-ROM/DVD drive	Yes (only when installing from CD)
Serial interface (COM)	Yes
PC cables for PC/PG communication	Yes

Types of delivery and license

Modular Safety System ES 2008 is available as follows:

- Floating license
 - Package contains the software on CD and a floating license on a USB stick
 - The software can be installed on any number of PCs
 - The floating license enables the software to be used by one user; after use, it can be transferred from the one PC to another
 - The CD also contains a trial version for test and evaluation purposes (free use of all program functions on any PC for a period of 14 days).

Following delivery versions are available in addition for Modular Safety System ES 2008:

- Powerpack
Special pack for switching within the same software version to a more powerful version with more functionality, e. g. Powerpack Modular Safety System ES 2008 for switching from Basic to Standard.
- Software Update Service
To keep you up to date at all times we offer a special service which supplies you automatically with all service packs and upgrades (floating license not included in delivery)

The software can be downloaded free from the Internet (without floating license) at:

support.automation.siemens.com/WW/view/en/25801078/133100

The download file also contains a trial license for test and evaluation purposes, which allows free use of all program functions on any PC for a period of 14 days. A floating license is needed to use the software after the 14 days.

Selection and ordering data**Parameterization, start-up and diagnostics software for the 3RK3 modular safety system**

- Runs under WIN XP PROF/
Windows Vista: Ultimate 32/Business 32
- Without PC cable

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Modular Safety System ES 2008 Basic**Floating license for one user**

E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface

- License key on USB stick, Class A, including CD ▶

3ZS1 314-4CC10-0YA5 1 1 unit 131 0.230

Modular Safety System ES 2008 Standard**Floating license for one user**

E-SW, software and documentation on CD, 3 languages (English/French/German), communication through system interface

- License key on USB stick, Class A, including CD ▶

3ZS1 314-5CC10-0YA5 1 1 unit 131 0.230

Powerpack For Modular Safety System ES 2008 Basic

Floating license for one user, E-SW, software and documentation on CD, license key on USB stick, Class A, 3 languages (German/English/French), communication through the system interface

- ▶

3ZS1 314-5CC10-0YD5 1 1 unit 131 0.230

Software Update Service

For one year with automatic extension, assuming the current software version is in use, E-SW, software and documentation on CD, communication through the system interface

- ▶

3ZS1 314-5CC10-0YL5 1 1 unit 131 0.230

Accessories**PC cable for PC/PG communication,**

Through the system interface on the device, for connecting to the serial interface on the PC/PG

- A

3UF7 940-0AA00-0 1 1 unit 131 0.150

USB/serial adapters

To connect a serial PC cable (for connection to the serial PC interface/RS 232), we recommend using 3RK3 modular safety system, 3RW44 soft starter, ET 200S/ECOFAS/ET 200pro motor starter, AS-i safety monitor, AS-i analyzer in conjunction with SIMOCODE pro 3UF7

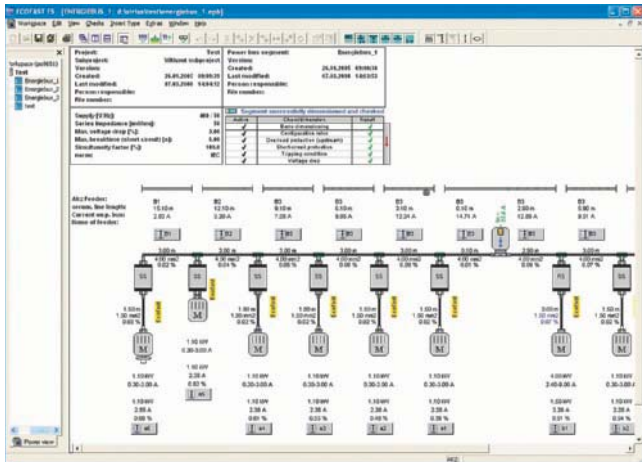
- B

3UF7 946-0AA00-0 1 1 unit 131 0.150

Planning, Configuration and Visualizing for SIRIUS

ECOFAST ES

Overview



ECOFAST ES for configuring, calculating and documenting of applications

ECOFAST ES configuring tool

The ECOFAST system is an open and innovative system solution for distributed applications and sets new standards in equipping machines and plants for automation, low-voltage controlgear and drive technology. The system therefore offers a high degree of safety and availability during operation in addition to high time and cost savings during planning and commissioning/mounting.

The convenient ECOFAST ES configuring software reduces configuring times even further and enables reliable configuring right from the start. ECOFAST ES reduces errors and effort during configuring, calculating and documentation of applications.

ECOFAST ES provides the following advantages:

- Graphic user interface for selecting and interconnecting stations on the power bus
- The components are identified down to the unique order number and entered in parts/quantity lists
- Automatic interface and function testing by means of logic rules (e. g. motor brakes, selectivity, etc.)
- Cable characteristics and laying specifications are taken into account in the calculation
- Plug-in connections are adapted automatically
- Division of projects into levels of hierarchy is possible
- The software finally calculates and checks the configuration according to currently valid standards and state of the art
- If necessary, an error list with hints for possible solutions (on-line help) can be generated
- The configuration can be optimized automatically
- Choice of German, English and French as operating language

System requirements

ECOFAST ES V 1.4 supports all standard PCs with the Windows operating system. Minimum hardware and software requirements need to be met to work with ECOFAST ES V 1.4; efficient operation is possible with the recommended values.

System requirements	Min.	Recommended
Operating system (with service pack)	Windows 2000 or Windows XP Professional	
Processor	Pentium 800 MHz	Pentium 1000 MHz ¹⁾
Graphics cards		
• Resolution	1024 x 768	1280 x 1024
• Colors, number	256	True Color
Main memory	512 MB RAM	> 512 MB RAM
Free space on hard disk	At least 50 MB ²⁾	
CD-ROM drive³⁾	Yes, for the installation of ECOFAST ES V 1.4	

¹⁾ More powerful platforms may be necessary when working with options.

²⁾ Additional free space recommended, e. g. for swap-out file.

³⁾ CD-ROM drive not required for using ECOFAST ES V 1.4.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

ECOFAST ES

ECOFAST ES, basic package V 1.4

- Graphic configuring tool for SIRIUS drive solutions
- Operator prompting for selecting products
- Configuring the supply system according to standards
- Documentation, parts lists, quantity lists
- Operating languages: German, English, French
- Type of delivery: CD, single license

B

3ZS1 200-0CC14-0YA0

1

1 unit

121

0.100



Power Management System

System overview

- 13/2 - Overview
- 13/2 - More information

SENTRON Power Monitoring Devices

General data

- 13/3 - Overview
- 13/4 - Benefits
- 13/5 - Application
- 13/5 - More information
- PAC3100 power monitoring devices
- 13/6 - Selection and ordering data
- 13/6 - More information
- PAC3200 power monitoring devices
- 13/7 - Selection and ordering data
- 13/7 - Accessories
- 13/7 - More information
- PAC4200 power monitoring devices
- 13/8 - Selection and ordering data
- 13/8 - More information
- Expansion modules
- PAC PROFIBUS DP
- 13/9 - Overview
- 13/9 - Application
- 13/9 - Selection and ordering data
- PAC RS485
- 13/10 - Overview
- 13/10 - Application
- 13/10 - Selection and ordering data

Technical Information

is available at

www.siemens.com/lowvoltage/support

under Product List:

- Technical Specifications

under Entry List:

- Updates
- Downloads
- FAQ
- Manuals/Operating instructions
- Characteristic curves
- Certificates

and at

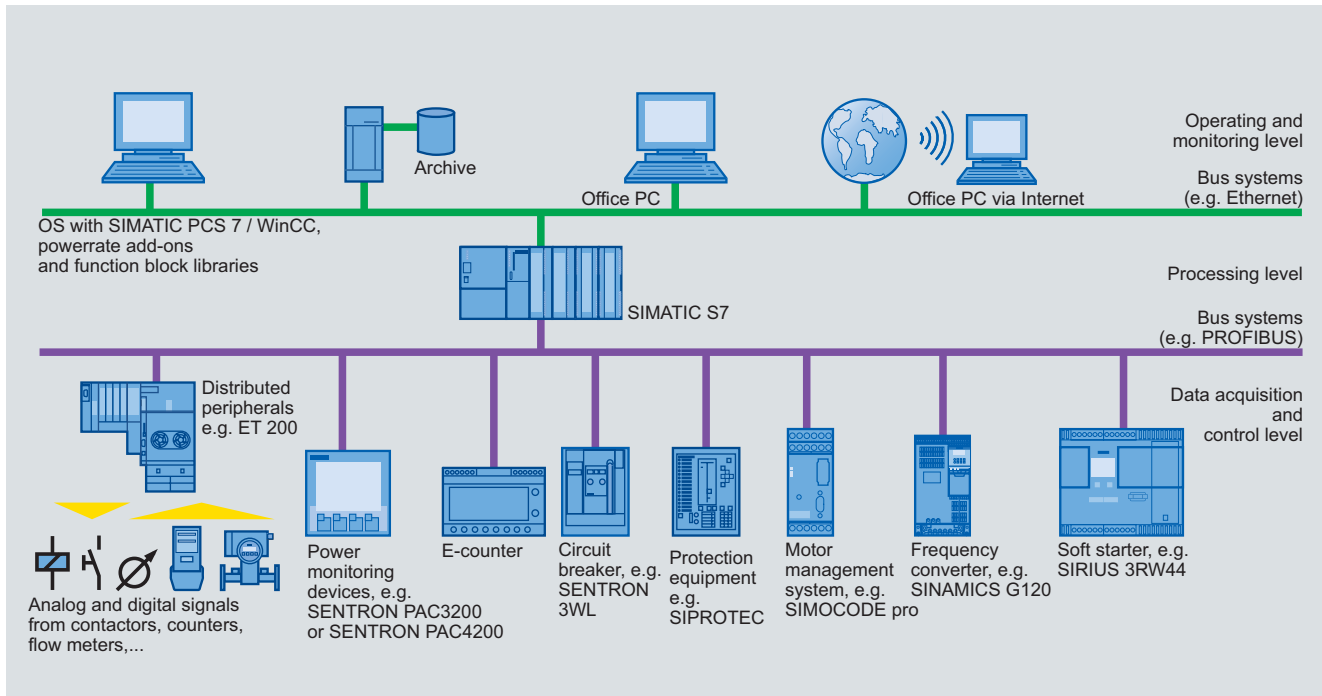
www.siemens.com/lowvoltage/configurators

- Configurators

Power Management System

System overview

Overview



Power Management System: Configuration and assembly of all required components

The continuous increase in energy prices is leading to higher operating costs and can pose a threat to a company's competitiveness.

The goal of our Power Management System is to optimize operating costs and increase plant availability.

As part of TIA and TIP it is fully integrated in the industrial technologies of production and process automation (SIMATIC PCS 7 and SIMATIC WinCC) from Siemens. This means lower costs of implementation and all the following benefits:

- Consistent product design
- Standard components
- Open interfaces
- Uniform operating philosophy
- System-tested, certified products
- Global availability in high Siemens quality
- Optimum support from Siemens hotline

In other words: With power management you can make full use of all the potential for optimization provided by a consistent power management solution.

The power management system comprises both hardware components and software components.

Hardware components

The hardware components are:

- Communication-capable measuring devices such as
- SENTRON PAC3200 and SENTRON PAC4200
- Switching and protection devices (3VL/3WL)
- The SIMOCODE pro motor management system
- E-counters
- Protection equipment such as SIPROTEC
- and diverse other communication-capable devices

Software components

The software components are:

- SIMATIC PCS 7 powerrate/SIMATIC WinCC powerrate as expansions to SIMATIC PCS 7 and SIMATIC WinCC
- SIMATIC PCS 7 Library PAC3200 as driver/faceplate for SIMATIC PCS 7
- Switch ES Power

SIMATIC PCS 7 powerrate, SIMATIC WinCC powerrate

SIMATIC PCS 7 and WinCC powerrate are expansions to PCS 7 and WinCC respectively and throw light on power consumption from the infeed to the load:

- Identification of power-intensive consumer devices and processes in order to introduce measures for improving power efficiency
- Comparison of consumption profiles for greater efficiency of process design, batch-related consumption recording
- Optimizing the company according to energy parameters based on an assessment of consumption and costs
- Complying with the contractually agreed power limit, thus preventing higher power supply costs or penalty payments

SIMATIC PCS 7 Library PAC3200 and PAC3200 function block library for SIMATIC WinCC

The SIMATIC PCS 7 and WinCC function block libraries for PAC3200 enable optimum integration of the SENTRON PAC3200 power monitoring device in SIMATIC PCS 7 and WinCC respectively.

More information

Hardware components of the Power Management System are dealt with in this chapter, its software components in Chapter 18.

You can find more information on the Internet at: www.siemens.com/powermanagementsystem

Overview



Instrument variants

PAC3100

PAC3200

PAC4200

Functional overview

		PAC3100	PAC3200	PAC4200
Basic measurement variables				
Voltage, current		✓	✓	✓
Neutral conductor current		✓	--	✓
Apparent power, active power, reactive power		✓	✓	✓
Power factor		✓	✓	✓
Power factor of the fundamental wave		--	--	✓
Frequency	Of the reference phase	✓	✓	✓
Min/max values	Slave pointer function With date & time	✓ --	✓ --	✓ ✓
Power measurement				
Apparent energy		--	✓	✓
Active energy, reactive energy	Input Output Balance	✓ ✓ ✓	✓ ✓ --	✓ ✓ --
Number of tariffs	Apparent, active and reactive energy	1	2	2
Daily energy values for 365 days	Apparent, active and reactive energy	--	--	✓
Power averages of the last measurement period	Active and reactive power average with min / max value	✓	✓	✓
Load profile record		--	--	✓ max. 3840 entries ¹⁾
E-counter for S ₀ signal at a digital input	Electrical energy Any energy	-- --	✓ --	✓ ✓
Accuracy class for active energy	According to IEC 62053-21 / 62053-22	Class 1	Class 0.5S	Class 0.2S
Accuracy class for reactive energy	According to IEC 62053-23	Class 3	Class 2	Class 2
Monitoring of state of the plant and quality of the network				
Configurable displays	For presenting up to 4 measured quantities	--	--	4
Operating hours counter	Operating hours of loads	--	✓	✓
Sliding mean values	<i>U, I, S, P, Q, LF</i>	--	--	✓
THD voltage, current		--	THD-R	THD
Distortion current strength		--	--	✓
Phase angle, phase displacement angle		--	--	✓
Unbalance	Voltage Current	--	$U_{nba} I_{nba}^{2)}$	$U_{nb} I_{nb}^{3)}$
Harmonics in voltage, current		--	--	3rd to 31st
Limit value monitoring	Max. number of limit values	--	6	12
Boolean logic	For limit values Inputs	-- --	✓ --	✓ ✓
Event memory for operation, control and system-related events	Including time stamp	--	--	✓
Battery backup for min / max values		--	--	✓
System integration and communication				
Ethernet (integrated)		--	10 Mbit/s	10/100 Mbit/s
• Protocol	Modbus TCP	--	✓	✓
• Gateway	Ethernet <--> RS485 (Modbus)	--	--	✓
PROFIBUS DP (V1)		--	Expansion module optional	
RS485		Integrated	Expansion module optional	
• Protocol	Modbus RTU	✓	✓	✓
Number of expansion modules		--	1	2
Integrated digital inputs	Number Multifunctional	2 --	1 ✓	2 ✓
Integrated digital outputs	Number Multifunctional	2 ✓	1 ✓	2 ✓
Installation plan				
Dimensions (L x W x D)	In mm	96 x 96 x 56	96 x 96 x 56	96 x 96 x 82
Mounting depth	PAC PAC with expansion module (in mm)	51 --	51 73	77 99
Panel cut-out (L x W)	In mm	92 x 92	92 x 92	92 x 92
Standards and approvals				
CE / cULus / C-Tick / GOST		✓	✓	✓
IEC 61557-12		✓	--	✓

¹⁾ This corresponds for example to a duration of 40 days with a measurement period length of 15 minutes.

²⁾ U_{nba}, I_{nba} - Unbalance with regard to amplitude

³⁾ U_{nba}, I_{nba} - Unbalance with regard to amplitude and phase

✓ Available

-- Not available

SENTRON Power Monitoring Devices

General data

Measuring precisely with SENTRON PAC3100/3200/4200 - New dimensions with the power monitoring devices



The SENTRON PAC power monitoring devices: PAC3200 (left), PAC3100 (center) and PAC4200 (right)

The power monitoring devices of the SENTRON PAC series are used to measure and indicate all relevant network parameters in low-voltage power distribution. They can be used for single-phase measurements as well as for multiphase measurements in 3 and 4-conductor networks (TN, TT, IT).

Power values for main distribution boards, electrical feeders or individual loads are recorded precisely and reliably, and important measured values are supplied in addition for assessing the state of the plant and the quality of the network.

Benefits

The common features of all power monitoring devices in the SENTRON PAC series:

- Simple mounting and commissioning
- Intuitive operation using 4 function keys and multilingual plain-text displays
- Easy adaptation to different systems using integrated
 - Digital inputs and outputs
 - Communication interface
- Global use
 - At least 8 languages
 - International approvals
 - Developed and tested in accordance with European and international standards
- Low mounting depth

Additional features of the SENTRON PAC3200 and SENTRON PAC4200:

- Precise power measurement
- Versatile system integration
 - Integrated Ethernet interface
 - Optional communication modules
 - Multifunctional digital inputs and outputs
 - Limit value monitoring

Additional features of the SENTRON PAC4200:

- Monitoring of the state of the plant and the quality of the network
 - Key data for assessing the quality of the network
 - Logging of plant history in the form of operation, control and system-related events
- Recording of the power characteristic in the form of power averages (load profile)
- SENTRON PAC4200 meets the high requirements according to IEC 61557-12. You can be sure therefore that performance, safety and operation characteristics will satisfy the demands of modern industrial plants and that the indicators of the measuring devices will supply clear results.

Application

Three-phase power monitoring devices are used to measure and indicate all relevant network parameters of an electrical installation and they monitor these parameters permanently.

Applications

Wherever power has to be distributed, be it in industrial or infrastructural buildings, the SENTRON PAC supplies important information to the building services system or the power controlling system.

The many different communication options offered by the SENTRON PAC make it an indispensable supplier of data for power management systems and for plant and building automation.

Industries

Power distribution systems for the power supply are needed in all sectors of industry. SENTRON PAC is used accordingly in all sectors where power consumption and electrical parameters are to be measured.

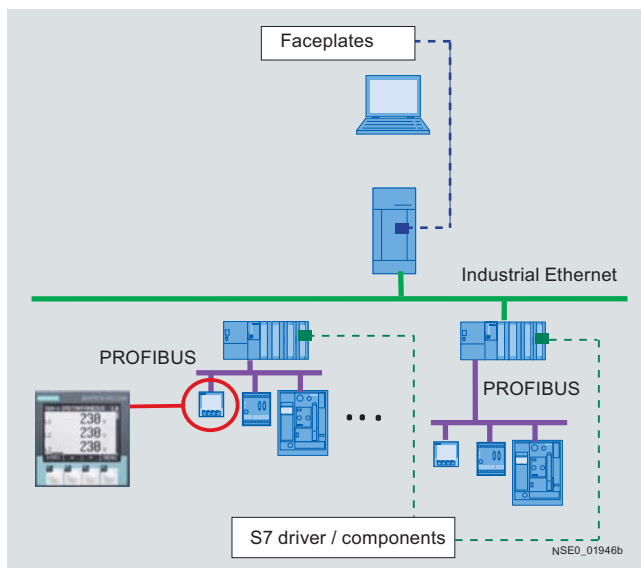
Integration of PAC3200 and PAC4200

When the SENTRON PAC3200 and PAC4200 are fully integrated in a power management system, they monitor the power consumption and help to monitor the operating state of the plant. Measured values, limit value violations, operating hours of a connected load or power flows are supplied by the instruments quickly and reliably.

Using the optionally available interface modules it is possible to integrate both instruments in every I&C system or every SIMATIC S7 environment.

System integration using function block libraries

Optionally available function block libraries make it easy to integrate the power monitoring devices in the SIMATIC PCS 7 process control system and the SCADA-System SIMATIC WinCC. Together with the faceplates as user interface for SENTRON PAC3200, the driver blocks and diagnostics blocks in the control system enable the operating and monitoring of technologically important values and functions of the measuring devices in the respective target system.



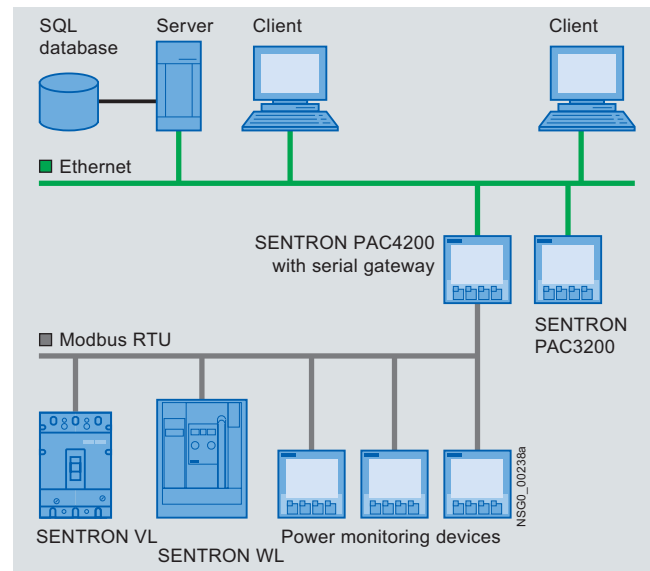
Integration of SENTRON PAC3200 in SIMATIC PCS 7 / WinCC

System integration of RS485 field bus devices through Ethernet

A special feature is the integrated gateway function of the SENTRON PAC4200. It enables a cost-effective and simple connection of devices with an RS485 interface to an Ethernet network.

Everything required is provided by the SENTRON PAC RS485 expansion module, to which a maximum of 31 lower-level devices can be connected without a repeater and as many as 247 with a repeater.

The gateway function of the SENTRON PAC4200 supports the Modbus or SEABus protocols and can be parameterized using SENTRON powerconfig.



Connecting Modbus-RTU devices to a power management system through PAC4200



More information

More information is available on the Internet at www.siemens.com/powermanagementsystem

SENTRON Power Monitoring Devices

PAC3100 power monitoring devices

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SENTRON PAC3100		Screw terminals					
 <p>Control panel instrument 96 mm x 96 mm A</p> <p>Screw terminals for connecting current and voltage</p> <p>AC/DC power supply unit with wide voltage range U_{AUX}:</p> <p>100 ... 240 V AC $\pm 10\%$, 50/60 Hz 110 ... 250 V DC $\pm 10\%$</p> <p>Measuring inputs</p> <p>U_e: max. 3 AC 480/277 V, 50/60 Hz I_e: /5 A</p>		 <p>7KM3 133-0BA00-3AA0</p>		1	1 unit	133	0.325

More information




Suitable current transformers can be found

- in Chapter 16 "SENTRON Switching and Protection Devices – Molded Case Circuit Breakers"
- in the Mall, Section "Low-Voltage Controls and Distribution" --> "Low-Voltage Power Distribution" --> "Switching and Protection Devices for Power Distribution" --> "Molded Case Circuit Breakers" --> "3VL Molded Case Circuit Breakers up to 1600 A" --> "Accessories and Spare Parts"

For more information about the software components of the Power Management System see Chapter 18 and on the Internet at www.siemens.com/powermanagementsystem

PAC3200 power monitoring devices

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
 7KM2 112-0BA00-3AA0	A	SENTRON PAC3200	Screw terminals	7KM2 112-0BA00-3AA0	1	1 unit	133	0.325
		Control panel instrument 96 mm x 96 mm Screw terminals for connecting current and voltage AC/DC power supply unit with wide voltage range U_{AUX} : 95 ... 240 V AC $\pm 10\%$, 50/60 Hz 110 ... 340 V DC $\pm 10\%$ Measuring inputs U_e : max. 3 AC 690/400 V, 50/60 Hz I_e : /1 A or /5 A						
 7KM2 111-1BA00-3AA0	A	SENTRON PAC3200	Screw terminals	7KM2 111-1BA00-3AA0	1	1 unit	133	0.325
		Control panel instrument 96 mm x 96 mm Screw terminals for connecting current and voltage DC power supply unit with extra-low voltage U_{AUX} : 22...65 V DC $\pm 10\%$ Measuring inputs U_e : max. 3 AC 500/289 V, 50/60 Hz I_e : /1 A or /5 A						
 7KM2 112-0BA00-2AA0	A	SENTRON PAC3200	Cable lug terminals	7KM2 112-0BA00-2AA0	1	1 unit	133	0.325
		Control panel instrument 96 mm x 96 mm Cable lug terminals for connecting current and voltage AC/DC power supply unit with wide voltage range U_{AUX} : 95...240 V AC $\pm 10\%$, 50/60 Hz 110...340 V DC $\pm 10\%$ Measuring inputs U_e : max. 3 AC 690/400 V, 50/60 Hz I_e : /1 A or /5 A						

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIMATIC PCS 7 Library PAC3200							
Software for integration of the SENTRON PAC3200 in SIMATIC PCS 7							
• Engineering + Runtime license	B	3ZS2 781-1CC10-0YG0		1	1 unit	133	0.250
• Runtime license	B	3ZS2 781-1CC10-6YH0		1	1 unit	133	0.250
PAC3200 function block library for SIMATIC WinCC							
Software for integration of the SENTRON PAC3200 in SIMATIC WinCC							
• Engineering + Runtime license	B	3ZS2 791-1CC10-0YG0		1	1 unit	133	0.250
• Runtime license	B	3ZS2 791-1CC10-6YH0		1	1 unit	133	0.250

More information

- Suitable current transformers can be found
- in Chapter 16 "SENTRON Switching and Protection Devices – Molded Case Circuit Breakers"
- in the Mall, Section "Low-Voltage Controls and Distribution" --> "Low-Voltage Power Distribution" --> "Switching and Protection Devices for Power Distribution" -->

"Molded Case Circuit Breakers" --> "3VL Molded Case Circuit Breakers up to 1600 A" --> "Accessories and Spare Parts"







For more information about the software components of the Power Management System see Chapter 18 and on the Internet at www.siemens.com/powermanagementsystem

* You can order this quantity or a multiple thereof.

SENTRON Power Monitoring Devices

PAC4200 power monitoring devices

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
  7KM4 112-0BA00-3AA0	SENTRON PAC4200 Control panel instrument 96 mm x 96 mm A Screw terminals for connecting current and voltage AC/DC power supply unit with wide voltage range U_{AUX} : 95 ... 240 V AC $\pm 10\%$, 50/60 Hz 110 ... 340 V DC $\pm 10\%$ Measuring inputs U_e : max. 3 AC 690/400 V, 50/60 Hz I_e : /1 A or /5 A	Screw terminals		1	1 unit	133	0.450
		7KM4 212-0BA00-3AA0					
  7KM4 112-0BA00-2AA0	SENTRON PAC4200 Control panel instrument 96 mm x 96 mm A Cable lug terminals for connecting current and voltage AC/DC power supply unit with wide voltage range U_{AUX} : 95 ... 240 V AC $\pm 10\%$, 50/60 Hz 110 ... 340 V DC $\pm 10\%$ Measuring inputs U_e : max. 3 AC 690/400 V, 50/60 Hz I_e : /1 A or /5 A	Cable lug terminals		1	1 unit	133	0.450
		7KM4 212-0BA00-2AA0					

More information

Suitable current transformers can be found

- in Catalog LV 1 · 2009, Chapter 16 "SENTRON Switching and Protection Devices – Molded Case Circuit Breakers"
- in the Mall, Section "Low-Voltage Controls and Distribution" --> "Low-Voltage Power Distribution" --> "Switching and Protection Devices for Power Distribution" --> "Molded Case Circuit Breakers" --> "3VL Molded Case Circuit Breakers up to 1600 A" --> "Accessories and Spare Parts"

For more information about the software components of the Power Management System see Chapter 18 and on the Internet at: www.siemens.com/powermanagementsystem

Expansion modules PAC PROFIBUS DP

13

Overview



The PAC PROFIBUS DP expansion module has the following features:

- PROFIBUS DP plug-in communication module for SENTRON PAC3200 and PAC4200 power monitoring devices
- Parameterizable from the front of the device or using parameterization software
- Using PROFIBUS DPV1, data can be transferred in both cyclic and acyclic modes
- Easy integration using GSD file, with free choice of the measurement variables to be transmitted
- Plug and play
- All baud rates from 9.6 Kbit/s to 12 Mbit/s are supported
- Connection through 9-pole Sub-D connector according to IEC 61158
- No external auxiliary power necessary
- Status indication by LED on the module


Application

The SENTRON PAC PROFIBUS DP communication module is plugged onto the rear of the power monitoring device. The device identifies the module automatically and presents the parameters of relevance for this module for selection in the parameterization menu.

All measurement variables supplied by the SENTRON PAC power monitoring devices are selected and cyclically or acyclically transmitted by means of the GSD file.

The state of the module is indicated by an LED.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 <p>PAC PROFIBUS DP Expansion module for SENTRON PAC3200 and PAC4200 (PROFIBUS DP V1)</p>	A	7KM9 300-0AB00-0AA0		1	1 unit	133	0.045
	<p>7KM9 300-0AB00-0AA0</p>						

* You can order this quantity or a multiple thereof.

SENTRON Power Monitoring Devices

Expansion modules PAC RS485

Overview



The PAC RS485 expansion module has the following features:


- PAC RS485 plug-in communication module for SENTRON PAC3200 and PAC4200 power monitoring devices
- Parameterizable from the front of the device or using parameterization software
- Support for Modbus RTU and SEAbus protocols
- Plug and play
- Baud rates of 4.8/9.6/19.2 and 38.4 kBd are supported
- Connection by means of 6-pole screw terminals
- No external auxiliary power necessary
- Status indication by LED on the module

Application

The SENTRON PAC RS485 communication module is plugged onto the rear of the PAC power monitoring devices. The device identifies the module automatically and presents the parameters of relevance for this module for selection in the parameterization menu. The state of the module is indicated by the integrated LED.

In connection with the SENTRON PAC power monitoring device, the Modbus RTU and SEAbus protocols are supported with baud rates of 4.8/9.6/19.2 and 38.4 kBd.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 PAC RS485 Expansion module for SENTRON PAC3200 and PAC4200 (SEAbus and Modbus RTU)	A	7KM9 300-0AM00-0AA0		1	1 unit	133	0.041

7KM9 300-0AM00-0AA0

* You can order this quantity or a multiple thereof.

Power Distribution Boards, Busway and Cubicle Systems

14



14/2	Introduction
	Switchgear
14/7	General data
14/8	SIVACON S8 power distribution boards and motor control centers
LV 55 ¹⁾ 14/10	SIKUS 1600 power distribution boards
LV 70 ²⁾	Busway Systems
14/11	SIVACON 8PS busbar trunking systems
LV 50 ³⁾	SIVACON 8MC, 8MF Cubicle Systems
	<u>System Cubicles</u>
14/12	General data
14/13	8MC system cubicles
14/13	8MF system cubicles
	<u>Accessories</u>
14/14	Cubicle lighting, socket outlets, plug-on mounts
LV 50 ³⁾	SIVACON 8MR, 8ME Cubicle Air-Conditioning
14/16	Introduction
14/16	Filter fans
14/17	Air conditioners/cooling devices
14/17	Heat exchangers
14/18	Heater units
14/19	Fan heaters
14/22	Thermostats, hygrometers, hygrometers
	SENTRON 8US Busbar Systems
Ch. 17	see Chapter 17
ET A1 ⁴⁾	ALPHA Distribution Boards
14/25	General data <u>ALPHA 630 - DIN Floor-Mounted Distribution Boards</u>
14/26	General data <u>ALPHA 8HP Molded-Plastic Distribution System</u>
14/27	General data
ET A1 ⁴⁾	ALPHA FIX Terminal Blocks
14/29	General data

Technical Information

can be found at
www.siemens.com/lowvoltage/support

under Product List:
- Technical Specifications

under Entry List:
- Updates
- Downloads
- FAQ
- Manuals
- Characteristic curves
- Certificates

and at
www.siemens.com/lowvoltage/configurators
- Configurators

- 1) See Catalog LV 55 "SIKUS 1600 Low-Voltage Power Distribution Boards" (in German only).
- 2) See Catalog LV 70 "SIVACON 8PS Busbar Trunking Systems".
- 3) See Catalog LV 50 "SICUBE System Cubicles and Cubicle Air-Conditioning" (in German only).
- 4) See Catalog ET A1 "ALPHA Distribution Boards and Terminal Blocks".

Introduction

Overview



SIVACON S8 power distribution boards and motor control centers up to 7000 A

Reliable, economical, flexible and communication-capable

For all applications in infrastructure and the process industry

In circuit breaker design

In 3NJ4 in-line design, fixed-mounted

In in-line design, plugged in

In fixed-mounted design (infrastructure)

In universal installation systems for the combination of:

- Withdrawable version
- Fixed-mounted version
- 3NJ6 in-line design, plugged in

Degree of protection up to IP54

Design-tested according to IEC 61439-1/2 (type-tested according to IEC 60439-1)

Tested for resistance to internal arcing faults in compliance with IEC 61641

Tested for resistance to earthquakes



SIKUS 1600 power distribution boards

Reliable, economical and flexible

For applications in non-residential and industrial buildings and in control engineering

Flexible modular system

Delivery of packed assembly kits with with standard parts

Assembly kits for 3WL, 3VL circuit breakers

Assembly kits for 3NJ4 fuse switch disconnectors

Assembly kits for 8GK distribution board systems

Degree of protection up to IP55

Design-tested according to IEC 61439-1/2 (type-tested according to IEC 60439-1)



SIVACON 8PV power distribution boards and motor control centers up to 6300 A

Reliable, economical, flexible and communication-capable

For all applications in infrastructure and process industry

In circuit breaker design

In fixed-mounted design

In 3NJ4 in-line design, fixed-mounted

In 3NJ6 in-line design, plugged in

In plug-in design

In withdrawable design

Degree of protection up to IP54

Design-tested according to IEC 61439-1/2 (type-tested according to IEC 60439-1)

Tested for resistance to internal arcing faults in compliance with IEC 61641

Tested for resistance to earthquakes



SIVACON 8PT power distribution boards and motor control centers up to 7400 A

Reliable, economical, flexible and communication-capable

For all applications in infrastructure and process industry

In circuit breaker design

In 3NJ4 in-line design, fixed-mounted

In 3NJ6 in-line design, plugged in

In fixed-mounted design

In plug-in design

In withdrawable design

Degree of protection up to IP54

Design-tested according to IEC 61439-1/2 (type-tested according to IEC 60439-1)

Tested for resistance to internal arcing faults in compliance with IEC 61641

Tested for resistance to earthquakes



SIVACON 8PS busbar trunking systems

- Flexible, modular power supply
- Easy and speedy planning
- Time-saving mounting
- Reliable and safe operation
- Quick adaptation of tap-off points
- According to EN 60 439-1



SIVACON 8MC, 8MF cubicle systems

- System cubicles for individual solutions including cubicle air-conditioning for optimum operating conditions
- For a wide range of applications in tough environments and in laboratories, offices and medical practices
- Flexible expansion levels and types of delivery
- Coordinated logistical and delivery concepts
- Degree of protection up to IP55
- For heavy integrated equipment up to 1000 kg
- System cubicles in EMC version
- System cubicles in earthquake-proof version
- In all RAL colors, including special colors

Introduction



EFR 012 electronic hygrostat



HG 140 semiconductor heater unit



CS 028 semiconductor fan



Air conditioner for lateral mounting

Control supply voltage or voltage for switching capacity

24 V DC

115 V AC

230 V AC

400 /440 V AC

8MR, 8ME Cubicle Air-Conditioning**Filter fans**

Standard filter fans, IP54 or IP55

- With or without additional EMC protection
- Cooling capacity 8 W/K ... 282 W/K
- Air rate 25 m³/h ... 845 m³/h
- Size 92 x 92 mm to 291 x 291 mm
- Color RAL 7035 or RAL 7032

Roof filter fans, IP33 or IP54

- Cooling capacity 113 W/K ... 242 W/K
- Air rate 350 m³/h ... 750 m³/h
- Size 430 mm x 430 mm to 470 mm x 470 mm
- Color RAL 7035 or RAL 7032

Air conditioners/cooling devices

For door and lateral mounting (recessed)

- 1000 W ... 1500 W
- 2000 W ... 2500 W

For lateral mounting

- 320 W ... 1400 W
- 2000 W ... 2500 W
- 3200 W ... 5000 W

For roof mounting

- 810 W ... 1600 W
- 3000 W ... 5000 W

Heat exchangers

Standard

- Size 11/06 ... 20/06

For lateral mounting

- 650 W ... 5000 W
- Size 500 mm x 200 mm x 100 mm ... 1400 mm x 460 mm x 235 mm

For roof mounting

- 1450 W ... 2100 W
- Size 600 mm x 390 mm x 140 mm ... 720 mm x 465 mm x 190 mm

Heater units optionally without or with thermostat

- 10 W ... 150 W

Fan heaters optionally without or with thermostat

- 100 W ... 950 W
- Setting ranges 0 ... 60 °C, +32 ... +140 °F

Thermostats, hygrostats, hygrotherms

Thermostats, optionally NC, NO, CO contacts

- Setting ranges 0 ... 80 °C
- Switching capacities 10 (2) A ... 16 A

Hygrostats, optionally NC, NO, CO contacts

- 40 ... 90 % relative air humidity

Hygrotherms, optionally NC, NO, CO contacts

- Setting ranges 0 ... 60 °C, +32 ... +140 °F
- 40 ... 90 % relative air humidity
- Switching capacities 6 (1) A ... 8 (1.6) A

✓ Available or possible

-- Not available or not possible



ALPHA 630 DIN floor-mounted distribution boards

ALPHA 630 DIN floor-mounted distribution boards

Up to 630 A

For applications in non-residential and industrial buildings

Flexible types of delivery (flat pack or preassembled)

Modular system

Many different assembly kits for individual expansion

Protection class 1 and protection class 2

Depth 210 mm, 250 mm and 320 mm

Degree of protection up to IP55

General data

Overvoltage category	V	III
Rated impulse withstand voltage U_{imp}	kV	6
Clearances in air and creepage distances		DIN VDE 0110
Rated insulation voltage U_i	V	690
Rated operational voltage U_e	V AC/DC	690
Rated voltage U_n (AC 40 Hz ... 60 Hz)	V	690 for built-in devices
Rated current	A	Up to 630
Short-circuit strength		
• Rated impulse withstand current I_{pk}	kA	Up to 61.3 (3-pole), conduction interval of 30 ms
• Rated short-time current I_{cw}	kA	20, conduction interval 1 s
Protective measures		Protection class 1 (protective conductor connection) Protection class 2 (total insulation)
Number of conductors in busbar run		4/5
Degree of protection acc. to EN 60529		IP43 with door, IP55 with door (with matching flanges)
Standard mounting rail tier spacing per standard mounting rail	mm	150
Modular width (MW)		18 mm, 12 MW + 1 mountable MW
Pollution degree		3
Ambient temperature	°C	35 (24 h mean value)
Relative air humidity	%	50 at 40 °C
Test specification		EN 60439-1/3 (VDE 0660 Part 500/504), DIN VDE 0603-1
Enclosures		Sheet steel
Mounting dimensions		DIN 43870
Surface of metal parts		Electrogalvanized and powder-coated
Color ¹⁾		RAL 7035 (light gray)
Locking system		3-point locking with integrated espagnolette lock (can be replaced with other locking systems if required)
Packing material		Shock-proof, environmentally-compatible

¹⁾ Further RAL colors are available upon request.

Power Distribution Boards, Busway and Cubicle Systems

Introduction



Enclosure size		1	2	2.5	3	4
ALPHA 8HP molded-plastic distribution system						
Width	mm	307	307	307	307	614
Height	mm	153.5	307	460.5	614	614
Depth						
• 147,0 mm		✓	✓	✓	✓	✓
• 185,0 mm		--	--	✓	--	--
• 212,0 mm		--	✓	--	--	--
• 239,5 mm		--	--	--	✓ (+ n x 92.5 mm)	✓ (+ n x 92.5 mm)
Empty enclosures						
Transparent covers		✓	✓	✓	✓	✓
Opaque covers		✓	✓	--	✓	✓
Enclosures for modular devices						
1 x 14 MW (transparent and opaque cover with actuating flap)		✓	--	--	--	--
2 x 14 MW (transparent and opaque cover with actuating flap)		--	✓	--	--	--
3 x 14 MW (transparent cover)		--	--	✓	--	--
4 x 14 MW (transparent and opaque cover with actuating flap)		--	--	--	✓	--
DIAZED fuse enclosures (25 A or 63 A)						
		✓	✓	✓	✓	--
Enclosures with LV HRC fuse base						
3 x NH00		✓	✓	--	--	--
6 x NH00		--	✓	--	--	--
3 x NH1		--	✓	✓	--	--
3 x NH2		--	✓	✓	✓	--
3 x NH3		--	✓	✓	✓	--
Meter enclosures						
		--	✓	✓	✓	✓
Enclosures with NP fuse switch disconnectors						
NH000		✓	✓	--	--	--
NH00		✓	✓	✓	--	--
NH1		--	✓	✓	✓	--
NH2		--	✓	--	✓	--
NH3		--	--	--	✓	--
Enclosures with main control and EMERGENCY-STOP switch						
$I_e = 63$ A		--	✓	--	--	--
$I_e = 125$ A		--	✓	--	--	--
$I_e = 160$ A		--	✓	--	✓	--
$I_e = 250$ A		--	✓	--	✓	--
$I_e = 400$ A		--	✓	--	✓	--
$I_e = 630$ A		--	--	--	✓	--
$I_e = 800$ A		--	--	--	✓	--
Enclosure with 3VL circuit breaker						
$I_e = 63$ A		--	--	--	✓	--
$I_e = 100$ A		--	--	--	✓	--
$I_e = 160$ A		--	--	--	✓	--
$I_e = 250$ A		--	--	--	✓	--

✓ = Available or possible -- = Not available or not possible

Overview

Low-voltage switchboards form the link between equipment (generators), transmission (cables, overhead lines) and transformation (transformers) of electrical energy on the one hand, and the loads, such as motors, solenoid valves, actuators and devices for heating, lighting and air conditioning on the other.

As the majority of applications are supplied with low voltage, the low-voltage switchboard is of special significance in both public supply systems and industrial plants.

Reliable power supplies depend on good availability, flexibility to allow for changes and process-related modifications, and high operating safety.

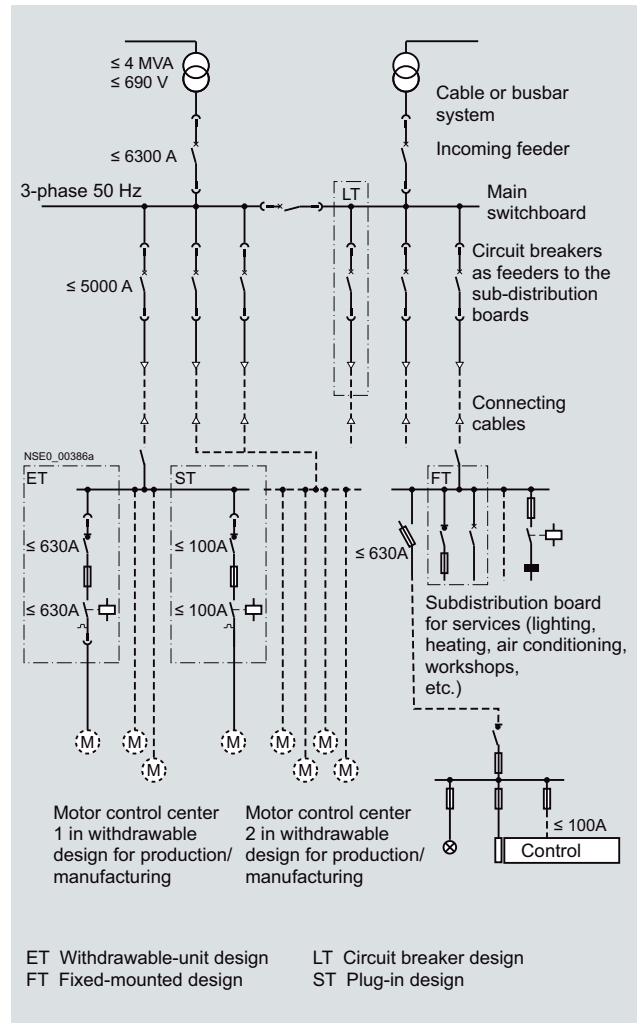
Power distribution in a low-voltage system usually takes place via a main switchboard (power center or main distribution board) and a number of sub-distribution boards or motor distribution boards, also known as motor control centers (MCC) (see example opposite).

The SIVACON low-voltage switchboards offer optimum solutions in low-voltage systems for all applications up to 7400 A. The SIVACON 8PV switchboards are manufactured by Siemens in Leipzig, and the SIVACON 8PT and SIVACON S8 switchboards by Siemens and our SIVACON Technology Partners near you.

The most important selection criteria are shown in the table below.

You can find more information on the Internet at:

www.siemens.com/sivaccon



Power distribution in a low-voltage system

Selection criteria	SIVACON S8		SIVACON 8PV		SIVACON 8PT	SIKUS 1600
	Top	Rear	Top	Rear	Top	Rear
Rated currents						
• Busbars up to	6300 A	7010 A	2500 A	6300 A	7400 A	1600 A
• Infeed up to	6300 A	6300 A	2500 A	6300 A	6300 A	1600 A
Short-circuit strength I_{pk} up to	330 kA	330 kA	110 kA	220 kA (250 kA)	375 kA	120 kA
Equipment layout						
• Fixed-mounted version	✓ ¹⁾	✓ ¹⁾	✓	✓	✓	✓ ¹⁾
• 3NJ4 in-line design, fixed installation	✓	✓	✓	✓	✓	✓
• In-line version, plugged in	✓	✓	✓	✓	✓	--
• Plug-in design	✓ ²⁾	✓ ²⁾	✓	✓	✓	--
• Withdrawable version	✓	✓	✓	✓	✓	--
• Universal installation system	✓	✓	--	--	--	--
Type of installation						
• Free-standing/against wall	✓	✓	✓	✓	✓	✓
• Back to back	✓	✓	✓	✓	✓	✓
• Double-fronted	--	✓	--	✓	--	--
Use						
• Motor control center	✓	✓	✓	✓	✓	--
• Power distribution board	✓	✓	✓	✓	✓	✓
Manufactured by SIVACON Technology Partner	✓	✓	--	--	✓	✓

✓ Available.

-- Not available.

¹⁾ Circuit breakers optionally in withdrawable version.

²⁾ Plugged in in-line panel.

SIVACON S8 power distribution boards and motor control centers

Overview



SIVACON S8 low-voltage switchgear and controlgear

Maximum safety and attractive design are combined in an efficient solution: with SIVACON S8, the new generation of switchboards for consistent and easy power distribution in non-residential and industrial buildings as well as in the process industry up to 7000 A.

The new design of the control cabinets opens up new applications, e. g. here as a motor control center. Following features are offered to improve personal and machine safety:

- Uniform operation for all withdrawable unit sizes
- Integrated operating error protection for all withdrawable units
- Unambiguous indication of withdrawable unit positions
- Separate actuation for main control switch and withdrawable unit position
- Test and disconnected position with door closed, without interruption of degree of protection
- Lockable disconnected position
- Optional withdrawable unit coding prevents swapping of withdrawable units of same size
- Swiveling instrument carrier on standard withdrawable units for making settings during operation
- Small withdrawable units for motor and cable feeders up to 63 A

The SIVACON S8 low-voltage switchboard is custom configured and constructed using design-tested functional components.

We or our authorized contractual partners take care of the following:

- Customized configuration
- Mechanical and electrical construction
- Inspection

Documentation prescribed by us serves as the basis for our authorized contractual partners.

Standards and specifications

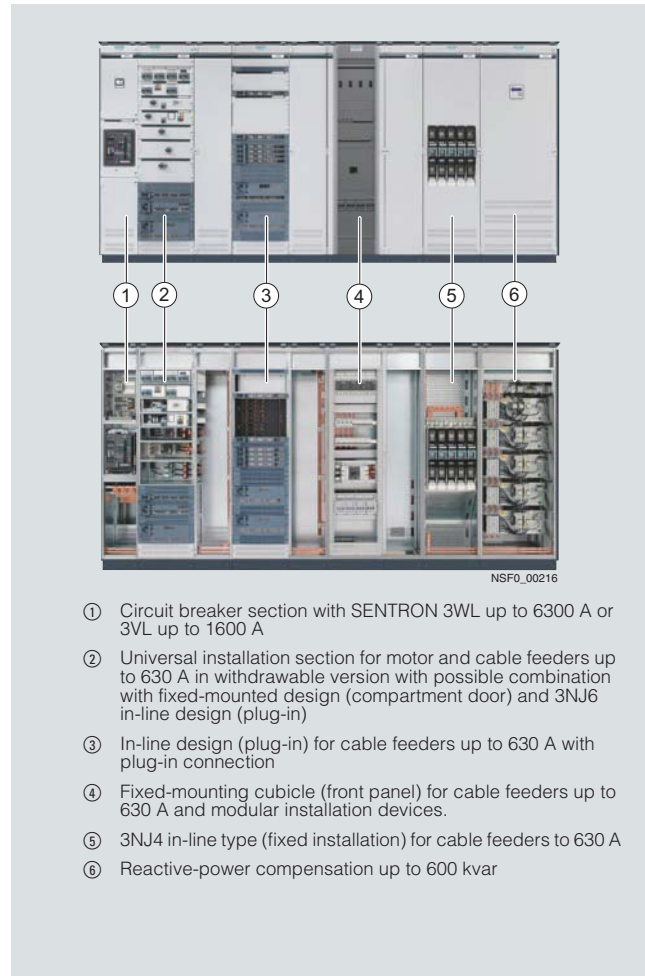
The SIVACON S8 low-voltage switchboard is a design-tested low-voltage controlgear assembly according to IEC 61439-1/2 (formerly IEC 60439-1 TTA). The switchboard is designed to be resistant to arcing faults according to IEC 61641, EN 60439, supplement sheet 2.

SIVACON S8 can be used as a design-tested power distribution board and motor control center up to 7000 A.

Equipment layouts

The SIVACON S8 low-voltage switchboard consists of standardized and typified components which can be flexibly combined as a cost-effective overall solution.

The following equipment layouts according to the diagram below are available:



- ① Circuit breaker section with SENTRON 3WL up to 6300 A or 3VL up to 1600 A
- ② Universal installation section for motor and cable feeders up to 630 A in withdrawable version with possible combination with fixed-mounted design (compartment door) and 3NJ6 in-line design (plug-in)
- ③ In-line design (plug-in) for cable feeders up to 630 A with plug-in connection
- ④ Fixed-mounting cubicle (front panel) for cable feeders up to 630 A and modular installation devices.
- ⑤ 3NJ4 in-line type (fixed installation) for cable feeders to 630 A
- ⑥ Reactive-power compensation up to 600 kvar

SIVACON S8 low-voltage switchboard with standardized and typified components

SIVACON S8 power distribution boards and motor control centers

Application

The main applications are as

- low-voltage power distribution boards or as
- motor control centers.

Use as motor control centers

Universal installation section (withdrawable version)

In many applications it is necessary for space reasons to integrate various installation systems in one and the same section.

The universal installation system from SIVACON S8 offers high efficiency, safety and high variability through the combination of

- tap-off units in withdrawable version (3 positions: Disconnect - Test - Operation),
- fixed-mounted version and
- tap-off units in 3NJ6 in-line design, plugged in.

The withdrawable units are ergonomically designed and offers the required flexibility where requirements change frequently. Changing requirements include e. g. a new motor rating or adding new loads.

Simple and safe handling as well as fast changeover times ensure the high availability of the plant.

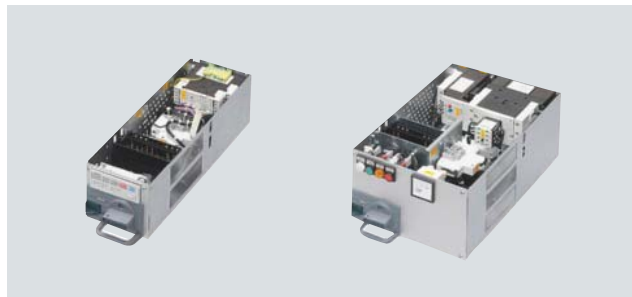


Universal installation section

Withdrawable unit versions

Small withdrawable units:

- Size $\frac{1}{4}$ and $\frac{1}{2}$ ($\frac{1}{4}$ sub-section or $\frac{1}{2}$ sub-section)
- Height 150 mm and 200 mm
- Up to 48 withdrawable units per section



Small withdrawable unit size 1/4 (left) and size 1/2 (right)

Standard withdrawable units:

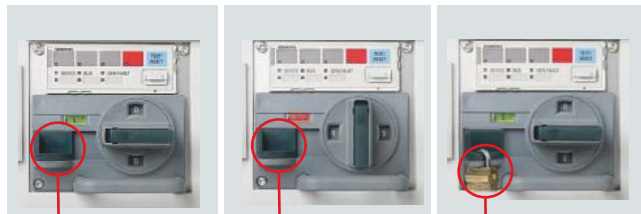
- Height 100 mm to 700 mm
- Up to 18 withdrawable units per section



Standard withdrawable unit

Operating error protection

Operating error protection prevents movement of the isolating contacts with main control switch "ON".



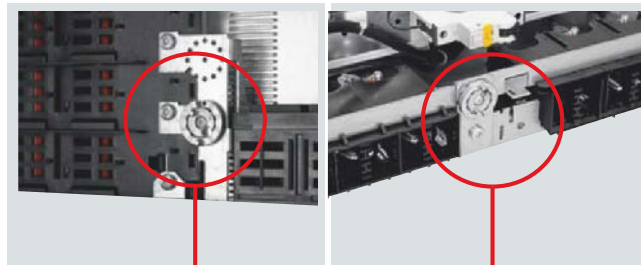
Operating error protection enabled, main control switch in position "0"

Operating error protection disabled, main control switch in position "1"

Lockable disconnected position

Withdrawable unit coding

The mechanical withdrawable unit coding prevents swapping of withdrawable units in the same size with up to 9216 coding options.



Withdrawable unit coding in the compartment

Withdrawable unit coding on the unit

More information

More information can be found on the Internet at www.siemens.com/sivacon

SIKUS 1600 Power Distribution Boards

Overview



SIKUS 1600 Power Distribution Boards

SIKUS 1600 is a low-voltage power distribution board in side-by-side cabinet design for indoor applications, optionally for wall or free-standing installation. SIKUS 1600 already meets the requirements of IEC 61439-1/2. The design verification is test-based.

System

SIKUS 1600 is based on the modular building block principle. Thanks to the use of requirements-based, standardized and series-produced assembly kits and the numerous combination possibilities, all demands in connection with low-voltage power distribution can be optimally met.

Through expansion with 8GK distribution board assembly kits or mounting plates, SIKUS 1600 also offers extensive solutions as a distribution board and in control engineering.

A catalog, manual and the SIMARIS Configuration Basic software are available for reliable and quick configuration.

Frames

The frame is constructed from height, width and depth profiles. It is the supporting structure for all built-in and surface-mounted components. Use of Sendzimir-galvanized frame profiles and self-tapping screws creates a mechanically highly stable construction with safe grounding of the built-in components.

Enclosures

The enclosure parts enable versions in degrees of protection IP30, IP40 or IP55. The powder-coated enclosure parts are finished in RAL7035. Panel-high doors come as standard with es-pagnolette and 3 mm double-bit key or optionally with twist lever catches with or without a lock.

Busbar systems

The SIKUS 1600 main busbar system offers a practical grading of rated currents up to 1600 A, coordinated with the rated currents and rated short-circuit currents of standard transformers.

Form of internal partition

Internal partition form 1 or 2 is possible depending on the requirements.

Assembly kits

A service-proven and coordinated range of assembly kits is available for SENTRON 3WL, 3VL, 3NJ4 switching and protection devices and for modular installation devices. Depth-adjustable modular and panel-high mounting plates round off the assembly kit range.

Benefits

- Future-oriented with prototype verification due to testing in accordance with IEC 61439-1/2
- Clear, modern design makes marking and operation easy and reliable
- Compact, space-saving design
- Versatile thanks to modular building block system
- Side-by-side cabinet system in frame type of construction, expandable width or depth
- Quick and reliable planning and configuring using SIMARIS Configuration Basic
- Delivery of assembly kits with all necessary standard parts
- Quick and easy assembly
 - due to clear separation of the functional areas
 - all frame components are marked to facilitate assembly
 - the necessary steps are described in mounting instructions
- Reliable grounding thanks to the use of self-tapping screws
- Doors with universal hinges
- Panel-high doors with 25 mm floor clearance
- Door hinges with grounding function
- Environmentally friendly and recyclable materials

Application

SIKUS 1600 is a system for the transmission and distribution of electrical energy in low-voltage systems.

The flexible building block system enables the configuration of incoming, outgoing or coupling unit sections with SENTRON 3WL or SENTRON 3VL circuit breakers. Through expansion with 8GK distribution board assembly kits or mounting plates, SIKUS 1600 also offers extensive solutions as a distribution board and in control engineering.

Through the use of standardized and series-produced assembly kits, easy and quick assembly and long maintenance intervals, SIKUS 1600 offers solutions for cost-effective configuration and operation.

Switchgear engineers must observe the manufacturer's construction and mounting instructions. The low-voltage switchboard must be configured and tested by the switchgear engineer in accordance with IEC 61439-1/2.

More information

Details and technical specifications can be found in Catalog LV 55.

Overview

Busbar trunking systems in the low-voltage range guarantee the reliable transmission and distribution of energy from the transformer through the main distribution board to the load. Siemens offers a complete range of high-performance systems:

- CD for 25 A ... 40 A
- BD01 for 40 ... 160 A
- BD2 for 160 ... 1250 A
- LR for 400 ... 6300 A
- LD for 1100 ... 5000 A
- LX for 800 ... 6300 A

All busbar trunking systems are "Type-tested low-voltage controlgear assemblies" (TTA) according to IEC/EN 60439-1 and -2. They thus provide a safety standard which meets the high demands of automated production facilities and building management systems.

Other advantages:

- Well arranged network topology
- Easy retrofitting when loads change
- Low operating costs thanks to high availability
- Easy planning and mounting

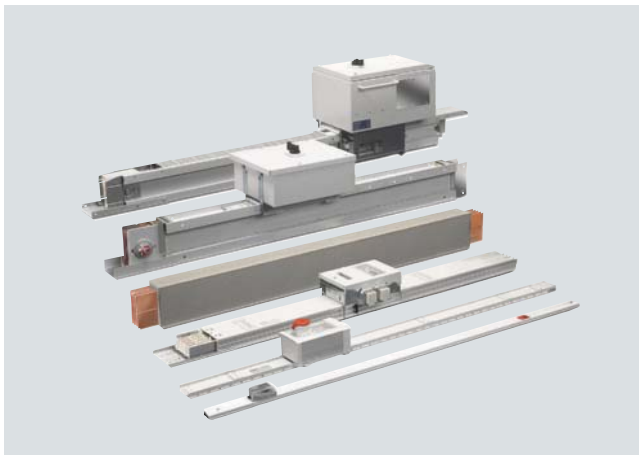
Area-wide solutions for lighting systems and small loads

Be it in furniture stores, supermarkets or greenhouses – with the CD system (up to 40 A) you can easily mount and supply energy to lighting systems over large areas. The attractive design of the busway systems is very suitable for sales rooms open to the public. And the high degree of protection enables use even under harsh conditions.

Power for loads with no fixed location

The BD01 system is ideal for power distribution (up to 160 A) in craft businesses and the skilled trades. The trunking units can be easily and quickly connected. An anti-rotation element in the tap-off units prevents incorrect mounting and guarantees easy conversion while production is in progress.

Other advantages: Minimum keeping of stocks and straightforward planning thanks to one standard size for five different levels of current.



Trunking units for currents from 25 A to 6300 A

Universal power distribution

The BD2 system (up to 1250 A) supplies energy to medium-size loads in buildings and all sectors of industry. Pre-assembled tap-off units with the most diverse equipment enable universal use. With only two standard sizes for all levels of current, stock keeping and planning are greatly facilitated.

High availability in production

The ventilated LD system (up to 5000 A) conveys electricity to production facilities with a high demand for power, e. g. in the automobile industry. A separate PE bar enables the assured response of the protective device over long conducting paths. The high short-circuit strength permits protection by medium-voltage circuit breakers for the conveyance of power between the transformer and the main infeed. Outgoing units up to 1250 A can be plugged in without causing any problems.

Flexible power distribution for multi-storey buildings

The LX sandwich system LX (up to 6300 A) is used wherever large amounts of power have to be conveyed independently of position. Be it for radio broadcasting stations, computer centers or Internet providers – conductor configurations with an insulated PE/ground conductor and double neutral conductor cross-section guarantee an interference-free power supply. Outgoing units up to 1250 A are available as standard.

Safe power conveyance for petrochemicals

The encapsulated LR system (up to 6300 A) is extremely resistant to external interference thanks to its high degree of protection. It guarantees the safe conveyance of power in severe weather as well as under harsh industrial conditions with dust, dirt and aggressive media. Typical applications are the petrochemical industry, refuse incineration plants and power stations.

More information

Catalog LV 70

SIVACON 8PS – CD, BD01, BD2 busbar trunking systems up to 1250 A

SIVACON 8PS Engineering Tools for made-to-measure, economical solutions

Used during the planning and configuring phase, SIVACON Engineering Tools result in made-to-measure and economical solutions. Even complicated tasks are now easy to perform from start to finish:

Selection aid for busway systems (MobileSpice)

The selection aid enables you to order busbar trunking systems up to 1250 A and is available in the Mall. The same selection aid is also included on the DVD in the catalog CA 01.

The following configurators are available:

- SIVACON 8PS System CD-L, 25 A ... 40 A
- SIVACON 8PS BD01 System, 40 ... 160 A
- SIVACON 8PS BD2 System, 160 A ... 1250 A

Manuals

Planning with SIVACON 8PS Busway Systems up to 6300 A

- German: Order No. A5E 01541017-01
- English: Order No. A5E 01541101-01

Leaflet

For Safe Power Flows – SIVACON 8PS Busbar Trunking Systems

- German: Order No. E20001-A360-P309-V2
- English: Order No. E20001-A360-P309-V2-7600
- French: Order No. E20001-A360-P309-X-7700

SIVACON 8MC, 8MF Cubicle Systems

System Cubicles

General data

Overview

Cubicles are installed in the most varied environments, from office buildings to workshops and manufacturing centers.

SIVACON 8MC and 8MF system cubicles are designed for all these environments.

Degrees of protection

In their standard versions, SIVACON 8MC and 8MF system cubicles offer the following degrees of protection:

- System cubicles without ventilation: IP40 and IP54
- System cubicles with ventilation: IP30 and IP40

Further degrees of protection are available upon request.

Available dimensions

The 8MC and 8MF system cubicles are available in dimension increments of 100 mm, within the following minimum and maximum dimension range:

- Height: From 400 mm to 2400 mm
- Width: From 300 mm to 1800 mm
- Depth: From 300 mm to 1400 mm

Transport

Cubicles are dispatched ex works on transport skids, or in the case of cubicle suites on transport bases.

Modifications and accessories/cubicle modifications

A standard 8MC or 8MF system cubicle comprises the following basic elements:

- a frame
- a rear panel
- a flat-panel roof
- a door with espagnolette lock and lock insert
- possibly side panels (in case of stand-alone installation)

For special requirements the standard system cubicle can be modified by replacing individual elements or by providing cut-outs, e. g.

- with a double-wing door in place of a single door
- with an instrument cover in place of a front door
- with a door in place of a rear panel
- with a roof prepared to accommodate a busbar or
- with the integration of ventilation slots into a standard door and with a perforated ventilation roof
- with mounted units for cubicle air-conditioning

Possible cubicle modifications are listed in Catalog LV 50.

Application

SIVACON 8MC and 8MF system cubicles are designed especially for:

- Open- and closed-loop control technology
- Electronics (19-inch installations)
- Power electronics
- Protection and control systems
- Automotive industry
- Remote control of crane systems
- Cement and paper industries
- Traffic engineering
- Switchgear and controlgear
- Data systems
- Communications technology
- Medical systems

Special cubicles

SIVACON 8MC and 8MF system cubicles are also available for special applications:

8MF6 earthquake-resistant version

The earthquake-resistant version is used preferably in nuclear power facilities and in applications with increased vibrations, e. g. on excavators or cranes.

PC cubicles

A variant of the SIVACON 8MC and 8MF system cubicles can also be ordered as a PC cubicle. The PC cubicle is a robust construction and is thus suitable for use in industrial environments.

EMC versions

Measures for enhancing electromagnetic compatibility (EMC) are becoming more and more important both for individual devices and complete systems. SIVACON 8MC and 8MF system cubicles are also available therefore in EMC versions.

The reasons for EMC measures are:

- Increasing processing speeds of communication systems
- Growing complexity of plants
- Contact between different systems working in a plant
- Different power levels
- More and more external interference sources

More information

More information can be found in Catalog LV 50 "[SIVACON Cubicle Systems and Air-Conditioning](#)"

or in the Industry Mall under "[Low-Voltage Controls and Distribution](#)" --> "[Low-Voltage Power Distribution](#)" --> "[SIVACON Power Distribution Boards, Busway and Cubicle Systems](#)"--> "[8MC, 8MF Cubicle Systems](#)" --> "[System Cubicles](#)".

SIVACON 8MC, 8MF Cubicle Systems

System Cubicles

8MC system cubicles

Overview



8MC system cubicle

Design

The 8MC system cubicle cuts a good figure wherever it stands:

- Doors over the full height and width of the cubicle, together with side panels integrated into the frame, lend the system cubicle an attractive appearance – the ideal choice for applications in office, industrial and craft trade environments.
- External hinges permit wide opening of the system cubicle doors – in line with individual requirements. Optional trim strips along the upper edges of the doors support a uniform design and also offer space for inscription.

Application

The versatile mounting options permit the fast and inexpensive installation of mechanical components and electrical devices, including all elements belonging to typical metric and/or 19" rack systems.

It goes without saying that the 8MC2 cubicle system complies with all national and international standards referring to metric installation systems (EN 50298, IEC 60917 etc.) and thus complements the SIPAC series (standardized Siemens packaging system) to offer solutions across the whole range from individual modules to subracks and cubicles.

8MC is the ideal cubicle system for the craft trades and industry, being suitable not only for small conventional systems but also for full-scale electrical installations.

8MF system cubicles

Overview



8MF system cubicle

Design

The 8MF cubicle system is available with the following frame variants:

- 8MF2 welded version
- 8MF5 screwed version
- 8MF6 earthquake-resistant version

The doors bring a floor clearance of 63 mm, and with their concealed hinges provide for a 180° opening angle (130° in the case of cubicle suites). The identical side and rear panels add 9 mm to the frame dimensions.

Petrol-colored trim strips above the doors offer space for inscription or for the integration of signaling lights.

Application

The 8MF cubicle system is suitable for the installation of devices and equipment for electronic and conventional open- and closed-loop control systems, as well as for low-voltage switchgear and controlgear.

Its design permits the fast and cost-effective integration of racks for 19-inch installations for the most varied industrial electronics applications, alongside distribution modules for power distribution.

Specific design measures permit 8MF6 cubicles in the dimensions (H x W) 2200 x 900 mm or 2200 x 600 mm to be supplied in earthquake-resistant versions for operation in nuclear power stations (see "Earthquake-Resistant Cubicles").

The 8MF5, 8MF6 and 8MF2 system cubicle series possess absolutely identical hole patterns in their frame profiles and are thus suitable for interconnection without restrictions.

SIVACON 8MC, 8MF Cubicle Systems

Accessories

Cubicle lighting, socket outlets, plug-on mounts

Overview



Slimline SL 025 light with motion detector

Cubicle lighting

The cubicle light is specifically suitable for operation in switch-gear and controlgear cubicles.

In the case of lamps with a SCHUKO socket outlet, the outlet is incorporated with an on/off switch or motion detector in the plastic enclosure.

The flat SL 025 Slimline lamp with motion detector or on/off switch is ideal for operation in cubicles and enclosures with a high density of built-in electrical/electronic components.

All lamps are fitted with environmentally friendly energy-saving lamps.

Rating of energy-saving lamps	Rating of conventional incandescent lamps
9 W	60 W
11 W	75 W
20 W	100 W

Spare lamp: Osram SPD1411-2B (100 W)

Socket outlets

Socket outlets are mounted on 35 mm support rails and connected without screws by way of three clamping terminals (for stranded and solid wires 0.5 ... 2.5 mm²).

The maximum operational voltage is 250 V. The enclosure is light-gray UL94 V-Q plastic.

Plug-on mounts

If a cubicle light is provided with a plug-on mount, it remains immune to vibration and can be removed at any later time without tools.

If fitted between two plug-on mounts, the cubicle light is fixed statically to the frame. The cubicle light can only be fitted to the cubicle frame by using plug-on mounts.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Cubicle lighting

Compact lights (355 x 65 x 70 mm)

KL 025

- 230 V, 50 Hz, 11 W (Germany)
- 120 V, 60 Hz, 9 W (Germany)
- 240 V, 50 Hz, 11 W

KL 025 with cover

- 230 V, 50 Hz, 11 W

KL 025 with 3-m cable

- 230 V, 50 Hz, 11 W

KL 025 with 3-m cable (orange-colored)

Spare parts for KL 025 compact lights

- Cover



Dual lights (396 x 67 x 100 mm)

DL 026

- 220 ... 240 V, 50-60 Hz, 20 W, with motion detector
- 220 ... 240 V, 50-60 Hz, 20 W, with on/off switch
- 220 ... 240 V, 50-60 Hz, 20 W, with hand-held lamp

C	8MF4 900	1	1 unit	195	2.230
C	8MF4 901	1	1 unit	195	1.115
C	8MF4 900-1A	1	1 unit	195	1.000
C	8MF4 904	1	1 unit	195	1.000
C	8MF4 900-1B	1	1 unit	195	1.000
C	8MF4 908	1	1 unit	195	0.100
C	8MF4 902	1	1 unit	195	0.600
C	8MF4 905	1	1 unit	195	0.600
C	8MF4 906	1	1 unit	195	0.600

Cubicle lighting, socket outlets, plug-on mounts

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Slimline lights (345 x 91 x 40 mm)								
SL 025, 230 V, 50/60 Hz, 11 W with pushbutton (On/Off)								
		• With socket outlet D, without magnet	C	8MF5 900-1A	1	1 unit	195 0.400	
		• With socket outlet D, with magnet (approx. 50 N)	C	8MF5 900	1	1 unit	195 0.600	
		• With socket outlet D, with magnet (approx. 30 N)	C	8MF5 900-1C	1	1 unit	195 0.500	
		• Without socket outlet, without magnet	C	8MF5 900-2A	1	1 unit	195 0.400	
		• Without socket outlet D, with magnet (approx. 50 N)	C	8MF5 900-1B	1	1 unit	195 0.600	
		• Without socket outlet D, with magnet (approx. 30 N)	C	8MF5 900-2B	1	1 unit	195 0.500	
8MF5 900-1A	<hr/>							
SL 025, 230 V, 50/60 Hz, 11 W with motion detector								
		• With socket outlet D, without magnet	C	8MF5 910-1A	1	1 unit	195 0.400	
		• With socket outlet D, with magnet (approx. 50 N)	C	8MF5 910	1	1 unit	195 0.600	
		• With socket outlet D, with magnet (approx. 30 N)	C	8MF5 910-1C	1	1 unit	195 0.500	
		• Without socket outlet, without magnet	C	8MF5 910-2A	1	1 unit	195 0.400	
		• Without socket outlet D, with magnet (approx. 50 N)	C	8MF5 910-1B	1	1 unit	195 0.600	
		• Without socket outlet D, with magnet (approx. 30 N)	C	8MF5 910-2B	1	1 unit	195 0.500	
8MF5 910-1A	<hr/>							
SL 025, 24 ... 48 V DC, 11 W, with pushbutton (On/Off)								
		• Without socket outlet, without magnet	C	8MF5 900-3A	1	1 unit	195 0.400	
		• Without socket outlet, with magnet (approx. 30 N)	C	8MF5 900-3B	1	1 unit	195 0.500	
<hr/>								
SL 025, 24 ... 48 V DC, 11 W, with motion detector								
		• Without socket outlet, without magnet	C	8MF5 910-3A	1	1 unit	195 0.400	
		• Without socket outlet, with magnet (approx. 30 N)	C	8MF5 910-3B	1	1 unit	195 0.500	
<hr/>								
Socket outlets								
Socket outlets with fuse								
		• VDE	C	8MF9 300	1	1 unit	195 0.500	
		• CEBEC	C	8MF9 301	1	1 unit	195 0.020	
<hr/>								
Socket outlets without fuse								
		• VDE	C	8MF9 305	1	1 unit	195 0.500	
<hr/>								
Plug-on mounts								
Plug-on mount								
		• For fitting the cubicle lighting	C	8MF4 903	1	1 unit	195 0.100	

More information

More information can be found in Catalog LV 50
["SIVACON Cubicle Systems and Air-Conditioning"](#)

or in the Industry Mall under
["Low-Voltage Controls and Distribution"](#) --> ["Low-Voltage Power Distribution"](#) --> ["SIVACON Power Distribution Boards, Busway and Cubicle Systems"](#) --> ["8MC, 8MF Cubicle Systems"](#)
--> ["Accessories"](#)

SIVACON 8MR, 8ME Cubicle Air-Conditioning

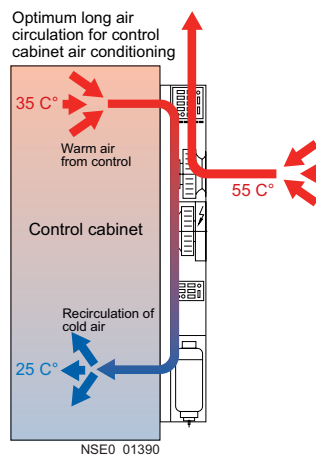
Introduction

Overview

In control cabinets, depending on the ambient conditions (e. g. heat, cold, air humidity etc.), there may be a tendency to over-heat or for mold to form. In such cases the cubicles should be air-conditioned. The following air-conditioning equipment is available for this purpose:

- Filter fans
- Air conditioners/cooling devices
- Heat exchangers
- Heaters/thermostats

When selecting the individual air-conditioning units, attention should be paid to the ambient temperature, power losses of the installed equipment, maximum permissible device temperatures and heat dissipation of the cubicle used. In addition, the required degree of protection must also be taken into account.



Optimum air duct for cubicle air-conditioning

Benefits

Installing air-conditioning equipment in SIVACON system cubicles ensures high fault tolerance for switchgear and controlgear assemblies and consequently a high level of availability of machines and plants.

Filter fans

Overview

Filter fans are the most cost-effective method - after heat dissipation through the surface of a control cabinet and/or ventilation openings in the enclosure parts of the control cabinets - for dissipating heat from control cabinets.

However, this can only achieve a control cabinet temperature which lies above the ambient temperature.

Standard filter fans optionally in EMC version

When filter fans are used for air conditioning, the cubicle must have openings which allow electromagnetic radiation to pass in and out unobstructed. Filter fans in EMC version offer additional protection when higher requirements are imposed on electromagnetic compatibility.

Filter fan versions

The following filter fans are available on request in 115 V and 230 V versions:

- Standard filter fan IP54, color RAL 7035/7032
- Standard filter fan IP55, color RAL 7035/7032
- Standard filter fan EMC, color RAL 7035/7032, IP54
- Standard filter fan EMC, color RAL 7035/7032, IP55

Note:

For all standard filter fans the useful cooling capacity and air rate are reduced by an average of approx. 30% in combinations of filter fan / outlet filter / filter mat, and for roof filter fans by approx. 40%.

Air conditioners/cooling devices

Overview

Where ambient temperatures are higher than the permissible device temperatures, air conditioners must be used.

All units operate with CFC-free refrigerants. Air conditioners dehumidify the air inside the control cabinet.

Cooling devices for door or lateral mounting and roof mounting

Two separate air circuits ensure that no ambient air enters the control cabinet. High-performance radial fans provide for air circulation in the control cabinet.

Simple temperature control is provided with an integrated thermostat (roof-mounted units).

Side-mounted units

Intelligent standard electronics with maximum customer benefits:

- Test mode
- Temperature limits
- Delayed start-up
- Door contact function
- Alarm contact
- Local diagnosis
- UL-approved

Versions

Air conditioners/cooling devices are available on request in the following versions:

- For door and side panel mounting
- For roof mounting

Heat exchangers

Overview**Air-air principle (8ME78)**

Heat exchangers designed on the air-air principle function with two completely separate air circuits: an internal and an external circuit. One fan draws in cool external air. A second fan then directs the warmed cubicle air past a large-area finned partition element, which passes the heat to the external circuit. Air conditioners dehumidify the air inside the control cabinet.

Air-water principle (8MR5)

Heat exchangers designed on the air-water principle function with a single air circuit. A fan directs the warm control cabinet air over the heat exchanger. The heat is passed to the water as the cooling medium, resulting in cooling of the air in the control cabinet.

Versions

Heat exchangers are available on request in the following versions:

- For lateral mounting
- For roof mounting

SIVACON 8MR, 8ME Cubicle Air-Conditioning

Heater units

Overview



HG 140 semiconductor heater unit, high output

Control cabinet heaters are used for preventing malfunctions due to condensation water and corrosion and for controlling the temperature inside the control cabinet (compliance with a minimum temperature).

The aluminum profile is designed to guarantee a uniform distribution of temperature and hence an optimum heating effect over the entire surface.

All units are also available in UL-approved versions and for special voltages.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Semiconductor heater units

Small semiconductor heater units

HGK 047 series

- 110-250 V, 10 W
- 110-250 V, 20 W
- 110-250 V, 30 W

B	8MR2 110-0B	1	2 units	195	0.200
B	8MR2 110-2B	1	2 units	195	0.400
B	8MR2 110-3B	1	2 units	195	0.400

HGK 047 series, UL-approved

- 110-120 V, 10 W
- 110-120 V, 20 W
- 110-120 V, 30 W

C	8MR2 110-0C	1	1 unit	195	0.100
C	8MR2 110-2C	1	1 unit	195	0.200
C	8MR2 110-3C	1	1 unit	195	0.200

HGK 047 series, special voltages

- 24 V, 10 W
- 24 V, 20 W

C	8MR2 110-0BA	1	1 unit	195	0.100
C	8MR2 110-2BA	1	1 unit	195	0.200

CSK 060 series

- 120-240 V AC/DC, 10 W
- 120-240 V AC/DC, 20 W

C	8MR2 112-1A	1	1 unit	195	0.250
C	8MR2 112-2A	1	1 unit	195	0.250



8MR2 112-1A

Semiconductor heater units

HG 040 series, UL-approved

- 110-250 V, 15 W
- 110-250 V, 30 W
- 110-250 V, 50 W
- 110-250 V, 80 W
- 110-250 V, 100 W

C	8MR2 110-1D	1	1 unit	195	0.300
C	8MR2 110-3D	1	1 unit	195	0.300
C	8MR2 110-4D	1	1 unit	195	0.500
C	8MR2 110-7D	1	1 unit	195	0.700
C	8MR2 110-0D	1	1 unit	195	0.700

Overview



CR 030 fan heater with integrated thermostat or hygrostat

Where higher heating outputs (from 150 W) are required, fan heaters are used.

The integrated fans provide for better air circulation and hereby achieve a more even air temperature distribution in the control cabinet.

All units are also available in UL-approved versions and for special voltages.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Fan heaters

*Fan heaters in standard version***Without fan, HV 031 series**

• 230 V, 100 W	C	8MR2 140-0A		1	1 unit	195	0.400
• 230 V, 150 W	C	8MR2 140-1A		1	1 unit	195	0.400
• 230 V, 200 W	C	8MR2 140-2A		1	1 unit	195	0.500
• 230 V, 300 W	C	8MR2 140-3A		1	1 unit	195	0.500
• 230 V, 400 W	C	8MR2 140-4A		1	1 unit	195	0.500

With fan, HVL 031 series

• 230 V, 100 W	C	8MR2 140-0B		1	1 unit	195	0.600
• 230 V, 150 W	C	8MR2 140-1B		1	1 unit	195	0.600
• 230 V, 200 W	C	8MR2 140-2B		1	1 unit	195	0.900
• 230 V, 300 W	C	8MR2 140-3B		1	1 unit	195	0.900
• 230 V, 400 W	C	8MR2 140-4B		1	1 unit	195	0.900

*Compact fan heaters***With fan, HGL 046 series**

• 220-230 V, 250 W	B	8MR2 122-4E		1	1 unit	195	1.000
• 220-230 V, 400 W	B	8MR2 122-8E		1	1 unit	195	1.300

With fan, HGL 046 series, UL-approved

• 230 V, 250 W	C	8MR2 122-4F		1	1 unit	195	1.000
• 230 V, 400 W	C	8MR2 122-8F		1	1 unit	195	1.300
• 115 V, 250 W	C	8MR2 122-4G		1	1 unit	195	1.000
• 115 V, 400 W	C	8MR2 122-8G		1	1 unit	195	1.300

With fan, HGL 046 series, special voltages

• 24 V, 250 W	C	8MR2 122-4EA		1	1 unit	195	1.000
---------------	---	---------------------	--	---	--------	-----	-------

With fan, HGL 046 series

• 230 V, 250 W (UL-approved)	C	8MR2 122-4A		1	1 unit	195	1.100
• 230 V, 400 W (UL-approved)	C	8MR2 122-8A		1	1 unit	195	1.400

With fan, HGL 046 series, UL-approved

• 120 V, 250 W (UL-approved)	C	8MR2 122-4B		1	1 unit	195	1.100
• 120 V, 400 W (UL-approved)	C	8MR2 122-8B		1	1 unit	195	1.400

With fan, HGL 046 series, special voltages

• 24 V, 250 W	C	8MR2 122-4AB		1	1 unit	195	1.100
• 48 V, 250 W	C	8MR2 122-4AC		1	1 unit	195	1.100

Without fan, HV 030 series

• 230 V, 600 W	C	8MR2 140-6C		1	1 unit	195	0.600
----------------	---	--------------------	--	---	--------	-----	-------


With fan, HVL 030 series

• 230 V, 600 W	C	8MR2 140-6D		1	1 unit	195	1.000
----------------	---	--------------------	--	---	--------	-----	-------

* You can order this quantity or a multiple thereof.

SIVACON 8MR, 8ME Cubicle Air-Conditioning

Fan heaters

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
HG 040 series, special voltages							
• 24 V, 60 W	C	8MR2 110-6AA		1	1 unit	195	0.400
HG 140 series							
• 110-250 V, 15 W	C	8MR2 130-1A		1	2 units	195	0.600
• 110-250 V, 30 W	C	8MR2 130-3A		1	2 units	195	0.600
• 110-250 V, 45 W	C	8MR2 130-4A		1	1 unit	195	0.300
• 110-250 V, 60 W	C	8MR2 130-6A		1	1 unit	195	0.400
• 110-250 V, 75 W	C	8MR2 130-7A		1	1 unit	195	0.500
• 110-250 V, 100 W	C	8MR2 130-0A		1	1 unit	195	0.500
• 110-250 V, 150 W	C	8MR2 130-5A		1	1 unit	195	0.700
							
8MR2 130-1A							
							
8MR2 130-5A							
Semiconductor heater units without thermostat, degree of protection IP20							
CS 060 series							
• 120-250 V, 50 W	C	8MR2 131-4A		1	1 unit	195	0.290
• 120-250 V, 100 W	C	8MR2 131-0A		1	1 unit	195	0.300
• 120-250 V, 150 W	C	8MR2 131-5A		1	1 unit	195	0.440
							
8MR2 131-4A							
Semiconductor heater units with thermostat, degree of protection IP20							
CSF 060 series							
• 120-250 V, 50 W, 15 °C	C	8MR2 132-1A		1	1 unit	195	0.300
• 120-250 V, 50 W, 25 °C	C	8MR2 132-1AB		1	1 unit	195	0.300
• 120-250 V, 100 W, 15 °C	C	8MR2 132-0A		1	1 unit	195	0.310
• 120-250 V, 100 W, 25 °C	C	8MR2 132-0AB		1	1 unit	195	0.310
• 120-250 V, 150 W, 15 °C	C	8MR2 132-5A		1	1 unit	195	0.440
• 120-250 V, 150 W, 25 °C	C	8MR2 132-5AB		1	1 unit	195	0.440
							
8MR2 132-1A							

SIVACON 8MR, 8ME Cubicle Air-Conditioning

Fan heaters

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Fan heaters with integrated thermostat or hygrostat								
 8MR2 150-0A		Fan heaters, CR 030 series						
		<ul style="list-style-type: none"> • 230 V, 950 W 0 to 60 °C • 230 V, 950 W, 65 % relative air humidity 	C	8MR2 150-0A	1	1 unit	195	1.400
 8MR2 150-0C		Fan heaters, CR 130 series						
		<ul style="list-style-type: none"> • 230 V, 950 W 0 to 60 °C • 230 V, 950 W, 65 % relative air humidity 	C	8MR2 150-0C	1	1 unit	195	1.450
Semiconductor fan heaters								
		CR 027 series						
		• 230 V, 350 W, °C	C	8MR2 140-3C	1	1 unit	195	1.100
		• 230 V, 550 W, °C	C	8MR2 140-5C	1	1 unit	195	1.100
		• 115 V, 350 W, °F	C	8MR2 140-3D	1	1 unit	195	1.100
		• 115 V, 550 W, °F	C	8MR2 140-5D	1	1 unit	195	1.100
		CS 028 series						
 8MR2 150-2C		• 230 V, 170 W, clip fixing	C	8MR2 150-2C	1	1 unit	195	0.300
		• 230 V, 170 W, screw fixing	C	8MR2 150-2D	1	1 unit	195	0.300
PTC fan heaters optionally with or without thermostat								
		CS 030 series						
 8MR2 150-2A		• 230 V, 1200 W, screw fixing, with thermostat, 0 to 60 °C	C	8MR2 150-2A	1	1 unit	195	1.200
		• 230 V, 1200 W, without thermostat	C	8MR2 150-2B	1	1 unit	195	1.200
 8MR2 150-3A		CS 130 series						
		• 230 V, 1200 W, clip fixing, with thermostat, 0 to 60 °C	C	8MR2 150-3A	1	1 unit	195	1.250
		• 230 V, 1200 W, without thermostat	C	8MR2 150-3B	1	1 unit	195	1.250

SIVACON 8MR, 8ME Cubicle Air-Conditioning

Thermostats, hygrometers, hygrometers

Overview



Fix thermostat, FTO 01 series, NC contact

Thermostats

Thermostats (as NC, NO or CO contacts) are used to regulate cooling devices, filter fans and heat exchangers, as well as to trigger signals in case of excessive temperatures.

Hygrostats

Hygrostats are used to regulate heaters/fan heaters so that the temperature increase raises the dew point from a critical humidity of 65 % in cubicles and enclosures with built-in electrical and electronic components. This prevents condensation on structural parts and electronic components.

Hygrotherms

Hygrotherms monitor both temperature and relative humidity in cabinets and enclosures with built-in electrical/electronic components and switch on a heater or fan upon reaching the selected values (temperature or relative humidity). This prevents condensation on structural parts and electronic components.

Switching modules

Switching modules are electronic relays for the switching of high-power DC devices.

Thermostats, hygrometers or hygrometers can be connected to operate the switching modules.

Note:

The switching capacity values quoted in brackets refer to inductive loads.

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Thermostats

Small thermostats

KTO 01140 series



8MR2 170-1BA

- NC contact, 0 ... 60 °C, max. switching capacity 250 V, 10 A (2 A) B
- NC contact, 0 ... 60 °C, max. switching capacity 250 V, 10 A (2 A), UL-approved C
- NC contact, -10 ... 50 °C, max. switching capacity 250 V, 10 A (2 A) C
- NC contact, +20 ... 80 °C, max. switching capacity 250 V, 10 A (2 A) C

8MR2 170-1BA				1	3 units	195	0.040
8MR2 170-2BA				1	1 unit	195	0.040
8MR2 170-1CA				1	3 units	195	0.150
8MR2 170-1DA				1	3 units	195	0.150

KTS 01141 series



8MR2 170-1BB

- NO contact, 0 ... 60 °C, max. switching capacity 250 V, 10 A (2 A) B
- NO contact, 0 ... 60 °C, max. switching capacity 250 V, 10 A (2 A), UL-approved C
- NO contact, -10 ... 50 °C, max. switching capacity 250 V, 10 A (2 A) C
- NO contact, +20 ... 80 °C, max. switching capacity 250 V, 10 A (2 A) C

8MR2 170-1BB				1	3 units	195	0.040
8MR2 170-2BB				1	1 unit	195	0.040
8MR2 170-1CB				1	3 units	195	0.040
8MR2 170-1DB				1	3 units	195	0.040

Fix thermostats

FTO 011 series



8MR2 171-1BA/2BA

- NC contact, 15 °C / 59 °F (40 °C / 41 °F), max. switching capacity 250 V, 10 A (2 A) C
- NC contact, 25 °C / 77 °F (15 °C / 59 °F), max. switching capacity 250 V, 10 A (2 A) C

8MR2 171-1BA				1	1 unit	195	0.023
8MR2 171-2BA				1	1 unit	195	0.023

SIVACON 8MR, 8ME Cubicle Air-Conditioning

Thermostats, hygrometers, hygrometers

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	-----------	--------------	-------------------	-----	----	--------------------------

Thermostats (continued)

Fix thermostats (continued)

FTS 011 series

- NO contact, 50 °C / 122 °F (40 °C / 104 °F), max. switching capacity 250 V, 10 A (2 A)
- NO contact, 60 °C / 140 °F (50 °C / 122 °F), max. switching capacity 250 V, 10 A (2 A)



8MR2 171-1BA/2BA

C	8MR2 171-1BB	1	1 unit	195	0.023
C	8MR2 171-2BB	1	1 unit	195	0.023

Mechanical thermostats

FZK 011 series

- CO contact, +5 ... +60 °C, max. switching capacity 250 V, 10 A (4 A)
- CO contact, -20 ... +30 °C, max. switching capacity 250 V, 10 A (4 A)



8MR2 171-1A

B	8MR2 170-1A	1	2 units	195	0.100
C	8MR2 170-1B	1	1 unit	195	0.100

Electronic thermostats

ET 011 series

- CO contact, +5 ... +60 °C, max. switching capacity 28 V DC, 16 A

C	8MR2 170-2A	1	1 unit	195	0.080
---	--------------------	---	--------	-----	-------

Twin thermostats

ZR 011 series

- NC and NO contact, 0... +60 °C, - Max. switching capacity 250 V AC, 10 (2 A) or 120 V AC, 10 A (2 A)

C	8MR2 170-1E	1	2 units	195	0.090
---	--------------------	---	---------	-----	-------

Twin thermostats (Fix)

FTD 011 series

- NC contact, 15 °C/59 °F (5 °C/41 °F) and NO contact, 50 °C/122 °F (40 °C/104 °F) - Max. switching capacity 240 V AC, 5 A (1.6 A) or DC 30 W
- NC contact, 25 °C/77 °F (15 °C/59 °F) and NO contact, 60 °C/140 °F (50 °C/122 °F) - Max. switching capacity 240 V AC, 5 A (1.6 A) or DC 30 W
- NO contact, 50 °C/122 °F (40 °C/104 °F) and NO contact, 60 °C/140 °F (50 °C/122 °F) - Max. switching capacity 240 V AC, 5 A (1.6 A) or DC 30 W

C	8MR2 172-1A	1	1 unit	195	0.040
C	8MR2 172-2A	1	1 unit	195	0.040
C	8MR2 172-1AB	1	1 unit	195	0.040

Hygrometers

For regulating heaters/fan heaters so that the temperature increase raises the dew point

Mechanical hygrometers

MFR 012 series

- CO contact, 230 V AC, 35 ... 95 % relative air humidity C - Max. switching capacity 250 V AC, 5 A (0.2 A) or DC 20 W
- Min. switching capacity 20 V AC/DC, 100 mA

C	8MR2 170-1C	1	1 unit	195	0.060
---	--------------------	---	--------	-----	-------

Electronic hygrometers

Electronic hygrometer, EFR 012 series

- CO contact, 230 V AC, 40 ... 90 % relative air humidity C - Max. switching capacity 240 V AC, 8 A (1.6 A) or 120 V AC, 8 A (1.6 A) or 24 V DC, 4 A

C	8MR2 170-1AF	1	1 unit	195	0.700
---	---------------------	---	--------	-----	-------



8MR2 170-1AF

* You can order this quantity or a multiple thereof.

SIVACON 8MR, 8ME Cubicle Air-Conditioning

Thermostats, hygrostats, hygrotherms

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Hygrotherms							
For simultaneously monitoring both temperature and relative humidity in cabinets and enclosures with electronic components							
Electronic hygrotherms							
ETF 012 series							
<ul style="list-style-type: none"> CO contact, 120 V AC, +32 ... +140 °F, 50 ... 90 % relative air humidity <ul style="list-style-type: none"> - Max. switching capacity of NC contact: 120 V AC, 6 A (1 A) - Max. switching capacity of NO contact: 120 V AC, 8 A (1.6 A) 	C	8MR2 170-3F		1	1 unit	195	0.200
<ul style="list-style-type: none"> CO contact, 230 V AC, +32 ... +140 °F, 50 ... 90 % relative air humidity <ul style="list-style-type: none"> - Max. switching capacity of NC contact: 240 V AC, 6 A (1 A) - Max. switching capacity of NO contact: 240 V AC, 8 A (1.6 A) 	C	8MR2 170-3G			1 unit	195	0.200
<ul style="list-style-type: none"> CO contact, 120 V AC, 0 ... +60 °C, 50 ... 90 % relative air humidity <ul style="list-style-type: none"> - Max. switching capacity of NC contact: 120 V AC, 6 A (1 A) - Max. switching capacity of NO contact: 120 V AC, 8 A (1.6 A) 	C	8MR2 170-3H		1	1 unit	195	0.200
<ul style="list-style-type: none"> CO contact, 230 V AC, 0 ... +60 °C, 50 ... 90 % relative air humidity <ul style="list-style-type: none"> - Max. switching capacity of NC contact: 240 V AC, 6 A (1 A) - Max. switching capacity of NO contact: 240 V AC, 8 A (1.6 A) 	B	8MR2 170-3E		1	1 unit	195	0.200
ETF 012 series							
<ul style="list-style-type: none"> CO contact, 120 V AC, +32 to +140 °F, 50 ... 90 % relative air humidity <ul style="list-style-type: none"> - Max. switching capacity of NC contact: 120 V AC, 6 A (1 A) - Max. switching capacity of NO contact: 120 V AC, 8 A (1.6 A) 	C	8MR2 170-4F		1	1 unit	195	0.020
<ul style="list-style-type: none"> CO contact, 120 V AC, 0 ... +60 °C, 50 ... 90 % relative air humidity <ul style="list-style-type: none"> - Max. switching capacity of NC contact: 120 V AC, 6 A (1 A) - Max. switching capacity of NO contact: 120 V AC, 8 A (1.6 A) 	C	8MR2 170-4H		1	1 unit	195	0.020
Switching modules							
Electronic relay for switching high-power DC devices from thermostats, hygrostats or hygrotherms							
SM 010 series							
<ul style="list-style-type: none"> 24 V DC, 16 A 	C	8MR2 180-1A		1	1 unit	195	0.085
<ul style="list-style-type: none"> 48 V DC, 16 A 	C	8MR2 180-1B		1	1 unit	195	0.085

More information

More information can be found in Catalog LV 50
["SIVACON Cubicle Systems and Air-Conditioning"](#)
 (in German only)

or in the Industry Mall under
["Low-Voltage Controls and Distribution"](#) --> ["Low-Voltage Power Distribution"](#) --> ["SIVACON Power Distribution Boards, Busway and Cubicle Systems"](#)--> ["8MR, 8ME Cubicle Air-Conditioning"](#)

Overview

		Surface-mounting distribution boards	Flush-mounting distribution boards	Rated current	Cabinet depth	Protection class		Degree of protection
						1	2	
Small distribution boards	SIMBOX 63	✓	✓	63		--	✓	IP30
	SIMBOX LC	✓	✓	63		--	✓	IP40
	SIMBOX WP	✓	--	63		--	✓	IP65
ALPHA 160 - DIN wall-mounted distribution boards	Partially equipped distribution boards	✓	✓	160	140	--	✓	IP31/IP43
	Unequipped distribution board	✓	✓	160	140	--	✓	IP31/IP43
ALPHA 400 - DIN wall-mounted distribution boards	Unequipped distribution board, flat pack	✓	--	400	210	✓	✓	IP43
	Unequipped distribution board, pre-assembled	✓	✓	400	210	✓	✓	IP31/IP43/IP55
ALPHA 630 - DIN floor-mounted distribution boards	Unequipped distribution boards, flat pack	✓	--	630	210	✓	✓	IP43
	Unequipped distribution board, pre-assembled	✓	--	630	210 / 250 / 320	✓	✓	IP43/IP55
ALPHA AS	Preassembled unequipped distribution board	✓	--	1250	400 / 600 ¹⁾	✓	--	IP55
ALPHA 400 – ZS meter cabinets		✓	--	400	210	--	✓	IP43/IP55
ALPHA 8HP Molded-Plastic Distribution System	Empty enclosures	✓	--	1000	Expandable as required	--	✓	IP65
	Complete enclosure	✓	--	1000	147 / 185 / 212 / 239.5	--	✓	IP65

✓ Available
-- Not available

¹⁾ 600 mm available soon

More information

More information can be found in Catalog ET A1 "ALPHA Distribution Boards and Terminal Blocks".

ALPHA Distribution Boards

ALPHA 630 – DIN Floor-Mounted Distribution Boards

General data

Overview



ALPHA 630 - DIN floor-mounted distribution board

System

The new Siemens switchboard system, based on decades of experience with distribution boards, is of modular design.

Particular attention was paid to individual installation practices.

The system includes unequipped distribution boards as flat packs (delivered in individual parts for customer assembly, see also Part 3) in degree of protection IP43, unequipped distribution boards ready assembled in degree of protection IP55, assembly kits for project-related and individual compilation, and a comprehensive range of accessories.

Enclosures

Material: Sheet steel, electrogalvanized, powder-coated.

Sheet thickness, degree of protection IP43/IP55: body 1 mm, door 1 mm

Color: RAL 7035 (light gray), further RAL colors available on request.

Assembly kits

The assembly kits are made of sendzimir-galvanized sheet steel and are equipped with molded-plastic covers for a wide range of equipping options, e. g., with switching devices and modular installation devices.

The largest switching devices mountable with the ALPHA 630 - DIN floor-mounted distribution boards are Siemens switching devices with a rated current of up to 630 A.

Cabinet dimensions

All dimensions in mm

Height: Internal dimensions: 1800, external dimensions with base: 1950

Width (internal/external dimensions): 250/300, 500/550, 750/800, 1000/1050, 1250/1300

Depth (external dimension): 210, 250, 320

Assembly kits in panel-size grid dimensions, height x width: 150 x 250.

Benefits

- Available as a flat pack (kit for customer assembly; the assembly kits can be mounted directly on the platform) or preassembled as an unequipped distribution board
- Easy planning thanks to modular design
- Generous wiring compartments behind the standard mounting rail
- Extensive range of assembly kits for Siemens switching devices and modular installation devices for individual and project-related composition
- Assembly made easier by keyhole-fastened components and modules with quick-acting locks
- System design according to DIN, EN and VDE standards
- Sturdy sheet-steel enclosure
- Degrees of protection: IP43 and IP55
- Protection class 1 (protective conductor connection) and protection class 2 (total insulation)
- High-quality surface finish: Distribution made of electrogalvanized and powder-coated sheet steel, system components made of sendzimir-galvanized sheet steel, small parts and screws galvanized and chromated (colorless)
- Doors can be hinged right or left
- Door opening angle 170°
- Replaceable locking systems (accessories)
- Transparent doors in Giugiaro design (accessories)
- Front cover with sealable 90° quick-acting locks
- Environmentally-compatible and recyclable plastics

Application

The ALPHA 630 - DIN floor-mounted distribution boards are used for all applications for which the ALPHA 400 - DIN wall-mounted distribution boards do not provide sufficient equipping or wiring space, e. g. in administrative, non-residential, commercial and industrial buildings.

It rounds off the Siemens distribution board product range with three different mounting depths: 210 mm, 250 mm and 320 mm.

The distribution boards and components are designed as part of a modular system.

With just a few standard components, they provide the widest possible variety and project-related mounting and configuration possibilities.

The ALPHA 630 - DIN floor-mounted distribution board range comprises wall-mounted distribution boards with up to 12 modular installation devices each with 12 MW per mounting width (250 mm). The standard mounting rail tier spacing is 150 mm. A total of 5 cabinet mounting widths are available, each with an internal dimension of 250 mm.

The distribution boards are designed to meet protection class 1 (protective conductor connection) and protection class 2 (total insulation).

For floor-mounted distribution boards the following degrees of protection are standard:

- IP43 with a depth of 210 mm (flat pack: delivery in individual components) and
- IP55 (unequipped distribution board, preassembled) with depths of 250 mm and 320 mm

The rated current is 630 A.

40 mm or 60 mm busbar systems with dimensions up to 30 mm x 10 mm can be installed.

The modular system allows easy planning, configuring, cost calculation, ordering and mounting.

The assembly kits available for all mountable switching and modular installation devices are designed such one size of screwdriver is needed for mounting.

More information

More information can be found in Catalog ET A1 "ALPHA Distribution Boards and Terminal Blocks".

ALPHA Distribution Boards

ALPHA 8HP Molded-Plastic Distribution System

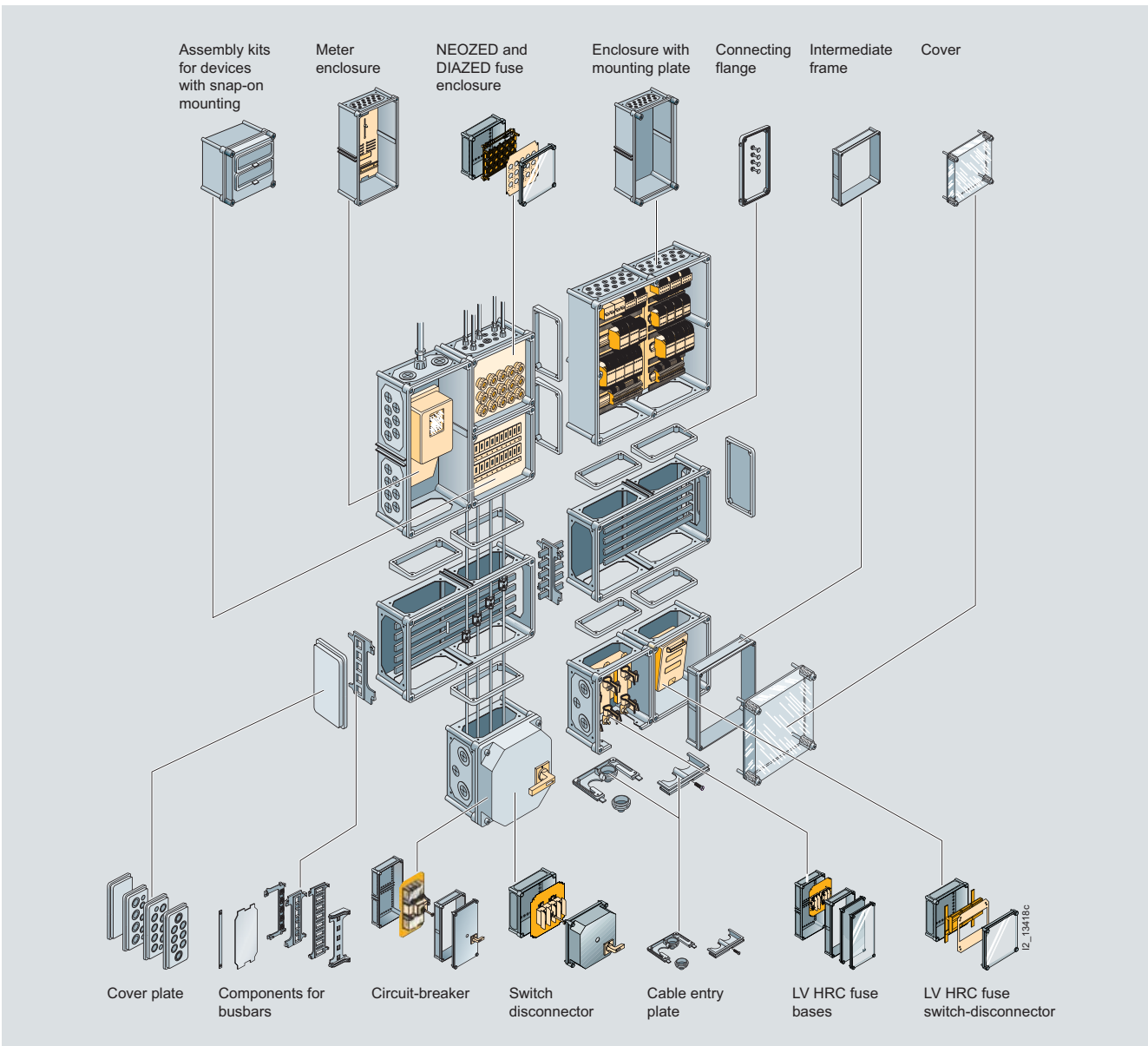
General data

Overview



8HP distribution board with support rack and cable space cover

The 8HP distribution system is a modular system for low-voltage small distribution boards, control panels and power distribution boards.



Overview of all components in the ALPHA 8HP molded-plastic distribution system

ALPHA Distribution Boards

ALPHA 8HP Molded-Plastic Distribution System

General data

Benefits

The optimum design of these high-quality materials fulfills all the demands made on modern enclosures. This includes:

- Basic insulation
- Corrosion resistance
- Mechanical strength
- Simple finish
- Temperature resistance
- Maintenance free
- Flame retardant, self-extinguishing

- Halogen-free (thus preventing consequential damage resulting from external fire), excludes cable space cover
- Lightweight components

Basic insulation

All enclosure parts and operating mechanisms are constructed so that they fulfill the conditions of the protective measure "basic insulation" according to DIN VDE 0100-410 when they are closed during operation. Enclosure fixings are situated outside the device installation space.

Application

It can be installed in all industrial plants, power stations, in large public or private buildings and in public utilities as well as in office buildings and residential buildings. The components of the 8HP distribution system fulfill the requirements specified for type-tested low-voltage controlgear assemblies (TTA) according to EN 60439-1. The enclosure corresponds to the protective measure "basic insulation" according to DIN VDE 0100-410.

Standards

EN 60439-1

Specifications for type-tested low-voltage switchgear and controlgear assemblies (TTA)

EN 60204-1

Standards for rating the creepage distances and clearances of electrical equipment

EN 60947-3

Standards for low-voltage controlgear

EN 60947-3

Standards for low-voltage controlgear:

Load-break switches, disconnectors, switch disconnectors and fuse-combination units

DIN VDE 0100 (IEC 60364, modified)

Specifications for the erection of power installations with rated voltages of up to 1000 V

Declaration of conformity

This declares conformity of the components and distribution boards with the safety requirements for low-voltage equipment as specified in the EC Directive dated 19.02.1973.

Special tests passed

- Fire tests for equipment used in mining are performed by the Versuchsgarbe Tremonia, Dortmund, Germany.
- Shock tests for equipment used in protective rooms are performed by the Bundesamt für Zivildschutz, Bad Godesberg, Germany, regulation category RK 1.0/10 to safety level "A", certificate of use 036/95.
- Earthquake tests are performed by the IAB, Ottobrunn, Germany.
- The enclosure is UL-certified.

Installation conditions

Installation	Measures	Climatic conditions according to DIN 50010	Special operating and ambient conditions
Indoor	No further measures necessary.	An indoor climate is an environment in rooms that are designed so that objects are largely separated from the direct influence of an open-air climate.	If the operating and ambient conditions differ from the standard conditions to EN 60439-1, Item 6.1, appropriate measures must be taken to protect and maintain the operating capability of the controlgear assembly for "Special operating and ambient conditions" according to Item 6.2 (mechanical protection, ventilation, indoor heating, breathers, etc.).
External	E. g. protected installation or protective cover, if necessary with additional walls and door (protective cabinet).	An external environment is an environment in rooms that are designed so that objects are protected against direct sunlight and precipitation and, if necessary, against wind, but are otherwise exposed to an open-air climate.	
Outdoor	Only permissible with measures as for external installation.	An open-air climate is an environment that affects objects in the open air.	

Conversion from Pg to metric screw connections

A new option for using metric screw connections was tested for the 8HP molded-plastic distribution system. The result of this test showed that the Pg openings listed in the following table are also suitable for the use of metric screw connections. Metric screw connections with lock nuts are used. Corresponding sealing washers are used in order to ensure degree of protection IP65.

The values for the tested conversions from Pg to metric screw connections are shown in the following table.

The knockouts in the enclosure base parts need to be drilled out.

Heavy-gauge threaded joints	Hole diameter mm	Metric screw connection	Lock hasp diameter fits	Lock hasp diameter must be enlarged to mm
Pg13.5	20.4	M20	✓	--
Pg16	22.5	M25	--	25.4
Pg21	28.3	M32	--	32.4
Pg29	37	M40	--	40.4
Pg36	47	M50	--	50.5
Pg42	54	M63	--	63.6
Pg48	59.3	M63	--	63.6

✓ Yes -- No

More information

More information can be found in Catalog ET A1 "ALPHA Distribution Boards and Terminal Blocks".

Overview



Terminal block types ¹⁾		8WA/8WH screw terminals		8WH/8WA spring-type terminals			8WH IPO terminals	8WH plug-in terminals	8WH combination plug-in terminals	8WH insulation displacement terminals
		8WA1 standard terminals	8WH1 standard terminals	8WA2 standard terminals	8WH2 standard terminals	8WH25 compact terminals	8WH6 standard terminals	8WH4 standard terminals	8WH5 standard terminals	8WH3 standard terminals
Conductor cross-section	mm ²	2.5 ... 70	25 ... 240	2.5 ... 16	1.5 ... 35	2.5 ... 6	2.5	2.5 ... 4	2.5	1.5 ... 2.5
Through-type terminals		✓	✓	✓	✓	✓	✓	✓	✓	✓
Multi-tier terminal blocks		✓	--	✓	✓	✓	✓	--	✓	✓
Neutral isolating terminals		✓	--	✓	--	--	--	✓	--	--
PE terminals		✓	--	✓	✓	✓	✓	✓	✓	✓
Isolating terminals		✓	--	✓	✓	✓	✓	--	✓	✓
Terminals for components		✓	--	✓	✓	✓	✓	--	--	--
Fuse terminals		✓	--	✓	✓	✓	✓	--	--	--
Insta terminals/ three-tier terminals		✓	--	✓	--	--	--	✓	--	--
Hybrid terminals		--	--	--	✓	✓	--	--	✓	✓
High-current terminals		--	✓	--	--	--	--	--	--	--
Bolt-type screw terminals		--	✓	--	--	--	--	--	--	--
Flat-type terminals		--	✓	--	--	--	--	--	--	--
Shield terminals		--	✓	--	--	--	--	--	--	--

¹⁾ Only the main terminal block types are listed here.

More information

More information can be found in Catalog ET A1 "ALPHA Distribution Boards and Terminal Blocks".

ALPHA FIX Terminal Blocks

Notes

14

SENTRON Switching and Protection Devices – Air Circuit Breakers

15



15/2

Introduction

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/
Non-Automatic Air Circuit Breakers
up to 6300 A (AC)

15/6

General data

15/7

3-pole, fixed-mounted versions

15/11

3-pole, withdrawable versions

15/15

4-pole, fixed-mounted versions

15/19

4-pole, withdrawable versions

15/23

Options

15/29

Accessories and Spare Parts

3WL Non-Automatic Air Circuit Breakers
up to 4000 A (DC)

15/50

3- and 4-pole, fixed-mounted versions

15/51

3-pole, withdrawable versions

15/52

4-pole, withdrawable versions

15/53

Accessories and Spare Parts

Technical Information

can be found at

www.siemens.com/lowvoltage/support

under Product List:

- Technical specifications

under Entry List:

- Updates
- Downloads
- FAQ
- Manuals
- Characteristic curves
- Certificates

and at

www.siemens.com/lowvoltage/configurators

- Configurators

SENTRON Switching and Protection Devices – Air Circuit Breakers

Introduction

Overview



Size I



Size II



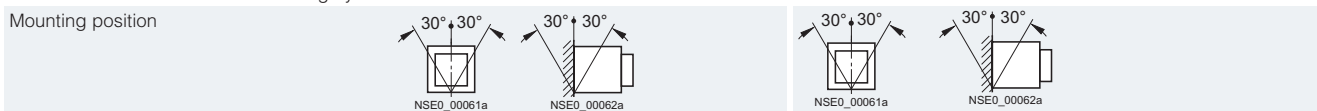
Size III

Air circuit breakers

3WL air circuit breakers/non-automatic air circuit breakers up to 6300 A (AC)

3WL non-automatic air circuit breakers up to 4000 A (DC)

Size		I, II, III			II
Rated current I_n	A	630, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000, 5000, 6300			1000, 2000, 4000
Number of poles		3-pole, 4-pole			3-pole, 4-pole
Rated operational voltage U_e	V AC V DC	... 690/1000/1150			-- ... 1000
Rated ultimate short-circuit breaking capacity at 500 V AC	kA	Size I 55/66	Size II 66/80/100	Size III 100/150 (3-pole), 130 (4-pole)	30/25/20 (at DC 300/600/1000 V)
Endurance	Operating cycles	20000	15000	10000	15000



Degree of protection		I, II, III			II
With cover		IP55			IP55
Without cover (with door sealing frame)		IP41			IP41

Dimensions 3-/4-pole

	W mm	460/590		704/914	460/590
Fixed mounting	434	434		434	434
	291	291		291	291
Withdrawable	465.5	465.5		465.5	465.5
	471	471		471	471



Type	ETU15B ¹⁾	ETU25B	ETU27B	ETU45B	ETU76B
------	----------------------	--------	--------	--------	--------

Electronic releases for SENTRON 3WL circuit breakers

Overload protection	✓	✓	✓	✓	✓
Short-time delayed short-circuit protection	--	✓	✓	✓	✓
Instantaneous short-circuit protection	✓	✓	✓	✓	✓
Neutral conductor protection	--	--	✓	✓	✓
Ground-fault protection	--	--	✓	□	□
Zone Selective Interlocking	--	--	--	□	□
LCD, 4-line	--	--	--	□	--
LCD, graphic	--	--	--	--	✓
Communication through PROFIBUS DP	--	--	--	□	□
Measurement function <i>Plus</i>	--	--	--	□	□
Selectable parameter sets	--	--	--	--	✓
Parameters freely programmable	--	--	--	--	✓
CubicleBUS	--	--	--	✓	✓

- ✓ Standard.
- Not available.
- Optional.

¹⁾ ETU15B cannot be used with 3WL circuit breakers, size III.

3WL air circuit breakers/non-automatic air circuit breakers according to UL 489 up to 5000 A, see Catalog LV 16.

Switching capacity

Size		I				II				III							
Type		3WL11				3WL12				3WL13							
Switching capacity class		N	(N)	S	(S)	N	(N)	S	(S)	H	(H)	H	(H)	C 3-pole	(C)	C 4-pole	(C)
Short-circuit breaking capacity																	
Rated operational voltage U_e up to 415 V AC																	
I_{cu}	kA	55		66		66		80		100		100		150		130	
I_{cs}	kA	55		66		66		80		100		100		150		130	
I_{cm}	kA	121		145		145		176		220		220		330		286	
Rated operational voltage U_e up to 500 V AC																	
I_{cu}	kA	55		66		66		80		100		100		150		130	
I_{cs}	kA	55		66		66		80		100		100		150		130	
I_{cm}	kA	121		145		145		176		220		220		330		286	
Rated operational voltage U_e up to 690 V AC																	
I_{cu}	kA	42		50		50		75		85		85		150		130	
I_{cs}	kA	42		50		50		75		85		85		150		130	
I_{cm}	kA	88		105		105		165		187		187		330		286	
Rated operational voltage U_e up to 1000 V/1150 V AC																	
I_{cu}	kA	--		--		--		--		50		50		70 ⁴⁾		70 ⁴⁾	
I_{cs}	kA	--		--		--		--		50		50		70 ⁴⁾		70 ⁴⁾	
I_{cm}	kA	--		--		--		--		105		105		154 ⁴⁾		154 ⁴⁾	
Rated short-time withstand current I_{cw} of the circuit breakers³⁾																	
0.5 s	kA	55		66		66		80		100		100		100		100	
1 s	kA	42		50		55		66		80		100		100		100	
2 s	kA	29.5		35		39		46		65 ^{1)/70²⁾}		80		80		80	
3 s	kA	24		29		32		37		50 ^{1)/65²⁾}		65		65		65	
Short-circuit breaking capacity I_{cc} of the non-automatic air circuit breakers																	
Up to 500 V AC	kA	55		66		66		80		100		100		100		100	
Up to 690 V AC	kA	42		50		50		75		85		85		100		100	
Up to 1000 V/1150 V AC	kA	--		--		--		--		50 ⁴⁾		50		70 ⁴⁾		70 ⁴⁾	
DC																	
Short-circuit breaking capacity																	
Up to 220 V DC	I_{cc}	kA 35															
Up to 300 V DC	I_{cc}	kA 30															
Up to 600 V DC	I_{cc}	kA 25															
Up to 1000 V DC	I_{cc}	kA 20															
Rated short-time withstand current I_{cw}																	
0.5 s	kA	--															
1 s	kA	35 ^{5)/30^{6)/25^{7)/20⁸⁾}}}															
2 s	kA	--															
3 s	kA	--															

- (N)** Circuit breakers with ECO switching capacity N ($I_{cu} = I_{cs}$ up to 55 kA size I/up to 66 kA size II at 500 V)
- (S)** Circuit breakers with standard switching capacity S ($I_{cu} = I_{cs}$ up to 66 kA size I/up to 80 kA size II at 500 V)
- (H)** Circuit breakers with high switching capacity H ($I_{cu} = I_{cs}$ up to 100 kA at 500 V)
- (C)** Circuit breakers with very high switching capacity C ($I_{cu} = I_{cs}$ up to 150 kA (3-pole)/130 kA (4-pole) at 500 V)
- (DC)** Non-automatic air circuit breakers with DC switching capacity

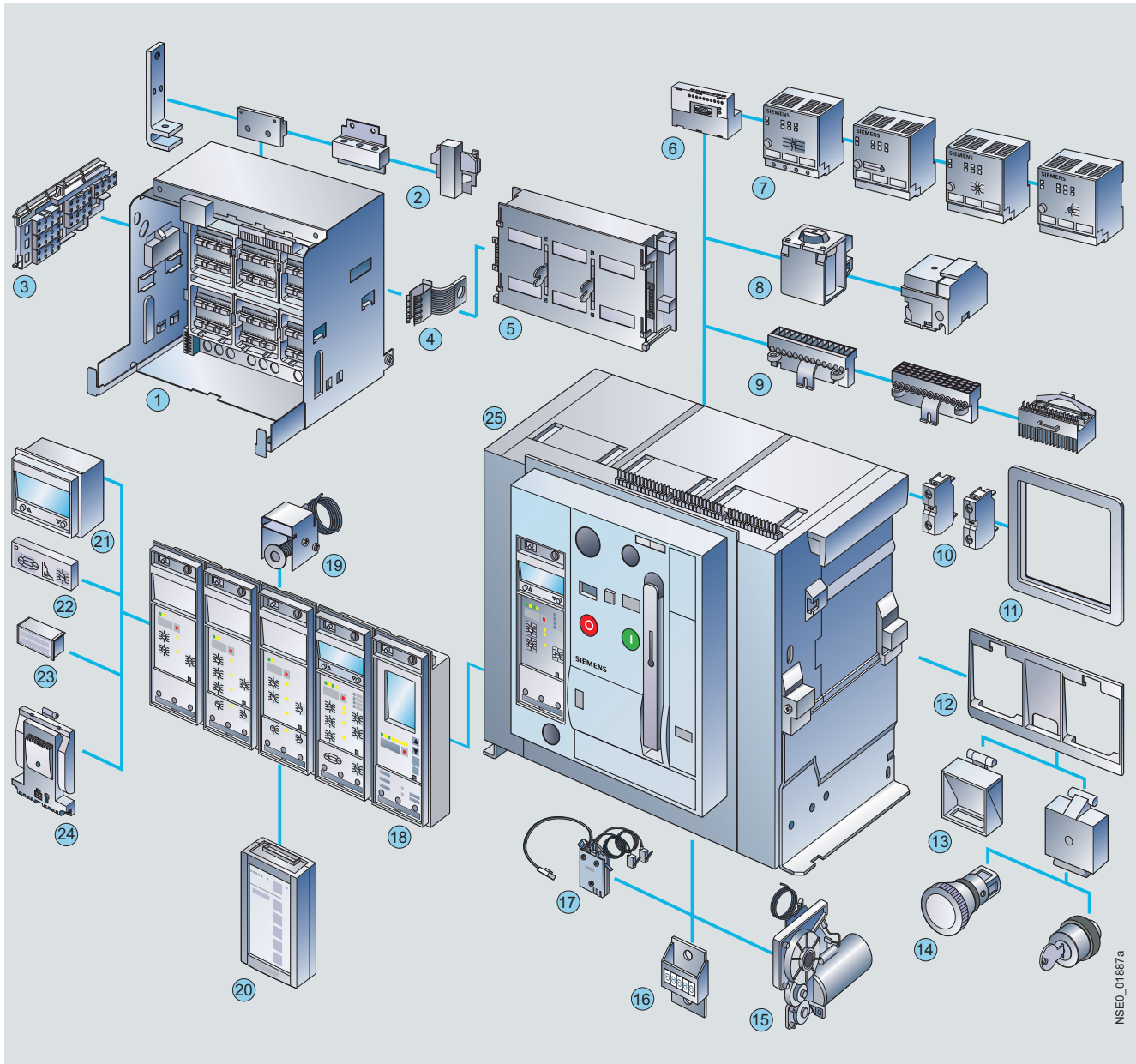
These circuit breakers are indicated in the selection and ordering data by orange backgrounds.

- 1) Size II with $I_{n \max} \leq 2500$ A.
- 2) Size II with $I_{n \max} = 3200$ A and $I_{n \max} = 4000$ A.
- 3) At a rated voltage of ≥ 690 V the I_{cw} value of the circuit breaker cannot be greater than the I_{cu} or I_{cs} value at 690 V.
- 4) Rated operational voltage $U_e = 1150$ V.
- 5) At $U_e = 220$ V DC.
- 6) At $U_e = 300$ V DC.
- 7) At $U_e = 600$ V DC.
- 8) At $U_e = 1000$ V DC.

Introduction

SENTRON 3WL:

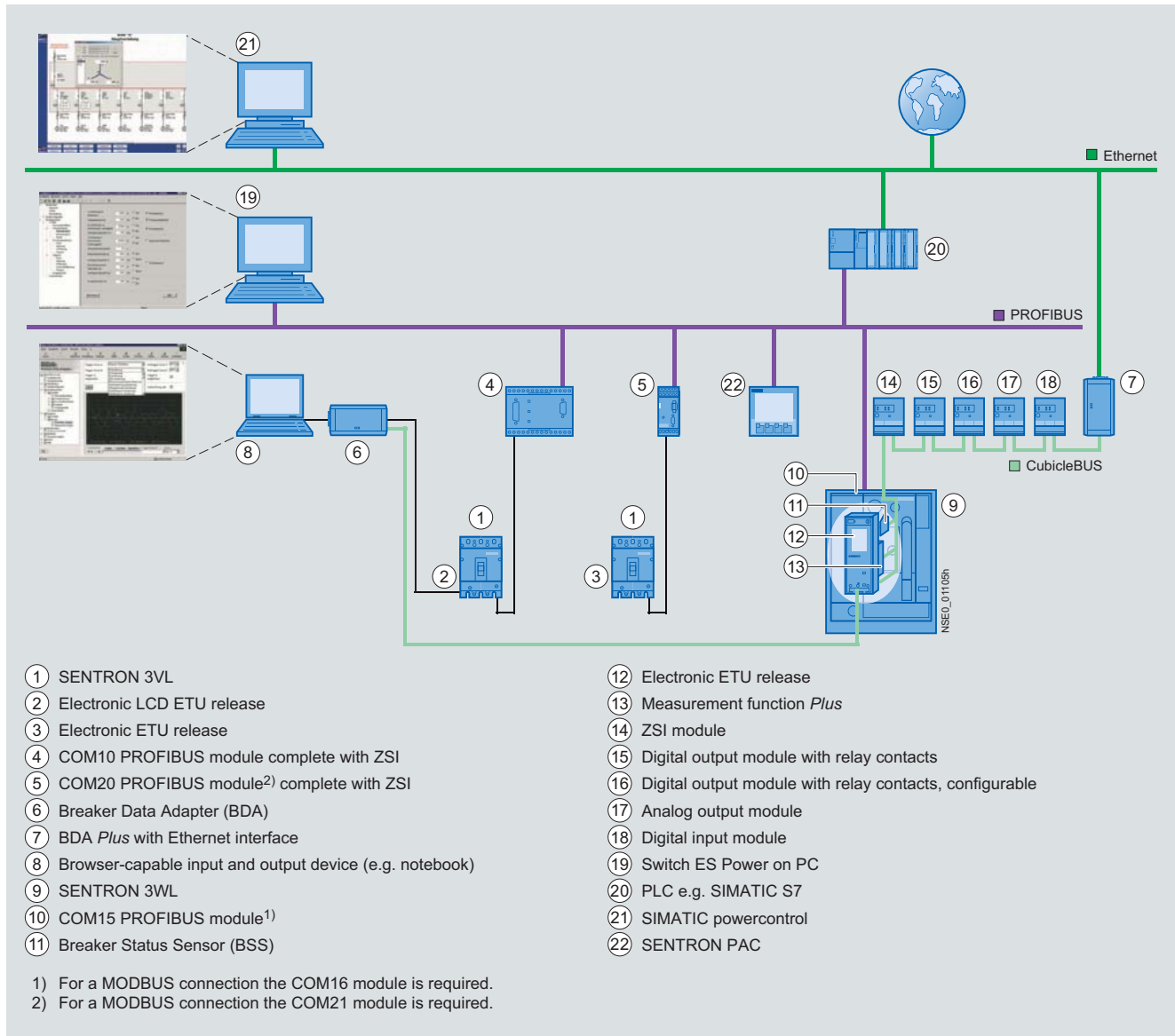
Superior individual products integrated into uniform power distribution systems - up to and including industry-specific industrial and infrastructure solutions



- | | |
|---|---|
| ① Guide frame (pages 15/30 to 15/33) | ⑬ Transparent panel, function insert (page 15/35) |
| ② Main circuit connection front, flange, horizontal, vertical (pages 15/45 and 15/46) | ⑭ EMERGENCY-STOP pushbutton, key operated (page 15/38) |
| ③ Position signaling switch (pages 15/26 and 15/38) | ⑮ Motorized operating mechanism (page 15/40) |
| ④ Grounding contact, leading (page 15/42) | |
| ⑤ Shutter (page 15/41) | |
| ⑥ COM15 PROFIBUS module or COM16 MODBUS module (page 15/44) | |
| ⑦ External CubicleBUS module (page 15/43) | |
| ⑧ Closing solenoid, auxiliary release (page 15/40) | |
| ⑨ Auxiliary conductor plug-in system (page 15/39) | |
| ⑩ Auxiliary switch block (page 15/40) | |
| ⑪ Door sealing frame (page 15/41) | |
| ⑫ Interlocking set for base plate (page 15/36) | |
| ⑬ Transparent panel, function insert (page 15/35) | |
| ⑭ EMERGENCY-STOP pushbutton, key operated (page 15/38) | |
| ⑮ Motorized operating mechanism (page 15/40) | |
| | ⑯ Remote reset solenoid (page 15/35) |
| | ⑰ Breaker status sensor (BSS) (page 15/44) |
| | ⑱ Protective device with device holder, electronic release (ETU) (page 15/34) |
| | ⑲ Remote reset solenoid (page 15/35) |
| | ⑳ Breaker data adapter (BDA) (page 15/43) |
| | ㉑ Four-line display (page 15/34) |
| | ㉒ Ground-fault protection module (page 15/34) |
| | ㉓ Rated current module (page 15/34) |
| | ㉔ Measuring function module (page 15/34) |
| | ㉕ Circuit breaker (pages 15/7 to 15/22) |

NSE0_01887a

Communication-capable circuit breakers (with ETU45B or ETU76B electronic release)



Features

- Coordinated communication concept using the PROFIBUS DP or MODBUS, ranging from 16 A to 6300 A with SENTRON 3VL and SENTRON 3WL
- The high level of modularity of circuit breakers and accessories allows easy retrofitting of all communication components
- Significant additional benefits due to the possibility of linking up external input and output modules to the circuit breaker-internal **CubicleBUS** of the SENTRON 3WL inside the switchgear
- Innovative software products for parameterization, operation, monitoring, and diagnostics of SENTRON circuit breakers, both locally or via PROFIBUS DP, MODBUS or Ethernet/Intranet/Internet
- Complete integration of the SENTRON circuit breakers into the Totally Integrated Power and Totally Integrated Automation solutions

Communication:

- For air circuit breakers with optional communication function (ETU45B or ETU76B electronic release) see pages 15/7 to 15/22.
- For accessories see pages 15/43 and 15/44.
- For more information see also the Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

General data

Benefits

Low space requirements

The SENTRON 3WL devices require very little space. Size I devices (up to 1600 A) fit into a 400 mm wide switchgear panel. Size III devices (up to 6300 A) are the smallest of their kind and with their construction width of 704 mm fit into a 800 mm wide switchgear panel.

Modular design

Components like auxiliary releases, motorized operating mechanisms, electronic releases, current sensors, auxiliary circuit signaling switches, automatic reset devices, interlocks and engagement operating mechanisms can all be exchanged or retrofitted at a later stage, thus allowing the circuit breaker to be adapted to new, changing requirements.

The main contacts can all be replaced in order to increase the endurance of the circuit breaker.

Retrofittable modules for electronic releases

Modularity is one of the main features of the new SENTRON 3WL circuit breakers.

Special LCDs, ground-fault modules, rated current modules and communication modules for the electronic releases are available for fast and easy retrofitting and adaptation to changing requirements.

Communication

The use of modern communication-capable circuit breakers opens up completely new possibilities in terms of start-up, parameterization, diagnostics, maintenance and operation. This allows many different ways of reducing costs and improving productivity in industrial plants, buildings and infrastructure projects to be achieved.

- Fast and reliable parameterization
- Timely information and response can prevent plant stoppages
- Effective diagnostics management
- Measured values are the basis for efficient load management, for drawing up power demand profiles and for assigning energy to cost centers
- Preventive maintenance reduces the risk of expansive plant down-times

Application

- As incoming-feeder, distribution, tie, and outgoing-feeder circuit breakers in electrical installations
- For switching and protecting motors, capacitors, generators, transformers, busbars and cables

Due to the reinforced use of electronic I&C systems, the demands made on air circuit breakers in terms of operator control and monitoring of network processes have increased.

The extensive, coordinated SENTRON range of devices covers all applications between 16 A and 6300 A with compact and air circuit breakers.

The AC devices are available as circuit breakers and non-automatic air circuit breakers. DC devices are only available as non-automatic air circuit breakers.

Standards

SENTRON 3WL circuit breakers comply with:

- IEC 60947-2
- DIN VDE 0660 Part 101
- Climate-proof according to IEC 60068-2-30.

Versions with UL 489 also available, [see Catalog LV 16](#).

For further standards, [see Appendix](#).

Conductor cross-sections

Size		I			II					
Type		Up to 3WL11 10	3WL11 12	3WL11 16	3WL12 08	3WL12 10	3WL12 12	3WL12 16	3WL12 20	
Permissible load At rear horizontal main connections	• Up to 55 °C (Cu bare)	A 1000	1250	1600	800	1000	1250	1600	2000	
	• Up to 60 °C (Cu bare) ¹⁾	A 1000	1250	1600	800	1000	1250	1600	2000	
	• Up to 70 °C (Cu black painted) ¹⁾	A 1000	1210	1490	800	1000	1250	1600	2000	
Main conductor minimum cross-sections	• Copper bars, bare	Unit(s) mm ²	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	3 × 50 × 10
	• Copper bars, painted black	Unit(s) mm ²	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	1 × 50 × 10	1 × 60 × 10	2 × 40 × 10	2 × 50 × 10	3 × 50 × 10

Size		II			III			
Type		3WL12 25	3WL12 32	3WL12 40	3WL13 40	3WL13 50	3WL13 63	
Permissible load	• Up to 55 °C (Cu bare)	A 2500	3200	3950	4000	5000	5920	
	• Up to 60 °C (Cu bare) ¹⁾	A 2500	3020	3810	4000	5000	5810	
	• Up to 70 °C (Cu black painted) ¹⁾	A 2280	2870	3600	4000	5000	5500	
Main conductor minimum cross-sections	• Copper bars, bare	Unit(s) mm ²	2 × 100 × 10	3 × 100 × 10	4 × 120 × 10	4 × 100 × 10	6 × 100 × 10	6 × 120 × 10
	• Copper bars, painted black	Unit(s) mm ²	2 × 100 × 10	3 × 100 × 10	4 × 100 × 10 ²⁾	4 × 100 × 10	6 × 100 × 10	6 × 120 × 10

¹⁾ ETU76B with graphics display can be used up to max. 55 °C.

²⁾ Minimum main conductor cross-sections for 4-pole withdrawable circuit breakers: 4 × 120 × 10 mm.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, fixed-mounted versions

Selection and ordering data

Size	Max. rated circuit breaker current $I_{n \text{ max.}}$	Rated current ¹⁾ I_n	I_{cu} up to 55/66 kA at 500 V, ECO switching capacity N		(N)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	A	kA	DT	Order No. For Order No. supplements, see page 15/23	Basic price per PU				
Horizontal main circuit connection									
I	630	630	55	B	3WL11 06-2□□32-....	1	1 unit	103	43.000
I	800	800	55	B	3WL11 08-2□□32-....	1	1 unit	103	43.000
I	1000	1000	55	B	3WL11 10-2□□32-....	1	1 unit	103	43.000
I	1250	1250	55	B	3WL11 12-2□□32-....	1	1 unit	103	43.000
I	1600	1600	55	B	3WL11 16-2□□32-....	1	1 unit	103	43.000
II	800	800	66	B	3WL12 08-2□□32-....	1	1 unit	103	56.000
II	1000	1000	66	B	3WL12 10-2□□32-....	1	1 unit	103	56.000
II	1250	1250	66	B	3WL12 12-2□□32-....	1	1 unit	103	56.000
II	1600	1600	66	B	3WL12 16-2□□32-....	1	1 unit	103	56.000
II	2000	2000	66	B	3WL12 20-2□□32-....	1	1 unit	103	56.000
II	2500	2500	66	B	3WL12 25-2□□32-....	1	1 unit	103	59.000
II	3200	3200	66	B	3WL12 32-2□□32-....	1	1 unit	103	64.000
Vertical main circuit connection									
I	630	630	55	B	3WL11 06-2□□31-....	1	1 unit	103	43.000
I	800	800	55	B	3WL11 08-2□□31-....	1	1 unit	103	43.000
I	1000	1000	55	B	3WL11 10-2□□31-....	1	1 unit	103	43.000
I	1250	1250	55	B	3WL11 12-2□□31-....	1	1 unit	103	43.000
I	1600	1600	55	B	3WL11 16-2□□31-....	1	1 unit	103	43.000
II	800	800	66	B	3WL12 08-2□□31-....	1	1 unit	103	56.000
II	1000	1000	66	B	3WL12 10-2□□31-....	1	1 unit	103	56.000
II	1250	1250	66	B	3WL12 12-2□□31-....	1	1 unit	103	56.000
II	1600	1600	66	B	3WL12 16-2□□31-....	1	1 unit	103	56.000
II	2000	2000	66	B	3WL12 20-2□□31-....	1	1 unit	103	56.000
II	2500	2500	66	B	3WL12 25-2□□31-....	1	1 unit	103	59.000
II	3200	3200	66	B	3WL12 32-2□□31-....	1	1 unit	103	64.000
II	4000	4000	66	B	3WL12 40-2□□31-....	1	1 unit	103	85.000
Front main circuit connection, single hole									
I	630	630	55	B	3WL11 06-2□□33-....	1	1 unit	103	43.000
I	800	800	55	B	3WL11 08-2□□33-....	1	1 unit	103	43.000
I	1000	1000	55	B	3WL11 10-2□□33-....	1	1 unit	103	43.000
I	1250	1250	55	B	3WL11 12-2□□33-....	1	1 unit	103	43.000
I	1600	1600	55	B	3WL11 16-2□□33-....	1	1 unit	103	43.000
II	800	800	66	B	3WL12 08-2□□33-....	1	1 unit	103	56.000
II	1000	1000	66	B	3WL12 10-2□□33-....	1	1 unit	103	56.000
II	1250	1250	66	B	3WL12 12-2□□33-....	1	1 unit	103	56.000
II	1600	1600	66	B	3WL12 16-2□□33-....	1	1 unit	103	56.000
II	2000	2000	66	B	3WL12 20-2□□33-....	1	1 unit	103	56.000
II	2500	2500	66	B	3WL12 25-2□□33-....	1	1 unit	103	59.000
II	3200	3200	66	B	3WL12 32-2□□33-....	1	1 unit	103	64.000
Front main circuit connection, double hole									
I	630	630	55	B	3WL11 06-2□□34-....	1	1 unit	103	43.000
I	800	800	55	B	3WL11 08-2□□34-....	1	1 unit	103	43.000
I	1000	1000	55	B	3WL11 10-2□□34-....	1	1 unit	103	43.000
I	1250	1250	55	B	3WL11 12-2□□34-....	1	1 unit	103	43.000
I	1600	1600	55	B	3WL11 16-2□□34-....	1	1 unit	103	43.000
II	800	800	66	B	3WL12 08-2□□34-....	1	1 unit	103	56.000
II	1000	1000	66	B	3WL12 10-2□□34-....	1	1 unit	103	56.000
II	1250	1250	66	B	3WL12 12-2□□34-....	1	1 unit	103	56.000
II	1600	1600	66	B	3WL12 16-2□□34-....	1	1 unit	103	56.000
II	2000	2000	66	B	3WL12 20-2□□34-....	1	1 unit	103	56.000
II	2500	2500	66	B	3WL12 25-2□□34-....	1	1 unit	103	59.000
II	3200	3200	66	B	3WL12 32-2□□34-....	1	1 unit	103	64.000
Non-automatic circuit breakers²⁾					Order No. supplements	Add. price			
Without electronic release					AA	None			
Electronic releases									
Versions without ground-fault protection									
ETU15B: Protection functions LI					BB	x			
ETU25B: Protection functions LSI					CB	x			
ETU45B: Protection functions LSIN ³⁾					EB	x			
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x			
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x			
Versions with ground-fault protection									
ETU27B: Protection functions LSING ⁴⁾					DG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x			
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x			
Standard Order No. supplements (for further Order No. supplements, see page 15/23)									
Manual operating mechanism with mechanical closing					1AA2	None			
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO									

x = Additional price

For footnotes see page 15/10.

* You can order this quantity or a multiple thereof.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, fixed-mounted versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 66/80 kA at 500 V, standard switching capacity S		Order No. For Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			kA	DT						
Horizontal main circuit connection										
I	630	630	66	B	3WL11 06-3□□32-....		1	1 unit	103	43.000
I	800	800	66	B	3WL11 08-3□□32-....		1	1 unit	103	43.000
I	1000	1000	66	B	3WL11 10-3□□32-....		1	1 unit	103	43.000
I	1250	1250	66	B	3WL11 12-3□□32-....		1	1 unit	103	43.000
I	1600	1600	66	B	3WL11 16-3□□32-....		1	1 unit	103	43.000
II	800	800	80	B	3WL12 08-3□□32-....		1	1 unit	103	56.000
II	1000	1000	80	B	3WL12 10-3□□32-....		1	1 unit	103	56.000
II	1250	1250	80	B	3WL12 12-3□□32-....		1	1 unit	103	56.000
II	1600	1600	80	B	3WL12 16-3□□32-....		1	1 unit	103	56.000
II	2000	2000	80	B	3WL12 20-3□□32-....		1	1 unit	103	56.000
II	2500	2500	80	B	3WL12 25-3□□32-....		1	1 unit	103	59.000
II	3200	3200	80	B	3WL12 32-3□□32-....		1	1 unit	103	64.000
Vertical main circuit connection										
I	630	630	66	B	3WL11 06-3□□31-....		1	1 unit	103	43.000
I	800	800	66	B	3WL11 08-3□□31-....		1	1 unit	103	43.000
I	1000	1000	66	B	3WL11 10-3□□31-....		1	1 unit	103	43.000
I	1250	1250	66	B	3WL11 12-3□□31-....		1	1 unit	103	43.000
I	1600	1600	66	B	3WL11 16-3□□31-....		1	1 unit	103	43.000
II	800	800	80	B	3WL12 08-3□□31-....		1	1 unit	103	56.000
II	1000	1000	80	B	3WL12 10-3□□31-....		1	1 unit	103	56.000
II	1250	1250	80	B	3WL12 12-3□□31-....		1	1 unit	103	56.000
II	1600	1600	80	B	3WL12 16-3□□31-....		1	1 unit	103	56.000
II	2000	2000	80	B	3WL12 20-3□□31-....		1	1 unit	103	56.000
II	2500	2500	80	B	3WL12 25-3□□31-....		1	1 unit	103	59.000
II	3200	3200	80	B	3WL12 32-3□□31-....		1	1 unit	103	64.000
II	4000	4000	80	B	3WL12 40-3□□31-....		1	1 unit	103	85.000
Front main circuit connection, single hole										
I	630	630	66	B	3WL11 06-3□□33-....		1	1 unit	103	43.000
I	800	800	66	B	3WL11 08-3□□33-....		1	1 unit	103	43.000
I	1000	1000	66	B	3WL11 10-3□□33-....		1	1 unit	103	43.000
I	1250	1250	66	B	3WL11 12-3□□33-....		1	1 unit	103	43.000
I	1600	1600	66	B	3WL11 16-3□□33-....		1	1 unit	103	43.000
II	800	800	80	B	3WL12 08-3□□33-....		1	1 unit	103	56.000
II	1000	1000	80	B	3WL12 10-3□□33-....		1	1 unit	103	56.000
II	1250	1250	80	B	3WL12 12-3□□33-....		1	1 unit	103	56.000
II	1600	1600	80	B	3WL12 16-3□□33-....		1	1 unit	103	56.000
II	2000	2000	80	B	3WL12 20-3□□33-....		1	1 unit	103	56.000
II	2500	2500	80	B	3WL12 25-3□□33-....		1	1 unit	103	59.000
II	3200	3200	80	B	3WL12 32-3□□33-....		1	1 unit	103	64.000
Front main circuit connection, double hole										
I	630	630	66	B	3WL11 06-3□□34-....		1	1 unit	103	43.000
I	800	800	66	B	3WL11 08-3□□34-....		1	1 unit	103	43.000
I	1000	1000	66	B	3WL11 10-3□□34-....		1	1 unit	103	43.000
I	1250	1250	66	B	3WL11 12-3□□34-....		1	1 unit	103	43.000
I	1600	1600	66	B	3WL11 16-3□□34-....		1	1 unit	103	43.000
II	800	800	80	B	3WL12 08-3□□34-....		1	1 unit	103	56.000
II	1000	1000	80	B	3WL12 10-3□□34-....		1	1 unit	103	56.000
II	1250	1250	80	B	3WL12 12-3□□34-....		1	1 unit	103	56.000
II	1600	1600	80	B	3WL12 16-3□□34-....		1	1 unit	103	56.000
II	2000	2000	80	B	3WL12 20-3□□34-....		1	1 unit	103	56.000
II	2500	2500	80	B	3WL12 25-3□□34-....		1	1 unit	103	59.000
II	3200	3200	80	B	3WL12 32-3□□34-....		1	1 unit	103	64.000
Non-automatic circuit breakers²⁾ Without electronic release					Order No. supplements	AA	None			
Electronic releases										
Versions without ground-fault protection										
ETU15B: Protection functions LI						BB	x			
ETU25B: Protection functions LSI						CB	x			
ETU45B: Protection functions LSIN ³⁾						EB	x			
ETU45B: Protection functions LSIN ³⁾ with 4-line display						FB	x			
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display						NB	x			
Versions with ground-fault protection										
ETU27B: Protection functions LSING ⁴⁾						DG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾						EG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display						FG	x			
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display						NG	x			
Standard Order No. supplements (for further Order No. supplements, see page 15/23)										
Manual operating mechanism with mechanical closing						1AA2	None			
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										

x = Additional price

For footnotes see page 15/10.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, fixed-mounted versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 100 kA at 500 V, high switching capacity H		Order No. Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			kA	DT						
Horizontal main circuit connection										
II	800	800	100	B	3WL12 08-4□□32-....		1	1 unit	103	56.000
II	1000	1000	100	B	3WL12 10-4□□32-....		1	1 unit	103	56.000
II	1250	1250	100	B	3WL12 12-4□□32-....		1	1 unit	103	56.000
II	1600	1600	100	B	3WL12 16-4□□32-....		1	1 unit	103	56.000
II	2000	2000	100	B	3WL12 20-4□□32-....		1	1 unit	103	56.000
II	2500	2500	100	B	3WL12 25-4□□32-....		1	1 unit	103	59.000
II	3200	3200	100	B	3WL12 32-4□□32-....		1	1 unit	103	64.000
III	4000	4000	100	B	3WL13 40-4□□32-....		1	1 unit	103	82.000
III	5000	5000	100	B	3WL13 50-4□□32-....		1	1 unit	103	82.000
Vertical main circuit connection										
II	800	800	100	B	3WL12 08-4□□31-....		1	1 unit	103	56.000
II	1000	1000	100	B	3WL12 10-4□□31-....		1	1 unit	103	56.000
II	1250	1250	100	B	3WL12 12-4□□31-....		1	1 unit	103	56.000
II	1600	1600	100	B	3WL12 16-4□□31-....		1	1 unit	103	56.000
II	2000	2000	100	B	3WL12 20-4□□31-....		1	1 unit	103	56.000
II	2500	2500	100	B	3WL12 25-4□□31-....		1	1 unit	103	59.000
II	3200	3200	100	B	3WL12 32-4□□31-....		1	1 unit	103	64.000
II	4000	4000	100	B	3WL12 40-4□□31-....		1	1 unit	103	85.000
III	4000	4000	100	B	3WL13 40-4□□31-....		1	1 unit	103	82.000
III	5000	5000	100	B	3WL13 50-4□□31-....		1	1 unit	103	82.000
III	6300	6300	100	B	3WL13 63-4□□31-....		1	1 unit	103	90.000
Front main circuit connection, single hole										
II	800	800	100	B	3WL12 08-4□□33-....		1	1 unit	103	56.000
II	1000	1000	100	B	3WL12 10-4□□33-....		1	1 unit	103	56.000
II	1250	1250	100	B	3WL12 12-4□□33-....		1	1 unit	103	56.000
II	1600	1600	100	B	3WL12 16-4□□33-....		1	1 unit	103	56.000
II	2000	2000	100	B	3WL12 20-4□□33-....		1	1 unit	103	56.000
II	2500	2500	100	B	3WL12 25-4□□33-....		1	1 unit	103	59.000
II	3200	3200	100	B	3WL12 32-4□□33-....		1	1 unit	103	64.000
III	4000	4000	100	B	3WL13 40-4□□33-....		1	1 unit	103	82.000
Front main circuit connection, double hole										
II	800	800	100	B	3WL12 08-4□□34-....		1	1 unit	103	56.000
II	1000	1000	100	B	3WL12 10-4□□34-....		1	1 unit	103	56.000
II	1250	1250	100	B	3WL12 12-4□□34-....		1	1 unit	103	56.000
II	1600	1600	100	B	3WL12 16-4□□34-....		1	1 unit	103	56.000
II	2000	2000	100	B	3WL12 20-4□□34-....		1	1 unit	103	56.000
II	2500	2500	100	B	3WL12 25-4□□34-....		1	1 unit	103	59.000
II	3200	3200	100	B	3WL12 32-4□□34-....		1	1 unit	103	64.000
III	4000	4000	100	B	3WL13 40-4□□34-....		1	1 unit	103	82.000
Non-automatic circuit breakers²⁾										
Without electronic release					Order No. supplements	Add. price				
					AA	None				
Electronic releases										
Versions without ground-fault protection										
ETU15B: Protection functions LI ⁶⁾					BB	x				
ETU25B: Protection functions LSI					CB	x				
ETU45B: Protection functions LSIN ³⁾					EB	x				
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x				
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x				
Versions with ground-fault protection										
ETU27B: Protection functions LSING ⁴⁾					DG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x				
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x				
Standard Order No. supplements (for further Order No. supplements, see page 15/23)										
Manual operating mechanism with mechanical closing					1AA2	None				
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										
x = Additional price										
For footnotes see page 15/10.										

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, fixed-mounted versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 150 kA at 500 V, very high switching capacity C		Order No. Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			kA	DT						
Horizontal main circuit connection										
III	4000	4000	150	B	3WL13 40-5□□32-....		1	1 unit	103	82.000
III	5000	5000	150	B	3WL13 50-5□□32-....		1	1 unit	103	82.000
Vertical main circuit connection										
III	4000	4000	150	B	3WL13 40-5□□31-....		1	1 unit	103	82.000
III	5000	5000	150	B	3WL13 50-5□□31-....		1	1 unit	103	82.000
III	6300	6300	150	B	3WL13 63-5□□31-....		1	1 unit	103	90.000
Non-automatic circuit breakers²⁾ Without electronic release					Order No. supplements	Add. price				
					AA	None				
Electronic releases										
Versions without ground-fault protection										
ETU25B: Protection functions LSI					CB	x				
ETU45B: Protection functions LSIN ³⁾					EB	x				
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x				
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x				
Versions with ground-fault protection										
ETU27B: Protection functions LSING ⁴⁾					DG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x				
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x				
Standard Order No. supplements (for further Order No. supplements, see page 15/23)										
Manual operating mechanism with mechanical closing					1AA2	None				
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										

x = Additional price

Footnotes for pages 15/7 to 15/10:

- The rated current is determined by the rated current module. For the standard version, the supplied module is equal to the maximum rated current. If a lower rated current is required, adaptation by order code on page 15/24.
- For permissible rated short-time current I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic air circuit breakers see page 15/3.
- Current transformers for protection of the N conductor and current transformers for detection of the ground-fault current in the grounded neutral point of the transformer are to be ordered separately, see page 15/34.

4) Current transformers for protection of the N conductor are to be ordered separately, see page 15/34.

5) ETU45B and ETU76B with ground-fault protection module GFM AT (alarm and tripping), see page 15/34.

6) ETU15B cannot be used with 3WL circuit breakers, size III.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, withdrawable versions

Selection and ordering data

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 55/66 kA at 500 V, ECO switching capacity N		(N)	Order No. For Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	A	kA	DT							kg	
Without guide frames (for guide frames, see page 15/30 to 15/33)											
I	630	630	55	B	3WL11 06-2□□35-....		1	1 unit	103	45.000	
I	800	800	55	B	3WL11 08-2□□35-....		1	1 unit	103	45.000	
I	1000	1000	55	B	3WL11 10-2□□35-....		1	1 unit	103	45.000	
I	1250	1250	55	B	3WL11 12-2□□35-....		1	1 unit	103	45.000	
I	1600	1600	55	B	3WL11 16-2□□35-....		1	1 unit	103	45.000	
II	800	800	66	B	3WL12 08-2□□35-....		1	1 unit	103	60.000	
II	1000	1000	66	B	3WL12 10-2□□35-....		1	1 unit	103	60.000	
II	1250	1250	66	B	3WL12 12-2□□35-....		1	1 unit	103	60.000	
II	1600	1600	66	B	3WL12 16-2□□35-....		1	1 unit	103	60.000	
II	2000	2000	66	B	3WL12 20-2□□35-....		1	1 unit	103	60.000	
II	2500	2500	66	B	3WL12 25-2□□35-....		1	1 unit	103	63.000	
II	3200	3200	66	B	3WL12 32-2□□35-....		1	1 unit	103	68.000	
With guide frames, horizontal main circuit connection											
I	630	630	55	B	3WL11 06-2□□36-....		1	1 unit	103	70.000	
I	800	800	55	B	3WL11 08-2□□36-....		1	1 unit	103	70.000	
I	1000	1000	55	B	3WL11 10-2□□36-....		1	1 unit	103	70.000	
I	1250	1250	55	B	3WL11 12-2□□36-....		1	1 unit	103	70.000	
I	1600	1600	55	B	3WL11 16-2□□36-....		1	1 unit	103	70.000	
II	800	800	66	B	3WL12 08-2□□36-....		1	1 unit	103	91.000	
II	1000	1000	66	B	3WL12 10-2□□36-....		1	1 unit	103	91.000	
II	1250	1250	66	B	3WL12 12-2□□36-....		1	1 unit	103	91.000	
II	1600	1600	66	B	3WL12 16-2□□36-....		1	1 unit	103	91.000	
II	2000	2000	66	B	3WL12 20-2□□36-....		1	1 unit	103	91.000	
II	2500	2500	66	B	3WL12 25-2□□36-....		1	1 unit	103	102.000	
II	3200	3200	66	B	3WL12 32-2□□36-....		1	1 unit	103	113.000	
With guide frames, vertical main circuit connection											
I	630	630	55	B	3WL11 06-2□□37-....		1	1 unit	103	70.000	
I	800	800	55	B	3WL11 08-2□□37-....		1	1 unit	103	70.000	
I	1000	1000	55	B	3WL11 10-2□□37-....		1	1 unit	103	70.000	
I	1250	1250	55	B	3WL11 12-2□□37-....		1	1 unit	103	70.000	
I	1600	1600	55	B	3WL11 16-2□□37-....		1	1 unit	103	70.000	
II	800	800	66	B	3WL12 08-2□□37-....		1	1 unit	103	91.000	
II	1000	1000	66	B	3WL12 10-2□□37-....		1	1 unit	103	91.000	
II	1250	1250	66	B	3WL12 12-2□□37-....		1	1 unit	103	91.000	
II	1600	1600	66	B	3WL12 16-2□□37-....		1	1 unit	103	91.000	
II	2000	2000	66	B	3WL12 20-2□□37-....		1	1 unit	103	91.000	
II	2500	2500	66	B	3WL12 25-2□□37-....		1	1 unit	103	102.000	
II	3200	3200	66	B	3WL12 32-2□□37-....		1	1 unit	103	113.000	
II	4000	4000	66	B	3WL12 40-2□□37-....		1	1 unit	103	121.000	
With guide frames, connecting flanges											
I	630	630	55	B	3WL11 06-2□□38-....		1	1 unit	103	70.000	
I	800	800	55	B	3WL11 08-2□□38-....		1	1 unit	103	70.000	
I	1000	1000	55	B	3WL11 10-2□□38-....		1	1 unit	103	70.000	
I	1250	1250	55	B	3WL11 12-2□□38-....		1	1 unit	103	70.000	
I	1600	1600	55	B	3WL11 16-2□□38-....		1	1 unit	103	70.000	
II	800	800	66	B	3WL12 08-2□□38-....		1	1 unit	103	91.000	
II	1000	1000	66	B	3WL12 10-2□□38-....		1	1 unit	103	91.000	
II	1250	1250	66	B	3WL12 12-2□□38-....		1	1 unit	103	91.000	
II	1600	1600	66	B	3WL12 16-2□□38-....		1	1 unit	103	91.000	
II	2000	2000	66	B	3WL12 20-2□□38-....		1	1 unit	103	91.000	
II	2500	2500	66	B	3WL12 25-2□□38-....		1	1 unit	103	102.000	
II	3200	3200	66	B	3WL12 32-2□□38-....		1	1 unit	103	113.000	
Non-automatic circuit breakers²⁾											
Without electronic release						Order No. supplements	AA	Add. price		None	
Electronic releases											
Versions without ground-fault protection											
ETU15B: Protection functions LI							BB		x		
ETU25B: Protection functions LSI							CB		x		
ETU45B: Protection functions LSIN ³⁾							EB		x		
ETU45B: Protection functions LSIN ³⁾ with 4-line display							FB		x		
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display							NB		x		
Versions with ground-fault protection											
ETU27B: Protection functions LSING ⁴⁾							DG		x		
ETU45B: Protection functions LSING ³⁾⁵⁾							EG		x		
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display							FG		x		
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display							NG		x		
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)											
Manual operating mechanism with mechanical closing							1AA2	Add. price		None	
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO											

x = Additional price

For footnotes see page 15/14.

* You can order this quantity or a multiple thereof.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, withdrawable versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 66/80 kA at 500 V, standard switching capacity S		(S)	Order No. For Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	A	kA	DT								
Without guide frames (for guide frames, see page 15/30 to 15/33)											
I	630	630	66	B	3WL11 06-3□□35-....		1	1 unit	103	45.000	
I	800	800	66	B	3WL11 08-3□□35-....		1	1 unit	103	45.000	
I	1000	1000	66	B	3WL11 10-3□□35-....		1	1 unit	103	45.000	
I	1250	1250	66	B	3WL11 12-3□□35-....		1	1 unit	103	45.000	
I	1600	1600	66	B	3WL11 16-3□□35-....		1	1 unit	103	45.000	
II	800	800	80	B	3WL12 08-3□□35-....		1	1 unit	103	60.000	
II	1000	1000	80	B	3WL12 10-3□□35-....		1	1 unit	103	60.000	
II	1250	1250	80	B	3WL12 12-3□□35-....		1	1 unit	103	60.000	
II	1600	1600	80	B	3WL12 16-3□□35-....		1	1 unit	103	60.000	
II	2000	2000	80	B	3WL12 20-3□□35-....		1	1 unit	103	60.000	
II	2500	2500	80	B	3WL12 25-3□□35-....		1	1 unit	103	63.000	
II	3200	3200	80	B	3WL12 32-3□□35-....		1	1 unit	103	68.000	
With guide frames, horizontal main circuit connection											
I	630	630	66	B	3WL11 06-3□□36-....		1	1 unit	103	70.000	
I	800	800	66	B	3WL11 08-3□□36-....		1	1 unit	103	70.000	
I	1000	1000	66	B	3WL11 10-3□□36-....		1	1 unit	103	70.000	
I	1250	1250	66	B	3WL11 12-3□□36-....		1	1 unit	103	70.000	
I	1600	1600	66	B	3WL11 16-3□□36-....		1	1 unit	103	70.000	
II	800	800	80	B	3WL12 08-3□□36-....		1	1 unit	103	91.000	
II	1000	1000	80	B	3WL12 10-3□□36-....		1	1 unit	103	91.000	
II	1250	1250	80	B	3WL12 12-3□□36-....		1	1 unit	103	91.000	
II	1600	1600	80	B	3WL12 16-3□□36-....		1	1 unit	103	91.000	
II	2000	2000	80	B	3WL12 20-3□□36-....		1	1 unit	103	91.000	
II	2500	2500	80	B	3WL12 25-3□□36-....		1	1 unit	103	102.000	
II	3200	3200	80	B	3WL12 32-3□□36-....		1	1 unit	103	113.000	
With guide frames, vertical main circuit connection											
I	630	630	66	B	3WL11 06-3□□37-....		1	1 unit	103	70.000	
I	800	800	66	B	3WL11 08-3□□37-....		1	1 unit	103	70.000	
I	1000	1000	66	B	3WL11 10-3□□37-....		1	1 unit	103	70.000	
I	1250	1250	66	B	3WL11 12-3□□37-....		1	1 unit	103	70.000	
I	1600	1600	66	B	3WL11 16-3□□37-....		1	1 unit	103	70.000	
II	800	800	80	B	3WL12 08-3□□37-....		1	1 unit	103	91.000	
II	1000	1000	80	B	3WL12 10-3□□37-....		1	1 unit	103	91.000	
II	1250	1250	80	B	3WL12 12-3□□37-....		1	1 unit	103	91.000	
II	1600	1600	80	B	3WL12 16-3□□37-....		1	1 unit	103	91.000	
II	2000	2000	80	B	3WL12 20-3□□37-....		1	1 unit	103	91.000	
II	2500	2500	80	B	3WL12 25-3□□37-....		1	1 unit	103	102.000	
II	3200	3200	80	B	3WL12 32-3□□37-....		1	1 unit	103	113.000	
II	4000	4000	80	B	3WL12 40-3□□37-....		1	1 unit	103	121.000	
With guide frames, connecting flanges											
I	630	630	66	B	3WL11 06-3□□38-....		1	1 unit	103	70.000	
I	800	800	66	B	3WL11 08-3□□38-....		1	1 unit	103	70.000	
I	1000	1000	66	B	3WL11 10-3□□38-....		1	1 unit	103	70.000	
I	1250	1250	66	B	3WL11 12-3□□38-....		1	1 unit	103	70.000	
I	1600	1600	66	B	3WL11 16-3□□38-....		1	1 unit	103	70.000	
II	800	800	80	B	3WL12 08-3□□38-....		1	1 unit	103	91.000	
II	1000	1000	80	B	3WL12 10-3□□38-....		1	1 unit	103	91.000	
II	1250	1250	80	B	3WL12 12-3□□38-....		1	1 unit	103	91.000	
II	1600	1600	80	B	3WL12 16-3□□38-....		1	1 unit	103	91.000	
II	2000	2000	80	B	3WL12 20-3□□38-....		1	1 unit	103	91.000	
II	2500	2500	80	B	3WL12 25-3□□38-....		1	1 unit	103	102.000	
II	3200	3200	80	B	3WL12 32-3□□38-....		1	1 unit	103	113.000	
Non-automatic circuit breakers²⁾						Order No. supplements	AA	None			
Without electronic release											
Electronic releases											
Versions without ground-fault protection											
ETU15B: Protection functions LI							BB	x			
ETU25B: Protection functions LSI							CB	x			
ETU45B: Protection functions LSIN ³⁾							EB	x			
ETU45B: Protection functions LSIN ³⁾ with 4-line display							FB	x			
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display							NB	x			
Versions with ground-fault protection											
ETU27B: Protection functions LSING ⁴⁾							DG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾							EG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display							FG	x			
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display							NG	x			
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)											
Manual operating mechanism with mechanical closing							1AA2	None			
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO											

x = Additional price

For footnotes see page 15/14.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, withdrawable versions

Size	Max. rated circuit breaker current $I_{n \text{ max.}}$	Rated current ¹⁾ I_n	I_{cu} up to 100 kA at 500 V, high switching capacity H		(H)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	A	A	kA	DT	Order No. Order No. supplements, see page 15/23	Basic price per PU			kg
Without guide frames (for guide frames, see page 15/30 to 15/33)									
II	800	800	100	B	3WL12 08-4□□35-....		1	1 unit	103 60.000
II	1000	1000	100	B	3WL12 10-4□□35-....		1	1 unit	103 60.000
II	1250	1250	100	B	3WL12 12-4□□35-....		1	1 unit	103 60.000
II	1600	1600	100	B	3WL12 16-4□□35-....		1	1 unit	103 60.000
II	2000	2000	100	B	3WL12 20-4□□35-....		1	1 unit	103 60.000
II	2500	2500	100	B	3WL12 25-4□□35-....		1	1 unit	103 63.000
II	3200	3200	100	B	3WL12 32-4□□35-....		1	1 unit	103 68.000
III	4000	4000	100	B	3WL13 40-4□□35-....		1	1 unit	103 88.000
III	5000	5000	100	B	3WL13 50-4□□35-....		1	1 unit	103 88.000
III	6300	6300	100	B	3WL13 63-4□□35-....		1	1 unit	103 96.000
With guide frames, horizontal main circuit connection									
II	800	800	100	B	3WL12 08-4□□36-....		1	1 unit	103 91.000
II	1000	1000	100	B	3WL12 10-4□□36-....		1	1 unit	103 91.000
II	1250	1250	100	B	3WL12 12-4□□36-....		1	1 unit	103 91.000
II	1600	1600	100	B	3WL12 16-4□□36-....		1	1 unit	103 91.000
II	2000	2000	100	B	3WL12 20-4□□36-....		1	1 unit	103 91.000
II	2500	2500	100	B	3WL12 25-4□□36-....		1	1 unit	103 102.000
II	3200	3200	100	B	3WL12 32-4□□36-....		1	1 unit	103 113.000
III	4000	4000	100	B	3WL13 40-4□□36-....		1	1 unit	103 148.000
III	5000	5000	100	B	3WL13 50-4□□36-....		1	1 unit	103 148.000
With guide frames, vertical main circuit connection									
II	800	800	100	B	3WL12 08-4□□37-....		1	1 unit	103 91.000
II	1000	1000	100	B	3WL12 10-4□□37-....		1	1 unit	103 91.000
II	1250	1250	100	B	3WL12 12-4□□37-....		1	1 unit	103 91.000
II	1600	1600	100	B	3WL12 16-4□□37-....		1	1 unit	103 91.000
II	2000	2000	100	B	3WL12 20-4□□37-....		1	1 unit	103 91.000
II	2500	2500	100	B	3WL12 25-4□□37-....		1	1 unit	103 102.000
II	3200	3200	100	B	3WL12 32-4□□37-....		1	1 unit	103 113.000
II	4000	4000	100	B	3WL12 40-4□□37-....		1	1 unit	103 121.000
III	4000	4000	100	B	3WL13 40-4□□37-....		1	1 unit	103 148.000
III	5000	5000	100	B	3WL13 50-4□□37-....		1	1 unit	103 148.000
III	6300	6300	100	B	3WL13 63-4□□37-....		1	1 unit	103 166.000
With guide frames, connecting flanges									
II	800	800	100	B	3WL12 08-4□□38-....		1	1 unit	103 91.000
II	1000	1000	100	B	3WL12 10-4□□38-....		1	1 unit	103 91.000
II	1250	1250	100	B	3WL12 12-4□□38-....		1	1 unit	103 91.000
II	1600	1600	100	B	3WL12 16-4□□38-....		1	1 unit	103 91.000
II	2000	2000	100	B	3WL12 20-4□□38-....		1	1 unit	103 91.000
II	2500	2500	100	B	3WL12 25-4□□38-....		1	1 unit	103 102.000
II	3200	3200	100	B	3WL12 32-4□□38-....		1	1 unit	103 113.000
III	4000	4000	100	B	3WL13 40-4□□38-....		1	1 unit	103 148.000
Non-automatic circuit breakers²⁾					Order No. supplements	Add. price			
Without electronic release					AA	None			
Electronic releases									
Versions without ground-fault protection					BB	x			
ETU15B: Protection functions LI ⁶⁾					CB	x			
ETU25B: Protection functions LS1					EB	x			
ETU45B: Protection functions LSIN ³⁾					FB	x			
ETU45B: Protection functions LSIN ³⁾ with 4-line display					NB	x			
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display									
Versions with ground-fault protection					DG	x			
ETU27B: Protection functions LSING ⁴⁾					EG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾					FG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					NG	x			
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display									
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)									
Manual operating mechanism with mechanical closing					1AA2	None			
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO									
x = Additional price									
For footnotes see page 15/14.									

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

3-pole, withdrawable versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 150 kA at 500 V, very high switching capacity C		Order No. Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	A	kA	DT							kg
Without guide frames (for guide frames, see page 15/30 to 15/33)										
III	4000	4000	150	B	3WL13 40-5□□35-....		1	1 unit	103	88.000
III	5000	5000	150	B	3WL13 50-5□□35-....		1	1 unit	103	88.000
III	6300	6300	150	B	3WL13 63-5□□35-....		1	1 unit	103	96.000
With guide frames, horizontal main circuit connection										
III	4000	4000	150	B	3WL13 40-5□□36-....		1	1 unit	103	148.000
III	5000	5000	150	B	3WL13 50-5□□36-....		1	1 unit	103	148.000
With guide frames, vertical main circuit connection										
III	4000	4000	150	B	3WL13 40-5□□37-....		1	1 unit	103	148.000
III	5000	5000	150	B	3WL13 50-5□□37-....		1	1 unit	103	148.000
III	6300	6300	150	B	3WL13 63-5□□37-....		1	1 unit	103	166.000
Non-automatic circuit breakers²⁾ Without electronic release					Order No. supplements	Add. price				
					AA	None				
Electronic releases										
Versions without ground-fault protection										
ETU25B: Protection functions LSI					CB	x				
ETU45B: Protection functions LSIN ³⁾					EB	x				
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x				
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x				
Versions with ground-fault protection										
ETU27B: Protection functions LSING ⁴⁾					DG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x				
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x				
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)										
Manual operating mechanism with mechanical closing					1AA2	None				
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										

x = Additional price

Footnotes for pages 15/11 to 15/14:

- The rated current is determined by the rated current module. For the standard version, the supplied module is equal to the maximum rated current. If a lower rated current is required, adaptation by order code on page 15/24.
- For permissible rated short-time current I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic air circuit breakers see page 15/3.
- Current transformers for protection of the N conductor and current transformers for detection of the ground-fault current in the grounded neutral point of the transformer are to be ordered separately, see page 15/34.

4) Current transformers for protection of the N conductor are to be ordered separately, see page 15/34.

5) ETU45B to ETU76B with ground-fault protection module GFM AT (alarm and tripping), see page 15/34.

6) ETU15B cannot be used with 3WL circuit breakers, size III.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, fixed-mounted versions

Selection and ordering data

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{CU} up to 55/66 kA at 500 V, ECO switching capacity N		(N)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
	A	A	kA	DT	Order No. Order No. supplements, see page 15/23	Basic price per PU				
Horizontal main circuit connection										
I	630	630	55	B	3WL11 06-2□□42-....		1	1 unit	103	50.000
I	800	800	55	B	3WL11 08-2□□42-....		1	1 unit	103	50.000
I	1000	1000	55	B	3WL11 10-2□□42-....		1	1 unit	103	50.000
I	1250	1250	55	B	3WL11 12-2□□42-....		1	1 unit	103	50.000
I	1600	1600	55	B	3WL11 16-2□□42-....		1	1 unit	103	50.000
II	800	800	66	B	3WL12 08-2□□42-....		1	1 unit	103	67.000
II	1000	1000	66	B	3WL12 10-2□□42-....		1	1 unit	103	67.000
II	1250	1250	66	B	3WL12 12-2□□42-....		1	1 unit	103	67.000
II	1600	1600	66	B	3WL12 16-2□□42-....		1	1 unit	103	67.000
II	2000	2000	66	B	3WL12 20-2□□42-....		1	1 unit	103	67.000
II	2500	2500	66	B	3WL12 25-2□□42-....		1	1 unit	103	71.000
II	3200	3200	66	B	3WL12 32-2□□42-....		1	1 unit	103	77.000
Vertical main circuit connection										
I	630	630	55	B	3WL11 06-2□□41-....		1	1 unit	103	50.000
I	800	800	55	B	3WL11 08-2□□41-....		1	1 unit	103	50.000
I	1000	1000	55	B	3WL11 10-2□□41-....		1	1 unit	103	50.000
I	1250	1250	55	B	3WL11 12-2□□41-....		1	1 unit	103	50.000
I	1600	1600	55	B	3WL11 16-2□□41-....		1	1 unit	103	50.000
II	800	800	66	B	3WL12 08-2□□41-....		1	1 unit	103	75.000
II	1000	1000	66	B	3WL12 10-2□□41-....		1	1 unit	103	75.000
II	1250	1250	66	B	3WL12 12-2□□41-....		1	1 unit	103	75.000
II	1600	1600	66	B	3WL12 16-2□□41-....		1	1 unit	103	75.000
II	2000	2000	66	B	3WL12 20-2□□41-....		1	1 unit	103	67.000
II	2500	2500	66	B	3WL12 25-2□□41-....		1	1 unit	103	71.000
II	3200	3200	66	B	3WL12 32-2□□41-....		1	1 unit	103	77.000
II	4000	4000	66	B	3WL12 40-2□□41-....		1	1 unit	103	103.000
Front main circuit connection, single hole										
I	630	630	55	B	3WL11 06-2□□43-....		1	1 unit	103	50.000
I	800	800	55	B	3WL11 08-2□□43-....		1	1 unit	103	50.000
I	1000	1000	55	B	3WL11 10-2□□43-....		1	1 unit	103	50.000
I	1250	1250	55	B	3WL11 12-2□□43-....		1	1 unit	103	50.000
I	1600	1600	55	B	3WL11 16-2□□43-....		1	1 unit	103	50.000
II	800	800	66	B	3WL12 08-2□□43-....		1	1 unit	103	67.000
II	1000	1000	66	B	3WL12 10-2□□43-....		1	1 unit	103	67.000
II	1250	1250	66	B	3WL12 12-2□□43-....		1	1 unit	103	67.000
II	1600	1600	66	B	3WL12 16-2□□43-....		1	1 unit	103	67.000
II	2000	2000	66	B	3WL12 20-2□□43-....		1	1 unit	103	67.000
II	2500	2500	66	B	3WL12 25-2□□43-....		1	1 unit	103	71.000
II	3200	3200	66	B	3WL12 32-2□□43-....		1	1 unit	103	77.000
Front main circuit connection, double hole										
I	630	630	55	B	3WL11 06-2□□44-....		1	1 unit	103	50.000
I	800	800	55	B	3WL11 08-2□□44-....		1	1 unit	103	50.000
I	1000	1000	55	B	3WL11 10-2□□44-....		1	1 unit	103	50.000
I	1250	1250	55	B	3WL11 12-2□□44-....		1	1 unit	103	50.000
I	1600	1600	55	B	3WL11 16-2□□44-....		1	1 unit	103	50.000
II	800	800	66	B	3WL12 08-2□□44-....		1	1 unit	103	67.000
II	1000	1000	66	B	3WL12 10-2□□44-....		1	1 unit	103	67.000
II	1250	1250	66	B	3WL12 12-2□□44-....		1	1 unit	103	67.000
II	1600	1600	66	B	3WL12 16-2□□44-....		1	1 unit	103	67.000
II	2000	2000	66	B	3WL12 20-2□□44-....		1	1 unit	103	67.000
II	2500	2500	66	B	3WL12 25-2□□44-....		1	1 unit	103	71.000
II	3200	3200	66	B	3WL12 32-2□□44-....		1	1 unit	103	77.000

Non-automatic circuit breakers²⁾

Without electronic release

Order No. supplements

Add. price

Electronic releases**Versions without ground-fault protection**

ETU15B: Protection functions LI
 ETU25B: Protection functions LSI
 ETU45B: Protection functions LSIN³⁾
 ETU45B: Protection functions LSIN³⁾ with 4-line display
 ETU76B: Protection functions LSIN³⁾ with pixel graphics display

Versions with ground-fault protection

ETU27B: Protection functions LSING⁴⁾
 ETU45B: Protection functions LSING³⁾⁵⁾
 ETU45B: Protection functions LSING³⁾⁵⁾ with 4-line display
 ETU76B: Protection functions LSING³⁾⁵⁾ with pixel graphics display

AA

None

BB

x

CB

x

EB

x

FB

x

NB

x

DG

x

EG

x

FG

x

NG

x

Standard Order No. supplements (for further Order No. supplements, see page 15/23)

Manual operating mechanism with mechanical closing
 Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO

1AA2

None

x = Additional price

For footnotes see page 15/18.

* You can order this quantity or a multiple thereof.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, fixed-mounted versions

Size	Max. rated circuit breaker current I_n max.		Rated current ¹⁾ I_n		I_{cu} up to 66/80 kA at 500 V, standard switching capacity S		S	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	A	A	kA	DT	Order No.	Basic price per PU					
Horizontal main circuit connection											
I	630	630	66	B	3WL11 06-3□□42-....			1	1 unit	103	50.000
I	800	800	66	B	3WL11 08-3□□42-....			1	1 unit	103	50.000
I	1000	1000	66	B	3WL11 10-3□□42-....			1	1 unit	103	50.000
I	1250	1250	66	B	3WL11 12-3□□42-....			1	1 unit	103	50.000
I	1600	1600	66	B	3WL11 16-3□□42-....			1	1 unit	103	50.000
II	800	800	80	B	3WL12 08-3□□42-....			1	1 unit	103	67.000
II	1000	1000	80	B	3WL12 10-3□□42-....			1	1 unit	103	67.000
II	1250	1250	80	B	3WL12 12-3□□42-....			1	1 unit	103	67.000
II	1600	1600	80	B	3WL12 16-3□□42-....			1	1 unit	103	67.000
II	2000	2000	80	B	3WL12 20-3□□42-....			1	1 unit	103	67.000
II	2500	2500	80	B	3WL12 25-3□□42-....			1	1 unit	103	71.000
II	3200	3200	80	B	3WL12 32-3□□42-....			1	1 unit	103	77.000
Vertical main circuit connection											
I	630	630	66	B	3WL11 06-3□□41-....			1	1 unit	103	50.000
I	800	800	66	B	3WL11 08-3□□41-....			1	1 unit	103	50.000
I	1000	1000	66	B	3WL11 10-3□□41-....			1	1 unit	103	50.000
I	1250	1250	66	B	3WL11 12-3□□41-....			1	1 unit	103	50.000
I	1600	1600	66	B	3WL11 16-3□□41-....			1	1 unit	103	50.000
II	800	800	80	B	3WL12 08-3□□41-....			1	1 unit	103	67.000
II	1000	1000	80	B	3WL12 10-3□□41-....			1	1 unit	103	67.000
II	1250	1250	80	B	3WL12 12-3□□41-....			1	1 unit	103	67.000
II	1600	1600	80	B	3WL12 16-3□□41-....			1	1 unit	103	67.000
II	2000	2000	80	B	3WL12 20-3□□41-....			1	1 unit	103	67.000
II	2500	2500	80	B	3WL12 25-3□□41-....			1	1 unit	103	71.000
II	3200	3200	80	B	3WL12 32-3□□41-....			1	1 unit	103	77.000
II	4000	4000	80	B	3WL12 40-3□□41-....			1	1 unit	103	103.000
Front main circuit connection, single hole											
I	630	630	66	B	3WL11 06-3□□43-....			1	1 unit	103	50.000
I	800	800	66	B	3WL11 08-3□□43-....			1	1 unit	103	50.000
I	1000	1000	66	B	3WL11 10-3□□43-....			1	1 unit	103	50.000
I	1250	1250	66	B	3WL11 12-3□□43-....			1	1 unit	103	50.000
I	1600	1600	66	B	3WL11 16-3□□43-....			1	1 unit	103	50.000
II	800	800	80	B	3WL12 08-3□□43-....			1	1 unit	103	67.000
II	1000	1000	80	B	3WL12 10-3□□43-....			1	1 unit	103	67.000
II	1250	1250	80	B	3WL12 12-3□□43-....			1	1 unit	103	67.000
II	1600	1600	80	B	3WL12 16-3□□43-....			1	1 unit	103	67.000
II	2000	2000	80	B	3WL12 20-3□□43-....			1	1 unit	103	67.000
II	2500	2500	80	B	3WL12 25-3□□43-....			1	1 unit	103	71.000
II	3200	3200	80	B	3WL12 32-3□□43-....			1	1 unit	103	77.000
Front main circuit connection, double hole											
I	630	630	66	B	3WL11 06-3□□44-....			1	1 unit	103	50.000
I	800	800	66	B	3WL11 08-3□□44-....			1	1 unit	103	50.000
I	1000	1000	66	B	3WL11 10-3□□44-....			1	1 unit	103	50.000
I	1250	1250	66	B	3WL11 12-3□□44-....			1	1 unit	103	50.000
I	1600	1600	66	B	3WL11 16-3□□44-....			1	1 unit	103	50.000
II	800	800	80	B	3WL12 08-3□□44-....			1	1 unit	103	67.000
II	1000	1000	80	B	3WL12 10-3□□44-....			1	1 unit	103	67.000
II	1250	1250	80	B	3WL12 12-3□□44-....			1	1 unit	103	67.000
II	1600	1600	80	B	3WL12 16-3□□44-....			1	1 unit	103	67.000
II	2000	2000	80	B	3WL12 20-3□□44-....			1	1 unit	103	67.000
II	2500	2500	80	B	3WL12 25-3□□44-....			1	1 unit	103	71.000
II	3200	3200	80	B	3WL12 32-3□□44-....			1	1 unit	103	77.000
Non-automatic circuit breakers²⁾											
Without electronic release											
						Order No. supplements	AA	Add. price		None	
Electronic releases											
Versions without ground-fault protection											
ETU15B: Protection functions LI						BB		x			
ETU25B: Protection functions LS1						CB		x			
ETU45B: Protection functions LSIN ³⁾						EB		x			
ETU45B: Protection functions LSIN ³⁾ with 4-line display						FB		x			
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display						NB		x			
Versions with ground-fault protection											
ETU27B: Protection functions LSING ⁴⁾						DG		x			
ETU45B: Protection functions LSING ³⁾⁵⁾						EG		x			
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display						FG		x			
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display						NG		x			
Standard Order No. supplements (for further Order No. supplements, see page 15/23)											
Manual operating mechanism with mechanical closing						1AA2		None			
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO											

x = Additional price

For footnotes see page 15/18.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, fixed-mounted versions

Size	Max. rated circuit breaker current $I_{n \max}$	Rated current ¹⁾ I_n	I_{cu} up to 100 kA at 500 V, high switching capacity H		Order No. Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			kA	DT						
Horizontal main circuit connection										
II	800	800	100	B	3WL12 08-4□□42-....		1	1 unit	103	67.000
II	1000	1000	100	B	3WL12 10-4□□42-....		1	1 unit	103	67.000
II	1250	1250	100	B	3WL12 12-4□□42-....		1	1 unit	103	67.000
II	1600	1600	100	B	3WL12 16-4□□42-....		1	1 unit	103	67.000
II	2000	2000	100	B	3WL12 20-4□□42-....		1	1 unit	103	67.000
II	2500	2500	100	B	3WL12 25-4□□42-....		1	1 unit	103	71.000
II	3200	3200	100	B	3WL12 32-4□□42-....		1	1 unit	103	77.000
III	4000	4000	100	B	3WL13 40-4□□42-....		1	1 unit	103	99.000
III	5000	5000	100	B	3WL13 50-4□□42-....		1	1 unit	103	99.000
Vertical main circuit connection										
II	800	800	100	B	3WL12 08-4□□41-....		1	1 unit	103	67.000
II	1000	1000	100	B	3WL12 10-4□□41-....		1	1 unit	103	67.000
II	1250	1250	100	B	3WL12 12-4□□41-....		1	1 unit	103	67.000
II	1600	1600	100	B	3WL12 16-4□□41-....		1	1 unit	103	67.000
II	2000	2000	100	B	3WL12 20-4□□41-....		1	1 unit	103	67.000
II	2500	2500	100	B	3WL12 25-4□□41-....		1	1 unit	103	71.000
II	3200	3200	100	B	3WL12 32-4□□41-....		1	1 unit	103	77.000
II	4000	4000	100	B	3WL12 40-4□□41-....		1	1 unit	103	103.000
III	4000	4000	100	B	3WL13 40-4□□41-....		1	1 unit	103	99.000
III	5000	5000	100	B	3WL13 50-4□□41-....		1	1 unit	103	99.000
III	6300	6300	100	B	3WL13 63-4□□41-....		1	1 unit	103	108.000
Front main circuit connection, single hole										
II	800	800	100	B	3WL12 08-4□□43-....		1	1 unit	103	67.000
II	1000	1000	100	B	3WL12 10-4□□43-....		1	1 unit	103	67.000
II	1250	1250	100	B	3WL12 12-4□□43-....		1	1 unit	103	67.000
II	1600	1600	100	B	3WL12 16-4□□43-....		1	1 unit	103	67.000
II	2000	2000	100	B	3WL12 20-4□□43-....		1	1 unit	103	67.000
II	2500	2500	100	B	3WL12 25-4□□43-....		1	1 unit	103	71.000
II	3200	3200	100	B	3WL12 32-4□□43-....		1	1 unit	103	77.000
III	4000	4000	100	B	3WL13 40-4□□43-....		1	1 unit	103	99.000
Front main circuit connection, double hole										
II	800	800	100	B	3WL12 08-4□□44-....		1	1 unit	103	67.000
II	1000	1000	100	B	3WL12 10-4□□44-....		1	1 unit	103	67.000
II	1250	1250	100	B	3WL12 12-4□□44-....		1	1 unit	103	67.000
II	1600	1600	100	B	3WL12 16-4□□44-....		1	1 unit	103	67.000
II	2000	2000	100	B	3WL12 20-4□□44-....		1	1 unit	103	67.000
II	2500	2500	100	B	3WL12 25-4□□44-....		1	1 unit	103	71.000
II	3200	3200	100	B	3WL12 32-4□□44-....		1	1 unit	103	77.000
III	4000	4000	100	B	3WL13 40-4□□44-....		1	1 unit	103	99.000
Non-automatic circuit breakers²⁾										
Without electronic release					Order No. supplements	Add. price				
					AA	None				
Electronic releases										
Versions without ground-fault protection										
ETU15B: Protection functions L ⁶⁾					BB	x				
ETU25B: Protection functions LSI					CB	x				
ETU45B: Protection functions LSIN ³⁾					EB	x				
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x				
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x				
Versions with ground-fault protection										
ETU27B: Protection functions LSING ⁴⁾					DG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x				
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x				
Standard Order No. supplements (for further Order No. supplements, see page 15/23)										
Manual operating mechanism with mechanical closing					1AA2	None				
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										

x = Additional price

For footnotes see page 15/18.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, fixed-mounted versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 130 kA at 500 V, very high switching capacity C		Order No. Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			kA	DT						
Horizontal main circuit connection										
III	4000	4000	130	B	3WL13 40-5□□42-....		1	1 unit	103	99.000
III	5000	5000	130	B	3WL13 50-5□□42-....		1	1 unit	103	99.000
Vertical main circuit connection										
III	4000	4000	130	B	3WL13 40-5□□41-....		1	1 unit	103	99.000
III	5000	5000	130	B	3WL13 50-5□□41-....		1	1 unit	103	99.000
III	6300	6300	130	B	3WL13 63-5□□41-....		1	1 unit	103	108.000
Non-automatic circuit breakers²⁾ Without electronic release					Order No. supplements	Add. price				
					AA	None				
Electronic releases										
Versions without ground-fault protection										
ETU25B: Protection functions LSI					CB	x				
ETU45B: Protection functions LSIN ³⁾					EB	x				
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x				
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x				
Versions with ground-fault protection										
ETU27B: Protection functions LSING ⁴⁾					DG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x				
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x				
Standard Order No. supplements (for further Order No. supplements, see page 15/23)										
Manual operating mechanism with mechanical closing					1AA2	None				
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										

x = Additional price

Footnotes for pages 15/15 to 15/18:

- 1) The rated current is determined by the rated current module. For the standard version, the supplied module is equal to the maximum rated current. If a lower rated current is required, adaptation by order code on page 15/24.
- 2) For permissible rated short-time current I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic air circuit breakers see page 15/3.

- 3) Current transformers for protection of the N conductor and current transformers for detection of the ground-fault current in the grounded neutral point of the transformer are to be ordered separately, see page 15/34. The internal current transformers for N conductors can be ordered by adding the supplement "-Z" and the order code "F23", see page 15/26.
- 4) Current transformers for protection of the N conductor are to be ordered separately, see page 15/34.
- 5) ETU45B to ETU76B with ground-fault protection module GFM AT (alarm and tripping), see page 15/34.
- 6) ETU15B cannot be used with 3WL circuit breakers, size III.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, withdrawable versions

Selection and ordering data

Size	Max. rated circuit breaker current $I_{n \text{ max.}}$	Rated current ¹⁾ I_n	I_{CU} up to 55/66 kA at 500 V, ECO switching capacity N		(N)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	A	kA	DT	Order No. Order No. supplements, see page 15/23	Basic price per PU				
Without guide frames (for guide frames, see page 15/30 to 15/33)									
I	630	630	55	B	3WL11 06-2□□45-....	1	1 unit	103	54.000
I	800	800	55	B	3WL11 08-2□□45-....	1	1 unit	103	54.000
I	1000	1000	55	B	3WL11 10-2□□45-....	1	1 unit	103	54.000
I	1250	1250	55	B	3WL11 12-2□□45-....	1	1 unit	103	54.000
I	1600	1600	55	B	3WL11 16-2□□45-....	1	1 unit	103	54.000
II	800	800	66	B	3WL12 08-2□□45-....	1	1 unit	103	75.000
II	1000	1000	66	B	3WL12 10-2□□45-....	1	1 unit	103	75.000
II	1250	1250	66	B	3WL12 12-2□□45-....	1	1 unit	103	75.000
II	1600	1600	66	B	3WL12 16-2□□45-....	1	1 unit	103	75.000
II	2000	2000	66	B	3WL12 20-2□□45-....	1	1 unit	103	72.000
II	2500	2500	66	B	3WL12 25-2□□45-....	1	1 unit	103	76.000
II	3200	3200	66	B	3WL12 32-2□□45-....	1	1 unit	103	82.000
With guide frames, horizontal main circuit connection									
I	630	630	55	B	3WL11 06-2□□46-....	1	1 unit	103	84.000
I	800	800	55	B	3WL11 08-2□□46-....	1	1 unit	103	84.000
I	1000	1000	55	B	3WL11 10-2□□46-....	1	1 unit	103	84.000
I	1250	1250	55	B	3WL11 12-2□□46-....	1	1 unit	103	84.000
I	1600	1600	55	B	3WL11 16-2□□46-....	1	1 unit	103	84.000
II	800	800	66	B	3WL12 08-2□□46-....	1	1 unit	103	109.000
II	1000	1000	66	B	3WL12 10-2□□46-....	1	1 unit	103	109.000
II	1250	1250	66	B	3WL12 12-2□□46-....	1	1 unit	103	109.000
II	1600	1600	66	B	3WL12 16-2□□46-....	1	1 unit	103	109.000
II	2000	2000	66	B	3WL12 20-2□□46-....	1	1 unit	103	109.000
II	2500	2500	66	B	3WL12 25-2□□46-....	1	1 unit	103	123.000
II	3200	3200	66	B	3WL12 32-2□□46-....	1	1 unit	103	136.000
With guide frames, vertical main circuit connection									
I	630	630	55	B	3WL11 06-2□□47-....	1	1 unit	103	84.000
I	800	800	55	B	3WL11 08-2□□47-....	1	1 unit	103	84.000
I	1000	1000	55	B	3WL11 10-2□□47-....	1	1 unit	103	84.000
I	1250	1250	55	B	3WL11 12-2□□47-....	1	1 unit	103	84.000
I	1600	1600	55	B	3WL11 16-2□□47-....	1	1 unit	103	84.000
II	800	800	66	B	3WL12 08-2□□47-....	1	1 unit	103	109.000
II	1000	1000	66	B	3WL12 10-2□□47-....	1	1 unit	103	109.000
II	1250	1250	66	B	3WL12 12-2□□47-....	1	1 unit	103	109.000
II	1600	1600	66	B	3WL12 16-2□□47-....	1	1 unit	103	109.000
II	2000	2000	66	B	3WL12 20-2□□47-....	1	1 unit	103	109.000
II	2500	2500	66	B	3WL12 25-2□□47-....	1	1 unit	103	123.000
II	3200	3200	66	B	3WL12 32-2□□47-....	1	1 unit	103	136.000
II	4000	4000	66	B	3WL12 40-2□□47-....	1	1 unit	103	146.000
With guide frames, connecting flanges									
I	630	630	55	B	3WL11 06-2□□48-....	1	1 unit	103	84.000
I	800	800	55	B	3WL11 08-2□□48-....	1	1 unit	103	84.000
I	1000	1000	55	B	3WL11 10-2□□48-....	1	1 unit	103	84.000
I	1250	1250	55	B	3WL11 12-2□□48-....	1	1 unit	103	84.000
I	1600	1600	55	B	3WL11 16-2□□48-....	1	1 unit	103	84.000
II	800	800	66	B	3WL12 08-2□□48-....	1	1 unit	103	109.000
II	1000	1000	66	B	3WL12 10-2□□48-....	1	1 unit	103	109.000
II	1250	1250	66	B	3WL12 12-2□□48-....	1	1 unit	103	109.000
II	1600	1600	66	B	3WL12 16-2□□48-....	1	1 unit	103	109.000
II	2000	2000	66	B	3WL12 20-2□□48-....	1	1 unit	103	109.000
II	2500	2500	66	B	3WL12 25-2□□48-....	1	1 unit	103	123.000
II	3200	3200	66	B	3WL12 32-2□□48-....	1	1 unit	103	136.000

Non-automatic circuit breakers²⁾

Without electronic release

Order No. supplements

Add. price

Electronic releases**Versions without ground-fault protection**

ETU15B: Protection functions LI
 ETU25B: Protection functions LSI
 ETU45B: Protection functions LSIN³⁾
 ETU45B: Protection functions LSIN³⁾ with 4-line display
 ETU76B: Protection functions LSIN³⁾ with pixel graphics display

Versions with ground-fault protection

ETU27B: Protection functions LSING⁴⁾
 ETU45B: Protection functions LSING³⁾⁵⁾
 ETU45B: Protection functions LSING³⁾⁵⁾ with 4-line display
 ETU76B: Protection functions LSING³⁾⁵⁾ with pixel graphics display

AA

None

BB

x

CB

x

EB

x

FB

x

NB

x

DG

x

EG

x

FG

x

NG

x

Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)

Manual operating mechanism with mechanical closing
 Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO

1AA2

None

x = Additional price

For footnotes see page 15/22.*** You can order this quantity or a multiple thereof.**

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, withdrawable versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 66/80 kA at 500 V, standard switching capacity S		S	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			kA	DT					
Without guide frames (for guide frames, see page 15/30 to 15/33)									
I	630	630	66	B	3WL11 06-3□□45-....	1	1 unit	103	54.000
I	800	800	66	B	3WL11 08-3□□45-....	1	1 unit	103	54.000
I	1000	1000	66	B	3WL11 10-3□□45-....	1	1 unit	103	54.000
I	1250	1250	66	B	3WL11 12-3□□45-....	1	1 unit	103	54.000
I	1600	1600	66	B	3WL11 16-3□□45-....	1	1 unit	103	54.000
II	800	800	80	B	3WL12 08-3□□45-....	1	1 unit	103	72.000
II	1000	1000	80	B	3WL12 10-3□□45-....	1	1 unit	103	72.000
II	1250	1250	80	B	3WL12 12-3□□45-....	1	1 unit	103	72.000
II	1600	1600	80	B	3WL12 16-3□□45-....	1	1 unit	103	72.000
II	2000	2000	80	B	3WL12 20-3□□45-....	1	1 unit	103	72.000
II	2500	2500	80	B	3WL12 25-3□□45-....	1	1 unit	103	76.000
II	3200	3200	80	B	3WL12 32-3□□45-....	1	1 unit	103	82.000
With guide frames, horizontal main circuit connection									
I	630	630	66	B	3WL11 06-3□□46-....	1	1 unit	103	84.000
I	800	800	66	B	3WL11 08-3□□46-....	1	1 unit	103	84.000
I	1000	1000	66	B	3WL11 10-3□□46-....	1	1 unit	103	84.000
I	1250	1250	66	B	3WL11 12-3□□46-....	1	1 unit	103	84.000
I	1600	1600	66	B	3WL11 16-3□□46-....	1	1 unit	103	84.000
II	800	800	80	B	3WL12 08-3□□46-....	1	1 unit	103	109.000
II	1000	1000	80	B	3WL12 10-3□□46-....	1	1 unit	103	109.000
II	1250	1250	80	B	3WL12 12-3□□46-....	1	1 unit	103	109.000
II	1600	1600	80	B	3WL12 16-3□□46-....	1	1 unit	103	109.000
II	2000	2000	80	B	3WL12 20-3□□46-....	1	1 unit	103	109.000
II	2500	2500	80	B	3WL12 25-3□□46-....	1	1 unit	103	123.000
II	3200	3200	80	B	3WL12 32-3□□46-....	1	1 unit	103	136.000
With guide frames, vertical main circuit connection									
I	630	630	66	B	3WL11 06-3□□47-....	1	1 unit	103	84.000
I	800	800	66	B	3WL11 08-3□□47-....	1	1 unit	103	84.000
I	1000	1000	66	B	3WL11 10-3□□47-....	1	1 unit	103	84.000
I	1250	1250	66	B	3WL11 12-3□□47-....	1	1 unit	103	84.000
I	1600	1600	66	B	3WL11 16-3□□47-....	1	1 unit	103	84.000
II	800	800	80	B	3WL12 08-3□□47-....	1	1 unit	103	109.000
II	1000	1000	80	B	3WL12 10-3□□47-....	1	1 unit	103	109.000
II	1250	1250	80	B	3WL12 12-3□□47-....	1	1 unit	103	109.000
II	1600	1600	80	B	3WL12 16-3□□47-....	1	1 unit	103	109.000
II	2000	2000	80	B	3WL12 20-3□□47-....	1	1 unit	103	109.000
II	2500	2500	80	B	3WL12 25-3□□47-....	1	1 unit	103	123.000
II	3200	3200	80	B	3WL12 32-3□□47-....	1	1 unit	103	136.000
II	4000	4000	80	B	3WL12 40-3□□47-....	1	1 unit	103	146.000
With guide frames, connecting flanges									
I	630	630	66	B	3WL11 06-3□□48-....	1	1 unit	103	84.000
I	800	800	66	B	3WL11 08-3□□48-....	1	1 unit	103	84.000
I	1000	1000	66	B	3WL11 10-3□□48-....	1	1 unit	103	84.000
I	1250	1250	66	B	3WL11 12-3□□48-....	1	1 unit	103	84.000
I	1600	1600	66	B	3WL11 16-3□□48-....	1	1 unit	103	84.000
II	800	800	80	B	3WL12 08-3□□48-....	1	1 unit	103	109.000
II	1000	1000	80	B	3WL12 10-3□□48-....	1	1 unit	103	109.000
II	1250	1250	80	B	3WL12 12-3□□48-....	1	1 unit	103	109.000
II	1600	1600	80	B	3WL12 16-3□□48-....	1	1 unit	103	109.000
II	2000	2000	80	B	3WL12 20-3□□48-....	1	1 unit	103	109.000
II	2500	2500	80	B	3WL12 25-3□□48-....	1	1 unit	103	123.000
II	3200	3200	80	B	3WL12 32-3□□48-....	1	1 unit	103	136.000
Non-automatic circuit breakers²⁾					Order No. supplements	Add. price			
Without electronic release					AA	None			
Electronic releases									
Versions without ground-fault protection									
ETU15B: Protection functions LI					BB	x			
ETU25B: Protection functions LSI					CB	x			
ETU45B: Protection functions LSIN ³⁾					EB	x			
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x			
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x			
Versions with ground-fault protection									
ETU27B: Protection functions LSING ⁴⁾					DG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x			
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x			
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x			
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)									
Manual operating mechanism with mechanical closing					1AA2	None			
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO									
x = Additional price									

For footnotes see page 15/22.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, withdrawable versions

Size	Max. rated circuit breaker current $I_{n \text{ max.}}$	Rated current ¹⁾ I_n	I_{cu} up to 100 kA at 500 V, high switching capacity H		Order No. Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			kA	DT						
Without guide frames (for guide frames, see page 15/30 to 15/33)										
II	800	800	100	B	3WL12 08-4□□45-....		1	1 unit	103	72.000
II	1000	1000	100	B	3WL12 10-4□□45-....		1	1 unit	103	72.000
II	1250	1250	100	B	3WL12 12-4□□45-....		1	1 unit	103	72.000
II	1600	1600	100	B	3WL12 16-4□□45-....		1	1 unit	103	72.000
II	2000	2000	100	B	3WL12 20-4□□45-....		1	1 unit	103	72.000
II	2500	2500	100	B	3WL12 25-4□□45-....		1	1 unit	103	76.000
II	3200	3200	100	B	3WL12 32-4□□45-....		1	1 unit	103	82.000
III	4000	4000	100	B	3WL13 40-4□□45-....		1	1 unit	103	106.000
III	5000	5000	100	B	3WL13 50-4□□45-....		1	1 unit	103	106.000
III	6300	6300	100	B	3WL13 63-4□□45-....		1	1 unit	103	108.000
With guide frames, horizontal main circuit connection										
II	800	800	100	B	3WL12 08-4□□46-....		1	1 unit	103	109.000
II	1000	1000	100	B	3WL12 10-4□□46-....		1	1 unit	103	109.000
II	1250	1250	100	B	3WL12 12-4□□46-....		1	1 unit	103	109.000
II	1600	1600	100	B	3WL12 16-4□□46-....		1	1 unit	103	109.000
II	2000	2000	100	B	3WL12 20-4□□46-....		1	1 unit	103	109.000
II	2500	2500	100	B	3WL12 25-4□□46-....		1	1 unit	103	123.000
II	3200	3200	100	B	3WL12 32-4□□46-....		1	1 unit	103	136.000
III	4000	4000	100	B	3WL13 40-4□□46-....		1	1 unit	103	190.000
III	5000	5000	100	B	3WL13 50-4□□46-....		1	1 unit	103	190.000
With guide frames, vertical main circuit connection										
II	800	800	100	B	3WL12 08-4□□47-....		1	1 unit	103	109.000
II	1000	1000	100	B	3WL12 10-4□□47-....		1	1 unit	103	109.000
II	1250	1250	100	B	3WL12 12-4□□47-....		1	1 unit	103	109.000
II	1600	1600	100	B	3WL12 16-4□□47-....		1	1 unit	103	109.000
II	2000	2000	100	B	3WL12 20-4□□47-....		1	1 unit	103	109.000
II	2500	2500	100	B	3WL12 25-4□□47-....		1	1 unit	103	123.000
II	3200	3200	100	B	3WL12 32-4□□47-....		1	1 unit	103	136.000
II	4000	4000	100	B	3WL12 40-4□□47-....		1	1 unit	103	146.000
III	4000	4000	100	B	3WL13 40-4□□47-....		1	1 unit	103	190.000
III	5000	5000	100	B	3WL13 50-4□□47-....		1	1 unit	103	190.000
III	6300	6300	100	B	3WL13 63-4□□47-....		1	1 unit	103	227.000
With guide frames, connecting flanges										
II	800	800	100	B	3WL12 08-4□□48-....		1	1 unit	103	109.000
II	1000	1000	100	B	3WL12 10-4□□48-....		1	1 unit	103	109.000
II	1250	1250	100	B	3WL12 12-4□□48-....		1	1 unit	103	109.000
II	1600	1600	100	B	3WL12 16-4□□48-....		1	1 unit	103	109.000
II	2000	2000	100	B	3WL12 20-4□□48-....		1	1 unit	103	109.000
II	2500	2500	100	B	3WL12 25-4□□48-....		1	1 unit	103	123.000
II	3200	3200	100	B	3WL12 32-4□□48-....		1	1 unit	103	136.000
III	4000	4000	100	B	3WL13 40-4□□48-....		1	1 unit	103	190.000
Non-automatic circuit breakers²⁾										
Without electronic release					AA			None		
Electronic releases										
Versions without ground-fault protection					BB			x		
ETU15B: Protection functions LI ⁶⁾					CB			x		
ETU25B: Protection functions LSI					EB			x		
ETU45B: Protection functions LSIN ³⁾					FB			x		
ETU45B: Protection functions LSIN ³⁾ with 4-line display					NB			x		
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display										
Versions with ground-fault protection					DG			x		
ETU27B: Protection functions LSING ⁴⁾					EG			x		
ETU45B: Protection functions LSING ³⁾⁵⁾					FG			x		
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					NG			x		
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display										
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)										
Manual operating mechanism with mechanical closing					1AA2			None		
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										

x = Additional price

For footnotes see page 15/22.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

4-pole, withdrawable versions

Size	Max. rated circuit breaker current I_n max.	Rated current ¹⁾ I_n	I_{cu} up to 130 kA at 500 V, very high switching capacity C		Order No. Order No. supplements, see page 15/23	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	A	kA	DT							kg
Without guide frames (for guide frames, see page 15/30 to 15/33)										
III	4000	4000	130	B	3WL13 40-5□□45-....		1	1 unit	103	115.000
III	5000	5000	130	B	3WL13 50-5□□45-....		1	1 unit	103	106.000
III	6300	6300	130	B	3WL13 63-5□□45-....		1	1 unit	103	108.000
With guide frames, horizontal main circuit connection										
III	4000	4000	130	B	3WL13 40-5□□46-....		1	1 unit	103	190.000
III	5000	5000	130	B	3WL13 50-5□□46-....		1	1 unit	103	190.000
With guide frames, vertical main circuit connection										
III	4000	4000	130	B	3WL13 40-5□□47-....		1	1 unit	103	190.000
III	5000	5000	130	B	3WL13 50-5□□47-....		1	1 unit	103	190.000
III	6300	6300	130	B	3WL13 63-5□□47-....		1	1 unit	103	227.000
Non-automatic circuit breakers²⁾ Without electronic release					Order No. supplements	Add. price				
					AA	None				
Electronic releases										
Versions without ground-fault protection										
ETU25B: Protection functions LSI					CB	x				
ETU45B: Protection functions LSIN ³⁾					EB	x				
ETU45B: Protection functions LSIN ³⁾ with 4-line display					FB	x				
ETU76B: Protection functions LSIN ³⁾ with pixel graphics display					NB	x				
Versions with ground-fault protection										
ETU27B: Protection functions LSING ⁴⁾					DG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾					EG	x				
ETU45B: Protection functions LSING ³⁾⁵⁾ with 4-line display					FG	x				
ETU76B: Protection functions LSING ³⁾⁵⁾ with pixel graphics display					NG	x				
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)										
Manual operating mechanism with mechanical closing					1AA2	None				
Without 1st and 2nd auxiliary releases; auxiliary switch 2 NC + 2 NO										

x = Additional price

Footnotes for pages 15/19 to 15/22:

- The rated current is determined by the rated current module. For the standard version, the supplied module is equal to the maximum rated current. If a lower rated current is required, adaptation by order code on page 15/24.
- For permissible rated short-time current I_{cc} and rated short-circuit making capacity I_{cm} for non-automatic air circuit breakers see page 15/3.
- Current transformers for protection of the N conductor and current transformers for detection of the ground-fault current in the grounded neutral point of the transformer are to be ordered separately, see page 15/34. The internal current transformers for N conductors can be ordered by adding the supplement "-Z" and the order code "F23", see page 15/26.

- Current transformers for protection of the N conductor are to be ordered separately, see page 15/34.
- ETU45B to ETU76B with ground-fault protection module GFM AT (alarm and tripping), see page 15/34.
- ETU15B cannot be used with 3WL circuit breakers, size III.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Options

Selection and ordering data

	Order No. supplement	Add. price
	3WL1...-.....-□□□□	
Operating mechanisms		
Manual operating mechanism with mechanical closing	1	None
Manual operating mechanism with mechanical and electrical closing, closing solenoid suitable for uninterrupted duty, 100 % duty ratio		
Closing solenoid		
AC 50/60 Hz V	V DC	
110	110 ... 125	2 x
230	220	3 x
Manual/motorized operating mechanism with mechanical and electrical closing, closing solenoid suitable for uninterrupted duty, 100 % duty ratio		
Motor	Closing solenoid	
AC 50/60 Hz V	V DC	AC 50/60 Hz V
208 ... 240	220 ... 250	230
110 ... 127	110 ... 125	110
--	24	--
		V DC
		220
		110 ... 125
		24
		4 x
		5 x
		6 x
To order different voltages for motorized operating mechanism and closing solenoid or closing solenoid for synchronization purposes: "1" at the 13th digit of the Order No. and order codes, see page 15/25.		
1st auxiliary release		
Without 1st auxiliary release	A	None
Shunt release suitable for uninterrupted duty, 100 % duty ratio		
Operating range $0.85 \dots 1,1 \times U_s$		
U_s AC 50/60 Hz V	U_s V DC	
--	24	B x
--	30	C x
--	48	D x
--	60	E x
110	110 ... 125	F x
230	220	G x
2nd auxiliary release		
Without 2nd auxiliary release	A	None
Shunt release suitable for uninterrupted duty, 100 % duty ratio		
Operating range $0.85 \dots 1,1 \times U_s$		
U_s AC 50/60 Hz V	U_s V DC	
--	24	B x
--	30	C x
--	48	D x
--	60	E x
110	110 ... 125	F x
230	220	G x
Undervoltage releases, instantaneous (≤ 80 ms), short-delay (≤ 200 ms)		
Operating range $0.85 \dots 1,1 \times U_s$		
U_s AC 50/60 Hz V	U_s V DC	
--	24	J x
--	30	K x
--	48	L x
--	60	U x
110 ... 127	110 ... 125	M x
208 ... 240	220 ... 250	N x
380 ... 415	--	P x
Undervoltage releases, can be delayed between 0.2 s to 3.2 s		
Operating range $0.85 \dots 1,1 \times U_s$		
U_s AC 50/60 Hz V	U_s V DC	
--	48	Q x
110 ... 127	110 ... 125	R x
208 ... 240	220 ... 250	S x
380 ... 415	--	T x
Auxiliary switches		
1st auxiliary switch block 2 NO + 2 NC	2	None
1st + 2nd auxiliary switch block 4 NO + 4 NC	4	x
6 NO + 2 NC	7	x
5 NO + 3 NC	8	x

x = Additional price

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Options

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).		Order No. with "-Z"				Add. price																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16						
		3WL - Z																					
		and additional order code(s)																					
		□ □ □ + . . . + . . .																					
		Code for "Further versions"-Z																					
Operating manual																							
Printed version																							
		French/Italian		A 1 1														x					
		Spanish/Portuguese		A 1 2														x					
Rated voltage 1000 V AC/DC																							
Only for circuit breakers with high switching capacity H (8th digit of the Order No. is a "4") Cannot be combined with "Rated voltage 1150 V AC order code "A15".																							
Size II ¹⁾		Up to 2000 A		A 0 5														x		x			
		2500 A		A 0 5														x		x			
		3200 A		A 0 5														x		x			
Size III ¹⁾²⁾		4000 A		A 0 5														x		x			
		5000 A		A 0 5														x		x			
		6300 A		A 0 5														x		x			
Rated voltage 1150 V AC																							
Only for circuit breakers with high switching capacity H (8th digit of the Order No. is a "4") Cannot be combined with "Rated voltage 1000 V AC order code "A05".																							
Size II		Up to 2000 A		A 1 5														x		x			
		2500 A		A 1 5														x		x			
		3200 A		A 1 5														x		x			
		4000 A		A 1 5														x		x			
For size III select a circuit breaker with very high switching capacity C, which can be used as standard up to 1150 V AC.																							
Tinned version of the customer's connections on the guide frame³⁾⁴⁾																							
Only for circuit breakers in withdrawable version with horizontal connection or flange connection. The normal delivery time increases to 15 work days.																							
Size I				A 0 8														x		x			
Size II				A 0 8														x		x			
Size III				A 0 8														x		x			
Special packaging (moisture protection)																							
Special packaging for extended technical requirements																							
		Cardboard packaging with water-repellent coating on corrugated cardboard (moisture protection)		A 6 1																x			
Rated current modules/Rating plugs																							
		Rated current I_n A																		Add. price			
Only one module is possible per circuit breaker (not in conjunction with electronic release ETU15B). As standard the electronic releases are equipped with a rated current module which is equal to the maximum rated circuit breaker current ($I_{n\max}$). The rated current of the selected rated current module must be smaller than $I_{n\max}$.		For size I, II		250		B 0 2																None	
				315		B 0 3																None	
				400		B 0 4																None	
				500		B 0 5																None	
				630		B 0 6																None	
				800		B 0 8																None	
				1000		B 1 0																None	
		For size I, II, III		1250		B 1 2																None	
				1600		B 1 6																None	
		For size II, III		2000		B 2 0																None	
				2500		B 2 5																None	
				3200		B 3 2																None	
				4000		B 4 0																None	
		For size III		5000		B 5 0																None	
				6300		B 6 3																None	

x = Additional price

1) If ordering withdrawable circuit breaker and guide frame separately, specify order code "A05" for withdrawable circuit breaker and guide frame.

2) Not necessary for circuit breakers with very high switching capacity C as these circuit breakers can be used as standard up to 1150 V AC.

3) Front connections are tinned as standard.

4) The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Options

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).

Order No. with "-Z"
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL - Z

Add. price

and additional order code(s)
 +

Code for
 "Further versions"-Z

Indication/operator control elements, door sealing frames				
5-digit mechanical operating cycles counter¹⁾		C 0 1		x
Electrical ON button in the operator panel²⁾ Possible only for circuit breakers with closing solenoid.	Button with sealing cap	C 1 1		x
	Key operation with lock CES	C 1 2		x
Storage status signaling switch²⁾ (S21)	1 NO	C 2 0		x
Ready-to-close signaling switch (S20)	1 NO	C 2 2		x
Signaling switches²⁾	For the first auxiliary release (S22)	C 2 6		x
	For the second auxiliary release (S23)	C 2 7		x
Motor shutdown switch in the operator panel³⁾		S 2 5		x
EMERGENCY-STOP pushbuttons	Mushroom pushbutton instead of the mechanical OFF pushbutton	S 2 4		x
Door sealing frames		T 4 0		x
Reclosing lockout and remote resets				
Automatic reset of the reclosing lockout		K 0 1		x
Tripped signal switch²⁾⁴⁾	1 CO	K 0 7		x
Remote reset solenoid for displays and reset buttons including automatic reset of the reclosing lockout				
AC 50/60 Hz V	V DC			
--	24	K 1 0		x
--	48	K 1 1		x
120	125	K 1 2		x
208 ... 250	208 ... 250	K 1 3		x
Motorized operating mechanisms and closing/opening solenoids				
Motorized operating mechanisms Only possible if the 13th digit of the Order No. = "1"				
Motor				
AC 50/60 Hz V	V DC			
--	24 ... 30	M 0 1		x
--	48 ... 60	M 0 3		x
110 ... 127	110 ... 125	M 0 5		x
208 ... 240	220 ... 250	M 0 6		x
Closing solenoid suitable for uninterrupted duty, 100 % duty ratio – Only possible if the 13th digit of the Order No. = "1"				
Activation solenoid				
AC 50/60 Hz V	V DC			
--	24	M 2 1		x
--	30	M 2 2		x
--	48	M 2 3		x
--	60	M 2 4		x
110	110	M 2 5		x
230	220	M 2 6		x
Closing solenoids⁵⁾ – unsuitable for uninterrupted duty, 5 % duty ratio – Only possible if the 13th digit of the Order No. = "1"				
Activation solenoid				
AC 50/60 Hz V	V DC			
--	24	M 3 1		x
--	48	M 3 3		x
110 ... 127	110 ... 125	M 3 5		x
208 ... 240	220 ... 250	M 3 6		x
Opening solenoids (shunt release)⁶⁾ – Not suitable for uninterrupted duty, 5% duty ratio				
Activation solenoid				
AC 50/60 Hz V	V DC			
--	24	M 4 1		x
--	48	M 4 3		x
110 ... 127	110 ... 125	M 4 5		x
208 ... 240	220 ... 250	M 4 6		x

x = Additional price

1) Only possible with motorized operating mechanism.

2) Not possible with communications interface option, order code "F02" or "F12".

3) Only for circuit breakers with motorized operating mechanism, not possible with order codes "C11", "C12".

4) Not available for non-automatic air circuit breakers.

5) Overexcited, i. e. opening time 50 ms (standard > 80 ms).

6) Only possible if the 14th position of the Order No. for the circuit breaker is "A", i. e. "without 1st auxiliary release".

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Options

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).				Order No. with "-Z"												Add. price		
				1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16														
				3WL -Z														
				and additional order code(s)														
				□ □ □ + . . . + . . .														
				Code for "Further versions" -Z														
				Order code for fixed-mounted version											Order code for withdrawable version			
Interlocks, covers, position signaling switches				□ □ □											□ □ □			
Mutual mechanical interlockings																		
Fixed-mounted circuit breakers				S 5 5											-- -- --	x		
For withdrawable circuit breakers with guide frame				--											R 5 5	x		
For guide frames				--											R 5 6	x		
For withdrawable circuit breakers				--											R 5 7	x		
Arc chute covers																		
3-pole				--											R 1 0	x		
Not available for				--											R 1 0	x		
- 1000 V version (order code "A05")				--											R 1 0	x		
- DC version				--														
- 4000 A size II				--											R 1 0	x		
- 1150 V version (order code "A15")				--														
4-pole				--											R 1 0	x		
Size I				--											R 1 0	x		
Size II				--											R 1 0	x		
Size III				--											R 1 0	x		
Shutters																		
3-pole				--											R 2 1	x		
2-part				--											R 2 1	x		
lockable				--											R 2 1	x		
with padlocks ¹⁾				--											R 2 1	x		
4-pole				--											R 2 1	x		
Size I				--											R 2 1	x		
Size II				--											R 2 1	x		
Size III				--											R 2 1	x		
Position signaling switches for guide frames																		
Connected position		Test position																
Disconnected position																		
1 CO		1 CO		1 CO		--											R 1 5	x
3 CO		2 CO		1 CO		--											R 1 6	x

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).				Order No. with "-Z"												Add. price
				1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16												
				3WL -Z												
				and additional order code(s)												
				□ □ □ + . . . + . . .												
				Code for "Further versions" -Z												
Communication and measurement functions																
Breaker status sensors (BSS)				F 0 1												x
PROFIBUS communications interface²⁾		Including COM15 and breaker status sensor (BSS)		F 0 2												x
MODBUS communications interface²⁾		Including COM16 and breaker status sensor (BSS)		F 1 2												x
Measurement function Plus (without PROFIBUS/MODBUS communications interface³⁾)				F 0 5												x
Overload and short-circuit protection for neutral conductors																
Internal current transformers for N conductors		Size I		F 2 3												x
Only possible with 4-pole circuit breakers with ETU27B to ETU76B		Size II		F 2 3												x
		Size III		F 2 3												x
EMC filters																
EMC filters		Common-mode interference suppressor filters (e. g. in IT networks, caused by frequency converters)		F 3 1												x
		Insertion loss (asymmetric) in the range 40 kHz to 10 MHz >40 dB.														

x = Additional price

¹⁾ Padlocks not included in scope of supply.

²⁾ If ordering withdrawable circuit breaker and guide frame separately, specify order code "F02" or "F12" for withdrawable circuit breaker only.

³⁾ Additional voltage transformers are required for connection of the measurement function Plus, see page 15/43.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Options

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).

Order No. mit "-Z"

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

3WL -Z
and additional order code(s)

□□□ + . . . + . . .

Code for
"Further versions"

-Z

	Order code for fixed-mounted version	Add. price for fixed-mounted version		Order code for withdrawable version	Add. price for withdrawable version
Locking devices	□ □ □			□ □ □	
Locking devices against unauthorized closing, in the operator panel					
The disconnecter unit fulfills the requirements for main circuit breakers according to EN 60204-1	Made by CES S 0 1 Made by IKON S 0 3 Assembly kit FORTRESS or Castell ¹⁾ S 0 5 Assembly kit for padlocks ²⁾ S 0 7 Made by Ronis S 0 8 Made by Profalux S 0 9	x x x x x x x		S 0 1 S 0 3 S 0 5 S 0 7 S 0 8 S 0 9	x x x x x x
EMERGENCY-STOP pushbuttons	Mushroom pushbutton instead of the mechanical OFF pushbutton S 2 4	x		S 2 4	x
Locking devices against unauthorized closing, for withdrawable circuit breakers	Made by CES Made by Ronis Made by Profalux			R 6 1 R 6 8 R 6 0	x x x
The disconnecter unit fulfills the requirements for main circuit breakers according to EN 60204-1, consisting of a lock in the cabinet door, active in the connected position, function is retained when circuit breaker is replaced.					
Locking devices for operating mechanism handles with padlock²⁾	S 3 3	x		S 3 3	x
Locking devices to prevent movement of the withdrawable circuit breakers	Made by CES Made by Profalux Made by Ronis			S 7 1 S 7 5 S 7 6	x x x
Safety lock for mounting on the circuit breaker					
Locking mechanisms					
Locking mechanisms to prevent movement of the withdrawable circuit breaker in disconnected positions,	Made by CES Made by Profalux Made by Ronis			R 8 1 R 8 5 R 8 6	x x x
consisting of Bowden wire and lock in the cabinet door					
Not possible in combination with order code "R30" or "R50".					
Locking devices	To prevent opening of the cabinet door in: ON position (fixed-mounted version)/ in connected position (withdrawable version) S 3 0	x		R 3 0	x
Not possible in combination with order code "R81", "R85" or "R86".				R 5 0	x
To prevent movement with the cabinet door open					
Connection methods for auxiliary conductors					
Connections for screwless terminals (tension spring)	N 6 1	x		P 6 1	x

x = Additional price

¹⁾ Locks must be ordered from the manufacturer.

²⁾ Padlock not included in the scope of supply.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Options

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).

Order No. mit "-Z"
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
3WL -Z
and additional order code(s)

+ . . . + . . .

Code for
"Further versions"-Z

For withdrawable circuit breakers with guide frames or for guide frames¹⁾

To select this connection method the 12th digit of the Order No. for the circuit breaker must be a "6"

Connection methods for main connections

			Code for "Further versions"-Z	Additional price 3-pole	Additional price 4-pole
Top and bottom: accessible from front, single hole	Size I, up to 1600 A	P 0 0		x	x
	Size II, up to 2000 A	P 0 0		x	x
	Size II, up to 2500 A	P 0 0		x	x
	Size II, up to 3200 A	P 0 0		x	x
	Size III, up to 4000 A	P 0 0		x	x
Top and bottom: accessible from front, double hole	Size I, up to 1600 A	P 0 1		x	x
	Size II, up to 2000 A	P 0 1		x	x
	Size II, up to 2500 A	P 0 1		x	x
	Size II, up to 3200 A	P 0 1		x	x
	Size III, up to 4000 A	P 0 1		x	x
Top: horizontal, double hole	Size I, up to 1600 A	P 0 7		x	x
	Size II, up to 2000 A	P 0 7		x	x
	Size II, up to 2500 A	P 0 7		x	x
Bottom: accessible from front, single hole	Size II, up to 3200 A	P 0 7		x	x
	Size III, up to 4000 A	P 0 7		x	x
Top: vertical	Size I, up to 1600 A	P 1 8		x	x
Bottom: horizontal	Size II, up to 2000 A	P 1 8		x	x
	Size II, up to 2500 A	P 1 8		x	x
	Size II, up to 3200 A	P 1 8		x	x
	Size III, up to 4000 A	P 1 8		x	x
	Size III, up to 5000 A	P 1 8		x	x
Top: connecting flange	Size I, up to 1600 A	P 1 9		x	x
Bottom: horizontal	Size II, up to 2000 A	P 1 9		x	x
	Size II, up to 2500 A	P 1 9		x	x
	Size II, up to 3200 A	P 1 9		x	x
	Size III, up to 4000 A	P 1 9		x	x
Top: horizontal	Size I, up to 1600 A	P 2 3		x	x
Bottom: vertical	Size II, up to 2000 A	P 2 3		x	x
	Size II, up to 2500 A	P 2 3		x	x
	Size II, up to 3200 A	P 2 3		x	x
	Size III, up to 4000 A	P 2 3		x	x
	Size III, up to 5000 A	P 2 3		x	x

For fixed-mounted circuit breakers

To select this connection method the 12th digit of the Order No. for the circuit breaker must be a "2"

Connection methods for main connections

			Code for "Further versions"-Z	Additional price 3-pole	Additional price 4-pole
Top: horizontal	Size I, up to 1600 A	N 1 1		x	x
Bottom: accessible from front, single hole	Size II, up to 2000 A	N 1 1		x	x
	Size II, up to 2500 A	N 1 1		x	x
	Size II, up to 3200 A	N 1 1		x	x
	Size III, up to 4000 A	N 1 1		x	x
Top: vertical	Size I, up to 1600 A	N 2 0		x	x
Bottom: horizontal	Size II, up to 2000 A	N 2 0		x	x
	Size II, up to 2500 A	N 2 0		x	x
	Size II, up to 3200 A	N 2 0		x	x
	Size III, up to 4000 A	N 2 0		x	x
	Size III, up to 5000 A	N 2 0		x	x
Top: horizontal	Size I, up to 1600 A	N 2 4		x	x
Bottom: vertical	Size II, up to 2000 A	N 2 4		x	x
	Size II, up to 2500 A	N 2 4		x	x
	Size II, up to 3200 A	N 2 4		x	x
	Size III, up to 4000 A	N 2 4		x	x
	Size III, up to 5000 A	N 2 4		x	x

x = Additional price

¹⁾ Only horizontal connection and vertical connection are available for circuit breakers with very high switching capacity C.

15

SENTRON 3WL Air Circuit Breakers

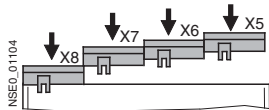
3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Overview

Determination of the number of auxiliary supply connectors required

This selection is only required if the guide frame is ordered under a separate Order No.



The required number of auxiliary supply connectors depends on:

- Operating mechanism type
- Electronic release with/without current transformer
- Type and number of auxiliary releases
- Number of auxiliary switches
- COM15/COM16 communication interface

		Number of auxiliary supply connectors	Terminal
a	First auxiliary supply connector X6 always required.	1	X6
b	Operating mechanisms		
b1	Manual operating mechanism with stored-energy feature with mechanical closing	0	
b2	Manual operating mechanism with stored-energy feature with mechanical and electrical closing	0	X6
b3	Manual/motorized operating mechanism with stored-energy feature with mechanical and electrical closing	+1	X5
c	Electronic releases		
c1	Electronic releases ETU15B, ETU25B, ETU27B	0	
c2	Electronic releases ETU45B, ETU76B (internal CubicleBUS)	+1	X8
	Connections for external current transformers for overload protection in the N conductor and ground-fault protection		
c3	Current transformer installed in the N conductor (required with 3-pole circuit breakers if c2 is not selected)	+1	X8
c4	Current transformer in the neutral point of the transformer (required if c2 or c3 is not selected)	+1	X8
d	Auxiliary releases		
d1	With/without 1st auxiliary release (shunt release F1)	0	X6
d2	2nd auxiliary release (shunt release F2, undervoltage release F3, delayable undervoltage release F4)	+1	X5
e	Auxiliary switch blocks		
e1	1st auxiliary switch block 2 NO + 2 NC	0	X6
e2	1st and 2nd auxiliary switch block 4 NO + 4 NC or 6 NO + 2 NC or 5 NO + 3 NC (required if b3 or d2 is not selected)	+1	X5
f	Communication modules		
f1	Without communication module COM15/COM16	0	
f2	With communication module COM15/COM16 – occupies the entire terminal strip X7, making the following options no longer possible: <ul style="list-style-type: none"> • Tripped signal switch S24 • Stored-energy status indication S21 • Electrical ON button S10 • Signaling switch on first and second auxiliary release S22 + S23 	+1	X7
g	Optional signals/accessories		
g1	Tripped signal switch S24 (only possible if f2 is not selected)	+1	X7
g2	Stored-energy status indication S21 (only possible if f2 is not selected, required if g1 is not selected)	+1	X7
g3	Electrical ON button S10 (only possible if f2 is not selected, required if g1 or g2 is not selected)	+1	X7
g4	Signaling switch on first auxiliary release S22 (only possible if f2 is not selected, required if g1, g2 or g3 is not selected)	+1	X7
g5	Signaling switch on second auxiliary release S23 (only possible if f2 is not selected, required if g1, g2, g3 or g4 is not selected)	+1	X7
g6	Ready-to-close signaling switch S20	0	X6
g7	Motor shutdown switch S12 (only possible if motorized operating mechanism is selected)	0	X5
g8	Remote reset solenoid F7 (required if c2 is not selected)	+1	X8
h	Total number of auxiliary supply connectors	(max. 4)	

For ordering the auxiliary supply connectors see under "Accessories and Spare Parts, Guide Frames for AC Circuit Breakers/Non-Automatic Air Circuit Breakers", pages 15/30 to 15/33 and under "Accessories and Spare Parts, Auxiliary Conductor Connections, Auxiliary Supply Connectors", page 15/39.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Selection and ordering data

Guide frames for AC circuit breakers/non-automatic circuit breakers

Size	Max. rated circuit breaker current I_n max.	Switching capacity I_{cu}	DT	Guide frames for 3-pole circuit breakers/ non-automatic circuit breakers	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg																	
Front main circuit connection, single hole																										
I	1000	... 100	B	3WL9 211-1AA□□-□□A1		1	1 unit	103	25.000																	
I	1600	... 100	B	3WL9 211-2AA□□-□□A1		1	1 unit	103	25.000																	
II	2000	... 100	B	3WL9 212-3AA□□-□□A1		1	1 unit	103	31.000																	
II	2500	... 100	B	3WL9 212-4AA□□-□□A1		1	1 unit	103	39.000																	
II	3200	... 100	B	3WL9 212-5AA□□-□□A1		1	1 unit	103	45.000																	
III	4000	... 100	B	3WL9 213-6AA□□-□□A1		1	1 unit	103	60.000																	
Front main circuit connection, double hole																										
I	1000	... 100	B	3WL9 211-1AB□□-□□A1		1	1 unit	103	25.000																	
I	1600	... 100	B	3WL9 211-2AB□□-□□A1		1	1 unit	103	25.000																	
II	2000	... 100	B	3WL9 212-3AB□□-□□A1		1	1 unit	103	31.000																	
II	2500	... 100	B	3WL9 212-4AB□□-□□A1		1	1 unit	103	39.000																	
II	3200	... 100	B	3WL9 212-5AB□□-□□A1		1	1 unit	103	45.000																	
III	4000	... 100	B	3WL9 213-6AB□□-□□A1		1	1 unit	103	60.000																	
Horizontal main circuit connection																										
I	1000	... 100	B	3WL9 211-1AC□□-□□A1		1	1 unit	103	25.000																	
I	1600	... 100	B	3WL9 211-2AC□□-□□A1		1	1 unit	103	25.000																	
II	2000	... 100	B	3WL9 212-3AC□□-□□A1		1	1 unit	103	31.000																	
II	2500	... 100	B	3WL9 212-4AC□□-□□A1		1	1 unit	103	39.000																	
II	3200	... 100	B	3WL9 212-5AC□□-□□A1		1	1 unit	103	45.000																	
III	4000	... 100	B	3WL9 213-6AC□□-□□A1		1	1 unit	103	60.000																	
III	5000	... 100	B	3WL9 213-7AC□□-□□A1		1	1 unit	103	60.000																	
III	4000	... 150	B	3WL9 213-6AC□□-□□C1		1	1 unit	103	63.000																	
III	5000	... 150	B	3WL9 213-7AC□□-□□C1		1	1 unit	103	63.000																	
Number of auxiliary supply connectors				Order No. supplements	0	1	2	3	4	Add. price																
Without										None																
1 connector					1					x																
2 connectors					2					x																
3 connectors					3					x																
4 connectors					4					x																
For required number of auxiliary supply connectors, see table on page 15/29																										
Type of auxiliary circuit connections					0	1	2			Add. price																
Without										None																
With screw connections (SIGUT)					1					x																
With screwless connection method (tension spring)					2					x																
Position signaling switches					0	1	2			Add. price																
Without										None																
Option 1				Connected position 1 CO contacts, test position 1 CO contacts, disconnected position 1 CO contact		1				x																
Option 2				Connected position 3 CO contacts, test position 2 CO contacts, disconnected position 1 CO contact		2				x																
Shutters					A	B				Add. price																
Without										None																
With shutter, Size I										x																
2-part, Size II										x																
Lockable, Size III										x																
Add "-Z" to the complete Order No. and indicate the appropriate order code(s).					Order No. with "-Z" and additional order code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Add. price				
						3	W	9	2	1	-Z			
Rated voltage 1000 V AC																										
Size II, except 4000 A (switching capacity H)																							A 05	x		
Size III, not necessary with circuit breakers with very high switching capacity																							A 05	x		
Rated voltage 1150 V AC																										
Size II, except 4000 A (switching capacity H)																								A 15	x	
Tinned version of the customer's connections on the guide frame ¹⁾²⁾																										
Only for guide frames with horizontal connection or flange connection																										
Size I																								A 08	x	
Size II																									A 08	x
Size III																									A 08	x

For vertical main circuit connection and main circuit connecting flanges see the following page.
All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see pages 15/24 to 15/28.

x = Additional price

1) Front connections are tinned as standard.

2) The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Size	Max. rated circuit breaker current I_n max.	Switching capacity I_{cu}	DT	Guide frames for 3-pole circuit breakers/ non-automatic circuit breakers	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
				Order No. (Order No. supplements required according to table below)	Basic price per PU				
A		kA							
Vertical main circuit connection									
I	1000	... 100	B	3WL9 211-1AD□□-□□A1		1	1 unit	103	25.000
I	1600	... 100	B	3WL9 211-2AD□□-□□A1		1	1 unit	103	25.000
II	2000	... 100	B	3WL9 212-3AD□□-□□A1		1	1 unit	103	31.000
II	2500	... 100	B	3WL9 212-4AD□□-□□A1		1	1 unit	103	39.000
II	3200	... 100	B	3WL9 212-5AD□□-□□A1		1	1 unit	103	45.000
II	4000	... 100	B	3WL9 212-6AD□□-□□A1		1	1 unit	103	52.000
III	4000	... 100	B	3WL9 213-6AD□□-□□A1		1	1 unit	103	60.000
III	5000	... 100	B	3WL9 213-7AD□□-□□A1		1	1 unit	103	60.000
III	6300	... 100	B	3WL9 213-8AD□□-□□A1		1	1 unit	103	70.000
III	4000	... 150	B	3WL9 213-6AD□□-□□C1		1	1 unit	103	63.000
III	5000	... 150	B	3WL9 213-7AD□□-□□C1		1	1 unit	103	63.000
III	6300	... 150	B	3WL9 213-8AD□□-□□C1		1	1 unit	103	74.000
Main circuit connection connecting flanges									
I	1000	... 100	B	3WL9 211-1AE□□-□□A1		1	1 unit	103	25.000
I	1600	... 100	B	3WL9 211-2AE□□-□□A1		1	1 unit	103	25.000
II	2000	... 100	B	3WL9 212-3AE□□-□□A1		1	1 unit	103	31.000
II	2500	... 100	B	3WL9 212-4AE□□-□□A1		1	1 unit	103	39.000
II	3200	... 100	B	3WL9 212-5AE□□-□□A1		1	1 unit	103	45.000
III	4000	... 100	B	3WL9 213-6AE□□-□□A1		1	1 unit	103	60.000
Number of auxiliary supply connectors				Order No. supplements	0	Add. price			
Without				0	None				
1 connector				1	x				
2 connectors				2	x				
3 connectors				3	x				
4 connectors				4	x				
For required number of auxiliary supply connectors, see table on page 15/29									
Type of auxiliary circuit connections					0	None			
Without				0	None				
With screw connections (SIGUT)				1	x				
With screwless connection method (tension spring)				2	x				
Position signaling switches					0	None			
Without				0	None				
Option 1				1	x				
Option 2				2	x				
Shutters					A	None			
Without				A	None				
With shutter, Size I				B	x				
2-part, Size II					x				
Lockable, Size III					x				
Add "-Z" to the complete Order No. and indicate the appropriate order code(s).				Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Add. price			
					3WL9 2 1 -Z				
Rated voltage 1000 V AC					□□□				
Size II, except 4000 A (switching capacity H)					A 0 5	x			
Size III, not necessary with circuit breakers with very high switching capacity					A 0 5	x			
Rated voltage 1150 V AC									
Size II, except 4000 A (switching capacity H)					A 1 5	x			
Tinned version of the customer's connections on the guide frame ¹⁾²⁾									
Only for guide frames with horizontal connection or flange connection									
Size I					A 0 8	x			
Size II					A 0 8	x			
Size III					A 0 8	x			

For front main circuit connection, single hole, front main circuit connection, double hole, and horizontal main circuit connection see the previous page.

All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see pages 15/24 to 15/28.

x = Additional price

1) Front connections are tinned as standard.

2) The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Size	Max. rated circuit breaker current I_n max.	Switching capacity I_{cu}	DT	Guide frames for 4-pole circuit breakers/ non-automatic circuit breakers	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
				Order No. (Order No. supplements required according to table below)	Basic price per PU				
A		kA							
Front main circuit connection, single hole									
I	1000	... 100	B	3WL9 211-1BA□□-□□A1		1	1 unit	103	30.000
I	1600	... 100	B	3WL9 211-2BA□□-□□A1		1	1 unit	103	30.000
II	2000	... 100	B	3WL9 212-3BA□□-□□A1		1	1 unit	103	37.000
II	2500	... 100	B	3WL9 212-4BA□□-□□A1		1	1 unit	103	47.000
II	3200	... 100	B	3WL9 212-5BA□□-□□A1		1	1 unit	103	54.000
III	4000	... 100	B	3WL9 213-6BA□□-□□A1		1	1 unit	103	84.000
Front main circuit connection, double hole									
I	1000	... 100	B	3WL9 211-1BB□□-□□A1		1	1 unit	103	30.000
I	1600	... 100	B	3WL9 211-2BB□□-□□A1		1	1 unit	103	30.000
II	2000	... 100	B	3WL9 212-3BB□□-□□A1		1	1 unit	103	37.000
II	2500	... 100	B	3WL9 212-4BB□□-□□A1		1	1 unit	103	47.000
II	3200	... 100	B	3WL9 212-5BB□□-□□A1		1	1 unit	103	54.000
III	4000	... 100	B	3WL9 213-6BB□□-□□A1		1	1 unit	103	84.000
Horizontal main circuit connection									
I	1000	... 100	B	3WL9 211-1BC□□-□□A1		1	1 unit	103	30.000
I	1600	... 100	B	3WL9 211-2BC□□-□□A1		1	1 unit	103	30.000
II	2000	... 100	B	3WL9 212-3BC□□-□□A1		1	1 unit	103	37.000
II	2500	... 100	B	3WL9 212-4BC□□-□□A1		1	1 unit	103	47.000
II	3200	... 100	B	3WL9 212-5BC□□-□□A1		1	1 unit	103	54.000
III	4000	... 100	B	3WL9 213-6BC□□-□□A1		1	1 unit	103	84.000
III	5000	... 100	B	3WL9 213-7BC□□-□□A1		1	1 unit	103	84.000
III	4000	... 130	B	3WL9 213-6BC□□-□□C1		1	1 unit	103	87.000
III	5000	... 130	B	3WL9 213-7BC□□-□□C1		1	1 unit	103	87.000
Number of auxiliary supply connectors				Order No. supplements	Add. price				
Without				0	None				
1 connector				1	x				
2 connectors				2	x				
3 connectors				3	x				
4 connectors				4	x				
For required number of auxiliary supply connectors, see table on page 15/29									
Type of auxiliary circuit connections									
Without				0	None				
With screw connections (SIGUT)				1	x				
With screwless connection method (tension spring)				2	x				
Position signaling switches									
Without				0	None				
Option 1	Connected position 1 CO contacts, test position 1 CO contacts, disconnected position 1 CO contact			1	x				
Option 2	Connected position 3 CO contacts, test position 2 CO contacts, disconnected position 1 CO contact			2	x				
Shutters									
Without				A	None				
With shutter, 2-part,				B	x				
Lockable					x				
					x				
					x				
Add "-Z" to the complete Order No. and indicate the appropriate order code(s).				Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Add. price			
Rated voltage 1000 V AC					3WL9 2 1 -Z				
Size II, except 4000 A (switching capacity H)					□□□				
Size III, not necessary with circuit breakers with very high switching capacity					A 05	x			
Rated voltage 1150 V AC					A 05	x			
Size II, except 4000 A (switching capacity H)					A 15	x			
Tinned version of the customer's connections on the guide frame ¹⁾²⁾									
Only for guide frames with horizontal connection or flange connection									
Size I					A 08	x			
Size II					A 08	x			
Size III					A 08	x			

For vertical main circuit connection and main circuit connecting flanges see the following page.
All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see pages 15/24 to 15/28.

x = Additional price
 1) Front connections are tinned as standard.
 2) The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Size	Max. rated circuit breaker current I_n max.	Switching capacity I_{cu}	DT	Guide frames for 4-pole circuit breakers/ non-automatic circuit breakers	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	A	kA		Order No. (Order No. supplements required according to table below)	Basic price per PU			
Vertical main circuit connection								
I	1000	... 100	B	3WL9 211-1BD□□-□□A1		1	1 unit	103 30.000
I	1600	... 100	B	3WL9 211-2BD□□-□□A1		1	1 unit	103 30.000
II	2000	... 100	B	3WL9 212-3BD□□-□□A1		1	1 unit	103 37.000
II	2500	... 100	B	3WL9 212-4BD□□-□□A1		1	1 unit	103 47.000
II	3200	... 100	B	3WL9 212-5BD□□-□□A1		1	1 unit	103 54.000
II	4000	... 100	B	3WL9 212-6BD□□-□□A1		1	1 unit	103 62.000
III	4000	... 100	B	3WL9 213-6BD□□-□□A1		1	1 unit	103 84.000
III	5000	... 100	B	3WL9 213-7BD□□-□□A1		1	1 unit	103 84.000
III	6300	... 100	B	3WL9 213-8BD□□-□□A1		1	1 unit	103 119.000
III	4000	... 130	B	3WL9 213-6BD□□-□□C1		1	1 unit	103 88.000
III	5000	... 130	B	3WL9 213-7BD□□-□□C1		1	1 unit	103 88.000
III	6300	... 130	B	3WL9 213-8BD□□-□□C1		1	1 unit	103 124.000
Main circuit connection connecting flanges								
I	1000	... 100	B	3WL9 211-1BE□□-□□A1		1	1 unit	103 30.000
I	1600	... 100	B	3WL9 211-2BE□□-□□A1		1	1 unit	103 30.000
II	2000	... 100	B	3WL9 212-3BE□□-□□A1		1	1 unit	103 37.000
II	2500	... 100	B	3WL9 212-4BE□□-□□A1		1	1 unit	103 47.000
II	3200	... 100	B	3WL9 212-5BE□□-□□A1		1	1 unit	103 54.000
III	4000	... 100	B	3WL9 213-6BE□□-□□A1		1	1 unit	103 84.000
Number of auxiliary supply connectors				Order No. supplements	Add. price			
Without				0	None			
1 connector				1	x			
2 connectors				2	x			
3 connectors				3	x			
4 connectors				4	x			
For required number of auxiliary supply connectors, see table on page 15/29								
Type of auxiliary circuit connections								
Without				0	None			
With screw connections (SIGUT)				1	x			
With screwless connection method (tension spring)				2	x			
Position signaling switches								
Without				0	None			
Option 1	Connected position 1 CO contacts, test position 1 CO contacts, disconnected position 1 CO contact			1	x			
Option 2	Connected position 3 CO contacts, test position 2 CO contacts, disconnected position 1 CO contact			2	x			
Shutters								
Without				A	None			
With shutter,	Size I			B	x			
2-part,	Size II				x			
Lockable	Size III				x			
Add "-Z" to the complete Order No. and indicate the appropriate order code(s).				Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 3WL9 2 1 -Z	Add. price		
Rated voltage 1000 V AC								
Size II, except 4000 A (switching capacity H)				A 05		x		
Size III, not necessary with circuit breakers with very high switching capacity				A 05		x		
Rated voltage 1150 V AC								
Size II, except 4000 A (switching capacity H)				A 15		x		
Tinned version of the customer's connections on the guide frame ¹⁾²⁾ Only for guide frames with horizontal connection or flange connection								
Size I				A 08		x		
Size II				A 08		x		
Size III				A 08		x		

For front main circuit connection, single hole, front main circuit connection, double hole, and horizontal main circuit connection see the previous page.

All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see pages 15/24 to 15/28.

x = Additional price


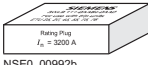



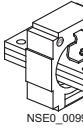
1) Front connections are tinned as standard.

2) The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
							kg	
Protective devices with device holder and optional measurement function¹⁾								
 NSE0_016100 3WL9 31...AA.0-0AA1	Type	With protection function	Measurement function					
	ETU15B	LI	Without	C	3WL9 311-5AA00-0AA2	1	1 unit	103 0.720
	ETU25B	LSI	Without	C	3WL9 312-5AA00-0AA2	1	1 unit	103 0.720
	ETU27B	LSING	Without	C	3WL9 312-7AA00-0AA2	1	1 unit	103 0.720
	ETU45B (without display)	LSIN(G)	Without With measurement function <i>Plus</i>	C B	3WL9 314-5AA00-0AA2 3WL9 314-5AA20-0AA2	1 1	1 unit	103 0.720 103 0.720
	ETU76B	LSIN(G)	Without With measurement function <i>Plus</i>	C B	3WL9 317-6AA00-0AA2 3WL9 317-6AA20-0AA2	1 1	1 unit	103 0.720 103 0.720
Rated current modules / Rating plugs²⁾								
 NSE0_00992b 3WL9 111-0AA64-0AA0	For size	Rated current I_n (A)						
	I, II	250	B	3WL9 111-0AA51-0AA0	1	1 unit	103	0.010
		315	B	3WL9 111-0AA52-0AA0	1	1 unit	103	0.010
		400	B	3WL9 111-0AA53-0AA0	1	1 unit	103	0.010
		500	B	3WL9 111-0AA54-0AA0	1	1 unit	103	0.010
		630	B	3WL9 111-0AA55-0AA0	1	1 unit	103	0.010
		800	B	3WL9 111-0AA56-0AA0	1	1 unit	103	0.010
		1000	B	3WL9 111-0AA57-0AA0	1	1 unit	103	0.010
	I, II, III	1250	B	3WL9 111-0AA58-0AA0	1	1 unit	103	0.010
		1600	B	3WL9 111-0AA61-0AA0	1	1 unit	103	0.010
	II, III	2000	B	3WL9 111-0AA62-0AA0	1	1 unit	103	0.010
		2500	B	3WL9 111-0AA63-0AA0	1	1 unit	103	0.010
		3200	B	3WL9 111-0AA64-0AA0	1	1 unit	103	0.010
		4000	B	3WL9 111-0AA65-0AA0	1	1 unit	103	0.010
	III	5000	B	3WL9 111-0AA66-0AA0	1	1 unit	103	0.010
6300		B	3WL9 111-0AA67-0AA0	1	1 unit	103	0.010	
Ground-fault modules³⁾								
 NSE0_01027a 3WL9 111-0AT53-0AA0	GFM AT 45B (only for ETU45B) alarm and tripping		B	3WL9 111-0AT53-0AA0	1	1 unit	103 0.030	
	GFM AT 55B-76B (only for ETU76B) alarm and tripping		B	3WL9 111-0AT56-0AA0	1	1 unit	103 0.030	
Displays								
 NSE0_01609 3WL9 111-0AT81-0AA0	4-line displays for ETU45B		B	3WL9 111-0AT81-0AA0	1	1 unit	103 0.060	
Current transformers for N conductor protection								
 NSE0_00990a 3WL9 111-0AA2.-0AA0	Internal transformers for N conductors (not for ETU Release 2)		Size I	B	3WL9 111-0AA11-0AA0	1	1 unit	103 0.200
	Including wiring kit		Size II	B	3WL9 111-0AA12-0AA0	1	1 unit	103 0.280
			Size III	B	3WL9 111-0AA13-0AA0	1	1 unit	103 0.500
 NSE0_00991a 3WL9 111-0AA3.-0AA0	Internal transformers for N conductors Only for ETU Release 2		Size I	B	3WL9 111-0AA14-0AA0	1	1 unit	103 0.200
	Including wiring kit		Size II	B	3WL9 111-0AA15-0AA0	1	1 unit	103 0.280
			Size III	B	3WL9 111-0AA16-0AA0	1	1 unit	103 0.500
External transformers for N conductors (for T5, "Measurement Method" function see Technical Information at www.siemens.com/lowvoltage/support .)		Size I	B	3WL9 111-0AA21-0AA0	1	1 unit	103 0.300	
		Size II	B	3WL9 111-0AA22-0AA0	1	1 unit	103 0.380	
		Size III	B	3WL9 111-0AA23-0AA0	1	1 unit	103 0.680	
External transformers for N conductors with copper connection pieces (for T5, "Measurement Method" function see Technical Information at www.siemens.com/lowvoltage/support .)		Size I	B	3WL9 111-0AA31-0AA0	1	1 unit	103 1.600	
		Size II	B	3WL9 111-0AA32-0AA0	1	1 unit	103 4.260	
		Size III	B	3WL9 111-0AA33-0AA0	1	1 unit	103 8.500	
EMC filters								
EMC filters		Not for ETU Release 2		B	3WL9 111-0AK32-0AA0	1	1 unit	103 0.280
Common-mode interference suppressor filters (e. g. in IT networks, caused by frequency converters)		Only for ETU Release 2		B	3WL9 111-0AK34-0AA0	1	1 unit	103 0.280
Insertion loss (asymmetric) in the range 40 kHz to 10 MHz >40 dB.								

¹⁾ For replacement in existing circuit breakers please specify the circuit breaker ID No. when ordering.

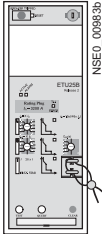
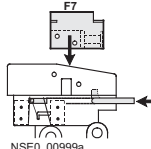
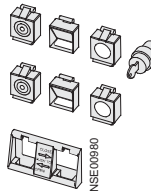
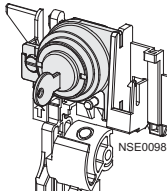
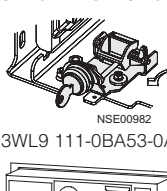
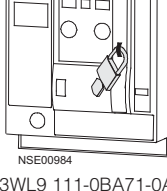
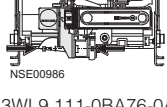
²⁾ With the rated current module selected, the maximum rated current $I_{n,max}$ of the circuit breaker must not be exceeded. The following applies $I_n \leq I_{n,max}$.

³⁾ For direct measurement of the ground-fault current, e. g. in the neutral point of the transformer, a 1200 A/1 A current transformer, class 1, is required. The internal load of the SENTRON 3WL is 0.11 Ω . If the ground-fault current is to be determined using the vectorial sum of the phases, a current transformer must be installed in the neutral conductor.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
More accessories for electronic releases							
	Sealable and lockable covers	For ETU15B to ETU45B	B	3WL9 111-0AT45-0AA0	1	1 unit	103 0.050
		For ETU76	B	3WL9 111-0AT46-0AA0	1	1 unit	103 0.050
	Automatic reset of the reclosing lockout	Spare part for option K01 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AK21-0AA0	1	1 unit	103 0.050
	Remote reset solenoids¹⁾	24 V DC	B	3WL9 111-0AK03-0AA0	1	1 unit	103 0.200
	For mechanical tripped indicator	48 V DC	B	3WL9 111-0AK04-0AA0	1	1 unit	103 0.200
	Spare part for option K10 to K13 , see "-Z" + order code, page 15/25 .	120 V AC/ 125 V DC	B	3WL9 111-0AK05-0AA0	1	1 unit	103 0.200
		208-250 V AC/ 208-250 V DC	B	3WL9 111-0AK06-0AA0	1	1 unit	103 0.200
	Retrofittable internal CubicleBUS wiring for connection to terminal X8 (without male connector ²⁾)	For ETU45B and ETU76B	B	3WL9 111-0AK30-0AA0	1	1 unit	103 0.150
	Retrofittable internal wiring for connection of the external N- and G-transformers to terminal X8 (without male connector, not for ETU Release 2)		D	3WL9 111-0AK31-0AA0	1	1 unit	103 0.020
	Retrofittable internal wiring for connection of the external N- and G-transformers to terminal X8 for ETU Release 2 (without male connector)		D	3WL9 111-0AK33-0AA0	1	1 unit	103 0.020
Locking devices							
	Protective covers for Mechanical ON/OFF	Without safety lock	B	3WL9 111-0BA21-0AA0	1	1 unit	103 0.100
		Made by CES	B	3WL9 111-0BA22-0AA0	1	1 unit	103 0.300
		Made by IKON	B	3WL9 111-0BA24-0AA0	1	1 unit	103 0.300
	Locking devices against unauthorized closing, in the operator panel	Assembly kit FORTRESS or CASTELL ³⁾	B	3WL9 111-0BA31-0AA0	1	1 unit	103 0.200
	The disconnecter unit ■	Made by Ronis	B	3WL9 111-0BA33-0AA0	1	1 unit	103 0.400
	fulfills the requirements for main circuit breakers according to EN 60204-1	Made by KIRK-Key ³⁾	B	3WL9 111-0BA34-0AA0	1	1 unit	103 0.270
	Spare part for option S01 to S09 , see "-Z" + order code, page 15/27 .	Made by Profalux	B	3WL9 111-0BA35-0AA0	1	1 unit	103 0.250
		Made by CES	B	3WL9 111-0BA36-0AA0	1	1 unit	103 0.200
		Made by IKON	B	3WL9 111-0BA38-0AA0	1	1 unit	103 0.200
		Assembly kit for padlocks ⁴⁾	B	3WL9 111-0BA41-0AA0	1	1 unit	103 0.360
	Locking devices against unauthorized closing, for withdrawable circuit breakers ■	Made by CES	B	3WL9 111-0BA51-0AA0	1	1 unit	103 0.300
	The disconnecter unit fulfills the requirements for main circuit breakers according to EN 60204-1	Made by IKON	B	3WL9 111-0BA53-0AA0	1	1 unit	103 0.300
	consisting of lock in the cabinet door, active in connected position; function is retained when circuit breaker is replaced	Made by KIRK-Key ³⁾	B	3WL9 111-0BA57-0AA0	1	1 unit	103 0.300
	Spare part for option R60 , R61 , R68 , see "-Z" + order code, page 15/27 .	Made by Ronis	B	3WL9 111-0BA58-0AA0	1	1 unit	103 0.300
		Made by Profalux	B	3WL9 111-0BA50-0AA0	1	1 unit	103 0.227
	Locking devices for operating mechanism handle with padlock⁴⁾		B	3WL9 111-0BA71-0AA0	1	1 unit	103 0.080
	Spare part for option S33 , see "-Z" + order code, page 15/27 .						
	Locking devices against movement of the withdrawable circuit breakers	Made by CES	B	3WL9 111-0BA73-0AA0	1	1 unit	103 0.300
	Safety lock for mounting on the circuit breaker.	Made by IKON	B	3WL9 111-0BA75-0AA0	1	1 unit	103 0.200
		Made by Profalux	B	3WL9 111-0BA76-0AA0	1	1 unit	103 0.300
		Made by Ronis	B	3WL9 111-0BA77-0AA0	1	1 unit	103 0.300
	Spare part for option S71 , S75 , S76 , see "-Z" + order code, page 15/27 .	■ Made by KIRK-Key ³⁾	B	3WL9 111-0BA80-0AA0	1	1 unit	103 0.400
	Interlocking systems	Made by CES	B	3WL9 111-0BA43-0AA0	1	1 unit	103 0.360
	2 of the same keys for 3 circuit breakers, Locking device OFF position, Key-operated switch on operator panel. A maximum of 2 circuit breakers can be switched on.						

¹⁾ Can only be used in conjunction with "automatic reset of lockout device", e. g. "-Z" + "K01", 3WL9 111-0AK21-0AA0.

²⁾ Required if communication is retrofitted.

³⁾ Locks, cylinders and keys must be ordered from the manufacturer.

⁴⁾ Padlock not included in the scope of supply.

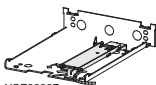

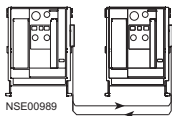
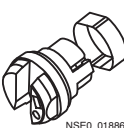
■ Start of delivery on request.

* You can order this quantity or a multiple thereof.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
Locking mechanisms									
 <p>NSE00987</p> <p>3WL9 111-0BA83-0AA0</p>	To prevent movement of the withdrawable circuit breakers in disconnected position, consisting of Bowden wire and lock in the cabinet door		Made by CES Made by IKON Made by Profalux Made by Ronis	B B B B	3WL9 111-0BA81-0AA0 3WL9 111-0BA83-0AA0 3WL9 111-0BA85-0AA0 3WL9 111-0BA86-0AA0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	103 103 103 103	0.800 0.800 0.800 0.800
	Spare part for option R81 , R85 , R86 , see "-Z" + order code, page 15/27 .								
	 <p>NSE00988</p> <p>3WL9 111-0BB12-0AA0</p>	Not possible in combination with "Locking device to prevent opening of the cabinet door" (order code "R30") or "Locking device to prevent movement with the cabinet door open" (order code "R50").							
		To prevent opening of the cabinet door in ON position (can be defeated)		Fixed mounting	B	3WL9 111-0BB12-0AA0	1	1 unit	103
Spare part for option S30 , see "-Z" + order code, page 15/27 .									
To prevent opening of the cabinet door (can be defeated)		Guide frames	B	3WL9 111-0BB13-0AA0	1	1 unit	103	0.150	
Spare part for option R30 , see "-Z" + order code, page 15/27 . Not possible in combination with "Locking device to prevent movement of the withdrawable circuit breakers in disconnected position" (order codes "R81", "R85" or "R86").									
To prevent movement with the cabinet door open		Guide frames	B	3WL9 111-0BB15-0AA0	1	1 unit	103	0.150	
Spare part for option R50 , see "-Z" + order code, page 15/27 . Not possible in combination with "Locking device to prevent movement of the withdrawable circuit breakers in disconnected position" (order codes "R81", "R85" or "R86").									
Interlocks									
 <p>NSE00989</p> <p>3WL9 111-0BB21-0AA0</p>	Mutual mechanical interlocking, with 2000 mm Bowden wire (one required for each circuit breaker)		Fixed-mounted circuit breakers	B	3WL9 111-0BB21-0AA0	1	1 unit	103	2.700
	Spare part for option S55 , see "-Z" + order code, page 15/26 .								
	Module for withdrawable circuit breaker with frame			B	3WL9 111-0BB24-0AA0	1	1 unit	103	1.130
	Spare part for option R55 , see "-Z" + order code, page 15/26 . <u>When ordered separately</u>								
Module for guide frame			B	3WL9 111-0BB22-0AA0	1	1 unit	103	1.100	
Spare part for option R56 , see "-Z" + order code, page 15/26 .									
Module for withdrawable circuit breaker			B	3WL9 111-0BB23-0AA0	1	1 unit	103	0.150	
Spare part for option R57 , see "-Z" + order code, page 15/26 .									
Adapter for size III Withdrawable circuit breaker			B	3WL9 111-0BB30-0AA0	1	1 unit	103	0.100	
Couplings on the circuit breaker (with ring) for mutual interlocking Can be used in all circuit breakers			B	3WL9 112-8AH47-0AA0	1	1 unit	103	0.160	
 <p>NSE0_01886</p> <p>3WL9 112-8HA47-0AA0</p>	Bowden wires		2000 mm	B	3WL9 111-0BB45-0AA0	1	1 unit	103	0.150
			3000 mm	B	3WL9 111-0BB46-0AA0	1	1 unit	103	0.220
			4500 mm	B	3WL9 111-0BB47-0AA0	1	1 unit	103	0.360

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

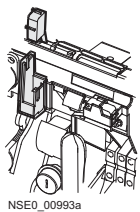
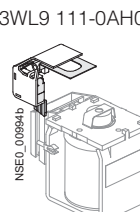
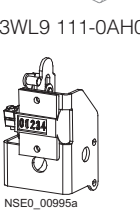
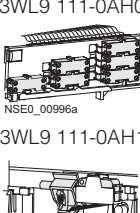

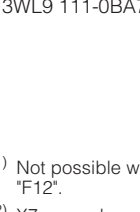
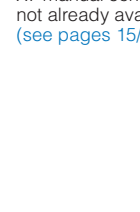

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Test devices							
Manual tester Release 2 for electronic releases ETU15B to ETU76B For testing the electronic trip unit functions	B	3WL9 111-0AT32-0AA0		1	1 unit	103	1.100
Function testers For testing the tripping characteristics for electronic releases ETU15B to ETU76B	D	3WL9 111-0AT44-0AA0		1	1 unit	103	8.210
Capacitor storage devices							
Capacitor storage devices <u>For shunt release</u> Storage time 5 min Rated control supply voltage must match the rated control supply voltage of the shunt release		Rated control supply voltage/rated operational voltage AC 50/60 Hz V V DC 220 ... 240 220 ... 250					
	B	3WL9 111-0BA14-0AA0		1	1 unit	103	0.520
Suitable also for 3VL and 3WN circuit breakers							

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

	Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Indicators, control elements								
	Ready-to-close signaling switches 1 NO Spare part for option C22 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AH01-0AA0		1	1 unit	103	0.020
	Signaling switches ¹⁾²⁾ 1st or 2nd auxiliary release Spare part for option C26 and C27 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AH02-0AA0		1	1 unit	103	0.020
	Tripped signaling switches ¹⁾²⁾ 1 CO Spare part for option K07 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AH14-0AA0		1	1 unit	103	0.080
	Operating cycles counters, mechanical ³⁾ Spare part for option C01 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AH07-0AA0		1	1 unit	103	0.100
	Stored energy status signaling switches ¹⁾²⁾ 1 NO Spare part for option C20 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AH08-0AA0		1	1 unit	103	0.030
	Position signaling switches for guide frames Spare part for option R15 and R16 , see "-Z" + order code, page 15/26 .	B	3WL9 111-0AH11-0AA0	1st block (3 CO contacts)	1	1 unit	103	0.200
	Electrical ON buttons ¹⁾⁴⁾ (button+wiring) ²⁾ , for operator panel. Possible only for circuit breakers with closing solenoid.	B	3WL9 111-0AJ02-0AA0	With sealing cap	1	1 unit	103	0.150
	Motor shutdown switches ⁵⁾ (mounting on operator panel) Spare part for option S25 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AJ03-0AA0	With CES assembly kit	1	1 unit	103	0.140
	Emergency-stop pushbuttons Mushroom pushbutton instead of the mechanical OFF pushbutton Spare part for option S24 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AJ05-0AA0	With IKON assembly kit	1	1 unit	103	0.140
	Motor shutdown switches ⁵⁾ (mounting on operator panel) Spare part for option S25 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AJ06-0AA0		1	1 unit	103	0.100
	EMERGENCY-STOP pushbuttons Mushroom pushbutton instead of the mechanical OFF pushbutton Spare part for option S24 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0BA72-0AA0		1	1 unit	103	0.080

1) Not possible with communications interface option, order code "F02" or "F12".

2) X7 manual connector required for circuit breakers or guide frames. If this is not already available, please order additionally (see [pages 15/29 and 15/39](#)).

3) Only in conjunction with motorized operating mechanism.

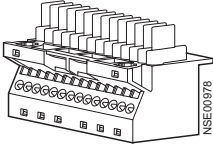
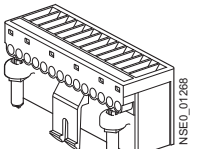
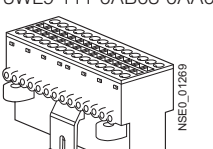
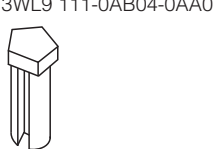
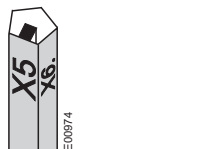
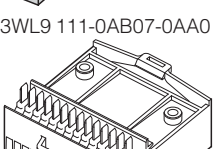
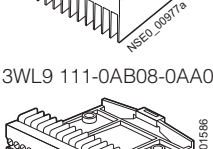

4) Not possible with motor shutdown switch.

5) Not possible with electrical ON button.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Auxiliary conductor connections							
 NSE00976 3WL9 111-0AB01-0AA0		Male connectors for circuit breakers ①	B	3WL9 111-0AB01-0AA0	1	1 unit	103 0.100
 NSE0_01288 3WL9 111-0AB02-0AA0		Extension for the 1000 V male connector versions (male connector must be ordered separately)	B	3WL9 111-0AB02-0AA0	1	1 unit	103 0.150
 NSE0_01289 3WL9 111-0AB03-0AA0		Male connectors and extension for 1000 V	B	3WL9 111-0AB10-0AA0	1	1 unit	103 1.000
 NSE00974 3WL9 111-0AB03-0AA0		Auxiliary supply connectors for circuit breakers or guide frames ②	B	3WL9 111-0AB03-0AA0	1	1 unit	103 0.070
 NSE0_01289 3WL9 111-0AB04-0AA0		Screw connection (SIGUT) Screwless connection method (tension spring)	B	3WL9 111-0AB04-0AA0	1	1 unit	103 0.070
 NSE00974 3WL9 111-0AB07-0AA0		Coding kits for fixed-mounted version (X5 to X8) ③	B	3WL9 111-0AB07-0AA0	1	1 unit	103 0.020
 NSE0_09977a 3WL9 111-0AB08-0AA0		Sliding contact modules for guide frames ④	B	3WL9 111-0AB08-0AA0	1	1 unit	103 0.100
 NSE0_01696 3WL9 111-0AB18-0AA0		One-part sliding contact modules for guide frames Screw connection (SIGUT) ⑤	B	3WL9 111-0AB18-0AA0	1	1 unit	103 0.120
		Blanking blocks for circuit breakers	B	3WL9 111-0AB12-0AA0	1	1 unit	103 0.030

For a complete auxiliary current connection you must order:

Fixed-mounted version: ① + ② + ③

Withdrawable version: ① + ④ + ②

or

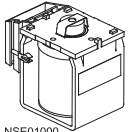
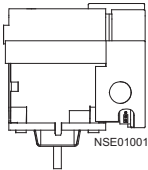
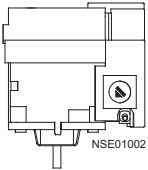
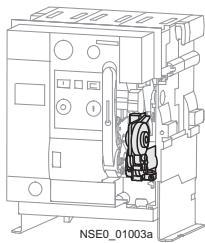
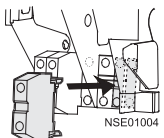
① + ⑤

* You can order this quantity or a multiple thereof.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

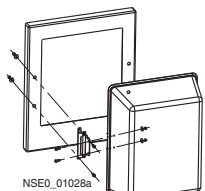
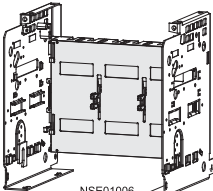
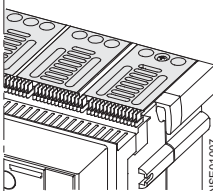
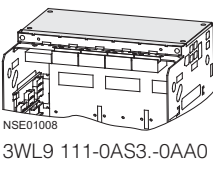
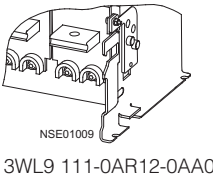
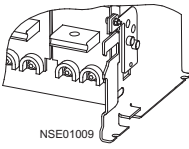
	Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Auxiliary releases									
 NSE01000 3WL9 111-0AD06-0AA0	Closing solenoids/shunt releases								
	24 V DC	100 % duty ratio	B	3WL9 111-0AD01-0AA0	1	1 unit	103	0.700	
	30 V DC		B	3WL9 111-0AD02-0AA0	1	1 unit	103	0.700	
	48 V DC		B	3WL9 111-0AD03-0AA0	1	1 unit	103	0.700	
	60 V DC		B	3WL9 111-0AD04-0AA0	1	1 unit	103	0.700	
	110 ... 125 V DC/110 V AC		B	3WL9 111-0AD05-0AA0	1	1 unit	103	0.700	
	220 V DC/230 V AC		B	3WL9 111-0AD06-0AA0	1	1 unit	103	0.700	
 NSE01001	24 V DC	5 % duty ratio	B	3WL9 111-0AD11-0AA0	1	1 unit	103	0.700	
	48 V DC		B	3WL9 111-0AD12-0AA0	1	1 unit	103	0.700	
	110 ... 125 V DC/110 ... 127 V AC		B	3WL9 111-0AD13-0AA0	1	1 unit	103	0.700	
	220 ... 250 V DC/208 ... 240 V AC		B	3WL9 111-0AD14-0AA0	1	1 unit	103	1.800	
Undervoltage releases									
 NSE01002 3WL9 111-0AE1.-0AA0	Instantaneous								
	24 V DC		B	3WL9 111-0AE01-0AA0	1	1 unit	103	0.730	
	30 V DC		B	3WL9 111-0AE02-0AA0	1	1 unit	103	0.730	
	48 V DC		B	3WL9 111-0AE03-0AA0	1	1 unit	103	0.730	
	60 V DC		B	3WL9 111-0AE07-0AA0	1	1 unit	103	0.730	
	110 ... 125 V DC/110 ... 127 V AC		B	3WL9 111-0AE04-0AA0	1	1 unit	103	0.730	
	220 ... 250 V DC/208 ... 240 V AC		B	3WL9 111-0AE05-0AA0	1	1 unit	103	0.730	
	380 ... 415 V AC		B	3WL9 111-0AE06-0AA0	1	1 unit	103	0.730	
	Delayed								
	48 V DC		B	3WL9 111-0AE11-0AA0	1	1 unit	103	0.740	
	110 ... 125 V DC/110 ... 127 V AC		B	3WL9 111-0AE12-0AA0	1	1 unit	103	0.740	
	220 ... 250 V DC/208 ... 240 V AC		B	3WL9 111-0AE13-0AA0	1	1 unit	103	0.740	
	380 ... 415 V AC		B	3WL9 111-0AE14-0AA0	1	1 unit	103	0.740	
	Operating mechanisms								
 NSE0_01003a 3WL9 111-0AF0.-0AA0	Motorized operating mechanisms¹⁾								
	24 ... 30 V DC		B	3WL9 111-0AF01-0AA0	1	1 unit	103	1.510	
	48 ... 60 V DC		B	3WL9 111-0AF02-0AA0	1	1 unit	103	1.510	
	110 ... 125 V DC/110 ... 127 V AC		B	3WL9 111-0AF03-0AA0	1	1 unit	103	1.510	
	220 ... 250 V DC/208 ... 240 V AC		B	3WL9 111-0AF04-0AA0	1	1 unit	103	1.510	
Auxiliary contacts									
 NSE01004 3WL9 111-0AG03-0AA0	Auxiliary switch blocks								
	2 NO + 2 NC		B	3WL9 111-0AG01-0AA0	1	1 unit	103	0.180	
	2 NO		B	3WL9 111-0AG02-0AA0	1	1 unit	103	0.080	
	1 NO + 1 NC		B	3WL9 111-0AG03-0AA0	1	1 unit	103	0.070	

¹⁾ X7 manual connector required for circuit breakers or guide frames. If this is not already available, please order additionally (see pages 15/29 and 15/39).

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts


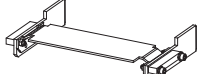
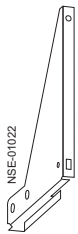
	Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Door sealing frames, covers, shutters									
 <p>3WL9 111-0AP02-0AA0</p>	Door sealing frames Spare part for option T40 , see "-Z" + order code, page 15/25 .	B	3WL9 111-0AP01-0AA0		1	1 unit	103	0.360	
	Protective covers, IP55 cannot be used in conjunction with door sealing frames, cover removable and can be opened on both sides	B	3WL9 111-0AP02-0AA0		1	1 unit	103	1.600	
 <p>3WL9 111-0AP0.-0AA0</p>	Shutters Spare part for option R21 , see "-Z" + order code, page 15/26 .								
	3-pole	Size I	B	3WL9 111-0AP04-0AA0		1	1 unit	103	0.500
		Size II	B	3WL9 111-0AP06-0AA0		1	1 unit	103	0.630
		Size III	B	3WL9 111-0AP07-0AA0		1	1 unit	103	0.860
	4-pole	Size I	B	3WL9 111-0AP08-0AA0		1	1 unit	103	0.600
		Size II	B	3WL9 111-0AP11-0AA0		1	1 unit	103	0.770
	Size III	B	3WL9 111-0AP12-0AA0		1	1 unit	103	1.070	
Arc chutes									
 <p>3WL9 111-0AS0.-0AA0</p>	Arc chutes 690 V	Size I	B	3WL9 111-0AS01-0AA0		1	1 unit	103	1.110
		Size II	B	3WL9 111-0AS02-0AA0		1	1 unit	103	1.680
		Size III	B	3WL9 111-0AS03-0AA0		1	1 unit	103	2.980
 <p>3WL9 111-0AS3.-0AA0</p>	1000 V/1150 V	Size II	B	3WL9 111-0AS05-0AA0		1	1 unit	103	3.140
		Size III	B	3WL9 111-0AS06-0AA0		1	1 unit	103	5.620
Arc chute covers¹⁾									
Parts kit for guide frame									
 <p>3WL9 111-0AR12-0AA0</p>	Spare part for option R10 , see "-Z" + order code, page 15/26 .								
	3-pole	Size I	B	3WL9 111-0AS32-0AA0		1	1 unit	103	1.850
		Size II	B	3WL9 111-0AS36-0AA0		1	1 unit	103	2.600
	Size III	B	3WL9 111-0AS38-0AA0		1	1 unit	103	4.050	
	4-pole	Size I	B	3WL9 111-0AS42-0AA0		1	1 unit	103	2.340
		Size II	B	3WL9 111-0AS44-0AA0		1	1 unit	103	3.300
		Size III	B	3WL9 111-0AS46-0AA0		1	1 unit	103	5.210
Withdrawable part coding									
 <p>3WL9 111-0AR12-0AA0</p>	Withdrawable part coding By customer, for 36 coding variants	B	3WL9 111-0AR12-0AA0		1	1 unit	103	0.400	

¹⁾ Not available for 1000 V version and 1150 V version, DC version and size II with rated circuit breaker current of 4000 A.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

	Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Ground-fault protection								
 NSE0 01018a 3WL9 111-0BA02-0AA0	Ground-fault protection between the guide frame and the withdrawable circuit breaker For 30 kA ground short-circuit current ¹⁾ Contacting module for guide frame	Size I, II ²⁾	B	3WL9 111-0BA01-0AA0	1	1 unit	103	0.330
		Size III	B	3WL9 111-0BA02-0AA0	1	1 unit	103	0.350
Contacting modules for withdrawable circuit breakers								
 NSE01019 3WL9 111-0BA07-0AA0	3-pole	Size I	B	3WL9 111-0BA05-0AA0	1	1 unit	103	1.250
		Size II ²⁾	B	3WL9 111-0BA06-0AA0	1	1 unit	103	1.530
		Size III	B	3WL9 111-0BA07-0AA0	1	1 unit	103	2.270
	4-pole	Size I	B	3WL9 111-0BA08-0AA0	1	1 unit	103	1.500
		Size II ²⁾	B	3WL9 111-0BA04-0AA0	1	1 unit	103	1.850
		Size III	B	3WL9 111-0BA10-0AA0	1	1 unit	103	2.950
Support brackets								
 NSE-01022 3WL9 111-0BB50-0AA0	Support brackets For mounting fixed-mounted circuit breakers on vertical plane, only for sizes I and II (1 set = 2 units)		B	3WL9 111-0BB50-0AA0	1	1 unit	103	7.000

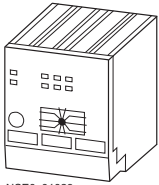
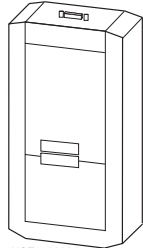
¹⁾ For 60 kA ground short-circuit current, order 2.

²⁾ Can also be used for size II, 4000 A.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
CubicleBUS modules¹⁾								
 <p>NSE0_01023a</p> <p>3WL9 111-0AT23-0AA0</p>		Digital output modules with rotary coding switch, relay outputs	B	3WL9 111-0AT26-0AA0	1	1 unit	103	0.240
		Digital output modules, configurable, relay outputs	B	3WL9 111-0AT20-0AA0	1	1 unit	103	0.310
		Digital input modules	B	3WL9 111-0AT27-0AA0	1	1 unit	103	0.240
		Analog output modules	B	3WL9 111-0AT23-0AA0	1	1 unit	103	0.240
		Zone Selective Interlocking modules	B	3WL9 111-0AT21-0AA0	1	1 unit	103	0.240
Parameterization systems								
 <p>NSE0_01024a</p> <p>3WL9 111-0AT28-0AA0</p>		Breaker Data Adapters (BDA)³⁾	B	3WL9 111-0AT28-0AA0	1	1 unit	103	0.900
		BDA Plus³⁾	B	3WL9 111-0AT33-0AA0	1	1 unit	103	1.200
		Connection cables for BDA Plus	B	3WL9 111-0BC21-0AA0	1	1 unit	103	0.350
		Switch ES Power parameterization software	A	3ZS2 311-0CC10-0YA0	1	1 unit	133	0.200
Accessories for communications								
Preassembled cables for CubicleBUS modules		0.2 m long, for connection to SENTRON 3WL with COM15/COM16	B	3WL9 111-0BC04-0AA0	1	1 unit	103	0.020
		1 m long, for connection to SENTRON 3WL with COM15/COM16	B	3WL9 111-0BC02-0AA0	1	1 unit	103	0.050
		2 m long, for connection to SENTRON 3WL with COM15/COM16	B	3WL9 111-0BC03-0AA0	1	1 unit	103	0.060
		2 m long, for connection to SENTRON 3WL without COM15/COM16	B	3WL9 111-0BC05-0AA0	1	1 unit	103	0.070
SENTRON manuals for communication solutions²⁾		Detailed description of the communication functions for SENTRON circuit breakers. Installation, connection, commissioning, data transmission to the PLC, including description of Switch ES Power and BDA. German Token fee on request English Token fee on request		A5E0151347 A5E0151353				
		To be ordered in Click4Business: You can find further information on the Internet at: www.click4business-supplies.com Free download from: www.siemens.com/lowvoltage/manuals						
Voltage transformers, 3-pole, for SENTRON 3WL with measurement function Plus		380 ... 690 V/100 V, class 0.5	B	3WL9 111-0BB68-0AA0	1	1 unit	103	2.600

All communication components, **CubicleBUS** modules and measurement functions are available for the ETU45B and ETU76B releases.

¹⁾ Each **CubicleBUS** module is supplied with a 0.2 m preassembled cable to connect the modules with each other. A longer preassembled cable is required for connection to the circuit breaker.

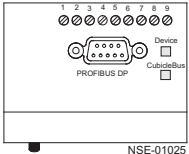
²⁾ Manual for MODBUS communication solution available on request.

³⁾ A 24 V DC power supply unit is required.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Retrofitting and spare parts							
 NSE-01025 3WL9 111-0AT15-0AA0	PROFIBUS retrofit kits	Retrofit kit for PROFIBUS communications including COM15, BSS and set of cables for all SENTRON 3WL circuit breakers with ETU45B and ETU76B releases	B	3WL9 111-0AT12-0AA0	1	1 unit	103 0.260
	COM15 PROFIBUS module	For ETU45B and ETU76B releases	B	3WL9 111-0AT15-0AA0	1	1 unit	103 0.140
	COM16 MODBUS modules	For ETU45B and ETU76B releases	B	3WL9 111-0AT17-0AA0	1	1 unit	103 0.140
	MODBUS IEC retrofit kits	Retrofit kit for MODBUS communications including COM16, BSS and set of cables for all SENTRON 3WL circuit breakers with ETU45B and ETU76B releases	B	3WL9 111-0AT18-0AA0	1	1 unit	103 0.260
	Breaker status sensors (BSS)	For ETU45B and ETU76B releases	B	3WL9 111-0AT16-0AA0	1	1 unit	103 0.120
	Measurement function Plus¹⁾	Not for ETU Release 2 (voltage transformer required)	B	3WL9 111-0AT03-0AA0	1	1 unit	103 0.250
	Measurement function Plus¹⁾	For ETU Release 2 (voltage transformer required)	B	3WL9 111-0AT04-0AA0	1	1 unit	103 0.250

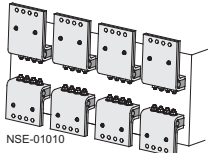
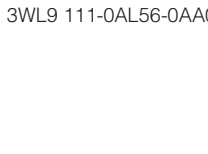
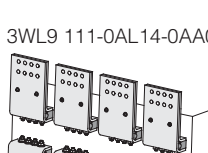
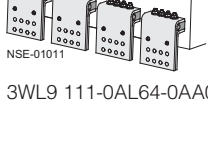
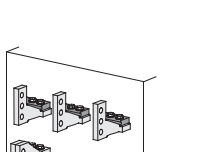
All communication components, **CubicleBUS** modules and measurement functions are available for the ETU45B and ETU76B releases.

¹⁾ A measuring accuracy of 3 % is reached if retrofitted.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Main conductor connections, fixed mounting (essential accessory)								
Specified for each connection								
 NSE-01010	Front-accessible main connections, single hole at top	Size I, up to 1000 A	B	3WL9 111-0AL01-0AA0	1	1 unit	103	1.100
		Size I, 1250 to 1600 A	B	3WL9 111-0AL02-0AA0	1	1 unit	103	1.600
		Size II, up to 2000 A	B	3WL9 111-0AL03-0AA0	1	1 unit	103	2.000
		Size II, up to 2500 A	B	3WL9 111-0AL04-0AA0	1	1 unit	103	3.600
		Size II, up to 3200 A	B	3WL9 111-0AL05-0AA0	1	1 unit	103	3.500
		Size III, up to 4000 A	B	3WL9 111-0AL06-0AA0	1	1 unit	103	6.100
 NSE-01011	Front-accessible main connections, single hole at bottom	Size I, up to 1000 A	B	3WL9 111-0AL51-0AA0	1	1 unit	103	1.000
		Size I, 1250 to 1600 A	B	3WL9 111-0AL52-0AA0	1	1 unit	103	1.300
		Size II, up to 2000 A	B	3WL9 111-0AL53-0AA0	1	1 unit	103	1.800
		Size II, up to 2500 A	B	3WL9 111-0AL54-0AA0	1	1 unit	103	3.100
		Size II, up to 3200 A	B	3WL9 111-0AL55-0AA0	1	1 unit	103	3.000
		Size III, up to 4000 A	B	3WL9 111-0AL56-0AA0	1	1 unit	103	5.200
 NSE-01011	Front-accessible main connections, according to DIN 43673, double hole at top	Size I, up to 1000 A	B	3WL9 111-0AL07-0AA0	1	1 unit	103	1.400
		Size I, 1250 to 1600 A	B	3WL9 111-0AL08-0AA0	1	1 unit	103	2.000
		Size II, up to 2000 A	B	3WL9 111-0AL11-0AA0	1	1 unit	103	2.400
		Size II, up to 2500 A	B	3WL9 111-0AL12-0AA0	1	1 unit	103	4.500
		Size II, up to 3200 A	B	3WL9 111-0AL13-0AA0	1	1 unit	103	4.400
		Size III, up to 4000 A	B	3WL9 111-0AL14-0AA0	1	1 unit	103	7.800
 NSE-01011	Front-accessible main connections, according to DIN 43673, double hole at bottom	Size I, up to 1000 A	B	3WL9 111-0AL57-0AA0	1	1 unit	103	1.300
		Size I, 1250 to 1600 A	B	3WL9 111-0AL58-0AA0	1	1 unit	103	1.700
		Size II, up to 2000 A	B	3WL9 111-0AL61-0AA0	1	1 unit	103	2.000
		Size II, up to 2500 A	B	3WL9 111-0AL62-0AA0	1	1 unit	103	3.700
		Size II, up to 3200 A	B	3WL9 111-0AL63-0AA0	1	1 unit	103	3.600
		Size III, up to 4000 A	B	3WL9 111-0AL64-0AA0	1	1 unit	103	6.400
 NSE-01012	Rear vertical main connections	Size I ¹⁾ , up to 1600 A	B	3WL9 111-0AM01-0AA0	1	1 unit	103	0.500
		Size II ²⁾ , up to 3200 A	B	3WL9 111-0AM02-0AA0	1	1 unit	103	2.200
		Size III, up to 6300 A	B	3WL9 111-0AM03-0AA0	1	1 unit	103	5.000
3WL9 111-0AM03-0AA0								

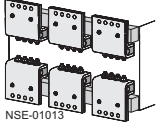
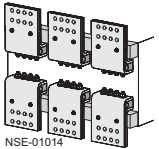
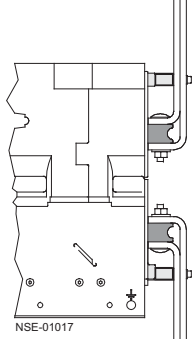
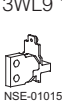
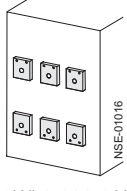

1) In the case of vertical connection size I, up to 1000 A one 3WL9 111-0AM01-0AA0 vertical connection is required, up to 1600 A two 3WL9 111-0AM01-0AA0 vertical connections are required.

2) In the case of vertical connection size II, up to 2500 A one 3WL9 111-0AM02-0AA0 vertical connection is required, up to 3200 A two 3WL9 111-0AM02-0AA0 vertical connections are required.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
Main conductor connections, withdrawable versions (essential accessory)									
Specified for each connection									
 NSE-01013 3WL9 111-0AN06-0AA0	Front-accessible main connections, single hole at top or at bottom¹⁾	Size I, up to 1000 A	B	3WL9 111-0AN01-0AA0	1	1 unit	103	1.000	
		Size I, 1250 to 1600 A	B	3WL9 111-0AN02-0AA0	1	1 unit	103	1.300	
		Size II, up to 2000 A	B	3WL9 111-0AN03-0AA0	1	1 unit	103	1.800	
		Size II, up to 2500 A	B	3WL9 111-0AN04-0AA0	1	1 unit	103	3.100	
		Size II, up to 3200 A	B	3WL9 111-0AN05-0AA0	1	1 unit	103	3.000	
		Size III, up to 4000 A	B	3WL9 111-0AN06-0AA0	1	1 unit	103	5.200	
 NSE-01014 3WL9 111-0AN14-0AA0	Front-accessible main connections, according to DIN 43673, double hole at top or at bottom¹⁾	Size I, up to 1000 A	B	3WL9 111-0AN07-0AA0	1	1 unit	103	1.300	
		Size I, 1250 to 1600 A	B	3WL9 111-0AN08-0AA0	1	1 unit	103	1.700	
		Size II, up to 2000 A	B	3WL9 111-0AN11-0AA0	1	1 unit	103	2.000	
		Size II, up to 2500 A	B	3WL9 111-0AN12-0AA0	1	1 unit	103	3.700	
		Size II, up to 3200 A	B	3WL9 111-0AN13-0AA0	1	1 unit	103	3.600	
		Size III, up to 4000 A	B	3WL9 111-0AN14-0AA0	1	1 unit	103	6.400	
 NSE-01017 3WL9 111-0AN41-0AA0	Supports for front and DIN connecting bars								
	3-pole for 3 bars	Size I	B	3WL9 111-0AN41-0AA0	1	1 unit	103	0.700	
		Size II	B	3WL9 111-0AN42-0AA0	1	1 unit	103	1.350	
		Size III	B	3WL9 111-0AN43-0AA0	1	1 unit	103	2.420	
	4-pole for 4 bars	Size I	B	3WL9 111-0AN44-0AA0	1	1 unit	103	1.200	
		Size II	B	3WL9 111-0AN45-0AA0	1	1 unit	103	2.200	
		Size III	B	3WL9 111-0AN46-0AA0	1	1 unit	103	3.200	
	 NSE-01015 3WL9 111-0AN23-0AA0	Rear vertical main connections	Size I, up to 1000 A	B	3WL9 111-0AN15-0AA0	1	1 unit	103	0.660
			Size I, 1250 to 1600 A	B	3WL9 111-0AN16-0AA0	1	1 unit	103	0.870
			Size II, up to 2000 A	B	3WL9 111-0AN17-0AA0	1	1 unit	103	1.150
			Size II, up to 2500 A	B	3WL9 111-0AN18-0AA0	1	1 unit	103	1.490
			Size II, up to 3200 A	B	3WL9 111-0AN21-0AA0	1	1 unit	103	2.580
		Size III, up to 5000 A	B	3WL9 111-0AN22-0AA0	1	1 unit	103	6.380	
		Size III, up to 6300 A (3 busbar connection pieces for 3-pole circuit breakers)	B	3WL9 111-0AN23-0AA0	1	1 unit	103	19.170	
		Size III, up to 6300 A, at top (4 busbar connection pieces for 4-pole circuit breakers)	B	3WL9 111-0AN20-0AA0	1	1 unit	103	18.410	
		Size III, up to 6300 A, at bottom (4 busbar connection pieces for 4-pole circuit breakers)	B	3WL9 111-0AN10-0AA0	1	1 unit	103	18.300	
 NSE-01016 3WL9 111-0AN24-0AA0		Rear horizontal circuit connections	Size I, up to 1000 A	B	3WL9 111-0AN32-0AA0	1	1 unit	103	0.630
		Size I, 1250 to 1600 A	B	3WL9 111-0AN33-0AA0	1	1 unit	103	0.770	
		Size II, up to 2000 A	B	3WL9 111-0AN34-0AA0	1	1 unit	103	1.020	
		Size II, up to 2500 A	B	3WL9 111-0AN35-0AA0	1	1 unit	103	1.240	
		Size II, up to 3200 A	B	3WL9 111-0AN36-0AA0	1	1 unit	103	2.170	
 NSE-01016 3WL9 111-0AN24-0AA0	Connecting flanges	Size III, up to 5000 A	B	3WL9 111-0AN37-0AA0	1	1 unit	103	3.860	
		Size I, up to 1000 A	B	3WL9 111-0AN24-0AA0	1	1 unit	103	0.610	
		Size I, 1250 to 1600 A	B	3WL9 111-0AN25-0AA0	1	1 unit	103	0.640	
		Size II, up to 2000 A	B	3WL9 111-0AN26-0AA0	1	1 unit	103	0.980	
		Size II, up to 2500 A	B	3WL9 111-0AN27-0AA0	1	1 unit	103	1.020	
		Size II, up to 3200 A	B	3WL9 111-0AN28-0AA0	1	1 unit	103	1.310	
		Size III, up to 4000 A	B	3WL9 111-0AN31-0AA0	1	1 unit	103	2.370	

¹⁾ When using front-accessible main connections (withdrawable circuit breakers) supports are required.

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Designation	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
-------------	----	-----------	--------------	-------------------	-----	----	--------------------------

Conversion sets

For converting fixed-mounted circuit breakers into withdrawable circuit breakers

Guide frames and sliding contact modules must be ordered separately.

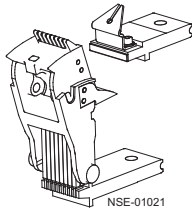
Number of poles	Size						
3-pole	I	B	3WL9 111-0BC11-0AA0	1	1 unit	103	5.100
	II	B	3WL9 111-0BC12-0AA0	1	1 unit	103	5.900
	III	B	3WL9 111-0BC13-0AA0	1	1 unit	103	8.100
4-pole	I	B	3WL9 111-0BC14-0AA0	1	1 unit	103	6.400
	II	B	3WL9 111-0BC15-0AA0	1	1 unit	103	6.450
	III	B	3WL9 111-0BC16-0AA0	1	1 unit	103	10.700

Main contact elements

You must specify the circuit breaker ID No. when ordering!

Specified for each connection (depending on the number of poles on the circuit breaker, order 3 or 4 units)

Sizes	I_n max		Order No. is automatically adapted to the circuit breaker ID number				
I	Up to 1600 A	B	3WL9 111-0AM90 L1Y¹⁾	1	1 unit	103	2.800
II	Up to 2500 A	B	3WL9 111-0AM91 L1Y¹⁾	1	1 unit	103	5.870
II	Up to 4000 A	B	3WL9 111-0AM92 L1Y¹⁾	1	1 unit	103	7.700
III	Up to 6300 A	B	3WL9 111-0AM93 L1Y¹⁾	1	1 unit	103	13.740



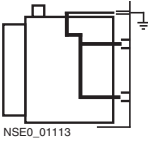
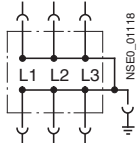
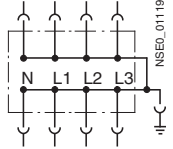
¹⁾ Please specify the circuit breaker ID No. in plain text when ordering.

SENTRON 3WL Air Circuit Breakers

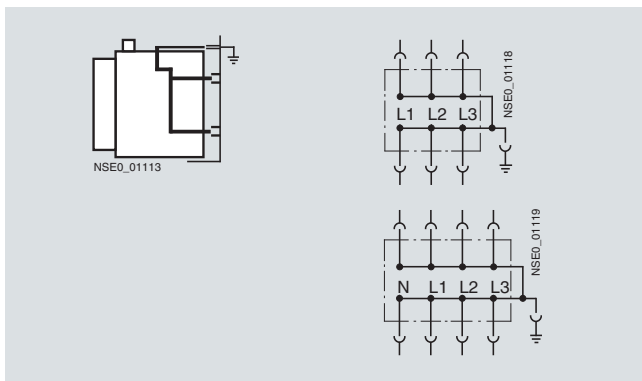
3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

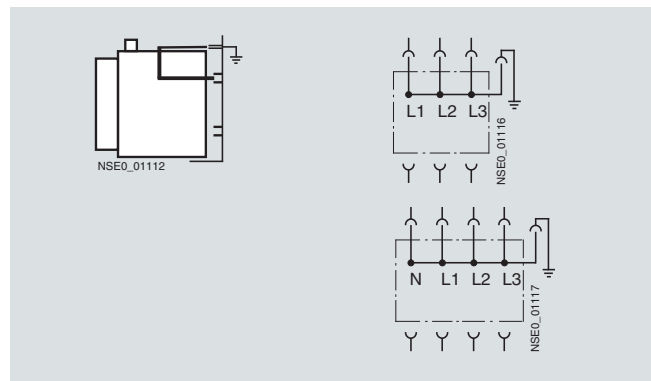
Schematics in as-supplied state	Version	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------------------------------	---------	------	----	-----------	--------------	-------------------	-----	----	--------------------------

Withdrawable short-circuiting, grounding and bridging units											
 NSE0_01113 (as-supplied state)	 NSE0_01118	Top and bottom parts of system are short-circuited and grounded	3-pole								
		Up to 1600 A I	C	3WL9 111-0BD01-0AA0		1	1 unit	103	30.000		
		Up to 3200 A II	C	3WL9 111-0BD03-0AA0		1	1 unit	103	40.500		
		Up to 6300 A III	C	3WL9 111-0BD05-0AA0		1	1 unit	103	65.000		
		<hr/>									
			 NSE0_01119	4-pole							
Up to 1600 A I	C	3WL9 111-0BD02-0AA0			1	1 unit	103	35.000			
Up to 3200 A II	C	3WL9 111-0BD04-0AA0			1	1 unit	103	46.000			
Up to 6300 A III	C	3WL9 111-0BD06-0AA0			1	1 unit	103	70.000			

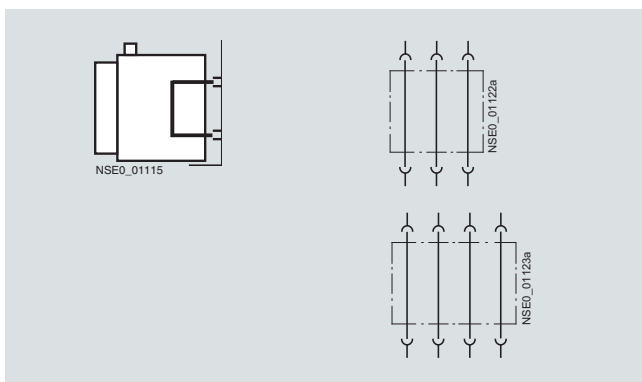
Conversion for the following applications is possible



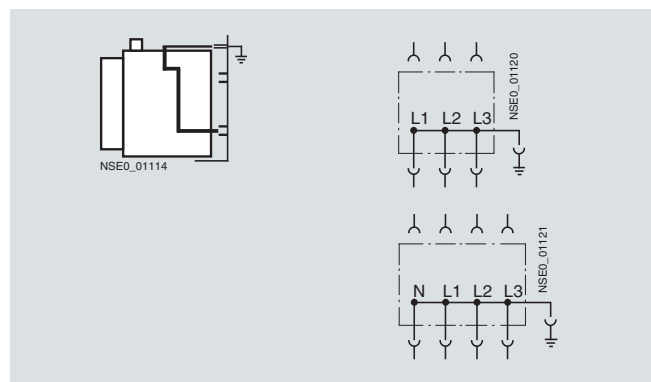
Top and bottom parts of system are short-circuited and grounded (as-supplied state)



Top part of system is short-circuited and grounded, infeed from bottom



Withdrawable bridging unit, infeed and outgoing terminals are permanently connected to each other



Bottom part of system is short-circuited and grounded, infeed from top

15

SENTRON 3WL Air Circuit Breakers

3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A (AC)

Accessories and spare parts

Options

Structure of the Order No.

		3WL1 2 2 0 - 4 N G 3 1 - 1 F A 2									
Example											
5th position:	Size	Size II									
6th and 7th positions:	Max. rated circuit breaker current $I_{n \max}$	$I_{n \max} = 2000 \text{ A}$									
8th position:	Switching capacity class	High breaking capacity "H": 100 kA									
9th position:	Electronic releases	ETU76B with pixel graphics display ...									
10th position:	Electronic release supplement	... with ground-fault protection									
11th position:	Number of poles	3-pole									
12th position:	Installation type	Fixed mounting, main connections on rear, vertical									
13th position:	Operating mechanisms	Manual operating mechanism with mechanical closing									
14th position:	1st auxiliary switch	Shunt releases AC 50/60 Hz 110 V									
15th position:	2nd auxiliary switch	Without 2nd auxiliary release									
16th position:	Auxiliary switch	2 NO + 2 NC									

An important prerequisite for computer-based order processing is that order numbers must be structured according to standardized criteria.

They are used as an unambiguous means of communication for various purposes:

- Offer processing
- Selection and configuration
- Order processing
- Ordering
- Order confirmation
- Handling warehouse
- Products
- Order processing at the supply bases
- Delivery and shipment
- Reporting and planning
- Service and warranty

The standardized structure ensures that only one Order No. has to be administered for one device.

This saves time and effort during planning, configuring, ordering and stock keeping, and consequently above all it saves costs.

The example opposite explains the various positions within an Order No.

Accessories: with first order (components are already mounted)

		3WL1 2 1 6 - 4 J G 3 1 - 1 F A 3 - Z F 0 2									
Example											
"-Z" with order code		Communications interface "Standard" + Breaker Status Sensor (BSS) + communication module COM15 for connection to PROFIBUS DP									

Additional accessory components can be ordered ready-mounted.

These supplements are identified by "-Z".

Even with additional components, one Order No. is sufficient.

Accessories: for retrofitting (components for subsequent fitting)

		3WL9 1 1 1 - 0 B A 2 1 - 0 A A 0									
Example											
Protective cover for mechanical ON/OFF without lock											

Additional accessories which are not intended to be ready-mounted in the factory, such as spare parts for storage, can also be ordered separately from the circuit breaker.

Accessories for retrofitting are identified by the Order No. stem 3WL9.

Documentation

Operating manual Complete set	German/English	Order No.	3ZX18 12-0WL00-0AN1
	French/Italian	Order No.	3ZX18 12-0WL00-0AJ1
	Spanish/Portuguese	Order No.	3ZX18 12-0WL00-0AL1
manuals Communication	German	Order No.	A5E0151347
	English	Order No.	A5E0151353

Delivery time class C
On request
On request

Free download of documentation from www.siemens.com/lowvoltage/manuals

More information

Up-to-date information on the Internet at: www.siemens.com/sentron

SENTRON 3WL Air Circuit Breakers

3WL Non-Automatic Air Circuit Breakers up to 4000 A (DC)

3- and 4-pole, fixed-mounted versions

Selection and ordering data

For general data see page 15/6.

Size	Max. rated circuit breaker current I_n max.	DT	3-pole non-automatic circuit breakers	DC	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No. For Order No. supplements, see page 15/23	Price per PU				kg
A								
Horizontal main circuit connection								
II	1000	B	3WL12 10-8□□32-....		1	1 unit	103	56.000
II	2000	B	3WL12 20-8□□32-....		1	1 unit	103	56.000
II	4000 ¹⁾	B	3WL12 40-8□□32-....		1	1 unit	103	64.000
Vertical main circuit connection								
II	1000	B	3WL12 10-8□□31-....		1	1 unit	103	56.000
II	2000	B	3WL12 20-8□□31-....		1	1 unit	103	56.000
II	4000 ¹⁾	B	3WL12 40-8□□31-....		1	1 unit	103	85.000
Front main circuit connection, single hole								
II	1000	B	3WL12 10-8□□33-....		1	1 unit	103	56.000
II	2000	B	3WL12 20-8□□33-....		1	1 unit	103	56.000
Front main circuit connection, double hole								
II	1000	B	3WL12 10-8□□34-....		1	1 unit	103	56.000
II	2000	B	3WL12 20-8□□34-....		1	1 unit	103	56.000
Non-automatic circuit breakers²⁾			Order No. supplements	Add. price				
Without electronic release			AA	None				
Standard Order No. supplements (for further Order No. supplements, see page 15/23)								
Manual operating mechanism with mechanical closing			1AA2	None				

Size	Max. rated circuit breaker current I_n max.	DT	4-pole non-automatic circuit breakers	DC	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No. For Order No. supplements, see page 15/23	Price per PU				kg
A								
Horizontal main circuit connection								
II	1000	B	3WL12 10-8□□42-....		1	1 unit	103	67.000
II	2000	B	3WL12 20-8□□42-....		1	1 unit	103	67.000
II	4000 ¹⁾	B	3WL12 40-8□□42-....		1	1 unit	103	77.000
Vertical main circuit connection								
II	1000	B	3WL12 10-8□□41-....		1	1 unit	103	75.000
II	2000	B	3WL12 20-8□□41-....		1	1 unit	103	75.000
II	4000 ¹⁾	B	3WL12 40-8□□41-....		1	1 unit	103	103.000
Front main circuit connection, single hole								
II	1000	B	3WL12 10-8□□43-....		1	1 unit	103	67.000
II	2000	B	3WL12 20-8□□43-....		1	1 unit	103	67.000
Front main circuit connection, double hole								
II	1000	B	3WL12 10-8□□44-....		1	1 unit	103	67.000
II	2000	B	3WL12 20-8□□44-....		1	1 unit	103	67.000
Non-automatic circuit breakers²⁾			Order No. supplements	Add. price				
Without electronic release			AA	None				
Standard Order No. supplements (for further Order No. supplements, see page 15/23)								
Manual operating mechanism with mechanical closing			1AA2	None				

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).	Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Add. price
		3WL1 2 . 0 - 8 -Z	
		□□□	
			3-pole 4-pole
Rated voltage 1000 V DC			
Size II Up to 2000 A		A 05	x x
Size II Up to 4000 A		A 05	x x

Note:

For voltages over 600 V use the version for 1000 V DC rated voltage: Order with "-Z" and order code "A05".

All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see "3WL Air circuit breakers/non-automatic air circuit breakers up to 6300 A (AC)", "Options", page 15/24 onwards.

An external overload and short-circuit protection device is available from the company "mat" for the SENTRON 3WL non-automatic air circuit breakers.

Available only directly from the company "mat" – Maschinen- und Anlagentechnik (for address see "Appendix, External Partners").

x = Additional price

1) Provisions to dissipate heat must be made on the line side.

2) For permissible rated short-time current I_{cw} and short-circuit switching capacity I_{cc} for non-automatic circuit breakers see page 15/3.

SENTRON 3WL Air Circuit Breakers

3WL Non-Automatic Air Circuit Breakers up to 4000 A (DC)

3-pole, withdrawable versions

Selection and ordering data

Size	Max. rated circuit breaker current $I_{n \text{ max.}}$	DT	3-pole non-automatic circuit breakers	DC	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A			Order No. For Order No. supplements, see page 15/23	Price per PU				kg
Without guide frames (for guide frames, see page 15/53)								
II	1000	B	3WL12 10-8□□35-....		1	1 unit	103	60.000
II	2000	B	3WL12 20-8□□35-....		1	1 unit	103	60.000
II	4000 ¹⁾	B	3WL12 40-8□□35-....		1	1 unit	103	68.000
With guide frames, horizontal main circuit connection								
II	1000	B	3WL12 10-8□□36-....		1	1 unit	103	91.000
II	2000	B	3WL12 20-8□□36-....		1	1 unit	103	91.000
II	4000 ¹⁾	B	3WL12 40-8□□36-....		1	1 unit	103	113.000
With guide frames, vertical main circuit connection								
II	1000	B	3WL12 10-8□□37-....		1	1 unit	103	91.000
II	2000	B	3WL12 20-8□□37-....		1	1 unit	103	91.000
II	4000 ¹⁾	B	3WL12 40-8□□37-....		1	1 unit	103	121.000
With guide frames, connecting flanges								
II	1000	B	3WL12 10-8□□38-....		1	1 unit	103	91.000
II	2000	B	3WL12 20-8□□38-....		1	1 unit	103	91.000
II	4000 ¹⁾	B	3WL12 40-8□□38-....		1	1 unit	103	113.000

Non-automatic circuit breakers²⁾

Order No. supplements

Add. price

Without electronic release

AA

None

Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)

Manual operating mechanism with mechanical closing

1AA2

None

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).	Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Add. price
		3WL1 2 . 0 - 8 . . 3 -Z	
		□□□	3-pole
Rated voltage 1000 V DC			
Size II ⁴⁾ Up to 2000 A		A 05	x
Size II ⁴⁾ Up to 4000 A		A 05	x
Tinned version of the customer's connections on the guide frame ³⁾ Only for circuit breakers in withdrawable version with horizontal connection or flange connection. The normal delivery time increases to 15 work days.			
Size II		A 08	x

Note:

For voltages over 600 V use the version for 1000 V DC rated voltage; order with "-Z" and order code "A05".

All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see "3WL Air circuit breakers/non-automatic air circuit breakers up to 6300 A (AC)", "Options", page 15/24 onwards.

An external overload and short-circuit protection device is available from the company "mat" for the SENTRON 3WL non-automatic air circuit breakers.

Available only directly from the company "mat" – Maschinen- und Anlagentechnik (for address see "Appendix", External Partners").

x = Additional price

1) Provisions to dissipate heat must be made on the line side.

2) For permissible rated short-time current I_{cw} and short-circuit switching capacity I_{cc} for non-automatic circuit breakers see page 15/3.

3) The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

4) If ordering withdrawable circuit breaker and guide frame separately, specify order code "A05" for withdrawable circuit breaker and guide frame.

SENTRON 3WL Air Circuit Breakers

3WL Non-Automatic Air Circuit Breakers up to 4000 A (DC)

4-pole, withdrawable versions

Selection and ordering data

Size	Max. rated circuit breaker current $I_{n \max}$	DT	4-pole non-automatic circuit breakers	DC	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
			Order No. For Order No. supplements, see page 15/23	Price per PU				kg
Without guide frames (for guide frames, see page 15/53)								
II	1000	B	3WL12 10-8□□45-....		1	1 unit	103	75.000
II	2000	B	3WL12 20-8□□45-....		1	1 unit	103	75.000
II	4000 ¹⁾	B	3WL12 40-8□□45-....		1	1 unit	103	82.000
With guide frames, horizontal main circuit connection								
II	1000	B	3WL12 10-8□□46-....		1	1 unit	103	109.000
II	2000	B	3WL12 20-8□□46-....		1	1 unit	103	109.000
II	4000 ¹⁾	B	3WL12 40-8□□46-....		1	1 unit	103	136.000
With guide frames, vertical main circuit connection								
II	1000	B	3WL12 10-8□□47-....		1	1 unit	103	109.000
II	2000	B	3WL12 20-8□□47-....		1	1 unit	103	109.000
II	4000 ¹⁾	B	3WL12 40-8□□47-....		1	1 unit	103	146.000
With guide frames, connecting flanges								
II	1000	B	3WL12 10-8□□48-....		1	1 unit	103	109.000
II	2000	B	3WL12 20-8□□48-....		1	1 unit	103	109.000
II	4000 ¹⁾	B	3WL12 40-8□□48-....		1	1 unit	103	136.000
Non-automatic circuit breakers²⁾			Order No. supplements	Add. price				
Without electronic release			AA	None				
Standard Order No. supplements (for further Order No. supplements for circuit breakers and guide frames, see page 15/23)								
Manual operating mechanism with mechanical closing			1AA2	None				
Add "-Z" to the complete Order No. and indicate the appropriate order code(s).			Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16				Add. price
				3WL1 2 . 0 - 8 . . 4 -Z				4-pole
				□□□				
Rated voltage 1000 V DC								
Size II ⁴⁾ Up to 2000 A				A 05				x
Size II ⁴⁾ Up to 4000 A				A 05				x
Tinned version of the customer's connections on the guide frame ³⁾ Only for circuit breakers in withdrawable version with horizontal connection or flange connection. The normal delivery time increases to 15 work days.								
Size II				A 08				x

Note:

For voltages over 600 V use the version for 1000 V DC rated voltage; order with "-Z" and order code "A05".

All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see "3WL Air circuit breakers/non-automatic air circuit breakers up to 6300 A (AC)", "Options", page 15/24 onwards.

An external overload and short-circuit protection device is available from the company "mat" for the SENTRON 3WL non-automatic air circuit breakers.

Available only directly from the company "mat" – Maschinen- und Anlagentechnik (for address see "Appendix→, External Partners").

x = Additional price

1) Provisions to dissipate heat must be made on the line side.

2) For permissible rated short-time current I_{cw} and short-circuit switching capacity I_{cc} for non-automatic circuit breakers see page 15/3.

3) The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

4) If ordering withdrawable circuit breaker and guide frame separately, specify order code "A05" for withdrawable circuit breaker and guide frame.

SENTRON 3WL Air Circuit Breakers

3WL Non-Automatic Air Circuit Breakers up to 4000 A (DC)

Accessories and spare parts

Selection and ordering data

Guide frames for DC non-automatic circuit breakers

Size	Max. rated circuit breaker current $I_{n\ max}$	DT	For 3-pole non-automatic circuit breakers Order No. (Order No. supplements required according to table below)	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A								
Front main circuit connection, single hole								
II	2000	B	3WL9 212-3DA□□-□□A1		1	1 unit	103	31.000
Front main circuit connection, double hole								
II	2000	B	3WL9 212-3DB□□-□□A1		1	1 unit	103	31.000
Horizontal main circuit connection								
II	2000	B	3WL9 212-3DC□□-□□A1		1	1 unit	103	31.000
II	4000	B	3WL9 212-6DC□□-□□A1		1	1 unit	103	60.000
Vertical main circuit connection								
II	2000	B	3WL9 212-3DD□□-□□A1		1	1 unit	103	31.000
II	4000	B	3WL9 212-6DD□□-□□A1		1	1 unit	103	60.000
Main circuit connection connecting flanges								
II	2000	B	3WL9 212-3DE□□-□□A1		1	1 unit	103	31.000
II	4000	B	3WL9 212-6DE□□-□□A1		1	1 unit	103	60.000

Number of auxiliary supply connectors

- Without
- 1 connector
- 2 connectors
- 3 connectors
- 4 connectors

For required number of auxiliary supply connectors, see table on page 15/29

Type of auxiliary circuit connections

- Without
- With screw connections (SIGUT)
- With screwless connection method (tension spring)

Position signaling switches

- Without
- Option 1
Connected 1 CO contact,
test 1 CO contacts,
disconnected 1 CO contact
- Option 2
Connected 3 CO contacts,
test 2 CO contacts,
disconnected 1 CO contact

Shutters

- Without
- With shutter, 2 parts, lockable

Order No. supplements

Add. price

0	3-pole
1	None
2	x
3	x
4	x
0	None
1	x
2	x
0	None
1	x
2	x
A	None
B	x

Add "-Z" to the complete Order No. and indicate the appropriate order code(s).	Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Add. price
Rated voltage 1000 V DC		3WL9 2 1 2 - A1 -Z □□□	
Size II		A 0 5	x
Tinned version of the customer's connections on the guide frame ¹⁾		A 0 8	x
Only for guide frames with horizontal connection or flange connection		A 0 8	x

Guide frames for 4-pole DC non-automatic circuit breakers

All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see "3WL Air circuit breakers/Non-Automatic Air circuit breakers up to 6300 A (AC)", "Options", page 15/24 onwards.

x = Additional price

¹⁾ The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

SENTRON 3WL Air Circuit Breakers

3WL Non-Automatic Air Circuit Breakers up to 4000 A (DC)

Accessories and spare parts

Size	Max. rated circuit breaker current $I_{n \max}$	DT	For 4-pole non-automatic circuit breakers Order No. (Order No. supplements required according to table below)	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
								kg
Front main circuit connection, single hole								
II	2000	B	3WL9 212-3EA□□-□□A1		1	1 unit	103	37.000
Front main circuit connection, double hole								
II	2000	B	3WL9 212-3EB□□-□□A1		1	1 unit	103	37.000
Horizontal main circuit connection								
II	2000	B	3WL9 212-3EC□□-□□A1		1	1 unit	103	37.000
II	4000	B	3WL9 212-6EC□□-□□A1		1	1 unit	103	84.000
Vertical main circuit connection								
II	2000	B	3WL9 212-3ED□□-□□A1		1	1 unit	103	37.000
II	4000	B	3WL9 212-6ED□□-□□A1		1	1 unit	103	84.000
Main circuit connection connecting flanges								
II	2000	B	3WL9 212-3EE□□-□□A1		1	1 unit	103	37.000
II	4000	B	3WL9 212-6EE□□-□□A1		1	1 unit	103	84.000
				Order No. supplements	Add. price			
Number of auxiliary supply connectors					4-pole			
Without				0	None			
1 connector				1	x			
2 connectors				2	x			
3 connectors				3	x			
4 connectors				4	x			
For required number of auxiliary supply connectors, see table on page 15/29								
Type of auxiliary circuit connections								
Without				0	None			
With screw connections (SIGUT)				1	x			
With screwless connection method (tension spring)				2	x			
Position signaling switches								
Without				0	None			
Option 1				1	x			
Option 2				2	x			
Option 1				0	None			
Option 2				1	x			
Option 2				2	x			
Shutters								
Without				A	None			
With shutter, 2 parts, lockable				B	x			
Add "-Z" to the complete Order No. and indicate the appropriate order code(s).			Order No. with "-Z" and additional order code	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Add. price			
Rated voltage 1000 V DC				3WL9 2 1 2 - A1 -Z				
Size II				□□□				
Tinned version of the customer's connections on the guide frame ¹⁾				A 0 5	x			
Only for guide frames with horizontal connection or flange connection				A 0 8	x			
Size II				A 0 8	x			

For guide frames for 3-pole DC non-automatic circuit breakers see previous page

All other accessory parts must be ordered by specifying "-Z" and the corresponding order code, see "3WL Air circuit breakers/Non-Automatic Air circuit breakers up to 6300 A (AC)", "Options", page 15/24 onwards.

x = Additional price

¹⁾ The permissible temperature-rise limits according to IEC 60947-2 are 5 K lower for a tin surface than for a silver surface.

SENTRON Switching and Protection Devices – Molded Case Circuit Breakers

16



16/2 Introduction

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

- 16/6 General data
- 16/10 3-pole
- 16/34 4-pole
- 16/55 Options
- 16/58 Accessories and spare parts

3VF2 Molded Case Circuit Breakers

3VF2 Molded Case Circuit Breakers up to 100 A

- 16/99 3-pole, fixed-mounted versions
- 16/99 4-pole, fixed-mounted versions
- 16/100 Accessories and spare parts

Technical Information

can be found at
www.siemens.com/lowvoltage/support

under Product List:
 - Technical specifications

under Entry List:
 - Updates
 - Downloads
 - FAQ
 - Manuals
 - Characteristic curves
 - Certificates

and at
www.siemens.com/lowvoltage/configurators
 - Configurators

Introduction

Overview



Type	VL160X/3VL1	VL160/3VL2	VL250/3VL3	VL400/3VL4
------	-------------	------------	------------	------------

Molded case circuit breakers**3VL molded case circuit breakers up to 1600 A**

Rated current I_n at 50 °C ambient temperature ¹⁾	A	16 ... 160	50 ... 160	200 ... 250	200 ... 400
---	---	------------	------------	-------------	-------------

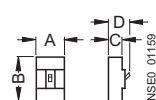
Number of poles		3	4	3	4	3	4	3	4
Rated operational voltage U_e 50/60 Hz AC	V	690	690	690	690	690	690	690	690
DC ²⁾	V	500	500	600	600	600	600	600	600

Overcurrent releases

Thermal-magnetic	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electronic LCD ETU/ETU	--	--	✓	✓	✓	✓	✓	✓	✓
Replaceable	--	--	✓	✓	✓	✓	✓	✓	✓
PROFIBUS module COM20	--	--	✓	✓	✓	✓	✓	✓	✓

Dimensions

	A	B	C	D	mm	105	139	105	139	105	139	105	139	139	183
A	mm	157	157	175	175	175	175	175	175	175	175	175	175	279	279
B	mm	81	81	81	81	81	81	81	81	81	81	81	81	102	102
C	mm	107	107	107	107	107	107	107	107	107	107	107	107	138	138
D	mm	107	107	107	107	107	107	107	107	107	107	107	107	138	138

**Switching capacity I_{cu}/I_{cs}
RMS value according to IEC 60947-2**

Standard switching capacity N ³⁾				
Up to 240 V AC	kA	65/65	65/65	65/65
Up to 415 V AC	kA	55/55	55/55	55/55
Up to 440 V AC	kA	25/20	25/20	35/26
Up to 500/525 V AC	kA	18/14	25/20	25/20
Up to 690 V AC	kA	8/4 ⁴⁾	12/6	15/8
Up to 250 V DC ⁵⁾	kA	30/30	32/32	32/32
Up to 500 V DC ⁵⁾	kA	--	--	--
Up to 600 V DC ⁵⁾	kA	--	--	--
NEMA breaking capacity ⁶⁾	kA	25	25	35
Up to 480 V AC	kA	8 ⁴⁾	12	20
Up to 600 V AC	kA	8 ⁴⁾	12	20
High switching capacity H ³⁾				
Up to 240 V AC	kA	100/75	100/75	100/75
Up to 415 V AC	kA	70/70	70/70	70/70
Up to 440 V AC	kA	42/32	50/38	50/38
Up to 500/525 V AC	kA	30/23	40/30	40/30
Up to 690 V AC	kA	12/6 ⁴⁾	12/6	15/8
Up to 250 V DC ⁵⁾	kA	30/30	32/32	32/32
Up to 500 V DC ⁵⁾	kA	30/30	32/32	32/32
Up to 600 V DC ⁵⁾	kA	--	--	--
NEMA breaking capacity ⁶⁾	kA	42	50	50
Up to 480 V AC	kA	12 ⁴⁾	12	20
Up to 600 V AC	kA	12 ⁴⁾	12	20
Very high switching capacity L ³⁾				
Up to 240 V AC	kA	--	200/150	200/150
Up to 415 V AC	kA	--	100/75	100/75
Up to 440 V AC	kA	--	75/50	75/50
Up to 500/525 V AC	kA	--	50/38	50/38
Up to 690 V AC	kA	--	12/6	15/8
Up to 250 V DC ⁵⁾	kA	--	32/32	32/32
Up to 500 V DC ⁵⁾	kA	--	32/32	32/32
Up to 600 V DC ⁵⁾	kA	--	32/32	32/32
NEMA breaking capacity ⁶⁾	kA	--	75	75
Up to 480 V AC	kA	--	12	20
Up to 600 V AC	kA	--	12	20

✓ Available
-- Not available

¹⁾ 3VF2 at 40 °C ambient temperature.

²⁾ Rated DC voltage applies only for circuit breakers with thermal-magnetic release.

For 3VL molded case circuit breakers according to UL 489 see Catalog LV 16.

SENTRON Switching and Protection Devices – Molded Case Circuit Breakers



VL630/3VL5		VL800/3VL6		VL1250/3VL7		VL1600/3VL8		3VF2	
3VL molded case circuit breakers up to 1600 A									
315 ... 630		800		1000 ... 1250		1600		3VF2 molded case circuit breakers up to 100 A	
3	4	3	4	3	4	3	4	3 and 4	
690	690	690	690	690	690	690	690	Up to 415	
600	600	--	--	--	--	--	--	--	
✓	✓	--	--	--	--	--	--	✓	
✓	✓	✓	✓	✓	✓	✓	✓	--	
✓	✓	✓	✓	✓	✓	✓	✓	--	
190	253	190	253	229	305	229	305	76/102	
279	279	406	406	406	406	406	406	124	
102	102	114	114	152	152	152	152	68	
138	138	151	151	207	207	207	207	73	

65/65	65/65	65/35	65/35	65/33
55/55	55/55	55/28	55/28	18/9
35/26	35/26	35/26	35/26	--
25/20	25/20	25/20	25/20	--
20/10	20/10	20/10	20/10	--
30/30	--	--	--	--
--	--	--	--	--
--	--	--	--	--
25	25	25	25	--
20	20	20	20	--
100/75	100/75	100/50	100/50	--
70/70	70/70	70/35	70/35	--
50/38	50/38	50/38	50/38	--
40/30	40/30	40/30	40/30	--
20/10	20/10	30/15	30/15	--
30/30	--	--	--	--
30/30	--	--	--	--
--	--	--	--	--
50	50	50	50	--
30	30	30	30	--
200/150	200/150	200/100	200/100	--
100/75	100/75	100/50	100/50	--
75/50	75/50	75/50	75/50	--
50/38	50/38	50/38	50/38	--
20/10	20/10	35/17	35/17	--
30/30	--	--	--	--
30/30	--	--	--	--
30/30	--	--	--	--
65	65	65	65	--
35	35	35	35	--

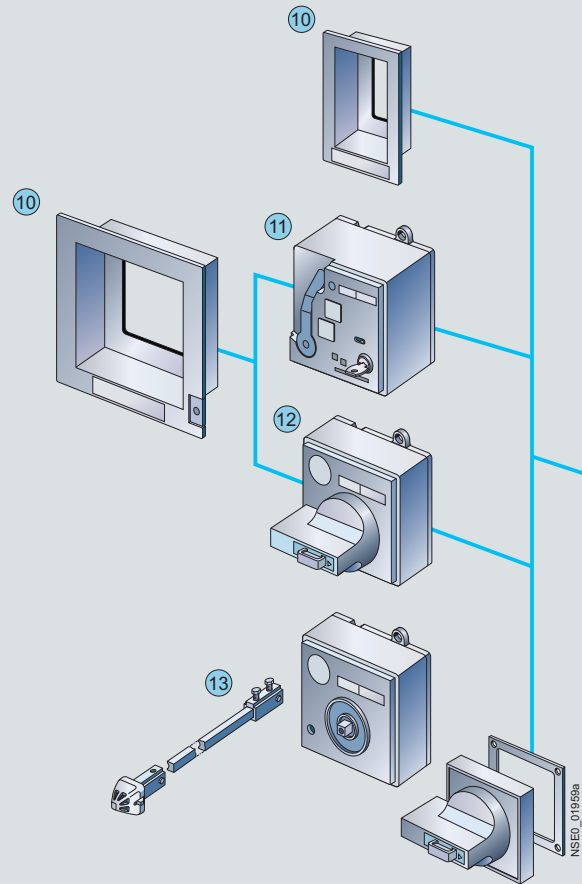
3) At 240 V AC, 415 V AC and 525 V AC max. 5 % overvoltage, at 440 V AC, 500 V AC and 690 V AC max. 10 % overvoltage, at 250/500/600 V DC max. 5 % overvoltage.

4) Rated current $I_n \geq 25$ A.

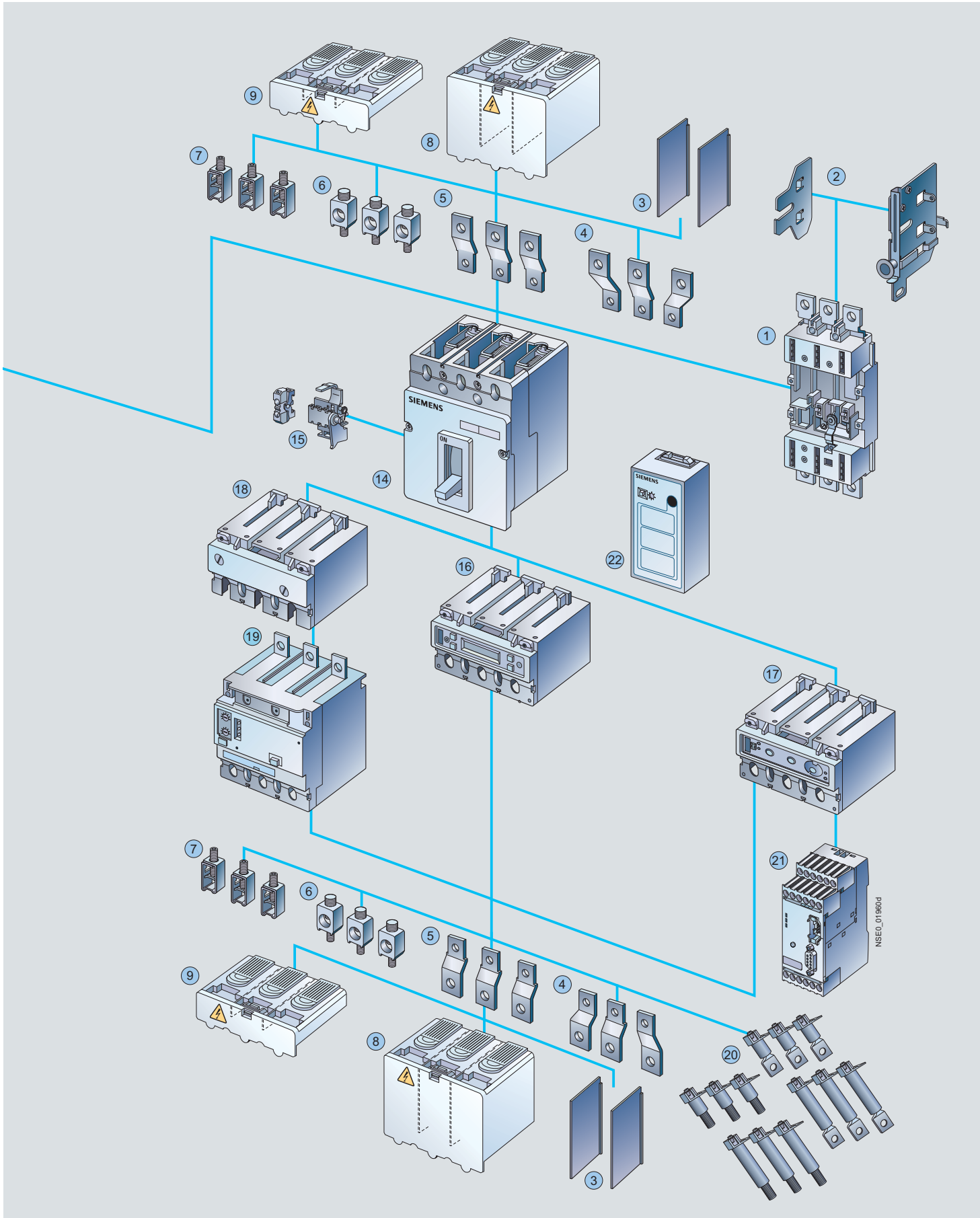
5) The maximum permitted DC voltage for each conducting path needs to be taken into account for DC switching applications; see [Technical Information at www.siemens.com/lowvoltage/support](http://www.siemens.com/lowvoltage/support); time constant $t = 15$ ms.

6) The NEMA breaking capacity can be found on the rating plate of each IEC circuit breaker.

Introduction



- ① Withdrawable/plug-in bases (pages 16/70 to 16/75)
- ② Side walls for withdrawable version (pages 16/70 to 16/75)
- ③ Phase barriers (pages 16/77 to 16/82)
- ④ Flared front busbar connecting bars (pages 16/77 to 16/82)
- ⑤ Straight connecting bars (pages 16/77 to 16/82)
- ⑥ Circular conductor terminals for Al/Cu (pages 16/80 to 16/82)
- ⑦ Box terminals for Cu (pages 16/77 to 16/82)
- ⑧ Extended terminal covers (pages 16/77 to 16/82)
- ⑨ Standard terminal covers (pages 16/77 to 16/82)
- ⑩ Masking frames/cover frames for door cutout (pages 16/94 to 16/97)
- ⑪ Motorized operating mechanisms with stored energy mechanism (pages 16/64 to 16/65)
- ⑫ Front-operated rotary operating mechanisms (pages 16/61 to 16/66)
- ⑬ Door-coupling rotary operating mechanisms (pages 16/61 to 16/66)
- ⑭ SENTRON 3VL circuit breakers (pages 16/10 to 16/55)
- ⑮ Internal accessories (pages 16/55, 16/58 to 16/59)
- ⑯ Electronic overcurrent releases LCD ETU (pages 16/20, 16/24, 16/28, 16/44, 16/46)
- ⑰ Electronic releases with communication function (pages 16/12 to 16/28 and 16/40 to 16/50)
- ⑱ Thermal/magnetic overcurrent releases (pages 16/10 to 16/12, 16/30, 16/34 to 16/38, 16/52)
- ⑲ RCD modules (page 16/76)
- ⑳ Rear terminals – flat and round (pages 16/77 to 16/82)
- ㉑ COM20 communication modules to the PROFIBUS DP (page 16/98)
- ㉒ Battery power supplies with test function for electronic releases (pages 16/84 to 16/88)



SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

General data

Benefits

- The compact design of the SENTRON 3VL circuit breakers coupled with excellent characteristics fulfills the high demands of today's electrical distribution systems.
- These circuit breakers offer a broad product range, improved technology, space savings and easy operation.
- They are available both in thermal-magnetic (16 A to 630 A) and in electronic versions (63 A to 1600 A).

Communication

The use of modern communication-capable circuit breakers opens up completely new possibilities in terms of start-up, parameterization, diagnostics, maintenance and operation. This allows many different ways of reducing costs and improving productivity in industrial plants, buildings and infrastructure projects to be achieved:

- Fast and reliable parameterization
- Timely information and response can prevent plant stoppages
- Effective diagnostics management

Measured values are the basis for efficient load management, for drawing up power demand profiles and for assigning power to cost centers.

Communication:

- For molded case circuit breakers with communication function see pages 16/12 to 16/28 and 16/40 to 16/50.
- For accessories, see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

Application

The different versions of SENTRON 3VL circuit breakers are suitable for the following applications:

- Incoming and outgoing circuit breakers in distribution systems
- Switching and protection devices for motors, transformers and capacitors
- Disconnecter units with features for stopping and switching off in an emergency (main control switches and EMERGENCY-STOP switches) in conjunction with lockable rotary operating mechanisms and terminal covers.

The SENTRON 3VL circuit breakers are available in the following versions:

1. For system protection (in 3- and 4-pole versions)
The overload and short-circuit releases are designed for the protection of cables, leads and non-motor loads.
2. For motor protection (in 3-pole version)
The overload and short-circuit releases are designed for optimized protection and direct-on-line starting of induction squirrel-cage motors. The circuit breakers for motor protection are susceptible to phase failure and feature an adjustable trip class. The electronic releases operate with a microprocessor.

3. For starter combinations (in 3-pole version)
These circuit breakers are used both for short-circuit protection as well as for isolating functions, which may be required in starter combinations consisting of circuit breakers, overload relays and motor contactors. These circuit breakers exclusively feature adjustable, instantaneous short-circuit releases.
4. As non-automatic circuit breakers (in 3- and 4-pole versions)
These circuit breakers can be used as feeder circuit breakers, main control switches or non-automatic circuit breakers without overload protection. They incorporate an integrated short-circuit self-protection system, eliminating the need for back-up fuses.

Switching capacity

- N** Circuit breakers with standard switching capacity N (I_{cu} up to 55 kA at 415 V)
- H** Circuit breakers with high switching capacity H (I_{cu} up to 70 kA at 415 V)
- L** Circuit breakers with very high switching capacity H (I_{cu} up to 100 kA at 415 V)

These circuit breakers are indicated in the selection and ordering data by orange backgrounds.

Standards and specifications

SENTRON 3VL circuit breakers comply with:

IEC 60947-1, EN 60947-1,
DIN VDE 0660, Part 100,
IEC 60947-2, EN 60947-2,
DIN VDE 0660, Part 101.

Isolating features according to IEC 60947-2, EN 60947-2.

Disconnecting features (main control switches) according to EN 60204 and DIN VDE 0113.

The SENTRON 3VL circuit breakers comply in addition with requirements for "disconnecter units with features for stopping and switching off in an emergency" (EMERGENCY-STOP switches) in conjunction with lockable rotary operating mechanisms (red-yellow) and terminal covers.

Please contact Siemens for details of other standards.

The electronic releases of the circuit breakers for motor protection also fulfill

IEC 60947-4-1, DIN VDE 0660, Part 102.

VL160X to VL400 circuit breakers can be equipped with a SENTRON 3VL RCD module. They then comply with IEC 60947-2 Appendix B.

The SENTRON 3VL RCD module complies with IEC 61000-4-2 to IEC 61000-4-6, IEC 61000-4-11 and EN 55011, Class B (equivalent to CISPR 11) with regard to electromagnetic compatibility.

Operating conditions

The SENTRON 3VL circuit breakers are designed for operation in enclosed areas.

Suitable enclosures must be provided for operation in areas with severe ambient conditions (such as dust, caustic vapors, hazardous gases).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

General data

RCD modules

The RCD module is designed for retrofitting to the circuit breaker. It can also be retrofitted by the customer.

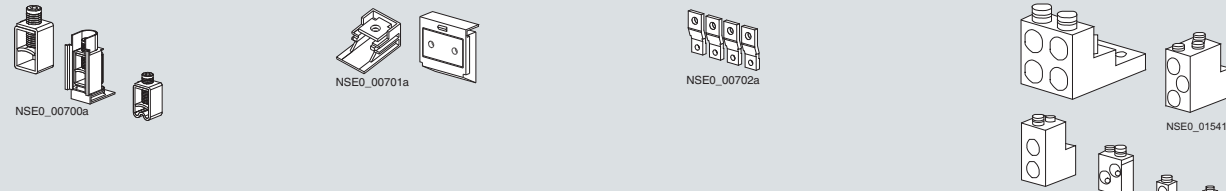
The combination of SENTRON 3VL circuit breaker and RCD module can be fed from the top or bottom.

All SENTRON 3VL circuit breakers with RCD modules are available with auxiliary switches, alarm switches, undervoltage and shunt releases.

Protection of plant and equipment against overload or damage by ground faults (ground-fault protection).

The RCD module trips the circuit breaker through vectorial summation current formation for all phase currents if the vectorial sum of the currents in the poles (= the ground fault current) overshoots the pre-set response and delay time values. AC currents and pulsating DC currents are measured (CBR, design A to EN 60947-2).

Main connections, basic equipment and options



Box terminal (for copper cables or solid/flexible busbars)

Connection with screw terminal (available with direct cable lug connection on VL160X, VL160, VL250, VL400)

Connection to front busbar connecting bars (screw terminal required)

Circular conductor terminals/multiple feed-in terminal (for Al/Cu terminal)

Main connections (see below for conductor cross-sections)

Circuit breakers	Connection overview and further options				
	Box terminals	Screw terminals with metric thread for flat connectors	Circular conductor terminal/multiple feed-in terminals	Rear-mounting terminals	Front-accessible connecting bars
VL160X	□	□	×	×	×
VL160	□	□	×	×	×
VL250	□	□	×	×	×
VL400	×	○	× ²⁾³⁾	×	×
VL630	× ¹⁾	○	× ²⁾	×	×
VL800	--	○	× ²⁾	×	×
VL1250	--	○	× ²⁾	×	×
VL1600	--	×	--	×	○

- Scope of supply
 □ Optional scope of supply
 × Available
 -- Not available

- ¹⁾ Connecting terminal plate for flexible busbar; not for 690 V AC/600 V DC.
²⁾ Multiple feed-in terminal
³⁾ Circular conductor terminal also available.

Conductor cross-sections

Type		VL160X 3VL1	VL160 3VL2	VL250 3VL3	VL400 3VL4	VL630 3VL5	VL800 3VL6	VL1250 3VL7	VL1600 3VL8
Conductor cross-sections									
Box terminals ¹⁾									
• Solid or stranded cable • Finely stranded with end sleeve • Flexible busbar	Copper only	mm ²	2.5 ... 95	2.5 ... 95	25 ... 185	50 ... 300	--	--	--
		mm ²	2.5 ... 50	2.5 ... 50	25 ... 120	50 ... 240	--	--	--
		mm	12 × 10	12 × 10	17 × 10	25 × 10	--	--	--
Connecting terminal plate for flexible busbar ²⁾		mm	--	--	--	2 units 10 × 32	--	--	--
Circular conductor terminal for cable ¹⁾									
• Solid or stranded cable • Finely stranded with end sleeve	Cu or Al	mm ²	16 ... 70	16 ... 70	25 ... 185	50 ... 300	--	--	--
		mm ²	10 ... 50	10 ... 50	25 ... 120	50 ... 240	--	--	--
Multiple feed-in terminal ¹⁾									
• Solid or stranded cable • Finely stranded with end sleeve	Cu or Al	mm ²	--	--	2 units 50 ... 120	2 units 50 ... 240	3 units 50 ... 240	4 units 50 ... 240	--
		mm ²	--	--	--	2 units 50 ... 95	2 units 50 ... 185	4 units 50 ... 185	--
• Direct connection of busbars • Screw for connection with screw terminal	Cu or Al	mm	17 × 7	22 × 7	24 × 7	32 × 10	40 × 10	2 × 40 × 10	2 × 50 × 10
		M6	M6	M8	M8	M6	M8	M8	3 × 60 × 10
Conductor cross-sections for control circuits with terminal connection									
Screw terminals									
• Solid • Finely stranded with end sleeve		mm ²	0.75 ... 1.5	0.75 ... 1.5	0.75 ... 1.5	0.75 ... 1.5	0.75 ... 1.5	0.75 ... 1.5	0.75 ... 1.5
		mm ²	0.75 ... 1.0	0.75 ... 1.0	0.75 ... 1.0	0.75 ... 1.0	0.75 ... 1.0	0.75 ... 1.0	0.75 ... 1.0

¹⁾ Cross-sections according to IEC 60999.

²⁾ Not for 690 V AC/600 V DC.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

General data

VL160 to VL1600 electronic releases – Functional overview

Order No. supplement	Releases	System protection	System/generator protection	Motor/generator protection	Starter protection	Isolators	Function	Setting options							
								L Overload protection		S ¹⁾ Short-circuit protection (short-time delayed)		I ¹⁾ Short-circuit protection (instantaneous)		G Ground-fault protection	
								$I_r = \times I_n$		$I_{sd} = \times I_r$	t_{sd} [s]	$I_1 = \times I_n$		$I_g = \times I_n$	t_g [s]
DK	M	--	--	--	✓	--	I	--	--	--	7 ... 15	--	--		
DE	M	--	--	--	--	✓	I	--	--	--	8 ... 18	--	--		
EE	M	--	--	--	--	✓	I	--	--	--	8 ... 18	--	--		
DA	TM ²⁾	✓	--	--	--	--	LI	1	--	--	9 ... 18 ⁴⁾	--	--		
DD	TM ²⁾	✓	--	--	--	--	LI	0.8 ... 1	--	--	9 ... 18 ⁴⁾	--	--		
DC	TM ²⁾	✓	--	--	--	--	LI	0.8 ... 1	--	--	5 ... 10	--	--		
EH	TM ²⁾	✓	--	--	--	--	LI	1	--	--	9 ... 18 ⁴⁾	--	--		
EJ	TM ²⁾	✓	--	--	--	--	LI	0.8 ... 1	--	--	5 ... 10	--	--		
EA	TM ²⁾	✓	--	--	--	--	LIN	1	--	--	9 ... 18 ⁴⁾	--	--		
EC	TM ²⁾	✓	--	--	--	--	LIN	0.8 ... 1	--	--	5 ... 10	--	--		
EM	TM ²⁾	✓	--	--	--	--	LIN	0.8 ... 1	--	--	5 ... 10	--	--		
SP	ETU10M ³⁾	--	--	✓	--	--	LI	0.4 ... 1	--	--	1.25 ... 11	--	--		
MP	ETU10M ³⁾	--	--	✓	--	--	LI	0.4 ... 1	--	--	1.25 ... 11	--	--		
SB	ETU10	✓	--	--	--	--	LI	0.4 ... 1	--	--	1.25 ... 11	--	--		
MB	ETU10	✓	--	--	--	--	LI	0.4 ... 1	--	--	1.25 ... 11	--	--		
TA	ETU10	✓	--	--	--	--	LIN	0.4 ... 1	--	--	1.25 ... 11	--	--		
NA	ETU10	✓	--	--	--	--	LIN	0.4 ... 1	--	--	1.25 ... 11	--	--		
TB	ETU10	✓	--	--	--	--	LI	0.4 ... 1	--	--	1.25 ... 11	--	--		
NB	ETU10	✓	--	--	--	--	LI	0.4 ... 1	--	--	1.25 ... 11	--	--		
SL	ETU12	✓	--	--	--	--	LIG	0.4 ... 1	--	--	1.25 ... 11	0.6 ... 1, OFF	0.1 ... 0.3		
ML	ETU12	✓	--	--	--	--	LIG	0.4 ... 1	--	--	1.25 ... 11	0.6 ... 1, OFF	0.1 ... 0.3		
SF	ETU12	✓	--	--	--	--	LIG	0.4 ... 1	--	--	1.25 ... 11	0.6 ... 1, OFF	0.1 ... 0.3		
MF	ETU12	✓	--	--	--	--	LIG	0.4 ... 1	--	--	1.25 ... 11	0.6 ... 1, OFF	0.1 ... 0.3		
TN	ETU12	✓	--	--	--	--	LING	0.4 ... 1	--	--	1.25 ... 11	0.6 ... 1, OFF	0.1 ... 0.3		
NN	ETU12	✓	--	--	--	--	LING	0.4 ... 1	--	--	1.25 ... 11	0.6 ... 1, OFF	0.1 ... 0.3		
SE	ETU20	--	✓	--	--	--	LSI	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	--	--		
ME	ETU20	--	✓	--	--	--	LSI	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	--	--		
TE	ETU20	--	✓	--	--	--	LSI	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	--	--		
NE	ETU20	--	✓	--	--	--	LSI	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	--	--		
TF	ETU20	--	✓	--	--	--	LSIN	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	--	--		
NF	ETU20	--	✓	--	--	--	LSIN	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	--	--		
SG	ETU22	--	✓	--	--	--	LSIG	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	0.6 ... 1, OFF	0.1 ... 0.3		
MG	ETU22	--	✓	--	--	--	LSIG	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	0.6 ... 1, OFF	0.1 ... 0.3		
SH	ETU22	--	✓	--	--	--	LSIG	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	0.6 ... 1, OFF	0.1 ... 0.3		
MH	ETU22	--	✓	--	--	--	LSIG	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	0.6 ... 1, OFF	0.1 ... 0.3		
TH	ETU22	--	✓	--	--	--	LSING	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	0.6 ... 1, OFF	0.1 ... 0.3		
NH	ETU22	--	✓	--	--	--	LSING	0.4 ... 1	1.5 ... 10	0 ... 0.5	11	0.6 ... 1, OFF	0.1 ... 0.3		
SS	ETU30M ³⁾	--	--	✓	--	--	LI	0.4 ... 1	--	--	6/8/11	--	--		
MS	ETU30M ³⁾	--	--	✓	--	--	LI	0.4 ... 1	--	--	6/8/11	--	--		
CP	LCD ETU40M ³⁾	--	--	✓	--	--	LI	0.4 ... 1	--	--	1.25 ... 11	--	--		
CH	LCD ETU40	--	✓	--	--	--	LI, LS, LSI	0.4 ... 1	1.5 ... 10	0 ... 0.5	1.25 ... 11	--	--		
CJ	LCD ETU40	--	✓	--	--	--	LI, LSI, LIN, LSIN	0.4 ... 1	1.5 ... 10	0 ... 0.5	1.25 ... 11	--	--		
CL	LCD ETU42	--	✓	--	--	--	LSIG	0.4 ... 1	1.5 ... 10	0 ... 0.5	1.25 ... 11	0.4 ... 1	0.1 ... 0.5		
CM	LCD ETU42	--	✓	--	--	--	LSIG	0.4 ... 1	1.5 ... 10	0 ... 0.5	1.25 ... 11	0.4 ... 1	0.1 ... 0.5		
CN	LCD ETU42	--	✓	--	--	--	LSIG, LSING	0.4 ... 1	1.5 ... 10	0 ... 0.5	1.25 ... 11	0.4 ... 1	0.1 ... 0.5		

¹⁾ Size dependent.

²⁾ TM up to $I_n = 630$ A.

³⁾ Motor protection up to $I_n = 500$ A.

⁴⁾ Non-adjustable.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

General data

Order No. supplement	Releases	Thermal limage	Phase failure	Communication-capable	Ground-fault protection	Number of poles	N pole protected ¹⁾	I^2t (ON/OFF)	Trip class (t_c)	Time-lag class (I_R)	Thermo-magnetic releases	Magnetic releases	Electronic releases	LCD display
DK	M	--	--	--	--	3	--	--	--	--	--	✓	--	--
DE	M	--	--	--	--	3	--	--	--	--	--	✓	--	--
EE	M	--	--	--	--	4	--	--	--	--	--	✓	--	--
DA	TM ²⁾	✓	--	--	--	3	--	--	--	--	✓	--	--	--
DD	TM ²⁾	✓	--	--	--	3	--	--	--	--	✓	--	--	--
DC	TM ²⁾	✓	--	--	--	3	--	--	--	--	✓	--	--	--
EH	TM ²⁾	✓	--	--	--	4	--	--	--	--	✓	--	--	--
EJ	TM ²⁾	✓	--	--	--	4	--	--	--	--	✓	--	--	--
EA	TM ²⁾	✓	--	--	--	4	100 %	--	--	--	✓	--	--	--
EC	TM ²⁾	✓	--	--	--	4	60 %	--	--	--	✓	--	--	--
EM	TM ²⁾	✓	--	--	--	4	100 %	--	--	--	✓	--	--	--
SP	ETU10M ³⁾	✓	40 % I_R	--	--	3	--	--	10	--	--	--	✓	--
MP	ETU10M ³⁾	✓	40 % I_R	✓ ⁴⁾	--	3	--	--	10	--	--	--	✓	--
SB	ETU10	✓	--	--	--	3	--	--	--	2.5 ... 30	--	--	✓	--
MB	ETU10	✓	--	✓ ⁴⁾	--	3	--	--	--	2.5 ... 30	--	--	✓	--
TA	ETU10	✓	--	--	--	4	50/100 %	--	--	2.5 ... 30	--	--	✓	--
NA	ETU10	✓	--	✓ ⁴⁾	--	4	50/100 %	--	--	2.5 ... 30	--	--	✓	--
TB	ETU10	✓	--	--	--	4	--	--	--	2.5 ... 30	--	--	✓	--
NB	ETU10	✓	--	✓ ⁴⁾	--	4	--	--	--	2.5 ... 30	--	--	✓	--
SL	ETU12	✓	--	--	①	3	--	✓	--	2.5 ... 30	--	--	✓	--
ML	ETU12	✓	--	✓ ⁴⁾	①	3	--	✓	--	2.5 ... 30	--	--	✓	--
SF	ETU12	✓	--	--	②	3	--	✓	--	2.5 ... 30	--	--	✓	--
MF	ETU12	✓	--	✓ ⁴⁾	②	3	--	✓	--	2.5 ... 30	--	--	✓	--
TN	ETU12	✓	--	--	②	4	50/100 %	✓	--	2.5 ... 30	--	--	✓	--
NN	ETU12	✓	--	✓ ⁴⁾	②	4	50/100 %	✓	--	2.5 ... 30	--	--	✓	--
SE	ETU20	✓	--	--	--	3	--	✓	--	--	--	--	✓	--
ME	ETU20	✓	--	✓ ⁴⁾	--	3	--	✓	--	--	--	--	✓	--
TE	ETU20	✓	--	--	--	4	--	✓	--	--	--	--	✓	--
NE	ETU20	✓	--	✓ ⁴⁾	--	4	--	✓	--	--	--	--	✓	--
TF	ETU20	✓	--	--	--	4	50/100 %	✓	--	--	--	--	✓	--
NF	ETU20	✓	--	✓ ⁴⁾	--	4	50/100 %	✓	--	--	--	--	✓	--
SG	ETU22	✓	--	--	①	3	--	✓	--	--	--	--	✓	--
MG	ETU22	✓	--	✓ ⁴⁾	①	3	--	✓	--	--	--	--	✓	--
SH	ETU22	✓	--	--	②	3	--	✓	--	--	--	--	✓	--
MH	ETU22	✓	--	✓ ⁴⁾	②	3	--	✓	--	--	--	--	✓	--
TH	ETU22	✓	--	--	②	4	50/100 %	✓	--	--	--	--	✓	--
NH	ETU22	✓	--	✓ ⁴⁾	②	4	50/100 %	✓	--	--	--	--	✓	--
SS	ETU30M ³⁾	✓	40 % I_R	--	--	3	--	--	10, 20, 30	--	--	--	✓	--
MS	ETU30M ³⁾	✓	40 % I_R	✓ ⁴⁾	--	3	--	--	10, 20, 30	--	--	--	✓	--
CP	LCD ETU40M ³⁾	✓	5 ... 50 % I_R	✓	--	3	--	--	5, 10, 15, 20, 30	--	--	--	✓	✓
CH	LCD ETU40	✓	--	✓	--	3	--	✓	--	2.5 ... 30	--	--	✓	✓
CJ	LCD ETU40	✓	--	✓	--	4	50 ... 100 %, OFF	✓	--	2.5 ... 30	--	--	✓	✓
CL	LCD ETU42	✓	--	✓	①	3	--	✓	--	2.5 ... 30	--	--	✓	✓
CM	LCD ETU42	✓	--	✓	①/③	3	--	✓	--	2.5 ... 30	--	--	✓	✓
CN	LCD ETU42	✓	--	✓	②	4	50 ... 100 %, OFF	✓	--	2.5 ... 30	--	--	✓	✓

Ground-fault protection

- ① Vectorial summation current (3-conductor system)
 ② Vectorial summation current (4-conductor system)
 ③ Direct detection of ground-fault current in the neutral point of the transformer

- 1) Size dependent.
 2) TM up to $I_n = 630$ A.
 3) Motor protection up to $I_n = 500$ A.
 4) With COM20/COM21.

SENTRON 3VL Molded Case Circuit Breakers

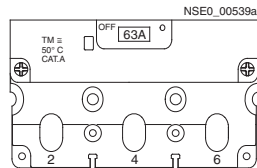
3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Selection and ordering data

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases I'_R	Operating current of the instantaneous short-circuit releases "I" I_i	DT **	I_{cu} up to 55 kA at 415 V, standard switching capacity N See "Overview".						
	A	A	A			Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
						Order No. supplement required, see page 16/56					

3-pole, fixed-mounted, for system protection, 16 A to 160 A, thermal-magnetic releases LI



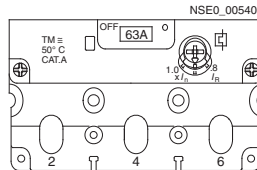
System protection, TM, LI function

With non-adjustable thermal overcurrent releases, non-adjustable short-circuit releases

Type	I_n	I'_R	I_i	DT	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
VL160X/3VL1	16	16	300	B	3VL17 96-1DA3□-....		1	1 unit	113	1.900
	20	20	300	B	3VL17 02-1DA3□-....		1	1 unit	113	1.900
	25	25	300	B	3VL17 25-1DA3□-....		1	1 unit	113	2.000
	32	32	300	B	3VL17 03-1DA3□-....		1	1 unit	113	2.000
	40	40	600	B	3VL17 04-1DA3□-....		1	1 unit	113	2.000
	50	50	600	B	3VL17 05-1DA3□-....		1	1 unit	113	2.000
	63	63	600	B	3VL17 06-1DA3□-....		1	1 unit	113	2.000
	80	80	1000	B	3VL17 08-1DA3□-....		1	1 unit	113	2.000
	100	100	1000	B	3VL17 10-1DA3□-....		1	1 unit	113	2.000
	125	125	1000	B	3VL17 12-1DA3□-....		1	1 unit	113	2.000
	160	160	1500	B	3VL17 16-1DA3□-....		1	1 unit	113	2.000

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**



System protection, TM, LI function

With adjustable thermal overcurrent releases, non-adjustable short-circuit releases

Type	I_n	I'_R	I_i	DT	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
VL160X/3VL1	20	16 ... 20	300	B	3VL17 02-1DD3□-....		1	1 unit	113	1.900
	32	25 ... 32	300	B	3VL17 03-1DD3□-....		1	1 unit	113	2.000
	40	32 ... 40	600	B	3VL17 04-1DD3□-....		1	1 unit	113	2.000
	50	40 ... 50	600	B	3VL17 05-1DD3□-....		1	1 unit	113	2.000
	63	50 ... 63	600	B	3VL17 06-1DD3□-....		1	1 unit	113	2.000
	80	63 ... 80	1000	B	3VL17 08-1DD3□-....		1	1 unit	113	2.000
	100	80 ... 100	1000	B	3VL17 10-1DD3□-....		1	1 unit	113	2.000
	125	100 ... 125	1000	B	3VL17 12-1DD3□-....		1	1 unit	113	2.000
	160	125 ... 160	1500	B	3VL17 16-1DD3□-....		1	1 unit	113	2.000

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**

** Delivery time class A for Order No. supplement "0AA0", see page 16/56.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT **	I_{cu} up to 70 kA at 415 V, high switching capacity H (H)						DT **	I_{cu} up to 100 kA at 415 V, very high switching capacity L (L)					
	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Order No. supplement required, see page 16/56							Order No. supplement required, see page 16/56					

B	3VL17 96-2DA3□-....		1	1 unit	113	1.900	--
B	3VL17 02-2DA3□-....		1	1 unit	113	1.900	--
B	3VL17 25-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 03-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 04-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 05-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 06-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 08-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 10-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 12-2DA3□-....		1	1 unit	113	2.000	--
B	3VL17 16-2DA3□-....		1	1 unit	113	2.000	--

3
6

B	3VL17 02-2DD3□-....		1	1 unit	113	1.900	--
B	3VL17 03-2DD3□-....		1	1 unit	113	2.000	--
B	3VL17 04-2DD3□-....		1	1 unit	113	2.000	--
B	3VL17 05-2DD3□-....		1	1 unit	113	2.000	--
B	3VL17 06-2DD3□-....		1	1 unit	113	2.000	--
B	3VL17 08-2DD3□-....		1	1 unit	113	2.000	--
B	3VL17 10-2DD3□-....		1	1 unit	113	2.000	--
B	3VL17 12-2DD3□-....		1	1 unit	113	2.000	--
B	3VL17 16-2DD3□-....		1	1 unit	113	2.000	--

3
6

** Delivery time class A for Order No. supplement "0AA0", see page 16/56.

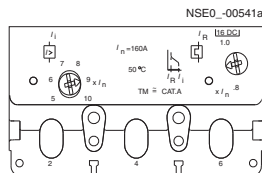
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases I_R	Operating current of the instantaneous short-circuit releases "I" I_I	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N See "Overview".					(N)
	A	A	A		Order No.	For basic price per PU/price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
					Order No. supplement required, see page 16/56					

3-pole, fixed-mounted, for system protection, 50 A to 630 A, thermal-magnetic releases LI



System protection, TM, LI function

With adjustable thermal overcurrent releases, adjustable short-circuit releases

VL160/3VL2	50	40 ... 50	300 ... 600	B	3VL27 05-1DC3□-....	1	1 unit	113	2.200
	63	50 ... 63	300 ... 600	B	3VL27 06-1DC3□-....	1	1 unit	113	2.200
	80	63 ... 80	400 ... 800	B	3VL27 08-1DC3□-....	1	1 unit	113	2.200
	100	80 ... 100	500 ... 1000	B	3VL27 10-1DC3□-....	1	1 unit	113	2.200
	125	100 ... 125	625 ... 1250	B	3VL27 12-1DC3□-....	1	1 unit	113	2.200
	160	125 ... 160	800 ... 1600	B	3VL27 16-1DC3□-....	1	1 unit	113	2.200
VL250/3VL3	200	160 ... 200	1000 ... 2000	B	3VL37 20-1DC3□-....	1	1 unit	113	2.300
	250	200 ... 250	1250 ... 2500	B	3VL37 25-1DC3□-....	1	1 unit	113	2.300

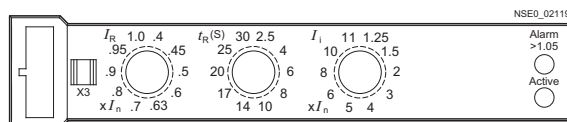
Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal not in conjunction with RCD module

3
6

VL400/3VL4	200	160 ... 200	1000 ... 2000	B	3VL47 20-1DC36-....	1	1 unit	113	5.700
	250	200 ... 250	1250 ... 2500	B	3VL47 25-1DC36-....	1	1 unit	113	5.700
	315	250 ... 315	1575 ... 3150	B	3VL47 31-1DC36-....	1	1 unit	113	5.700
	400	320 ... 400	2000 ... 4000	B	3VL47 40-1DC36-....	1	1 unit	113	5.700
VL630/3VL5	315	250 ... 315	1575 ... 3150	B	3VL57 31-1DC36-....	1	1 unit	113	9.000
	400	320 ... 400	2000 ... 4000	B	3VL57 40-1DC36-....	1	1 unit	113	9.000
	500	400 ... 500	2500 ... 5000	B	3VL57 50-1DC36-....	1	1 unit	113	9.000
	630	500 ... 630	3150 ... 6300	B	3VL57 63-1DC36-....	1	1 unit	113	9.000

3-pole, fixed-mounted, for system protection, 63 A to 1600 A, electronic releases LI



ETU10, LI function

With adjustable overcurrent releases, adjustable short-circuit releases

VL160/3VL2	63	25 ... 63	1.25 ... 11 × I_n	B	3VL27 06-1□□3□-....	1	1 unit	113	2.400
	100	40 ... 100	1.25 ... 11 × I_n	B	3VL27 10-1□□3□-....	1	1 unit	113	2.400
	160	64 ... 160	1.25 ... 11 × I_n	B	3VL27 16-1□□3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	1.25 ... 11 × I_n	B	3VL37 20-1□□3□-....	1	1 unit	113	2.500
	250	100 ... 250	1.25 ... 11 × I_n	B	3VL37 25-1□□3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	1.25 ... 11 × I_n	B	3VL47 31-1□□36-....	1	1 unit	113	5.900
	400	160 ... 400	1.25 ... 11 × I_n	B	3VL47 40-1□□36-....	1	1 unit	113	5.900
VL630/3VL5	630	525 ... 630	1.25 ... 10 × I_n	B	3VL57 63-1□□36-....	1	1 unit	113	9.300
VL800/3VL6	800	320 ... 800	1.25 ... 8 × I_n	B	3VL67 80-1□□36-....	1	1 unit	113	16.000
VL1250/3VL7	1000	400 ... 1000	1.25 ... 11 × I_n	B	3VL77 10-1□□36-....	1	1 unit	113	25.000
	1250	500 ... 1250	1.25 ... 11 × I_n	B	3VL77 12-1□□36-....	1	1 unit	113	25.000
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... 9 × I_n	B	3VL87 16-1□□30-....	1	1 unit	113	31.300

- Without communication preparation
- With communication preparation

SB
MB

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H (H)						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L (L)					
	Order No.	For basic price per PU/price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No.	For basic price per PU/price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 05-2DC3□-....		1	1 unit	113	2.200	B	3VL27 05-3DC3□-....		1	1 unit	113	2.200
B	3VL27 06-2DC3□-....		1	1 unit	113	2.200	B	3VL27 06-3DC3□-....		1	1 unit	113	2.200
B	3VL27 08-2DC3□-....		1	1 unit	113	2.200	B	3VL27 08-3DC3□-....		1	1 unit	113	2.200
B	3VL27 10-2DC3□-....		1	1 unit	113	2.200	B	3VL27 10-3DC3□-....		1	1 unit	113	2.200
B	3VL27 12-2DC3□-....		1	1 unit	113	2.200	B	3VL27 12-3DC3□-....		1	1 unit	113	2.200
B	3VL27 16-2DC3□-....		1	1 unit	113	2.200	B	3VL27 16-3DC3□-....		1	1 unit	113	2.200
B	3VL37 20-2DC3□-....		1	1 unit	113	2.300	B	3VL37 20-3DC3□-....		1	1 unit	113	2.300
B	3VL37 25-2DC3□-....		1	1 unit	113	2.300	B	3VL37 25-3DC3□-....		1	1 unit	113	2.300

3
6

3
6

B	3VL47 20-2DC36-....		1	1 unit	113	5.700	B	3VL47 20-3DC36-....		1	1 unit	113	5.700
B	3VL47 25-2DC36-....		1	1 unit	113	5.700	B	3VL47 25-3DC36-....		1	1 unit	113	5.700
B	3VL47 31-2DC36-....		1	1 unit	113	5.700	B	3VL47 31-3DC36-....		1	1 unit	113	5.700
B	3VL47 40-2DC36-....		1	1 unit	113	5.700	B	3VL47 40-3DC36-....		1	1 unit	113	5.700
B	3VL57 31-2DC36-....		1	1 unit	113	9.000	B	3VL57 31-3DC36-....		1	1 unit	113	9.000
B	3VL57 40-2DC36-....		1	1 unit	113	9.000	B	3VL57 40-3DC36-....		1	1 unit	113	9.000
B	3VL57 50-2DC36-....		1	1 unit	113	9.000	B	3VL57 50-3DC36-....		1	1 unit	113	9.000
B	3VL57 63-2DC36-....		1	1 unit	113	9.000	B	3VL57 63-3DC36-....		1	1 unit	113	9.000

16

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL47 40-2□□36-....		1	1 unit	113	5.900	B	3VL47 40-3□□36-....		1	1 unit	113	5.900
B	3VL57 63-2□□36-....		1	1 unit	113	9.300	B	3VL57 63-3□□36-....		1	1 unit	113	9.300
B	3VL67 80-2□□36-....		1	1 unit	113	16.000	B	3VL67 80-3□□36-....		1	1 unit	113	16.000
B	3VL77 10-2□□36-....		1	1 unit	113	25.000	B	3VL77 10-3□□36-....		1	1 unit	113	25.000
B	3VL77 12-2□□36-....		1	1 unit	113	25.000	B	3VL77 12-3□□36-....		1	1 unit	113	25.000
B	3VL87 16-2□□30-....		1	1 unit	113	31.300	B	3VL87 16-3□□30-....		1	1 unit	113	31.300

SB
MB

SB
MB

* You can order this quantity or a multiple thereof.

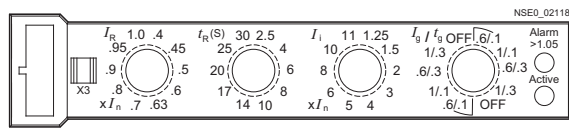
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	Ground-fault protection "G" I_g	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N See "Overview".					(N)	
	A	A	A	A		Order No. Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	kg

3-pole, fixed-mounted, for system protection, 63 A to 1600 A, electronic releases LIG



ETU12, LIG function for 3-wire three-phase systems

With adjustable overcurrent releases, adjustable short-circuit releases, vectorial summation current, ground fault delay $t_g = 0.1 \dots 0.3$ s, ground fault function (G) can be switched off.

VL160/3VL2	63	25 ... 63	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL27 06-1□□3□-....	1	1 unit	113	2.400
	100	40 ... 100	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL27 10-1□□3□-....	1	1 unit	113	2.400
	160	64 ... 160	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL27 16-1□□3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL37 20-1□□3□-....	1	1 unit	113	2.500
	250	100 ... 250	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL37 25-1□□3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

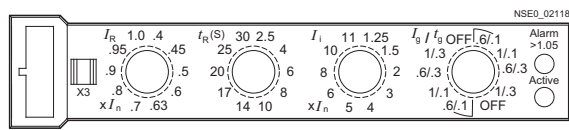
3
6

VL400/3VL4	315	128 ... 315	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL47 31-1□□36-....	1	1 unit	113	5.900
	400	160 ... 400	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL47 40-1□□36-....	1	1 unit	113	5.900
VL630/3VL5	630	252 ... 630	1.25 ... 10 × I_n	0.6 ... 1 × I_n	OFF	B	3VL57 63-1□□36-....	1	1 unit	113	9.300
VL800/3VL6	800	320 ... 800	1.25 ... 8 × I_n	0.6 ... 1 × I_n	OFF	B	3VL67 80-1□□36-....	1	1 unit	113	16.000
VL1250/3VL7	1000	400 ... 1000	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL77 10-1□□36-....	1	1 unit	113	25.000
	1250	500 ... 1250	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL77 12-1□□36-....	1	1 unit	113	25.000
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... 9 × I_n	0.6 ... 1 × I_n	OFF	B	3VL87 16-1□□30-....	1	1 unit	113	31.300

- Without communication preparation
- With communication preparation

SL
ML

3-pole, fixed-mounted, for system protection, 63 A to 1600 A, electronic releases LIG



ETU12, LIG function for 4-wire three-phase systems

With adjustable overcurrent releases, adjustable short-circuit releases, vectorial summation current, external current transformers required in addition, see page 16/90. Ground fault delay $t_g = 0.1 \dots 0.3$ s, ground fault function (G) can be switched off.

VL160/3VL2	63	25 ... 63	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL27 06-1□□3□-....	1	1 unit	113	2.400
	100	40 ... 100	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL27 10-1□□3□-....	1	1 unit	113	2.400
	160	64 ... 160	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL27 16-1□□3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL37 20-1□□3□-....	1	1 unit	113	2.500
	250	100 ... 250	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL37 25-1□□3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL47 31-1□□36-....	1	1 unit	113	5.900
	400	160 ... 400	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL47 40-1□□36-....	1	1 unit	113	5.900
VL630/3VL5	630	252 ... 630	1.25 ... 10 × I_n	0.6 ... 1 × I_n	OFF	B	3VL57 63-1□□36-....	1	1 unit	113	9.300
VL800/3VL6	800	320 ... 800	1.25 ... 8 × I_n	0.6 ... 1 × I_n	OFF	B	3VL67 80-1□□36-....	1	1 unit	113	16.000
VL1250/3VL7	1000	400 ... 1000	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL77 10-1□□36-....	1	1 unit	113	25.000
	1250	500 ... 1250	1.25 ... 11 × I_n	0.6 ... 1 × I_n	OFF	B	3VL77 12-1□□36-....	1	1 unit	113	25.000
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... 9 × I_n	0.6 ... 1 × I_n	OFF	B	3VL87 16-1□□30-....	1	1 unit	113	31.300

- Without communication preparation
- With communication preparation

SF
MF

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H (H)						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L (L)					
	Order No.	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No.	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Order No. supplement required, see page 16/56							Order No. supplement required, see page 16/56					

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3 6						3 6							
B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL47 40-2□□36-....		1	1 unit	113	5.900	B	3VL47 40-3□□36-....		1	1 unit	113	5.900
B	3VL57 63-2□□36-....		1	1 unit	113	9.300	B	3VL57 63-3□□36-....		1	1 unit	113	9.300
B	3VL67 80-2□□36-....		1	1 unit	113	16.000	B	3VL67 80-3□□36-....		1	1 unit	113	16.000
B	3VL77 10-2□□36-....		1	1 unit	113	25.000	B	3VL77 10-3□□36-....		1	1 unit	113	25.000
B	3VL77 12-2□□36-....		1	1 unit	113	25.000	B	3VL77 12-3□□36-....		1	1 unit	113	25.000
B	3VL87 16-2□□30-....		1	1 unit	113	31.300	B	3VL87 16-3□□30-....		1	1 unit	113	31.300

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3 6						3 6							
B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL47 40-2□□36-....		1	1 unit	113	5.900	B	3VL47 40-3□□36-....		1	1 unit	113	5.900
B	3VL57 63-2□□36-....		1	1 unit	113	9.300	B	3VL57 63-3□□36-....		1	1 unit	113	9.300
B	3VL67 80-2□□36-....		1	1 unit	113	16.000	B	3VL67 80-3□□36-....		1	1 unit	113	16.000
B	3VL77 10-2□□36-....		1	1 unit	113	25.000	B	3VL77 10-3□□36-....		1	1 unit	113	25.000
B	3VL77 12-2□□36-....		1	1 unit	113	25.000	B	3VL77 12-3□□36-....		1	1 unit	113	25.000
B	3VL87 16-2□□30-....		1	1 unit	113	31.300	B	3VL87 16-3□□30-....		1	1 unit	113	31.300

Communication:

- For accessories see page 16/98.

- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

* You can order this quantity or a multiple thereof.

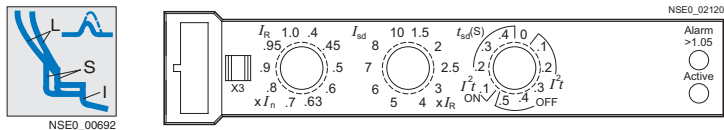
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	S function short-circuit protection (short-time delayed) S	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"					(N)	
	A	A	A	A		Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	kg

3-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSI



ETU20, LSI function for time-based discrimination

With adjustable overcurrent releases, non-adjustable short-circuit releases, short-circuit delay ($t_{sd} = 0$ to 0.5 s)

Model	Rated current I_n	Overcurrent release range	Short-circuit release range	Short-circuit delay t_{sd}	Order No.	PU	PS*	PG	Weight per PU approx.
VL160/3VL2	63	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL27 06-1□□3□-....	1	1 unit	113	2.400
	100	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL27 10-1□□3□-....	1	1 unit	113	2.400
	160	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL27 16-1□□3□-....	1	1 unit	113	2.400
VL250/3VL3	200	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL37 20-1□□3□-....	1	1 unit	113	2.500
	250	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL37 25-1□□3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal **6**

Model	Rated current I_n	Overcurrent release range	Short-circuit release range	Short-circuit delay t_{sd}	Order No.	PU	PS*	PG	Weight per PU approx.
VL400/3VL4	315	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL47 31-1□□36-....	1	1 unit	113	5.900
	400	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL47 40-1□□36-....	1	1 unit	113	5.900
VL630/3VL5	630	0.4 ... 1.0 × I_n	10 × I_n	1.5 ... 9 × I_R B	3VL57 63-1□□36-....	1	1 unit	113	9.300
VL800/3VL6	800	0.4 ... 1.0 × I_n	8 × I_n	1.5 ... 7 × I_R B	3VL67 80-1□□36-....	1	1 unit	113	16.000
VL1250/3VL7	1000	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL77 10-1□□36-....	1	1 unit	113	25.000
	1250	0.4 ... 1.0 × I_n	11 × I_n	1.5 ... 10 × I_R B	3VL77 12-1□□36-....	1	1 unit	113	25.000
VL1600/3VL8 ¹⁾	1600	0.4 ... 1.0 × I_n	9 × I_n	1.5 ... 8 × I_R B	3VL87 16-1□□30-....	1	1 unit	113	31.300

- Without communication preparation **SE**
- With communication preparation **ME**

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No.	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		Order No.	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Order No. supplement required, see page 16/56					kg		Order No. supplement required, see page 16/56					kg

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3
63
6

B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL47 40-2□□36-....		1	1 unit	113	5.900	B	3VL47 40-3□□36-....		1	1 unit	113	5.900
B	3VL57 63-2□□36-....		1	1 unit	113	9.300	B	3VL57 63-3□□36-....		1	1 unit	113	9.300
B	3VL67 80-2□□36-....		1	1 unit	113	16.000	B	3VL67 80-3□□36-....		1	1 unit	113	16.000
B	3VL77 10-2□□36-....		1	1 unit	113	25.000	B	3VL77 10-3□□36-....		1	1 unit	113	25.000
B	3VL77 12-2□□36-....		1	1 unit	113	25.000	B	3VL77 12-3□□36-....		1	1 unit	113	25.000
B	3VL87 16-2□□30-....		1	1 unit	113	31.300	B	3VL87 16-3□□30-....		1	1 unit	113	31.300

SE
MESE
ME

16

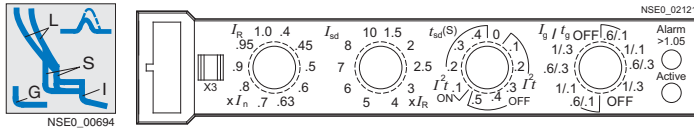
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_I	S function short-circuit protection (short-time delayed) S	Ground-fault protection "G" I_g	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"						
	A	A	A	A	A		Order No.	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	(N)
							Order No. supplement required, see page 16/56					kg	

3-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSIG



ETU22, LSIG function for 3-wire three-phase systems and time-based discrimination

With adjustable overcurrent releases, non-adjustable short-circuit releases, ground fault delay $t_g = 0.1 \dots 0.3$ s, short-circuit delay $t_{sd} = 0 \dots 0.5$ s, ground fault protection (G) can be switched off

VL160/3VL2	63	25 ... 63	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL27 06-1□□3□-....	1	1 unit	113	2.400
	100	40 ... 100	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL27 10-1□□3□-....	1	1 unit	113	2.400
	160	64 ... 160	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL27 16-1□□3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL37 20-1□□3□-....	1	1 unit	113	2.500
	250	100 ... 250	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL37 25-1□□3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL47 31-1□□36-....	1	1 unit	113	5.900
	400	160 ... 400	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL47 40-1□□36-....	1	1 unit	113	5.900
VL630/3VL5	630	252 ... 630	$10 \times I_n$	1.5 ...	$9 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL57 63-1□□36-....	1	1 unit	113	9.300
VL800/3VL6	800	320 ... 800	$8 \times I_n$	1.5 ...	$7 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL67 80-1□□36-....	1	1 unit	113	16.000
VL1250/3VL7	1000	400 ... 1000	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL77 10-1□□36-....	1	1 unit	113	25.000
	1250	500 ... 1250	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL77 12-1□□36-....	1	1 unit	113	25.000
VL1600/3VL8 ¹⁾	1600	640 ... 1600	$9 \times I_n$	1.5 ...	$8 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL87 16-1□□30-....	1	1 unit	113	31.300

- Without communication preparation
- With communication preparation

SG
MG

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No. Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL47 40-2□□36-....		1	1 unit	113	5.900	B	3VL47 40-3□□36-....		1	1 unit	113	5.900
B	3VL57 63-2□□36-....		1	1 unit	113	9.300	B	3VL57 63-3□□36-....		1	1 unit	113	9.300
B	3VL67 80-2□□36-....		1	1 unit	113	16.000	B	3VL67 80-3□□36-....		1	1 unit	113	16.000
B	3VL77 10-2□□36-....		1	1 unit	113	25.000	B	3VL77 10-3□□36-....		1	1 unit	113	25.000
B	3VL77 12-2□□36-....		1	1 unit	113	25.000	B	3VL77 12-3□□36-....		1	1 unit	113	25.000
B	3VL87 16-2□□30-....		1	1 unit	113	31.300	B	3VL87 16-3□□30-....		1	1 unit	113	31.300

SG
MG

SG
MG

* You can order this quantity or a multiple thereof.

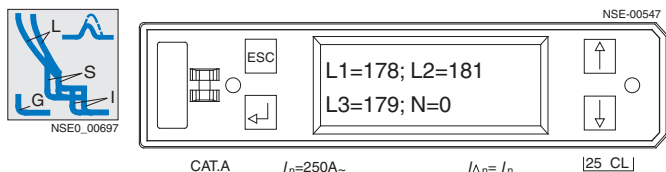
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_I	S function short-circuit protection (short-time delayed) S	Ground-fault protection "G" I_g	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"	(N) Order No. Basic price per PU PU (UNIT, SET, M) PS* PG Weight per PU approx.			
A	A	A	A	A	A						

3-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSIG



LCD-ETU42, LSIG function for 3-wire three-phase systems and time-based discrimination

With adjustable overcurrent releases, adjustable short-circuit releases, vectorial summation current, ground fault delay $t_g = 0.1 \dots 0.5$ s, short-circuit delay $t_{sd} = 0 \dots 0.5$ s

VL160/3VL2	63	25 ... 63	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL27 06-1CL3□-....	1	1 unit	113	2.400
	100	40 ... 100	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL27 10-1CL3□-....	1	1 unit	113	2.400
	160	64 ... 160	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL27 16-1CL3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL37 20-1CL3□-....	1	1 unit	113	2.500
	250	100 ... 250	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL37 25-1CL3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

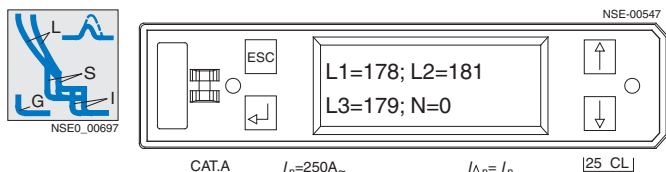
- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL47 31-1CL36-....	1	1 unit	113	5.900
	400	160 ... 400	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL47 40-1CL36-....	1	1 unit	113	5.900
VL630/3VL5	630	252 ... 630	$10 \times I_n$	$1.5 \dots 9 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL57 63-1CL36-....	1	1 unit	113	9.300
VL800/3VL6	800	320 ... 800	$8 \times I_n$	$1.5 \dots 7 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL67 80-1CL36-....	1	1 unit	113	16.000
VL1250/3VL7	1000	400 ... 1000	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL77 10-1CL36-....	1	1 unit	113	25.000
	1250	500 ... 1250	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL77 12-1CL36-....	1	1 unit	113	25.000
VL1600/3VL8 ¹⁾	1600	640 ... 1600	$9 \times I_n$	$1.5 \dots 8 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL87 16-1CL30-....	1	1 unit	113	31.300

- With communication preparation

CL



LCD-ETU42, LSIG function for 4-wire three-phase systems and time-based discrimination

With adjustable overcurrent releases, adjustable short-circuit releases. External current transformer required in addition, see pages 16/90. Vectorial summation current, ground fault delay $t_g = 0.1 \dots 0.5$ s, short-circuit delay $t_{sd} = 0 \dots 0.5$ s

VL160/3VL2	63	25 ... 63	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL27 06-1CM3□-....	1	1 unit	113	2.400
	100	40 ... 100	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL27 10-1CM3□-....	1	1 unit	113	2.400
	160	64 ... 160	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL27 16-1CM3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL37 20-1CM3□-....	1	1 unit	113	2.500
	250	100 ... 250	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL37 25-1CM3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL47 31-1CM36-....	1	1 unit	113	5.900
	400	160 ... 400	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL47 40-1CM36-....	1	1 unit	113	5.900
VL630/3VL5	630	252 ... 630	$10 \times I_n$	$1.5 \dots 9 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL57 63-1CM36-....	1	1 unit	113	9.300
VL800/3VL6	800	320 ... 800	$8 \times I_n$	$1.5 \dots 7 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL67 80-1CM36-....	1	1 unit	113	16.000
VL1250/3VL7	1000	400 ... 1000	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL77 10-1CM36-....	1	1 unit	113	25.000
	1250	500 ... 1250	$11 \times I_n$	$1.5 \dots 10 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL77 12-1CM36-....	1	1 unit	113	25.000
VL1600/3VL8 ¹⁾	1600	640 ... 1600	$9 \times I_n$	$1.5 \dots 8 \times I_R$	0.4 ... 1 $\times I_n$	B	3VL87 16-1CM30-....	1	1 unit	113	31.300

- With communication preparation

CM

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 06-2CL3□-....		1	1 unit	113	2.400	B	3VL27 06-3CL3□-....		1	1 unit	113	2.400
B	3VL27 10-2CL3□-....		1	1 unit	113	2.400	B	3VL27 10-3CL3□-....		1	1 unit	113	2.400
B	3VL27 16-2CL3□-....		1	1 unit	113	2.400	B	3VL27 16-3CL3□-....		1	1 unit	113	2.400
B	3VL37 20-2CL3□-....		1	1 unit	113	2.500	B	3VL37 20-3CL3□-....		1	1 unit	113	2.500
B	3VL37 25-2CL3□-....		1	1 unit	113	2.500	B	3VL37 25-3CL3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2CL36-....		1	1 unit	113	5.900	B	3VL47 31-3CL36-....		1	1 unit	113	5.900
B	3VL47 40-2CL36-....		1	1 unit	113	5.900	B	3VL47 40-3CL36-....		1	1 unit	113	5.900
B	3VL57 63-2CL36-....		1	1 unit	113	9.300	B	3VL57 63-3CL36-....		1	1 unit	113	9.300
B	3VL67 80-2CL36-....		1	1 unit	113	16.000	B	3VL67 80-3CL36-....		1	1 unit	113	16.000
B	3VL77 10-2CL36-....		1	1 unit	113	25.000	B	3VL77 10-3CL36-....		1	1 unit	113	25.000
B	3VL77 12-2CL36-....		1	1 unit	113	25.000	B	3VL77 12-3CL36-....		1	1 unit	113	25.000
B	3VL87 16-2CL30-....		1	1 unit	113	31.300	B	3VL87 16-3CL30-....		1	1 unit	113	31.300

CL

CL

B	3VL27 06-2CM3□-....		1	1 unit	113	2.400	B	3VL27 06-3CM3□-....		1	1 unit	113	2.400
B	3VL27 10-2CM3□-....		1	1 unit	113	2.400	B	3VL27 10-3CM3□-....		1	1 unit	113	2.400
B	3VL27 16-2CM3□-....		1	1 unit	113	2.400	B	3VL27 16-3CM3□-....		1	1 unit	113	2.400
B	3VL37 20-2CM3□-....		1	1 unit	113	2.500	B	3VL37 20-3CM3□-....		1	1 unit	113	2.500
B	3VL37 25-2CM3□-....		1	1 unit	113	2.500	B	3VL37 25-3CM3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2CM36-....		1	1 unit	113	5.900	B	3VL47 31-3CM36-....		1	1 unit	113	5.900
B	3VL47 40-2CM36-....		1	1 unit	113	5.900	B	3VL47 40-3CM36-....		1	1 unit	113	5.900
B	3VL57 63-2CM36-....		1	1 unit	113	9.300	B	3VL57 63-3CM36-....		1	1 unit	113	9.300
B	3VL67 80-2CM36-....		1	1 unit	113	16.000	B	3VL67 80-3CM36-....		1	1 unit	113	16.000
B	3VL77 10-2CM36-....		1	1 unit	113	25.000	B	3VL77 10-3CM36-....		1	1 unit	113	25.000
B	3VL77 12-2CM36-....		1	1 unit	113	25.000	B	3VL77 12-3CM36-....		1	1 unit	113	25.000
B	3VL87 16-2CM30-....		1	1 unit	113	31.300	B	3VL87 16-3CM30-....		1	1 unit	113	31.300

CM

CM

Communication:

- For accessories see page 16/98.

- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

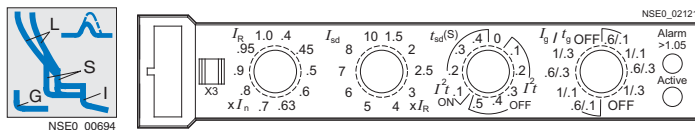
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_I	S function short-circuit protection (short-time delayed) S	Ground-fault protection "G" I_g	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview" (N)					
	A	A	A	A	A		Order No.	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							Order No. supplement required, see page 16/56					kg

3-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSIG



ETU22, LSIG function for 4-wire three-phase systems and time-based discrimination

With adjustable overcurrent releases, non-adjustable short-circuit releases, external current transformers required in addition, see page 16/90. Ground fault delay $t_g = 0.1 \dots 0.3$ s, short-circuit delay $t_{sd} = 0 \dots 0.5$ s, ground fault protection (G) can be switched off

VL160/3VL2	63 100 160	25 ... 63 40 ... 100 64 ... 160	$11 \times I_n$ $11 \times I_n$ $11 \times I_n$	$1.5 \dots 10 \times I_R$ $1.5 \dots 10 \times I_R$ $1.5 \dots 10 \times I_R$	$0.6 \dots 1 \times I_n$, OFF B $0.6 \dots 1 \times I_n$, OFF B $0.6 \dots 1 \times I_n$, OFF B		3VL27 06-1□□3□-.... 3VL27 10-1□□3□-.... 3VL27 16-1□□3□-....	1 1 1	1 unit 1 unit 1 unit	113 113 113	2.400 2.400 2.400
VL250/3VL3	200 250	80 ... 200 100 ... 250	$11 \times I_n$ $11 \times I_n$	$1.5 \dots 10 \times I_R$ $1.5 \dots 10 \times I_R$	$0.6 \dots 1 \times I_n$, OFF B $0.6 \dots 1 \times I_n$, OFF B		3VL37 20-1□□3□-.... 3VL37 25-1□□3□-....	1 1	1 unit 1 unit	113 113	2.500 2.500
Connection type can be selected by assignment of the 12th position of the Order No. • Connection with box terminal 3 • Connection with screw terminal 6											
VL400/3VL4	315 400	128 ... 315 160 ... 400	$11 \times I_n$ $11 \times I_n$	$1.5 \dots 10 \times I_R$ $1.5 \dots 10 \times I_R$	$0.6 \dots 1 \times I_n$, OFF B $0.6 \dots 1 \times I_n$, OFF B		3VL47 31-1□□36-.... 3VL47 40-1□□36-....	1 1	1 unit 1 unit	113 113	5.900 5.900
VL630/3VL5	630	252 ... 630	$10 \times I_n$	$1.5 \dots 9 \times I_R$	$0.6 \dots 1 \times I_n$, OFF B		3VL57 63-1□□36-....	1	1 unit	113	9.300
VL800/3VL6	800	320 ... 800	$8 \times I_n$	$1.5 \dots 7 \times I_R$	$0.6 \dots 1 \times I_n$, OFF B		3VL67 80-1□□36-....	1	1 unit	113	16.000
VL1250/3VL7	1000 1250	400 ... 1000 500 ... 1250	$11 \times I_n$ $11 \times I_n$	$1.5 \dots 10 \times I_R$ $1.5 \dots 10 \times I_R$	$0.6 \dots 1 \times I_n$, OFF B $0.6 \dots 1 \times I_n$, OFF B		3VL77 10-1□□36-.... 3VL77 12-1□□36-....	1 1	1 unit 1 unit	113 113	25.000 25.000
VL1600/3VL8 ¹⁾	1600	640 ... 1600	$9 \times I_n$	$1.5 \dots 8 \times I_R$	$0.6 \dots 1 \times I_n$, OFF B		3VL87 16-1□□30-....	1	1 unit	113	31.300
• Without communication preparation SH • With communication preparation MH											

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No. Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL47 40-2□□36-....		1	1 unit	113	5.900	B	3VL47 40-3□□36-....		1	1 unit	113	5.900
B	3VL57 63-2□□36-....		1	1 unit	113	9.300	B	3VL57 63-3□□36-....		1	1 unit	113	9.300
B	3VL67 80-2□□36-....		1	1 unit	113	16.000	B	3VL67 80-3□□36-....		1	1 unit	113	16.000
B	3VL77 10-2□□36-....		1	1 unit	113	25.000	B	3VL77 10-3□□36-....		1	1 unit	113	25.000
B	3VL77 12-2□□36-....		1	1 unit	113	25.000	B	3VL77 12-3□□36-....		1	1 unit	113	25.000
B	3VL87 16-2□□30-....		1	1 unit	113	31.300	B	3VL87 16-3□□30-....		1	1 unit	113	31.300

SH
MH

SH
MH

* You can order this quantity or a multiple thereof.

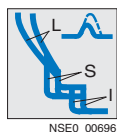
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

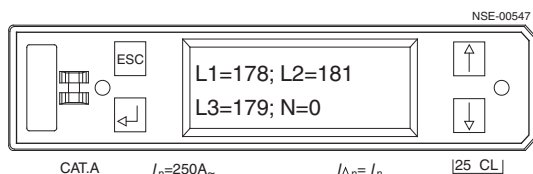
3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	S function short-circuit protection (short-time delayed) S	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"					(N)
	A	A	A	A		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
						Order No. supplement required, see page 16/56					kg

3-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LI, LS, LSI



NSE0_00696



CAT.A

 $I_n=250A..$ $I_{\Delta n}=I_n$

[25 CL]

LCD-ETU40, LI/LS/LSI function selectable

With adjustable overcurrent releases, adjustable short-circuit releases, short-circuit delay ($t_{sd} = 0$ to 0.5 s)

VL160/3VL2	63	25 ... 63	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL27 06-1CH3□-....	1	1 unit	113	2.400		
	100	40 ... 100	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL27 10-1CH3□-....	1	1 unit	113	2.400		
	160	64 ... 160	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL27 16-1CH3□-....	1	1 unit	113	2.400		
VL250/3VL3	200	80 ... 200	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL37 20-1CH3□-....	1	1 unit	113	2.500		
	250	100 ... 250	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL37 25-1CH3□-....	1	1 unit	113	2.500		
Connection type can be selected by assignment of the 12th position of the Order No.						3					
• Connection with box terminal						6					
• Connection with screw terminal											
VL400/3VL4	315	128 ... 315	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL47 31-1CH36-....	1	1 unit	113	5.900		
	400	160 ... 400	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL47 40-1CH36-....	1	1 unit	113	5.900		
VL630/3VL5	630	252 ... 630	1.25 ... $10 \times I_n$	1.5 ... $9 \times I_R$ B	3VL57 63-1CH36-....	1	1 unit	113	9.300		
VL800/3VL6	800	320 ... 800	1.25 ... $8 \times I_n$	1.5 ... $7 \times I_R$ B	3VL67 80-1CH36-....	1	1 unit	113	16.000		
VL1250/3VL7	1000	400 ... 1000	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL77 10-1CH36-....	1	1 unit	113	25.000		
	1250	500 ... 1250	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$ B	3VL77 12-1CH36-....	1	1 unit	113	25.000		
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... $9 \times I_n$	1.5 ... $8 \times I_R$ B	3VL87 16-1CH30-....	1	1 unit	113	31.300		

• With communication preparation

CH

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 06-2CH3□-....		1	1 unit	113	2.400	B	3VL27 06-3CH3□-....		1	1 unit	113	2.400
B	3VL27 10-2CH3□-....		1	1 unit	113	2.400	B	3VL27 10-3CH3□-....		1	1 unit	113	2.400
B	3VL27 16-2CH3□-....		1	1 unit	113	2.400	B	3VL27 16-3CH3□-....		1	1 unit	113	2.400
B	3VL37 20-2CH3□-....		1	1 unit	113	2.500	B	3VL37 20-3CH3□-....		1	1 unit	113	2.500
B	3VL37 25-2CH3□-....		1	1 unit	113	2.500	B	3VL37 25-3CH3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2CH36-....		1	1 unit	113	5.900	B	3VL47 31-3CH36-....		1	1 unit	113	5.900
B	3VL47 40-2CH36-....		1	1 unit	113	5.900	B	3VL47 40-3CH36-....		1	1 unit	113	5.900
B	3VL57 63-2CH36-....		1	1 unit	113	9.300	B	3VL57 63-3CH36-....		1	1 unit	113	9.300
B	3VL67 80-2CH36-....		1	1 unit	113	16.000	B	3VL67 80-3CH36-....		1	1 unit	113	16.000
B	3VL77 10-2CH36-....		1	1 unit	113	25.000	B	3VL77 10-3CH36-....		1	1 unit	113	25.000
B	3VL77 12-2CH36-....		1	1 unit	113	25.000	B	3VL77 12-3CH36-....		1	1 unit	113	25.000
B	3VL87 16-2CH30-....		1	1 unit	113	31.300	B	3VL87 16-3CH30-....		1	1 unit	113	31.300

CH

CH

* You can order this quantity or a multiple thereof.

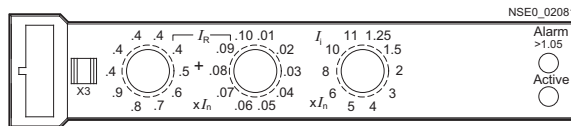
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"					
	A	A	A		Order No.	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
					Order No. supplement required, see page 16/56					kg

3-pole, fixed-mounted, for motor protection - generator protection, 63 A to 500 A, electronic releases LI



ETU10M, LI function

With thermal image, with non-adjustable trip class $t_C = 10$, with phase failure sensitivity 40 % I_R

VL160/3VL2	63	25 ... 63	1.25 ... $11 \times I_n$	B	3VL27 06-1□□3□-....	1	1 unit	113	2.400
	100	40 ... 100	1.25 ... $11 \times I_n$	B	3VL27 10-1□□3□-....	1	1 unit	113	2.400
	160	64 ... 160	1.25 ... $11 \times I_n$	B	3VL27 16-1□□3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	1.25 ... $11 \times I_n$	B	3VL37 20-1□□3□-....	1	1 unit	113	2.500
	250	100 ... 250	1.25 ... $11 \times I_n$	B	3VL37 25-1□□3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

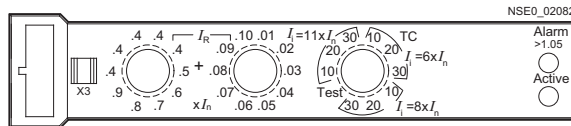
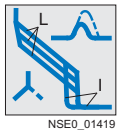
- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	125 ... 315	1.25 ... $11 \times I_n$	B	3VL47 31-1□□36-....	1	1 unit	113	5.900
VL630/3VL5	500	200 ... 500	1.25 ... $12.5 \times I_n$	B	3VL57 50-1□□36-....	1	1 unit	113	9.300

- Without communication preparation
- With communication preparation

SP
MP



ETU30M, LI function

With thermal image, with adjustable trip class $t_C = 10, 20, 30$, with phase failure sensitivity 40 % I_R

VL160/3VL2	63	25 ... 63	6/8/11 $\times I_n$	B	3VL27 06-1□□3□-....	1	1 unit	113	2.400
	100	40 ... 100	6/8/11 $\times I_n$	B	3VL27 10-1□□3□-....	1	1 unit	113	2.400
	160	64 ... 160	6/8/11 $\times I_n$	B	3VL27 16-1□□3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	6/8/11 $\times I_n$	B	3VL37 20-1□□3□-....	1	1 unit	113	2.500
	250	100 ... 250	6/8/11 $\times I_n$	B	3VL37 25-1□□3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	125 ... 315	6/8/11 $\times I_n$	B	3VL47 31-1□□36-....	1	1 unit	113	5.900
VL630/3VL5	500	200 ... 500	6/8/12.5 $\times I_n$	B	3VL57 50-1□□36-....	1	1 unit	113	9.300

- Without communication preparation
- With communication preparation

SS
MS

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No. Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	For price see page 16/32	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL57 50-2□□36-....		1	1 unit	113	9.300	B	3VL57 50-3□□36-....		1	1 unit	113	9.300

SP
MP

SP
MP

B	3VL27 06-2□□3□-....		1	1 unit	113	2.400	B	3VL27 06-3□□3□-....		1	1 unit	113	2.400
B	3VL27 10-2□□3□-....		1	1 unit	113	2.400	B	3VL27 10-3□□3□-....		1	1 unit	113	2.400
B	3VL27 16-2□□3□-....		1	1 unit	113	2.400	B	3VL27 16-3□□3□-....		1	1 unit	113	2.400
B	3VL37 20-2□□3□-....		1	1 unit	113	2.500	B	3VL37 20-3□□3□-....		1	1 unit	113	2.500
B	3VL37 25-2□□3□-....		1	1 unit	113	2.500	B	3VL37 25-3□□3□-....		1	1 unit	113	2.500

3
6

3
6

B	3VL47 31-2□□36-....		1	1 unit	113	5.900	B	3VL47 31-3□□36-....		1	1 unit	113	5.900
B	3VL57 50-2□□36-....		1	1 unit	113	9.300	B	3VL57 50-3□□36-....		1	1 unit	113	9.300

SS
MS

SS
MS

* You can order this quantity or a multiple thereof.

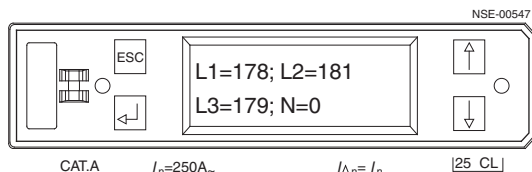
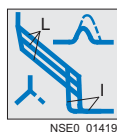
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"					
	A	A	A		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
					Order No. supplement required, see page 16/56					

3-pole, fixed-mounted, for motor protection - generator protection, 63 A to 500 A, electronic releases LI



LCD-ETU40M, LI function

With thermal image, with adjustable trip class $t_C = 5, 10, 15, 20, 30$, phase failure sensitivity adjustable in steps 5 ... 50 % I_R .

Model	Rated current I_n	Current setting I_R	Operating current I_i	DT	Order No.	PU	PS*	PG	Weight per PU
VL160/3VL2	63	25 ... 63	$1.25 \dots 11 \times I_n$	B	3VL27 06-1CP3□-....	1	1 unit	113	2.400
	100	40 ... 100	$1.25 \dots 11 \times I_n$	B	3VL27 10-1CP3□-....	1	1 unit	113	2.400
	160	64 ... 160	$1.25 \dots 11 \times I_n$	B	3VL27 16-1CP3□-....	1	1 unit	113	2.400
VL250/3VL3	200	80 ... 200	$1.25 \dots 11 \times I_n$	B	3VL37 20-1CP3□-....	1	1 unit	113	2.500
	250	100 ... 250	$1.25 \dots 11 \times I_n$	B	3VL37 25-1CP3□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	$1.25 \dots 11 \times I_n$	B	3VL47 31-1CP36-....	1	1 unit	113	5.900
VL630/3VL5	500	250 ... 500	$1.25 \dots 11 \times I_n$	B	3VL57 50-1CP36-....	1	1 unit	113	9.300

- With communication preparation

CP

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						(H)	DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L						(L)
	Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
						kg							kg		

B	3VL27 06-2CP3□-....		1	1 unit	113	2.400	B	3VL27 06-3CP3□-....		1	1 unit	113	2.400	
B	3VL27 10-2CP3□-....		1	1 unit	113	2.400	B	3VL27 10-3CP3□-....		1	1 unit	113	2.400	
B	3VL27 16-2CP3□-....		1	1 unit	113	2.400	B	3VL27 16-3CP3□-....		1	1 unit	113	2.400	
B	3VL37 20-2CP3□-....		1	1 unit	113	2.500	B	3VL37 20-3CP3□-....		1	1 unit	113	2.500	
B	3VL37 25-2CP3□-....		1	1 unit	113	2.500	B	3VL37 25-3CP3□-....		1	1 unit	113	2.500	

3
6

3
6

B	3VL47 31-2CP36-....		1	1 unit	113	5.900	B	3VL47 31-3CP36-....		1	1 unit	113	5.900	
B	3VL57 50-2CP36-....		1	1 unit	113	9.300	B	3VL57 50-3CP36-....		1	1 unit	113	9.300	

CP

CP

* You can order this quantity or a multiple thereof.

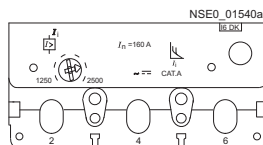
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Type	Rated current I_n	Operating current of the instantaneous short-circuit releases I' I_i	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"					(N)
				Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A				Order No. supplement required, see page 16/56					kg

3-pole, fixed-mounted, for starter protection, 63 A to 500 A, magnetic releases I



Starter protection, M, I function

Without overcurrent release, with adjustable short-circuit release

VL160/3VL2	63	450 ... 900	B	3VL27 06-1DK3□-....	1	1 unit	113	2.200
	100	750 ... 1500	B	3VL27 10-1DK3□-....	1	1 unit	113	2.200
	160	1250 ... 2500	B	3VL27 16-1DK3□-....	1	1 unit	113	2.200
VL250/3VL3	250	1750 ... 3500	B	3VL37 25-1DK3□-....	1	1 unit	113	2.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal not in conjunction with RCD module

3
6

VL400/3VL4	200	1250 ... 2500	B	3VL47 20-1DK36-....	1	1 unit	113	5.700
	250	2000 ... 4000	B	3VL47 25-1DK36-....	1	1 unit	113	5.700
	315	2000 ... 4000	A	3VL47 31-1DK36-....	1	1 unit	113	5.700
VL630/3VL5	315	2000 ... 4000	B	3VL57 31-1DK36-....	1	1 unit	113	9.000
	500	3250 ... 6300	B	3VL57 50-1DK36-....	1	1 unit	113	9.000

3-pole, fixed-mounted, for safe disconnection, 100 A to 1600 A, magnetic releases I



NSE0_00708

Non-automatic molded case circuit breakers¹⁾, I function

Without overcurrent release, with non-adjustable short-circuit release (for intrinsic protection only)

VL160X/3VL1	100	1800	B	3VL17 10-1DE3□-....	1	1 unit	113	2.000
	160	1800	B	3VL17 16-1DE3□-....	1	1 unit	113	2.000
VL160/3VL2	100	2500	B	3VL27 10-1DE3□-....	1	1 unit	113	2.200
	160	2500	B	3VL27 16-1DE3□-....	1	1 unit	113	2.200
VL250/3VL3	250	3500	B	3VL37 25-1DE3□-....	1	1 unit	113	2.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal not in conjunction with RCD module

3
6

VL400/3VL4	400	4000	B	3VL47 40-1DE36-....	1	1 unit	113	5.700
VL630/3VL5	630	6300	B	3VL57 63-1DE36-....	1	1 unit	113	9.000
VL800/3VL6	800	6500	B	3VL67 80-1DE36-....	1	1 unit	113	15.700
VL1250/3VL7	1250	12000	B	3VL77 12-1DE36-....	1	1 unit	113	23.500
VL1600/3VL8 ²⁾	1600	14400	B	3VL87 16-1DE30-....	1	1 unit	113	29.800

For further versions, including for short-circuit and ground-fault protection, see pages 16/12 to 16/28.

¹⁾ See also the Chapter "3K, 3KE, 3LD Switch Disconnectors". 3K. switch disconnectors are also available with rear-mounting operating mechanism and leading contacts.

²⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

DT I_{cu} up to 70 kA at 415 V, high switching capacity H							DT I_{cu} up to 100 kA at 415 V, very high switching capacity L						
Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Order No. supplement required, see page 16/56						kg	Order No. supplement required, see page 16/56						kg

B	3VL27 06-2DK3□-....	1	1 unit	113	2.200	B	3VL27 06-3DK3□-....	1	1 unit	113	2.200
B	3VL27 10-2DK3□-....	1	1 unit	113	2.200	B	3VL27 10-3DK3□-....	1	1 unit	113	2.200
B	3VL27 16-2DK3□-....	1	1 unit	113	2.200	B	3VL27 16-3DK3□-....	1	1 unit	113	2.200
B	3VL37 25-2DK3□-....	1	1 unit	113	2.300	B	3VL37 25-3DK3□-....	1	1 unit	113	2.300

3
6

3
6

B	3VL47 20-2DK36-....	1	1 unit	113	5.700	B	3VL47 20-3DK36-....	1	1 unit	113	5.700
B	3VL47 25-2DK36-....	1	1 unit	113	5.700	B	3VL47 25-3DK36-....	1	1 unit	113	5.700
A	3VL47 31-2DK36-....	1	1 unit	113	5.700	A	3VL47 31-3DK36-....	1	1 unit	113	5.700
B	3VL57 31-2DK36-....	1	1 unit	113	9.000	B	3VL57 31-3DK36-....	1	1 unit	113	9.000
B	3VL57 50-2DK36-....	1	1 unit	113	9.000	B	3VL57 50-3DK36-....	1	1 unit	113	9.000

B	3VL17 10-2DE3□-....	1	1 unit	113	2.000	--					
B	3VL17 16-2DE3□-....	1	1 unit	113	2.000	--					
B	3VL27 10-2DE3□-....	1	1 unit	113	2.200	B	3VL27 10-3DE3□-....	1	1 unit	113	2.200
B	3VL27 16-2DE3□-....	1	1 unit	113	2.200	B	3VL27 16-3DE3□-....	1	1 unit	113	2.200
B	3VL37 25-2DE3□-....	1	1 unit	113	2.300	B	3VL37 25-3DE3□-....	1	1 unit	113	2.300

3
6

3
6

B	3VL47 40-2DE36-....	1	1 unit	113	5.700	B	3VL47 40-3DE36-....	1	1 unit	113	5.700
B	3VL57 63-2DE36-....	1	1 unit	113	9.000	B	3VL57 63-3DE36-....	1	1 unit	113	9.000
B	3VL67 80-2DE36-....	1	1 unit	113	15.700	B	3VL67 80-3DE36-....	1	1 unit	113	15.700
B	3VL77 12-2DE36-....	1	1 unit	113	23.500	B	3VL77 12-3DE36-....	1	1 unit	113	23.500
B	3VL87 16-2DE30-....	1	1 unit	113	29.800	B	3VL87 16-3DE30-....	1	1 unit	113	29.800

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole






Order No. supplement (for complete Order No., see pages 16/12 to 16/28) 3VL7 ...-□□3-.... Releases	Switching capacity	Type VL160 3VL2	VL250 3VL3			VL400 3VL4		VL630 3VL5		VL800 3VL6		VL1250 3VL7		VL1600 3VL8
			Rated current I_n											
			63 A	100 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A	800 A	1000 A	1250 A
Price														
ETU10 S B		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU10 M B		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU12 S L		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU12 M L		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU12 S F		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU12 M F		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU20 S E		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU20 M E		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU22 S G		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU22 M G		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU42 C L		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU42 C M		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU22 S H		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU22 M H		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
ETU40 C H		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x
		x	x	x	x	x	x	x	--	x	x	x	x	x

x = Additional price
-- = Not available

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

3-pole

Order No. supplement (for complete Order No., see pages 16/12 to 16/28) 3VL.7 ... □□3-.... Releases	Switching capacity	Type	VL160			VL250		VL400		VL630		VL800		VL1250		VL1600		
		3VL2	3VL3			3VL4		3VL5		3VL6		3VL7		3VL8				
		Rated current I_n																
		63 A	100 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A	800 A	1000 A	1250 A	1600 A				
Price																		
ETU10M SP		x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--
ETU10M MP		x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--
ETU30M SS		x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--
ETU30M MS		x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--
ETU40M CP		x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	
		x	x	x	x	x	x	x	--	x	--	--	--	--	--	--	--	--

x = Additional price
-- = Not available

SENTRON 3VL Molded Case Circuit Breakers

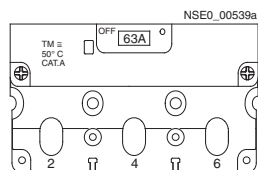
3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Selection and ordering data

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases I_L I_R	Operating current of the instantaneous short-circuit releases "I" I_i	DT **	I_{cu} up to 55 kA at 415 V, standard switching capacity N See "Overview".						
	A	A	A			Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
						Order No. supplement required, see page 16/56					

4-pole, fixed-mounted, for system protection, 16 A to 630 A, thermal-magnetic releases LI



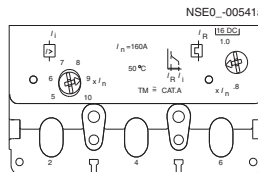
System protection, TM, LI function

With non-adjustable thermal overcurrent releases, non-adjustable short-circuit releases, without overcurrent and short-circuit release in 4th pole (N)

VL160X/3VL1	16	16	300	B	3VL17 96-1EH4□-....	1	1 unit	113	2.300
	20	20	300	B	3VL17 02-1EH4□-....	1	1 unit	113	2.300
	25	25	300	B	3VL17 25-1EH4□-....	1	1 unit	113	2.500
	32	32	300	B	3VL17 03-1EH4□-....	1	1 unit	113	2.500
	40	40	600	B	3VL17 04-1EH4□-....	1	1 unit	113	2.500
	50	50	600	B	3VL17 05-1EH4□-....	1	1 unit	113	2.500
	63	63	600	B	3VL17 06-1EH4□-....	1	1 unit	113	2.500
	80	80	1000	B	3VL17 08-1EH4□-....	1	1 unit	113	2.500
	100	100	1000	B	3VL17 10-1EH4□-....	1	1 unit	113	2.500
	125	125	1000	B	3VL17 12-1EH4□-....	1	1 unit	113	2.500
	160	160	1500	B	3VL17 16-1EH4□-....	1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**



System protection, TM, LI function

With adjustable thermal overcurrent releases, adjustable short-circuit releases, without overcurrent and short-circuit release in 4th pole (N)

VL160/3VL2	50	40 ... 50	300 ... 600	B	3VL27 05-1EJ4□-....	1	1 unit	113	3.000
	63	50 ... 63	300 ... 600	B	3VL27 06-1EJ4□-....	1	1 unit	113	3.000
	80	63 ... 80	400 ... 800	B	3VL27 08-1EJ4□-....	1	1 unit	113	3.000
	100	80 ... 100	500 ... 1000	B	3VL27 10-1EJ4□-....	1	1 unit	113	3.000
	125	100 ... 125	625 ... 1250	B	3VL27 12-1EJ4□-....	1	1 unit	113	3.000
	160	125 ... 160	800 ... 1600	B	3VL27 16-1EJ4□-....	1	1 unit	113	3.000
VL250/3VL3	200	160 ... 200	1000 ... 2000	B	3VL37 20-1EJ4□-....	1	1 unit	113	3.200
	250	200 ... 250	1250 ... 2500	B	3VL37 25-1EJ4□-....	1	1 unit	113	3.200

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**

VL400/3VL4	200	160 ... 200	1000 ... 2000	B	3VL47 20-1EJ46-....	1	1 unit	113	7.400
	250	200 ... 250	1250 ... 2500	B	3VL47 25-1EJ46-....	1	1 unit	113	7.400
	315	250 ... 315	1575 ... 3150	B	3VL47 31-1EJ46-....	1	1 unit	113	7.400
	400	320 ... 400	2000 ... 4000	B	3VL47 40-1EJ46-....	1	1 unit	113	7.400
VL630/3VL5	315	250 ... 315	1575 ... 3150	B	3VL57 31-1EJ46-....	1	1 unit	113	11.200
	400	320 ... 400	2000 ... 4000	B	3VL57 40-1EJ46-....	1	1 unit	113	11.200
	500	400 ... 500	2500 ... 5000	B	3VL57 50-1EJ46-....	1	1 unit	113	11.200
	630	500 ... 630	3150 ... 6300	B	3VL57 63-1EJ46-....	1	1 unit	113	11.200

** Delivery time class A for Order No. supplement "0AA0", see page 16/56.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT **	I_{cu} up to 70 kA at 415 V, high switching capacity H						H	DT **	I_{cu} up to 100 kA at 415 V, very high switching capacity L						L
	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg			Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	

B	3VL17 96-2EH4□-....		1	1 unit	113	2,300								
B	3VL17 02-2EH4□-....		1	1 unit	113	2,300								
B	3VL17 25-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 03-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 04-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 05-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 06-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 08-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 10-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 12-2EH4□-....		1	1 unit	113	2,500								
B	3VL17 16-2EH4□-....		1	1 unit	113	2,500								

3
6

B	3VL27 05-2EJ4□-....		1	1 unit	113	3,000	B	3VL27 05-3EJ4□-....		1	1 unit	113	3,000
B	3VL27 06-2EJ4□-....		1	1 unit	113	3,000	B	3VL27 06-3EJ4□-....		1	1 unit	113	3,000
B	3VL27 08-2EJ4□-....		1	1 unit	113	3,000	B	3VL27 08-3EJ4□-....		1	1 unit	113	3,000
B	3VL27 10-2EJ4□-....		1	1 unit	113	3,000	B	3VL27 10-3EJ4□-....		1	1 unit	113	3,000
B	3VL27 12-2EJ4□-....		1	1 unit	113	3,000	B	3VL27 12-3EJ4□-....		1	1 unit	113	3,000
B	3VL27 16-2EJ4□-....		1	1 unit	113	3,000	B	3VL27 16-3EJ4□-....		1	1 unit	113	3,000
B	3VL37 20-2EJ4□-....		1	1 unit	113	3,200	B	3VL37 20-3EJ4□-....		1	1 unit	113	3,200
B	3VL37 25-2EJ4□-....		1	1 unit	113	3,200	B	3VL37 25-3EJ4□-....		1	1 unit	113	3,200

3
63
6

B	3VL47 20-2EJ46-....		1	1 unit	113	7,400	B	3VL47 20-3EJ46-....		1	1 unit	113	7,400
B	3VL47 25-2EJ46-....		1	1 unit	113	7,400	B	3VL47 25-3EJ46-....		1	1 unit	113	7,400
B	3VL47 31-2EJ46-....		1	1 unit	113	7,400	B	3VL47 31-3EJ46-....		1	1 unit	113	7,400
B	3VL47 40-2EJ46-....		1	1 unit	113	7,400	B	3VL47 40-3EJ46-....		1	1 unit	113	7,400
B	3VL57 31-2EJ46-....		1	1 unit	113	11,200	B	3VL57 31-3EJ46-....		1	1 unit	113	11,200
B	3VL57 40-2EJ46-....		1	1 unit	113	11,200	B	3VL57 40-3EJ46-....		1	1 unit	113	11,200
B	3VL57 50-2EJ46-....		1	1 unit	113	11,200	B	3VL57 50-3EJ46-....		1	1 unit	113	11,200
B	3VL57 63-2EJ46-....		1	1 unit	113	11,200	B	3VL57 63-3EJ46-....		1	1 unit	113	11,200

** Delivery time class A for Order No. supplement "0AA0", see page 16/56.

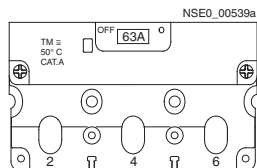
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	DT **	I_{cu} up to 55 kA at 415 V, standard switching capacity N See "Overview".						
	A	A	A			Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
						Order No. supplement required, see page 16/56					kg

4-pole, fixed-mounted, for system protection, 16 A to 160 A, thermal-magnetic releases LIN



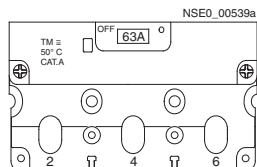
System protection, TM, LIN function

With non-adjustable thermal overcurrent releases, non-adjustable short-circuit releases, with "N" overcurrent and short-circuit release
N protection = 100 %

VL160X/3VL1	I_n	I_R	I_i	DT	Order No.	Basic price per PU	PU	PS*	PG	Weight per PU approx.
	16	16	300	B	3VL17 96-1EA4□-....		1	1 unit	113	2.300
	20	20	300	B	3VL17 02-1EA4□-....		1	1 unit	113	2.300
	25	25	300	B	3VL17 25-1EA4□-....		1	1 unit	113	2.500
	32	32	300	B	3VL17 03-1EA4□-....		1	1 unit	113	2.500
	40	40	600	B	3VL17 04-1EA4□-....		1	1 unit	113	2.500
	50	50	600	B	3VL17 05-1EA4□-....		1	1 unit	113	2.500
	63	63	600	B	3VL17 06-1EA4□-....		1	1 unit	113	2.500
	80	80	1000	B	3VL17 08-1EA4□-....		1	1 unit	113	2.500
	100	100	1000	B	3VL17 10-1EA4□-....		1	1 unit	113	2.500
	125	125	1000	B	3VL17 12-1EL4□-....		1	1 unit	113	2.500
	160	160	1500	B	3VL17 16-1EL4□-....		1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**



System protection, TM, LIN function

With non-adjustable thermal overcurrent releases, non-adjustable short-circuit releases, with "N" overcurrent and short-circuit release
N protection = 60 %

VL160X/3VL1	I_n	I_R	I_i	DT	Order No.	Basic price per PU	PU	PS*	PG	Weight per PU approx.
	125	125	1000	B	3VL17 12-1EA4□-....		1	1 unit	113	2.500
	160	160	1500	B	3VL17 16-1EA4□-....		1	1 unit	113	2.500

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**

** Delivery time class A for Order No. supplement "0AA0", see page 16/56.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT **	I_{cu} up to 70 kA at 415 V, high switching capacity H						(H)	DT **	I_{cu} up to 100 kA at 415 V, very high switching capacity L						(L)
	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
	Order No. supplement required, see page 16/56					kg		Order No. supplement required, see page 16/56					kg		

B	3VL17 96-2EA4□-....		1	1 unit	113	2.300		--						
B	3VL17 02-2EA4□-....		1	1 unit	113	2.300		--						
B	3VL17 25-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 03-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 04-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 05-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 06-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 08-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 10-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 12-2EL4□-....		1	1 unit	113	2.500		--						
B	3VL17 16-2EL4□-....		1	1 unit	113	2.500		--						

3
6

B	3VL17 12-2EA4□-....		1	1 unit	113	2.500		--						
B	3VL17 16-2EA4□-....		1	1 unit	113	2.500		--						

3
6

** Delivery time class A for Order No. supplement "0AA0", see page 16/56.

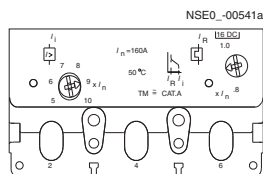
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases I_R	Operating current of the instantaneous short-circuit releases "I" I_i	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N See "Overview".					
	A	A	A		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
					Order No. supplement required, see page 16/56					kg

4-pole, fixed-mounted, for system protection, 16 A to 630 A, thermal-magnetic releases LIN



System protection, TM, LIN function

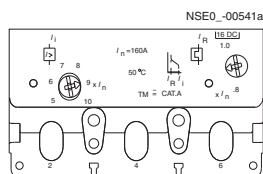
With adjustable thermal overcurrent releases, adjustable short-circuit releases, with "N" overcurrent and short-circuit release
N protection = 100 %

VL160/3VL2	50	40 ... 50	300 ... 600	B	3VL27 05-1EM4□-....	1	1 unit	113	3.000
	63	50 ... 63	300 ... 600	B	3VL27 06-1EM4□-....	1	1 unit	113	3.000
	80	63 ... 80	400 ... 800	B	3VL27 08-1EM4□-....	1	1 unit	113	3.000
	100	80 ... 100	500 ... 1000	B	3VL27 10-1EM4□-....	1	1 unit	113	3.000
	125	100 ... 125	625 ... 1250	B	3VL27 12-1EM4□-....	1	1 unit	113	3.000
	160	125 ... 160	800 ... 1600	B	3VL27 16-1EM4□-....	1	1 unit	113	3.000
VL250/3VL3	200	160 ... 200	1000 ... 2000	B	3VL37 20-1EM4□-....	1	1 unit	113	3.200
	250	200 ... 250	1250 ... 2500	B	3VL37 25-1EM4□-....	1	1 unit	113	3.200

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**

VL400/3VL4	200	160 ... 200	1000 ... 2000	B	3VL47 20-1EM46-....	1	1 unit	113	7.400
	250	200 ... 250	1250 ... 2500	B	3VL47 25-1EM46-....	1	1 unit	113	7.400
	315	250 ... 315	1575 ... 3150	B	3VL47 31-1EM46-....	1	1 unit	113	7.400
	400	320 ... 400	2000 ... 4000	B	3VL47 40-1EM46-....	1	1 unit	113	7.400
VL630/3VL5	315	250 ... 315	1575 ... 3150	B	3VL57 31-1EM46-....	1	1 unit	113	11.200
	400	320 ... 400	2000 ... 4000	B	3VL57 40-1EM46-....	1	1 unit	113	11.200
	500	400 ... 500	2500 ... 5000	B	3VL57 50-1EM46-....	1	1 unit	113	11.200
	630	500 ... 630	3150 ... 6300	B	3VL57 63-1EM46-....	1	1 unit	113	11.200



System protection, TM, LIN function

With adjustable thermal overcurrent releases, adjustable short-circuit releases, with "N" overcurrent and short-circuit release
N protection = 60 %

VL160/3VL2	125	100 ... 125	625 ... 1250	B	3VL27 12-1EC4□-....	1	1 unit	113	3.000
	160	125 ... 160	800 ... 1600	B	3VL27 16-1EC4□-....	1	1 unit	113	3.000
VL250/3VL3	200	160 ... 200	1000 ... 2000	B	3VL37 20-1EC4□-....	1	1 unit	113	3.200
	250	200 ... 250	1250 ... 2500	B	3VL37 25-1EC4□-....	1	1 unit	113	3.200

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal not in conjunction with RCD module **6**

VL400/3VL4	200	160 ... 200	1000 ... 2000	B	3VL47 20-1EC46-....	1	1 unit	113	7.400
	250	200 ... 250	1250 ... 2500	B	3VL47 25-1EC46-....	1	1 unit	113	7.400
	315	250 ... 315	1575 ... 3150	B	3VL47 31-1EC46-....	1	1 unit	113	7.400
	400	320 ... 400	2000 ... 4000	B	3VL47 40-1EC46-....	1	1 unit	113	7.400
VL630/3VL5	315	250 ... 315	1575 ... 3150	B	3VL57 31-1EC46-....	1	1 unit	113	11.200
	400	320 ... 400	2000 ... 4000	B	3VL57 40-1EC46-....	1	1 unit	113	11.200
	500	400 ... 500	2500 ... 5000	B	3VL57 50-1EC46-....	1	1 unit	113	11.200
	630	500 ... 630	3150 ... 6300	B	3VL57 63-1EC46-....	1	1 unit	113	11.200

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						(H)	DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L						(L)
	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
	Order No. supplement required, see page 16/56					kg		Order No. supplement required, see page 16/56					kg		

B	3VL27 05-2EM4□-....		1	1 unit	113	3.000	B	3VL27 05-3EM4□-....		1	1 unit	113	3.000
B	3VL27 06-2EM4□-....		1	1 unit	113	3.000	B	3VL27 06-3EM4□-....		1	1 unit	113	3.000
B	3VL27 08-2EM4□-....		1	1 unit	113	3.000	B	3VL27 08-3EM4□-....		1	1 unit	113	3.000
B	3VL27 10-2EM4□-....		1	1 unit	113	3.000	B	3VL27 10-3EM4□-....		1	1 unit	113	3.000
B	3VL27 12-2EM4□-....		1	1 unit	113	3.000	B	3VL27 12-3EM4□-....		1	1 unit	113	3.000
B	3VL27 16-2EM4□-....		1	1 unit	113	3.000	B	3VL27 16-3EM4□-....		1	1 unit	113	3.000
B	3VL37 20-2EM4□-....		1	1 unit	113	3.200	B	3VL37 20-3EM4□-....		1	1 unit	113	3.200
B	3VL37 25-2EM4□-....		1	1 unit	113	3.200	B	3VL37 25-3EM4□-....		1	1 unit	113	3.200

3
6

3
6

B	3VL47 20-2EM46-....		1	1 unit	113	7.400	B	3VL47 20-3EM46-....		1	1 unit	113	7.400
B	3VL47 25-2EM46-....		1	1 unit	113	7.400	B	3VL47 25-3EM46-....		1	1 unit	113	7.400
B	3VL47 31-2EM46-....		1	1 unit	113	7.400	B	3VL47 31-3EM46-....		1	1 unit	113	7.400
B	3VL47 40-2EM46-....		1	1 unit	113	7.400	B	3VL47 40-3EM46-....		1	1 unit	113	7.400
B	3VL57 31-2EM46-....		1	1 unit	113	11.200	B	3VL57 31-3EM46-....		1	1 unit	113	11.200
B	3VL57 40-2EM46-....		1	1 unit	113	11.200	B	3VL57 40-3EM46-....		1	1 unit	113	11.200
B	3VL57 50-2EM46-....		1	1 unit	113	11.200	B	3VL57 50-3EM46-....		1	1 unit	113	11.200
B	3VL57 63-2EM46-....		1	1 unit	113	11.200	B	3VL57 63-3EM46-....		1	1 unit	113	11.200

3
6

3
6

B	3VL27 12-2EC4□-....		1	1 unit	113	3.000	B	3VL27 12-3EC4□-....		1	1 unit	113	3.000
B	3VL27 16-2EC4□-....		1	1 unit	113	3.000	B	3VL27 16-3EC4□-....		1	1 unit	113	3.000
B	3VL37 20-2EC4□-....		1	1 unit	113	3.200	B	3VL37 20-3EC4□-....		1	1 unit	113	3.200
B	3VL37 25-2EC4□-....		1	1 unit	113	3.200	B	3VL37 25-3EC4□-....		1	1 unit	113	3.200

B	3VL47 20-2EC46-....		1	1 unit	113	7.400	B	3VL47 20-3EC46-....		1	1 unit	113	7.400
B	3VL47 25-2EC46-....		1	1 unit	113	7.400	B	3VL47 25-3EC46-....		1	1 unit	113	7.400
B	3VL47 31-2EC46-....		1	1 unit	113	7.400	B	3VL47 31-3EC46-....		1	1 unit	113	7.400
B	3VL47 40-2EC46-....		1	1 unit	113	7.400	B	3VL47 40-3EC46-....		1	1 unit	113	7.400
B	3VL57 31-2EC46-....		1	1 unit	113	11.200	B	3VL57 31-3EC46-....		1	1 unit	113	11.200
B	3VL57 40-2EC46-....		1	1 unit	113	11.200	B	3VL57 40-3EC46-....		1	1 unit	113	11.200
B	3VL57 50-2EC46-....		1	1 unit	113	11.200	B	3VL57 50-3EC46-....		1	1 unit	113	11.200
B	3VL57 63-2EC46-....		1	1 unit	113	11.200	B	3VL57 63-3EC46-....		1	1 unit	113	11.200

* You can order this quantity or a multiple thereof.

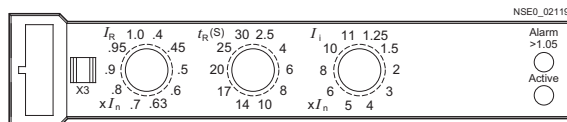
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent release "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"						
	A	A	A			Order No.	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

4-pole, fixed-mounted, for system protection, 63 A to 1600 A, electronic releases LI



ETU10, LI function

With adjustable overcurrent releases, adjustable short-circuit releases

VL160/3VL2	63 100 160	25 ... 63 40 ... 100 64 ... 160	1.25 ... 11 × I_n 1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B B	3VL27 06-1□□4□-.... 3VL27 10-1□□4□-.... 3VL27 16-1□□4□-....	1 1 1	1 unit 1 unit 1 unit	113 113 113	3.100 3.100 3.100
VL250/3VL3	200 250	80 ... 200 100 ... 250	1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B	3VL37 20-1□□4□-.... 3VL37 25-1□□4□-....	1 1	1 unit 1 unit	113 113	3.300 3.300

Connection type can be selected by assignment of the 12th position of the Order No.

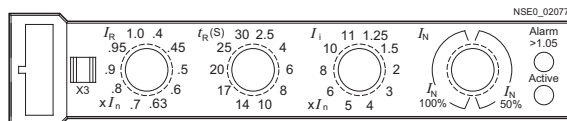
- Connection with box terminal **3**
- Connection with screw terminal **6**

VL400/3VL4	315 400	128 ... 315 160 ... 400	1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B	3VL47 31-1□□46-.... 3VL47 40-1□□46-....	1 1	1 unit 1 unit	113 113	7.600 7.600
VL630/3VL5	630	252 ... 630	1.25 ... 10 × I_n	B	3VL57 63-1□□46-....	1	1 unit	113	11.700
VL800/3VL6	800	320 ... 800	1.25 ... 8 × I_n	B	3VL67 80-1□□46-....	1	1 unit	113	20.500
VL1250/3VL7	1000 1250	400 ... 1000 500 ... 1250	1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B	3VL77 10-1□□46-.... 3VL77 12-1□□46-....	1 1	1 unit 1 unit	113 113	33.500 33.500
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... 9 × I_n	B	3VL87 16-1□□40-....	1	1 unit	113	40.800

- Without communication preparation
- With communication preparation

TB
NB

4-pole, fixed-mounted, for system protection, 63 A to 1600 A, electronic releases LIN



ETU10, LIN function

With adjustable overcurrent releases, adjustable short-circuit releases, with overcurrent and short-circuit release in 4th pole (N)
N protection = 50/100 %

VL160/3VL2	63 100 160	25 ... 63 40 ... 100 64 ... 160	1.25 ... 11 × I_n 1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B B	3VL27 06-1□□4□-.... 3VL27 10-1□□4□-.... 3VL27 16-1□□4□-....	1 1 1	1 unit 1 unit 1 unit	113 113 113	3.100 3.100 3.100
VL250/3VL3	200 250	80 ... 200 100 ... 250	1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B	3VL37 20-1□□4□-.... 3VL37 25-1□□4□-....	1 1	1 unit 1 unit	113 113	3.300 3.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal **6**

VL400/3VL4	315 400	128 ... 315 160 ... 400	1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B	3VL47 31-1□□46-.... 3VL47 40-1□□46-....	1 1	1 unit 1 unit	113 113	7.600 7.600
VL630/3VL5	630	252 ... 630	1.25 ... 10 × I_n	B	3VL57 63-1□□46-....	1	1 unit	113	11.700
VL800/3VL6	800	320 ... 800	1.25 ... 8 × I_n	B	3VL67 80-1□□46-....	1	1 unit	113	20.500
VL1250/3VL7	1000 1250	400 ... 1000 500 ... 1250	1.25 ... 11 × I_n 1.25 ... 11 × I_n	B B	3VL77 10-1□□46-.... 3VL77 12-1□□46-....	1 1	1 unit 1 unit	113 113	33.500 33.500
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... 9 × I_n	B	3VL87 16-1□□40-....	1	1 unit	113	40.800

- Without communication preparation
- With communication preparation

TA
NA

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT I_{cu} up to 70 kA at 415 V, high switching capacity H (H)							DT I_{cu} up to 100 kA at 415 V, very high switching capacity L (L)						
Order No.	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No.	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	

B	3VL27 06-2□□4□-....	1	1 unit	113	3.100	B	3VL27 06-3□□4□-....	1	1 unit	113	3.100
B	3VL27 10-2□□4□-....	1	1 unit	113	3.100	B	3VL27 10-3□□4□-....	1	1 unit	113	3.100
B	3VL27 16-2□□4□-....	1	1 unit	113	3.100	B	3VL27 16-3□□4□-....	1	1 unit	113	3.100
B	3VL37 20-2□□4□-....	1	1 unit	113	3.300	B	3VL37 20-3□□4□-....	1	1 unit	113	3.300
B	3VL37 25-2□□4□-....	1	1 unit	113	3.300	B	3VL37 25-3□□4□-....	1	1 unit	113	3.300

3
6

3
6

B	3VL47 31-2□□46-....	1	1 unit	113	7.600	B	3VL47 31-3□□46-....	1	1 unit	113	7.600
B	3VL47 40-2□□46-....	1	1 unit	113	7.600	B	3VL47 40-3□□46-....	1	1 unit	113	7.600
B	3VL57 63-2□□46-....	1	1 unit	113	11.700	B	3VL57 63-3□□46-....	1	1 unit	113	11.700
B	3VL67 80-2□□46-....	1	1 unit	113	20.500	B	3VL67 80-3□□46-....	1	1 unit	113	20.500
B	3VL77 10-2□□46-....	1	1 unit	113	33.500	B	3VL77 10-3□□46-....	1	1 unit	113	33.500
B	3VL77 12-2□□46-....	1	1 unit	113	33.500	B	3VL77 12-3□□46-....	1	1 unit	113	33.500
B	3VL87 16-2□□40-....	1	1 unit	113	40.800	B	3VL87 16-3□□40-....	1	1 unit	113	40.800

TB
NB

TB
NB

B	3VL27 06-2□□4□-....	1	1 unit	113	3.100	B	3VL27 06-3□□4□-....	1	1 unit	113	3.100
B	3VL27 10-2□□4□-....	1	1 unit	113	3.100	B	3VL27 10-3□□4□-....	1	1 unit	113	3.100
B	3VL27 16-2□□4□-....	1	1 unit	113	3.100	B	3VL27 16-3□□4□-....	1	1 unit	113	3.100
B	3VL37 20-2□□4□-....	1	1 unit	113	3.300	B	3VL37 20-3□□4□-....	1	1 unit	113	3.300
B	3VL37 25-2□□4□-....	1	1 unit	113	3.300	B	3VL37 25-3□□4□-....	1	1 unit	113	3.300

3
6

3
6

B	3VL47 31-2□□46-....	1	1 unit	113	7.600	B	3VL47 31-3□□46-....	1	1 unit	113	7.600
B	3VL47 40-2□□46-....	1	1 unit	113	7.600	B	3VL47 40-3□□46-....	1	1 unit	113	7.600
B	3VL57 63-2□□46-....	1	1 unit	113	11.700	B	3VL57 63-3□□46-....	1	1 unit	113	11.700
B	3VL67 80-2□□46-....	1	1 unit	113	20.500	B	3VL67 80-3□□46-....	1	1 unit	113	20.500
B	3VL77 10-2□□46-....	1	1 unit	113	33.500	B	3VL77 10-3□□46-....	1	1 unit	113	33.500
B	3VL77 12-2□□46-....	1	1 unit	113	33.500	B	3VL77 12-3□□46-....	1	1 unit	113	33.500
B	3VL87 16-2□□40-....	1	1 unit	113	40.800	B	3VL87 16-3□□40-....	1	1 unit	113	40.800

TA
NA

TA
NA

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution"

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

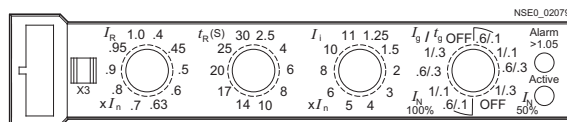
4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	Ground-fault protection "G" I_g	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N See "Overview".					
	A	A	A	A		Order No.	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
						Order No. supplement required, see page 16/56					kg

4-pole, fixed-mounted, for system protection, 63 A to 1600 A, electronic releases LING



NSE0_00693



NSE0_02079

ETU12, LING function for 4-wire three-phase systems

With adjustable overcurrent releases, adjustable short-circuit releases, vectorial summation current, ground fault delay $t_g = 0.1 \dots 0.3$ s, ground fault protection (G) can be switched off with overcurrent and short-circuit release in 4th pole (N), N protection = 50/100 %

Model	I_n	I_R	I_i	I_g	DT	Order No.	PU	PS*	PG	Weight
VL160/3VL2	63	25 ... 63	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL27 06-1□□4□-....	1	1 unit	113	3.100
	100	40 ... 100	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL27 10-1□□4□-....	1	1 unit	113	3.100
	160	64 ... 160	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL27 16-1□□4□-....	1	1 unit	113	3.100
VL250/3VL3	200	80 ... 200	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL37 20-1□□4□-....	1	1 unit	113	3.300
	250	100 ... 250	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL37 25-1□□4□-....	1	1 unit	113	3.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL47 31-1□□46-....	1	1 unit	113	7.600
	400	160 ... 400	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL47 40-1□□46-....	1	1 unit	113	7.600
VL630/3VL5	630	252 ... 630	$1.25 \dots 10 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL57 63-1□□46-....	1	1 unit	113	11.700
VL800/3VL6	800	320 ... 800	$1.25 \dots 8 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL67 80-1□□46-....	1	1 unit	113	20.500
VL1250/3VL7	1000	400 ... 1000	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL77 10-1□□46-....	1	1 unit	113	33.500
	1250	500 ... 1250	$1.25 \dots 11 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL77 12-1□□46-....	1	1 unit	113	33.500
VL1600/3VL8 ¹⁾	1600	640 ... 1600	$1.25 \dots 9 \times I_n$	$0.6 \dots 1 \times I_n$	OFF B	3VL87 16-1□□40-....	1	1 unit	113	40.800

- Without communication preparation
- With communication preparation

TN
NN

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H (H)						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L (L)					
	Order No. Order No. supplement required, see page 16/56	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 06-2□□4□-....		1	1 unit	113	3.100	B	3VL27 06-3□□4□-....		1	1 unit	113	3.100
B	3VL27 10-2□□4□-....		1	1 unit	113	3.100	B	3VL27 10-3□□4□-....		1	1 unit	113	3.100
B	3VL27 16-2□□4□-....		1	1 unit	113	3.100	B	3VL27 16-3□□4□-....		1	1 unit	113	3.100
B	3VL37 20-2□□4□-....		1	1 unit	113	3.300	B	3VL37 20-3□□4□-....		1	1 unit	113	3.300
B	3VL37 25-2□□4□-....		1	1 unit	113	3.300	B	3VL37 25-3□□4□-....		1	1 unit	113	3.300

3 6							3 6						
B	3VL47 31-2□□46-....		1	1 unit	113	7.600	B	3VL47 31-3□□46-....		1	1 unit	113	7.600
B	3VL47 40-2□□46-....		1	1 unit	113	7.600	B	3VL47 40-3□□46-....		1	1 unit	113	7.600
B	3VL57 63-2□□46-....		1	1 unit	113	11.700	B	3VL57 63-3□□46-....		1	1 unit	113	11.700
B	3VL67 80-2□□46-....		1	1 unit	113	20.500	B	3VL67 80-3□□46-....		1	1 unit	113	20.500
B	3VL77 10-2□□46-....		1	1 unit	113	33.500	B	3VL77 10-3□□46-....		1	1 unit	113	33.500
B	3VL77 12-2□□46-....		1	1 unit	113	33.500	B	3VL77 12-3□□46-....		1	1 unit	113	33.500
B	3VL87 16-2□□40-....		1	1 unit	113	40.800	B	3VL87 16-3□□40-....		1	1 unit	113	40.800

TN
NN

TN
NN

* You can order this quantity or a multiple thereof.

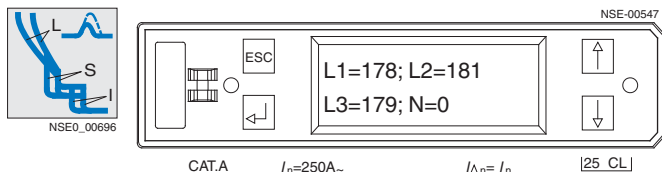
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed over-current releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	S function short-circuit protection (short-time delayed) S	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview" (N)					
	A	A	A	A		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
						Order No. supplement required, see page 16/56					kg

4-pole, fixed-mounted, for system protection, 63 A to 1600 A, electronic releases LI, LSI, LIN, LSIN



LCD-ETU40, LI/LSI/LIN/LSIN function selectable

With adjustable overcurrent releases, adjustable short-circuit releases, short-circuit delay $t_{sd} = 0 \dots 0.5$ s

with overcurrent and short-circuit release in 4th pole (N), N protection = 50 ... 100 %, OFF

Type	Rated current I_n	Current setting of the inverse-time delayed over-current releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	S function short-circuit protection (short-time delayed) S	DT	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
VL160/3VL2	63 ²⁾	25 ... 63	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL27 06-1CJ4 □-....		1	1 unit	113	3.100
	100 ²⁾	40 ... 100	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL27 10-1CJ4 □-....		1	1 unit	113	3.100
	160	64 ... 160	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL27 16-1CJ4 □-....		1	1 unit	113	3.100
VL250/3VL3	200	80 ... 200	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL37 20-1CJ4 □-....		1	1 unit	113	3.300
	250	100 ... 250	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL37 25-1CJ4 □-....		1	1 unit	113	3.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

Type	Rated current I_n	Current setting of the inverse-time delayed over-current releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	S function short-circuit protection (short-time delayed) S	DT	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
VL400/3VL4	315	128 ... 315	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL47 31-1CJ46 -....		1	1 unit	113	7.600
	400	160 ... 400	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL47 40-1CJ46 -....		1	1 unit	113	7.600
VL630/3VL5	630	252 ... 630	1.25 ... 10 × I_n	1.5 ... 9 × I_R	B	3VL57 63-1CJ46 -....		1	1 unit	113	11.700
VL800/3VL6	800	320 ... 800	1.25 ... 8 × I_n	1.5 ... 7 × I_R	B	3VL67 80-1CJ46 -....		1	1 unit	113	20.500
VL1250/3VL7	1000	400 ... 1000	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL77 10-1CJ46 -....		1	1 unit	113	33.500
	1250	500 ... 1250	1.25 ... 11 × I_n	1.5 ... 10 × I_R	B	3VL77 12-1CJ46 -....		1	1 unit	113	33.500
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... 9 × I_n	1.5 ... 8 × I_R	B	3VL87 16-1CJ40 -....		1	1 unit	113	40.800

- With communication preparation

CJ

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

²⁾ N = 100 % protection for $I_n \leq 100$ A.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Order No. supplement required, see page 16/56					kg		Order No. supplement required, see page 16/56					kg

B	3VL27 06-2CJ4□-....		1	1 unit	113	3.100	B	3VL27 06-3CJ4□-....		1	1 unit	113	3.100
B	3VL27 10-2CJ4□-....		1	1 unit	113	3.100	B	3VL27 10-3CJ4□-....		1	1 unit	113	3.100
B	3VL27 16-2CJ4□-....		1	1 unit	113	3.100	B	3VL27 16-3CJ4□-....		1	1 unit	113	3.100
B	3VL37 20-2CJ4□-....		1	1 unit	113	3.300	B	3VL37 20-3CJ4□-....		1	1 unit	113	3.300
B	3VL37 25-2CJ4□-....		1	1 unit	113	3.300	B	3VL37 25-3CJ4□-....		1	1 unit	113	3.300

3
6

3
6

B	3VL47 31-2CJ46-....		1	1 unit	113	7.600	B	3VL47 31-3CJ46-....		1	1 unit	113	7.600
B	3VL47 40-2CJ46-....		1	1 unit	113	7.600	B	3VL47 40-3CJ46-....		1	1 unit	113	7.600
B	3VL57 63-2CJ46-....		1	1 unit	113	11.700	B	3VL57 63-3CJ46-....		1	1 unit	113	11.700
B	3VL67 80-2CJ46-....		1	1 unit	113	20.500	B	3VL67 80-3CJ46-....		1	1 unit	113	20.500
B	3VL77 10-2CJ46-....		1	1 unit	113	33.500	B	3VL77 10-3CJ46-....		1	1 unit	113	33.500
B	3VL77 12-2CJ46-....		1	1 unit	113	33.500	B	3VL77 12-3CJ46-....		1	1 unit	113	33.500
B	3VL87 16-2CJ40-....		1	1 unit	113	40.800	B	3VL87 16-3CJ40-....		1	1 unit	113	40.800

CJ

CJ

* You can order this quantity or a multiple thereof.

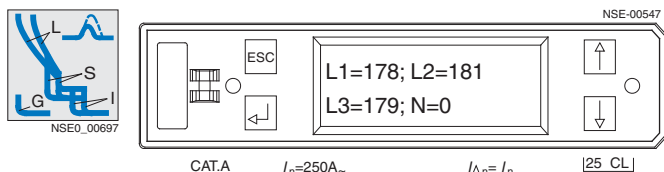
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_I	S function short-circuit protection (short-time delayed) S	Ground-fault protection "G" I_g	DT protection	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"				(N)	
	A	A	A	A	A		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							Order No. supplement required, see page 16/56					kg

4-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSIG, LSING



LCD-ETU42, LSIG/LSING function for 4-wire three-phase systems and time-based discrimination

With adjustable overcurrent releases, adjustable short-circuit releases, ground fault delay $t_g = 0.1 \dots 0.5$ s, short-circuit delay $t_{sd} = 0 \dots 0.3$ s with overcurrent and short-circuit release in 4th pole (N), N protection = 50 ... 100 %, OFF

VL160/3VL2	63	25 ... 63	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL27 06-1CN4□-....	1	1 unit	113	3.100
	100	40 ... 100	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL27 10-1CN4□-....	1	1 unit	113	3.100
	160	64 ... 160	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL27 16-1CN4□-....	1	1 unit	113	3.100
VL250/3VL3	200	80 ... 200	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL37 20-1CN4□-....	1	1 unit	113	3.300
	250	100 ... 250	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL37 25-1CN4□-....	1	1 unit	113	3.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL47 31-1CN46-....	1	1 unit	113	7.600
	400	160 ... 400	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL47 40-1CN46-....	1	1 unit	113	7.600
VL630/3VL5	630	252 ... 630	1.25 ... $10 \times I_n$	1.5 ... $9 \times I_R$	0.4 ... $1 \times I_n$	B	3VL57 63-1CN46-....	1	1 unit	113	11.700
VL800/3VL6	800	320 ... 800	1.25 ... $8 \times I_n$	1.5 ... $7 \times I_R$	0.4 ... $1 \times I_n$	B	3VL67 80-1CN46-....	1	1 unit	113	20.500
VL1250/3VL7	1000	400 ... 1000	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL77 10-1CN46-....	1	1 unit	113	33.500
	1250	500 ... 1250	1.25 ... $11 \times I_n$	1.5 ... $10 \times I_R$	0.4 ... $1 \times I_n$	B	3VL77 12-1CN46-....	1	1 unit	113	33.500
VL1600/3VL8 ¹⁾	1600	640 ... 1600	1.25 ... $9 \times I_n$	1.5 ... $8 \times I_R$	0.4 ... $1 \times I_n$	B	3VL87 16-1CN40-....	1	1 unit	113	40.800

- With communication preparation

CN

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H					DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L						
	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Order No. supplement required, see page 16/56					kg		Order No. supplement required, see page 16/56					kg

B	3VL27 06-2CN4□-....		1	1 unit	113	3.100	B	3VL27 06-3CN4□-....		1	1 unit	113	3.100
B	3VL27 10-2CN4□-....		1	1 unit	113	3.100	B	3VL27 10-3CN4□-....		1	1 unit	113	3.100
B	3VL27 16-2CN4□-....		1	1 unit	113	3.100	B	3VL27 16-3CN4□-....		1	1 unit	113	3.100
B	3VL37 20-2CN4□-....		1	1 unit	113	3.300	B	3VL37 20-3CN4□-....		1	1 unit	113	3.300
B	3VL37 25-2CN4□-....		1	1 unit	113	3.300	B	3VL37 25-3CN4□-....		1	1 unit	113	3.300

3
6

3
6

B	3VL47 31-2CN46-....		1	1 unit	113	7.600	B	3VL47 31-3CN46-....		1	1 unit	113	7.600
B	3VL47 40-2CN46-....		1	1 unit	113	7.600	B	3VL47 40-3CN46-....		1	1 unit	113	7.600
B	3VL57 63-2CN46-....		1	1 unit	113	11.700	B	3VL57 63-3CN46-....		1	1 unit	113	11.700
B	3VL67 80-2CN46-....		1	1 unit	113	20.500	B	3VL67 80-3CN46-....		1	1 unit	113	20.500
B	3VL77 10-2CN46-....		1	1 unit	113	33.500	B	3VL77 10-3CN46-....		1	1 unit	113	33.500
B	3VL77 12-2CN46-....		1	1 unit	113	33.500	B	3VL77 12-3CN46-....		1	1 unit	113	33.500
B	3VL87 16-2CN40-....		1	1 unit	113	40.800	B	3VL87 16-3CN40-....		1	1 unit	113	40.800

CN

CN

* You can order this quantity or a multiple thereof.

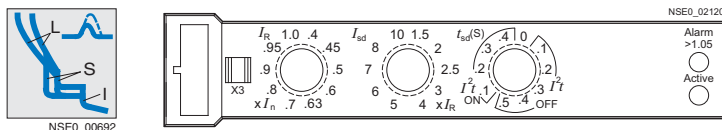
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed over-current releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_I	S function short-circuit protection (short-time delayed) S	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"	(N)				
	A	A	A	A		Order No. Order No. supplement required, see page 16/56	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

4-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSI



ETU20, LSI function for time-based discrimination

With adjustable overcurrent releases, non-adjustable short-circuit releases, short-circuit delay ($t_{sd} = 0$ to 0.5 s)

VL160/3VL2	63	25 ... 63	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL27 06-1□□4□-....	1	1 unit	113	3.100
	100	40 ... 100	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL27 10-1□□4□-....	1	1 unit	113	3.100
	160	64 ... 160	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL27 16-1□□4□-....	1	1 unit	113	3.100
VL250/3VL3	200	80 ... 200	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL37 20-1□□4□-....	1	1 unit	113	3.300
	250	100 ... 250	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL37 25-1□□4□-....	1	1 unit	113	3.300

Connection type can be selected by assignment of the 12th position of the Order No.

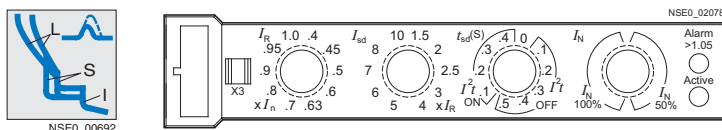
- Connection with box terminal **3**
- Connection with screw terminal **6**

VL400/3VL4	315	128 ... 315	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL47 31-1□□46-....	1	1 unit	113	7.600
	400	160 ... 400	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL47 40-1□□46-....	1	1 unit	113	7.600
VL630/3VL5	630	252 ... 630	$10 \times I_n$	$1.5 \dots 9xI_R$ B	3VL57 63-1□□46-....	1	1 unit	113	11.700
VL800/3VL6	800	320 ... 800	$8 \times I_n$	$1.5 \dots 7xI_R$ B	3VL67 80-1□□46-....	1	1 unit	113	20.500
VL1250/3VL7	1000	400 ... 1000	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL77 10-1□□46-....	1	1 unit	113	33.500
	1250	500 ... 1250	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL77 12-1□□46-....	1	1 unit	113	33.500
VL1600/3VL8 ¹⁾	1600	640 ... 1600	$9 \times I_n$	$1.5 \dots 8xI_R$ B	3VL87 16-1□□40-....	1	1 unit	113	40.800

- Without communication preparation
- With communication preparation

TE
NE

4-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSIN



ETU20, LSIN function for time-based discrimination

With adjustable overcurrent releases, adjustable short-circuit releases, short-circuit delay ($t_{sd} = 0$ to 0.5 s) with overcurrent and short-circuit release in 4th pole (N), N = 50/100 % protection

VL160/3VL2	63	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL27 06-1□□4□-....	1	1 unit	113	3.100
	100	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL27 10-1□□4□-....	1	1 unit	113	3.100
	160	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL27 16-1□□4□-....	1	1 unit	113	3.100
VL250/3VL3	200	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL37 20-1□□4□-....	1	1 unit	113	3.300
	250	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL37 25-1□□4□-....	1	1 unit	113	3.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal **3**
- Connection with screw terminal **6**

VL400/3VL4	315	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL47 31-1□□46-....	1	1 unit	113	7.600
	400	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL47 40-1□□46-....	1	1 unit	113	7.600
VL630/3VL5	630	$0.4 \dots 1.0 \times I_n$	$10 \times I_n$	$1.5 \dots 9xI_R$ B	3VL57 63-1□□46-....	1	1 unit	113	11.700
VL800/3VL6	800	$0.4 \dots 1.0 \times I_n$	$8 \times I_n$	$1.5 \dots 7xI_R$ B	3VL67 80-1□□46-....	1	1 unit	113	20.500
VL1250/3VL7	1000	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL77 10-1□□46-....	1	1 unit	113	33.500
	1250	$0.4 \dots 1.0 \times I_n$	$11 \times I_n$	$1.5 \dots 10xI_R$ B	3VL77 12-1□□46-....	1	1 unit	113	33.500
VL1600/3VL8 ¹⁾	1600	$0.4 \dots 1.0 \times I_n$	$9 \times I_n$	$1.5 \dots 8xI_R$ B	3VL87 16-1□□40-....	1	1 unit	113	40.800

- Without communication preparation
- With communication preparation

TF
NF

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						(H)	DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L						(L)
	Order No. Order No. supplement required, see page 16/56	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		

B	3VL27 06-2□□4□-....		1	1 unit	113	3.100	B	3VL27 06-3□□4□-....		1	1 unit	113	3.100	
B	3VL27 10-2□□4□-....		1	1 unit	113	3.100	B	3VL27 10-3□□4□-....		1	1 unit	113	3.100	
B	3VL27 16-2□□4□-....		1	1 unit	113	3.100	B	3VL27 16-3□□4□-....		1	1 unit	113	3.100	
B	3VL37 20-2□□4□-....		1	1 unit	113	3.300	B	3VL37 20-3□□4□-....		1	1 unit	113	3.300	
B	3VL37 25-2□□4□-....		1	1 unit	113	3.300	B	3VL37 25-3□□4□-....		1	1 unit	113	3.300	

3
6

3
6

B	3VL47 31-2□□46-....		1	1 unit	113	7.600	B	3VL47 31-3□□46-....		1	1 unit	113	7.600	
B	3VL47 40-2□□46-....		1	1 unit	113	7.600	B	3VL47 40-3□□46-....		1	1 unit	113	7.600	
B	3VL57 63-2□□46-....		1	1 unit	113	11.700	B	3VL57 63-3□□46-....		1	1 unit	113	11.700	
B	3VL67 80-2□□46-....		1	1 unit	113	20.500	B	3VL67 80-3□□46-....		1	1 unit	113	20.500	
B	3VL77 10-2□□46-....		1	1 unit	113	33.500	B	3VL77 10-3□□46-....		1	1 unit	113	33.500	
B	3VL77 12-2□□46-....		1	1 unit	113	33.500	B	3VL77 12-3□□46-....		1	1 unit	113	33.500	
B	3VL87 16-2□□40-....		1	1 unit	113	40.800	B	3VL87 16-3□□40-....		1	1 unit	113	40.800	

TE
NE

TE
NE

B	3VL27 06-2□□4□-....		1	1 unit	113	3.100	B	3VL27 06-3□□4□-....		1	1 unit	113	3.100	
B	3VL27 10-2□□4□-....		1	1 unit	113	3.100	B	3VL27 10-3□□4□-....		1	1 unit	113	3.100	
B	3VL27 16-2□□4□-....		1	1 unit	113	3.100	B	3VL27 16-3□□4□-....		1	1 unit	113	3.100	
B	3VL37 20-2□□4□-....		1	1 unit	113	3.300	B	3VL37 20-3□□4□-....		1	1 unit	113	3.300	
B	3VL37 25-2□□4□-....		1	1 unit	113	3.300	B	3VL37 25-3□□4□-....		1	1 unit	113	3.300	

3
6

3
6

B	3VL47 31-2□□46-....		1	1 unit	113	7.600	B	3VL47 31-3□□46-....		1	1 unit	113	7.600	
B	3VL47 40-2□□46-....		1	1 unit	113	7.600	B	3VL47 40-3□□46-....		1	1 unit	113	7.600	
B	3VL57 63-2□□46-....		1	1 unit	113	11.700	B	3VL57 63-3□□46-....		1	1 unit	113	11.700	
B	3VL67 80-2□□46-....		1	1 unit	113	20.500	B	3VL67 80-3□□46-....		1	1 unit	113	20.500	
B	3VL77 10-2□□46-....		1	1 unit	113	33.500	B	3VL77 10-3□□46-....		1	1 unit	113	33.500	
B	3VL77 12-2□□46-....		1	1 unit	113	33.500	B	3VL77 12-3□□46-....		1	1 unit	113	33.500	
B	3VL87 16-2□□40-....		1	1 unit	113	40.800	B	3VL87 16-3□□40-....		1	1 unit	113	40.800	

TF
NF

TF
NF

* You can order this quantity or a multiple thereof.

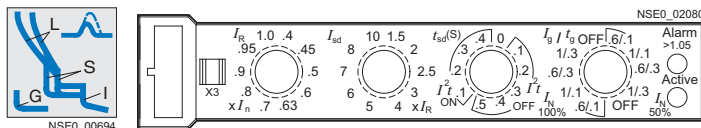
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Current setting of the inverse-time delayed overcurrent releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_I	S function short-circuit protection (short-time delayed)	Ground-fault protection "G" I_g	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"						
	A	A	A	A	A		Order No.	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	(N)
							Order No. supplement required, see page 16/56					kg	

4-pole, fixed-mounted, for system protection - generator protection, 63 A to 1600 A, electronic releases LSING



ETU22, LSING function for 4-wire three-phase systems and time-based discrimination

With adjustable overcurrent releases, adjustable short-circuit releases, ground fault delay $t_g = 0.1 \dots 0.3$ s, ground fault protection (G) can be switched off, short-circuit delay $t_{sd} = 0 \dots 0.5$ s with overcurrent and short-circuit release in 4th pole (N), N protection = 50/100 %

VL160/3VL2	63	25 ... 63	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL27 06-1□□4□-....	1	1 unit	113	3.100
	100	40 ... 100	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL27 10-1□□4□-....	1	1 unit	113	3.100
	160	64 ... 160	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL27 16-1□□4□-....	1	1 unit	113	3.100
VL250/3VL3	200	80 ... 200	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL37 20-1□□4□-....	1	1 unit	113	3.300
	250	100 ... 250	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL37 25-1□□4□-....	1	1 unit	113	3.300

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal

3
6

VL400/3VL4	315	128 ... 315	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL47 31-1□□46-....	1	1 unit	113	7.600
	400	160 ... 400	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL47 40-1□□46-....	1	1 unit	113	7.600
VL630/3VL5	630	252 ... 630	$10 \times I_n$	1.5 ...	$9 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL57 63-1□□46-....	1	1 unit	113	11.700
VL800/3VL6	800	320 ... 800	$8 \times I_n$	1.5 ...	$7 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL67 80-1□□46-....	1	1 unit	113	20.500
VL1250/3VL7	1000	400 ... 1000	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL77 10-1□□46-....	1	1 unit	113	33.500
	1250	500 ... 1250	$11 \times I_n$	1.5 ...	$10 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL77 12-1□□46-....	1	1 unit	113	33.500
VL1600/3VL8 ¹⁾	1600	640 ... 1600	$9 \times I_n$	1.5 ...	$8 \times I_R$	0.6 ...	$1 \times I_n$, OFF	B	3VL87 16-1□□40-....	1	1 unit	113	40.800

- Without communication preparation
- With communication preparation

TH
NH

¹⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

Communication:

- For accessories see page 16/98.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L					
	Order No. Order No. supplement required, see page 16/56	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	For price see page 16/54	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL27 06-2□□4□-....		1	1 unit	113	3.100	B	3VL27 06-3□□4□-....		1	1 unit	113	3.100
B	3VL27 10-2□□4□-....		1	1 unit	113	3.100	B	3VL27 10-3□□4□-....		1	1 unit	113	3.100
B	3VL27 16-2□□4□-....		1	1 unit	113	3.100	B	3VL27 16-3□□4□-....		1	1 unit	113	3.100
B	3VL37 20-2□□4□-....		1	1 unit	113	3.300	B	3VL37 20-3□□4□-....		1	1 unit	113	3.300
B	3VL37 25-2□□4□-....		1	1 unit	113	3.300	B	3VL37 25-3□□4□-....		1	1 unit	113	3.300

3
6

3
6

B	3VL47 31-2□□46-....		1	1 unit	113	7.600	B	3VL47 31-3□□46-....		1	1 unit	113	7.600
B	3VL47 40-2□□46-....		1	1 unit	113	7.600	B	3VL47 40-3□□46-....		1	1 unit	113	7.600
B	3VL57 63-2□□46-....		1	1 unit	113	11.700	B	3VL57 63-3□□46-....		1	1 unit	113	11.700
B	3VL67 80-2□□46-....		1	1 unit	113	20.500	B	3VL67 80-3□□46-....		1	1 unit	113	20.500
B	3VL77 10-2□□46-....		1	1 unit	113	33.500	B	3VL77 10-3□□46-....		1	1 unit	113	33.500
B	3VL77 12-2□□46-....		1	1 unit	113	33.500	B	3VL77 12-3□□46-....		1	1 unit	113	33.500
B	3VL87 16-2□□40-....		1	1 unit	113	40.800	B	3VL87 16-3□□40-....		1	1 unit	113	40.800

TH
NH

TH
NH

16

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Type	Rated current I_n	Operating current of the instantaneous short-circuit releases "I" I_i	DT	I_{cu} up to 55 kA at 415 V, standard switching capacity N see "Overview"					(N)
	A			Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

4-pole, fixed-mounted, for safe disconnection, 100 A to 1600 A, magnetic releases I



NSE0_00708

Non-automatic molded case circuit breakers¹⁾, I function

Without overcurrent releases, with non-adjustable short-circuit releases (for intrinsic protection only), without overcurrent and short-circuit release in 4th pole (N)

Type	Rated current I_n	Operating current of the instantaneous short-circuit releases "I" I_i	DT	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
VL160X/3VL1	100	1800	B	3VL17 10-1EE4□-....		1	1 unit	113	2.500
	160	1800	B	3VL17 16-1EE4□-....		1	1 unit	113	2.500
VL160/3VL2	100	2500	B	3VL27 10-1EE4□-....		1	1 unit	113	3.000
	160	2500	B	3VL27 16-1EE4□-....		1	1 unit	113	3.000
VL250/3VL3	250	3500	B	3VL37 25-1EE4□-....		1	1 unit	113	3.200

Connection type can be selected by assignment of the 12th position of the Order No.

- Connection with box terminal
- Connection with screw terminal not in conjunction with RCD module

3

6

Type	Rated current I_n	Operating current of the instantaneous short-circuit releases "I" I_i	DT	Order No.	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
VL400/3VL4	400	4000	B	3VL47 40-1EE46-....		1	1 unit	113	7.400
VL630/3VL5	630	6300	B	3VL57 63-1EE46-....		1	1 unit	113	11.200
VL800/3VL6	800	6500	B	3VL67 80-1EE46-....		1	1 unit	113	19.900
VL1250/3VL7	1250	12000	B	3VL77 12-1EE46-....		1	1 unit	113	31.000
VL1600/3VL8 ²⁾	1600	14400	B	3VL87 16-1EE40-....		1	1 unit	113	38.300

¹⁾ See also the Chapter "3K, 3KE, 3LD Switch Disconnectors". 3K, switch disconnectors are also available with rear-mounting operating mechanism and leading contacts.

²⁾ Front busbar connection pieces are included in the scope of supply and are to be fitted by the customer.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

DT	I_{cu} up to 70 kA at 415 V, high switching capacity H (H)						DT	I_{cu} up to 100 kA at 415 V, very high switching capacity L (L)					
	Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		Order No. Order No. supplement required, see page 16/56	Basic price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

B	3VL17 10-2EE4□-....		1	1 unit	113	2.500		--					
B	3VL17 16-2EE4□-....		1	1 unit	113	2.500		--					
B	3VL27 10-2EE4□-....		1	1 unit	113	3.000	B	3VL27 10-3EE4□-....		1	1 unit	113	3.000
B	3VL27 16-2EE4□-....		1	1 unit	113	3.000	B	3VL27 16-3EE4□-....		1	1 unit	113	3.000
B	3VL37 25-2EE4□-....		1	1 unit	113	3.200	B	3VL37 25-3EE4□-....		1	1 unit	113	3.200

3
6

3
6

B	3VL47 40-2EE46-....		1	1 unit	113	7.400	B	3VL47 40-3EE46-....		1	1 unit	113	7.400
B	3VL57 63-2EE46-....		1	1 unit	113	11.200	B	3VL57 63-3EE46-....		1	1 unit	113	11.200
B	3VL67 80-2EE46-....		1	1 unit	113	19.900	B	3VL67 80-3EE46-....		1	1 unit	113	19.900
B	3VL77 12-2EE46-....		1	1 unit	113	31.000	B	3VL77 12-3EE46-....		1	1 unit	113	31.000
B	3VL87 16-2EE40-....		1	1 unit	113	38.300	B	3VL87 16-3EE40-....		1	1 unit	113	38.300

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

4-pole

Order No. supplement (for complete Order No., see pages 16/40 to 16/50) 3VL7 ... <input type="checkbox"/> 4-....	Switching capacity	Type	VL160		VL250		VL400		VL630	VL800	VL1250		VL1600
			3VL2		3VL3		3VL4		3VL5	3VL6	3VL7		3VL8
			Rated current I_n										
Releases		63 A	100 A	160 A	200 A	250 A	315 A	400 A	630 A	800 A	1000 A	1250 A	1600 A
Price													
ETU10	T B		x	x	x	x	x	x	x	x	x	x	x
ETU10	N B		x	x	x	x	x	x	x	x	x	x	x
ETU10	T A		x	x	x	x	x	x	x	x	x	x	x
ETU10	N A		x	x	x	x	x	x	x	x	x	x	x
ETU12	T N		x	x	x	x	x	x	x	x	x	x	x
ETU12	N N		x	x	x	x	x	x	x	x	x	x	x
ETU40	C J		x	x	x	x	x	x	x	x	x	x	x
ETU42	C N		x	x	x	x	x	x	x	x	x	x	x
ETU20	T E		x	x	x	x	x	x	x	x	x	x	x
ETU20	N E		x	x	x	x	x	x	x	x	x	x	x
ETU20	T F		x	x	x	x	x	x	x	x	x	x	x
ETU20	N F		x	x	x	x	x	x	x	x	x	x	x
ETU22	T H		x	x	x	x	x	x	x	x	x	x	x
ETU22	N H		x	x	x	x	x	x	x	x	x	x	x

x = Additional price
-- = Not available

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Options

Selection and ordering data

When ordering, add "-Z" to the complete Order No. and add the relevant order code(s).	Order No. with "-Z" 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 3VL - - -Z and additional order code(s) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> + . . . + . . .	Add. price
---	---	------------

Code for further versions -Z

For fixed-mounted circuit breakers (wired in factory)				
Prewired internal accessories Connecting cables (3 m long) brought out at the rear This option "L02" can be selected <u>only</u> in combination with internal accessories (page 16/56).	For VL160X to VL1600 (3VL1 to 3VL8)	L 0 2		x
Prewired connecting cables for motorized operating mechanisms Connecting cables on the circuit breaker for motorized operating mechanisms (3 m long). On VL160X to VL400 brought out at the top. On VL630 to VL1600 brought out on the right. Motorized operating mechanism <u>must</u> be ordered separately, see pages 16/64 to 16/66. This option "L12" can be selected <u>only</u> in combination with motorized operating mechanisms (see pages 16/64 to 16/66).	For VL160X to VL1600 (3VL1 to 3VL8)	L 1 2		x
Factory-fitted motorized operating mechanisms (24 V DC) on circuit breaker Motorized operating mechanism <u>not</u> prewired; if prewiring for the motorized operating mechanism is wanted, please specify "L12" in addition. If internal accessories are provided, the prewiring option "L02" for internal accessories is already included. In this case "L02" must <u>not</u> be specified in addition.	Available for VL160X, VL160, VL250 (3VL1, 3VL2, 3VL3) VL400 (3VL4) VL630, VL800 (3VL5, 3VL6) VL1250, VL1600 (3VL7, 3VL8)	M 2 4		x x x x
Factory-fitted motorized operating mechanisms (42 ... 48 V AC/DC) on circuit breaker Motorized operating mechanism <u>not</u> prewired; if prewiring for the motorized operating mechanism is wanted, please specify "L12" in addition. If internal accessories are provided, the prewiring option "L02" for internal accessories is already included. In this case "L02" must <u>not</u> be specified in addition.	Available for VL160X, VL160, VL250 (3VL1, 3VL2, 3VL3) VL400 (3VL4) VL630, VL800 (3VL5, 3VL6) VL1250, VL1600 (3VL7, 3VL8)	M 4 2		x x x x
Factory-fitted motorized operating mechanisms (60 V AC/DC) on circuit breaker Motorized operating mechanism <u>not</u> prewired; if prewiring for the motorized operating mechanism is wanted, please specify "L12" in addition. If internal accessories are provided, the prewiring option "L02" for internal accessories is already included. In this case "L02" must <u>not</u> be specified in addition.	Available for VL160X, VL160, VL250 (3VL1, 3VL2, 3VL3) VL400 (3VL4) VL630, VL800 (3VL5, 3VL6) VL1250, VL1600 (3VL7, 3VL8)	M 6 0		x x x x
Factory-fitted motorized operating mechanisms (110 ... 127 V AC/DC) on circuit breaker Motorized operating mechanism <u>not</u> prewired; if prewiring for the motorized operating mechanism is wanted, please specify "L12" in addition. If internal accessories are provided, the prewiring option "L02" for internal accessories is already included. In this case "L02" must <u>not</u> be specified in addition.	Available for VL160X, VL160, VL250 (3VL1, 3VL2, 3VL3) VL400 (3VL4) VL630, VL800 (3VL5, 3VL6) VL1250, VL1600 (3VL7, 3VL8)	M 1 1		x x x x
Factory-fitted motorized operating mechanisms (220 ... 250 V AC/DC) on circuit breaker Motorized operating mechanism <u>not</u> prewired; if prewiring for the motorized operating mechanism is wanted, please specify "L12" in addition. If internal accessories are provided, the prewiring option "L02" for internal accessories is already included. In this case "L02" must <u>not</u> be specified in addition.	Available for VL160X, VL160, VL250 (3VL1, 3VL2, 3VL3) VL400 (3VL4) VL630, VL800 (3VL5, 3VL6) VL1250, VL1600 (3VL7, 3VL8)	M 2 2		x x x x

x = Additional price

16

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Options

1. Order No. supplement: Undervoltage or shunt release, wiring directly to accessories

Rated control supply voltage U_c /frequency	Order No. supplement	Circuit breakers Type	Additional price
50/60 Hz AC DC	3VL.....-.....- <input type="checkbox"/> <input type="checkbox"/> ..	VL160X to VL400/ 3VL1 to 3VL4	VL630 to VL1600/ 3VL5 to 3VL8
		Additional price	Additional price
Without auxiliary releases		0 A	None
With undervoltage releases			
Only right pole			
V AC	V DC		
--	12	2 N	x
--	24	2 P	x
--	48	2 U	x
--	60	2 V	x
--	110 ... 127	2 R	x
--	220 ... 250	2 S	x
24	--	2 D	x
110 ... 127	--	2 G	x
220 ... 250	--	2 H	x
208	--	2 M	x
277	--	2 Q	x
380 ... 415	--	2 J	x
440 ... 480	--	2 K	x
500 ... 525	--	2 L	x
With shunt releases			
Only right pole			
V AC	V DC		
24	24	8 C	x
--	48 ... 60	8 J	x
--	110 ... 127	8 K	x
--	220 ... 250	8 Q	x
48 ... 60	--	8 M	x
110 ... 127	--	8 R	x
208 ... 277	--	8 T	x
380 ... 600	--	8 V	x

2. Order No. supplement: Auxiliary switches (HS) and alarm switches (AS), left/right pole, wiring directly to accessories

Equipment	Order No. supplement	Circuit breakers Type	Additional price
HS = 1 NO or 1 NC switching block AS = 1 NO switching block	3VL.....-.....- .. <input type="checkbox"/> <input type="checkbox"/>	VL160X to VL400 ¹⁾ / 3VL1 to 3VL4	VL630 to VL1600/ 3VL5 to 3VL8
		Additional price	Additional price
Without auxiliary/alarm switches	A 0	None	None
2 HS (1 NO/1 NC) ²⁾	B 1	x ¹⁾⁴⁾	--
4 HS (2 NO/2 NC)	C 1	--	x
2 HS (1 NO/1 NC) + 1 AS (1 NO)	D 1	x ¹⁾⁴⁾	--
2 HS (1 NO/1 NC) + 1 AS (1 NO) ³⁾	E 1	--	x ⁵⁾

x = Additional price

-- = Not available

1) Except for installing in the left accessory compartment of the SENTRON VL160X circuit breakers with RCD module.

2) With mounting adapter up to 3 HS.

3) With mounting adapter up to 2 HS + 2 AS.

4) Not possible when using the LCD ETU with SENTRON VL160 and VL250 and when using shunt and undervoltage releases.

When using a communication-capable ETU, the accessory compartment X2 is fitted with an auxiliary switch and an alarm switch. The combination of 1st and 2nd Order No. supplement is only possible with restrictions. It is recommended to use the configurator in the Mall for selection purposes.

5) Not possible when using a communication-capable ETU.

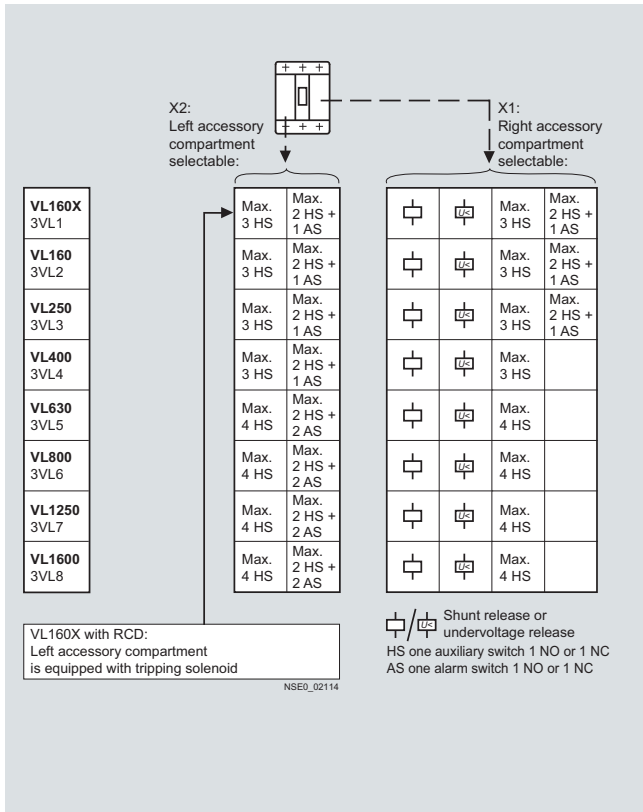
SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

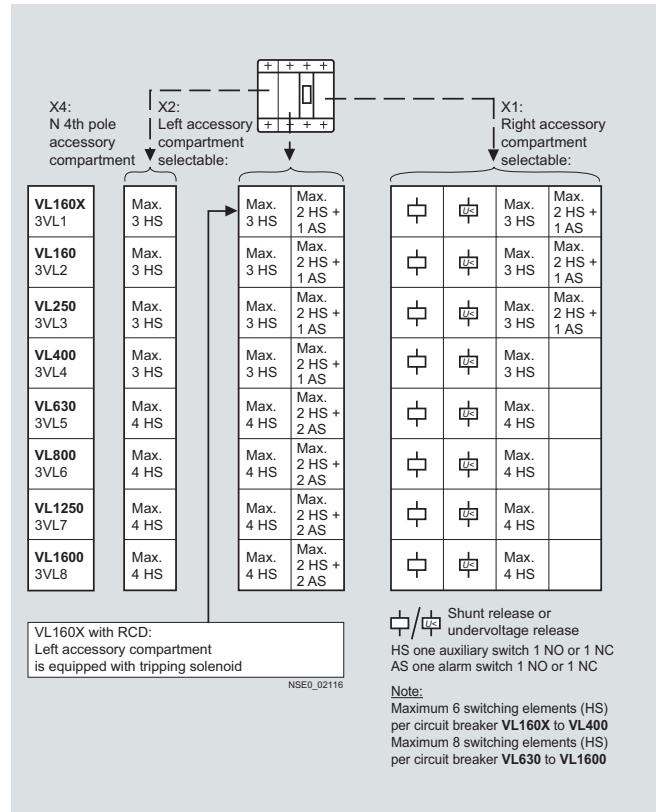
Options

Equipment options for the insulated accessory subsections in the SENTRY 3VL circuit breakers

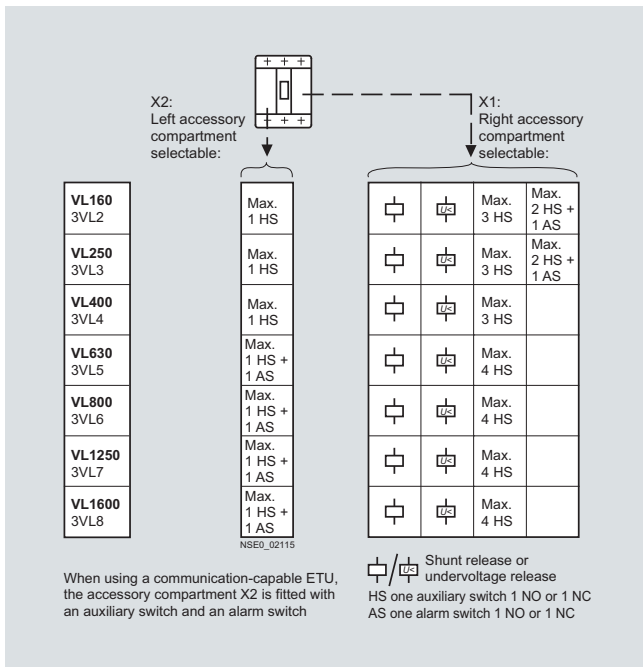
3-pole circuit breakers without communication preparation



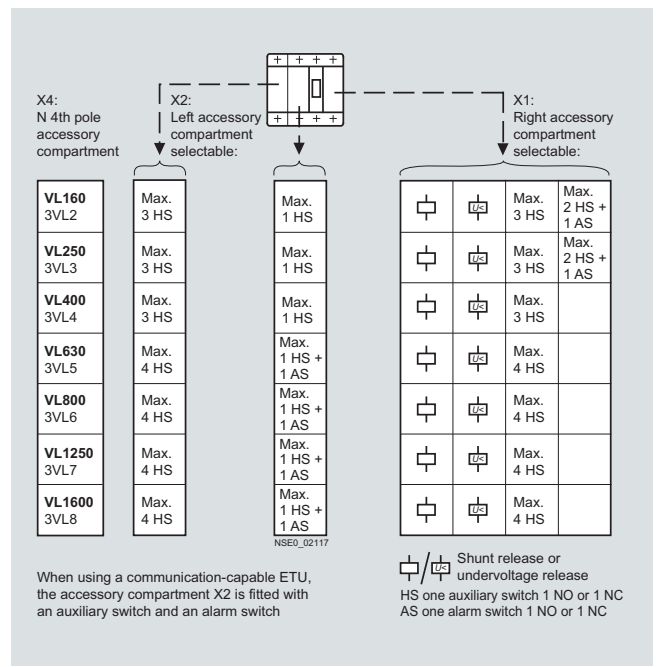
4-pole circuit breakers without communication preparation



3-pole circuit breakers with communication preparation



4-pole circuit breakers with communication preparation



Note:

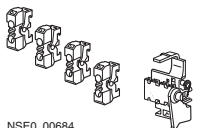
Before ordering, use the tables above to check whether the required combination of shunt releases, undervoltage releases and auxiliary/alarm switches is feasible.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Selection and ordering data

Wiring directly at accessories		DT	For VL160X to VL400 (3VL1 to 3VL4)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
			Order No.	Price per PU			
Auxiliary switches and auxiliary releases							
3- or 4-pole							
For retrofitting (for possible complements see Technical Information at www.siemens.com/lowvoltage/support .)							
Auxiliary switches (HS) and alarm switches (AS)							
For retrofitting							
Assembly kits		Mounting side					
 NSE0_00684	2 HS (1 NO + 1 NC)	N, left ¹⁾ , right	A	3VL9 400-2AB00	1	1 unit	113 0.027
	4 HS (2 NO + 2 NC)	N, left ¹⁾ , right		--			
	2 HS (1 NC + 1 NO) + 1 AS (1 NO) (kit)	left ¹⁾ , right ³⁾ left ¹⁾	A	3VL9 400-2AD00	1	1 unit	113 0.051
				--			
Additional auxiliary switch/alarm switch combinations			See page 16/60.				
Shunt releases²⁾							
For retrofitting							
V AC	V DC	Mounting side					
24	24	Right pole only	A	3VL9 400-1SC00	1	1 unit	113 0.075
--	48 ... 60	Right pole only	A	3VL9 400-1SJ00	1	1 unit	113 0.075
--	110 ... 127	Right pole only	A	3VL9 400-1SK00	1	1 unit	113 0.075
--	220 ... 250	Right pole only	A	3VL9 400-1SQ00	1	1 unit	113 0.075
48 ... 60	--	Right pole only	A	3VL9 400-1SM00	1	1 unit	113 0.075
110 ... 127	--	Right pole only	A	3VL9 400-1SR00	1	1 unit	113 0.075
208 ... 277	--	Right pole only	A	3VL9 400-1ST00	1	1 unit	113 0.075
380 ... 600	--	Right pole only	A	3VL9 400-1SV00	1	1 unit	113 0.075
Undervoltage releases							
For retrofitting							
V AC	V DC	Mounting side					
--	12	Right pole only	A	3VL9 400-1UN00	1	1 unit	113 0.075
--	24	Right pole only	A	3VL9 400-1UP00	1	1 unit	113 0.075
--	48	Right pole only	A	3VL9 400-1UU00	1	1 unit	113 0.075
--	60	Right pole only	A	3VL9 400-1UV00	1	1 unit	113 0.075
24	--	Right pole only	A	3VL9 400-1UD00	1	1 unit	113 0.075
110 ... 127	--	Right pole only	A	3VL9 400-1UG00	1	1 unit	113 0.075
--	110 ... 127	Right pole only	A	3VL9 400-1UR00	1	1 unit	113 0.075
208	--	Right pole only	A	3VL9 400-1UM00	1	1 unit	113 0.075
220 ... 250	--	Right pole only	A	3VL9 400-1UH00	1	1 unit	113 0.075
--	220 ... 250	Right pole only	A	3VL9 400-1US00	1	1 unit	113 0.075
277	--	Right pole only	A	3VL9 400-1UQ00	1	1 unit	113 0.075
380 ... 415	--	Right pole only	A	3VL9 400-1UJ00	1	1 unit	113 0.075
440 ... 480	--	Right pole only	A	3VL9 400-1UK00	1	1 unit	113 0.075
500 ... 525	--	Right pole only	A	3VL9 400-1UL00	1	1 unit	113 0.075
Time-delay devices for undervoltage releases (220 ... 250 V DC)							
Rated control supply voltage U_s 220 ... 250 V AC/DC							
Delay time > 200 ms			A	3TX4 701-0AN1	1	1 unit	101 0.170
Storage devices for shunt releases (208 ... 277 V AC/220 ... 250 V DC)							
Rated control supply voltage U_s 220 ... 240 V/220 ... 250 V AC							
Storage time 5 min			B	3VL9 111-0BA14-0AA0	1	1 unit	103 0.520

¹⁾ Except for installing in the left accessory compartment of the SENTRON VL160X (3VL1) circuit breakers with RCD module and SENTRON VL160/250 with LCD ETU.

²⁾ Shunt releases with disconnection contact (3SB3 for ON/OFF position) not floating (see Technical Information at www.siemens.com/lowvoltage/support).

³⁾ In the case of VL400 (3VL4):
Unsuitable for mounting in the right-hand accessory compartment.
The 3VL9 400-2AB00 assembly kit with auxiliary switches only is recommended.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Wiring directly at accessories	DT	For VL630 up to VL1600 (3VL5 to 3VL8)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg

Auxiliary switches and auxiliary releases

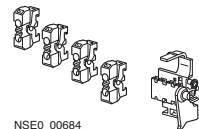
3- or 4-pole

For retrofitting (for possible complements see Technical Information at www.siemens.com/lowvoltage/support.)

Auxiliary switches (HS) and alarm switches (AS)

For retrofitting

Assembly kits	Mounting side					
2 HS (1 NO + 1 NC)	N, left, right	--				
4 HS (2 NO + 2 NC)	N, left, right	A	3VL9 800-2AC00	1	1 unit	113 0.058
2 HS (1 NC + 1 NO)	Left, right	--				
+ 1 AS (1 NO) (kit)	Left	A	3VL9 800-2AE00	1	1 unit	113 0.060



NSE0_00684
3VL9 800-2A.00

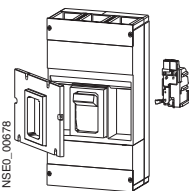
Additional auxiliary switch/alarm switch combinations

See page 16/60.

Shunt releases¹⁾

For retrofitting

V AC	V DC	Mounting side				
24	24	Right pole only	A	3VL9 800-1SC00	1	1 unit 113 0.120
--	48 ... 60	Right pole only	A	3VL9 800-1SJ00	1	1 unit 113 0.120
--	110 ... 127	Right pole only	A	3VL9 800-1SK00	1	1 unit 113 0.120
--	220 ... 250	Right pole only	A	3VL9 800-1SQ00	1	1 unit 113 0.120
48 ... 60	--	Right pole only	A	3VL9 800-1SM00	1	1 unit 113 0.120
110 ... 127	--	Right pole only	A	3VL9 800-1SR00	1	1 unit 113 0.120
208 ... 277	--	Right pole only	A	3VL9 800-1ST00	1	1 unit 113 0.120
380 ... 600	--	Right pole only	A	3VL9 800-1SV00	1	1 unit 113 0.120



NSE0_00678
3VL9 800-1S.00,
3VL9 800-1U.00

Undervoltage releases

For retrofitting

V AC	V DC	Mounting side				
--	12	Right pole only	A	3VL9 800-1UN00	1	1 unit 113 0.088
--	24	Right pole only	A	3VL9 800-1UP00	1	1 unit 113 0.088
--	48	Right pole only	A	3VL9 800-1UU00	1	1 unit 113 0.088
--	60	Right pole only	A	3VL9 800-1UV00	1	1 unit 113 0.088
24	--	Right pole only	A	3VL9 800-1UD00	1	1 unit 113 0.088
110 ... 127	--	Right pole only	A	3VL9 800-1UG00	1	1 unit 113 0.088
--	110 ... 127	Right pole only	A	3VL9 800-1UR00	1	1 unit 113 0.088
208	--	Right pole only	A	3VL9 800-1UM00	1	1 unit 113 0.088
220 ... 250	--	Right pole only	A	3VL9 800-1UH00	1	1 unit 113 0.088
--	220 ... 250	Right pole only	A	3VL9 800-1US00	1	1 unit 113 0.088
277	--	Right pole only	A	3VL9 800-1UQ00	1	1 unit 113 0.088
380 ... 415	--	Right pole only	A	3VL9 800-1UJ00	1	1 unit 113 0.088
440 ... 480	--	Right pole only	A	3VL9 800-1UK00	1	1 unit 113 0.088
500 ... 525	--	Right pole only	A	3VL9 800-1UL00	1	1 unit 113 0.088

Time-delay devices for undervoltage releases (220 ... 250 V DC)

Rated control supply voltage U_s
220 ... 250 V AC/DC

Delay time > 200 ms	A	3TX4 701-0AN1	1	1 unit	101	0.170
---------------------	---	----------------------	---	--------	-----	-------

Storage devices for shunt releases (208 ... 277 V AC/220 ... 250 V DC)

Rated control supply voltage U_s
220 ... 240 V AC/220 ... 250 V DC

Storage time 5 min	B	3WL9 111-0BA14-0AA0	1	1 unit	103	0.520
--------------------	---	----------------------------	---	--------	-----	-------

¹⁾ Shunt releases with disconnection contact (3SB3 for ON/OFF position) not floating (see Technical Information at www.siemens.com/lowvoltage/support).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

For circuit breakers	Maximum combination of auxiliary switches (HS) and alarm switches (AS)	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type								kg
3SB adapters and 3SB contact blocks								
<i>Mounting adapters for auxiliary and alarm switch combinations</i>								
For installation in the N pole of the circuit breaker								
VL160X, VL160, VL250, VL400 (3VL1 to 3VL4)	Up to 3 HS ¹⁾	A	3VL9 400-2AH00		1	1 unit	113	0.009
	2 HS + 1 AS ¹⁾²⁾		--					
VL630, VL800, VL1250, VL1600 (3VL5 to 3VL8)	Up to 4 HS	A	3VL9 816-2AL00		1	1 unit	113	0.075
	2 HS + 2 AS		--					
For installation in the left pole of the circuit breaker								
VL160X, VL160, VL250, VL400 (3VL1 to 3VL4)	Up to 3 HS ¹⁾	A	3VL9 400-2AH00		1	1 unit	113	0.009
	2 HS + 1 AS ¹⁾²⁾	A	3VL9 400-2AJ10		1	1 unit	113	0.001
VL630, VL800, VL1250, VL1600 (3VL5 to 3VL8)	Up to 4 HS	A	3VL9 816-2AL00		1	1 unit	113	0.075
	2 HS + 2 AS	A	3VL9 816-2AN10		1	1 unit	113	0.072
For installation in the right pole of the circuit breaker								
VL160X, VL160, VL250, VL400 (3VL1 to 3VL4) ²⁾	Up to 3 HS ¹⁾	A	3VL9 400-2AH00		1	1 unit	113	0.009
	2 HS + 1 AS ¹⁾²⁾	A	3VL9 400-2AJ20		1	1 unit	113	0.001
VL630, VL800, VL1250, VL1600 (3VL5 to 3VL8)	Up to 4 HS	A	3VL9 816-2AL00		1	1 unit	113	0.075
	2 HS + 2 AS		--					

¹⁾ Except for installing in the left pole for SENTRON VL160X circuit breakers (3VL1) with RCD module.

²⁾ In the case of VL400: 3VL9 400-2AJ20 unsuitable for mounting in the right-hand accessory sub-section.

For auxiliary/alarm switches	DT	Circuit breakers Type	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg
Contact blocks for auxiliary and alarm switch combinations						
1 NO	B	3SB34 00-0J		1	1 unit	102 0.010
1 NC	B	3SB34 00-0K		1	1 unit	102 0.010

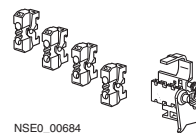
For auxiliary switch or alarm switch combinations not included in the kits provided as standard, the mounting adapters specified can be ordered separately together with the required contact blocks:

- 1 HS or 1 AS with NO contact 3SB34 00-0J
- 1 HS or 1 AS with NC contact 3SB34 00-0K

Note:

A maximum of 6 contact blocks (HS) per circuit breaker (VL160X, VL160, VL250, VL400; 3VL1 to 3VL4) and a maximum of 8 contact blocks (HS) per circuit breaker (VL630, VL800, VL1250, VL1600; 3VL5 to 3VL8) are possible.

Four 3SB34 auxiliary contact blocks and one mounting adapter (right), suitable for VL630, VL800, VL1250, VL1600 (3VL5 to 3VL8) circuit breakers.



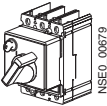
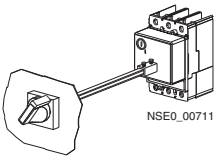
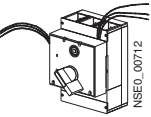
NSE0_00684

For retrofitting/possible complement see Technical Information at www.siemens.com/lowvoltage/support.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL160X to VL250 (3VL1 to 3VL3) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Operating mechanisms								
3- or 4-pole								
 NSE0_00679 3VL9 .00-3H.00	Front-operated rotary operating mechanisms¹⁾							
	For direct mounting on the circuit breaker, without leading auxiliary switch, degree of protection IP30 ²⁾ , <u>black</u> , max. 3 padlocks		A	3VL9 300-3HA00	1	1 unit	113	0.362
	<u>EMERGENCY-STOP version</u> Red knob, yellow indicator plate		A	3VL9 300-3HC00	1	1 unit	113	0.362
<i>Safety locks for installation by the customer For installation see pages 16/84 to 16/88.</i>								
 NSE0_00711 3VL9 .00-3H.05	Door-coupling rotary operating mechanisms, complete¹⁾, installation in doors and covers							
	Degree of protection IP65, including handle ti-grey, with masking plate, indicator plate, removable door coupling (die-cast with reduced tolerance compensation), 300 mm extension shaft (8 x 8 mm) and front-operated rotary operating mechanism for the respective circuit breaker, lockable with up to 3 padlocks, with door interlocking		A	3VL9 300-3HF05	1	1 unit	113	0.970
	<u>EMERGENCY-STOP version</u> , Red knob, yellow indicator plate, without leading auxiliary switch		A	3VL9 300-3HG05	1	1 unit	113	0.980
<i>Safety locks for installation by the customer For installation see pages 16/84 to 16/88.</i>								
 NSE0_00712 3VL9 .00-3A.10	Leading auxiliary switches for installation in a front-operated rotary operating mechanism, door-coupling rotary operating mechanism or side panel rotary operating mechanism							
	Standard or EMERGENCY-STOP version							
	<u>"OFF after ON"</u> Leading auxiliary switches when switching on		A	3VL9 300-3AS10	1	1 unit	113	0.080
	1 changeover contact with 1.5 m long cables		A	3VL9 300-3AT10	1	1 unit	113	0.130
<u>"ON after OFF"</u> Leading auxiliary switches when switching off		A	3VL9 300-3AU10	1	1 unit	113	0.080	
1 changeover contact with 1.5 m long cables		A	3VL9 300-3AW10	1	1 unit	113	0.130	
2 changeover contacts with 1.5 m long cables		A	3VL9 300-3AW10	1	1 unit	113	0.130	
Side panel rotary operating mechanisms, complete								
Degree of protection IP65, including black knob with masking plate, indicator plate, Bowden wire, lockable with up to 3 padlocks								
	- With 600 mm Bowden wire	A	3VL9 300-3HR10	1	1 unit	113	1.400	
	- With 1000 mm Bowden wire	A	3VL9 300-3HR20	1	1 unit	113	1.400	
	- With 1500 mm Bowden wire	A	3VL9 300-3HR30	1	1 unit	113	1.400	
Side panel rotary operating mechanisms, complete								
<u>EMERGENCY-STOP version</u>								
Degree of protection IP65, including red knob with masking plate, yellow indicator plate, Bowden wire, lockable with up to 3 padlocks								
	- With 600 mm Bowden wire	A	3VL9 300-3HR11	1	1 unit	113	1.400	
	- With 1000 mm Bowden wire	A	3VL9 300-3HR21	1	1 unit	113	1.400	
	- With 1500 mm Bowden wire	A	3VL9 300-3HR31	1	1 unit	113	1.400	
	Retaining brackets	A	3VL9 300-3HP00	1	1 unit	113	0.253	
Retaining bracket is mounted on the operating mechanism, recommended for extension shafts >250 mm, with locking device for max. 3 padlocks								
	Rotary operating mechanisms with shaft stub, without knob¹⁾	A	3VL9 300-3HE00	1	1 unit	113	0.267	
Without leading auxiliary switch, for auxiliary switches see above								

For more accessories and components for door-coupling rotary operating mechanisms, see pages 16/67 to 16/69.

¹⁾ Not possible on VL160X with RCD module.

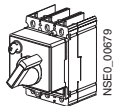
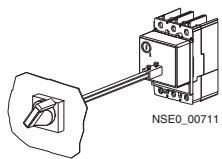
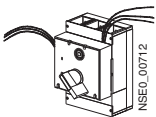
²⁾ IP40 with additional masking frame mounted on the door cutout.

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL400 (3VL4) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Operating mechanisms							
3- or 4-pole							
Front-operated rotary operating mechanisms							
For direct mounting on the circuit breaker, without leading auxiliary switch, degree of protection IP30 ¹⁾ , <u>black</u> , max. 3 padlocks							
 NSE0_00679	A	3VL9 400-3HA00		1	1 unit	113	0.725
3VL9 .00-3H.00	A	3VL9 400-3HC00		1	1 unit	113	0.725
EMERGENCY-STOP version Red knob, yellow indicator plate							
Safety locks for installation by the customer For installation see pages 16/84 to 16/88.							
Door-coupling rotary operating mechanisms, complete, installation in doors and covers							
Degree of protection IP65, including handle ti-grey, with masking plate, indicator plate, removable door coupling (die-cast with reduced tolerance compensation), 300 mm extension shaft (8 × 8 mm) and front-operated rotary operating mechanism for the respective circuit breaker, lockable with up to 3 padlocks, with door interlocking							
 NSE0_00711	A	3VL9 400-3HF05		1	1 unit	113	0.970
3VL9 .00-3H.05	A	3VL9 400-3HG05		1	1 unit	113	1.100
EMERGENCY-STOP version, Red knob, yellow indicator plate, without leading auxiliary switch							
Safety locks for installation by the customer For installation see pages 16/84 to 16/88.							
Leading auxiliary switches for installation in a front-operated rotary operating mechanism, door-coupling rotary operating mechanism or side panel rotary operating mechanism							
Standard or EMERGENCY-STOP version							
"OFF after ON"							
Leading auxiliary switches when switching on							
 NSE0_00712	A	3VL9 400-3AS10		1	1 unit	113	0.080
3VL9 .00-3A.10	A	3VL9 400-3AT10		1	1 unit	113	0.130
2 changeover contacts with 1.5 m long cables							
"ON after OFF"							
Leading auxiliary switches when switching off							
A	A	3VL9 400-3AU10		1	1 unit	113	0.080
A	A	3VL9 400-3AW10		1	1 unit	113	0.130
2 changeover contacts with 1.5 m long cables							
Side panel rotary operating mechanisms, complete							
Degree of protection IP65, including black knob with masking plate, indicator plate, Bowden wire, lockable with up to 3 padlocks							
- With 600 mm Bowden wire							
A	A	3VL9 400-3HR10		1	1 unit	113	2.000
- With 1000 mm Bowden wire							
A	A	3VL9 400-3HR20		1	1 unit	113	2.000
- With 1500 mm Bowden wire							
A	A	3VL9 400-3HR30		1	1 unit	113	2.000
Side panel rotary operating mechanisms, complete							
EMERGENCY-STOP version							
Degree of protection IP65, including red knob with masking plate, yellow indicator plate, Bowden wire, lockable with up to 3 padlocks							
- With 600 mm Bowden wire							
A	A	3VL9 400-3HR11		1	1 unit	113	2.000
- With 1000 mm Bowden wire							
A	A	3VL9 400-3HR21		1	1 unit	113	2.000
- With 1500 mm Bowden wire							
A	A	3VL9 400-3HR31		1	1 unit	113	2.000
Retaining brackets							
A	A	3VL9 400-3HP00		1	1 unit	113	0.379
Retaining bracket is mounted on the operating mechanism, recommended for extension shafts >250 mm, with locking device for max. 3 padlocks							
A	A	3VL9 400-3HE00		1	1 unit	113	0.267
Rotary operating mechanisms with shaft stub, without knob							
Without leading auxiliary switch, for auxiliary switches see above							

For more accessories and components for door-coupling rotary operating mechanisms, see pages 16/67 to 16/69.

¹⁾ IP40 with additional masking frame mounted on the door cutout.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

DT	For VL630 (3VL5) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL800 (3VL6) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 600-3HA00		1	1 unit	113	0.834	A	3VL9 600-3HA00		1	1 unit	113	0.834
A	3VL9 600-3HC00		1	1 unit	113	0.834	A	3VL9 600-3HC00		1	1 unit	113	0.834
A	3VL9 600-3HF05		1	1 unit	113	2.465	A	3VL9 600-3HF05		1	1 unit	113	2.465
A	3VL9 600-3HG05		1	1 unit	113	2.460	A	3VL9 600-3HG05		1	1 unit	113	2.460
A	3VL9 600-3AS10		1	1 unit	113	0.080	A	3VL9 600-3AS10		1	1 unit	113	0.080
A	3VL9 600-3AT10		1	1 unit	113	0.130	A	3VL9 600-3AT10		1	1 unit	113	0.130
A	3VL9 600-3AU10		1	1 unit	113	0.080	A	3VL9 600-3AU10		1	1 unit	113	0.080
A	3VL9 600-3AW10		1	1 unit	113	0.130	A	3VL9 600-3AW10		1	1 unit	113	0.130
A	3VL9 500-3HR10		1	1 unit	113	2.400	--						
A	3VL9 500-3HR20		1	1 unit	113	2.400	--						
A	3VL9 500-3HR30		1	1 unit	113	2.400	--						
A	3VL9 500-3HR11		1	1 unit	113	2.400	--						
A	3VL9 500-3HR21		1	1 unit	113	2.400	--						
A	3VL9 500-3HR31		1	1 unit	113	2.400	--						
A	3VL9 600-3HP00		1	1 unit	113	0.437	A	3VL9 600-3HP00		1	1 unit	113	0.437
A	3VL9 600-3HE00		1	1 unit	113	0.755	A	3VL9 600-3HE00		1	1 unit	113	0.755

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

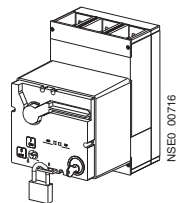
Version	DT	For VL160X to VL250 (3VL1 to 3VL3)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg

Operating mechanisms

3- or 4-pole

Motorized operating mechanisms with stored energy mechanism¹⁾²⁾

Degree of protection IP30, with locking device for 3 padlocks, suitable for synchronizing



3VL9 .00-3M.00

50/60 Hz V AC	V DC					
--	24	C	3VL9 300-3MJ00	1	1 unit	113 2.140
42 ... 48	42 ... 48	C	3VL9 300-3ML00	1	1 unit	113 2.140
60	60	C	3VL9 300-3MS00	1	1 unit	113 2.140
110 ... 127	110 ... 127	C	3VL9 300-3MN00	1	1 unit	113 2.140
220 ... 250	220 ... 250	C	3VL9 300-3MQ00	1	1 unit	113 2.140

Toggle handle extensions

--

Version	DT	For VL160X (3VL1)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg

Operating mechanisms

3- or 4-pole

Motorized operating mechanisms

Degree of protection IP30, with locking device for 3 padlocks

50/60 Hz V AC	V DC					
--	24	B	3VL9 100-3MA10	1	1 unit	113 2.100
42 ... 60	42 ... 60	B	3VL9 100-3MC10	1	1 unit	113 2.100
110 ... 127	110 ... 127	B	3VL9 100-3MD10	1	1 unit	113 2.100
220 ... 250	220 ... 250	B	3VL9 100-3ME10	1	1 unit	113 2.100

Version	DT	For VL160 and VL250 (3VL2 and 3VL3)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		Order No.	Price per PU			kg

Operating mechanisms

3- or 4-pole

Motorized operating mechanisms

Degree of protection IP30, with locking device for 3 padlocks

50/60 Hz V AC	V DC					
--	24	B	3VL9 300-3MA10	1	1 unit	113 2.100
42 ... 60	42 ... 60	B	3VL9 300-3MC10	1	1 unit	113 2.100
110 ... 127	110 ... 127	B	3VL9 300-3MD10	1	1 unit	113 2.100
220 ... 250	220 ... 250	B	3VL9 300-3ME10	1	1 unit	113 2.100

¹⁾ Not possible on VL160X with RCD module.

²⁾ For safety lock as an assembly kit for retrofitting see pages 16/84 to 16/88.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

DT	For VL400 (3VL4)		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL630 to VL800 (3VL5 to 3VL6)		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Order No.	Price per PU						Order No.	Price per PU				
C	3VL9 400-3MJ00		1	1 unit	113	3.910	C	3VL9 600-3MJ00		1	1 unit	113	4.800
C	3VL9 400-3ML00		1	1 unit	113	3.910	C	3VL9 600-3ML00		1	1 unit	113	4.800
C	3VL9 400-3MS00		1	1 unit	113	3.910	C	3VL9 600-3MS00		1	1 unit	113	4.800
C	3VL9 400-3MN00		1	1 unit	113	3.910	C	3VL9 600-3MN00		1	1 unit	113	4.800
C	3VL9 400-3MQ00		1	1 unit	113	3.910	C	3VL9 600-3MQ00		1	1 unit	113	4.800
A	3VL9 400-3HN00		1	1 unit	113	0.100	A	3VL9 600-3HN00		1	1 unit	113	0.140

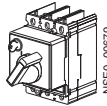
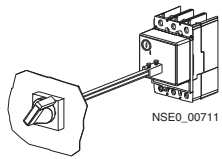
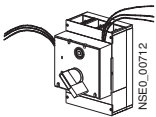
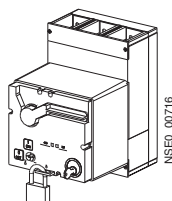
DT	For VL400 (3VL4)		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL630 and VL800 (3VL5 and 3VL6)		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Order No.	Price per PU						Order No.	Price per PU				
B	3VL9 400-3MA10		1	1 unit	113	4.800	B	3VL9 600-3MA10		1	1 unit	113	4.800
B	3VL9 400-3MC10		1	1 unit	113	4.800	B	3VL9 600-3MC10		1	1 unit	113	4.800
B	3VL9 400-3MD10		1	1 unit	113	4.800	B	3VL9 600-3MD10		1	1 unit	113	4.800
B	3VL9 400-3ME10		1	1 unit	113	4.800	B	3VL9 600-3ME10		1	1 unit	113	4.800

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For 1250 to VL1600 (3VL7 and 3VL8) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Operating mechanisms							
<i>3- or 4-pole</i>							
Front-operated rotary operating mechanisms							
For direct mounting on the circuit breaker, without leading auxiliary switch, degree of protection IP30 ¹⁾ , <u>black</u> , max. 3 padlocks							
	A	3VL9 800-3HA00		1	1 unit	113	2.831
3VL9 .00-3H.00	A	3VL9 800-3HC00		1	1 unit	113	2.831
EMERGENCY-STOP version Red knob, yellow indicator plate							
Safety locks for installation by the customer For installation see pages 16/84 to 16/88.							
Door-coupling rotary operating mechanisms, complete, installation in doors and covers							
Degree of protection IP65, including handle ti-grey, with masking plate, indicator plate, removable door coupling (die-cost), 300 mm extension shaft (12 x 12 mm) and front-operated rotary operating mechanism for the respective circuit breaker, lockable with up to 3 padlocks, with door interlocking							
	A	3VL9 800-3HF05		1	1 unit	113	4.102
3VL9 .00-3H.05	A	3VL9 800-3HG05		1	1 unit	113	4.100
EMERGENCY-STOP version, Red knob, yellow indicator plate, without leading auxiliary switch							
Safety locks for installation by the customer For installation see pages 16/84 to 16/88.							
Leading auxiliary switches for installation in a front-operated rotary operating mechanism or door-coupling rotary operating mechanism							
Standard or EMERGENCY-STOP version							
"OFF after ON"							
Leading auxiliary switches when switching on							
	A	3VL9 800-3AS10		1	1 unit	113	0.080
3VL9 .00-3A.10	A	3VL9 800-3AT10		1	1 unit	113	0.130
2 changeover contacts with 1.5 m long cables							
"ON after OFF"							
Leading auxiliary switches when switching off							
	A	3VL9 800-3AU10		1	1 unit	113	0.080
	A	3VL9 800-3AW10		1	1 unit	113	0.130
2 changeover contacts with 1.5 m long cables							
Retaining brackets							
	A	3VL9 800-3HP00		1	1 unit	113	0.529
Retaining bracket is mounted on the operating mechanism, recommended for extension shafts >250 mm, with locking device for max. 3 padlocks							
Rotary operating mechanisms with shaft stub, without knob							
	A	3VL9 800-3HE00		1	1 unit	113	2.175
Without leading auxiliary switch, for auxiliary switches see above							
Motorized operating mechanisms²⁾							
Degree of protection IP30, with locking device for 3 padlocks, not suitable for synchronizing							
50/60 Hz V AC							
V DC							
--	C	3VL9 800-3MJ00		1	1 unit	113	6.800
42 ... 48	C	3VL9 800-3ML00		1	1 unit	113	6.800
60	C	3VL9 800-3MS00		1	1 unit	113	6.800
110 ... 127	C	3VL9 800-3MN00		1	1 unit	113	6.800
220 ... 250	C	3VL9 800-3MQ00		1	1 unit	113	6.800
	A	3VL9 800-3HN00		1	1 unit	113	0.234
3VL9 .00-3M.00							
Toggle handle extensions							

For more accessories and components for door-coupling rotary operating mechanisms, see pages 16/67 to 16/69.




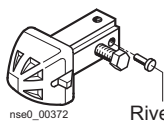
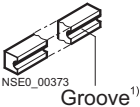
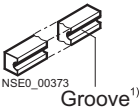
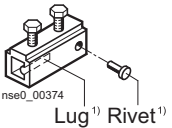
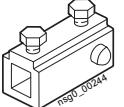
¹⁾ IP40 with additional masking frame mounted on the door cutout.

²⁾ For safety lock as an assembly kit for retrofitting see pages 16/84 to 16/88.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Switching device	Rotary operating mechanisms	Size	Cross-section of the actuating shaft	Version ³⁾	DT	Individual parts for 8UC7 door-coupling rotary operating mechanisms	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Type	Type	mm × mm				Order No.	Price per PU			kg	
Individual parts for 8UC door-coupling rotary operating mechanisms											
Handles with masking plate (including flat gasket and fixing screws)											
	3VL1, 3VL2, 3VL3	8UC71	1	6 × 6 or 8 × 8	Standard EMERGENCY-STOP	C	8UC71 10-6BD	1	1 unit	103	0.200
						C	8UC71 20-8BD	1	1 unit	103	0.200
	3VL4, 3VL5, 3VL6	8UC72	2	8 × 8	Standard EMERGENCY-STOP	C	8UC72 10-6BD	1	1 unit	103	0.200
						C	8UC72 20-8BD	1	1 unit	103	0.200
	3VL7, 3VL8	8UC73	3	12 × 12	Standard EMERGENCY-STOP	C	8UC73 10-6BD	1	1 unit	103	0.200
						C	8UC73 20-8BD	1	1 unit	103	0.200
Individual parts for 8UC door-coupling rotary operating mechanisms											
Coupling drivers for 3VL											
	8UC71 (plastics)			6 × 6		C	8UC70 11-2AA	1	1 unit	103	0.200
	8UC71/8UC72 ²⁾ (die-cost)			8 × 8		A	8UC60 17-2AA	1	1 unit	103	0.047
	8UC73/74 (die-cost)			12 × 12		B	8UC60 14	1	1 unit	103	0.253
8UC60 14											
Extension shafts 300 mm long											
	8UC71			6 × 6		B	8UC60 31	1	1 unit	103	0.068
	8UC71/8UC72			8 × 8		B	8UC60 32	1	1 unit	103	0.132
	8UC73			10 × 10		C	8UC60 33	1	1 unit	103	0.217
	8UC73/74			12 × 12		B	8UC60 34	1	1 unit	103	0.315
8UC60 31											
Extension shafts 600 mm long											
	8UC71			6 × 6		B	8UC60 81	1	1 unit	103	0.136
	8UC71/8UC72			8 × 8		B	8UC60 82	1	1 unit	103	0.265
	8UC73			10 × 10		B	8UC60 83	1	1 unit	103	0.430
	8UC73/74			12 × 12		B	8UC60 84	1	1 unit	103	0.640
8UC60 81											
Shaft couplings											
	8UC71			6 × 6		B	8UC60 21	1	1 unit	103	0.031
	8UC72			8 × 8		B	8UC60 22	1	1 unit	103	0.023
	8UC73			10 × 10		B	8UC60 23	1	1 unit	103	0.085
	8UC73/74			12 × 12		B	8UC60 24	1	1 unit	103	0.077
8UC60 21 to 8UC60 24											
Reducers											
	8UC71			8 × 8 to 6 × 6		C	8UC70 58	1	1 unit	103	0.200
	8UC72			12 × 12 to 8 × 8		C	8UC70 50	1	1 unit	103	0.200
8UC70 58											

¹⁾ Non-interchangeability features.

²⁾ Shortened coupling driver with reduced tolerance compensation.

³⁾ Standard: Ti-grey handle, light-gray masking plate; EMERGENCY-STOP: Red handle, yellow-cost.


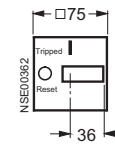

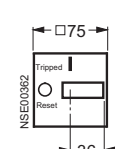

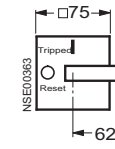

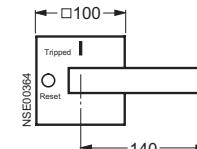
* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Switching devices ¹⁾	Rated current	Cross-section of the actuating shaft	Torque	Rotary operating mechanisms	Illustrated: Handle, masking plate
---------------------------------	---------------	--------------------------------------	--------	-----------------------------	------------------------------------

Type	A	mm	Nm		
8UC Door-Coupling Rotary Operating Mechanisms					
<i>8UC71 - 3VL circuit breakers</i>					
	3VL1	16 ... 160	6 × 6	4	1
	3VL2	50 ... 160	6 × 6	4	
	3VL3	200... 250	6 × 6	4	
					
	3VL1	16 ... 160	8 × 8	4	1
	3VL2	50 ... 160	8 × 8	4	
	3VL3	200... 250	8 × 8	4	
					
<i>8UC72 - 3VL circuit breakers</i>					
	3VL4	200 ... 400	8 × 8	9	2
	3VL5	315 ... 600	8 × 8	9	
	3VL6	320 ... 800	8 × 8	9	
					
<i>8UC73 - 3VL circuit breakers</i>					
	3VL7	400 ... 1250	12 × 12	25	3
	3VL8	640 ... 1600	12 × 12	25	
					

- ¹⁾ For 3RV circuit breakers/motor starter protectors, see Chapter 5 "Protection Equipment, Circuit Breakers/Motor Starter Protectors".
- ²⁾ Requires in addition a front-operated rotary operating mechanism with shaft stub for direct mounting to the circuit breaker. For ordering the complete operating mechanism see pages 16/61 to 16/66.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

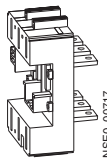
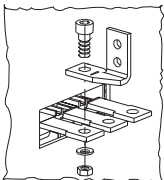
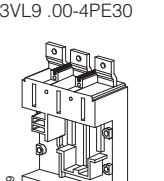
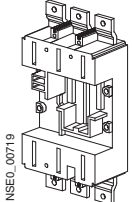
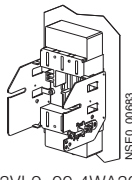
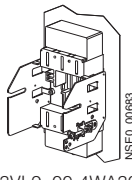
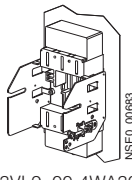
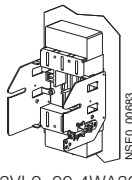
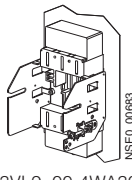
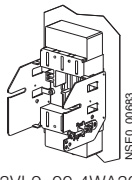
Accessories and spare parts

Version	DT	Rotary operating mechanisms, complete ²⁾		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	Individual parts of the rotary operating mechanism			
		Order No.	Price per PU					Handle with masking plate	Coupling drivers	Extension shaft (length 300 mm)	Reducer/shaft coupling
Standard: Ti-grey handle, light-gray masking plate; <u>EMERGENCY-STOP</u> : Red handle, yellow masking plate							kg	Order No.	Order No.	Order No.	Order No.
Standard EMERGENCY-STOP (plastics coupling driver)	C	8UC71 11-6BD15		1	1 unit	103	0.200	8UC71 10-6BD	8UC70 11-2AA	8UC60 31	8UC70 58
	C	8UC71 21-8BD15		1	1 unit	103	0.200	8UC71 20-8BD	8UC70 11-2AA	8UC60 31	8UC70 58
Standard EMERGENCY-STOP (die-cast coupling driver with reduced tolerance compensation)	C	8UC71 62-6BD22		1	1 unit	103	0.200	8UC71 10-6BD	8UC60 17-2AA	8UC60 32	8UC60 22
	C	8UC71 72-8BD22		1	1 unit	103	0.200	8UC71 20-8BD	8UC60 17-2AA	8UC60 32	8UC60 22
Standard EMERGENCY-STOP (die-cast coupling driver with reduced tolerance compensation)	C	8UC72 62-6BD26		1	1 unit	103	0.200	8UC72 10-6BD	8UC60 17-2AA	8UC60 32	8UC70 50
	C	8UC72 62-8BD26		1	1 unit	103	0.200	8UC72 20-8BD	8UC60 17-2AA	8UC60 32	8UC70 50
Standard EMERGENCY-STOP (die-cast coupling driver)	C	8UC73 14-6BD44		1	1 unit	103	0.200	8UC73 10-6BD	8UC60 14	8UC60 34	8UC60 24
	C	8UC73 24-8BD44		1	1 unit	103	0.200	8UC73 20-8BD	8UC60 14	8UC60 34	8UC60 24

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL160X (3VL1) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Plug-in versions/withdrawable versions								
<i>3- or 4-pole</i>								
Plug-in base assembly kits								
Base, blade contacts for circuit breakers, terminal covers for degree of protection IP20, fixing screws, trip pin								
Rear terminals								
 NSE0_00717 3VL9 .00-4PA30	A	3VL9 100-4PA30		1	1 unit	113	2.170	
	A	3VL9 100-4PB30		1	1 unit	113	2.460	
	A	3VL9 100-4PA40		1	1 unit	113	2.850	
	A	3VL9 100-4PB40		1	1 unit	113	3.200	
90° angle connecting adapters								
For rear connection, 3-pole								
 NSE00581 3VL9 .00-4PE30	A	3VL9 300-4PE30		1	1 unit	113	0.375	
	A	3VL9 300-4PE40		1	1 unit	113	0.500	
Front-accessible terminals								
 NSE00581 3VL9 .00-4PE30	A	3VL9 100-4PC30		1	1 unit	113	1.980	
	A	3VL9 100-4PD30		1	1 unit	113	2.260	
	A	3VL9 100-4PC40		1	1 unit	113	2.620	
	A	3VL9 100-4PD40		1	1 unit	113	2.960	
Withdrawable version assembly kits								
Upgrade of the plug-in base assembly kit to								
 NSE0_00719 3VL9 .00-4WF30	3-pole	---						
	3-pole with RCD including side panels and racking mechanism.	3-pole with RCD	---					
	4-pole	---						
	4-pole with RCD	---						
Withdrawable versions								
Same as plug-in base assembly kit, with additional side panels and racking mechanism								
Rear terminals								
 NSE0_00683 3VL9 .00-4WA30	3-pole	---						
	3-pole with RCD module	---						
	4-pole	---						
	4-pole with RCD module	---						
Front-accessible terminals								
 NSE0_00683 3VL9 .00-4WA30	3-pole	---						
	3-pole with RCD module	---						
	4-pole	---						
	4-pole with RCD module	---						
Blade contacts								
As replacement for converting fixed-mounted circuit breakers into plug-in/withdrawable circuit breakers, including trip pin								
 NSE0_00683 3VL9 .00-4WA30	1 set = 6 units	3-pole	A	3VL9 100-4PS30	1	1 unit	113	0.226
	1 set = 8 units	4-pole	A	3VL9 100-4PS40	1	1 unit	113	0.295
Trip pins and springs								
As replacement for plug-in/withdrawable circuit breakers								
 NSE0_00683 3VL9 .00-4WA30	A	3VL9 100-4PF00		1	1 unit	113	0.012	
	Auxiliary circuit plug connections for plug-in bases							
Accessory connections for plug-in circuit breakers (factory-wired connectors) and for plug-in bases or withdrawable version (coupling with screw terminal)								
 NSE0_00683 3VL9 .00-4WA30	8 terminals		A	3VL9 300-4PJ00	1	1 unit	113	0.134
	Position signaling switches							
(connected/disconnected position)								
For plug-in/withdrawable base, 1 changeover contact, max. 2 signaling switches possible								
 NSE0_00683 3VL9 .00-4WA30	A	3VL9 000-4WL00		1	1 unit	113	0.019	

¹⁾ It is recommended to use a maximum of 2 auxiliary circuit plug-in systems per circuit breaker (16 terminals).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

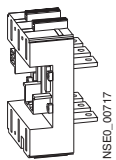
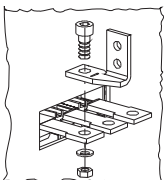
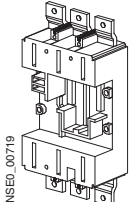
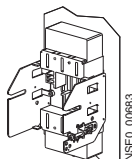
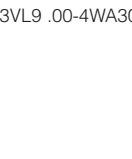
Accessories and spare parts

DT	For VL160 (3VL2)	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL250 (3VL3)	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 200-4PA30		1	1 unit	113	2.170	A	3VL9 300-4PA30		1	1 unit	113	2.280
A	3VL9 200-4PB30		1	1 unit	113	2.460	A	3VL9 300-4PB30		1	1 unit	113	2.570
A	3VL9 200-4PA40		1	1 unit	113	2.850	A	3VL9 300-4PA40		1	1 unit	113	3.000
A	3VL9 200-4PB40		1	1 unit	113	3.200	A	3VL9 300-4PB40		1	1 unit	113	3.330
A	3VL9 300-4PE30		1	1 unit	113	0.375	A	3VL9 300-4PE30		1	1 unit	113	0.375
A	3VL9 300-4PE40		1	1 unit	113	0.500	A	3VL9 300-4PE40		1	1 unit	113	0.500
A	3VL9 200-4PC30		1	1 unit	113	1.980	A	3VL9 300-4PC30		1	1 unit	113	2.090
A	3VL9 200-4PD30		1	1 unit	113	2.260	A	3VL9 300-4PD30		1	1 unit	113	2.370
A	3VL9 200-4PC40		1	1 unit	113	2.620	A	3VL9 300-4PC40		1	1 unit	113	2.770
A	3VL9 200-4PD40		1	1 unit	113	2.960	A	3VL9 300-4PD40		1	1 unit	113	3.070
A	3VL9 300-4WF30		1	1 unit	113	1.260	A	3VL9 300-4WF30		1	1 unit	113	1.260
A	3VL9 300-4WG30		1	1 unit	113	2.031	A	3VL9 300-4WG30		1	1 unit	113	2.031
A	3VL9 300-4WF40		1	1 unit	113	1.280	A	3VL9 300-4WF40		1	1 unit	113	1.280
A	3VL9 300-4WG40		1	1 unit	113	2.050	A	3VL9 300-4WG40		1	1 unit	113	2.050
A	3VL9 200-4WA30		1	1 unit	113	3.430	A	3VL9 300-4WA30		1	1 unit	113	3.540
A	3VL9 200-4WB30		1	1 unit	113	4.000	A	3VL9 300-4WB30		1	1 unit	113	4.601
A	3VL9 200-4WA40		1	1 unit	113	4.130	A	3VL9 300-4WA40		1	1 unit	113	4.280
A	3VL9 200-4WB40		1	1 unit	113	4.940	A	3VL9 300-4WB40		1	1 unit	113	5.361
A	3VL9 200-4WC30		1	1 unit	113	3.240	A	3VL9 300-4WC30		1	1 unit	113	3.350
A	3VL9 200-4WD30		1	1 unit	113	3.810	A	3VL9 300-4WD30		1	1 unit	113	4.398
A	3VL9 200-4WC40		1	1 unit	113	3.940	A	3VL9 300-4WC40		1	1 unit	113	4.050
A	3VL9 200-4WD40		1	1 unit	113	4.710	A	3VL9 300-4WD40		1	1 unit	113	5.158
A	3VL9 200-4PS30		1	1 unit	113	0.248	A	3VL9 300-4PS30		1	1 unit	113	0.342
A	3VL9 200-4PS40		1	1 unit	113	0.330	A	3VL9 300-4PS40		1	1 unit	113	0.426
A	3VL9 300-4PF00		1	1 unit	113	0.013	A	3VL9 300-4PF00		1	1 unit	113	0.013
A	1) 3VL9 300-4PJ00		1	1 unit	113	0.134	A	1) 3VL9 300-4PJ00		1	1 unit	113	0.134
A	3VL9 000-4WL00		1	1 unit	113	0.019	A	3VL9 000-4WL00		1	1 unit	113	0.019

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL400 (3VL4) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Plug-in versions/withdrawable versions							
<i>3- or 4-pole</i>							
Plug-in base assembly kits Base, blade contacts for circuit breakers, terminal covers for degree of protection IP20, fixing screws, trip pin							
Rear terminals							
 NSE0_00717 3VL9 .00-4PA30	A	3VL9 400-4PA30 --1)		1	1 unit	113	5.869
	A	3VL9 400-4PA40		1	1 unit	113	8.008
	A	3VL9 400-4PB40		1	1 unit	113	10.100
	A						
90° angle connecting adapters For rear connection, 3-pole For rear connection, 4-pole							
Front-accessible terminals							
 NSE00581 3VL9 .00-4PE30	A	3VL9 400-4PC30 --1)		1	1 unit	113	5.424
	A	3VL9 400-4PC40		1	1 unit	113	7.408
	A	3VL9 400-4PD40		1	1 unit	113	9.500
	A						
Withdrawable version assembly kits Upgrade of the plug-in base assembly kit to							
Withdrawable version 3-pole							
 NSE0_00719 3VL9 .00-4WF30	A	3VL9 400-4WF30 --1)		1	1 unit	113	3.400
	A	3VL9 400-4WF40		1	1 unit	113	3.600
	A	3VL9 400-4WG40		1	1 unit	113	3.800
Withdrawable versions Same as plug-in base assembly kit, with additional side panels and racking mechanism							
Rear terminals³⁾							
 NSE0_00683 3VL9 .00-4WA30	A	3VL9 400-4WA30 --1)		1	1 unit	113	8.769
	A	3VL9 400-4WA40		1	1 unit	113	11.549
	A	3VL9 400-4WB40		1	1 unit	113	13.200
	A						
Front-accessible terminals							
 NSE0_00683 3VL9 .00-4WC30	A	3VL9 400-4WC30 --1)		1	1 unit	113	8.324
	A	3VL9 400-4WC40		1	1 unit	113	10.949
	A	3VL9 400-4WD40		1	1 unit	113	12.600
	A						
Blade contacts As replacement for converting fixed-mounted circuit breakers into plug-in/withdrawable circuit breakers, including trip pin							
1 set = 6 units 3-pole							
1 set = 8 units 4-pole							
Trip pins and springs As replacement for plug-in/withdrawable circuit breakers							
Auxiliary circuit plug connections for plug-in bases Accessory connections for plug-in circuit breakers (factory-wired connectors) and for plug-in bases or withdrawable version (coupling with screw terminal)							
2)							
8 terminals							
Position signaling switches (connected/disconnected position) For plug-in/withdrawable base, 1 changeover contact, max. 2 signaling switches possible							
A							

1) For 3-pole applications please use 4-pole withdrawable version with 4-pole RCD module and 4-pole circuit breaker.

2) It is recommended to use a maximum of 3 auxiliary circuit plug-in systems per circuit breaker (24 terminals).

3) With VL800 (3VL6) to VL1600 (3VL8) as vertical connection.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

DT	For VL630 (3VL5) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL800 (3VL6) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 500-4PA30		1	1 unit	113	8.200	--						
A	3VL9 500-4PA40		1	1 unit	113	11.200	--						
	--						--						
	--						--						
A	3VL9 500-4PC30		1	1 unit	113	7.400	--						
A	3VL9 500-4PC40		1	1 unit	113	9.600	--						
	--						--						
A	3VL9 500-4WF30		1	1 unit	113	3.600	--						
A	3VL9 500-4WF40		1	1 unit	113	3.800	--						
	--						--						
A	3VL9 500-4WA30		1	1 unit	113	11.000	A	3VL9 600-4WA30		1	1 unit	113	40.104
A	3VL9 500-4WA40		1	1 unit	113	15.000	A	3VL9 600-4WA40		1	1 unit	113	48.060
	--						--						
A	3VL9 500-4WC30		1	1 unit	113	10.300	A	3VL9 600-4WC30		1	1 unit	113	40.716
A	3VL9 500-4WC40		1	1 unit	113	13.400	A	3VL9 600-4WC40		1	1 unit	113	48.876
	--						--						
A	3VL9 500-4PS30		1	1 unit	113	1.260	A	3VL9 600-4PS30		1	1 unit	113	1.500
A	3VL9 500-4PS40		1	1 unit	113	1.680	A	3VL9 600-4PS40		1	1 unit	113	2.000
A	3VL9 500-4PF00		1	1 unit	113	0.018	A	3VL9 600-4PF00		1	1 unit	113	0.025
	--						--						
	2)							2)					
A	3VL9 600-4PJ00		1	1 unit	113	0.144	A	3VL9 600-4PJ00		1	1 unit	113	0.144
A	3VL9 000-4WL00		1	1 unit	113	0.019	A	3VL9 000-4WL00		1	1 unit	113	0.019

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL1250 (3VL7) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Plug-in versions/withdrawable versions							
3- or 4-pole							
Plug-in base assembly kits							
Base, blade contacts for circuit breakers, terminal covers for degree of protection IP20, fixing screws, trip pin							
Rear terminals							
3-pole --							
3-pole with RCD module ---							
4-pole ---							
4-pole with RCD module ---							
90° angle connecting adapters							
For rear connection, 3-pole --							
For rear connection, 4-pole --							
Front-accessible terminals							
3-pole --							
3-pole with RCD module ---							
4-pole ---							
4-pole with RCD module ---							
Withdrawable version assembly kits							
Upgrade of the plug-in base assembly kit to							
Withdrawable version 3-pole --							
including side panels 3-pole with RCD ---							
and racking mechanism 4-pole ---							
4-pole with RCD ---							
Withdrawable versions							
Same as plug-in base assembly kit, with additional side panels and racking mechanism							
Rear terminals¹⁾							
3-pole A 3VL9 800-4WA30 1 1 unit 113 39.996							
3-pole with RCD module ---							
4-pole A 3VL9 800-4WA40 1 1 unit 113 47.148							
4-pole with RCD module ---							
Front-accessible terminals							
3-pole A 3VL9 800-4WC30 1 1 unit 113 40.608							
3-pole with RCD module ---							
4-pole A 3VL9 800-4WC40 1 1 unit 113 47.964							
4-pole with RCD module ---							
Blade contacts							
As replacement for converting fixed-mounted circuit breakers into plug-in/withdrawable circuit breakers, including trip pin							
1 set = 6 units 3-pole A 3VL9 800-4PS30 1 1 unit 113 2.000							
1 set = 8 units 4-pole A 3VL9 800-4PS40 1 1 unit 113 2.660							
Trip pins and springs							
As replacement for plug-in/withdrawable circuit breakers A 3VL9 800-4PF00 1 1 unit 113 0.030							
Auxiliary circuit plug connections for plug-in bases							
Accessory connections for plug-in circuit breakers (factory-wired connectors) and for plug-in bases or withdrawable version (coupling with screw terminal)							
8 terminals A ²⁾ 3VL9 800-4PJ00 1 1 unit 113 0.144							
Position signaling switches							
(connected/disconnected position)							
For plug-in/withdrawable base, 1 changeover contact, max. 2 signaling switches possible A 3VL9 000-4WL00 1 1 unit 113 0.019							

¹⁾ With VL800 (3VL6) to VL1600 (3VL8) as vertical connection.

²⁾ It is recommended to use a maximum of 3 auxiliary circuit plug-in systems per circuit breaker (24 terminals).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

DT	For VL1600 (3VL8) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg

A	3VL9 800-4WA30		1	1 unit	113	39.996
A	3VL9 800-4WA40		1	1 unit	113	47.148
A	3VL9 800-4WC30		1	1 unit	113	40.608
A	3VL9 800-4WC40		1	1 unit	113	47.964
A	3VL9 800-4PS30		1	1 unit	113	2.000
A	3VL9 800-4PS40		1	1 unit	113	2.660
A	3VL9 800-4PF00		1	1 unit	113	0.030
A	2) 3VL9 800-4PJ00		1	1 unit	113	0.144
A	3VL9 000-4WL00		1	1 unit	113	0.019

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

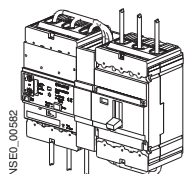
3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Circuit breakers for system protection, only for TM, starters, disconnectors	Rated current I_n	Residual currents I_{Δ} adjustable	Delay time t_d adjustable	Rated operational voltage U_e	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	A	A	s	V AC							kg

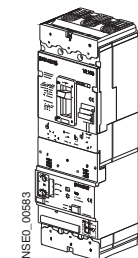
RCD modules

3-pole



VL160X (3VL1)		0.03	Instantaneous								
Bottom mounting ¹⁾³⁾	160	0.10	0.06	127 ... 480	C	3VL9 112-5GA30		1	1 unit	113	1.340
Mounting kit for left side, without RCD ¹⁾²⁾³⁾		0.30	0.10								
		0.50	0.25		A	3VL9 112-5GB30		1	1 unit	113	1.525
		1.00	0.50								
VL160 (3VL2)	160	3.00	1.00	127 ... 480	C	3VL9 216-5GC30		1	1 unit	113	1.320
				230 ... 690	C	3VL9 216-5GD30		1	1 unit	113	1.320
SENTRON VL 160X with RCD module mounted laterally on the circuit breaker (on left side)	VL250 (3VL3)	250		127 ... 480	C	3VL9 325-5GE30		1	1 unit	113	1.400
	VL400 (3VL4)	400		127 ... 480		--		1	1 unit	113	1.400
				230 ... 690		--		1	1 unit	113	1.400

4-pole



VL160X (3VL1)		0.03	Instantaneous								
Bottom mounting ¹⁾³⁾	160	0.10	0.06	127 ... 480	C	3VL9 112-5GA40		1	1 unit	113	1.590
Mounting kit for left side, without RCD ¹⁾²⁾³⁾		0.30	0.10								
		0.50	0.25		A	3VL9 112-5GB40		1	1 unit	113	1.824
		1.00	0.50								
VL160 (3VL2)	160	3.00	1.00	127 ... 480	C	3VL9 216-5GC40		1	1 unit	113	1.570
				230 ... 690	C	3VL9 216-5GD40		1	1 unit	113	1.570
SENTRON VL 160X up to VL400 with RCD module mounted below the circuit breaker	VL250 (3VL3)	250		127 ... 480	C	3VL9 325-5GE40		1	1 unit	113	1.650
	VL400 (3VL4)	400		127 ... 480	C	3VL9 325-5GF40		1	1 unit	113	1.650
				230 ... 690	C	3VL9 440-5GG40		1	1 unit	113	2.980
				230 ... 690	C	3VL9 440-5GH40		1	1 unit	113	2.980

Circuit breakers for system protection, only for TM, starters, disconnectors	Rated current I_n	Residual currents I_{Δ} adjustable	Delay time t_d adjustable	Rated operational voltage U_e	3-pole circuit breakers	4-pole circuit breakers
	A	A	s	V AC	Order No. with "-Z" and additional order code <input type="checkbox"/> <input type="checkbox"/> Code for further versions -Z	Order No. with "-Z" and additional order code <input type="checkbox"/> <input type="checkbox"/> Code for further versions -Z

Circuit breakers with RCD module

3-pole and 4-pole

VL160X (3VL1)		0.03	Instantaneous							
(Bottom mounting)	160	0.10	0.06	127 ... 480	A 0 1 ¹⁾³⁾	x	A 0 1 ¹⁾³⁾	x		x
		0.30	0.10							
		0.50	0.25							
VL160 (3VL2)	160	1.00	0.50	127 ... 480	A 0 1	x	A 0 1	x		x
		3.00	1.00	230 ... 690	A 0 2	x	A 0 2	x		x
SENTRON VL 160X with RCD module mounted laterally on the circuit breaker (on left side)	VL250 (3VL3)	250		127 ... 480	A 0 1	x	A 0 1	x		x
	VL400 (3VL4)	400		127 ... 480	--		A 0 1	x		x
				230 ... 690	--		A 0 2	x		x

x = Additional price

¹⁾ Only the right-hand accessory compartment and the N conductor (4-pole) accessory compartment can be used for the installation of accessories, see [Technical Information at www.siemens.com/lowvoltage/support](http://www.siemens.com/lowvoltage/support).




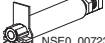




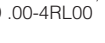








²⁾ The assembly kit consists of the mounting plate, wiring and covers for circuit breakers and RCD module (for 75 mm standard mounting rail). The RCD module (3VL9 112-5GA30/-5GA40) must be ordered separately.

³⁾ VL160X (3VL1) + RCD module cannot be combined with motorized operating mechanism, front operating mechanism, door-coupling rotary operating mechanism, locking device for toggle levers and screw terminal connections (3VL17...-...6-....).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts















Version	DT	For VL160X (3VL1) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Connection methods for fixed-mounted circuit breakers							
3- or 4-pole							
 NSE0_00702a	Front connecting bars¹⁾ Phase barriers included. Standard						
3VL9 .00-4EC40		1 set = 3 units	3-pole	A	3VL9 216-4EC30	1 1 unit	113 0.198
		1 set = 4 units	4-pole	A	3VL9 216-4EC40	1 1 unit	113 0.198
 NSE0_00722	For increased pole spacing						
3VL9 .00-4ED40		1 set = 3 units	3-pole	A	3VL9 216-4ED30	1 1 unit	113 0.189
		1 set = 4 units	4-pole	A	3VL9 216-4ED40	1 1 unit	113 0.252
Rear terminals							
		Short terminal (1 unit)		A	3VL9 100-4RA00	1 1 unit	113 0.126
		Long terminal (1 unit)		A	3VL9 100-4RB00	1 1 unit	113 0.229
		Terminal kit (2 short + 1 long)	3-pole	A	3VL9 100-4RC30	1 1 unit	113 0.481
3VL9 .00-4RA00, 3VL9 .00-4RB00		Terminal kit (2 short + 2 long)	4-pole	A	3VL9 100-4RF40	1 1 unit	113 0.711
		Short flat connector (1 unit)		A	3VL9 100-4RK00	1 1 unit	113 0.104
		Long flat connector (1 unit)		A	3VL9 100-4RL00	1 1 unit	113 0.200
		Flat connector kit (2 short + 1 long)	3-pole	A	3VL9 100-4RM30	1 1 unit	113 0.408
		Flat connector kit (2 short + 2 long)	4-pole	A	3VL9 100-4RN40	1 1 unit	113 0.608
3VL9 .00-4RK00, 3VL9 .00-4RL00		Flat connecting bar (1 unit)		--	--		
		Flat connecting bar		--	--		
		Set = 3 units, 3-pole		--	--		
		Set = 4 units, 4-pole		--	--		
 NSE0_00725							
3VL9 .00-4RG00							
Box terminals							
		For connection for flexible flat copper busbar or cable, see Technical Information at www.siemens.com/lowvoltage/support .					
NSE0_00700a		1 set = 3 units		A	3VL9 100-4TC30	1 1 unit	113 0.084
3VL9 .00-4TC.0		1 set = 4 units		A	3VL9 100-4TC40	1 1 unit	113 0.112
Circular conductor terminals							
 NSE0_01529		Only for cables (Al or Cu) <u>Aluminum terminal (tinned)</u>					
3VL9 .00-4TD.0		1 set = 3 units		A	3VL9 100-4TD30	1 1 unit	113 0.041
		1 set = 4 units		A	3VL9 100-4TD40	1 1 unit	113 0.055
Auxiliary conductor terminals							
 NSE0_00700b		For box terminals/circular conductor terminals 1 set = 10 units		A	3VL9 200-3TN00	1 1 unit	113 0.130
3VL9 .00-4TD.0							
Terminals with screw connection - metric thread							
 NSE0_00701a		With insulator (for rear) for use with busbars and cable lugs, see Technical Information at www.siemens.com/lowvoltage/support .					
3VL9 .00-4TA.0		1 set = 3 units		A	3VL9 116-4TA30	1 1 unit	113 0.055
		1 set = 4 units		A	3VL9 116-4TA40	1 1 unit	113 0.070
 NSE0_00730							
3VL9 .00-3CB.0							
Terminal covers for circuit breakers							
 NSE0_00731		Degree of protection IP30 for main connections 1 set = 2 units					
3VL9 .00-8CE00		Extended	3-pole	A	3VL9 300-8CA30	1 1 unit	113 0.204
		Standard	3-pole	A	3VL9 300-8CB30	1 1 unit	113 0.053
		Extended	4-pole	A	3VL9 300-8CA40	1 1 unit	113 0.264
		Standard	4-pole	A	3VL9 300-8CB40	1 1 unit	113 0.071
Phase barriers for circuit breakers, fixed-mounted, plug-in or withdrawable versions							
		1 set = 2 units		A	3VL9 300-8CE00	1 1 unit	113 0.023

¹⁾ Screw terminal connections are required for SENTRON VL160X and VL160 (3VL1 and 3VL2) circuit breakers, [see Technical Information at www.siemens.com/lowvoltage/support](http://www.siemens.com/lowvoltage/support).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL160 (3VL2) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg			
Connection parts for fixed-mounted circuit breakers										
3- or 4-pole										
	Front connecting bars¹⁾ Phase barriers included.									
3VL9.00-4EC40	Standard									
		1 set = 3 units	3-pole	A	3VL9 216-4EC30	1	1 unit	113	0.198	
		1 set = 4 units	4-pole	A	3VL9 216-4EC40	1	1 unit	113	0.198	
	For increased pole spacing									
3VL9.00-4ED40		1 set = 3 units	3-pole	A	3VL9 216-4ED30	1	1 unit	113	0.189	
		1 set = 4 units	4-pole	A	3VL9 216-4ED40	1	1 unit	113	0.252	
	Rear terminals									
3VL9.00-4RA00,		Short terminal (1 unit)		A	3VL9 200-4RA00	1	1 unit	113	0.126	
3VL9.00-4RB00		Long terminal (1 unit)		A	3VL9 200-4RB00	1	1 unit	113	0.229	
		Terminal kit (2 short + 1 long) 3-pole		A	3VL9 200-4RC30	1	1 unit	113	0.481	
		Terminal kit (2 short + 2 long) 4-pole		A	3VL9 200-4RF40	1	1 unit	113	0.711	
		Short flat connector (1 unit)		A	3VL9 200-4RK00	1	1 unit	113	0.104	
3VL9.00-4RK00,		Long flat connector (1 unit)		A	3VL9 200-4RL00	1	1 unit	113	0.200	
3VL9.00-4RL00		Flat connector kit (2 short + 1 long) 3-pole		A	3VL9 200-4RM30	1	1 unit	113	0.408	
		Flat connector kit (2 short + 2 long) 4-pole		A	3VL9 200-4RN40	1	1 unit	113	0.608	
		Flat connecting bar (1 unit)		--	--					
3VL9.00-4RK00,		Flat connecting bar		--	--					
3VL9.00-4RL00		Set = 3 units, 3-pole		--	--					
		Flat connecting bar		--	--					
		Set = 4 units, 4-pole		--	--					
	Box terminals Connection for flexible flat copper busbar or cable. see Technical Information at www.siemens.com/lowvoltage/support .									
3VL9.00-4RG00		1 set = 3 units		A	3VL9 200-4TC30	1	1 unit	113	0.084	
		1 set = 4 units		A	3VL9 200-4TC40	1	1 unit	113	0.112	
	Circular conductor terminals Only for cables (Al or Cu)									
3VL9.00-4TC.0		<u>Aluminum terminal (tinned)</u>								
		1 set = 3 units		A	3VL9 200-4TD30	1	1 unit	113	0.041	
		1 set = 4 units		A	3VL9 200-4TD40	1	1 unit	113	0.055	
	Multiple feed-in terminals									
3VL9.00-4TD.0		3 units		--	--					
		4 units		--	--					
	Auxiliary conductor terminals									
3VL9.00-4TF.0		For box terminals/circular conductor terminals/multiple feed-in terminals								
		1 set = 10 units		A	3VL9 200-3TN00	1	1 unit	113	0.130	
	Terminal plates¹⁾ Connection for flexible flat copper busbar with auxiliary conductor connection 0.5 – 4 mm ² (extended terminal covers or phase barriers required)									
3VL9.00-4TT.0		1 set = 3 units		--	--					
		1 set = 4 units		--	--					
	Terminals with screw connection - metric thread With insulator (for rear) for use with busbars and cable lugs. see Technical Information at www.siemens.com/lowvoltage/support .									
3VL9.00-4TA.0		1 set = 3 units		A	3VL9 216-4TA30	1	1 unit	113	0.055	
		1 set = 4 units		A	3VL9 216-4TA40	1	1 unit	113	0.070	
	Terminal covers for circuit breakers Degree of protection IP30 for main connections									
3VL9.00-3CB.0		1 set = 2 units								
		Extended	3-pole	A	3VL9 300-8CA30	1	1 unit	113	0.204	
		Standard	3-pole	A	3VL9 300-8CB30	1	1 unit	113	0.053	
		Extended	4-pole	A	3VL9 300-8CA40	1	1 unit	113	0.264	
3VL9.00-8CE00		Standard	4-pole	A	3VL9 300-8CB40	1	1 unit	113	0.071	
	Phase barriers for circuit breakers, fixed-mounted, plug-in or withdrawable versions									
		1 set = 2 units		A	3VL9 300-8CE00	1	1 unit	113	0.023	

¹⁾ Screw terminal connections are required for SENTRON VL160X and VL160 (3VL1 and 3VL2) circuit breakers, [see Technical Information at www.siemens.com/lowvoltage/support](http://www.siemens.com/lowvoltage/support).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts




















DT	For VL250 (3VL3) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL400 (3VL4) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 300-4EC30		1	1 unit	113	0.256	A	3VL9 400-4EC30		1	1 unit	113	0.889
A	3VL9 300-4EC40		1	1 unit	113	0.345	A	3VL9 400-4EC40		1	1 unit	113	1.193
A	3VL9 300-4ED30		1	1 unit	113	0.256	A	3VL9 400-4ED30		1	1 unit	113	0.916
A	3VL9 300-4ED40		1	1 unit	113	0.345	A	3VL9 400-4ED40		1	1 unit	113	1.229
A	3VL9 300-4RA00		1	1 unit	113	0.126	A	3VL9 400-4RA00		1	1 unit	113	0.219
A	3VL9 300-4RB00		1	1 unit	113	0.229	A	3VL9 400-4RB00		1	1 unit	113	0.377
A	3VL9 300-4RC30		1	1 unit	113	0.481	A	3VL9 400-4RC30		1	1 unit	113	0.816
A	3VL9 300-4RF40		1	1 unit	113	0.711	A	3VL9 400-4RF40		1	1 unit	113	1.192
A	3VL9 300-4RK00		1	1 unit	113	0.104	A	3VL9 400-4RK00		1	1 unit	113	0.343
A	3VL9 300-4RL00		1	1 unit	113	0.200	A	3VL9 400-4RL00		1	1 unit	113	0.502
A	3VL9 300-4RM30		1	1 unit	113	0.408	A	3VL9 400-4RM30		1	1 unit	113	1.190
A	3VL9 300-4RN40		1	1 unit	113	0.608	A	3VL9 400-4RN40		1	1 unit	113	1.690
--								--					
--								--					
--								--					
A	3VL9 300-4TC30		1	1 unit	113	0.192	A	3VL9 400-4TC30		1	1 unit	113	0.423
A	3VL9 300-4TC40		1	1 unit	113	0.256	A	3VL9 400-4TC40		1	1 unit	113	0.573
A	3VL9 300-4TD30		1	1 unit	113	0.159	A	3VL9 400-4TD30		1	1 unit	113	0.260
A	3VL9 300-4TD40		1	1 unit	113	0.212	A	3VL9 400-4TD40		1	1 unit	113	0.340
--							A	3VL9 400-4TF30		1	1 unit	113	0.420
--							A	3VL9 400-4TF40		1	1 unit	113	0.560
A	3VL9 300-3TN00		1	1 unit	113	0.150	A	3VL9 400-3TN00		1	1 unit	113	0.140
--								--					
--								--					
A	3VL9 300-4TA30		1	1 unit	113	0.090	A	3VL9 400-4TA30		1	1 unit	113	0.112
A	3VL9 300-4TA40		1	1 unit	113	0.120	A	3VL9 400-4TA40		1	1 unit	113	0.149
A	3VL9 300-8CA30		1	1 unit	113	0.204	A	3VL9 400-8CA30		1	1 unit	113	0.450
A	3VL9 300-8CB30		1	1 unit	113	0.053	A	3VL9 400-8CB30		1	1 unit	113	0.120
A	3VL9 300-8CA40		1	1 unit	113	0.264	A	3VL9 400-8CA40		1	1 unit	113	0.594
A	3VL9 300-8CB40		1	1 unit	113	0.071	A	3VL9 400-8CB40		1	1 unit	113	0.164
A	3VL9 300-8CE00		1	1 unit	113	0.023	A	3VL9 600-8CE00		1	1 unit	113	0.042

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL630 (3VL5) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Connection parts for fixed-mounted circuit breakers							
3- or 4-pole							
 NSE0_00702a 3VL9 .00-4EC40	Front connecting bars Phase barriers included. Standard						
	1 set = 3 units	3-pole	A	3VL9 500-4EC30	1	1 unit	113 1.028
	1 set = 4 units	4-pole	A	3VL9 500-4EC40	1	1 unit	113 1.371
 NSE0_00722 3VL9 .00-4ED40	For increased pole spacing						
	1 set = 3 units	3-pole	A	3VL9 500-4ED30	1	1 unit	113 1.059
	1 set = 4 units	4-pole	A	3VL9 500-4ED40	1	1 unit	113 1.412
Rear terminals							
	Short terminal (1 unit)		--				
	Long terminal (1 unit)		--				
 NSE0_00723 3VL9 .00-4RA00,	Terminal kit (2 short + 1 long) 3-pole		--				
 3VL9 .00-4RB00	Terminal kit (2 short + 2 long) 4-pole		--				
	Short flat connector (1 unit)		--				
	Long flat connector (1 unit)		--				
 NSE0_00724 3VL9 .00-4RK00,	Flat connector kit (2 short + 1 long) 3-pole		--				
 3VL9 .00-4RL00	Flat connector kit (2 short + 2 long) 4-pole		--				
 NSE0_00725 3VL9 .00-4RH30,	Flat connecting bar (1 unit)		A	3VL9 500-4RG00	1	1 unit	113 0.358
 3VL9 .00-4RL00	Flat connecting bar		A	3VL9 500-4RH30	1	1 unit	113 1.075
	Set = 3 units, 3-pole		A	3VL9 500-4RH40	1	1 unit	113 1.433
	Set = 4 units, 4-pole		A	3VL9 500-4RH40	1	1 unit	113 1.433
Multiple feed-in terminals							
Only for cables (Al or Cu)							
Aluminum terminal (tinned)							
 NSE0_00725 3VL9 .00-4RG00	1 set = 3 units		A	3VL9 500-4TG30	1	1 unit	113 0.461
	1 set = 4 units		A	3VL9 500-4TG40	1	1 unit	113 0.614
Auxiliary conductor terminals							
For multiple feed-in terminals							
	1 set = 10 units		A	3VL9 400-3TN00	1	1 unit	113 0.140
Terminal plates¹⁾							
Connection for flexible flat copper busbar with auxiliary conductor connection 0.5 – 4 mm ² (extended terminal covers or phase barriers required)							
 NSE0_01542 3VL9 .00-4TF.0	1 set = 3 units		A	3VL9 500-4TT30	1	1 unit	113 1.350
 NSE0_01543 3VL9 .00-4TF.0	1 set = 4 units		A	3VL9 500-4TT40	1	1 unit	113 1.800
Terminals with screw connection - metric thread							
With insulator (for rear) for use with busbars and cable lugs, see Technical Information at www.siemens.com/lowvoltage/support .							
 NSE0_01530 3VL9 .00-4TT.0	1 set = 3 units		A	3VL9 500-4TA30	1	1 unit	113 0.150
	1 set = 4 units		A	3VL9 500-4TA40	1	1 unit	113 0.200
Terminal covers for circuit breakers							
Degree of protection IP30 for main connections							
	1 set = 2 units						
 NSE0_00701a 3VL9 .00-4TA.0	Extended 3-pole		A	3VL9 600-8CA30	1	1 unit	113 0.696
	Standard 3-pole		A	3VL9 600-8CB30	1	1 unit	113 0.210
	Extended 4-pole		A	3VL9 600-8CA40	1	1 unit	113 0.960
	Standard 4-pole		A	3VL9 600-8CB40	1	1 unit	113 0.270
Phase barriers for circuit breakers, fixed-mounted, plug-in or withdrawable versions²⁾							
 NSE0_00730 3VL9 .00-3CB.0	1 set = 2 units		A	3VL9 600-8CE00	1	1 unit	113 0.042
 NSE0_00731 3VL9 .00-8CE00							

¹⁾ Front connecting bars included in scope of supply; not for 690 V AC/600 V DC.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts




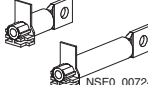

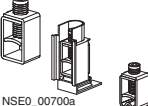
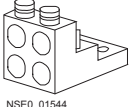



DT	For VL800 (3VL6)	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	DT	For VL1250 (3VL7)	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Order No.					kg		Order No.					kg
A	3VL9 600-4EC30		1	1 unit	113	1.602	A	3VL9 800-4EC30		1	1 unit	113	3.313
A	3VL9 600-4EC40		1	1 unit	113	2.136	A	3VL9 800-4EC40		1	1 unit	113	4.438
A	3VL9 600-4ED30		1	1 unit	113	1.613	--	--					
A	3VL9 600-4ED40		1	1 unit	113	2.154	--	--					
--							--						
--							--						
--							--						
--							--						
--							--						
--							--						
A	3VL9 600-4RG00		1	1 unit	113	1.604	A	3VL9 700-4RG00		1	1 unit	113	1.604
A	3VL9 600-4RH30		1	1 unit	113	4.812	A	3VL9 700-4RH30		1	1 unit	113	4.812
A	3VL9 600-4RH40		1	1 unit	113	6.416	A	3VL9 700-4RH40		1	1 unit	113	6.416
A	3VL9 600-4TG30		1	1 unit	113	0.918	A	3VL9 700-4TG30		1	1 unit	113	2.175
A	3VL9 600-4TG40		1	1 unit	113	1.224	A	3VL9 700-4TG40		1	1 unit	113	2.900
A	3VL9 400-3TN00		1	1 unit	113	0.140	A	3VL9 400-3TN00		1	1 unit	113	0.140
--							--						
--							--						
A	3VL9 600-4TA30		1	1 unit	113	0.289	A	3VL9 800-4TA30		1	1 unit	113	0.319
A	3VL9 600-4TA40		1	1 unit	113	0.386	A	3VL9 800-4TA40		1	1 unit	113	0.426
A	3VL9 600-8CA30		1	1 unit	113	0.696	A	3VL9 800-8CA30		1	1 unit	113	1.060
A	3VL9 600-8CB30		1	1 unit	113	0.210	A	3VL9 800-8CB30		1	1 unit	113	0.360
A	3VL9 600-8CA40		1	1 unit	113	0.960	A	3VL9 800-8CA40		1	1 unit	113	1.326
A	3VL9 600-8CB40		1	1 unit	113	0.270	A	3VL9 800-8CB40		1	1 unit	113	0.470
A	3VL9 600-8CE00		1	1 unit	113	0.042	A	3VL9 800-8CE00		1	1 unit	113	0.130

²⁾ Plug-in version: Not for VL1250 (3VL7),
withdrawable version: Not for VL800 (3VL6) and VL1250 (3VL7).

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

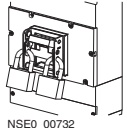
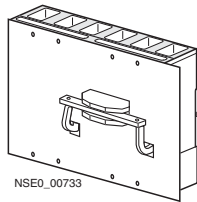
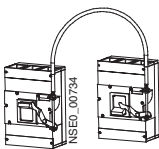
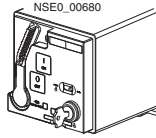
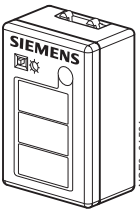
Version	DT	For VL1600 (3VL8) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Connection parts for fixed-mounted circuit breakers							
3- or 4-pole							
Front connecting bars							
Phase barriers included.							
Standard							
 NSE0_00702a 3VL9 .00-4EC40	1 set = 3 units	3-pole	A	3VL9 800-4EC30	1	1 unit	113 3.313 ¹⁾
	1 set = 4 units	4-pole	A	3VL9 800-4EC40	1	1 unit	113 4.438 ¹⁾
For increased pole spacing							
 NSE0_00722 3VL9 .00-4ED40	1 set = 3 units	3-pole	--				
	1 set = 4 units	4-pole	--				
Rear terminals							
 NSE0_00723 3VL9 .00-4RA00, 3VL9 .00-4RB00	Short terminal (1 unit)		--				
	Long terminal (1 unit)		--				
	Terminal kit (2 short + 1 long)		--				
	3-pole		--				
	Terminal kit (2 short + 2 long)		--				
	4-pole		--				
 NSE0_00724 3VL9 .00-4RK00, 3VL9 .00-4RL00	Short flat connector (1 unit)		--				
	Long flat connector (1 unit)		--				
	Flat connector kit (2 short + 1 long)		--				
	3-pole		--				
	Flat connector kit (2 short + 2 long)		--				
	4-pole		--				
 NSE0_00725 3VL9 .00-4RG00	Flat connecting bar (1 unit)		A	3VL9 800-4RG00	1	1 unit	113 1.527
	Flat connecting bar Set = 3 units, 3-pole		A	3VL9 800-4RH30	1	1 unit	113 4.581
	Flat connecting bar Set = 4 units, 4-pole		A	3VL9 800-4RH40	1	1 unit	113 6.108
Box terminals							
For connection for flexible flat copper busbar or cable, see Technical Information at www.siemens.com/lowvoltage/support .							
 NSE0_00700a 3VL9 .00-4TC.0	1 set = 3 units		--				
	1 set = 4 units		--				
Multiple feed-in terminals							
Only for cables (Al or Cu)							
Aluminum terminal (tinned)							
 NSE0_01544 3VL9 .00-4TG.0	1 set = 3 units		--				
	1 set = 4 units		--				
Auxiliary conductor terminals							
For box terminals/aluminum terminals							
Terminals with screw connection - metric thread							
With insulator (for rear) for use with busbars and cable lugs, see Technical Information at www.siemens.com/lowvoltage/support .							
 NSE0_00701a 3VL9 .00-4TA.0	1 set = 3 units		A	3VL9 800-4TA30	1	1 unit	113 0.319
	1 set = 4 units		A	3VL9 800-4TA40	1	1 unit	113 0.426
Terminal covers for circuit breakers							
Degree of protection IP30 for main connections							
1 set = 2 units							
 NSE0_00730 3VL9 .00-3CB.0	Extended		3-pole	A	3VL9 800-8CA30	1	1 unit 113 1.060
	Standard		3-pole	A	3VL9 800-8CB30	1	1 unit 113 0.360
	Extended		4-pole	A	3VL9 800-8CA40	1	1 unit 113 1.326
	Standard		4-pole	A	3VL9 800-8CB40	1	1 unit 113 0.470
 NSE0_00731 3VL9 .00-8CE00	Phase barriers for fixed-mounted circuit breakers						
	1 set = 2 units		A	3VL9 800-8CE00	1	1 unit	113 0.130

¹⁾ In scope of supply of circuit breaker.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

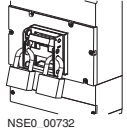
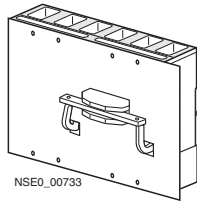
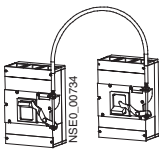
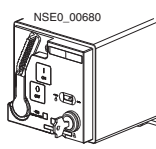
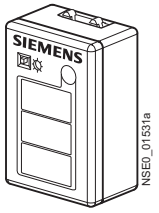
Version	DT	For VL160X (3VL1) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Interlocks							
3- or 4-pole							
 NSE0_00732 3VL9 .00-3HL00		Locking devices for toggle levers For locking the circuit breaker in the "OFF" position. Up to 3 padlocks with Ø 5–8 mm can be used. Removable (padlocks not included)	A	3VL9 300-3HL00	1	1 unit	113 0.052
 NSE0_00733 3VL9 .00-8L.00		Rear interlocking modules For the mechanical interlocking of two adjacent circuit breakers. The circuit breakers must be of the same installation type and size. (Mounting plate not included in scope of supply) Fixed-mounted circuit breakers Plug-in/withdrawable circuit breakers	A A	3VL9 300-8LC00 3VL9 300-8LD00	1 1	1 unit 1 unit	113 0.215 113 0.223
 NSE0_00734 3VL9 .00-8LA00		Interlocking modules for Bowden wire interlocking¹⁾ For the mechanical interlocking of two circuit breakers. Interlocking module for one circuit breaker	A	3VL9 300-8LA00	1	1 unit	113 0.174
		Bowden wires for Bowden wire interlocking¹⁾ Wire length 0.5 m Wire length 1.0 m Wire length 1.5 m	A A A	3VL9 000-8LH10 3VL9 000-8LH20 3VL9 000-8LH30	1 1 1	1 unit 1 unit 1 unit	113 0.206 113 0.298 113 0.412
 NSE0_00680 3VL9 ...-8HA00		Safety lock assembly kits Key can be removed with the circuit breaker in the "OFF" position <u>For front-operated rotary operating mechanisms</u> Lock types Ronis <u>For motorized operating mechanism with stored energy mechanism</u> Lock types Ronis Filli Giussani	A -- A	3VL9 715-8HA00 3VL9 321-8HA00	1 1	1 unit 1 unit	113 0.309 113 0.053
		Sets of fixing screws (metric thread) Including the screws, washers and nuts required to secure a 3- or 4-pole circuit breaker to a prepared surface Set with 4 screws	A	3VL9 300-8SA40	1	1 unit	113 0.030
 NSE0_01531a 3VL9 000-8AP01		Transparent covers for overcurrent releases, sealable To prevent access by unqualified personnel and unauthorized changes to settings (seal not included) Electronic releases Thermal-magnetic	-- A	3VL9 300-8BM00	1	1 unit	113 0.015
		Battery power supply for activating/parameterizing the LCD ETU release, with test function for all IEC and UL ETUs. (two 9 V blocks are required in addition)	--	--	--	--	--

¹⁾ Two interlocking modules and one Bowden wire are required. Cannot be used in conjunction with motorized operating mechanism!

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL160 (3VL2) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Interlocks							
3- or 4-pole							
 NSE0_00732 3VL9 .00-3HL00		Locking devices for toggle levers For locking the circuit breaker in the "OFF" position. Up to 3 padlocks with Ø 5–8 mm can be used. Removable (padlocks not included)	A	3VL9 300-3HL00	1	1 unit	113 0.052
Rear interlocking modules							
For the mechanical interlocking of two adjacent circuit breakers. The circuit breakers must be of the same installation type and size. (Mounting plate not included in scope of supply)							
 NSE0_00733 3VL9 .00-8L.00		Fixed-mounted circuit breakers	A	3VL9 300-8LC00	1	1 unit	113 0.215
		Plug-in/withdrawable circuit breakers	A	3VL9 300-8LD00	1	1 unit	113 0.223
Interlocking modules for Bowden wire interlocking¹⁾							
For the mechanical interlocking of two circuit breakers. Interlocking module for one circuit breaker							
 NSE0_00734 3VL9 .00-8LA00		Combinations with next size up/down possible (see Order No.)	A	3VL9 300-8LA00	1	1 unit	113 0.174
Bowden wires for Bowden wire interlocking¹⁾							
		Wire length 0.5 m	A	3VL9 000-8LH10	1	1 unit	113 0.206
		Wire length 1.0 m	A	3VL9 000-8LH20	1	1 unit	113 0.298
		Wire length 1.5 m	A	3VL9 000-8LH30	1	1 unit	113 0.412
Safety lock assembly kits							
Key can be removed with the circuit breaker in the "OFF" position							
<u>For front-operated rotary operating mechanisms</u>							
Lock types							
		Ronis	A	3VL9 715-8HA00	1	1 unit	113 0.309
 NSE0_00680 3VL9 ...-8HA00		<u>For motorized operating mechanism with stored energy mechanism</u>		--			
		Lock types					
		Ronis	A	3VL9 321-8HA00	1	1 unit	113 0.053
		Filli Giussani	A	3VL9 321-8HA00	1	1 unit	113 0.053
Sets of fixing screws (metric thread)							
Including the screws, washers and nuts required to secure a 3- or 4-pole circuit breaker to a prepared surface							
		Set with 4 screws	A	3VL9 300-8SA40	1	1 unit	113 0.030
Transparent covers for overcurrent releases, sealable							
To prevent access by unqualified personnel and unauthorized changes to settings (seal not included)							
		Electronic releases	A	3VL9 700-8BL00	1	1 unit	113 0.002
		Thermal-magnetic	A	3VL9 300-8BM00	1	1 unit	113 0.015
 NSE0_01531a 3VL9 000-8AP01		Battery power supply for activating/parameterizing the LCD ETU release, with test function for all IEC and UL ETUs (two 9 V blocks are required in addition)	B	3VL9 000-8AP01	1	1 unit	113 0.605

¹⁾ Two interlocking modules and one Bowden wire are required. Cannot be used in conjunction with motorized operating mechanism!

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

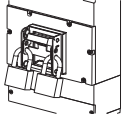
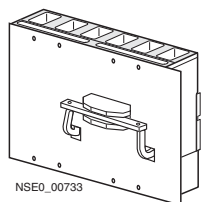
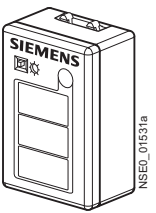
DT	For VL250 (3VL3) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL400 (3VL4) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 300-3HL00		1	1 unit	113	0.052	A	3VL9 400-3HL00		1	1 unit	113	0.122
A	3VL9 300-8LC00		1	1 unit	113	0.215	A	3VL9 400-8LC00		1	1 unit	113	0.386
A	3VL9 300-8LD00		1	1 unit	113	0.223	A	3VL9 400-8LD00		1	1 unit	113	0.436
A	3VL9 300-8LA00		1	1 unit	113	0.174	A	3VL9 400-8LA00		1	1 unit	113	0.196
A	3VL9 000-8LH10		1	1 unit	113	0.206	--						
A	3VL9 000-8LH20		1	1 unit	113	0.298	A	3VL9 000-8LH20		1	1 unit	113	0.298
A	3VL9 000-8LH30		1	1 unit	113	0.412	A	3VL9 000-8LH30		1	1 unit	113	0.412
A	3VL9 715-8HA00		1	1 unit	113	0.309	A	3VL9 715-8HA00		1	1 unit	113	0.309
--							A	3VL9 715-8HA00		1	1 unit	113	0.309
A	3VL9 321-8HA00		1	1 unit	113	0.053	--						
A	3VL9 300-8SA40		1	1 unit	113	0.030	A	3VL9 500-8SA40		1	1 unit	113	0.090
A	3VL9 700-8BL00		1	1 unit	113	0.002	A	3VL9 700-8BL00		1	1 unit	113	0.002
A	3VL9 300-8BM00		1	1 unit	113	0.015	A	3VL9 400-8BM00		1	1 unit	113	0.017
B	3VL9 000-8AP01		1	1 unit	113	0.605	B	3VL9 000-8AP01		1	1 unit	113	0.605

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL630 (3VL5) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Interlocks								
<i>3- or 4-pole</i>								
 NSE0_00732 3VL9...00-3HL00		Locking devices for toggle levers For locking the circuit breaker in the "OFF" position. Up to 3 padlocks with Ø 5–8 mm can be used. Removable (padlocks not included)						
	A	3VL9 600-3HL00		1	1 unit	113	0.130	
 NSE0_00733 3VL9...00-8L.00		Rear interlocking modules For the mechanical interlocking of two adjacent circuit breakers. The circuit breakers must be of the same installation type and size. (Mounting plate not included in scope of supply)						
	A	3VL9 600-8LC00		1	1 unit	113	1.499	
	A	3VL9 600-8LD00		1	1 unit	113	5.076	
		Interlocking modules for Bowden wire interlocking¹⁾ For the mechanical interlocking of two circuit breakers. Interlocking module for one circuit breaker						
	A	3VL9 600-8LA00		1	1 unit	113	0.244	
		Bowden wires for Bowden wire interlocking¹⁾ Wire length 0.5 m						
		Wire length 1.0 m	A	3VL9 000-8LH20	1	1 unit	113	0.298
		Wire length 1.5 m	A	3VL9 000-8LH30	1	1 unit	113	0.412
		Safety lock assembly kits Key can be removed with the circuit breaker in the "OFF" position For front-operated rotary operating mechanisms						
		Lock types						
	A	Ronis		3VL9 715-8HA00	1	1 unit	113	0.309
		For motorized operating mechanism with stored energy mechanism						
	A	Ronis		3VL9 715-8HA00	1	1 unit	113	0.309
		Filli Giussani		--				
		Sets of fixing screws (metric thread) Including the screws, washers and nuts required to secure a 3- or 4-pole circuit breaker to a prepared surface						
	A	Set with 4 screws		3VL9 500-8SA40	1	1 unit	113	0.090
		Transparent covers for overcurrent releases, sealable To prevent access by unqualified personnel and unauthorized changes to settings (seal not included)						
	A	Electronic releases		3VL9 700-8BL00	1	1 unit	113	0.002
	A	Thermal-magnetic		3VL9 600-8BM00	1	1 unit	113	0.019
 NSE0_01531a 3VL9 000-8AP01		Battery power supply for activating/parameterizing the LCD ETU release, with test function for all IEC and UL ETUs (two 9 V blocks are required in addition)						
	B	3VL9 000-8AP01		1	1 unit	113	0.605	

¹⁾ Two interlocking modules and one Bowden wire are required.
Cannot be used in conjunction with motorized operating mechanism.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

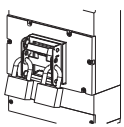
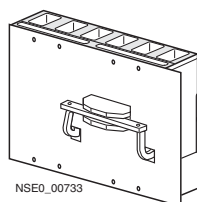
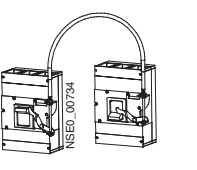
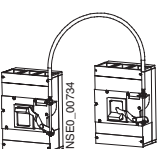
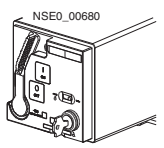
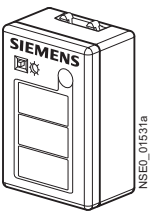
DT	For VL800 (3VL6) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL1250 (3VL7) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 600-3HL00		1	1 unit	113	0.130	A	3VL9 800-3HL00		1	1 unit	113	0.238
A	3VL9 600-8LC00		1	1 unit	113	1.499	A	3VL9 800-8LC00		1	1 unit	113	2.935
A	3VL9 600-8LD00		1	1 unit	113	5.076	A	3VL9 800-8LD00		1	1 unit	113	3.825
A	3VL9 600-8LA00		1	1 unit	113	0.244	A	3VL9 800-8LA00		1	1 unit	113	0.283
A	-- 3VL9 000-8LH20		1	1 unit	113	0.298	A	-- 3VL9 000-8LH30		1	1 unit	113	0.412
A	3VL9 715-8HA00		1	1 unit	113	0.309	A	3VL9 715-8HA00		1	1 unit	113	0.309
A	3VL9 715-8HA00		1	1 unit	113	0.309	A	3VL9 715-8HA00		1	1 unit	113	0.309
A	3VL9 600-8SA40		1	1 unit	113	0.090	A	3VL9 800-8SA40		1	1 unit	113	0.090
A	3VL9 700-8BL00		1	1 unit	113	0.002	A	3VL9 700-8BL00		1	1 unit	113	0.002
B	3VL9 000-8AP01		1	1 unit	113	0.605	B	3VL9 000-8AP01		1	1 unit	113	0.605

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL1600 (3VL8) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Interlocks							
<i>3- or 4-pole</i>							
Locking devices for toggle levers							
For locking the circuit breaker in the "OFF" position. Up to 3 padlocks with Ø 5–8 mm can be used. Removable (padlocks not included)							
 NSE0_00732 3VL9...00-3HL00	A	3VL9 800-3HL00		1	1 unit	113	0.238
Rear interlocking modules							
For the mechanical interlocking of two adjacent circuit breakers. The circuit breakers must be of the same installation type and size.							
Circuit breakers, fixed-mounted ¹⁾							
 NSE0_00733 3VL9...00-8L.00	A	3VL9 800-8LC00		1	1 unit	113	2.935
Plug-in/withdrawable circuit breakers							
	A	3VL9 800-8LD00		1	1 unit	113	3.825
Interlocking modules for Bowden wire interlocking²⁾							
For the mechanical interlocking of two circuit breakers.							
Interlocking module for one circuit breaker							
 NSE0_00734 3VL9...00-8LA00	A	3VL9 800-8LA00		1	1 unit	113	0.283
Bowden wires for Bowden wire interlocking²⁾							
Wire length 0.5 m							
	--						
Wire length 1.0 m							
	--						
Wire length 1.5 m							
 NSE0_00734 3VL9...00-8LA00	A	3VL9 000-8LH30		1	1 unit	113	0.412
Safety lock assembly kits							
Key can be removed with the circuit breaker in the "OFF" position							
<u>For front-operated rotary operating mechanisms</u>							
Lock types							
Ronis							
 NSE0_00680 3VL9...-8HA00	A	3VL9 715-8HA00		1	1 unit	113	0.309
<u>For motorized operating mechanisms</u>							
Lock types							
Ronis							
	A	3VL9 715-8HA00		1	1 unit	113	0.309
Filli Giussani							
	--						
Sets of fixing screws (metric thread)							
Including the screws, washers and nuts required to secure a 3- or 4-pole circuit breaker to a prepared surface							
Set with 4 screws							
	A	3VL9 800-8SA40		1	1 unit	113	0.090
Transparent covers for overcurrent releases, sealable							
To prevent access by unqualified personnel and unauthorized changes to settings (seal not included)							
Electronic releases							
	A	3VL9 700-8BL00		1	1 unit	113	0.002
Thermal-magnetic							
	--						
Battery power supply for activating/parameterizing the LCD ETU release, with test function for all IEC and UL ETUs (two 9 V blocks are required in addition)							
 NSE0_01531a 3VL9 000-8AP01	B	3VL9 000-8AP01		1	1 unit	113	0.605

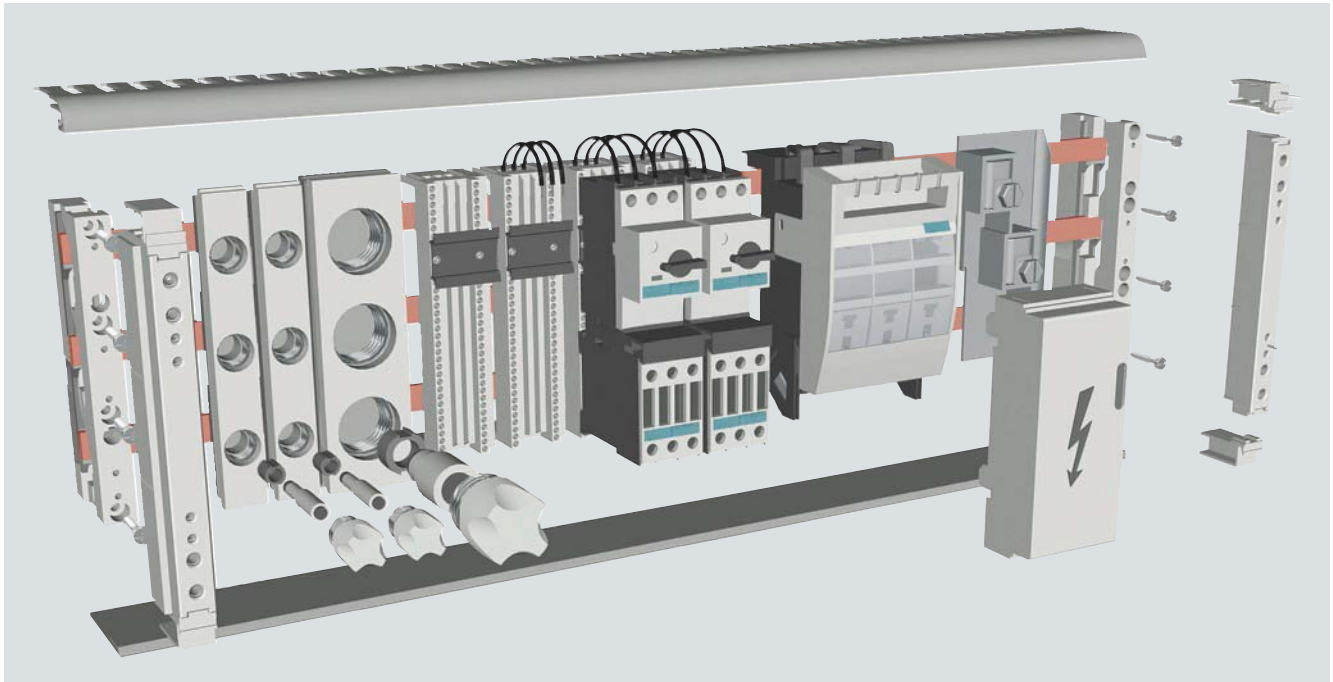
¹⁾ Mounting plate not included in scope of supply.

²⁾ Two interlocking modules and one Bowden wire are required. Cannot be used in conjunction with motorized operating mechanism.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts



Busbar adapter systems with 40 mm or 60 mm busbar center-to-center spacing with components for busbar runs, adapters and switching device holders for individual equipment possibilities, devices with an integrated adapter, as well as accessories and flat copper profiles. Observe the short-circuit strength of the busbar system. Short-circuit strength greater than 50 kA on request.

See also Chapter 17 "SENTRON Switching and Protection Devices for Power Distribution", "SENTRON 8US Busbar Systems".

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

40 mm busbar adapter systems

According to DIN 43870 Part 2 for copper busbars with sharp (DIN 1759) and with rounded (DIN 46433) edges, width 12 mm and 15 mm, thickness 5 mm and 10 mm.

Up to 160 A

Busbar adapters, length 175 mm
 With plug connection tags at top, 3-pole
 With terminal cover (degree of protection IP10)¹⁾
 For one VL160X (3VL1) circuit breaker²⁾
 108 mm wide

A

8US10 11-4SL01

1 1 unit

143

0.585

kg

¹⁾ For degree of protection IP30, the terminal covers on pages 16/77 to 16/82 should be ordered.

²⁾ Usable only for 3VL circuit breakers with line-side box terminals.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

60 mm busbar adapter systems

For copper busbars with sharp (DIN 1759) and with rounded (DIN 46433) edges, width 12 mm to 30 mm, thickness 5 mm and 10 mm, also for T and double-T special profiles

	<p>Up to 160 A Busbar adapters, length 175 mm With plug connection tags at top, 3-pole With terminal cover (degree of protection IP10)¹⁾ For one VL160X/VL160 (3VL1, 3VL2) 108 mm wide A circuit breaker²⁾</p>						
	<p>Up to 250 A Busbar adapters, length 175 mm With plug connection tags at top, 3-pole With terminal cover (degree of protection IP10)¹⁾ For one VL250 (3VL3) circuit breaker 108 mm wide A</p>						
	<p>Up to 400 A Busbar adapters, length 320 mm With threaded inserts M4, M6 and M8 For various types of switching devices, 3-pole Without connecting cables, with M10 terminal screws at top and bottom¹⁾</p>						
	<p>Adapters 185 mm wide A</p>						
	<p>Mounting plates for 8US12 10-4AF00</p>						
	<p>For VL400 (3VL4) circuit breakers (also for VL160X+RCD, VL160, VL250 (3VL1 + RCD, 3VL2, 3VL3) circuit breakers) A</p>						
	<p>For VL630 (3VL5) circuit breakers ($I_n \text{ max} = 580 \text{ V}$) A</p>						
	<p>The connecting cable between adapter and switching device should be manufactured in accordance with the rated current as a round cable, e. g. H07V-R, with a cable lug or as a flat conductor for bolt-type connection M10 (adapter).</p>						

¹⁾ For degree of protection IP30, the terminal covers on pages 16/77 to 16/82 should be ordered.

²⁾ Usable only for 3VL circuit breakers with line-side box terminals.

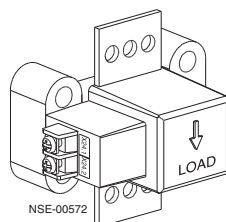
Type	Rated current I_n	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
------	---------------------	----	-----------	--------------	-------------------	-----	----	-----------------------

A

kg

Further accessories

Current transformers (-T6) for N conductor/grounded neutral point of the transformer for ground-fault protection in 4-wire three-phase systems¹⁾



NSE-00572

VL160/3VL2	63, 80	A	3VL9 280-8TC00		1 1 unit		113	0.500
	100	A	3VL9 210-8TC00		1 1 unit		113	0.450
	160	A	3VL9 216-8TC00		1 1 unit		113	0.485
VL250/3VL3	200	A	3VL9 320-8TC00		1 1 unit		113	0.445
	250	A	3VL9 325-8TC00		1 1 unit		113	0.493
VL400/3VL4	315	A	3VL9 440-8TC00		1 1 unit		113	0.493
	400	A	3VL9 440-8TC00		1 1 unit		113	0.493
VL630/3VL5	630	A	3VL9 563-8TC00		1 1 unit		113	0.760
VL800/3VL6	800	A	3VL9 680-8TC00		1 1 unit		113	0.778
VL1250/3VL7	1000	A	3VL9 712-8TC00		1 1 unit		113	2.080
	1250	A	3VL9 712-8TC00		1 1 unit		113	2.080
VL1600/3VL8	1600	A	3VL9 816-8TC00		1 1 unit		113	2.110

¹⁾ Please note the rated current of the circuit breaker.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

General criteria for the selection of current transformers for measurement purposes



4NC53 current transformers

Standards	IEC 60185, DIN VDE 0414 Parts 1 and 2
Window-type current transformers	The conductor to be measured (busbar or cable) is passed through the window opening and constitutes the primary circuit of the window-type current transformer. Pin-wound transformers: An economical solution especially for small primary currents of 5 ... 75 A is achieved when the conductor to be measured is pin-wound several times.
Rated primary current I_{pn}	Current transformers can be continuously loaded with 1.3 times the rated primary current (I_{pn}).
Rated secondary current I_{sn}	
1 A	Particularly suitable for longer measuring leads. Cable losses of only 4 % in contrast to 5 A current transformers.
5 A	5 A current transformers generate 25 times the power losses on measuring leads as compared with 1 A current transformers. These stray losses result in higher power in the case of long cables. Only recommended for use with short measuring leads.
Accuracy class	
Class 1	Operation measurement, internal metering Current error $\pm 1\%$ at $1 \times I_{pn}$ and $1.2 \times I_{pn}$
Class 3	Coarse measurement Current error $\pm 3\%$ at $0.5 \times I_{pn}$ and $1.2 \times I_{pn}$
Rated power P_n	The rated power of transformers is specified in VA. The actual load rating should be similar to the rated power; a lower actual load rating (underburden) increases the overcurrent factor and measuring devices may be damaged in case of a short-circuit, a higher actual load rating (overburden) has a negative effect on the accuracy. With a frequency of 60 Hz the rated power increases to 1.2 times. With $16^{2/3}$ Hz the output power decreases to $1/3$ of the rated power.
Maximum voltage for equipment U_m	This is the rms value of the maximum voltage between the conductors of a system. For this voltage the insulation must be rated at normal operating conditions. 4NC5 current transformers are suitable for 720 V.
Overcurrent limiting factor FS	The overcurrent limiting factor is expressed using the characters FS and a factor, e. g. FS5 or FS10. When a short-circuit current flows through the primary winding of a current transformer, the load on the measuring devices connected to the current transformer is the lower the smaller the overcurrent limiting factor is.
Rated short-time thermal current I_{th}	The rated short-time thermal current I_{th} is the rms value of the primary current with a duration of one second, whose heat effect the current transformer can resist without being damaged in the event of a short-circuited secondary winding.
Rated impulse current I_{dyn}	The rated impulse current I_{dyn} is the highest instantaneous value of the current after a short-circuit whose force the current transformer can resist without being damaged. The rated impulse current is specified as peak value.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

4NC current transformers for measuring purposes

Rated primary current I_{pn}	Rating P_n	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	VA							kg
Classes 1 and 3, from 50 to 1500 A								
Rated secondary current 1A								
Class 3								
<ul style="list-style-type: none"> For circular conductors with max. diameter 17.5 mm For busbars up to max. 12 mm × 10 mm 								
50	2.5	A	4NC51 12-0BC20		1	1 unit	103	0.428
60	2.5	A	4NC51 13-0BC20		1	1 unit	103	0.432
75	2.5	A	4NC51 15-0BC20		1	1 unit	103	0.425
Class 1								
<ul style="list-style-type: none"> For circular conductors with max. diameter 17.5 mm For 1 busbar up to max. 12 mm × 10 mm 								
100	2.5	A	4NC51 17-0CC20		1	1 unit	103	0.335
150	2.5	A	4NC51 21-0CC20		1	1 unit	103	0.327
200	5	A	4NC51 22-0CE20		1	1 unit	103	0.356
250	5	A	4NC51 23-0CE20		1	1 unit	103	0.352
<ul style="list-style-type: none"> For circular conductors with max. diameter 28 mm For 1 busbar up to max. 30 mm × 10 mm For 2 busbars up to max. 25 mm × 5 mm 								
200	5	A	4NC52 22-0CE20		1	1 unit	103	0.464
250	5	A	4NC52 23-0CE20		1	1 unit	103	0.477
300	5	A	4NC52 24-0CE20		1	1 unit	103	0.363
400	5	A	4NC52 25-0CE20		1	1 unit	103	0.373
<ul style="list-style-type: none"> For circular conductors with max. diameter 36 mm For 1 busbar up to max. 50 mm × 10 mm For 2 busbars up to max. 40 mm × 5 mm 								
400	5	A	4NC53 25-0CE20		1	1 unit	103	0.469
500	5	A	4NC53 26-0CE20		1	1 unit	103	0.410
600	5	A	4NC53 27-0CE20		1	1 unit	103	0.424
750	5	A	4NC53 28-0CE20		1	1 unit	103	0.391
<ul style="list-style-type: none"> For circular conductors with max. diameter 45 mm For 1 busbar up to max. 60 mm × 10 mm For 2 busbars up to max. 60 mm × 10 mm For 3 busbars up to max. 60 mm × 5 mm 								
1000	10	A	4NC54 31-0CH20		1	1 unit	103	0.644
1250	10	A	4NC54 33-0CH20		1	1 unit	103	0.667
1500	10	A	4NC54 34-0CH20		1	1 unit	103	0.713



4NC51 12-0BC20



4NC51 17-0CC20



4NC52 22-0CE20



4NC53 25-0CE20



4NC54 31-0CH20

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Rated primary current I_{pn}	Rating P_n	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	VA							kg
Rated secondary current 5 A								
Class 3								
<ul style="list-style-type: none"> For circular conductors with max. diameter 17.5 mm For 1 busbar up to max. 12 mm × 10 mm 								
50	2.5	A	4NC51 12-2BC20		1	1 unit	103	0.426
60	2.5	A	4NC51 13-2BC20		1	1 unit	103	0.430
75	2.5	A	4NC51 15-2BC20		1	1 unit	103	0.431
Class 1								
<ul style="list-style-type: none"> For circular conductors with max. diameter 17.5 mm For 1 busbar up to max. 12 mm × 10 mm 								
100	2.5	A	4NC51 17-2CC20		1	1 unit	103	0.340
150	2.5	A	4NC51 21-2CC20		1	1 unit	103	0.327
200	5	A	4NC51 22-2CE20		1	1 unit	103	0.339
250	5	A	4NC51 23-2CE20		1	1 unit	103	0.345
<ul style="list-style-type: none"> For circular conductors with max. diameter 28 mm For 1 busbar up to max. 30 mm × 10 mm For 2 busbars up to max. 25 mm × 5 mm 								
200	5	A	4NC52 22-2CE20		1	1 unit	103	0.467
250	5	A	4NC52 23-2CE20		1	1 unit	103	0.474
300	5	A	4NC52 24-2CE20		1	1 unit	103	0.356
400	5	A	4NC52 25-2CE20		1	1 unit	103	0.379
<ul style="list-style-type: none"> For circular conductors with max. diameter 36 mm For 1 busbars up to max. 50 mm × 10 mm For 2 busbars up to max. 40 mm × 5 mm 								
400	5	A	4NC53 25-2CE20		1	1 unit	103	0.452
500	5	A	4NC53 26-2CE20		1	1 unit	103	0.406
600	5	A	4NC53 27-2CE20		1	1 unit	103	0.425
750	5	A	4NC53 28-2CE20		1	1 unit	103	0.379
<ul style="list-style-type: none"> For circular conductors with max. diameter 45 mm For 1 busbar up to max. 60 mm × 10 mm For 2 busbars up to max. 60 mm × 10 mm For 3 busbars up to max. 60 mm × 5 mm 								
1000	10	A	4NC54 31-2CH20		1	1 unit	103	0.660
1250	10	A	4NC54 33-2CH20		1	1 unit	103	0.631
1500	10	A	4NC54 34-2CH20		1	1 unit	103	0.669

4NC51 window-type current transformers, used as pin-wound transformers, Classes 1 and 3, from 5 A to 75 A

Pin-winding increases the primary current of the current transformer. Consequently, window-type current transformers can also be used for low primary currents.

Basic type		4NC51 12	4NC51 13	4NC51 15	4NC51 17	4NC51 21	4NC51 22	4NC51 23
Rated primary current	A	50	60	75	100	150	200	250
Rating	VA	2.5	2.5	2.5	2.5	2.5	5	5
Primary current to be measured		Number of required pin windings						
	A	Class 3			Class 1			
	5	10	--	--	--	--	--	--
	10	5	6	--	10	--	--	--
	15	--	4	5	--	10	--	--
	20	--	3	--	5	--	10	--
	25	2	--	3	4	6	8	8
	30	--	2	--	--	5	--	--
	40	--	--	--	--	--	5	--
	50	--	--	--	2	3	4	5
	75	--	--	--	--	2	--	--

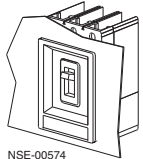

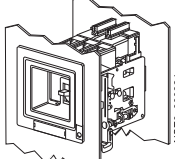


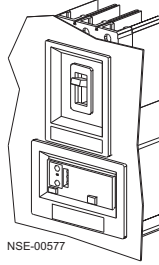
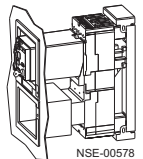
4NC51 used as pin-wound transformer

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

Version	DT	For VL160X (3VL1) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Further accessories							
3- or 4-pole							
Masking frames (cover frames) For door cutouts							
 NSE-00574 Masking frame A	A IP40	Fixed-mounted or plug-in circuit breaker	A	3VL9 300-8BC00	1	1 unit	113 0.038
	B¹⁾ IP40	Fixed-mounted, plug-in or withdrawable circuit breaker with front-operated rotary operating mechanism or motorized operating mechanism	A	3VL9 300-8BG00	1	1 unit	113 0.099
	C IP20	Withdrawable circuit breaker with toggle lever actuation. Assembly kit contains masking frame and extended escutcheon (cannot be used together with a motorized operating mechanism/rotary operating mechanism)	--				
 NSE-00575 Masking frame B	D IP40	Fixed-mounted circuit breaker or plug-in circuit breaker RCD circuit breaker masking frame	A	3VL9 300-8BD00	1	1 unit	113 0.034
		RCD masking frame	A	3VL9 300-8BD00	1	1 unit	113 0.034
	E¹⁾ IP40	circuit breaker with RCD module and front-operated rotary operating mechanism. Assembly kit contains masking frame and extended escutcheon	--				
 NSE0_000924 Masking frame C		circuit breaker with RCD module and motorized operating mechanism. Assembly kit contains masking frame and extended escutcheon	--				

Version	DT	For VL400 (3VL4) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Further accessories							
3- or 4-pole							
Masking frames (cover frames) For door cutouts							
 NSE-00577 Masking frame D	A IP40	Fixed-mounted or plug-in circuit breaker	A	3VL9 400-8BC00	1	1 unit	113 0.027
	B¹⁾ IP40	Fixed-mounted, plug-in or withdrawable circuit breaker with front-operated rotary operating mechanism or motorized operating mechanism	A	3VL9 400-8BG00	1	1 unit	113 0.149
	C IP20	Withdrawable circuit breaker with toggle lever actuation. Assembly kit contains masking frame and extended escutcheon (cannot be used together with a motorized operating mechanism/rotary operating mechanism)	A	3VL9 400-8BH00	1	1 unit	113 0.426
	D IP40	Fixed-mounted circuit breaker or plug-in circuit breaker RCD circuit breaker masking frame	A	3VL9 400-8BC00	1	1 unit	113 0.027
		RCD masking frame	A	3VL9 400-8BD00	1	1 unit	113 0.047
	E¹⁾ IP40	circuit breaker with RCD module and front-operated rotary operating mechanism. Assembly kit contains masking frame and extended escutcheon	A	3VL9 400-8BH00	1	1 unit	113 0.426
 NSE-00578 Masking frame E		circuit breaker with RCD module and motorized operating mechanism. Assembly kit contains masking frame and extended escutcheon	A	3VL9 400-8BJ00	1	1 unit	113 0.395

¹⁾ For withdrawable version IP20.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

DT	For VL160 (3VL2) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL250 (3VL3) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 300-8BC00		1	1 unit	113	0.038	A	3VL9 300-8BC00		1	1 unit	113	0.038
A	3VL9 300-8BG00		1	1 unit	113	0.099	A	3VL9 300-8BG00		1	1 unit	113	0.099
A	3VL9 300-8BH00		1	1 unit	113	0.267	A	3VL9 300-8BH00		1	1 unit	113	0.267
A	3VL9 300-8BD00		1	1 unit	113	0.034	A	3VL9 300-8BD00		1	1 unit	113	0.034
A	3VL9 300-8BD00		1	1 unit	113	0.034	A	3VL9 300-8BD00		1	1 unit	113	0.034
A	3VL9 300-8BH00		1	1 unit	113	0.267	A	3VL9 300-8BH00		1	1 unit	113	0.267
A	3VL9 300-8BJ00		1	1 unit	113	0.230	A	3VL9 300-8BJ00		1	1 unit	113	0.230

DT	For VL630 (3VL5) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	DT	For VL800 (3VL6) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 600-8BC00		1	1 unit	113	0.055	A	3VL9 600-8BC00		1	1 unit	113	0.055
A	3VL9 600-8BG00		1	1 unit	113	0.177	A	3VL9 600-8BG00		1	1 unit	113	0.177
A	3VL9 600-8BH00		1	1 unit	113	0.575	A	3VL9 600-8BH00		1	1 unit	113	0.575
--							--						
--							--						
--							--						
--							--						

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

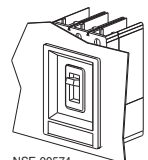
Accessories and spare parts

Version	DT	For VL1250 (3VL7) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---------	----	--------------------------------	-----------------	-------------------------	-----	----	-----------------------------------

Further accessories

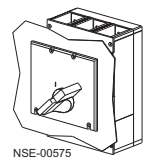
3- or 4-pole

Masking frames (cover frames) For door cutouts



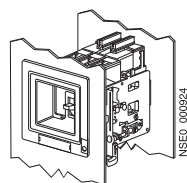
NSE-00574
Masking frame A

A IP40	Fixed-mounted or plug-in circuit breaker	A	3VL9 800-8BC00	1	1 unit	113	0.043
-------------------------	--	---	-----------------------	---	--------	-----	-------



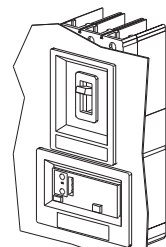
NSE-00575
Masking frame B

B¹⁾ IP40	Fixed-mounted, plug-in or withdrawable circuit breaker with front-operated rotary operating mechanism or motorized operating mechanism	A	3VL9 800-8BG00	1	1 unit	113	0.192
--------------------------------------	--	---	-----------------------	---	--------	-----	-------



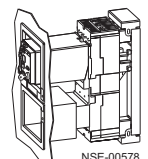
NSE0_000924
Masking frame C

C IP20	Withdrawable circuit breaker with toggle lever actuation. Assembly kit contains masking frame and extended escutcheon (cannot be used together with a motorized operating mechanism/rotary operating mechanism)	A	3VL9 800-8BH00	1	1 unit	113	0.531
-------------------------	---	---	-----------------------	---	--------	-----	-------



NSE-00577
Masking frame D

D IP40	Fixed-mounted circuit breaker or plug-in circuit breaker RCD circuit breaker masking frame RCD masking frame	-- --					
-------------------------	--	----------	--	--	--	--	--



NSE-00578
Masking frame E

E¹⁾ IP40	circuit breaker with RCD module and front-operated rotary operating mechanism. Assembly kit contains masking frame and extended escutcheon circuit breaker with RCD module and motorized operating mechanism. Assembly kit contains masking frame and extended escutcheon	-- --					
--------------------------------------	--	----------	--	--	--	--	--

¹⁾ For withdrawable version IP20.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

DT	For VL1600 (3VL8) Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A	3VL9 800-8BC00		1	1 unit	113	0.043
A	3VL9 800-8BG00		1	1 unit	113	0.192
A	3VL9 800-8BH00		1	1 unit	113	0.531
	--					
	--					

* You can order this quantity or a multiple thereof.

SENTRON 3VL Molded Case Circuit Breakers

3VL Molded Case Circuit Breakers up to 1600 A

Accessories and spare parts

For type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
kg								
Accessories for communication								
3- or 4-pole								
Data transmission through COM20, COM21								
VL160 (3VL2) to VL1600 (3VL8)								
COM20 (PROFIBUS module for SENTRON 3VL) for ETU release with communication function								
Module for connecting the SENTRON 3VL to the PROFIBUS DP, including switching function and Zone Selective Interlocking functionality, connection cable to ETU included in delivery of the ETU, length 1.5 m.			A	3VL9 000-8AU00	1	1 unit	113	1.038
COM21 (MODBUS module for SENTRON 3VL) for ETU release with communication function								
Module for connecting the SENTRON 3VL to the MODBUS, including switching function and Zone Selective Interlocking functionality, connection cable to ETU included in delivery of the ETU, length 1.5 m.			B	3VL9 000-8AV00	1	1 unit	113	1.038
Connection cable ETU – COM20/COM21								
For VL400, length 3 m			A	3VL9 000-8AQ61	1	1 unit	113	0.210
For VL630 ... VL1600, length 3 m			A	3VL9 000-8AQ71	1	1 unit	113	0.210
For VL160 ... VL250, length 3 m			A	3VL9 000-8AQ81	1	1 unit	113	0.210
Addressing plugs								
For assigning the PROFIBUS addresses without using a PC or programming device			A	3UF7 910-0AA00-0	1	1 unit	131	0.030
On COM20/COM21 through the system interface								
Breaker Data Adapter (BDA)¹⁾								
Parameterization, operation, monitoring and diagnostics of SENTRON circuit breakers using the local interface; Breaker Data Adapter, connection cable to the SENTRON 3WL circuit breaker and to the programming device (e. g. notebook); can be run with Internet Explorer with JAVA2 VM 1.4.0-01 and higher			B	3WL9 111-0AT28-0AA0	1	1 unit	103	0.900
BDA Plus¹⁾								
Same as BDA, but with additional Ethernet interface for connection to Ethernet/Intranet/Internet			B	3WL9 111-0AT33-0AA0	1	1 unit	103	1.200
Connection cables for BDA and BDA Plus								
Connection cables for connection of BDA and BDA Plus to LCD ETU release of the SENTRON 3VL circuit breaker; length 1 m			C	3WL9 111-0BC20-0AA0	1	1 unit	103	0.200
Switch ES Power parameterization software								
Calibration, operation, monitoring, and diagnostics of SENTRON circuit breakers via PROFIBUS DP; runs under Windows 95, Windows 98, Windows NT, Windows 2000 and Windows XP Professional, requires additional PROFIBUS card e. g. CP5613			A	3ZS2 311-0CC10-0YA0	1	1 unit	133	0.200

¹⁾ A 24 V DC power supply unit is required.

Communication:

- For molded case circuit breakers with communication function see pages 16/12 to 16/28 and 16/40 to 16/50.
- For more information see also Chapter 13 "Power Management System" and Chapter 18 "Software for Power Distribution".

More information

Manual for the SENTRON 3VL circuit breakers

This manual contains additional technical information, covering a product description, mode of operation, electrical wiring system and retrofitting.

The manual and operating instructions are available in PDF format at:

www.siemens.com/lowvoltage/manuals

SENTRON manual for communication solutions

Free download from www.siemens.com/lowvoltage/manuals

See also Chapter 15 "SENTRON Switching and Protection Devices - Air Circuit Breakers", "3WL Air Circuit Breakers", "3WL Air Circuit Breakers/Non-Automatic Air Circuit Breakers up to 6300 A(AC)", "Accessories and Spare Parts".

3VF2 Molded Case Circuit Breakers

3VF2 Molded Case Circuit Breakers up to 100 A

3-pole, fixed-mounted versions

Selection and ordering data



Making/breaking capacity class A			
Rated ultimate short-circuit breaking capacity I_{cu}	Up to 240 V	kA	65
	Up to 415 V	kA	18
Rated service short-circuit breaking capacity I_{cs}	Up to 240 V	kA	33
	Up to 415 V	kA	9
Rated short-circuit making capacity I_{cm}	Up to 240 V	kA	143
	Up to 415 V	kA	36

Rated current I_n	Current setting of the inverse-time delayed overload release "L" I_r	Operating current of instantaneous short-circuit release "I" I_i	DT	VF100 circuit breakers Making/breaking capacity class A	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	A	A		Order No.	Price per PU			kg

3VF2 circuit breakers, up to 18 kA

System protection, TM

With non-adjustable thermal overload releases



16	16	350	A	3VF22 13-0FC41-0AA0	1	1 unit	113	0.948
20	20	450	A	3VF22 13-0FD41-0AA0	1	1 unit	113	0.953
25	25	500	A	3VF22 13-0FE41-0AA0	1	1 unit	113	0.961
32	32	600	A	3VF22 13-0FG41-0AA0	1	1 unit	113	0.949
40	40	750	A	3VF22 13-0FJ41-0AA0	1	1 unit	113	0.973
45	45	750	A	3VF22 13-0FK41-0AA0	1	1 unit	113	0.960
50	50	800	A	3VF22 13-0FL41-0AA0	1	1 unit	113	0.963
63	63	800	A	3VF22 13-0FN41-0AA0	1	1 unit	113	0.967
70	70	900	A	3VF22 13-0FP41-0AA0	1	1 unit	113	0.980
80	80	900	A	3VF22 13-0FQ41-0AA0	1	1 unit	113	0.976
90	90	1000	A	3VF22 13-0FR41-0AA0	1	1 unit	113	0.968
100	100	1000	A	3VF22 13-0FS41-0AA0	1	1 unit	113	0.977

4-pole, fixed-mounted versions

Selection and ordering data



Making/breaking capacity class A			
Rated ultimate short-circuit breaking capacity I_{cu}	Up to 240 V	kA	65
	Up to 415 V	kA	18
Rated service short-circuit breaking capacity I_{cs}	Up to 240 V	kA	33
	Up to 415 V	kA	9
Rated short-circuit making capacity I_{cm}	Up to 240 V	kA	143
	Up to 415 V	kA	36

Rated current I_n	Current setting of the inverse-time delayed overload release "L" I_r	Operating current of instantaneous short-circuit release "I" I_i	DT	VF100 circuit breakers Making/breaking capacity class A	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	A	A		Order No.	Price per PU			kg

3VF2 circuit breakers, up to 18 kA

System protection, TM

With non-adjustable thermal overload releases, with overload and short-circuit release in the 4th pole (N = 100 %).



16	16	350	A	3VF22 14-0JC41-0AA0	1	1 unit	113	1.299
20	20	450	A	3VF22 14-0JD41-0AA0	1	1 unit	113	1.271
25	25	500	A	3VF22 14-0JE41-0AA0	1	1 unit	113	1.252
32	32	600	A	3VF22 14-0JG41-0AA0	1	1 unit	113	1.257
40	40	750	A	3VF22 14-0JJ41-0AA0	1	1 unit	113	1.300
45	45	750	A	3VF22 14-0JK41-0AA0	1	1 unit	113	1.299
50	50	800	A	3VF22 14-0JL41-0AA0	1	1 unit	113	1.272
63	63	800	A	3VF22 14-0JN41-0AA0	1	1 unit	113	1.277
70	70	900	A	3VF22 14-0JP41-0AA0	1	1 unit	113	1.299
80	80	900	A	3VF22 14-0JQ41-0AA0	1	1 unit	113	1.288
90	90	1000	A	3VF22 14-0JR41-0AA0	1	1 unit	113	1.295
100	100	1000	A	3VF22 14-0JS41-0AA0	1	1 unit	113	1.299

* You can order this quantity or a multiple thereof.

3VF2 Molded Case Circuit Breakers

3VF2 Molded Case Circuit Breakers up to 100 A

Accessories and spare parts

Selection and ordering data

For 3VF2 circuit breakers

Operating mechanisms	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Operating mechanisms							
Front-operated rotary operating mechanisms							
For direct mounting on circuit breakers Degree of protection IP30, black knob Max. 3 padlocks	A	3VF9 223-1AA00		1	1 unit	113	0.232
EMERGENCY-STOP version Red knob, yellow indicator plate	A	3VF9 223-1BA00		1	1 unit	113	0.232
Version with shaft stub, without knob (8UC61 operating mechanism required, see below)	A	3VF9 223-1JA00		1	1 unit	113	0.204
Door-coupling rotary operating mechanisms							
Standard version, black	B	8UC71 12-1BD22		1	1 unit	103	0.417
EMERGENCY-STOP version, red/yellow	B	8UC71 22-3BD22		1	1 unit	103	0.402
To be ordered separately: front-operated rotary operating mechanism with shaft stub	A	3VF9 223-1JA00		1	1 unit	113	0.204
Connection components, covers							
3VF22 rear terminals							
For 45 to 100 A (for cover, see below)							
For 3-pole circuit breakers 1 set = 6 units	A	3VF9 224-1LD10		1	1 unit	113	0.252
For 4-pole circuit breakers 1 set = 8 units	A	3VF9 224-1LD20		1	1 unit	113	0.333
Terminal covers							
For main circuit connection, cable connection							
For 3-pole circuit breakers 1 set = 2 units	A	3VF9 224-1NB10		1	1 unit	113	0.063
For 4-pole circuit breakers 1 set = 2 units	A	3VF9 224-1NB20		1	1 unit	113	0.079
Covers with cap dimension 45 mm							
For distribution boards							
For 3-pole circuit breakers	A	3VF9 220-1CA10		1	1 unit	113	0.019
For 4-pole circuit breakers	A	3VF9 220-1CA20		1	1 unit	113	0.021
Cover frames for door cutout							
For circuit breakers 1 set = 1 unit	A	3VF9 220-1AA00		1	1 unit	113	0.048
Shunt releases¹⁾							
<i>Version with terminal blocks</i>							
Shunt releases							
50/60 Hz AC	DC						
--	24 V	A	3VF9 221-1JD10	1	1 unit	113	0.297
110-127 V	--	A	3VF9 221-1JP10	1	1 unit	113	0.292
220-240 V	--	A	3VF9 221-1JM10	1	1 unit	113	0.311
380-415 V	--	A	3VF9 221-1JV10	1	1 unit	113	0.282
Shunt releases with auxiliary switch 1 CO							
50/60 Hz AC	DC						
--	24 V	A	3VF9 221-1KD10	1	1 unit	113	0.302
110-127 V	--	A	3VF9 221-1KP10	1	1 unit	113	0.300
220-240 V	--	A	3VF9 221-1KM10	1	1 unit	113	0.288
380-415 V	--	A	3VF9 221-1KV10	1	1 unit	113	0.297
Auxiliary switches and alarm switches¹⁾							
<i>Version with terminal blocks</i>							
Tripped signaling/alarm switches							
1 CO		A	3VF9 222-1AC10	1	1 unit	113	0.240
Alarm switches (AS) and auxiliary switches (HS)							
1 CO (AS) + 1 CO (HS)		A	3VF9 222-1DC10	1	1 unit	113	0.243
Auxiliary switch							
1 CO		A	3VF9 222-1BC10	1	1 unit	113	0.275
2 CO		A	3VF9 222-1CC10	1	1 unit	113	0.235

¹⁾ Only one accessory part possible per 3VF2 circuit breaker; mounting on left side of circuit breaker.

SENTRON Switching and Protection Devices – Switch Disconnectors, 8US Busbar Systems

17



Technical Information

is available at www.siemens.com/lowvoltage/support

under Product List:
- Technical specifications

under Entry List:
- Updates
- Downloads
- FAQ
- Manuals/operating instructions
- Characteristic curves
- Certificates

and at www.siemens.com/lowvoltage/configurators

- Configurators

17/2 Introduction

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

- 17/3 General data
- 17/6 Front mounting
- 17/11 Floor mounting
- 17/16 Distribution board mounting
- 17/18 Molded-plastic enclosures
- 17/20 DC applications
- 17/21 Accessories
- SENTRON 3KA, 3KE switch disconnectors up to 1000 A

- 17/26 General data
- 17/29 Floor mounting
- 17/34 Molded-plastic enclosures
- 17/35 Accessories

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

- 17/38 General data
- 17/40 Floor mounting
- 17/42 Front mounting
- 17/43 Accessories

SENTRON 3KM Switch Disconnectors with Fuses and Isolating Plug Connector up to 400 A

- 17/47 General data
- 17/49 For snapping onto busbars
- 17/50 Accessories
- 8UC Door-Coupling Rotary Operating Mechanisms

- 17/52 For 3K switch disconnectors
- 17/56 Individual parts
- 17/57 Operating mechanisms for fixed mounting

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses

- 17/58 - General data
- 17/61 - For LV HRC fuse links
- 17/62 - For BS fuse links
- 17/63 - For LV HRC and BS fuse links
- 17/72 - Accessories

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications, power distribution

- 17/79 - General data
- 17/82 - Floor mounting
- 17/84 - For 40 mm busbar system
- 17/86 - For 60 mm busbar system
- 17/88 - Accessories

3NP5 for extended technical requirements

- 17/96 - General data
- 17/98 - Floor mounting
- 17/99 - For 40 mm busbar system
- 17/99 - For 60 mm busbar system
- 17/100 - With fuse monitoring
- 17/104 - Accessories
- 17/107 - Assembly kits for distribution systems

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

- 17/108 General data
- 17/111 1-pole switchable
- 17/112 3-pole switchable
- 17/113 Accessories

ET B1¹⁾ LV HRC fuse links

ET B1¹⁾ SITOR Semiconductor Fuses, LV HRC design

SENTRON 8US Busbar Systems

Introduction

- 17/118 General data
- 40 mm Busbar System
- 17/120 General data
- 17/121 Base assemblies
- 17/122 Infeed and connection components
- 17/123 Busbar adapters and device holders
- 17/126 Accessories
- 60 mm Busbar System
- 17/127 General data
- 17/128 Base assemblies up to 630 A
- 17/131 Base assemblies up to 1600 A
- 17/132 Infeed and connection components
- 17/134 Busbar adapters and device holders
- 17/138 Bus-mounting fuse bases
- 17/139 Accessories

¹⁾ See Catalog ET B1 "BETA Low-Voltage Circuit Protection".

Introduction

Overview

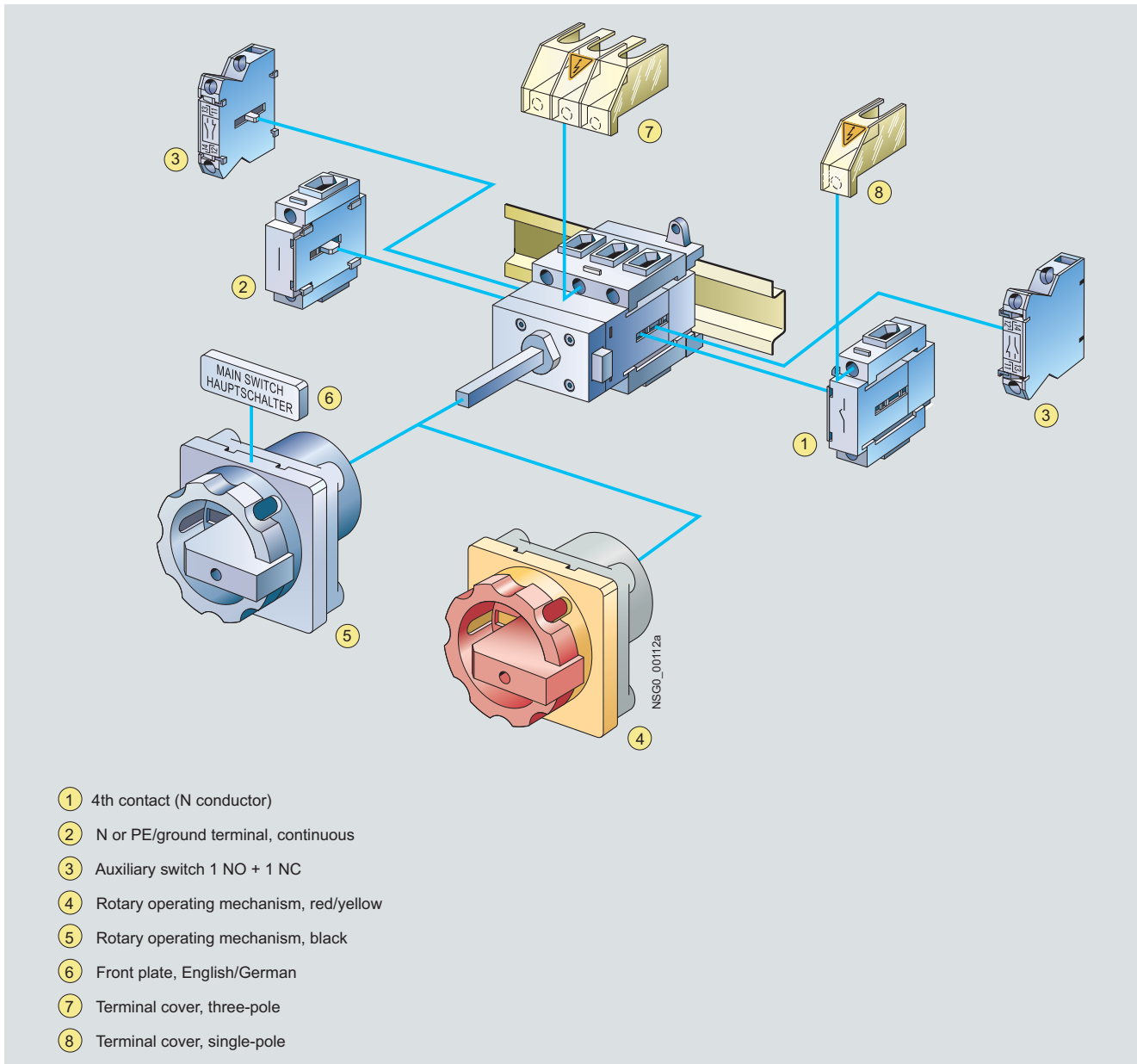
		Order No.	Page
Switch disconnectors			
	<p>Main and EMERGENCY-STOP switches 16 A to 250 A</p> <ul style="list-style-type: none"> • Devices for front mounting, floor mounting with door-coupling rotary operating mechanism, distribution board mounting or in molded-plastic enclosures • Front mounting with four-hole and center hole arrangement • 3, 4 and 6-pole versions • 3 and 4-pole load transfer switches • Solar plant isolators 800 V DC 	3LD	17/3
	<p>Switch disconnectors 63 A to 1000 A</p> <ul style="list-style-type: none"> • Devices for floor mounting with handle, with door-coupling rotary operating mechanism, in molded-plastic enclosures and for mounting in control cabinet side panels • 3 and 4-pole versions • Accessories for use as load transfer switches and parallel switches 	3KA/3KE	17/26
Switch disconnectors with fuses			
	<p>Switch disconnectors with fuses up to 800 A</p> <ul style="list-style-type: none"> • Devices for floor mounting with door-coupling rotary operating mechanism and for mounting in control cabinet side panels • 3KM versions with isolating plug connector for mounting on vertical busbars • 3 and 4-pole versions • Suitable for NH and BS 88 fuse systems 	3KL 3KM	17/38 17/47
	<p>In-line switch disconnectors with fuses, plug-in type, up to 630 A</p> <ul style="list-style-type: none"> • 3 and 4-pole versions • Suitable for NH and BS 88 fuse systems • Manually operated or with motorized operating mechanism • Optionally with integrated current transformers, auxiliary switches and electronic fuse monitoring 	3NJ62	17/58
Fuse switch disconnectors			
	<p>Fuse switch disconnectors up to 630 A</p> <ul style="list-style-type: none"> • Connection components are available for flat connection, saddle-type terminal connection, prism terminal connection and box terminal connection • Electromechanical and electronic fuse monitoring with/without network monitoring function • Mounting variants for floor mounting and 40/60 mm busbar system 	3NP1 / 3NP5	17/79
	<p>In-line fuse switch disconnectors up to 2000 A</p> <ul style="list-style-type: none"> • 1- and 3-pole switchable versions • Versions for secondary-side fusing of transformers • Connection components are available for flat connection, stud bolt connection, saddle-type terminal connection, prism terminal connection and box terminal connection • Versions with/without integratable current transformer • Versions with/without electronic fuse monitoring 	3NJ4/3NJ5	17/108
Busbar systems			
	<ul style="list-style-type: none"> • Systems for 40 mm and 60 mm busbar center-to-center clearance • 1, 2, 3, 4 and 5-pole systems • For flat copper bars and special profiles up to 1600 A • Versions for IEC and UL applications 	8US	17/118

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

General data

Overview



The 3LD main and EMERGENCY-STOP switches are manually operated switch disconnectors according to IEC 60947-3/VDE 0660 Part 107 (EN 60947-3) and comply with the conditions for switch disconnectors.

In EN 60204-1 (VDE 0113 Part 1), main control switches are called "disconnector units", while EMERGENCY-STOP switches are termed "devices for emergency shutdown".

The 3LD switches for 16 to 125 A are approved according to UL 508 and can be used as "manual motor controllers" and "motor disconnects".

UL 508 approval of 3LD switches for 160 and 250 A is under application.

Maintenance personnel can protect themselves against unauthorized startup with padlocks (up to three can be fitted).

The 3LD switches can be used in any mounting position.

Application

The 3LD switches are used for switching main and auxiliary circuits, but also for switching induction motors and other loads during maintenance and repair work.

They can be used as:

- ON-OFF switches
- EMERGENCY-STOP switches
- Main control switches according to EN 60204-1.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

General data

Switch construction

Construction of the contacts

Each switch has three adjacent contact elements¹⁾. A fourth leading contact for switching the N conductor, a continuous PE terminal, an auxiliary switch (1 NO + 1 NC) can be fitted to each side of the switch. The auxiliary switches operate as leading contacts on opening. On opening, the NO contact opens before the main contacts, so that a contactor carries the switching capacity in the circuit and the maintenance or safety switch switches at zero current. On closing, the auxiliary switch switches later than or at the same time as the main contacts.

Construction of rotary operating mechanisms

The rotary operating mechanisms of the switches for front or floor mounting are mounted on control cabinet doors, front or side panels with four-hole or center-hole mounting with a standard diameter of 22.5 mm and operated from the outside. In their Off position, they can be locked with up to three padlocks with a hasp thickness of 8 mm. Controls with defeatable door-coupling rotary operating mechanism are available in addition.

- **Switch position indicator:**
The switch position is clearly marked with direction arrows and an "O" for OFF and a "I" for ON at the front.
- **Switches for front mounting:**
The switches for front mounting are connected directly to the rotary operating mechanism through the fixing screws or - in the case of center-hole mounting - a special-purpose coupling.
- **Switches for floor mounting:**
The switches for floor mounting are snapped onto 35 mm standard mounting rails according to EN 60715 or screw-mounted on mounting plates. The actuators are connected to the lower section of the switch through a door coupling, which can be released in its zero position, and a 300 mm long switch shaft. When the control cabinet door is open, the switch can be protected against inadvertent operation by removing the switch shaft from the lower section of the switch. The mounting depth can be adapted to individual requirements by adjusting the switch shaft length.
- **Switches for distribution board mounting:**
The switches for distribution board mounting are suited for operation in switchboards and for switching inside control cabinets or distributors. They have cap and mounting dimensions to DIN 43880 and can be fitted under the same cover together with miniature circuit breakers. The selector switches can be locked in their Off position with up to 2 padlocks with a hasp thickness of 6 mm.
- **Switches in molded-plastic enclosure:**
For surface mounting of individual main and EMERGENCY-STOP switches, molded plastic-enclosed switches to degree of protection IP65 are used. The actuators can be locked in their Off position with three padlocks with a hasp thickness of 8 mm. The molded-plastic enclosures each contain an N and/or a PE terminal.

¹⁾ 16 A versions have four contact elements; 3-pole changeover switches and 6-pole main control switches have six contact elements.



3LD2 704-0TK53 switch for front mounting with rotary operating mechanism



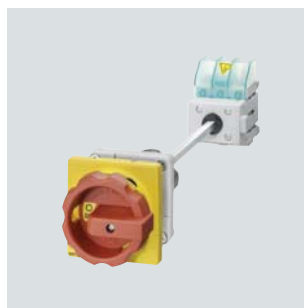
3LD2 222-0TK1 switch for front mounting with knob



3LD2 122-7UK01 3-pole changeover switch for front mounting with knob



3LD2 103-3VK53 6-pole switch for front mounting with rotary operating mechanism



3LD2 144-0TK53 switch for floor mounting with rotary operating mechanism and door coupling



3LD2 530-0TK11 switch for distribution board mounting with knob



3LD2 264-0TB5 switch in molded-plastic enclosure



3LD2 217-1TL13 switch for front mounting with rotary operating mechanism and defeatable door coupling



3LD2 265-8VQ51-0AF6 solar plant isolator



3LD2 217-1TL13 switch for floor mounting, 250 A, with rotary operating mechanism and door coupling

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

General data

More information

Standards		DIN VDE 0660, IEC 60947								
Switches		Type	3LD2 0	3LD2 1	3LD2 2	3LD2 5	3LD2 7	3LD2 8	3LD2 3	3LD2 4
Number of contacts			3/4							
Rated insulation voltage U_i		V	690							
Rated operational voltage U_e		V AC	690							
Rated frequency		Hz	50 ... 60							
Rated impulse withstand voltage U_{imp}		V	690	690	690	690	690	690	690	690
Rated short-time withstand current (1 s current, rms value)		A	340	640	640	1260	2000	2000	4000	4000
Short-circuit protection, max. back-up fuse (gL)		A	20	25	40	63	100	125	160	250
Rated uninterrupted current I_u		A	16	25	32	63	100	125	160	250
AC-21A load-break switch	Rated operational current I_e	A	16	25	32	63	100	125	160	250
AC-3 motor load switches	Rating									
In-service switching of individual motors	At 220 V ... 240 V	kW	3.0	4.0	5.5	11.0	18.5	22.0	35.0	55.0
	At 380 V ... 440 V	kW	5.5	7.5	9.5	18.5	30.0	37.0	50.0	110.0
	At 660 V/690 V	kW	5.5	7.5	9.5	15.0	22.0	30.0	37.0	45.0
AC-23A main control switch	Rating									
Repair switch	At 220 V ... 240 V	kW	4.0	5.0	6.0	11.0	18.5	22.0	45.0	75.0
frequent, but not in-service switching of individual motors	At 380 V ... 440 V	kW	7.5	9.5	11.5	22.0	37.0	45.0	75.0	132.0
	At 660 V/690 V	kW	7.5	9.5	11.5	18.5	30.0	37.0	45.0	55.0
Power loss per conducting path at I_e		W	0.5	1.1	1.8	4.5	7.5	12.0	36.0	36.0
Endurance mechanical	Operating cycles		100 000							
Switching frequency		1/h	50							
Permissible ambient temperature		°C	-25 ... +55							
Isolating features		Up to max.	V 690							
Conductor cross-sections for main conductors ¹⁾										
Solid or stranded		mm ²	1 ... 6	1.5 ... 16	1.5 ... 16	2.5 ... 35	4 ... 50	4 ... 50	16 ... 185	16 ... 185
Finely stranded with end sleeve (max.)		mm ²	4	10	10	16	35	35	150	150
Conductor cross-sections	Copper cable	AWG	18 ... 10	14 ... 8	14 ... 8	14 ... 6	12 ... 1	12 ... 1		
Torque for terminal		Nm	1.5 ... 2	2 ... 2.5	2 ... 2.5	2.5 ... 3	2.5 ... 3	2.5 ... 3	9.5 ... 10	9.5 ... 10
Touch protection acc. to EN 50274			Yes							
Auxiliary switches										
Rated insulation voltage U_i		V	500							
Rated operational voltage U_e		V AC	500							
Rated uninterrupted current I_u		A	10							
Rated operational current I_e , AC-15	At 120 V	A	6							
	At 220 V ... 240 V	A	3							
	At 380 V ... 415 V	A	1.8							
	At 500 V	A	1.4							
Short-circuit protection, auxiliary switch, max. back-up fuse (gL/gG)		A	10							
Conductor cross-sections for auxiliary conductors										
Connection type			Terminals							
Solid or stranded		mm ²	2 × (0.75 ... 2.5), 1 × 4							
Finely stranded with end sleeve		mm ²	2 × (0.75 ... 1.5) 1 × 2.5							
Torque for terminal		Nm	0.8							

SENTRON 3LD main and EMERGENCY-STOP switches for UL/CSA

Standards		UL/CSA								
Switches		Type	3LD2 0	3LD2 1	3LD2 2	3LD2 5	3LD2 7	3LD2 8	3LD2 3	3LD2 4
Rated operational voltage U_e		V AC	600	600	600	600	600	600	--	--
Rated uninterrupted current I_u		A	10	20	30	60	100	125	--	--
Conventional thermal current I_{th}	Current rating		A 600	A 600	A 600	--	--	--	--	--
	Pilot duty	A	P 600	P 600	P 600	63	100	125	--	--
Maximum rated power (AC-3) AC motors 40 Hz ... 60 Hz (HP = PS)	3 ~ 120 V	240 V	HP 1	3	3	5	10	15	--	--
		480 V	HP 3	7.5	10	15	30	40	--	--
		480 V	HP 7.5	10	20	40	60	75	--	--
		600 V	HP 10	15	30	50	75	100	--	--
	1 ~ 120 V	240 V	HP 0.5	2	2	3	--	--	--	--
		HP 1.5	3	3	10	--	--	--	--	
Conductor cross-sections		Cu cable	AWG 18 ... 10	14 ... 8	14 ... 8	14 ... 6	12 ... 1	12 ... 1	--	--
Torque			Nm 1.5 ... 2	2 ... 2.5	2 ... 2.5	2.5 ... 3	2.5 ... 3	2.5 ... 3	--	--

¹⁾ Depending on the cable infeed, only small cross-sections are possible with devices in molded-plastic enclosures

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Front mounting

Selection and ordering data

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-3	P/AC-23A	I_{th} /AC-21A							kg
		kW	kW	A							

Main and EMERGENCY-STOP switches with rotary operating mechanism/knob-operated mechanism

- Lockable in 0 position with up to 3 padlocks
- Degree of protection at front side IP65
- All versions with rotary operating mechanism
Exception: 3LD2 3 and 3LD2 4 with knob-operated mechanism
- Including terminal cover for the infeed side
- Front plate:
 - 3LD2 0, 3LD2 1, 3LD2 2: 67 mm × 67 mm
 - 3LD2 0, 3LD2 1, 3LD2 2: 67 mm × 67 mm
 - 3LD2 3 to 3LD2 4: 96 mm × 96 mm

Four-hole mounting



3LD2 203-0TK51



3LD2 704-0TK53

3	--	5.5	7.5	16	▶	3LD2 003-0TK5□		1	1 unit	103	0.207
		7.5	9.5	25	▶	3LD2 103-0TK5□		1	1 unit	103	0.206
		9.5	11.5	32	▶	3LD2 203-0TK5□		1	1 unit	103	0.206
		18.5	22.0	63	▶	3LD2 504-0TK5□		1	1 unit	103	0.424
		30	37.0	100	▶	3LD2 704-0TK5□		1	1 unit	103	0.501
		37	45.0	125	A	3LD2 804-0TK5□		1	1 unit	103	0.503
		50	75.0	160	A	3LD2 305-0TK1□		1	1 unit	103	2.100
		110	132.0	250	A	3LD2 405-0TK1□		1	1 unit	103	2.100
3 + N	--	5.5	7.5	16	▶	3LD2 003-1TL5□		1	1 unit	103	0.217
		7.5	9.5	25	A	3LD2 103-1TL5□		1	1 unit	103	0.243
		9.5	11.5	32	A	3LD2 203-1TL5□		1	1 unit	103	0.243
		18.5	22.0	63	A	3LD2 504-1TL5□		1	1 unit	103	0.424
		30.0	37.0	100	▶	3LD2 704-0TK5□ + ¹⁾		1	1 unit	103	0.501
					▶	3LD9 280-0B		1	1 unit	103	0.101
		37.0	45.0	125	A	3LD2 804-0TK5□ + ¹⁾		1	1 unit	103	0.503
					▶	3LD9 280-0B		1	1 unit	103	0.101
3	1 NO + 1 NC	5.5	7.5	16	A	3LD2 003-1TP5□		1	1 unit	103	0.250
		7.5	9.5	25	A	3LD2 103-1TP5□		1	1 unit	103	0.249
		9.5	11.5	32	A	3LD2 203-1TP5□		1	1 unit	103	0.206
		18.5	22.0	63	A	3LD2 504-1TP5□		1	1 unit	103	0.424
		30.0	37.0	100	A	3LD2 704-1TP5□		1	1 unit	103	0.503
		37	45.0	125	A	3LD2 804-1TP5□		1	1 unit	103	0.503
		50.0	75.0	160	A	3LD2 305-0TK1□ + ¹⁾		1	1 unit	103	2.100
					▶	3LD9 200-5B		1	1 unit	103	0.046
3 + N	1 NO + 1 NC	110.0	132.0	250	A	3LD2 405-0TK1□ + ¹⁾		1	1 unit	103	2.100
					▶	3LD9 200-5B		1	1 unit	103	0.046
		5.5	7.5	16	A	3LD2 003-2EP5□		1	1 unit	103	0.272
		7.5	9.5	25	A	3LD2 103-2EP5□		1	1 unit	103	0.287
		9.5	11.5	32	A	3LD2 203-1TL5□ + ¹⁾		1	1 unit	103	0.243
					▶	3LD9 200-5B		1	1 unit	103	0.046
		18.5	22.0	63	A	3LD2 504-1TP5□ + ²⁾		1	1 unit	103	0.424
					▶	3LD9 250-0BA		1	1 unit	103	0.079
3	1 NO + 1 NC	30.0	37.0	100	▶	3LD2 704-0TK5□ + ²⁾		1	1 unit	103	0.501
					▶	3LD9 280-0B + ¹⁾		1	1 unit	103	0.101
					▶	3LD9 200-5B		1	1 unit	103	0.046
		37.0	45.0	125	A	3LD2 804-0TK5□ + ²⁾		1	1 unit	103	0.503
					▶	3LD9 280-0B + ¹⁾		1	1 unit	103	0.101
					▶	3LD9 200-5B		1	1 unit	103	0.046
		50.0	75.0	160	A	3LD2 305-1TL1□ + ¹⁾		1	1 unit	103	2.600
					▶	3LD9 200-5B		1	1 unit	103	0.046
3	1 NO + 1 NC	110.0	132.0	250	A	3LD2 405-1TL1□ + ¹⁾		1	1 unit	103	2.600
					▶	3LD9 200-5B		1	1 unit	103	0.046

Actuator color

Black

Red/yellow (EMERGENCY-STOP)

1

3

¹⁾ 4th contact element as N conductor to be ordered separately, see "Accessories". ²⁾ Auxiliary switches 1 NO + 1 NC to be ordered separately, see "Accessories".

* You can order this quantity or a multiple thereof.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Front mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-3	P/AC-23A	I _u /AC-21A							kg
		kW	kW	A							

Main and EMERGENCY-STOP switches with rotary operating mechanism/knob-operated mechanism

- Lockable in 0 position with up to 3 padlocks
- Degree of protection at front side IP65
- All versions with rotary operating mechanism
Exception: 3LD2 3 and 3LD2 4 with knob-operated mechanism
- Including terminal cover for the infeed side
- Front plate
 - 3LD2 0, 3LD2 1, 3LD2 2: 67 mm × 67 mm
 - 3LD2 5 to 3LD2 8: 90 mm × 90 mm
 - 3LD2 3 to 3LD2 4: 96 mm × 96 mm

Center-hole mounting Ø 22.5 mm



3LD2 254-0TK53

3	--	5.5	7.5	16	A	3LD2 054-0TK5□		1	1 unit	103	0.215
		7.5	9.5	25	A	3LD2 154-0TK5□		1	1 unit	103	0.215
		9.5	11.5	32	A	3LD2 254-0TK5□		1	1 unit	103	0.214
		18.5	22	63	A	3LD2 555-0TK5□		1	1 unit	103	0.443
3 + N	--	5.5	7.5	16	A	3LD2 054-1TL5□		1	1 unit	103	0.230
		7.5	9.5	25	A	3LD2 154-1TL5□		1	1 unit	103	0.256
		9.5	11.5	32	A	3LD2 254-1TL5□		1	1 unit	103	0.260
		18.5	22	63	A	3LD2 555-0TK5□ +1)		1	1 unit	103	0.443
						▶					
						▶					
						▶					
						▶					
3	1 NO + 1 NC	5.5	7.5	16	A	3LD2 054-1TP5□		1	1 unit	103	0.261
		7.5	9.5	25	A	3LD2 154-1TP5□		1	1 unit	103	0.257
		9.5	11.5	32	A	3LD2 254-0TK5□ +1)		1	1 unit	103	0.214
		18.5	22	63	A	3LD2 555-0TK5□ +1)		1	1 unit	103	0.443
						▶					
						▶					
						▶					
						▶					
3 + N	1 NO + 1 NC	5.5	7.5	16	A	3LD2 054-2EP5□		1	1 unit	103	0.276
		7.5	9.5	25	C	3LD2 154-2EP5□		1	1 unit	103	0.304
		9.5	11.5	32	A	3LD2 254-1TL5□ +1)		1	1 unit	103	0.260
		18.5	22	63	A	3LD2 555-0TK5□ +2)		1	1 unit	103	0.443
						▶					
						▶					
						▶					
						▶					

Actuator color

Black
Red/yellow (EMERGENCY-STOP)

1
3

1) 4th contact element as N conductor to be ordered separately, see "Accessories".

2) Auxiliary switches 1 NO + 1 NC to be ordered separately, see "Accessories".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Front mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-23A	I_u							
		kW	A							kg

Main and EMERGENCY-STOP switches with knob-operated mechanism

- Lockable in 0 position (can be modified to I position) with max. 2 padlocks
- Degree of protection at front side IP65
- Including terminal cover for the infeed side
- Front plate
 - 48 mm × 48 mm

Four-hole mounting



3LD2 222-0TK11

3	--	7.5	16	A	3LD2 022-0TK1□	1	1 unit	103	0.186
		9.5	25	A	3LD2 122-0TK1□	1	1 unit	103	0.181
		11.5	32	A	3LD2 222-0TK1□	1	1 unit	103	0.182
3 + N	--	7.5	16	A	3LD2 022-1TL1□	1	1 unit	103	0.206
		9.5	25	A	3LD2 122-1TL1□	1	1 unit	103	0.180
		11.5	32	A	3LD2 222-0TK1□ + ¹⁾	1	1 unit	103	0.182
3	1 NO + 1 NC	7.5	16	A	3LD2 022-0TK1□ + ²⁾	1	1 unit	103	0.186
					▶ 3LD9 220-0B	1	1 unit	103	0.039
		9.5	25	A	3LD2 122-0TK1□ + ²⁾	1	1 unit	103	0.181
3 + N	1 NO + 1 NC	7.5	16	A	3LD2 022-1TL1□ + ²⁾	1	1 unit	103	0.206
					▶ 3LD9 200-5B	1	1 unit	103	0.046
		9.5	25	A	3LD2 122-1TL1□ + ²⁾	1	1 unit	103	0.180
3	1 NO + 1 NC	7.5	16	A	3LD2 222-0TK1□ + ¹⁾	1	1 unit	103	0.182
					▶ 3LD9 220-0B + ²⁾	1	1 unit	103	0.039
					▶ 3LD9 200-5B	1	1 unit	103	0.046

Actuator color

Black

Red/yellow (EMERGENCY-STOP)

1
3

¹⁾ 4th contact element as N conductor to be ordered separately, see "Accessories".

²⁾ Auxiliary switches 1 NO + 1 NC to be ordered separately, see "Accessories".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Front mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-23A	I_u							
		kW	A							kg

Main and EMERGENCY-STOP switches with knob-operated mechanism

- Lockable in 0 position (can be modified to I position) with max. 2 padlocks
- Degree of protection at front side IP65
- Including terminal cover for the infeed side
- Front plate: 48 mm × 48 mm

Center-hole mounting Ø 22.5 mm



3LD2 150-0TK13

3	--	7.5	16	A	3LD2 050-0TK1□	1	1 unit	103	0.197
		9.5	25	A	3LD2 150-0TK1□	1	1 unit	103	0.191
		11.5	32	A	3LD2 250-0TK1□	1	1 unit	103	0.192
3 + N	--	7.5	16	A	3LD2 050-1TL1□	1	1 unit	103	0.215
		9.5	25	A	3LD2 150-0TK1□ ⁺¹⁾	1	1 unit	103	0.191
					▶ 3LD9 200-5B	1	1 unit	103	0.046
		11.5	32	A	3LD2 250-0TK1□ ⁺¹⁾	1	1 unit	103	0.192
			▶ 3LD9 200-5B	1	1 unit	103	0.046		
3	1 NO + 1 NC	7.5	16	A	3LD2 050-0TK1□ ⁺²⁾	1	1 unit	103	0.197
					▶ 3LD9 200-5B	1	1 unit	103	0.046
		9.5	25	A	3LD2 150-0TK1□ ⁺²⁾	1	1 unit	103	0.191
				▶ 3LD9 200-5B	1	1 unit	103	0.046	
	11.5	32	A	3LD2 250-0TK1□ ⁺²⁾	1	1 unit	103	0.192	
				▶ 3LD9 200-5B	1	1 unit	103	0.046	
3 + N	1 NO + 1 NC	7.5	16	A	3LD2 050-1TL1□ ⁺²⁾	1	1 unit	103	0.215
					▶ 3LD9 200-5B	1	1 unit	103	0.046
		9.5	25	A	3LD2 150-0TK1□ ⁺¹⁾	1	1 unit	103	0.191
					▶ 3LD9 220-0B ⁺²⁾	1	1 unit	103	0.039
			▶ 3LD9 200-5B	1	1 unit	103	0.046		
11.5	32	A	3LD2 250-0TK1□ ⁺¹⁾	1	1 unit	103	0.192		
			▶ 3LD9 220-0B ⁺²⁾	1	1 unit	103	0.039		
			▶ 3LD9 200-5B	1	1 unit	103	0.046		

Actuator color

Black

Red/yellow (EMERGENCY-STOP)

1

3

¹⁾ 4th contact element as N conductor to be ordered separately, see "Accessories".

²⁾ Auxiliary switches 1 NO + 1 NC to be ordered separately, see "Accessories".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Front mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-3 kW	P/AC-23A kW	I_u A							kg

Main and EMERGENCY-STOP switches with rotary operating mechanism/knob-operated mechanism (6-pole)

- Lockable in 0 position with up to 3 padlocks
- Degree of protection at front side IP65
- All versions with rotary operating mechanism
Exception: 3LD2 3 and 3LD2 4 with knob-operated mechanism
- Including terminal cover for the infeed side
- Front plate
 - 3LD2 0, 3LD2 1, 3LD2 2: 67 mm × 67 mm
 - 3LD2 5: 90 mm × 90 mm
 - 3LD2 3 to 3LD2 4: 96 mm × 96 mm

Four-hole mounting



3LD2 103-3VK53

6	--	7.5	9.5	25	A	3LD2 103-3VK5□		1	1 unit	103	0.380
		9.5	11.5	32	A	3LD2 203-3VK5□		1	1 unit	103	0.381
		18.5	22.0	63	A	3LD2 504-3VK5□		1	1 unit	103	0.854
		50	75	160	A	3LD2 305-3VK1□		1	1 unit	103	3.900
		110	132	250	A	3LD2 405-3VK1□		1	1 unit	103	3.900
6	1 NO + 1 NC	7.5	9.5	25	A	3LD2 103-4VP5□		1	1 unit	103	0.432

Actuator color

Black
Red/yellow (EMERGENCY-STOP)

1
3

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-3 kW	P/AC-23A kW	I_u A							kg

Changeover switches with knob-operated mechanism

- Black actuator
- Knob-operated mechanism on 3LD2 3 and 3LD2 4 is lockable, on all other versions it is non-lockable
- Degree of protection at front side IP65

Four-hole mounting



3LD2 123-7UK01



3LD2 405-7UL01

3	--	7.5	9.5	25	A	3LD2 123-7UK01		1	1 unit	103	0.374
		9.5	11.5	32	A	3LD2 223-7UK01		1	1 unit	103	0.378
		18.5	22.0	63	A	3LD2 524-7UK01		1	1 unit	103	0.841
		30.0	37.0	100	A	3LD2 724-7UK01		1	1 unit	103	1.061
		50	75	160	A	3LD2 305-7UK01		1	1 unit	103	4.300
		110	132	250	A	3LD2 405-7UK01		1	1 unit	103	4.400
3 + N		50	75	160	A	3LD2 305-7UL01		1	1 unit	103	5.700
		110	132	250	A	3LD2 405-7UL01		1	1 unit	103	5.700

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Floor mounting

Selection and ordering data

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-23A	I_u							kg
		kW	A							

Main and EMERGENCY-STOP switches with door-coupling rotary operating mechanism

- With shaft
- Lockable in 0 position with up to 3 padlocks
- Degree of protection at front side IP65
- Door-coupling rotary operating mechanism with integrated tolerance compensation (16 A to 125 A)
- All versions with rotary operating mechanism
- Exception: 3LD2 3 and 3LD2 4 with knob-operated mechanism
- Mounting using screws or snap-on mounting on 35 mm standard mounting rail (16 A to 125 A)
- Including terminal cover for the infeed side
- Front plate
 - 3LD2 0, 3LD2 1, 3LD2 2: 67 mm x 67 mm
 - 3LD2 5 to 3LD2 8: 90 mm x 90 mm
 - 3LD2 3 to 3LD2 4: 96 mm x 96 mm
- Mounting dimensions
 - 3LD2 0, 3LD2 1, 3LD2 2: 380 mm
 - 3LD2 5 to 3LD2 8: 390 mm
 - 3LD2 3 to 3LD2 4: 600 mm

Four-hole mounting



3LD2 213-0TK53

3	--	7.5	16	▶	3LD2 013-0TK5□	1	1 unit	103	0.412
		9.5	25	▶	3LD2 113-0TK5□	1	1 unit	103	0.407
		11.5	32	▶	3LD2 213-0TK5□	1	1 unit	103	0.405
		22	63	▶	3LD2 514-0TK5□	1	1 unit	103	0.655
		37	100	▶	3LD2 714-0TK5□	1	1 unit	103	0.765
		45	125	A	3LD2 814-0TK5□	1	1 unit	103	0.766
		75	160	A	3LD2 318-0TK1□	1	1 unit	103	2.400
		132	250	A	3LD2 418-0TK1□	1	1 unit	103	2.700
3 + N	--	7.5	16	▶	3LD2 013-1TL5□	1	1 unit	103	0.412
		9.5	25	A	3LD2 113-1TL5□	1	1 unit	103	0.450
		11.5	32	A	3LD2 213-1TL5□	1	1 unit	103	0.446
		22	63	A	3LD2 514-1TL5□	1	1 unit	103	0.720
		37	100	▶	3LD2 714-0TK5□ + ¹⁾	1	1 unit	103	0.765
				▶	3LD9 280-0C	1	1 unit	103	0.102
		45	125	A	3LD2 814-0TK5□ + ¹⁾	1	1 unit	103	0.766
				▶	3LD9 280-0C	1	1 unit	103	0.102
		75	160	A	3LD2 318-1TL1□	1	1 unit	103	2.900
		132	250	A	3LD2 418-1TL1□	1	1 unit	103	3.200

Actuator color

Black

Red/yellow (EMERGENCY-STOP)

1


3

¹⁾ 4th contact element as N conductor to be ordered separately, see "Accessories".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Floor mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-23A	I _u							
		kW	A							kg
 3LD2 213-0TK53	3	1 NO + 1 NC	7.5	16	▶	3LD2 013-0TK5□ +2)	1	1 unit	103	0.412
					▶	3LD9 200-5C	1	1 unit	103	0.046
			9.5	25	▶	3LD2 113-0TK5□ +2)	1	1 unit	103	0.407
					▶	3LD9 200-5C	1	1 unit	103	0.046
			11.5	32	▶	3LD2 213-0TK5□ +2)	1	1 unit	103	0.405
					▶	3LD9 200-5C	1	1 unit	103	0.046
			22	63	▶	3LD2 514-0TK5□ +2)	1	1 unit	103	0.655
					▶	3LD9 200-5C	1	1 unit	103	0.046
			37	100	▶	3LD2 714-0TK5□ +2)	1	1 unit	103	0.765
					▶	3LD9 200-5C	1	1 unit	103	0.046
			45	125	A	3LD2 814-0TK5□ +2)	1	1 unit	103	0.766
					▶	3LD9 200-5C	1	1 unit	103	0.046
			75	160	A	3LD2 318-0TK1□ +1)	1	1 unit	103	2.400
					▶	3LD9 200-5C	1	1 unit	103	0.046
132	250	A	3LD2 418-0TK1□ +1)	1	1 unit	103	2.700			
		▶	3LD9 200-5C	1	1 unit	103	0.046			
3 + N	1 NO + 1 NC	7.5	16	▶	3LD2 013-1TL5□ +2)	1	1 unit	103	0.412	
				▶	3LD9 200-5C	1	1 unit	103	0.046	
		9.5	25	A	3LD2 113-1TL5□ +2)	1	1 unit	103	0.450	
				▶	3LD9 200-5C	1	1 unit	103	0.046	
		11.5	32	A	3LD2 213-1TL5□ +2)	1	1 unit	103	0.446	
				▶	3LD9 200-5C	1	1 unit	103	0.046	
		22	63	A	3LD2 514-1TL5□ +2)	1	1 unit	103	0.720	
				▶	3LD9 200-5C	1	1 unit	103	0.046	
		37	100	▶	3LD2 714-0TK5□ +1)	1	1 unit	103	0.765	
				▶	3LD9 280-0C +2)	1	1 unit	103	0.102	
				▶	3LD9 200-5C	1	1 unit	103	0.046	
		45	125	A	3LD2 814-0TK5□ +1)	1	1 unit	103	0.766	
				▶	3LD9 280-0C +2)	1	1 unit	103	0.102	
				▶	3LD9 200-5C	1	1 unit	103	0.046	
75	160	A	3LD2 318-1TL1□ +2)	1	1 unit	103	2.900			
		▶	3LD9 200-5C	1	1 unit	103	0.046			
132	250	A	3LD2 418-1TL1□ +2)	1	1 unit	103	3.200			
		▶	3LD9 200-5C	1	1 unit	103	0.046			

Actuator color

Black

Red/yellow (EMERGENCY-STOP)

1

3

1) 4th contact element as N conductor to be ordered separately, see "Accessories".

2) Auxiliary switches 1 NO + 1 NC to be ordered separately, see "Accessories".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A


Floor mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-23A	I_u							kg
		kW	A							

Main and EMERGENCY-STOP switches with door-coupling rotary operating mechanism

- With shaft
- Lockable in 0 position with up to 3 padlocks
- Degree of protection at front side IP65
- Door-coupling rotary operating mechanism with integrated tolerance compensation (16 A to 125 A)
- All versions with rotary operating mechanism
- Exception: 3LD2 3 and 3LD2 4 with knob-operated mechanism
- Mounting using screws or snap-on mounting on 35 mm standard mounting rail (16 A to 125 A)
- Including terminal cover for the infeed side
- Front plate
 - 3LD2 0, 3LD2 1, 3LD2 2: 67 mm x 67 mm
 - 3LD2 5 to 3LD2 8: 90 mm x 90 mm
 - 3LD2 3 to 3LD2 4: 96 mm x 96 mm
- Mounting dimensions
 - 3LD2 0, 3LD2 1, 3LD2 2: 380 mm
 - 3LD2 5 to 3LD2 8: 390 mm
 - 3LD2 3 to 3LD2 4: 600 mm

Center-hole mounting Ø 22.5 mm

	3	--	7.5	16	A	3LD2 044-0TK5□	1	1 unit	103	0.430
			9.5	25	A	3LD2 144-0TK5□	1	1 unit	103	0.426
			11.5	32	A	3LD2 244-0TK5□	1	1 unit	103	0.427
			22	63	A	3LD2 545-0TK5□	1	1 unit	103	0.710
	3 + N	--	7.5	16	A	3LD2 044-1TL5□	1	1 unit	103	0.433
			9.5	25	A	3LD2 144-1TL5□	1	1 unit	103	0.461
			11.5	32	A	3LD2 244-1TL5□	1	1 unit	103	0.465
			22	63	A	3LD2 545-0TK5□ ⁺¹⁾	1	1 unit	103	0.710
	3	1 NO + 1 NC	7.5	16	A	▶ 3LD9 250-OCA	1	1 unit	103	0.080
						▶ 3LD2 044-0TK5□ ⁺²⁾	1	1 unit	103	0.430
						▶ 3LD9 200-5C	1	1 unit	103	0.046
			9.5	25	A	▶ 3LD2 144-0TK5□ ⁺²⁾	1	1 unit	103	0.426
					▶ 3LD9 200-5C	1	1 unit	103	0.046	
11.5			32	A	▶ 3LD2 244-0TK5□ ⁺²⁾	1	1 unit	103	0.427	
					▶ 3LD9 200-5C	1	1 unit	103	0.046	
22			63	A	▶ 3LD2 545-0TK5□ ⁺²⁾	1	1 unit	103	0.710	
			▶ 3LD9 200-5C	1	1 unit	103	0.046			
3 + N	1 NO + 1 NC	7.5	16	A	▶ 3LD2 044-1TL5□ ⁺²⁾	1	1 unit	103	0.433	
					▶ 3LD9 200-5C	1	1 unit	103	0.046	
		9.5	25	A	▶ 3LD2 144-1TL5□ ⁺²⁾	1	1 unit	103	0.461	
					▶ 3LD9 200-5C	1	1 unit	103	0.046	
		11.5	32	A	▶ 3LD2 244-1TL5□ ⁺²⁾	1	1 unit	103	0.465	
					▶ 3LD9 200-5C	1	1 unit	103	0.046	
		22	63	A	▶ 3LD2 545-0TK5□ ⁺¹⁾	1	1 unit	103	0.710	
					▶ 3LD9 250-OCA ⁺²⁾	1	1 unit	103	0.080	
			▶ 3LD9 200-5C	1	1 unit	103	0.046			

Actuator color

Black
Red/yellow (EMERGENCY-STOP)

1
3

¹⁾ 4th contact element as N conductor to be ordered separately, see "Accessories".

²⁾ Auxiliary switches 1 NO + 1 NC to be ordered separately, see "Accessories".

* You can order this quantity or a multiple thereof.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Floor mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-3	P/AC-23A	I_u							kg
		kW	kW	A							

Main and EMERGENCY-STOP switches with door-coupling rotary operating mechanism (6-pole)

- Lockable in 0 position with up to 3 padlocks
- Degree of protection at front side IP65
- Door-coupling rotary operating mechanism with integrated tolerance compensation (for 3LD21)
- All versions with rotary operating mechanism
Exception: 3LD2 3 and 3LD2 4 with door-coupling rotary operating mechanism as selector switch
- Mounting using screws or snap-on mounting on 35 mm standard mounting rail
- Including terminal cover for the infeed side
- Front plate
- 3LD2 0, 3LD2 1, 3LD2 2: 67 mm × 67 mm
- 3LD2 3, 3LD2 4: 96 mm × 96 mm

Four-hole mounting



3LD2 113-3VK51

6	--	7.5	9.5	25	C	3LD2 113-3VK5 □		1	1 unit	103	0.604
6	--	50	75	160	A	3LD2 318-3VK1 □		1	1 unit	103	4.500
6	--	110	132	250	A	3LD2 418-3VK1 □		1	1 unit	103	4.500
6	1 NO + 1 NC	9.5	9.5	25	C	3LD2 113-4VP5 □		1	1 unit	103	0.645

Actuator color

- Black
- Red/yellow (EMERGENCY-STOP)

1

3

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-3	P/AC-23A	I_u							kg
		kW	kW	A							

Changeover switches with door-coupling rotary operating mechanism

- Lockable in 0 position with up to 3 padlocks
- Handle and cover black
- Door-coupling rotary operating mechanisms as selector switch
- Degree of protection at front side IP65

Four-hole mounting

3		50	75	160	A	3LD2 318-7UK01		1	1 unit	103	5.000
3		110	132	250	A	3LD2 418-7UK01		1	1 unit	103	5.000
3 + N		50	75	160	A	3LD2 318-7UL01		1	1 unit	103	6.400
3 + N		110	132	250	A	3LD2 418-7UL01		1	1 unit	103	6.400

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Floor mounting

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-23A	I_u							kg
		kW	A							

Main and EMERGENCY-STOP switches with defeatable door-coupling rotary operating mechanism

The SENTRYON 3LD main and EMERGENCY-STOP switch with defeatable door-coupling rotary operating mechanism enables you to conduct repairs, maintenance work or tests on electrical plants and machines without having to interrupt their operation. With the help of the defeatable door-coupling rotary operating mechanism, an electrician can bypass the interlock in ON position and open the control cabinet door with the plant activated.

SENTRON 3LD main and EMERGENCY-STOP switches with defeatable door-coupling rotary operating mechanism are approved according to UL 508.

- With 300 mm switch shaft
- Lockable in 0 position with up to 3 padlocks
- Degree of protection at front side IP65
- Door-coupling rotary operating mechanism with integrated tolerance compensation
- Mounting using screws or snap-on mounting on 35 mm standard mounting rail
- Including terminal cover for the infeed side
- Front plate 65 mm × 65 mm

Four-hole mounting



3LD2 017-0TK..

3	--	7.5	16	C	3LD2 017-0TK1□	1	1 unit	103	0.412
		11.5	32	C	3LD2 217-0TK1□	1	1 unit	103	0.412
		22	63	C	3LD2 517-0TK1□	1	1 unit	103	0.412
3 + N	--	7.5	16	C	3LD2 017-1TL1□	1	1 unit	103	0.412
		11.5	32	C	3LD2 217-1TL1□	1	1 unit	103	0.412
		22	63	C	3LD2 517-1TL1□	1	1 unit	103	0.412

Actuator color

Black
Red/yellow (EMERGENCY-STOP)



1
3

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Distribution board mounting

Selection and ordering data

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Main contact elements	Auxiliary contact elements	P/AC-23A	I_u							kg	
		kW	A								
ON/OFF and EMERGENCY-STOP switches with masking plate and selector switch <ul style="list-style-type: none"> • With screw mounting With snap-on mounting on 35 mm standard mounting rail (16 A to 125 A) • Lockable in 0 position with up to 2 (160 A and 250 A: max. 3) padlocks • Degree of protection at front side IP44 • Including terminal cover for the infeed and outgoing terminal (160 A and 250 A) 											
 3LD2 530-0TK13	3	--	7.5	16	A	3LD2 030-0TK1□		1	1 unit	103	0.169
			9.5	25	A	3LD2 130-0TK1□		1	1 unit	103	0.171
			11.5	32	A	3LD2 230-0TK1□		1	1 unit	103	0.168
			22	63	A	3LD2 530-0TK1□		1	1 unit	103	0.311
			37	100	A	3LD2 730-0TK1□		1	1 unit	103	0.379
			45	125	A	3LD2 830-0TK1□		1	1 unit	103	0.379
 3LD2 330-0TK11	3 + N	--	7.5	16	A	3LD2 030-1TL1□		1	1 unit	103	0.183
			9.5	25	A	3LD2 130-0TK1□ ⁺¹⁾		1	1 unit	103	0.171
						▶ 3LD9 220-0C		1	1 unit	103	0.039
			11.5	32	A	3LD2 230-0TK1□ ⁺¹⁾		1	1 unit	103	0.168
						▶ 3LD9 220-0C		1	1 unit	103	0.039
			22	63	A	3LD2 530-0TK1□ ⁺¹⁾		1	1 unit	103	0.311
						▶ 3LD9 250-OCA		1	1 unit	103	0.080
			37	100	A	3LD2 730-0TK1□ ⁺¹⁾		1	1 unit	103	0.379
						▶ 3LD9 280-0C		1	1 unit	103	0.102
			45	125	A	3LD2 830-0TK1□ ⁺¹⁾		1	1 unit	103	0.379
						▶ 3LD9 280-0C		1	1 unit	103	0.102
			75	160	A	3LD2 330-0TK1□ ⁺¹⁾		1	1 unit	103	2.000
			▶ 3LD9 240-0C		1	1 unit	103	0.500			
132	250	A	3LD2 430-0TK1□ ⁺¹⁾		1	1 unit	103	2.000			
			▶ 3LD9 240-0C		1	1 unit	103	0.500			

Actuator color

Black

Red/yellow (EMERGENCY-STOP)

1

3

¹⁾ 4th contact element as N conductor to be ordered separately; see "Accessories for floor mounting".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Distribution board mounting



3LD2 530-0TK11

Number and version of the contacts		Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Main contact elements	Auxiliary contact elements	P/AC-23A	I_u							
		kW	A							kg
3	1 NO + 1 NC	7.5	16	A	3LD2 030-0TK1□ +2)		1	1 unit	103	0.169
				▶	3LD9 200-5C					
		9.5	25	A	3LD2 130-0TK1□ +2)		1	1 unit	103	0.171
				▶	3LD9 200-5C					
		11.5	32	A	3LD2 230-0TK1□ +2)		1	1 unit	103	0.168
				▶	3LD9 200-5C					
		22	63	A	3LD2 530-0TK1□ +2)		1	1 unit	103	0.311
				▶	3LD9 200-5C					
		37	100	A	3LD2 730-0TK1□ +2)		1	1 unit	103	0.379
				▶	3LD9 200-5C					
		45	125	A	3LD2 830-0TK1□ +2)		1	1 unit	103	0.379
				▶	3LD9 200-5C					
		75	160	A	3LD2 330-0TK1□ +2)		1	1 unit	103	2.000
				▶	3LD9 200-5C					
132	250	A	3LD2 430-0TK1□ +2)		1	1 unit	103	2.000		
		▶	3LD9 200-5C						1	1 unit
3 + N	1 NO + 1 NC	7.5	16	A	3LD2 030-1TL1□ +2)		1	1 unit	103	0.183
				▶	3LD9 200-5C					
		9.5	25	A	3LD2 130-0TK1□ +2)		1	1 unit	103	0.171
				▶	3LD9 200-5C +1)					
		11.5	32	A	3LD2 230-0TK1□ +2)		1	1 unit	103	0.168
				▶	3LD9 220-0C +1)					
		22	63	A	3LD2 530-0TK1□ +2)		1	1 unit	103	0.311
				▶	3LD9 200-5C +1)					
		37	100	A	3LD2 730-0TK1□ +2)		1	1 unit	103	0.379
				▶	3LD9 280-0C +1)					
		45	125	A	3LD2 830-0TK1□ +2)		1	1 unit	103	0.379
				▶	3LD9 280-0C +1)					
		75	160	A	3LD2 330-0TK1□ +2)		1	1 unit	103	2.000
				▶	3LD9 240-0C +1)					
132	250	A	3LD2 430-0TK1□ +2)		1	1 unit	103	2.000		
		▶	3LD9 240-0C +1)						1	1 unit

Actuator color

Black

Red/yellow (EMERGENCY-STOP)

1
3

¹⁾ 4th contact element as N conductor to be ordered separately; see "Accessories for floor mounting".


²⁾ Auxiliary switches 1 NO + 1 NC to be ordered separately, see "Accessories".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Molded-plastic enclosure

Selection and ordering data

Number and version of the contacts		Base terminal	Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Main contact elements	Auxiliary contact elements		P/AC-23A	I_u							kg	
			kW	A								
Main and EMERGENCY-STOP switches												
<ul style="list-style-type: none"> • With N- and/or PE-/ground base terminals • Lockable in 0 position with up to 3 padlocks • Degree of protection IP65 • Rotary operating mechanisms with center-hole mounting • For floor-mounted auxiliary switches • Metric screw connection 												
	3	--	PE + N	7.5	16	A	3LD2 064-0TB5 □	1	1 unit	103	0.463	
			PE + N	9.5	25	A	3LD2 164-0TB5 □	1	1 unit	103	0.463	
			PE + N	11.5	32	A	3LD2 264-0TB5 □	1	1 unit	103	0.465	
			PE + N	22	63	A	3LD2 565-0TB5 □	1	1 unit	103	0.906	
			PE + N	37	100	A	3LD2 766-0TB5 □	1	1 unit	103	1.890	
			PE + N	45	125	A	3LD2 866-0TB5 □	1	1 unit	103	1.890	
	3 + N	--	PE	7.5	16	A	3LD2 064-1TC5 □	1	1 unit	103	0.453	
			PE	9.5	25	A	3LD2 164-1TC5 □	1	1 unit	103	0.487	
			PE	11.5	32	C	3LD2 264-1TC5 □	1	1 unit	103	0.500	
			PE	22	63	C	3LD2 565-1TC5 □	1	1 unit	103	0.960	
			PE + N	37	100	A	3LD2 766-0TB5 □ +1)	1	1 unit	103	1.890	
								▶	3LD9 280-0C	1	1 unit	103
	3	1 NO + 1 NC	N	7.5	16	A	3LD2 064-1GP5 □	1	1 unit	103	0.507	
			N	9.5	25	A	3LD2 164-1GP5 □	1	1 unit	103	0.501	
			N	11.5	32	A	3LD2 264-1GP5 □	1	1 unit	103	0.488	
			N	22	63	A	3LD2 565-1GP5 □	1	1 unit	103	0.935	
			N	37	100	A	3LD2 766-1GP5 □	1	1 unit	103	1.838	
			N	45	125	A	3LD2 866-1GP5 □	1	1 unit	103	1.843	
	3 + N	1 NO + 1 NC	PE	7.5	16	A	3LD2 064-1TC5 □ +2)	1	1 unit	103	0.453	
								▶	3LD9 200-5C	1	1 unit	103
PE			9.5	25	A	3LD2 164-1TC5 □ +2)	1	1 unit	103	0.487		
							▶	3LD9 200-5C	1	1 unit	103	0.046
PE			11.5	32	C	3LD2 264-1TC5 □ +2)	1	1 unit	103	0.500		
							▶	3LD9 200-5C	1	1 unit	103	0.046
PE			22	63	C	3LD2 565-1TC5 □ +2)	1	1 unit	103	0.960		
							▶	3LD9 200-5C	1	1 unit	103	0.046
N			37	100	A	3LD2 766-1GP5 □ +2)	1	1 unit	103	1.838		
							▶	3LD9 280-0C	1	1 unit	103	0.102
N			45	125	A	3LD2 866-1GP5 □ +2)	1	1 unit	103	1.843		
							▶	3LD9 280-0C	1	1 unit	103	0.102

Actuator color

Black
Red/yellow (EMERGENCY-STOP)

1
3

¹⁾ 4th contact element as N conductor to be ordered separately; see "Accessories for floor mounting".

²⁾ Auxiliary switches 1 NO + 1 NC to be ordered separately; see "Accessories".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Molded-plastic enclosure

Number and version of the contacts	Base terminal	Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		P/AC-3	P/AC-23A	I_u							
Main contact elements	Auxiliary contact elements	kW	kW	A							kg

Main and EMERGENCY-STOP switches with rotary operating mechanism (6-pole)

- With N- and/or PE-/ground base terminals
- Degree of protection IP65
- Metric screw connection



3LD2 165-3VB53

6	--	PE + N	7.5	9.5	25	A	3LD2 165-3VB5□	1	1 unit	103	0.880
		PE + N	9.5	11.5	32	A	3LD2 265-3VB5□	1	1 unit	103	0.878
		PE + N	18.5	22.0	63	A	3LD2 566-3VB5□	1	1 unit	103	2.105
6	1 NO + 1 NC	N	7.5	9.5	25	A	3LD2 165-4VD5□	1	1 unit	103	0.914
		N	9.5	11.5	32	A	3LD2 265-4VD5□	1	1 unit	103	0.910
		PE + N	18.5	22.0	63	A	3LD2 566-4VD5□	1	1 unit	103	2.084

Actuator color

Black
Red/yellow (EMERGENCY-STOP)

1
3

Number and version of the contacts	Base terminal	Rated data at 50 Hz ... 60 Hz, 380 V ... 440 V			DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
		P/AC-3	P/AC-23A	I_u							
Main contact elements	Auxiliary contact elements	kW	kW	A							kg

Changeover switches with knob-operated mechanism, knob cannot be locked

- With N- and/or PE-/ground base terminals
- Black actuator
- Metric screw connection
- Degree of protection IP65



3LD2 165-7UB01

3	--	PE + N	7.5	9.5	25	A	3LD2 165-7UB01	1	1 unit	103	0.888
		PE + N	9.5	11.5	32	A	3LD2 265-7UB01	1	1 unit	103	0.888
		PE + N	18.5	22.0	63	A	3LD2 566-7UB01	1	1 unit	103	2.105
		PE + N	30.0	37.0	100	A	3LD2 766-7UB01	1	1 unit	103	2.335

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

DC applications

Mains voltage	Rated current I_e at 800 V DC		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Max. V DC	DC-21A A	DC-22A A							kg

Solar plant isolators in molded-plastic enclosure

- Molded-plastic enclosure IP65
- Metric screw connection
- (W x H x D) 146 mm x 199 mm x 136 mm
- Conductor cross-sections:
 - Solid and stranded 1.5 ... 16 mm²
 - Finely stranded with end sleeve up to 10 mm²
- Lockable



3LD2 265-8VQ5.-0AF6

800	32	16	A	3LD2 265-8VQ5□-0AF6		1	1 unit	103	0.878
-----	----	----	---	----------------------------	--	---	--------	-----	-------

Actuator color

- Black
- Red/yellow (EMERGENCY-STOP)

1
3

Mains voltage	Rated current I_e at 800 V DC		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Max. V DC	DC-21A A	DC-22A A							kg

Solar plant isolators for distribution board mounting

- Conductor cross-sections:
 - Solid and stranded 1.5 ... 16 mm²
 - Finely stranded with end sleeve up to 10 mm²
- Actuator color: Black



3LD2 265-8VQ11-0AF6

800	32	16	A	3LD2 230-8VQ11-0AF6		1	1 unit	103	0.878
-----	----	----	---	----------------------------	--	---	--------	-----	-------

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Accessories

Selection and ordering data

Version	DT	3LD2 0	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Order No.	Price per PU				
For front mounting						
	N or PE terminals Continuous	▶	3LD9 200-2B	1	1 unit	103 0.030
3LD9 200-2B						
	Auxiliary switches For mounting on the left and/or right, lagging switch-on, leading switch-off • 1 NO + 1 NC	▶	3LD9 200-5B	1	1 unit	103 0.046
3LD9 200-5B	For mounting on the left and/or right, lagging switch-on, with gold-plate contacts for SIMATIC request, leading switch-off • 1 NO + 1 NC	C	3LD9 200-5BF	1	1 unit	103 0.028
For floor mounting, distribution board mounting or molded-plastic enclosures						
	N or PE terminals Continuous	▶	3LD9 200-2C	1	1 unit	103 0.032
3LD9 200-2C						
	Auxiliary switches For mounting on the left and/or right, lagging switch-on, leading switch-off • 1 NO + 1 NC	▶	3LD9 200-5C	1	1 unit	103 0.046
3LD9 200-5C (left)	• 2 NO	▶	3LD9 200-6C	1	1 unit	103 0.046
3LD9 200-6C (right)	For mounting on the left and/or right, lagging switch-on, with gold-plate contacts for SIMATIC request, leading switch-off • 1 NO + 1 NC	C	3LD9 200-5CF	1	1 unit	103 0.028
For front and floor mounting						
	Rotary operating mechanisms Lockable in 0 position with up to 3 padlocks • For four-hole mounting, including seal - Black	A	3LD9 224-1B	1	1 unit	103 0.072
3LD9 224-1B	- Red/yellow	A	3LD9 224-3B	1	1 unit	103 0.075
	• For center-hole mounting, including seal and nut - Black	A	3LD9 224-1D	1	1 unit	103 0.080
3LD9 224-3D	- Red/yellow	A	3LD9 224-3D	1	1 unit	103 0.081
	Mounting tools For center-hole mounting with nut	A	3LD9 256-0A	1	5 units	103 0.027
3LD9 256-0A						
	Switching shafts 6 x 6 mm Length 300 mm	C	3LD9 205-0C	1	5 units	103 0.476
	Length 600 mm	C	3LD9 205-2C	1	5 units	103 0.476
	Inscription labels With English/German inscription (MAIN SWITCH/HAUPTSCHALTER)	A	3LD9 286-1A	1	10 units	103 0.005
3LD9 286-1A	Without inscription	A	3LD9 286-4A	1	10 units	103 0.054
	Terminal covers as additional touch protection (also for distribution board mounting) Can be snapped on at top and bottom • 1-pole	A	3LD9 201-2A	100	4 units	103 0.200
3LD9 201-2A	• 3-/4-pole	A	3LD9 201-1A	1	4 units	103 0.007

* You can order this quantity or a multiple thereof.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Accessories








Version	DT	3LD2 1 and 3LD2 2	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
		Order No.	Price per PU			kg		
For front mounting								
 <p>3LD9 220-0B (left) 3LD9 220-2B (right)</p>		4th contact (N conductor)	▶	3LD9 220-0B	1	1 unit	103	0.039
		Leading switch-on, lagging switch-off						
		N or PE terminals	▶	3LD9 220-2B	1	1 unit	103	0.036
		Continuous						
 <p>3LD9 200-5B</p>		Auxiliary switches						
		For mounting on the left and/or right, lagging switch-on, leading switch-off						
		<ul style="list-style-type: none"> • 1 NO + 1 NC 	▶	3LD9 200-5B	1	1 unit	103	0.046
		For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request						
		<ul style="list-style-type: none"> • 1 NO + 1 NC 	C	3LD9 200-5BF	1	1 unit	103	0.028
For floor mounting, distribution board mounting or molded-plastic enclosures								
 <p>3LD9 220-0C</p>		4th contact (N conductor)	▶	3LD9 220-0C	1	1 unit	103	0.039
		Leading switch-on, lagging switch-off						
		N or PE terminals	▶	3LD9 220-2C	1	1 unit	103	0.037
		Continuous						
 <p>3LD9 200-5C (left) 3LD9 200-6C (right)</p>		Auxiliary switches						
		For mounting on the left and/or right, lagging switch-on, leading switch-off						
		<ul style="list-style-type: none"> • 1 NO + 1 NC • 2 NO 	▶	3LD9 200-5C	1	1 unit	103	0.046
		For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request						
		<ul style="list-style-type: none"> • 1 NO + 1 NC 	C	3LD9 200-5CF	1	1 unit	103	0.028
For front and floor mounting								
 <p>3LD9 224-1B</p>		Rotary operating mechanisms						
		Lockable in 0 position with up to 3 padlocks						
		<ul style="list-style-type: none"> • For four-hole mounting 	A	3LD9 224-1B	1	1 unit	103	0.072
		<ul style="list-style-type: none"> - Black - Red/yellow 	A	3LD9 224-3B	1	1 unit	103	0.075
		For center-hole mounting, including seal and nut						
 <p>3LD9 224-3D</p>		<ul style="list-style-type: none"> - Black - Red/yellow 	A	3LD9 224-1D	1	1 unit	103	0.080
			A	3LD9 224-3D	1	1 unit	103	0.081
 <p>3LD9 256-0A</p>		Mounting tools						
		For center-hole mounting with nut	A	3LD9 256-0A	1	5 units	103	0.027
		Switching shafts 6 x 6 mm						
		Length 300 mm	C	3LD9 205-0C	1	5 units	103	0.476
		Length 600 mm	C	3LD9 205-2C	1	5 units	103	0.476
 <p>3LD9 286-1A</p>		Inscription labels						
		With English/German inscription (MAIN SWITCH/HAUPTSCHALTER)	A	3LD9 286-1A	1	10 units	103	0.005
		Without inscription	A	3LD9 286-4A	1	10 units	103	0.054
 <p>3LD9 221-2A (left) 3LD9 221-0A (right)</p>		Terminal covers as additional touch protection (also for distribution board mounting)						
		Can be snapped on at top and bottom						
		<ul style="list-style-type: none"> • 1-pole • 3-pole 	A	3LD9 221-2A	100	4 units	103	0.100
			A	3LD9 221-0A	1	4 units	103	0.007

* You can order this quantity or a multiple thereof.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Accessories

Version	DT	3LD2 3 and 3LD2 4	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
		Order No.	Price per PU			kg		
For front mounting								
 3LD9 240-0B (left) 3LD9 240-2B (right)		4th contact (N conductor) Leading switch-on, lagging switch-off	▶	3LD9 240-0B	1	1 unit	103	0.500
		N or PE terminals Continuous	▶	3LD9 240-2B	1	1 unit	103	0.450
 3LD9 200-5B		Auxiliary switches For mounting on the left and/or right, lagging switch-on, leading switch-off						
		<ul style="list-style-type: none"> • 1 NO + 1 NC • For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request • 1 NO + 1 NC 	▶	3LD9 200-5B	1	1 unit	103	0.046
	C			3LD9 200-5BF	1	1 unit	103	0.028
For floor and distribution board mounting								
 3LD9 240-0C (left) 3LD9 240-2C (right)		4th contact (N conductor) Leading switch-on, lagging switch-off	▶	3LD9 240-0C	1	1 unit	103	0.500
		N or PE terminals Continuous	▶	3LD9 240-2C	1	1 unit	103	0.450
 3LD9 200-5C (left) 3LD9 200-6C (right)		Auxiliary switches For mounting on the left and/or right, lagging switch-on, leading switch-off						
		<ul style="list-style-type: none"> • 1 NO + 1 NC • 2 NO • For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request • 1 NO + 1 NC 	▶	3LD9 200-5C	1	1 unit	103	0.046
			▶	3LD9 200-6C	1	1 unit	103	0.046
	C			3LD9 200-5CF	1	1 unit	103	0.028
For front and floor mounting								
 3LD9 243-1B		Knob-operated mechanism Lockable in 0 position with up to 3 padlocks						
		<ul style="list-style-type: none"> • For four-hole mounting, including seal - Black - Red/yellow 	A	3LD9 243-1B	1	1 unit	103	0.154
			A	3LD9 243-3B	1	1 unit	103	0.154
		Switching shafts 8 x 8 mm						
		Length 300 mm	C	3LD9 245-0C	1	5 units	103	0.476
		Length 600 mm	C	3LD9 245-2C	1	5 units	103	0.476
		Inscription labels						
 3LD9 286-1A		With English/German inscription (MAIN SWITCH/HAUPTSCHALTER)	A	3LD9 286-1A	1	10 units	103	0.005
		Without inscription	A	3LD9 286-4A	1	10 units	103	0.054
 3LD9 241-2A		Terminal covers as additional touch protection (also for distribution board mounting) Can be snapped on at top and bottom						
		• 1-pole	A	3LD9 241-2A	1	4 units	103	0.010

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Accessories


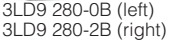



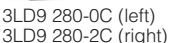




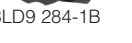




Version	DT	3LD2 5	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
		Order No.	Price per PU			kg		
For front mounting								
		4th contact (N conductor) Leading switch-on, lagging switch-off	▶	3LD9 250-0BA	1	1 unit	103	0.079
3LD9 250-0BA (left) 3LD9 250-2BA (right)		N or PE terminals Continuous	▶	3LD9 250-2BA	1	1 unit	103	0.072
		Auxiliary switches For mounting on the left and/or right, lagging switch-on, leading switch-off • 1 NO + 1 NC	▶	3LD9 200-5B	1	1 unit	103	0.046
3LD9 200-5B		For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request • 1 NO + 1 NC	▶	3LD9 200-5BF	1	1 unit	103	0.028
	C							
For floor mounting, distribution board mounting or molded-plastic enclosures								
		4th contact (N conductor) Leading switch-on, lagging switch-off	▶	3LD9 250-0CA	1	1 unit	103	0.080
3LD9 250-0CA (left) 3LD9 250-2CA (right)		N or PE terminals Continuous	▶	3LD9 250-2CA	1	1 unit	103	0.073
		Auxiliary switches For mounting on the left and/or right, lagging switch-on, leading switch-off • 1 NO + 1 NC • 2 NO	▶	3LD9 200-5C	1	1 unit	103	0.046
3LD9 200-5C (left) 3LD9 200-6C (right)		For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request • 1 NO + 1 NC	▶	3LD9 200-6C	1	1 unit	103	0.046
	C			3LD9 200-5CF	1	1 unit	103	0.028
For front and floor mounting								
		Rotary operating mechanisms Lockable in 0 position with up to 3 padlocks • For four-hole mounting, including seal - Black - Red/yellow	A	3LD9 284-1B	1	1 unit	103	0.154
3LD9 284-1B			A	3LD9 284-3B	1	1 unit	103	0.152
		• For center-hole mounting, including seal and nut - Black - Red/yellow	A	3LD9 284-1D	1	1 unit	103	0.155
3LD9 284-3D			A	3LD9 284-3D	1	1 unit	103	0.155
		Mounting tools For center-hole mounting with nut	A	3LD9 256-0A	1	5 units	103	0.027
3LD9 256-0A								
		Switching shafts 6 x 6 mm Length 300 mm	C	3LD9 205-0C	1	5 units	103	0.476
		Length 600 mm	C	3LD9 205-2C	1	5 units	103	0.476
		Inscription labels With English/German inscription (MAIN SWITCH/HAUPTSCHALTER)	A	3LD9 286-1A	1	10 units	103	0.005
3LD9 286-1A		Without inscription	A	3LD9 286-4A	1	10 units	103	0.054
		Terminal covers as additional touch protection (also for distribution board mounting) Can be snapped on at top and bottom • 1-pole • 3-pole	A	3LD9 251-2A	100	4 units	103	0.100
3LD9 251-2A (left) 3LD9 251-0A (right)			A	3LD9 251-0A	1	4 units	103	0.009

* You can order this quantity or a multiple thereof.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3LD Main and EMERGENCY-STOP Switches up to 250 A

Accessories

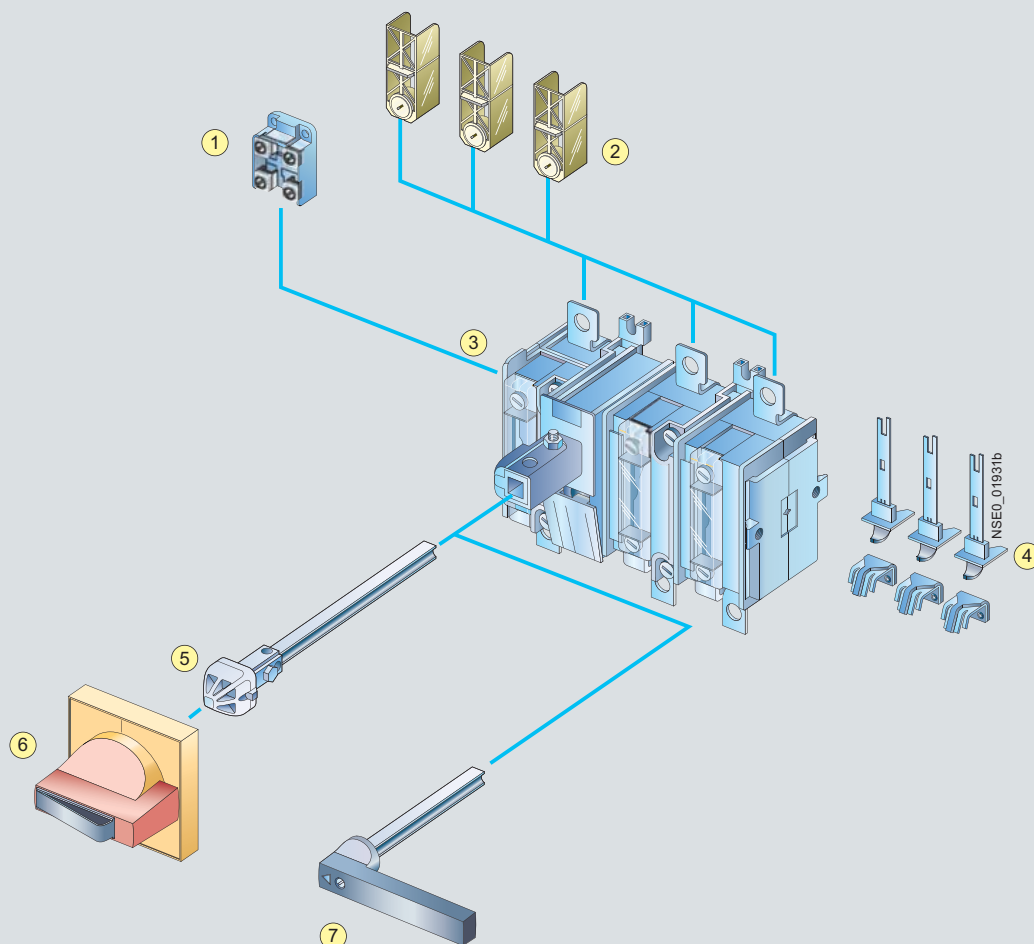
Version	DT	3LD2 7 and 3LD2 8	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.		
		Order No.	Price per PU				kg	
For front mounting								
		4th contact (N conductor)	▶	3LD9 280-0B	1	1 unit	103	0.101
		Leading switch-on, lagging switch-off						
		N or PE terminals	▶	3LD9 280-2B	1	1 unit	103	0.092
		Continuous						
		Auxiliary switches						
		For mounting on the left and/or right, lagging switch-on, leading switch-off						
		• 1 NO + 1 NC	▶	3LD9 200-5B	1	1 unit	103	0.046
		For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request						
		• 1 NO + 1 NC	C	3LD9 200-5BF	1	1 unit	103	0.028
For floor mounting, distribution board mounting or molded-plastic enclosures								
		4th contact (N conductor)	▶	3LD9 280-0C	1	1 unit	103	0.102
		Leading switch-on, lagging switch-off						
		N or PE terminals	▶	3LD9 280-2C	1	1 unit	103	0.093
		Continuous						
		Auxiliary switches						
		For mounting on the left and/or right, lagging switch-on, leading switch-off						
		• 1 NO + 1 NC	▶	3LD9 200-5C	1	1 unit	103	0.046
		• 2 NO	▶	3LD9 200-6C	1	1 unit	103	0.046
		For mounting on the left and/or right, lagging switch-on, leading switch-off, with gold-plate contacts for SIMATIC request						
		• 1 NO + 1 NC	C	3LD9 200-5CF	1	1 unit	103	0.028
For front and floor mounting								
		Rotary operating mechanisms for four-hole mounting						
		Lockable in 0 position with up to 3 padlocks, including seal						
		• Black	A	3LD9 284-1B	1	1 unit	103	0.154
		• Red/yellow	A	3LD9 284-3B	1	1 unit	103	0.152
		Switching shafts 6 x 6 mm						
		Length 300 mm	C	3LD9 205-0C	1	5 units	103	0.476
	Length 600 mm	C	3LD9 205-2C	1	5 units	103	0.476	
		Inscription labels						
		With English/German inscription (MAIN SWITCH/HAUPTSCHALTER)	A	3LD9 286-1A	1	10 units	103	0.005
		Without inscription	A	3LD9 286-4A	1	10 units	103	0.054
		Terminal covers as additional touch protection (also for distribution board mounting)						
		Can be snapped on at top and bottom						
		• 1-pole (1 pack = 4 units)	A	3LD9 281-2A	1	4 units	103	0.007

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

General data

Overview



- ① Auxiliary switch (3SB for 3KA; 3KX for 3KE)
- ② IP20 terminal cover (Operator side)
- ③ 3K switch disconnector
- ④ Arcing contacts (only for 3KE)
- ⑤ Extension shaft
- ⑥ 8UC7 door-coupling rotary operating mechanism in standard version (ti-grey) or EMERGENCY-STOP version (red/yellow).
- ⑦ 8UC9 knob for fixed mounting in standard version (black) or EMERGENCY-STOP version (red/yellow).

All components from the switch to the actuator are provided with non-interchangeability features.

For the 3KA switch disconnectors, complete kits for standard and EMERGENCY-STOP application are available for installation in the side and rear panels of control cabinets.

A changeover operating mechanism is available for the use of 2 switch disconnectors in the 3KE series as load changeover switches.

An operating linkage permits simultaneous switching of two 3KE switch disconnectors with identical or different rated operational currents.

Identical accessories for 3KA switch disconnectors and for 3KL and 3KM switch disconnectors with fuses simplify stock keeping.

Application

3KA and 3KE switch disconnectors are used as main, EMERGENCY-STOP, maintenance and transfer switches in distribution boards for residential and non-residential buildings as well as industrial switchboards. As three and four-pole versions, they ensure activation and deactivation of the specified rated current under load. At the same time, they constitute a safety isolating function and isolating distance in all low-voltage circuits.

All 3K switch disconnectors are climate-proof and meet the requirements of IEC 60947-1, IEC 60947-3 and VDE 0660 Part 107. Switch disconnectors in the type-tested 8HP molded-plastic distribution board enclosure (degree of protection IP65) are available for use as safety switches.

More information can be found in the [Catalog ET A1 "ALPHA Distribution Boards and Terminal Blocks"](#).

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

General data

More information

Standards	IEC 60947-1, IEC 60947-3, VDE 0660 Part 107							
	Type	3KA50	3KA51	3KA52 ¹⁾	3KA53 ¹⁾	3KA55 ¹⁾	3KA57 ¹⁾	3KA58 ¹⁾
Rated uninterrupted current I_U	A	63	80	125	160	250	400	630 ³⁾
Conventional free-air thermal current I_{th}²⁾	A	63	80	125	160	250	400	630 ³⁾
Rated insulation voltage U_i	V	690	690	1000	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	6	6	8	8	8	8	8
Rated operational voltage U_e								
AC 50 Hz/60 Hz	V	690						
DC	V	440 (3 conducting paths series-connected)						
	V	220 (2 conducting paths series-connected)						
	V	110 (1 conducting path)						
Rated short-circuit making capacity I_{cm} with upstream fuses⁴⁾	kA	220	220	220	220	176	176	105
At 50 Hz/60 Hz 690 V AC, peak value								
Rated conditional short-circuit current with upstream fuses⁴⁾	kA	100	100	100	100	80	80	50
At 50 Hz/60 Hz 690 V AC, rms value								
Max. rated current I_n of the fuses	A	63	80	160	160	400	400	630
Permissible let-through current of the fuses	kA	8	10	17	17	30 ⁵⁾	30 ⁵⁾	40 ⁵⁾
Maximum permissible let-through I^2t value	kA ² s	55	55	223	223	1000	1000	2600
Permissible let-through current of an upstream circuit breaker	kA	7	8	8	15	25	25	32
At 50 Hz/60 Hz 690 V AC, peak value								
Rated short-circuit making capacity without fuses	kA	7	7	7	9	20	25	35
At 50 Hz/60 Hz 690 V AC, peak value								
Switching capacity (infeed from the top or bottom)								
At 400 V AC								
• Breaking current I_c (at p.f. = 0.35, rms value)	A	500	650	1000	1280	2000	3200	5040
• Rated operational current I_e at								
- AC-21A, AC-22A, AC-23A	A	63	80	125	160	250	400	630 ⁶⁾
• Motor switching capacity AC-23A	kW	30	40	65	80	132	200	350
At 500 V AC								
• Breaking current I_c (at p.f. = 0.35, rms value)	A	500	640	1000	1280	2000	3200	3200
• Rated operational current I_e at								
- AC-21A, AC-22A	A	63	80	125	160	250	400	630
- AC-23A	A	63	80	125	160	250	400	400
• Motor switching capacity AC-23A	kW	40	50	90	110	185	280	280
At 690 V AC								
• Breaking current I_c (at p.f. = 0.35, rms value)	A	500	500	1000	1280	2000	3200	3200
• Rated operational current I_e at								
- AC-21A, AC-22A	A	63	80	125	160	250	400	630
- AC-23A	A	63	63	125	160	250	400	400
• Motor switching capacity AC-23A	kW	50	50	110	150	220	375	375
At 440 V DC (3 conducting paths series-connected) ⁷⁾								
• Breaking current I_c ($L/R = 15$ ms)	A	250	260	500	640	1000 ⁸⁾	1600	1600
• Rated operational current I_e at DC-23A	A	63	63	125	160	250 ⁹⁾	400	400
Rated short-time current I_{cw} (1 s current, rms value)	kA	2.5	2.5	3.2	3.2	8	11	15
Permissible ambient temperature	°C	-25 ... +55 for operation ³⁾						
	°C	-50 ... +80 when stored						
Mechanical endurance, operating cycles		15000	15000	15000	15000	12000	12000	12000
Degree of protection		IP00/IP20 (from the operator side, with busbar and terminal covers)						
Power loss of the switch disconnector at I_{th}	W	7	12	22	22	33	72	170
Main conductor connections								
Busbar systems, max. dimensions (w x t)	mm	25 x 9	25 x 9	45 x 10	45 x 10	40 x 12	40 x 12	40 x 15
Cable lug, max. conductor cross-section (stranded)	mm ²	35	35	70	120	150	2 x 150 or 1 x 240	2 x 240
Tightening torque	Nm	6 ... 7.5	6 ... 7.5	7 ... 10	18 ... 22	35 ... 45	35 ... 45	35 ... 45
Terminal screws		M6	M6	M6	M8	M10	M10	M10
Protective conductor connections								
Flat bars	mm	--	--	--	--	20 x 2.5	20 x 2.5	20 x 2.5
Cable lug, max. conductor cross-section (stranded)	mm ²	--	--	--	--	70	120	120

1) Technical specifications for approval on request.

2) Configuring note: Max. permissible operating temperature at connections 100 °C.

3) With 3KA58 for operation -25 °C ... +35 °C, 570 A at 55 °C.

4) Only with 3NA38, 3NA32 or 3ND18, 3ND12 fuses (otherwise only 105 kA/50 kA).

5) 3ND1 switchgear protection fuse.

6) AC-23B

7) 220 V DC (L1 and L3 series-connected) or 110 V DC (one conducting path) at DC-23A.

8) At 440 V $L/R = 4$ ms, at 220 V $L/R = 15$ ms.

9) At 440 V DC-22A, at 220 V DC-23A.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

General data

Standards	IEC 60947-1, IEC 60947-3, VDE 0660 Part 107				
	Type	3KE42	3KE43	3KE44	3KE45
Rated uninterrupted current I_U	A	250	400	630	1000
Rated insulation voltage U_i	V	AC 1000, DC 1200			
Rated impulse voltage U_{imp}	kV	8	8	8	8
Rated operational voltage U_e					
AC 50 Hz/60 Hz	V	690			
DC	V	440 (3 conducting paths series-connected)			
	V	220 (2 conducting paths series-connected)			
Rated short-circuit making capacity I_{cm} At 50 Hz/60 Hz 690 V AC (peak value)	kA	35	35	60	60
Rated short-circuit making capacity with upstream fuses At 50 Hz/60 Hz 690 V AC (peak value)	kA	105	105	105	84
Rated conditional short-circuit current with upstream fuses At 50 Hz/60 Hz 690 V AC (rms value)	A	50	50	50	40
Maximum permissible let-through I^2t value	kA ² s	2150	2150	5400	19000
Permissible let-through current of an upstream circuit breaker					
At 50 Hz/60 Hz 690 V AC (peak value)	kA	35	35	60	60
Max. rated current I_n of the fuse	A	400	400	630	1000
Permissible let-through current of the fuses (peak value)	kA	38	38	60	75
Switching capacity (infeed from the top or bottom)					
At 400 V AC					
• Breaking current I_C (rms value at p.f. = 0.35)	A	1000	1000	2520	2520
• Rated operational current I_e at					
- AC-21A	A	250	400	630	1000
- AC-22A	A	250	330	630	800
- AC-23A	A	125	125	315	315
At 500 V AC					
• Breaking current I_C (rms value at p.f. = 0.35)	A	1000	1000	2520	2520
• Rated operational current I_e at					
- AC-21A	A	250	400	630	1000
- AC-22A	A	250	330	630	800
- AC-23A	A	125	125	315	315
At 690 V AC					
• Breaking current I_C (rms value at p.f. = 0.35)	A	1000	1000	2520	2520
• Rated operational current I_e at					
- AC-21A	A	250	400	630	1000
- AC-22A	A	250	330	630	800
- AC-23A	A	125	125	315	315
At 440 V DC (3 conducting paths series-connected)					
• Breaking current I_C (L/R = 5 ms)	A	1000	1000	2520	2520
• Rated operational current I_e at					
- DC-21A	A	250	400	630	1000
- DC-22A	A	250	250	630	630
Rated short-time current I_{cw} (1 s current, rms value)	kA	12.5	12.5	21	21
Permissible ambient temperature	°C	-25 ... +55 for operation			
	°C	-50 ... +80 when stored			
Mechanical endurance , operating cycles		10000			
Degree of protection		IP00			
Power loss of the switch disconnector at I_{th}	W	15	33	78	180
Main conductor connections					
Busbar systems, max. dimensions (w x t)	mm	25 x 10	25 x 10	2 x 40 x 10	2 x 40 x 10
Cable lug, max. conductor cross-section (stranded)	mm ²	2 x 150	2 x 150, 1 x 240	2 x 240	2 x 240

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Floor mounting

Application




3KA switch disconnectors are implemented as main switches and EMERGENCY-STOP switches for normal switching duty and isolation of main circuits and auxiliary circuits. Another field of application is the switching of induction motors and other loads in the event of maintenance and repair.

Main and EMERGENCY-STOP switches are manually operated switch disconnectors according to IEC 60947-3 and VDE 0660 Part 107 (EN 60947-3) and comply with the conditions for switch disconnectors and the requirements of the machinery directive EN 60204-1.

Selection and ordering data

All switch disconnectors with degree of protection IP00

Conductor connecting screws are generally included in the scope of supply.

Rated uninterrupted current I_u	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
A							
Complete versions with 8UC7 door-coupling rotary operating mechanism (black handle)							
3-pole for motor loads and for power distribution							
63	B	3KA50 30-1GE01		1	1 unit	103	1.444
80	B	3KA51 30-1GE01		1	1 unit	103	1.403
125	B	3KA52 30-1GE01		1	1 unit	103	2.383
160	B	3KA53 30-1GE01		1	1 unit	103	2.426
250	B	3KA55 30-1GE01		1	1 unit	103	5.475
400	B	3KA57 30-1GE01		1	1 unit	103	5.556
630	B	3KA58 30-1GE01		1	1 unit	103	6.128
4-pole¹⁾ for power distribution							
63	B	3KA50 40-1GE01		1	1 unit	103	2.498
80	B	3KA51 40-1GE01		1	1 unit	103	2.540
125	B	3KA52 40-1GE01		1	1 unit	103	2.490
160	B	3KA53 40-1GE01		1	1 unit	103	2.458
250	B	3KA55 40-1GE01		1	1 unit	103	6.038
400	B	3KA57 40-1GE01		1	1 unit	103	5.154
630	B	3KA58 40-1GE01		1	1 unit	103	6.595
Basic switch versions without handle							
3-pole for motor loads and for power distribution							
	63	B	3KA50 30-1AE01	1	1 unit	103	0.946
	80	B	3KA51 30-1AE01	1	1 unit	103	0.918
	125	B	3KA52 30-1AE01	1	1 unit	103	1.880
	160	▶	3KA53 30-1AE01	1	1 unit	103	2.028
	250	B	3KA55 30-1AE01	1	1 unit	103	4.514
	400	B	3KA57 30-1AE01	1	1 unit	103	4.630
	630	B	3KA58 30-1AE01	1	1 unit	103	5.151
3KA53 30-1AE01							
4-pole¹⁾ for power distribution							
	63	B	3KA50 40-1AE01	1	1 unit	103	2.100
	80	B	3KA51 40-1AE01	1	1 unit	103	2.112
	125	B	3KA52 40-1AE01	1	1 unit	103	2.090
	160	B	3KA53 40-1AE01	1	1 unit	103	2.240
	250	C	3KA55 40-1AE01	1	1 unit	103	5.042
	400	B	3KA57 40-1AE01	1	1 unit	103	5.195
	630	B	3KA58 40-1AE01	1	1 unit	103	5.740
3KA53 40-1AE01							
8UC7 EMERGENCY-STOP door-coupling rotary operating mechanisms (red handle, yellow indicator plate) for basic switch versions without handle							
3-pole for motor loads and for power distribution							
	63	C	8UC71 21-3BB10	1	1 unit	103	0.200
	80	C	8UC71 21-3BB10	1	1 unit	103	0.200
	125	C	8UC72 22-3BB20	1	1 unit	103	0.200
	160	C	8UC72 22-3BB20	1	1 unit	103	0.200
	250	C	8UC73 23-3BB30	1	1 unit	103	0.200
	400	C	8UC73 23-3BB30	1	1 unit	103	0.200
	630	C	8UC73 23-3BB30	1	1 unit	103	0.200
8UC71 21-3BB10							
4-pole¹⁾ for power distribution							
	63	C	8UC72 22-3BB20	1	1 unit	103	0.200
	80	C	8UC72 22-3BB20	1	1 unit	103	0.200
	125	C	8UC72 22-3BB20	1	1 unit	103	0.200
	160	C	8UC72 22-3BB20	1	1 unit	103	0.200
	250	C	8UC73 23-3BB30	1	1 unit	103	0.200
	400	C	8UC73 23-3BB30	1	1 unit	103	0.200
	630	C	8UC73 23-3BB30	1	1 unit	103	0.200


¹⁾ Rated values reduced in the event of strong harmonics caused by frequency converter operation.

For 8UC7 EMERGENCY-STOP door-coupling rotary operating mechanisms (red handle, yellow indicator plate), see Accessories.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Floor mounting

Rated uninterrupted current I_u	DT	3-pole, assembly kit for mounting in control cabinet side panel Assembly kits (IP40) Comprising: Lockable handle and three terminal covers for the infeed side	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
A		Order No.	Price per PU			kg	
Black handle							
 <p>3KA53 30-1AE01 with 3KX3 536-2AA</p>	63	B	3KX3 516-2AA	1	1 unit	103 0.591	
	80	B	3KX3 516-2AA	1	1 unit	103 0.591	
	125	B	3KX3 536-2AA	1	1 unit	103 0.843	
	160	B	3KX3 536-2AA	1	1 unit	103 0.843	
	250	B	3KX3 556-2AA	1	1 unit	103 1.560	
	400	B	3KX3 556-2AA	1	1 unit	103 1.560	
	630	B	3KX3 556-2AA	1	1 unit	103 1.560	
	EMERGENCY-STOP red handle						
	63	B	3KX3 516-2BA	1	1 unit	103 0.584	
	80	B	3KX3 516-2BA	1	1 unit	103 0.584	
125	B	3KX3 536-2BA	1	1 unit	103 0.860		
160	B	3KX3 536-2BA	1	1 unit	103 0.860		
250	B	3KX3 556-2BA	1	1 unit	103 1.590		
400	B	3KX3 556-2BA	1	1 unit	103 1.590		
630	B	3KX3 556-2BA	1	1 unit	103 1.590		

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Floor mounting

All switch disconnectors with degree of protection IP00
with high speed closing and opening
conductor connecting screws are generally included in the scope of supply

Rated uninterrupted current I_u	DT	3-pole, operating mechanism and actuation from the front Direct operating mechanisms	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A		Order No.	Price per PU			kg
Complete versions with black handle						
250	B	3KE42 30-0BA	1	1 unit	103	4.210
400	B	3KE43 30-0BA	1	1 unit	103	4.178
630	B	3KE44 30-0BA	1	1 unit	103	7.184
1000	B	3KE45 30-0BA	1	1 unit	103	7.838
Basic switch versions without handle						
250	B	3KE42 30-0AA	1	1 unit	103	3.879
400	B	3KE43 30-0AA	1	1 unit	103	3.870
630	B	3KE44 30-0AA	1	1 unit	103	6.915
1000	B	3KE45 30-0AA	1	1 unit	103	7.427
EMERGENCY-STOP red handles + coupling sockets for basic switch versions without handle						
250	B	8UC93 71 + 3KX2 210-0H	1	1 unit	103	0.146
	B	3KX2 210-0H	1	1 unit	103	0.236
400	B	8UC93 71 + 3KX2 210-0H	1	1 unit	103	0.146
	B	3KX2 210-0H	1	1 unit	103	0.236
630	B	8UC93 75 + 3KX2 210-0H	1	1 unit	103	0.165
	B	3KX2 210-0H	1	1 unit	103	0.236
1000	B	8UC93 75 + 3KX2 210-0H	1	1 unit	103	0.165
	B	3KX2 210-0H	1	1 unit	103	0.236
Rated uninterrupted current I_u	DT	3-pole, operating mechanism and actuation from the front Door-coupling rotary operating mechanisms (lockable)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A		Order No.	Price per PU			kg
Complete versions with 8UC7 door-coupling rotary operating mechanism (black handle)						
250	B	3KE42 30-0GA	1	1 unit	103	5.032
400	B	3KE43 30-0GA	1	1 unit	103	5.041
630	B	3KE44 30-0GA	1	1 unit	103	7.885
1000	B	3KE45 30-0GA	1	1 unit	103	8.532
Basic switch versions without handle						
250	B	3KE42 30-0AA	1	1 unit	103	3.879
400	B	3KE43 30-0AA	1	1 unit	103	3.870
630	B	3KE44 30-0AA	1	1 unit	103	6.915
1000	B	3KE45 30-0AA	1	1 unit	103	7.427
8UC7 EMERGENCY-STOP door-coupling rotary operating mechanisms (red handle, yellow indicator plate) for basic switch versions without handle						
250, 400, 630, 1000	C	8UC73 24-3BB44	1	1 unit	103	0.200

* You can order this quantity or a multiple thereof.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Floor mounting

Rated uninterrupted current I_u	DT	3-pole, rear operating mechanism and actuation	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A		Order No.	Price per PU			kg
Basic switch versions without handle						
Direct operating mechanisms						
250	B	3KE42 30-0CA	1	1 unit	103	5.306
400	B	3KE43 30-0CA	1	1 unit	103	5.030
630	C	3KE44 30-0CA	1	1 unit	103	7.395
1000	C	3KE45 30-0CA	1	1 unit	103	7.990
Direct operating mechanisms (lockable)						
250	B	3KE42 30-0CA	1	1 unit	103	5.306
400	B	3KE43 30-0CA	1	1 unit	103	5.030
630	C	3KE44 30-0CA	1	1 unit	103	7.395
1000	C	3KE45 30-0CA	1	1 unit	103	7.990
Handles (black) + masking plates + display plates (silver) for basic switch versions without handle						
Direct operating mechanisms						
250	B	8UC93 70	1	1 unit	103	0.128
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 31-0B	1	1 unit	103	0.011
400	B	8UC93 70	1	1 unit	103	0.128
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 31-0B	1	1 unit	103	0.011
630	B	8UC93 74	1	1 unit	103	0.145
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 31-0B	1	1 unit	103	0.011
1000	B	8UC93 74	1	1 unit	103	0.145
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 31-0B	1	1 unit	103	0.011
Direct operating mechanisms (lockable)						
250	B	8UC93 70	1	1 unit	103	0.128
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 31-0B	1	1 unit	103	0.011
400	B	8UC93 70	1	1 unit	103	0.128
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 31-0B	1	1 unit	103	0.011
630	B	8UC93 74	1	1 unit	103	0.145
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 31-0B	1	1 unit	103	0.011
1000	B	8UC93 74	1	1 unit	103	0.145
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 31-0B	1	1 unit	103	0.011

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Floor mounting

Rated uninterrupted current I_u	DT	3-pole, rear operating mechanism and actuation	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A		Order No.	Price per PU			kg
EMERGENCY-STOP red handles + masking plates + display plates (yellow) for basic switch versions without handle						
Direct operating mechanisms						
250	B	8UC93 71	1	1 unit	103	0.146
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
400	B	8UC93 71	1	1 unit	103	0.146
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
630	B	8UC93 75	1	1 unit	103	0.165
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
1000	B	8UC93 75	1	1 unit	103	0.165
	A	+ 8UB95 30	1	1 unit	103	0.028
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
Direct operating mechanisms (lockable)						
250	B	8UC93 71	1	1 unit	103	0.146
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
400	B	8UC93 71	1	1 unit	103	0.146
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
630	B	8UC93 75	1	1 unit	103	0.165
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
1000	B	8UC93 75	1	1 unit	103	0.165
	B	+ 8UC95 63	1	1 unit	103	0.271
	A	+ 8UC96 33-0B	1	1 unit	103	0.011
Rated uninterrupted current I_u	DT	3-pole, rear rotary operating mechanisms (lockable) Door-coupling rotary operating mechanisms (lockable)	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A		Order No.	Price per PU			kg
Basic switch versions without handle						
250	B	3KE42 30-0CA	1	1 unit	103	5.306
400	B	3KE43 30-0CA	1	1 unit	103	5.030
630	C	3KE44 30-0CA	1	1 unit	103	7.395
1000	C	3KE45 30-0CA	1	1 unit	103	7.990
8UC7 door-coupling rotary operating mechanisms (black handle) for basic switch versions without handle						
250, 400, 630, 1000	C	8UC73 14-1BB44	1	1 unit	103	0.200
8UC7 EMERGENCY-STOP door-coupling rotary operating mechanisms (red handle, yellow indicator plate) for basic switch versions without handle						
250, 400, 630, 1000	C	8UC73 24-3BB44	1	1 unit	103	0.200

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Molded-plastic enclosure

Benefits

- Lockable with 3 padlocks
- Generous terminal compartment
- Degree of protection IP65
- Maintenance-free
- Easy mounting


Application

Our master and EMERGENCY-STOP switches provide absolute safety, even during maintenance and repair work. All-round safety for people and machines.

With their high degree of protection IP65, they can even withstand dust and water spray, providing unparalleled safety in the

building and industrial installations as well as the food and chemical industry. Even with the enclosure open, they comply with protection class 2. IP20 is the minimum!

Selection and ordering data

Main contacts	Auxiliary contacts	P/AC-23A		I_u	Conductor cross-section of main conductor/PEN	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
		At 380 ... 400 V	At 660/690 V										kW
Main control switches complete with rotary operating mechanism, black¹⁾													
	3	--	65	110	125	35/35 ²⁾	C	8HP2 707		1	1 unit	046	5.240
			80	150	160	120/70 ²⁾	C	8HP2 711		1	1 unit	046	8.039
			132	220	250	150/70 ²⁾	C	8HP2 712		1	1 unit	046	12.242
			200	375	400	2 × 150 or 1 × 240/120	C	8HP2 717		1	1 unit	046	12.378
			350	375	630	2 × 240/120	C	8HP2 718		1	1 unit	046	13.050
			315	315	800 ³⁾	2 × 240/240	C	8HP2 738		1	1 unit	046	14.290
EMERGENCY-STOP switches complete with rotary operating mechanism, red/yellow¹⁾													
	3	--	65	110	125	35/35 ²⁾	C	8HP2 747		1	1 unit	046	5.217
			80	150	160	120/70 ²⁾	C	8HP2 748		1	1 unit	046	7.992
			132	220	250	150/70 ²⁾	C	8HP2 761		1	1 unit	046	12.340
			200	375	400	2 × 150 or 1 × 240/120	C	8HP2 762		1	1 unit	046	12.354
			350	375	630	2 × 240/120	C	8HP2 763		1	1 unit	046	12.875
			315	315	800 ³⁾	2 × 240/240	C	8HP2 758		1	1 unit	046	14.329

¹⁾ With PE-/ground or N terminal.

²⁾ For a fifth conductor, the same terminal can be fitted additionally.

³⁾ At ambient temperatures up to 35 °C.

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Accessories

Selection and ordering data

	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3KA50 30/3KA51 30							
		Terminal cover					
		For 3-pole devices (1 set = 6 units)	▶ 3KX3 552-3DA01	1	1 unit	103	0.077
		For 4-pole devices (1 set = 8 units)	B 3KX3 552-3DB01	1	1 unit	103	0.102
		Door-coupling rotary operating mechanisms IP65					
		Black handle, shaft 300 mm	C 8UC71 11-1BB10	1	1 unit	103	0.200
		EMERGENCY-STOP (yellow/red), shaft 300 mm	C 8UC71 21-3BB10	1	1 unit	103	0.200
		Operating mechanisms for fixed mounting	▶ 3KX3 516-1AA	1	1 unit	103	0.088
		Black handle, shaft 250 mm					
		Extension shaft 300 mm long	B 8UC60 31	1	1 unit	103	0.068
		Extension shaft 600 mm long	B 8UC60 81	1	1 unit	103	0.136
		Shaft connecting pieces	B 8UC60 21	1	1 unit	103	0.031
		Auxiliary switches	C 3SB14 00-0A	1	1 unit	102	0.020
		1 NO + 1 NC ¹⁾					
3KA50 40/3KA51 40/3KA52/3KA53							
		Terminal cover					
		For 3KA52 3-pole devices (1 set = 6 units)	▶ 3KX3 552-3DA01	1	1 unit	103	0.077
		For 3KA53	▶ 3KX3 553-3DA01	1	1 unit	103	0.147
		For 3KA52 4-pole devices (1 set = 8 units)	B 3KX3 552-3DB01	1	1 unit	103	0.102
		For 3KA53	B 3KX3 553-3DB01	1	1 unit	103	0.170
		Door-coupling rotary operating mechanisms IP65					
		Black handle, shaft 300 mm	C 8UC72 12-1BB20	1	1 unit	103	0.200
		EMERGENCY-STOP (yellow/red), shaft 300 mm	C 8UC72 22-3BB20	1	1 unit	103	0.200
		Operating mechanisms for fixed mounting	▶ 3KX3 536-1AA	1	1 unit	103	0.155
		Black handle, shaft 250 mm					
		Extension shaft 300 mm long	B 8UC60 32	1	1 unit	103	0.132
		Extension shaft 600 mm long	B 8UC60 82	1	1 unit	103	0.265
		Shaft connecting pieces	B 8UC60 22	1	1 unit	103	0.023
		Auxiliary switches	C 3SB14 00-0A	1	1 unit	102	0.020
		1 NO + 1 NC ¹⁾					
		20 ms leading	B 3KX3 552-3EA01	1	1 unit	103	0.019
		1 NO + 1 NC					
3KA55/3KA57/3KA58							
		Terminal cover					
		For 3-pole devices (1 set = 6 units)	▶ 3KX3 557-3DA01	1	1 unit	103	0.277
		For 4-pole devices (1 set = 8 units)	B 3KX3 557-3DB01	1	1 unit	103	0.362
		Door-coupling rotary operating mechanisms IP65					
		Black handle, shaft 300 mm	C 8UC73 13-1BB30	1	1 unit	103	0.200
		EMERGENCY-STOP (yellow/red), shaft 300 mm	C 8UC73 23-3BB30	1	1 unit	103	0.200
		Operating mechanisms for fixed mounting	▶ 3KX3 176-1E	1	1 unit	103	0.285
		Black handle, shaft 250 mm					
		Extension shaft 300 mm long	C 8UC60 33	1	1 unit	103	0.217
		Extension shaft 600 mm long	B 8UC60 83	1	1 unit	103	0.430
		Shaft connecting pieces	B 8UC60 23	1	1 unit	103	0.085
		Auxiliary switches	C 3SB14 00-0A	1	1 unit	102	0.020
		1 NO + 1 NC ¹⁾					
		20 ms leading	B 3KX3 552-3EA01	1	1 unit	103	0.019
		1 NO + 1 NC ¹⁾					

¹⁾ For more 3SB14 00-0. contact blocks with other contact types, see Chapter 9 "Pushbuttons and Indicator Lights".

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
---------	----	-----------	--------------	-------------------	-----	----	-----------------------

kg

3KE42/3KE43

Changeover switches

Changeover switches with interruption

Switch I ON – Switch II OFF
Switch I OFF – Switch II OFF
Switch I ON – Switch II ON



3KX2 210-0D

B	3KX2 210-0D	1	1 unit	103	2.442
---	-------------	---	--------	-----	-------

Door-coupling rotary operating mechanisms IP65

Twin handle (black), shaft 300 mm

Direct operating mechanisms

Twin handle (black) for fixed mounting

Changeover switches without interruption

Switch I ON – Switch II OFF
Switch I ON – Switch II ON
Switch I ON – Switch II ON

Door-coupling rotary operating mechanisms IP65

Twin handle (black), shaft 300 mm

Direct operating mechanisms

Twin handle (black) for fixed mounting

Parallel switches

Switch I ON – Switch II ON
Switch I OFF – Switch II OFF

Door-coupling rotary operating mechanisms IP65

Twin handle (black), shaft 300 mm

EMERGENCY-STOP door-coupling rotary operating mechanisms IP65

Twin handle (red), shaft 300 mm

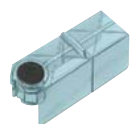
Direct operating mechanisms

Twin handle (black) for fixed mounting

Further accessories

Terminal cover

(1 set = 6 units)



3KX3 557-3DA01

▶	3KX3 557-3DA01	1	1 unit	103	0.277
---	----------------	---	--------	-----	-------

Door-coupling rotary operating mechanisms IP65

Black handle, shaft 300 mm
EMERGENCY-STOP (yellow/red), shaft 300 mm

Extension shaft 300 mm long

Extension shaft 600 mm long

Auxiliary switches with switching cam

1 NO + 1 NC (complete mounting kit)



3KX2 231-1A

C	8UC73 14-1BB44	1	1 unit	103	0.200
C	8UC73 24-3BB44	1	1 unit	103	0.200
B	8UC60 34	1	1 unit	103	0.315
B	8UC60 84	1	1 unit	103	0.640
B	3KX2 231-1A	1	1 unit	103	0.049

Grounding brackets

Arc chute

(spare part with 3 arc-splitter assemblies)

Arcing contacts

(spare part with 3 fixed and 3 movable contacts)



3KY2 204-0A

B	3KX2 252-1A	1	1 unit	103	0.049
B	3KY2 202-0B	1	1 unit	103	0.640
B	3KY2 204-0A	1	1 unit	103	0.202

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg
3KE44/3KE45							
<i>Changeover switches</i>							
Changeover switches with interruption							
Switch I ON – Switch II OFF Switch I OFF – Switch II OFF Switch I ON – Switch II ON	B	3KX2 210-0D		1	1 unit	103	2.442
Door-coupling rotary operating mechanisms IP65							
Twin handle (black), shaft 300 mm	C	8UC74 14-1BF44		1	1 unit	103	0.200
Direct operating mechanisms							
Twin handle (black) for fixed mounting	B	8UC93 81		1	1 unit	103	0.264
Changeover switches without interruption							
Switch I ON – Switch II OFF Switch I ON – Switch II ON Switch I ON – Switch II ON	B	3KX2 210-0E		1	1 unit	103	2.448
Door-coupling rotary operating mechanisms IP65							
Twin handle (black), shaft 300 mm	C	8UC74 14-1FG44		1	1 unit	103	0.200
Direct operating mechanisms							
Twin handle (black) for fixed mounting	B	8UC93 81		1	1 unit	103	0.264
<i>Parallel switches</i>							
Switch I ON – Switch II ON Switch I OFF – Switch II OFF	C	3KX2 250-1A		1	1 unit	103	0.750
Door-coupling rotary operating mechanisms IP65							
Twin handle (black), shaft 300 mm	C	8UC74 14-1BB44		1	1 unit	103	0.200
EMERGENCY-STOP door-coupling rotary operating mechanisms IP65							
Twin handle (red), shaft 300 mm	C	8UC74 24-3BB44		1	1 unit	103	0.200
Direct operating mechanisms							
Twin handle (black) for fixed mounting	B	8UC93 81		1	1 unit	103	0.264
<i>Further accessories</i>							
Terminal cover (top and bottom)							
	B	3KX2 252-0C		1	1 unit	103	0.424
Door-coupling rotary operating mechanisms IP65							
Black handle, shaft 300 mm	C	8UC73 14-1BB44		1	1 unit	103	0.200
EMERGENCY-STOP (yellow/red), shaft 300 mm	C	8UC73 24-3BB44		1	1 unit	103	0.200
Extension shaft 300 mm long							
	B	8UC60 34		1	1 unit	103	0.315
Extension shaft 600 mm long							
	B	8UC60 84		1	1 unit	103	0.640
Auxiliary switches							
1 NO + 1 NC (complete mounting kit)	B	3KX2 231-1A		1	1 unit	103	0.049
Grounding brackets							
	B	3KX2 252-1A		1	1 unit	103	0.049
Arc chute (spare part with 3 arc-splitter assemblies)							
	B	3KY2 232-0A		1	1 unit	103	1.040
Arcing contacts (spare part with 3 fixed and 3 movable contacts)							
	B	3KY2 234-0A		1	1 unit	103	0.105



3KX2 210-0D



3KX2 231-1A



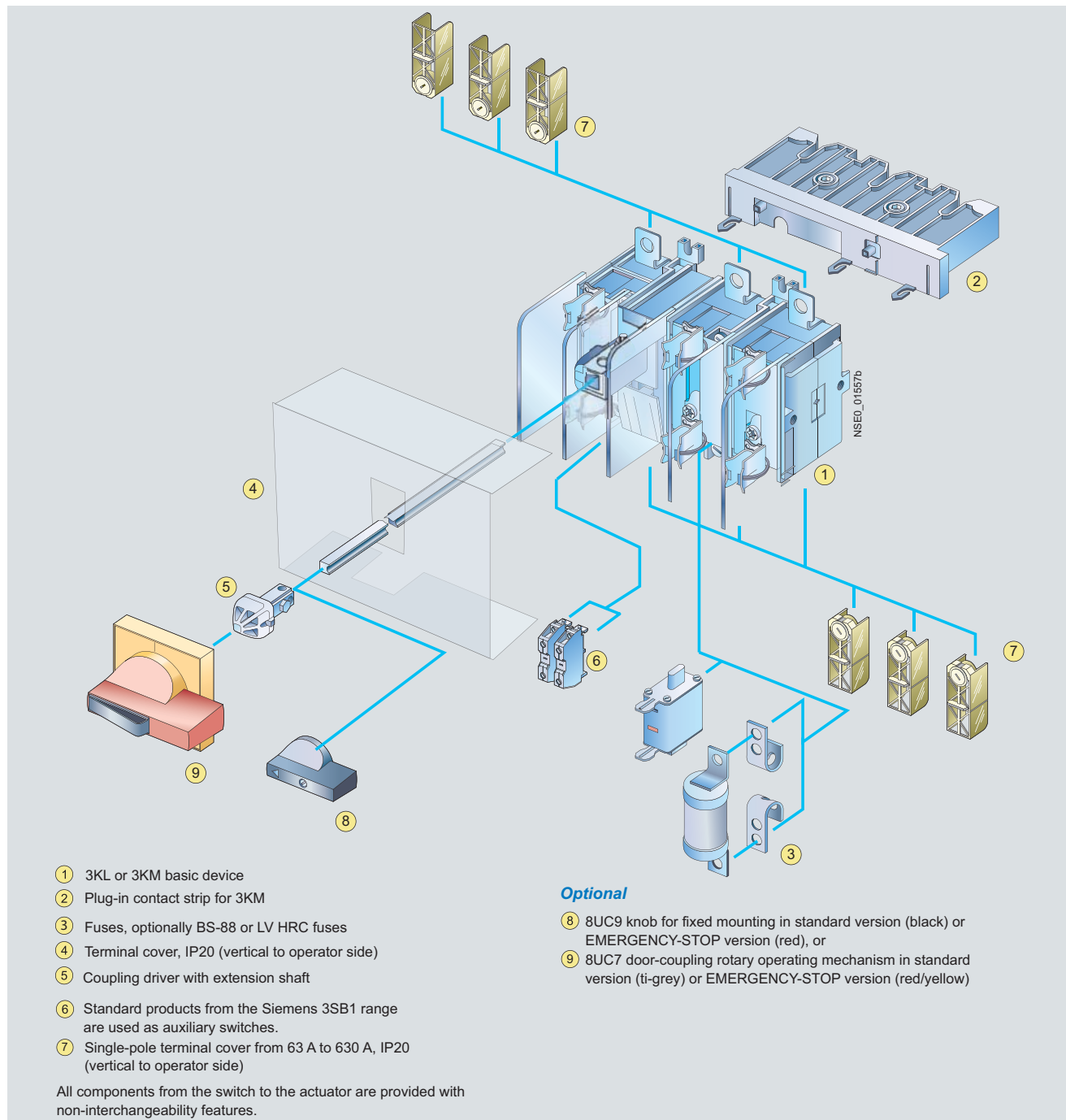
3KY2 232-0A

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

General data

Overview



All switch disconnectors feature double contact interruption and an isolating distance. As a result, the fuses of the switch disconnectors are de-energized in the OFF position. Generally, all 3K. 5 switch disconnectors can be secured on the shaft with a padlock to prevent unauthorized reclosing.

Identical accessories for 3KA switch disconnectors and for 3KL and 3KM switch disconnectors with fuses simplify stock keeping. Please inquire about a special variant with reduced values that is particularly resistant to atmospheres high in sulfur, e. g. in the paper and cellulose processing industries.

Application

3KL switch disconnectors with fuses protect against overload and short-circuits as main and EMERGENCY-STOP switches of switch boards, distribution boards, power supply and motor outgoing feeders. In conjunction with Siemens SITOR semiconductor fuses, they are also used in UPS systems, frequency converters and capacitor control systems.

All 3K switch disconnectors are climate-proof and meet the requirements of IEC 60947-1, IEC 60947-3 and VDE 0660 Part 107.

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

General data

More information

Standards	IEC 60947-1, IEC 60947-3, VDE 0660 Part 107							
	Type	3KL50	3KL52 ¹⁾	3KL53 ¹⁾	3KL55 ¹⁾	3KL57 ¹⁾	3KL61 ¹⁾	3KL62 ¹⁾
Rated uninterrupted current I_U For fuse links acc. to DIN 43620, (when SITOR semiconductor fuses are used, a reduction of rated current is necessary, see Catalog Add-On ET B1 AO · 2009)	A Size	63 00 and 000	125 00 and 000	160 00 and 000	250 1 and 2	400 1 and 2	630 3 and 2	800 3 and 2
Conventional free-air thermal current I_{th} ²⁾	A	63	125	160	250	400	630	800
Rated insulation voltage U_i	V	690	1000	1000	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	6	8	8	8	8	8	8
Rated operational voltage U_e AC 50 Hz/60 Hz DC	V V	690 440 (3 conducting paths series-connected) 220 (2 conducting paths series-connected) ³⁾						
Rated short-circuit making capacity with fuses Peak value, at 50 Hz/60 Hz 690 V AC	kA	220	220	220	176	176	105	105
Rated conditional short-circuit current with fuses Rms value, at AC 50 Hz/60 Hz 690 V Max. rated current I_n of the fuses	kA A	100 80	100 160	100 160	80 400	80 400	50 630 ⁴⁾	50 800
Max. permissible power loss of the installed fuse								
• NH	W	6	9	11.5	32	45	48	62
• BS	W	8 (A2/A3)	11.5 (A4)	11.5	32	45	48	60.5
Permissible let-through current of the fuses	kA	8	17	17	30 ⁵⁾	30 ⁵⁾	50	50
Maximum permissible let-through I^2t value	kA ² s	55	223	223	1000	1000	5400	10500
Switching capacity (infeed from the top or bottom)								
At 400 V AC								
• Breaking current I_C (at p.f. = 0.35, rms value)	A	500	1000	1280	2000	3200	5100	6400
• Rated operational current I_e with AC-21A, AC-22A, AC-23A	A	63	125	160	250	400	630 ⁶⁾	800 ⁶⁾
• Motor switching capacity AC-23A	kW	30	65	80	132	200	335	400
At 500 V AC								
• Breaking current I_C (at p.f. = 0.35, rms value)	A	500	1000	1280	2000	3200	5100	6400
• Rated operational current I_e with AC-21A, AC-22A, AC-23A	A	63	125	160	250	400	630 ⁶⁾	800 ⁶⁾
• Motor switching capacity AC-23A	kW	40	90	110	185	280	425	500
At 690 V AC								
• Breaking current I_C (at p.f. = 0.35, rms value)	A	500	1000	1280	2000	3200	5100	6400
• Rated operational current I_e with AC-21A, AC-22A, AC-23A	A	63	125	160	250	400	630 ⁵⁾	800 ⁵⁾
• Motor switching capacity AC-23A	kW	50	110	150	220	375	560	700
At 440 V DC (3 conducting paths series-connected) ⁷⁾								
• Breaking current I_C ($L/R = 15$ ms)	A	250	500	640	1000 ⁸⁾	1600	2520 ⁹⁾	2520 ⁹⁾
• Rated operational current I_e at DC-23A	A	63	125	160	250 ¹⁰⁾	400	630 ¹⁰⁾	630 ¹⁰⁾
Rated short-time current I_{cw} (1 s current, rms value)	kA	2.5	3.2	3.2	8	11	32	32
Permissible ambient temperature	°C °C	-25 ... +55 for operation ⁴⁾ , -50 ... +80 when stored						
Mechanical endurance , operating cycles		15000	15000	15000	12000	12000	3000	3000
Degree of protection		IP00/IP20 (from the operator side, with fuse and terminal covers)						
Power loss of the switch disconnector at I_{th} (plus power loss of the fuses)	W	8.5	22	36	33	86	140	225
Main conductor connections								
Busbar systems, max. dimensions (w x t)	mm	25 x 9	45 x 10	45 x 10	40 x 12	40 x 15	40 x 17	40 x 17
Cable lug, max. conductor cross-section (stranded)	mm ²	35	70	120	150	2 x 150 or 1 x 240	2 x 240	2 x 240
Tightening torque	Nm	6 ... 7.5	7 ... 10	18 ... 22	35 ... 45	35 ... 45	56	56
Terminal screws		M6	M6	M8	M10	M10	M12	M12
Protective conductor connections								
Flat bars	mm	--	--	--	20 x 2.5	20 x 2.5	--	--
Cable lug, max. conductor cross-section (stranded)	mm ²	--	--	--	70	120	--	--

1) Technical specifications for approval on request.

2) Configuring note: Max. permissible operating temperature for fuse blades 135 °C, for connections 100 °C.

3) 110 V (one conducting path).

4) With 3KL61 for operation -25 °C ... +35 °C, at +55 °C: $I_{th} = 570$ A.

5) With 3ND1 switchgear protection fuse.

6) AC-23B

7) 220 V DC (L1 and L3 series-connected) or 110 V DC (one conducting path) at DC-23A.

8) At 440 V $L/R = 4$ ms, at 220 V $L/R = 15$ ms.9) Only DC-22A ($L/R = 2.5$ ms)

10) At 440 V DC-22A, at 220 V DC-23A.

Note:

For the 3KL switch disconnectors, complete kits for standard and EMERGENCY-STOP application are available for installation in the side and rear panels of control cabinets.

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

Floor mounting

Selection and ordering data

All switch disconnectors with degree of protection IP00

Conductor connecting screws and fuse partitions are generally included in the scope of supply

Rated uninterrupted current I_u	LV HRC fuse links ¹⁾ acc. to DIN 43620 ²⁾		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Size	Operational class							

A

Complete versions with 8UC7 door-coupling rotary operating mechanism (black handle)

3-pole for NH fuse systems

63	00 and 000	gG, aM	B	3KL50 30-1GB01		1	1 unit	103	1.460
125	00 and 000	gG, aM	B	3KL52 30-1GB01		1	1 unit	103	2.414
160	00 and 000	gG, aM	B	3KL53 30-1GB01		1	1 unit	103	2.600
250	1 and 2	gG, aM	B	3KL55 30-1GB01		1	1 unit	103	6.112
400	2 and 1	gG, aM	B	3KL57 30-1GB01		1	1 unit	103	6.067
630	3 and 2	gG, aM	B	3KL61 30-1GB00		1	1 unit	103	18.070
630 ³⁾	3 and 2 ³⁾	gG, aM ³⁾	D	3KL61 30-1GB02		1	1 unit	113	15.200
800 ³⁾	3 and 2 ³⁾	gG, aM ³⁾	C	3KL62 30-1GB02		1	1 unit	113	15.200

4-pole for NH fuse systems

63	00 and 000	gG, aM	B	3KL50 40-1GB01		1	1 unit	103	2.542
125	00 and 000	gG, aM	B	3KL52 40-1GB01		1	1 unit	103	2.623
160	00 and 000	gG, aM	C	3KL53 40-1GB01		1	1 unit	103	2.776
250	1 and 2	gG, aM	B	3KL55 40-1GB01		1	1 unit	103	6.642
400	2 and 1	gG, aM	B	3KL57 40-1GB01		1	1 unit	103	6.886
630	3 and 2	gG, aM	B	3KL61 40-1GB00		1	1 unit	103	16.690

3-pole for fuses acc. to BS 88

63	Form A2/A3		B	3KL50 30-1GG01		1	1 unit	103	1.455
125	Form A2/A3		B	3KL52 30-1GG01		1	1 unit	103	2.360
125	Form A4		B	3KL52 30-1GJ01		1	1 unit	103	2.406
160	Form A4		B	3KL53 30-1GJ01		1	1 unit	103	2.575
250	Form B1-B3		B	3KL55 30-1GG01		1	1 unit	103	6.115
400	Form B1-B3		B	3KL57 30-1GG01		1	1 unit	103	6.582
630	Form C1-C3		C	3KL61 30-1GG00		1	1 unit	103	16.278
800	Form C1-C3		D	3KL62 30-1GG00		1	1 unit	113	15.400

4-pole for fuses acc. to BS 88

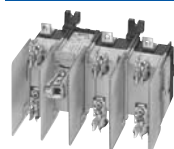
63	Form A2/A3		B	3KL50 40-1GG01		1	1 unit	103	2.563
125	Form A2/A3		B	3KL52 40-1GG01		1	1 unit	103	2.560
125	Form A4		B	3KL52 40-1GJ01		1	1 unit	103	2.614
160	Form A4		B	3KL53 40-1GJ01		1	1 unit	103	2.780
250	Form B1-B3		B	3KL55 40-1GG01		1	1 unit	103	6.639
400	Form B1-B3		B	3KL57 40-1GG01		1	1 unit	103	7.148

630	Form C1-C3		C	3KL61 40-1GG00		1	1 unit	103	16.996
-----	------------	--	---	-----------------------	--	---	--------	-----	--------

Basic switch versions without handle

3-pole for NH fuse systems

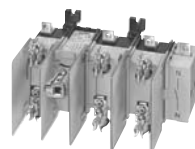
63	00 and 000	gG, aM	▶	3KL50 30-1AB01		1	1 unit	103	1.055
125	00 and 000	gG, aM	▶	3KL52 30-1AB01		1	1 unit	103	1.989
160	00 and 000	gG, aM	▶	3KL53 30-1AB01		1	1 unit	103	2.200
250	1 and 2	gG, aM	▶	3KL55 30-1AB01		1	1 unit	103	5.715
400	2 and 1	gG, aM	▶	3KL57 30-1AB01		1	1 unit	103	5.400
630	3 and 2	gG, aM	A	3KL61 30-1AB0		1	1 unit	113	17.696
630 ³⁾	3 and 2 ³⁾	gG, aM ³⁾	A	3KL61 30-1AB02		1	1 unit	113	14.000
800 ³⁾	3 and 2 ³⁾	gG, aM ³⁾	A	3KL62 30-1AB02		1	1 unit	113	15.200



3KL52 30-1AB01

4-pole for NH fuse systems

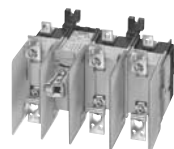
63	00 and 000	gG, aM	B	3KL50 40-1AB01		1	1 unit	103	2.219
125	00 and 000	gG, aM	B	3KL52 40-1AB01		1	1 unit	103	2.195
160	00 and 000	gG, aM	B	3KL53 40-1AB01		1	1 unit	103	2.344
250	1 and 2	gG, aM	B	3KL55 40-1AB01		1	1 unit	103	5.577
400	2 and 1	gG, aM	B	3KL57 40-1AB01		1	1 unit	103	5.670
630	3 and 2	gG, aM	A	3KL61 40-1AB00		1	1 unit	113	15.423



3KL52 40-1AB01

3-pole for fuses acc. to BS 88

63	Form A2/A3		B	3KL50 30-1AG01		1	1 unit	103	0.993
125	Form A2/A3		B	3KL52 30-1AG01		1	1 unit	103	1.939
125	Form A4		B	3KL52 30-1AJ01		1	1 unit	103	2.033
160	Form A4		B	3KL53 30-1AJ01		1	1 unit	103	2.170
250	Form B1-B3		B	3KL55 30-1AG01		1	1 unit	103	5.145
400	Form B1-B3		B	3KL57 30-1AG01		1	1 unit	103	5.666
630	Form C1-C3		A	3KL61 30-1AG00		1	1 unit	113	15.075
800	Form C1-C3		C	3KL62 30-1AG00		1	1 unit	113	14.200



3KL52 30-1AJ01

Fuse monitoring through 5TT3 170 safety monitor with a floating 1 NO, signaling contact, see Catalog ET B1.

For footnotes, see page 17/41.

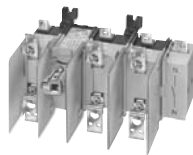
* You can order this quantity or a multiple thereof.

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

Floor mounting

Rated uninterrupted current I_u	LV HRC fuse links ¹⁾ acc. to DIN 43620 ²⁾		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
	Size	Operational class							
A									
4-pole for fuses acc. to BS 88									
63	Form A2/A3		B	3KL50 40-1AG01		1	1 unit	103	2.145
125	Form A2/A3		B	3KL52 40-1AG01		1	1 unit	103	2.161
125	Form A4		B	3KL52 40-1AJ01		1	1 unit	103	2.120
160	Form A4		B	3KL53 40-1AJ01		1	1 unit	103	2.230
250	Form B1-B3		B	3KL55 40-1AG01		1	1 unit	103	5.666
400	Form B1-B3		B	3KL57 40-1AG01		1	1 unit	103	6.441
630	Form C1-C3		C	3KL61 40-1AG00		1	1 unit	113	15.708



3KL52 40-1AJ01 with fuses

8UC7 EMERGENCY-STOP door-coupling rotary operating mechanisms (red handle, yellow indicator plate) for basic switch versions without handle



8UC71 21-3BB10

3-pole for NH fuse systems									
63	00 and 000	gG, aM	C	8UC71 21-3BB10		1	1 unit	103	0.200
125	00 and 000	gG, aM	C	8UC72 22-3BB20		1	1 unit	103	0.200
160	00 and 000	gG, aM	C	8UC72 22-3BB20		1	1 unit	103	0.200
250	1 and 2	gG, aM	C	8UC73 23-3BB30		1	1 unit	103	0.200
400	2 and 1	gG, aM	C	8UC73 23-3BB30		1	1 unit	103	0.200
630	3 and 2	gG, aM	C	8UC74 24-3BB44		1	1 unit	103	0.200
				+ 8UC92 53		1	1 unit	103	0.115
800	3 and 2	gG, aM	C	8UC74 24-3BB44		1	1 unit	103	0.200
				+ 8UC92 53		1	1 unit	103	0.115
4-pole for NH fuse systems									
63	00 and 000	gG, aM	C	8UC72 22-3BB20		1	1 unit	103	0.200
125	00 and 000	gG, aM	C	8UC72 22-3BB20		1	1 unit	103	0.200
160	00 and 000	gG, aM	C	8UC72 22-3BB20		1	1 unit	103	0.200
250	1 and 2	gG, aM	C	8UC73 23-3BB30		1	1 unit	103	0.200
400	2 and 1	gG, aM	C	8UC73 23-3BB30		1	1 unit	103	0.200
630	3 and 2	gG, aM	C	8UC74 24-3BB44		1	1 unit	103	0.200
				+ 8UC92 53		1	1 unit	103	0.115
3-pole for fuses acc. to BS 88									
63	Form A2/A3		C	8UC71 21-3BB10		1	1 unit	103	0.200
125	Form A2/A3		C	8UC72 22-3BB20		1	1 unit	103	0.200
125	Form A4		C	8UC72 22-3BB20		1	1 unit	103	0.200
160	Form A4		C	8UC72 22-3BB20		1	1 unit	103	0.200
250	Form B1-B3		C	8UC73 23-3BB30		1	1 unit	103	0.200
400	Form B1-B3		C	8UC73 23-3BB30		1	1 unit	103	0.200
630	Form C1-C3		C	8UC74 24-3BB44		1	1 unit	103	0.200
				+ 8UC92 53		1	1 unit	103	0.115
800	Form C1-C3		C	8UC74 24-3BB44		1	1 unit	103	0.200
				+ 8UC92 53		1	1 unit	103	0.115
4-pole for fuses acc. to BS 88									
63	Form A2/A3		C	8UC72 22-3BB20		1	1 unit	103	0.200
125	Form A2/A3		C	8UC72 22-3BB20		1	1 unit	103	0.200
125	Form A4		C	8UC72 22-3BB20		1	1 unit	103	0.200
160	Form A4		C	8UC72 22-3BB20		1	1 unit	103	0.200
250	Form B1-B3		C	8UC73 23-3BB30		1	1 unit	103	0.200
400	Form B1-B3		C	8UC73 23-3BB30		1	1 unit	103	0.200
630	Form C1-C3		C	8UC74 24-3BB44		1	1 unit	103	0.200
				+ 8UC92 53		1	1 unit	103	0.115

Fuse monitoring through 5TT3 170 safety monitor with a floating 1 NO signaling contact, see [Catalog ET B1](#).

Footnotes for pages 17/40 and 17/41:

- 1) Silver-plated fuse blades. Silver-plated isolating links can be used if desired.
- 2) For the assignment of semiconductor fuses see "Accessories".
- 3) With SITOP 3NE fuse links c_{bus}-approved.

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

Front mounting

Selection and ordering data

All switch disconnectors with degree of protection IP00

Conductor connecting screws and fuse partitions are generally included in the scope of supply

Rated uninterrupted current I_u	LV HRC fuse links ¹⁾ acc. to DIN 43620 ²⁾		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Size	Operational class							
A									kg

Assembly kits (IP40) comprising: lockable handle, cover for NH fuse systems (locked in ON state) and three terminal covers for infeed side for basic switch versions without handle

3-pole, assembly kits for mounting in control cabinet side panels

• Black handle

63	00	gG, aM	B	3KX3 516-3AA		1	1 unit	103	0.626
125	00	gG, aM	B	3KX3 526-3AA		1	1 unit	103	0.820
160	00	gG, aM	B	3KX3 536-3AA		1	1 unit	103	0.880
250	1 and 2	gG, aM	B	3KX3 556-3AA		1	1 unit	103	1.720
400	2 and 1	gG, aM	B	3KX3 556-3AA		1	1 unit	103	1.720

• EMERGENCY-STOP red handle

63	00	gG, aM	B	3KX3 516-3BA		1	1 unit	103	0.625
125	00	gG, aM	B	3KX3 526-3BA		1	1 unit	103	0.846
160	00	gG, aM	B	3KX3 536-3BA		1	1 unit	103	0.883
250	1 and 2	gG, aM	B	3KX3 556-3BA		1	1 unit	103	1.690
400	2 and 1	gG, aM	B	3KX3 556-3BA		1	1 unit	103	1.690

Fuse monitoring through 5TT3 170 safety monitor with a floating 1 NO signaling contact, [see Catalog ET B1](#).

¹⁾ Silver-plated fuse blades. Silver-plated isolating links can be used if desired.






²⁾ [For the assignment of semiconductor fuses see "Accessories"](#).

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

Accessories

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3KL50 30							
 3KX3 552-3DA01		Terminal cover For 3-pole devices (1 set = 6 units)	▶	3KX3 552-3DA01	1	1 unit	103 0.077
 3KX3 5.7-3AA		Fuse covers (interlock only detachable in the OFF position)	▶	3KX3 517-3AA	1	1 unit	103 0.041
		Cover IP20 For 3-pole devices	▶	3KX3 507-0CA02	1	1 unit	103 0.400
		Fuse partitions (1 set = 5 units)	▶	3KX3 507-0AA01	1	1 unit	103 0.044
 3KX3 507-0BA01	B	Lyre-shaped fuse covers (1 set = 6 units)		3KX3 507-0BA01	1	1 unit	103 0.033
	C	Door-coupling rotary operating mechanisms IP65 Black handle, shaft 300 mm EMERGENCY-STOP (yellow/red), shaft 300 mm		8UC71 11-1BB10	1	1 unit	103 0.200
	C			8UC71 21-3BB10	1	1 unit	103 0.200
		Operating mechanisms for fixed mounting Black handle, shaft 250 mm	▶	3KX3 516-1AA	1	1 unit	103 0.088
	B	Extension shaft 300 mm long		8UC60 31	1	1 unit	103 0.068
	B	Extension shaft 600 mm long		8UC60 81	1	1 unit	103 0.136
	B	Shaft connecting pieces		8UC60 21	1	1 unit	103 0.031
 3SB14 00-0A	C	Auxiliary switches 1 NO + 1 NC 2 NO 2 NC		3SB14 00-0A	1	1 unit	102 0.020
	C			3SB14 00-0G	1	1 unit	102 0.020
	D			3SB14 00-0H	1	1 unit	102 0.020
	B	Fuse monitor connections (1 set = 6 units)		3KX3 505-0AA	1	1 unit	103 0.014
3KL50 40/3KL52/3KL53							
 3KX3 552-3DA01		Terminal covers For 3-pole devices (1 set = 6 units)	▶	3KX3 552-3DA01	1	1 unit	103 0.077
			▶	3KX3 553-3DA01	1	1 unit	103 0.147
	B	For 4-pole devices (1 set = 8 units)		3KX3 552-3DB01	1	1 unit	103 0.102
	B			3KX3 553-3DB01	1	1 unit	103 0.170
 3KX3 5.7-3AA		Fuse covers¹⁾ (interlock only detachable in the OFF position)	▶	3KX3 527-3AA	1	1 unit	103 0.071
		Cover IP20 For 3KL52 3-pole devices	▶	3KX3 527-0CA02	1	1 unit	103 0.765
		Cover IP20 For 3KL53 3-pole devices	▶	3KX3 537-0CA02	1	1 unit	103 0.765
		Fuse partitions (1 set = 5 units)	▶	3KX3 507-0AA01	1	1 unit	103 0.044
 3KX3 507-0BA01	B	Lyre-shaped fuse covers (1 set = 6 units)		3KX3 507-0BA01	1	1 unit	103 0.033

¹⁾ For 3KX3 527-3AA: Not suitable for use with type A4 BS fuses.

* You can order this quantity or a multiple thereof.

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Door-coupling rotary operating mechanisms IP65							
Black handle, shaft 300 mm	C	8UC72 12-1BB20		1	1 unit	103	0.200
EMERGENCY-STOP (yellow/red), shaft 300 mm	C	8UC72 22-3BB20		1	1 unit	103	0.200
Operating mechanisms for fixed mounting							
Black handle, shaft 250 mm	▶	3KX3 536-1AA		1	1 unit	103	0.155
Extension shaft 300 mm long							
	B	8UC60 32		1	1 unit	103	0.132
Extension shaft 600 mm long							
	B	8UC60 82		1	1 unit	103	0.265
Shaft connecting pieces							
	B	8UC60 22		1	1 unit	103	0.023
Auxiliary switches							
1 NO + 1 NC	C	3SB14 00-0A		1	1 unit	102	0.020
20 ms leading, 1 NO + 1 NC	B	3KX3 552-3EA01		1	1 unit	103	0.019
2 NO	C	3SB14 00-0G		1	1 unit	102	0.020
2 NC	D	3SB14 00-0H		1	1 unit	102	0.020
Fuse monitor connections							
(1 set = 6 units)	B	3KX3 505-0AA		1	1 unit	103	0.014
3KL55/3KL57							
Terminal cover							
For 3-pole devices (1 set = 6 units)	▶	3KX3 557-3DA01		1	1 unit	103	0.277
For 4-pole devices (1 set = 8 units)	B	3KX3 557-3DB01		1	1 unit	103	0.362
Fuse covers							
(interlock only detachable in the OFF position)	▶	3KX3 557-3AA		1	1 unit	103	0.212
Cover IP20							
For 3-pole devices	▶	3KX3 557-0CA02		1	1 unit	103	1.235
Fuse partitions							
(1 set = 5 units)	▶	3KX3 557-0AA01		1	1 unit	103	0.162
Door-coupling rotary operating mechanisms IP65							
Black handle, shaft 300 mm	C	8UC73 13-1BB30		1	1 unit	103	0.200
EMERGENCY-STOP (yellow/red), shaft 300 mm	C	8UC73 23-3BB30		1	1 unit	103	0.200
Operating mechanisms for fixed mounting, size 3							
Black handle, shaft 250 mm	▶	3KX3 176-1E		1	1 unit	103	0.285
Extension shaft 300 mm long							
	C	8UC60 33		1	1 unit	103	0.217
Extension shaft 600 mm long							
	B	8UC60 83		1	1 unit	103	0.430
Shaft connecting pieces							
	B	8UC60 23		1	1 unit	103	0.085
Auxiliary switches							
1 NO + 1 NC	C	3SB14 00-0A		1	1 unit	102	0.020
20 ms leading, 1 NO + 1 NC	B	3KX3 552-3EA01		1	1 unit	103	0.019
2 NO	C	3SB14 00-0G		1	1 unit	102	0.020
2 NC	D	3SB14 00-0H		1	1 unit	102	0.020
Fuse monitor connections							
(1 set = 6 units)	B	3KX3 505-0AA		1	1 unit	103	0.014



3SB14 00-0A



3KX3 5.7-3AA



3KX3 176-1E



3SB14 00-0A

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3KL61/3KL62							
Terminal cover For 3-pole devices (1 set = 6 units) For 4-pole devices (1 set = 8 units)	▶ B	3KX3 561-3DA01 3KX3 561-3DB01		1 1	1 unit 1 unit	103 103	0.263 0.365
Fuse covers Cover plate Complete covers ¹⁾	A A	3KX3 561-0AA00 3KX3 561-1AA00		1 1	1 unit 1 unit	113 113	0.408 0.408
Door-coupling rotary operating mechanisms IP65 Black handle, shaft 300 mm	C	8UC74 14-1BB44 +		1	1 unit	103	0.200
	▶	8UC92 53		1	1 unit	103	0.115
EMERGENCY-STOP (yellow/red), shaft 300 mm	C	8UC74 24-3BB44 +		1	1 unit	103	0.200
	▶	8UC92 53		1	1 unit	103	0.115
Operating mechanisms for fixed mounting, size 5 Black handle, shaft 250 mm	▶	3KX3 616-1A		1	1 unit	103	0.490
Extension shaft 300 mm long	B	8UC60 34		1	1 unit	103	0.315
Extension shaft 600 mm long	B	8UC60 84		1	1 unit	103	0.640
Shaft connecting pieces	B	8UC60 24		1	1 unit	103	0.077
Auxiliary switches 1 NO + 1 NC 2 NO 2 NC	C B B	3KX3 612-1B 3SB34 00-0D 3SB34 00-0E		1 1 1	1 unit 1 unit 1 unit	113 102 102	0.201 0.018 0.018



8UC92 53

¹⁾ Only for NH fuse systems.

SITOR fuses for 3KL and KM fuse switch disconnectors: Assignment table

for switch disconnectors			SITOR fuses				DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Type 3KL (Type 3KM)	Permissible load current ¹⁾	Required conductor cross-section Cu	Size	Operational class	Rated current	Rated voltage							
A		mm ²			A	V							kg
SITOR 3NE1 fuses for 3KL5, 3KL6 and 3 KM5													
3KL50 30 (3KM50 30)	16 20 25 35 40 50 63	1.5 2.5 4 6 10 10 16	000 ¹⁾ 000 ¹⁾ 000 ¹⁾ 000 ¹⁾ 000 ¹⁾ 000 ¹⁾ 000 ¹⁾	gR/gS gR/gS gR/gS gR/gS gR/gS gR/gS gR/gS	16 20 25 35 40 50 63	690 690 690 690 690 690 690	▶ ▶ ▶ ▶ ▶ ▶ ▶	3NE1 813-0 3NE1 814-0 3NE1 815-0 3NE1 803-0 3NE1 802-0 3NE1 817-0 3NE1 818-0		1 1 1 1 1 1 1	3 units 3 units 3 units 3 units 3 units 3 units 3 units	047 047 047 047 047 047 047	0.127 0.128 0.127 0.128 0.127 0.128 0.128
3KL52 30 (3KM52 30)	80 100 125 125	25 35 50 50	000 ¹⁾ 00 00 00	gR/gS gR/gS gR/gS gR	80 100 125 125	690 690 690 690	▶ ▶ ▶ ▶	3NE1 820-0 3NE1 021-0 3NE1 022-0 3NE1 022-2		1 1 1 1	3 units 3 units 3 units 3 units	047 047 047 047	0.129 0.202 0.202 0.203
3KL55 30 (3KM55 30)	160 160 200 200 250 245	70 70 95 95 120 120	1 1 1 1 1 1	gR/gS gR gR/gS gR gR/gS gR	160 160 200 200 250 250	690 690 690 690 690 690	▶ ▶ ▶ ▶ ▶ ▶	3NE1 224-0 3NE1 224-2 3NE1 225-0 3NE1 225-2 3NE1 227-0 3NE1 227-2		1 1 1 1 1 1	3 units 3 units 3 units 3 units 3 units 3 units	047 047 047 047 047 047	0.580 0.613 0.582 0.612 0.580 0.626
3KL57 30 (3KM57 30)	315 280	2 × 70 2 × 70	1 1	gR/gS gR	315 315	690 690	A A	3NE1 230-0 3NE1 230-2		1 1	3 units 3 units	047 047	0.581 0.615
3KL57 (3KM57 30)	350 (330) ²⁾ 350 (300) ²⁾ 400 (375) ²⁾	2 × 95 2 × 95 2 × 95	2 2 2	gR/gS gR gR/gS	350 400 400	690 690 690	▶ ▶ ▶	3NE1 331-0 3NE1 331-2 3NE1 332-0		1 1 1	3 units 3 units 3 units	047 047 047	0.766 0.754 0.743
3KL61 30 (3KM57 30)	450 (400) ²⁾ 450 (325) ²⁾ 500 (400) ²⁾ 500 (350) ²⁾	2 × 120 2 × 120 2 × 120 2 × 120	2 2 2 2	gR/gS gR gR/gS gR	450 450 500 500	690 690 690 690	A A A A	3NE1 333-0 3NE1 333-2 3NE1 334-0 3NE1 334-2		1 1 1 1	3 units 3 units 3 units 3 units	047 047 047 047	0.760 0.768 0.766 0.768

¹⁾ Permissible load current in the switch disconnector.
In the case of cyclic loads, the currents may have to be reduced again (precise values on request).

²⁾ Values in blue in brackets apply to 3KM switch disconnectors.

Switch Disconnectors with Fuses

SENTRON 3KL Switch Disconnectors with Fuses up to 800 A

Accessories

For switch disconnectors			SITOR fuses					DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
Type 3KL (Type 3KM)	Permissible load current ¹⁾	Required conductor cross-section Cu	Size	Operational class	Rated current	Rated voltage								
	A	mm ²			A	V							kg	
3KL61 30 (3KL62)	630 (710) ³⁾	2 x (40 x 5)	3	gR/gS	710	690	A	3NE1 437-0		1	3 units	047	1.117	
	630 (710) ³⁾	2 x (40 x 5)	3	gR	710	600	D	3NE1 437-1		1	3 units	047	1.120	
	630 (700) ³⁾	2 x (40 x 5)	3	gR	710	690	B	3NE1 437-2		1	3 units	047	1.153	
	630 (800) ³⁾	2 x (50 x 5)	3	gR/gS	800	690		3NE1 438-0		1	3 units	047	1.124	
	630 (800) ³⁾	2 x (50 x 5)	3	gR	800	600	B	3NE1 438-1		1	3 units	047	1.113	
630 (760) ³⁾	2 x (50 x 5)	3	gR	800	690	A	3NE1 438-2		1	3 units	047	1.184		
3KL61 30 (3KL62)	630 (670) ³⁾	2 x (40 x 5)	3	gR	670	690	A	3NE1 447-2		1	3 units	047	1.170	
	630 (790) ³⁾	2 x (40 x 8)	3	gR	850	690	A	3NE1 448-2		1	3 units	047	1.207	
SITOR fuses 3NE3 ... 3NE8, 3NC2 for 3KL5, 3KL6 and 3KM5														
3KL50 (3KM50)	25	4	00	gR	25	690	▶	3NE8 015-1		1	3 units	047	0.205	
	33	6	00	gR	35	690	▶	3NE8 003-1		1	3 units	047	0.204	
	45	10	00	gR	50	690	▶	3NE8 017-1		1	3 units	047	0.203	
	54	16	00	gR	63	690	▶	3NE8 018-1		1	3 units	047	0.205	
3KL52 (3KM52)	68	25	00	aR	80	690	▶	3NE8 020-1		1	3 units	047	0.203	
	89	35	00	aR	100	690	▶	3NE8 021-1		1	3 units	047	0.205	
	106	50	00	aR	125	690	▶	3NE8 022-1		1	3 units	047	0.213	
	130	70	00	aR	160	690	▶	3NE8 024-1		1	3 units	047	0.207	
3KL55 ²⁾ (3KM55) ²⁾	32	6	0	gR	32	1000	▶	3NE4 101		1	3 units	047	0.278	
	40	10	0	gR	40	1000	▶	3NE4 102		1	3 units	047	0.277	
	50	10	0	gR	50	1000	▶	3NE4 117		1	3 units	047	0.276	
	63	16	0	gR	63	1000	▶	3NE4 118		1	3 units	047	0.279	
	80	25	0	aR	80	1000	▶	3NE4 120		1	3 units	047	0.276	
	95	35	0	aR	100	1000	▶	3NE4 121		1	3 units	047	0.278	
	120	50	0	aR	125	1000	▶	3NE4 122		1	3 units	047	0.279	
	150	70	0	aR	160	1000	▶	3NE4 124		1	3 units	047	0.279	
	90	35	1	aR	100	1000	A	3NE3 221		1	3 units	047	0.580	
	110	50	1	aR	125	1000	A	3NE3 222		1	3 units	047	0.568	
	140	70	1	aR	160	1000	▶	3NE3 224		1	3 units	047	0.573	
	175	95	1	aR	200	1000	▶	3NE3 225		1	3 units	047	0.570	
210	120	1	aR	250	1000	▶	3NE3 227		1	3 units	047	0.580		
3KL57 (3KM57)	240	185	1	aR	315	1000	▶	3NE3 230-0B		1	3 units	047	0.585	
	265	240	1	aR	350	1000	A	3NE3 231		1	3 units	047	0.590	
	290	240	1	aR	400	1000	A	3NE3 232-0B		1	3 units	047	0.576	
	320	2 x 150	1	aR	450	1000	▶	3NE3 233		1	3 units	047	0.720	
3KL61 (3KL62) (3KM57)	340 (360) ³⁾ (290) ⁴⁾	240	2	aR	400	1000	A	3NE3 332-0B		1	3 units	047	0.759	
	380 (400) ³⁾ (320) ⁴⁾	2 x 150	2	aR	450	1000	A	3NE3 333		1	3 units	047	0.748	
	440 (470) ³⁾ (360) ⁴⁾	2 x 150	2	aR	500	1000	▶	3NE3 334-0B		1	3 units	047	0.753	
	500 (530) ³⁾ (400) ⁴⁾	2 x 185	2	aR	560	1000	▶	3NE3 335		1	3 units	047	0.756	
	540 (580) ³⁾ (400) ⁴⁾	2 x 185	2	aR	630	1000	▶	3NE3 336		1	3 units	047	0.760	
	600 (640) ³⁾ (400) ⁴⁾	2 x 200	2	aR	710	900	▶	3NE3 337-8		1	3 units	047	0.762	
	630 (720) ³⁾ (400) ⁴⁾	2 x 200	2	aR	800	800	▶	3NE3 338-8		1	3 units	047	0.764	
	630 (800) ³⁾ (400) ⁴⁾	2 x 200	2	aR	900	690	▶	3NE3 340-8		1	3 units	047	0.753	
	200 (200) ³⁾ (175) ⁴⁾	120	2	aR	250	800	▶	3NE4 327-0B		1	3 units	047	0.753	
	260 (260) ³⁾ (230) ⁴⁾	240	2	aR	315	800	▶	3NE4 330-0B		1	3 units	047	0.760	
	370 (370) ³⁾ (340) ⁴⁾	2 x (30 x 5)	2	aR	450	800	▶	3NE4 333-0B		1	3 units	047	0.760	
	425 (450) ³⁾ (380) ⁴⁾	2 x (30 x 5)	2	aR	500	800	▶	3NE4 334-0B		1	3 units	047	0.754	
600 (630) ³⁾ (400) ⁴⁾	2 x (40 x 5)	2	aR	710	800	▶	3NE4 337		1	3 units	047	0.771		
3KL61 (3KL62)	145 (150) ³⁾	70	3	gR	150	500	B	3NC2 423-3C		1	3 units	047	0.940	
	180 (190) ³⁾	95	3	gR	200	500	B	3NC2 425-3		1	3 units	047	1.057	
	225 (240) ³⁾	120	3	gR	250	500	B	3NC2 427-3		1	3 units	047	1.066	
	255 (270) ³⁾	185	3	gR	300	500	B	3NC2 428-3		1	3 units	047	1.078	
	330 (345) ³⁾	240	3	gR	350	500	B	3NC2 431-3C		1	3 units	047	0.940	
	400 (400) ³⁾	240	3	gR	400	500	B	3NC2 432-3C		1	3 units	047	0.940	
	135 (140) ³⁾	70	3	gR	150	660	B	3NC8 423-3		1	3 units	047	1.062	
	180 (190) ³⁾	95	3	gR	200	660	B	3NC8 425-3		1	3 units	047	1.063	
	225 (240) ³⁾	120	3	gR	250	660	B	3NC8 427-3		1	3 units	047	1.069	
	300 (315) ³⁾	240	3	gR	350	660	B	3NC8 431-3		1	3 units	047	1.072	
	425 (450) ³⁾	2 x 150	3	gR	500	660	B	3NC8 434-3		1	3 units	047	1.069	
	630 (800) ³⁾	2 x (60 x 6)	3	aR	1000	600	C	3NC8 444-3		1	3 units	047	1.085	

¹⁾ Permissible load current in the switch disconnector.
In the case of cyclic loads, the currents may have to be reduced again (precise values on request).

²⁾ Due to the mechanical stress on the relatively long fuse blades, SITOR 3NE41 fuses should be switchable only occasionally and only at zero current.

³⁾ Values in black in brackets apply to 3KL62 switch disconnectors.

⁴⁾ Values in blue in brackets apply to 3KM switch disconnectors.

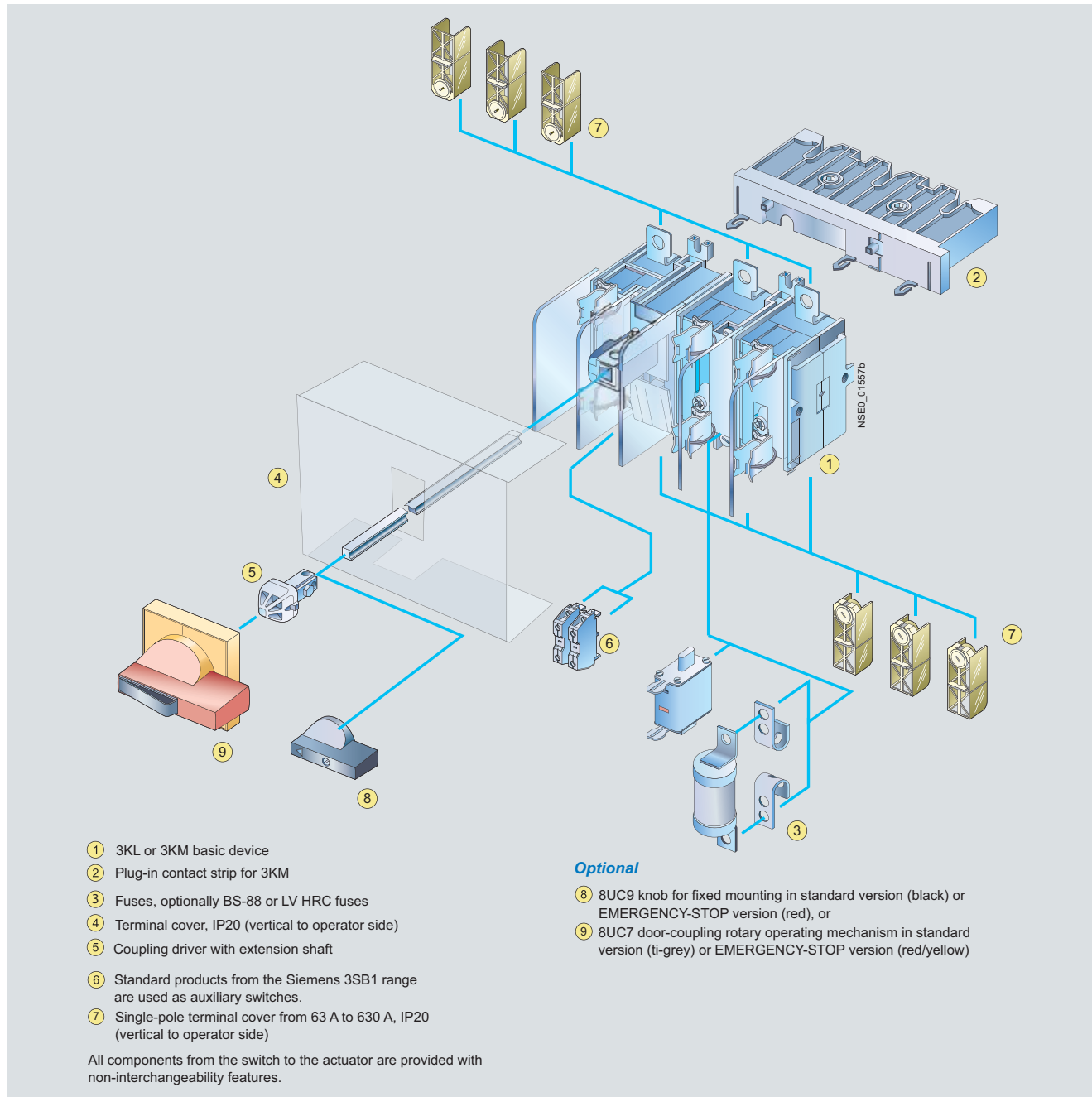
For technical specifications and dimensional drawings of the SITOR fuses see [Catalog ET B1](#).

Switch Disconnectors with Fuses

SENTRON 3KM Switch Disconnectors with Fuses and Isolating Plug Connector up to 400 A

General data

Overview



All switch disconnectors feature double contact interruption and an isolating distance. As a result, the fuses are de-energized when the switch disconnectors are in the disconnected position.

The 3KM switch disconnectors with fuses also feature an isolating plug connector. This facilitates mounting and contact establishment in motor control centers (MCCs) in conjunction with vertical busbars. Generally, all 3K. 5 switch disconnectors can be

secured on the shaft with a padlock to prevent unauthorized re-closing.

Identical accessories for 3KA switch disconnectors and for 3KL and 3KM switch disconnectors with fuses simplify stock keeping.

Please inquire about a special variant with reduced values that is particularly resistant to atmospheres high in sulfur, e. g. in the paper and cellulose processing industries.

Application

3KM switch disconnectors with fuses protect against overload and short-circuits as main and EMERGENCY-STOP switches of switch boards, distribution boards, power supply and motor outgoing feeders. In conjunction with Siemens SITOP semiconductor fuses, they are also used in UPS systems, frequency converters and capacitor control systems.

All 3K switch disconnectors are climate-proof and meet the requirements of IEC 60947-1, IEC 60947-3 and VDE 0660 Part 107.

Switch Disconnectors with Fuses

SENTRON 3KM Switch Disconnectors with Fuses and Isolating Plug Connector up to 400 A

General data

More information

Standards	IEC 60947-1, IEC 60947-3, VDE 0660 Part 107					
	Type	3KM50	3KM52	3KM53	3KM55	3KM57
Rated uninterrupted current I_U For fuse links acc. to DIN 43620, (when SITOR semiconductor fuse links are used, a reduction of rated current is necessary, see Catalog Add-On ET B1 AO · 2009)	A	63	125	160	250	400
	Size	00 and 000	00 and 000	00 and 000	1 and 2	1 and 2
Conventional free-air thermal current $I_{th}^{(1)}$	A	63	125	160	250	400
Rated insulation voltage U_i	V	690	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	6	8	8	8	8
Rated operational voltage U_e						
AC 50 Hz/60 Hz	V	690				
DC	V	440 (3 conducting paths series-connected)				
	V	220 (2 conducting paths series-connected) ²⁾				
Rated short-circuit making capacity with fuses (peak value, at 50 Hz/60 Hz 690 V AC)	kA	220	220	220	176	176
Rated conditional short-circuit current with fuses (rms value, at 50 Hz/60 Hz 690 V AC)	kA	100	100	100	80	80
Max. rated current I_n of the fuses	A	80	160	160	400	400
Max. permissible power loss of the installed fuse						
• NH	W	6	9	11.5	32	45
• BS	W	8 (A2/A3)	11.5 (A4)	11.5	32	45
Permissible let-through current of the fuses	kA	8	17	17	30 ³⁾	30 ³⁾
Maximum permissible let-through I^2t value	kA ² s	55	223	223	1000	1000
Switching capacity (infeed from the top or bottom)						
At 400 V AC						
• Breaking current I_C (at p.f. = 0.35, rms value)	A	500	1000	1280	2000	3200
• Rated operational current I_e with AC-21A, AC-22A, AC-23A	A	63	125	160	250	400
• Motor switching capacity AC-23A	kW	30	65	80	132	200
At 500 V AC						
• Breaking current I_C (at p.f. = 0.35, rms value)	A	500	1000	1280	2000	3200
• Rated operational current I_e with AC-21A, AC-22A, AC-23A	A	63	125	160	250	400
• Motor switching capacity AC-23A	kW	40	90	110	185	280
At 690 V AC						
• Breaking current I_C (at p.f. = 0.35, rms value)	A	500	1000	1280	2000	3200
• Rated operational current I_e with AC-21A, AC-22A, AC-23A	A	63	125	160	250	400
• Motor switching capacity AC-23A	kW	50	110	150	220	375
At 440 V DC (3 conducting paths series-connected) ⁴⁾						
• Breaking current I_C ($L/R = 15$ ms)	A	250	500	640	1000 ⁴⁾	1600
• Rated operational current I_e at DC-23A	A	63	125	160	250 ⁵⁾	400
Rated short-time current (1 s current), rms value	kA	2.5	3.2	3.2	8	11
Permissible ambient temperature	°C	-25 ... +55 for operation ⁶⁾				
	°C	-50 ... +80 when stored				
Mechanical endurance, operating cycles		15000	15000	15000	12000	12000
Degree of protection		IP00/IP20 (from the operator side, with fuse and terminal covers)				
Power loss of the switch disconnector at I_{th} (plus power loss of the fuses)	W	8.5	22	36	33	86
Main conductor connections						
Busbars, max. dimensions (w × t)	mm	25 × 9	45 × 10	45 × 10	40 × 12	40 × 15
Cable lug, max. conductor cross-section (stranded)	mm ²	35	70	120	150	2 × 150 or 1 × 240
Busbars, max. dimensions (w × t)	mm	25 × 9	45 × 10	45 × 10	40 × 12	40 × 15
Tightening torque	Nm	6 ... 7.5	7 ... 10	18 ... 22	35 ... 45	35 ... 45
Terminal screws		M6	M6	M8	M10	M10
Protective conductor connections						
Flat bars	mm	--	--	--	20 × 2.5	20 × 2.5
Cable lug, max. conductor cross-section (stranded)	mm ²	--	--	--	70	120

1) Configuring note: Max. permissible operating temperature for fuse blades 135 °C, for connections 100 °C.

2) 110 V (one conducting path).

3) 220 V DC (L1 and L3 series-connected) or 110 V DC (one conducting path) at DC-23A.

4) At 440 V $L/R = 4$ ms, at 220 V $L/R = 15$ ms.

5) At 440 V DC-22A, at 220 V DC-23A.

6) 3ND1 switchgear protection fuse.

Switch Disconnectors with Fuses

SENTRON 3KM Switch Disconnectors with Fuses and Isolating Plug Connector up to 400 A

For snapping onto busbars

Selection and ordering data

All switch disconnectors with degree of protection IP00

Mounting on vertical busbars with busbar center-to-center spacing of 60 mm and bar thickness from 5 mm to 6.35 mm

Conductor connecting screws and fuse partitions are generally included in the scope of supply.

Rated uninterrupted current I_u	LV HRC fuse links ¹⁾ acc. to DIN 43620 ²⁾		DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Size	Operational class							
A									kg

8UC7 complete versions with door-coupling rotary operating mechanisms

3-pole for NH fuse systems

- (black handle)

63	00 and 000	gG, aM	B	3KM50 30-1GB01		1	1 unit	103	1.890
125	00 and 000	gG, aM	B	3KM52 30-1GB01		1	1 unit	103	2.860
160	00 and 000	gG, aM	B	3KM53 30-1GB01		1	1 unit	103	2.935
250	1 and 2	gG, aM	B	3KM55 30-1GB01		1	1 unit	103	5.670
400	2 and 1	gG, aM	B	3KM57 30-1GB01		1	1 unit	103	6.938

3-pole for fuses acc. to BS 88

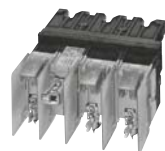
- Complete versions with 8UC7 door-coupling rotary operating mechanism (black handle)

125	Form A2/A3		C	3KM52 30-1GG01		1	1 unit	103	2.785
125	Form A4		C	3KM52 30-1GJ01		1	1 unit	103	2.340
160	Form A4		C	3KM53 30-1GJ01		1	1 unit	103	2.926
250	Form B1-B3		C	3KM55 30-1GG01		1	1 unit	103	6.651
400	Form B1-B3		C	3KM57 30-1GG01		1	1 unit	103	7.175

Basic switch versions without handle

3-pole for NH fuse systems

63	00 and 000	gG, aM	B	3KM50 30-1AB01		1	1 unit	103	1.515
125	00 and 000	gG, aM	B	3KM52 30-1AB01		1	1 unit	103	2.450
160	00 and 000	gG, aM	C	3KM53 30-1AB01		1	1 unit	103	2.516
250	1 and 2	gG, aM	B	3KM55 30-1AB01		1	1 unit	103	5.698
400	2 and 1	gG, aM	B	3KM57 30-1AB01		1	1 unit	103	5.966



3KM53 30-1AB01 with fuses

3-pole for fuses acc. to BS 88

63	Form A2/A3		C	3KM50 30-1AG01		1	1 unit	103	1.450
125	Form A2/A3		C	3KM52 30-1AG01		1	1 unit	103	2.405
125	Form A4		C	3KM52 30-1AJ01		1	1 unit	103	2.430
160	Form A4		C	3KM53 30-1AJ01		1	1 unit	103	2.520
250	Form B1-B3		C	3KM55 30-1AG01		1	1 unit	103	5.689
400	Form B1-B3		C	3KM57 30-1AG01		1	1 unit	103	6.250



3KM55 30-1AG01 with fuses

8UC7 EMERGENCY-STOP door-coupling rotary operating mechanisms (red handle, yellow indicator plate) for basic switch versions without handle

63	00 and 000	gG, aM	C	8UC71 21-3BB10		1	1 unit	103	0.200
125	00 and 000	gG, aM	C	8UC72 22-3BB20		1	1 unit	103	0.200
160	00 and 000	gG, aM	C	8UC72 22-3BB20		1	1 unit	103	0.200
250	1 and 2	gG, aM	C	8UC73 23-3BB30		1	1 unit	103	0.200
400	2 and 1	gG, aM	C	8UC73 23-3BB30		1	1 unit	103	0.200



8UC71 21-3BB10

- 8UC7 EMERGENCY-STOP door-coupling rotary operating mechanisms (red handle, yellow indicator plate)

63	Form A2/A3		C	8UC71 21-3BB10		1	1 unit	103	0.200
125	Form A2/A3		C	8UC72 22-3BB20		1	1 unit	103	0.200
125	Form A4		C	8UC72 22-3BB20		1	1 unit	103	0.200
160	Form A4		C	8UC72 22-3BB20		1	1 unit	103	0.200
250	Form B1-B3		C	8UC73 23-3BB30		1	1 unit	103	0.200
400	Form B1-B3		C	8UC73 23-3BB30		1	1 unit	103	0.200

Fuse monitoring through 5TT3 170 safety monitor with a floating 1 NO signaling contact, see [Catalog ET B1](#).

¹⁾ Silver-plated fuse blades. Silver-plated isolating links can be used if desired.

²⁾ For the assignment of semiconductor fuses see "3KL Switch Disconnectors with Fuses up to 800 A" --> "Accessories".

* You can order this quantity or a multiple thereof.

Switch Disconnectors with Fuses

SENTRON 3KM Switch Disconnectors with Fuses and Isolating Plug Connector up to 400 A

Accessories

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3KM50							
 3KM50 5.7-3AA	Terminal cover For 3-pole devices (1 set = 6 units)	▶	3KX3 552-3DA01	1	1 unit	103	0.077
	Fuse covers (interlock only detachable in the OFF position)	▶	3KX3 517-3AA	1	1 unit	103	0.041
	Fuse partitions (1 set = 5 units)	▶	3KX3 507-0AA01	1	1 unit	103	0.044
 3KX3 507-0BA01	Lyre-shaped fuse covers (1 set = 6 units)	B	3KX3 507-0BA01	1	1 unit	103	0.033
	Door-coupling rotary operating mechanisms IP65 Black handle, shaft 300 mm EMERGENCY-STOP (yellow/red), shaft 300 mm	C C	8UC71 11-1BB10 8UC71 21-3BB10	1 1	1 unit 1 unit	103 103	0.200 0.200
	Operating mechanisms for fixed mounting Black handle, shaft 250 mm	▶	3KX3 516-1AA	1	1 unit	103	0.088
	Extension shaft 300 mm long	B	8UC60 31	1	1 unit	103	0.068
	Extension shaft 600 mm long	B	8UC60 81	1	1 unit	103	0.136
	Shaft connecting pieces	B	8UC60 21	1	1 unit	103	0.031
 3SB14 00-0A	Auxiliary switches 1 NO + 1 NC	C	3SB14 00-0A	1	1 unit	102	0.020
	2 NO	C	3SB14 00-0G	1	1 unit	102	0.020
	2 NC	D	3SB14 00-0H	1	1 unit	102	0.020
	Fuse monitor connections (1 set = 6 units)	B	3KX3 505-0AA	1	1 unit	103	0.014
3KM52/3KM53							
 3KM52/3KM53 5.7-3AA	Terminal cover For 3-pole devices (1 set = 6 units)	3KM52 ▶ 3KM53 ▶	3KX3 552-3DA01 3KX3 553-3DA01	1 1	1 unit 1 unit	103 103	0.077 0.147
	Fuse covers ¹⁾ (interlock only detachable in the OFF position)	3KM52 ▶ 3KM53 ▶	3KX3 552-3DB01 3KX3 553-3DB01	1 1	1 unit 1 unit	103 103	0.102 0.170
	Fuse partitions (1 set = 5 units)	▶	3KX3 507-0AA01	1	1 unit	103	0.044
 3KM52/3KM53 507-0BA01	Lyre-shaped fuse covers (1 set = 6 units)	B	3KX3 507-0BA01	1	1 unit	103	0.033
	Door-coupling rotary operating mechanisms IP65 Black handle, shaft 300 mm EMERGENCY-STOP (yellow/red), shaft 300 mm	C C	8UC72 12-1BB20 8UC72 22-3BB20	1 1	1 unit 1 unit	103 103	0.200 0.200
	Operating mechanisms for fixed mounting Black handle, shaft 250 mm	▶	3KX3 536-1AA	1	1 unit	103	0.155

¹⁾ For 3KX3 527-3AA: Not suitable for use with type A4 BS fuses.

Switch Disconnectors with Fuses

SENTRON 3KM Switch Disconnectors with Fuses and Isolating Plug Connector up to 400 A

Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3KM52/3KM53 (continued)							
Extension shaft 300 mm long	B	8UC60 32		1	1 unit	103	0.132
Extension shaft 600 mm long	B	8UC60 82		1	1 unit	103	0.265
Shaft connecting pieces	B	8UC60 22		1	1 unit	103	0.023
Auxiliary switches							
1 NO + 1 NC	C	3SB14 00-0A		1	1 unit	102	0.020
20 ms leading, 1 NO + 1 NC	B	3KX3 552-3EA01		1	1 unit	103	0.019
2 NO	C	3SB14 00-0G		1	1 unit	102	0.020
2 NC	D	3SB14 00-0H		1	1 unit	102	0.020
Fuse monitor connections (1 set = 6 units)	B	3KX3 505-0AA		1	1 unit	103	0.014
3KM55/3KM57							
Terminal cover							
For 3-pole devices (1 set = 6 units)	▶	3KX3 557-3DA01		1	1 unit	103	0.277
For 4-pole devices (1 set = 8 units)	B	3KX3 557-3DB01		1	1 unit	103	0.362
Fuse covers (interlock only detachable in the OFF position)	▶	3KX3 557-3AA		1	1 unit	103	0.212
Fuse partitions (1 set = 5 units)	▶	3KX3 557-0AA01		1	1 unit	103	0.162
Door-coupling rotary operating mechanisms IP65							
Black handle, shaft 300 mm	C	8UC73 13-1BB30		1	1 unit	103	0.200
EMERGENCY-STOP (yellow/red), shaft 300 mm	C	8UC73 23-3BB30		1	1 unit	103	0.200
Operating mechanisms for fixed mounting, size 3	▶	3KX3 176-1E		1	1 unit	103	0.285
Black handle, shaft 250 mm							
Extension shaft 300 mm long	C	8UC60 33		1	1 unit	103	0.217
Extension shaft 600 mm long	B	8UC60 83		1	1 unit	103	0.430
Shaft connecting pieces	B	8UC60 23		1	1 unit	103	0.085
Auxiliary switches							
1 NO + 1 NC	C	3SB14 00-0A		1	1 unit	102	0.020
20 ms leading, 1 NO + 1 NC	B	3KX3 552-3EA01		1	1 unit	103	0.019
2 NO	C	3SB14 00-0G		1	1 unit	102	0.020
2 NC	D	3SB14 00-0H		1	1 unit	102	0.020
Fuse monitor connections (1 set = 6 units)	B	3KX3 505-0AA		1	1 unit	103	0.014



3SB14 00-0A



3KX3 5.7-3AA



3KX3 557-0AA01



3KX3 176-1E



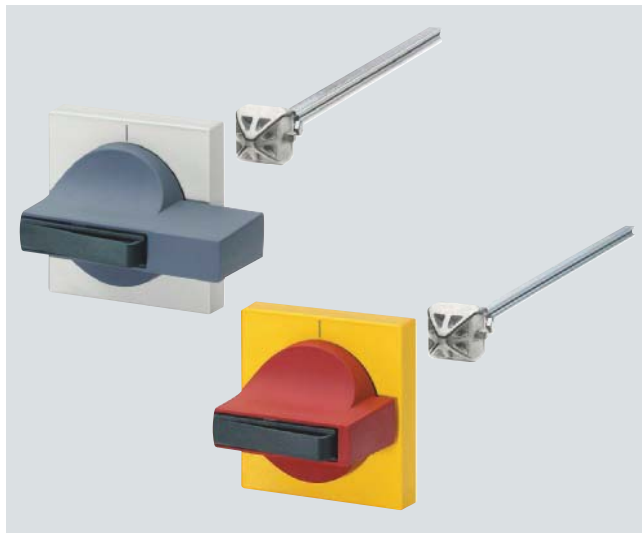
3SB14 00-0A

Switch Disconnectors with Fuses

8UC Door-Coupling Rotary Operating Mechanisms

For 3K switch disconnectors

Overview



8UC7 rotary operating mechanism in STANDARD version (left) and EMERGENCY-STOP version (right)

With door-coupling rotary operating mechanisms it is also possible to operate switch disconnectors from the outside with the control cabinet doors closed

The rotary operating mechanisms are available in "STANDARD" and "EMERGENCY-STOP" versions with the following differences:

- STANDARD version: Masking plates in light-gray with black inscription, handles in ti-grey.
- EMERGENCY-STOP version: Masking plates in yellow with black inscription, handles in red.

Available sizes

Rotary operating mechanisms	Size	Rated torque ¹⁾	Shaft profile	Masking plate
		Nm		
8UC71	1	4	6 x 6	75 x 75
8UC72	2	9	8 x 8	75 x 75
8UC73	3	25	10 x 10 or 12 x 12	100 x 100
8UC74	4	40/55 ²⁾	12 x 12	100 x 100

¹⁾ Operating mechanisms tested with triple torque (according to EN 60947-3). They are therefore also suitable for applications in this area.

²⁾ Operation with two hands.

Degree of protection

Degree of protection when installed is IP65.

Standards

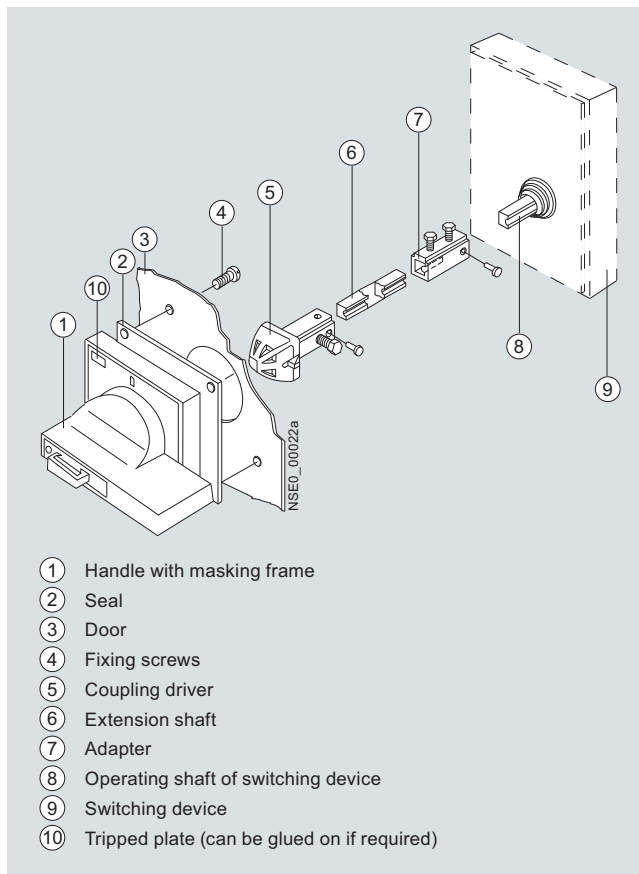
8UC7 door-coupling rotary operating mechanisms are in line with for example the following standards:

IEC 60204-1, EN 60204-1 (VDE 0113 Part 1)	Electrical equipment of machines
IEC 60439-1, EN 60439-1 (VDE 0660 Part 500)	Low-voltage switchgear and controlgear assemblies
IEC 60947-3, EN 60947-3 (VDE 0660 Part 107)	Low-voltage switchgear and controlgear; load-break switches, disconnectors, switch disconnectors and fuse-combination units

Design

The rotary operating mechanisms consist of a masking plate with handle, including seal and fixing screws for door installation, an extension shaft (300 mm) and a coupling driver to be mounted onto the switch shaft.

Operating mechanisms for 3KA / 3KL / 3KM switch disconnectors do not have a shaft coupling since the extension shaft is fitted directly into the switch. Extension shafts with a length of 600 mm are also available.

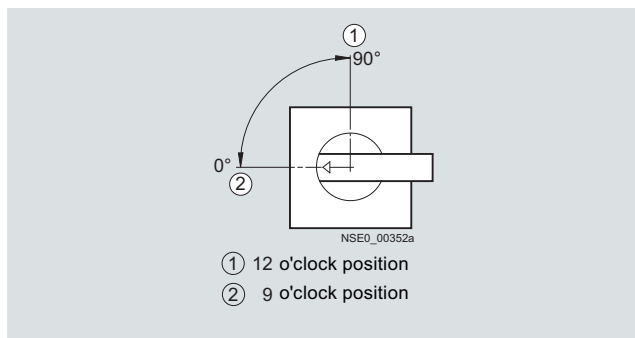


- 1 Handle with masking frame
- 2 Seal
- 3 Door
- 4 Fixing screws
- 5 Coupling driver
- 6 Extension shaft
- 7 Adapter
- 8 Operating shaft of switching device
- 9 Switching device
- 10 Tripped plate (can be glued on if required)

Design, schematic representation

Switch position

In order to ensure compliance with locking and interlocking conditions, the controls and operating mechanisms must be installed such that, with two-position switches the "0" position lies at 9 o'clock and the "I" position at 12 o'clock.



Positions for two-position switches with 90° operating angle

Switch Disconnectors with Fuses

8UC Door-Coupling Rotary Operating Mechanisms

For 3K switch disconnectors

Benefits

Can be locked

The retractable locking device integrated in the handles is suitable for padlocks with shackle diameters of 4.5 mm to 8.5 mm (locks according to DIN 7465).

Up to three padlocks with a shackle diameter of 8.5 mm and up to five padlocks with a shackle diameter of 6 mm can be fitted simultaneously.

Non-interchangeability

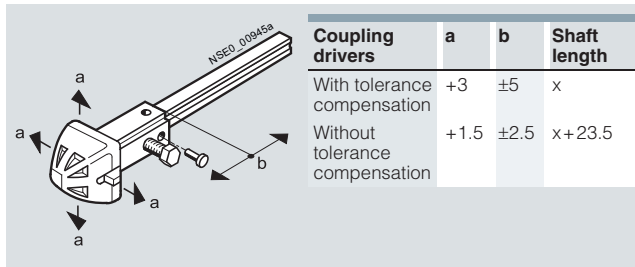
In order to ensure that, when installing switches and door-coupling operating mechanisms, all components are assembled in the correct position with respect to one another, the components are provided with non-interchangeability features (rivet and lug).

Stops

Stops are used to prevent damage occurring as the result of excessive torque. These stops are supplied loose with the rotary operating mechanisms and can be fitted as required. Stops are fitted at the factory to size 1 and 2 rotary operating mechanisms with a 90° operating angle (exception: 3RV motor starter protectors).

Tolerance compensation

8UC7 rotary operating mechanisms are capable of taking up a radial eccentricity of max. 3 mm between the actuating shaft of the switching device and the door-coupling rotary operating mechanism. Supporting the extension shaft is recommended with greater tolerances.



Permissible radial eccentricity and axial tolerance compensation in mm

Pull-out strength

The pull-out strength of interlocked operating mechanisms, e. g. pulling off the shaft or destruction of the operating mechanism, amounts to 800 N when the pulling force acts directly onto the operating mechanism in direction of shaft.

Application

8UC7 door-coupling rotary operating mechanisms can be used in electrical controls, distribution boards and switchboards in cases where switches have to be mounted behind covers, end plates and doors that must be opened and where they are to be operated manually from outside.

Interlocking conditions

The basic versions of the rotary operating mechanisms comply with the following interlocking conditions:

- Operating mechanism and switch in "0" (OFF) position: The control cabinet door can be opened. With padlocks fitted, the control cabinet door remains locked however.
- Operating mechanism and switch in "I" (ON) position: The control cabinet door cannot be opened in this position. However, the interlock can be overridden and the control cabinet door opened by trained personnel for performing checks. No padlocks can be fitted in "I" position.

Other interlocking conditions:

- If no door interlock is required, the user can remove the door interlocking plate of the rotary operating mechanism.
- It is easy for the user to fit padlocks to the rotary operating mechanisms in the "I" position as well. In this case the door cannot be opened, the operating mechanism cannot be actuated and the door interlock cannot be overridden.

Operating conditions and ambient conditions

The temperature range for operation of the rotary operating mechanisms is between -25 °C and +60 °C.

Thanks to the use of glass fiber-reinforced molded plastic for handles and masking plates as well as metal components with surface protection, the rotary operating mechanisms are suitable for rough conditions, high air humidity and aggressive atmospheres.

Switch Disconnectors with Fuses

8UC Door-Coupling Rotary Operating Mechanisms

For 3K switch disconnectors

Selection and ordering data

Door-coupling rotary operating mechanisms, fully lockable with padlocks, with door interlock supplied with seal and fixing screws

Switching device	Rated current	Cross-section of the actuating shaft	Torque	Rotary operating mechanisms	Illustrated: Handle, masking plate
------------------	---------------	--------------------------------------	--------	-----------------------------	------------------------------------

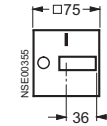
Type	A	mm	Nm	Size
------	---	----	----	------

8UC71



For switch disconnectors with or without fuses

3KL50 ¹⁾ , 3KM50 ¹⁾	63	6 x 6	3	1
3KA50 ¹⁾	63	6 x 6	3	
3KA51 ¹⁾	80	6 x 6	3	

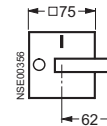


8UC72



For switch disconnectors with or without fuses

3KL52, 3KM52	125	8 x 8	7.5	2
3KL53, 3KM53	160	8 x 8	7.5	
3KA52	125	8 x 8	7.5	
3KA53	160	8 x 8	7.5	

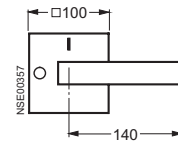


8UC73



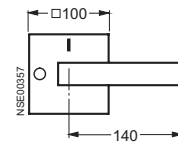
For switch disconnectors with or without fuses

3KL55, 3KM55	250	10 x 10	16	3
3KL57, 3KM57	400	10 x 10	16	
3KA55	250	10 x 10	16	
3KA57	400	10 x 10	16	
3KA58	630	10 x 10	16	

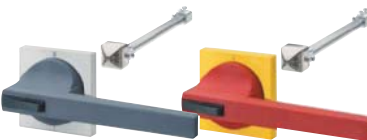


For switch disconnectors without fuses

3KE42	250	12 x 12	15	3
3KE43	400	12 x 12	15	
3KE44	630	12 x 12	24	
3KE45	1000	12 x 12	24	

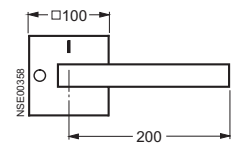


8UC74



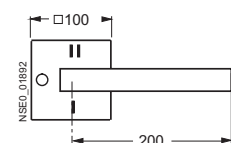
For switch disconnectors with fuses

3KL61 ²⁾	630	12 x 12	30	4
3KL62 ²⁾	800	12 x 12	30	



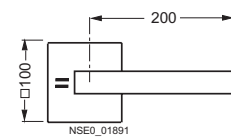
For switch disconnectors as changeover switches with break-before-make feature

3KE42 (2 units)	250	12 x 12	20	4
3KE43 (2 units)	400	12 x 12	20	
3KE44 (2 units)	630	12 x 12	30	
3KE45 (2 units)	1000	12 x 12	30	



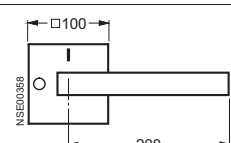
For switch disconnectors as changeover switches without break-before-make feature

3KE42 (2 units)	250	12 x 12	40	4
3KE43 (2 units)	400	12 x 12	40	
3KE44 (2 units)	630	12 x 12	55	
3KE45 (2 units)	1000	12 x 12	55	



For switch disconnectors as changeover switches without break-before-make feature

3KE42 (2 units)	250	12 x 12	40	4
3KE43 (2 units)	400	12 x 12	40	
3KE44 (2 units)	630	12 x 12	55	
3KE45 (2 units)	1000	12 x 12	55	



¹⁾ Valid only for 3-pole switching devices. For 4-pole switching devices, an operating mechanism with 8 x 8 mm actuating shaft must be used, see lower level for 3KA52, 3KL52 or 3KM52.

²⁾ Additionally required for 3KL61: 1 shaft coupling, Order No. 8UC92 53, see "Individual Parts", table on page 17/56.

³⁾ The door interlocking plate must be removed.

⁴⁾ With shortened 8UC60 16/8UC60 17 coupling driver and reduced tolerance compensation, see "Dimensional Drawings".

Switch Disconnectors with Fuses

8UC Door-Coupling Rotary Operating Mechanisms

For 3K switch disconnectors





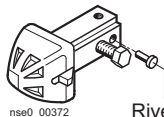
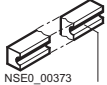
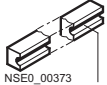
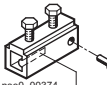
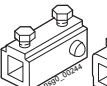
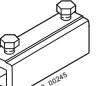
Version	DT	Rotary operating mechanisms, complete	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	Individual parts					
									Handle with masking plate	Coupling drivers	Extension shaft Length 300 mm	Shaft couplings		
									Order No.	Order No.	Order No.	Order No.		
Standard	C	8UC71 11-1BB10			1	1 unit	103	0.200	8UC71 10-1BB	8UC60 11	8UC60 31	□ 6 mm	□ 6 mm	□ 6 mm by 6 mm
Standard ⁴⁾	C	8UC71 61-1BB10			1	1 unit	103	0.200	8UC71 10-1BB	8UC60 16	8UC60 31			Not required
EMERGENCY-STOP	C	8UC71 21-3BB10			1	1 unit	103	0.200	8UC71 20-3BB	8UC60 11	8UC60 31			Not required
Standard	C	8UC72 12-1BB20			1	1 unit	103	0.200	8UC72 10-1BB	8UC60 12	8UC60 32	□ 8 mm	□ 8 mm	□ 8 mm by 8 mm
Standard ⁴⁾	C	8UC72 62-1BB20			1	1 unit	103	0.200	8UC72 10-1BB	8UC60 17	8UC60 32			Not required
EMERGENCY-STOP	C	8UC72 22-3BB20			1	1 unit	103	0.200	8UC72 20-3BB	8UC60 12	8UC60 32			Not required
Standard	C	8UC73 13-1BB30			1	1 unit	103	0.200	8UC73 10-1BB	8UC60 13	8UC60 33	□ 10 mm	□ 10 mm	□ 10 mm by 10 mm
EMERGENCY-STOP	C	8UC73 23-3BB30			1	1 unit	103	0.200	8UC73 20-3BB	8UC60 13	8UC60 33			Not required
Standard	C	8UC73 14-1BB44			1	1 unit	103	0.200	8UC73 10-1BB	8UC60 14	8UC60 34	□ 12 mm	□ 12 mm	□ 12 mm by 12 mm
EMERGENCY-STOP	C	8UC73 24-3BB44			1	1 unit	103	0.200	8UC73 20-3BB	8UC60 14	8UC60 34			8UC60 24
Standard	C	8UC74 14-1BB44			1	1 unit	103	0.200	8UC74 10-1BB	8UC60 14	8UC60 34	□ 12 mm	□ 12 mm	□ 12 mm by 12 mm
EMERGENCY-STOP	C	8UC74 24-3BB44			1	1 unit	103	0.200	8UC74 20-3BB	8UC60 14	8UC60 34			8UC60 24
Standard	C	8UC74 14-1BF44			1	1 unit	103	0.200	8UC74 10-1BF	8UC60 14	8UC60 34	□ 12 mm	□ 12 mm	□ 12 mm by 12 mm
Standard	C	8UC74 14-1FG44			1	1 unit	103	0.200	8UC74 10-1FG	8UC60 14	8UC60 34	□ 12 mm	□ 12 mm	□ 12 mm by 12 mm
Standard	C	8UC74 14-1BB44			1	1 unit	103	0.200	8UC74 10-1BB	8UC60 14	8UC60 34	□ 12 mm	□ 12 mm	□ 12 mm by 12 mm

Switch Disconnectors with Fuses

8UC Door-Coupling Rotary Operating Mechanisms

Individual parts

Selection and ordering data

Switching device	Rotary operating mechanisms	Size	Cross-section of the actuating shaft	Version ⁴⁾	DT	Individual parts for 8UC7 door-coupling rotary operating mechanisms	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
Type	Type	mm × mm				Order No.	Price per PU			kg	
Handles with masking plate (including flat gasket and fixing screws)											
	3KL50, 3KM50, 3KA50, 3KA51	8UC71	1	6 × 6	Standard E-STOP	C C	8UC71 10-1BB 8UC71 20-3BB	1 1	1 unit 1 unit	103 103	0.200 0.200
8UC71 10-1BB											
	3KL52, 3KM52, 3KL53, 3KM53, 3KA52, 3KA53	8UC72	2	8 × 8	Standard E-STOP	C C	8UC72 10-1BB 8UC72 20-3BB	1 1	1 unit 1 unit	103 103	0.200 0.200
8UC72 10-6BD											
	3KL55, 3KM55, 3KL57, 3KM57, 3KA55, 3KA57, 3KE42, 3KE43, 3KE44, 3KE45	8UC73	3	10 × 10 or 12 × 12	Standard E-STOP	C C	8UC73 10-1BB 8UC73 20-3BB	1 1	1 unit 1 unit	103 103	0.200 0.200
8UC73 10-1BB											
	3KL61, 3KL62	8UC74	4	12 × 12	Standard E-STOP	C C	8UC74 10-1BB 8UC74 20-3BB	1 1	1 unit 1 unit	103 103	0.200 0.200
8UC74 10-1BB											
	3KE42, 3KE43, 3KE44, 3KE45	8UC74 ³⁾	4	12 × 12	Standard	C	8UC74 10-1BF	1	1 unit	103	0.200
					Standard	C	8UC74 10-1FG	1	1 unit	103	0.200
					Standard	C	8UC74 10-1BB	1	1 unit	103	0.200
Rotary operating mechanisms											
Rotary operating mechanisms	Cross-section of the actuating shaft	DT	Individual parts for 8UC6 door-coupling rotary operating mechanisms	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.				
Type	mm × mm		Order No.	Price per PU			kg				
Coupling drivers, extension shafts, shaft couplings and reducers											
Coupling drivers for 3K											
	8UC71	6 × 6	B	8UC60 11	1	1 unit	103	0.078			
	8UC71 ²⁾	6 × 6	A	8UC60 16	1	1 unit	103	0.070			
	8UC72	8 × 8	B	8UC60 12	1	1 unit	103	0.075			
	8UC72 ²⁾	8 × 8	A	8UC60 17	1	1 unit	103	0.043			
	8UC73	10 × 10	B	8UC60 13	1	1 unit	103	0.251			
	8UC73/74	12 × 12	B	8UC60 14	1	1 unit	103	0.253			
8UC60 11											
Extension shafts 300 mm long											
	8UC71	6 × 6	B	8UC60 31	1	1 unit	103	0.068			
	8UC72	8 × 8	B	8UC60 32	1	1 unit	103	0.132			
	8UC73	10 × 10	C	8UC60 33	1	1 unit	103	0.217			
	8UC73/74	12 × 12	B	8UC60 34	1	1 unit	103	0.315			
8UC60 31 ... 34											
Extension shafts 600 mm long											
	8UC71	6 × 6	B	8UC60 81	1	1 unit	103	0.136			
	8UC72	8 × 8	B	8UC60 82	1	1 unit	103	0.265			
	8UC73	10 × 10	B	8UC60 83	1	1 unit	103	0.430			
	8UC73/74	12 × 12	B	8UC60 84	1	1 unit	103	0.640			
8UC60 81 ... 84											
Shaft couplings											
	8UC71	6 × 6	B	8UC60 21	1	1 unit	103	0.031			
	8UC72	8 × 8	B	8UC60 22	1	1 unit	103	0.023			
	8UC73	10 × 10	B	8UC60 23	1	1 unit	103	0.085			
	8UC73/74	12 × 12	B	8UC60 24	1	1 unit	103	0.077			
	8UC74 (3KL61)	12 × 12	▶	8UC92 53	1	1 unit	103	0.115			
8UC60 21 to 8UC60 24											
Reducers											
	8UC71	8 × 8 to 6 × 6	C	8UC70 58	1	1 unit	103	0.200			
	8UC72	12 × 12 to 8 × 8	C	8UC70 50	1	1 unit	103	0.200			
8UC70 58	8UC70 50										

1) Non-interchangeability features.

2) Shortened coupling driver with reduced tolerance compensation.

3) For switch disconnectors as changeover switches in various versions, see table on page 17/54






4) Standard: Ti-grey handle, light-gray masking plate; EMERGENCY-STOP: Red handle, yellow masking plate.

Switch Disconnectors with Fuses

8UC Door-Coupling Rotary Operating Mechanisms

Operating mechanisms for fixed mounting

Selection and ordering data

	Switching device	Cross-section of the actuating shaft	Torque of the operating mechanism ¹⁾	Operating mechanism	Color of handle	DT	Operating mechanisms for fixed mounting		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Type	mm × mm	Nm	Size			Order No.	Price per PU				kg
 8UC93 54	3KA50, 3KA51, 3KL50, 3KM50	6 × 6	4	1	Black	²⁾ B	8UC93 54		1	1 unit	103	0.031
 8UC93 60			7.5	2	Black	²⁾ B	8UC93 60		1	1 unit	103	0.047
	3KA52 3KA53, 3KL52, 3KM52, 3KL53, 3KM53	8 × 8	7.5	2	Black	B	8UC93 62		1	1 unit	103	0.041
					Red	B	8UC93 63		1	1 unit	103	0.044
 8UC93 65	3KL55, 3KM55, 3KL57, 3KM57	10 × 10	16	3	Black	B	8UC93 65		1	1 unit	103	0.138
	3KA55, 3KA57, 3KA58				Red	B	8UC93 66		1	1 unit	103	0.160
	3KE42, 3KE43	12 × 12	16	3	Black	³⁾ B	8UC93 70		1	1 unit	103	0.128
					Red	³⁾ B	8UC93 71		1	1 unit	103	0.146
 8UC93 74	3KE44, 3KE45	12 × 12	30	4	Black	³⁾ B	8UC93 74		1	1 unit	103	0.145
					Red	³⁾ B	8UC93 75		1	1 unit	103	0.165
 8UC93 81	3KL61	12 × 12	55	5	Black	B	8UC93 81		1	1 unit	103	0.264
					Red	B	8UC93 82		1	1 unit	103	0.273

¹⁾ Operating mechanisms were tested with triple torque (DIN VDE 0660 Part 107). They are therefore qualified for use in all controls, especially for disconnectors.

²⁾ Red handle available on request.

³⁾ Also required: 3KX2 210-0H coupling socket.

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses General data

Overview

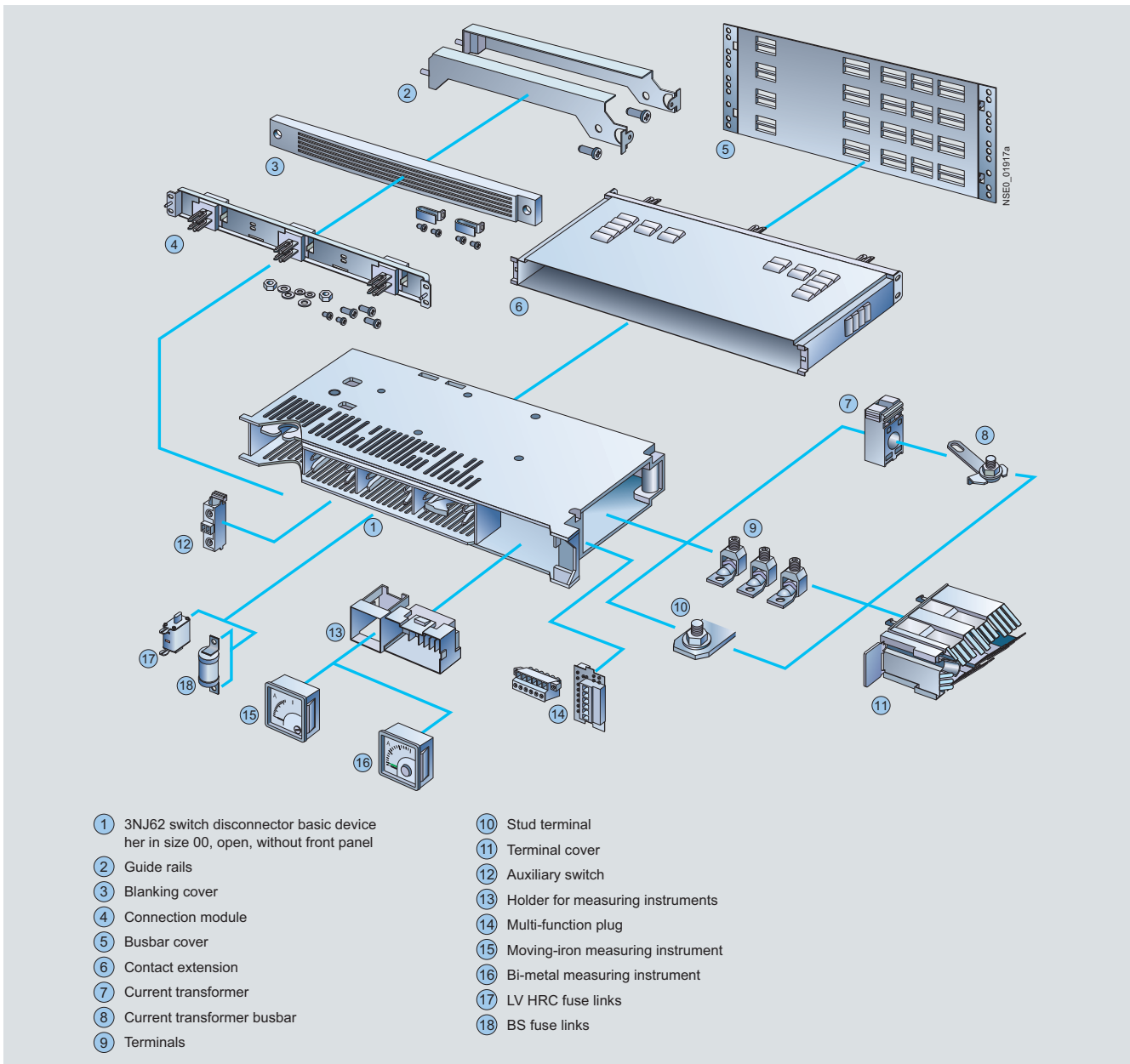


3NJ62 Switch Disconnectors with Fuses

All key product features at a glance

- In-line
- Type-tested according to IEC EN 60947-3
- Voltage levels up to 690 V AC
- 160 A to 630 A for LV HRC and BS 88 fuse links, according to IEC 60269-1/EN 60269-1
- 3-/4-pole versions available
- 185 mm phase center distance of plug-in contacts
- Manually operated or with motorized operating mechanism
- Electronic fuse monitoring (EFM)
- Developed for switchgears in plug-in design
- Horizontal or vertical mounting position
- Front panel locked in ON position
- Degree of protection IP41

Overview of components and accessory parts



- | | |
|---|------------------------------------|
| ① 3NJ62 switch disconnector basic device
her in size 00, open, without front panel | ⑩ Stud terminal |
| ② Guide rails | ⑪ Terminal cover |
| ③ Blanking cover | ⑫ Auxiliary switch |
| ④ Connection module | ⑬ Holder for measuring instruments |
| ⑤ Busbar cover | ⑭ Multi-function plug |
| ⑥ Contact extension | ⑮ Moving-iron measuring instrument |
| ⑦ Current transformer | ⑯ Bi-metal measuring instrument |
| ⑧ Current transformer busbar | ⑰ LV HRC fuse links |
| ⑨ Terminals | ⑱ BS fuse links |

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses
General data

Benefits

Key advantages for switchgear manufacturers due to the following:

- Compact, modular design
- Simple and efficient mounting due to incoming plug-in contact
- High packing density in the field
- Cable connection with cable clamps or cable lugs
- Can be mounted in different control cabinet depths
- Comprehensive range of accessories

The advantages for users are:

- Conversion, retrofitting and replacement without switching off the switchgear
- Dead-state fuse replacement
- Maintenance free
- High personal safety
- Operating handle can be locked in OFF position
- Clear and unambiguous switch position indicator

Application

The plug-in 3NJ6 switch disconnectors with fuses are installed in low-voltage distribution boards where a minimum amount of space is available for a maximum number of cable ducts to the power distribution. They can be easily fitted in all common control cabinets (minimum depth: 400 mm).

The plug-in 3NJ62 switch disconnectors with fuses are available for rated uninterrupted currents from 160 A to 630 A.

LV HRC fuse links according to IEC 60269-1/EN 60269-1 (sizes NH 00 to NH 3) or BS fuse links according to BS 88 provide overload and short-circuit protection up to 690 V AC.

The switch disconnectors can be retrofitted at any time with auxiliary switches, an ammeter (48 mm x 48 mm) and current transformers, with no extra space required. For installation in control cabinets of > 400 mm depth, the mounting depth of the disconnectors can be increased by 200 mm using a contact extension. Further installation accessories, such as guide rails and blanking covers, complete the product range.

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses

General data

More information

Standards	EN / IEC 60947-3																				
Size	Size 00				Size 1				Size 2				Size 3								
Type 3NJ62 ...																					
With LV HRC fuse links	--	...03-1 ...04-1 ...04-2			...03-3 ...03-4			...13-1 ...14-1 ...14-2		...13-3 ...13-4		...23-1 ...24-1 ...24-2		...23-3 ...23-4		...33-1 ...34-1 ...34-2		...33-3 ...33-4			
With BS fuse links	...43-3	...53-3	...64-1		...63-3 ...63-4		...74-1 ...74-2		...73-3 ...73-4		...84-1 ...84-2		...83-3 ...83-4		...94-1 ...94-2		...93-3 ...93-4				
Switching capacity	H	H	S		H		S		H		S		H		S		H				
Rated insulation voltage U_i V	1000																				
Rated peak withstand voltage U_{imp} V	8000																				
For LV HRC fuse links acc. to IEC 60269	--	00 and 000				1				2 and 1				3 and 2							
For BS fuse links acc. to BS 88	A3	00T ¹⁾				B2				B4				3T ¹⁾							
Rated operational current I_e For fuse links acc. to IEC 60269/BS 88	A	63	100	160	125	160	125	250	250	400	400	630	500	630	500						
Rated operational voltage U_e At 50/60 Hz rated frequency	V AC	690	690	500	690	500	690	690	690	690	690	500	690	500	690						
Utilization categories		AC-23B	AC-23B	AC-22B	AC-23B	AC-22B	AC-23B	AC-22B	AC-23B	AC-22B	AC-23B	AC-22B	AC-23B								
Rated conditional short-circuit current																					
Short-circuit strength, rms value	kA	100	100	100	100	100	100	100	100	100	100	100	100								
Short-circuit making capacity, rms value	kA	66	66	55	66	55	66	55	66	55	66	55	66								
Rated making capacity																					
p.f. = 0.65	A	--	--	480	375	--	--	750	--	1200	--	1890	1500	--	--						
p.f. = 0.45	A	630	1000	--	--	--	--	--	--	--	--	--	--	--	--						
p.f. = 0.35	A	--	--	--	--	1600	1250	--	2500	--	4000	--	--	6300	5000						
Rated breaking capacity																					
p.f. = 0.65	A	--	--	480	375	--	--	750	--	1200	--	1890	1500	--	--						
p.f. = 0.45	A	504	800	--	--	--	--	--	--	--	--	--	--	--	--						
p.f. = 0.35	A	--	--	--	--	1280	1000	--	2000	--	3200	--	--	5040	4000						
Endurance																					
Operating cycles total		2000		1600				1600				1000				1000					
Operating cycles electrical at 690 V, p.f. = 0.65		300		200				200				200				200					
Power loss W		7	17	43				78				158				357					
Without fuse links																					
Permissible ambient temperature °C		-5 ... +55																			
Permissible mounting positions		Horizontal and vertical with bottom connection																			
Degree of protection (in operating state)		IP41																			
Main conductor connections																					
Cable lug connection conductor cross-section																					
Al/Cu, solid or stranded	mm ²	1 x (10 ... 95)				1 x (10 ... 95)				1 x (25 ... 240)				1 x (25 ... 300)				1 x (25 ... 300)			
Acc. to DIN 46235 (Cu) and DIN 46239 (Al)	mm ²	2 x (16 ... 70)				2 x (16 ... 70)				1 x (25 ... 70)				2 x (25 ... 240)				2 x (25 ... 240)			
Screw size		M8				M8				M12				2 x M12				2 x M12			
Torque	Nm	15				15				30				30				30			
Terminal connection																					
(Al/Cu), rm	mm ²	1 x (10 ... 50)				1 x (10 ... 50)				1 x (16 ... 185)				2 x (16 ... 185)				2 x (16 ... 185)			
(Al/Cu), re	mm ²	1 x (10 ... 50)				1 x (10 ... 50)				1 x (16 ... 150)				2 x (16 ... 150)				2 x (16 ... 150)			
(Al/Cu), sm	mm ²	1 x (16 ... 95)				1 x (16 ... 95)				1 x (16 ... 240)				2 x (16 ... 240)				2 x (16 ... 240)			
(Al/Cu), se	mm ²	1 x (16 ... 95)				1 x (16 ... 95)				1 x (35 ... 300)				2 x (35 ... 300)				2 x (35 ... 300)			
Torque	Nm	15				15				25				25				25			
Motorized operating mechanisms																					
Control supply voltage	V DC	24 ±2																			
Power consumption	A	1.1							1.3							2.8					
Signal duration	s	min. 0.5 or continuous signal																			
Auxiliary switches																					
Rated insulation voltage U_i	V	690																			
Rated peak withstand voltage U_{imp}	V	8000																			
Rated operational current I_e																					
At AC-15, $U_e = 120$ V	A	8																			
At AC-15, $U_e = 230$ V	A	6																			
At AC-15, $U_e = 400$ V	A	4																			
At AC-15, $U_e = 690$ V	A	2																			

¹⁾ The fuse is available from Lawson fuses (UK) and does not correspond to BS 88.

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses
for LV HRC fuse links

Selection and ordering data

Rated current I_n	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A								kg
3-pole, standard switching capacity S								
<i>Manually operated</i>								
160	00/000	A	3NJ62 03-1AA0□-□□□□		1	1 unit	143	3.630
250	1	A	3NJ62 13-1AA0□-□□□□		1	1 unit	143	6.750
400	2/1	A	3NJ62 23-1AA0□-□□□□		1	1 unit	143	15.000
630	3/2	A	3NJ62 33-1AA0□-□□□□		1	1 unit	143	15.360
3-pole, high switching capacity H								
<i>Manually operated</i>								
160	00/000	A	3NJ62 03-3AA0□-□□□□		1	1 unit	143	3.630
250	1	A	3NJ62 13-3AA0□-□□□□		1	1 unit	143	6.750
400	2/1	A	3NJ62 23-3AA0□-□□□□		1	1 unit	143	15.000
630	3/2	A	3NJ62 33-3AA0□-□□□□		1	1 unit	143	15.360
<i>Manually operated, EFM</i>								
160	00/000	A	3NJ62 03-3AV0□-□□□□		1	1 unit	143	3.630
250	1	A	3NJ62 13-3AV0□-□□□□		1	1 unit	143	6.750
400	2/1	A	3NJ62 23-3AV0□-□□□□		1	1 unit	143	15.000
630	3/2	A	3NJ62 33-3AV0□-□□□□		1	1 unit	143	15.360
<i>Motorized operating mechanisms</i>								
160	00/000	C	3NJ62 03-4AA0□-□□□□		1	1 unit	143	3.630
250	1	C	3NJ62 13-4AA0□-□□□□		1	1 unit	143	6.750
400	2/1	C	3NJ62 23-4AA0□-□□□□		1	1 unit	143	15.000
630	3/2	C	3NJ62 33-4AA0□-□□□□		1	1 unit	143	15.360
<i>Motorized operating mechanism, EFM</i>								
160	00/000	C	3NJ62 03-4AV0□-□□□□		1	1 unit	143	3.630
250	1	C	3NJ62 13-4AV0□-□□□□		1	1 unit	143	6.750
400	2/1	C	3NJ62 23-4AV0□-□□□□		1	1 unit	143	15.000
630	3/2	C	3NJ62 33-4AV0□-□□□□		1	1 unit	143	15.360
4-pole, standard switching capacity S								
<i>Manually operated</i>								
160	00/000	A	3NJ62 04-1AA0□-□□□□		1	1 unit	143	6.160
250	1	A	3NJ62 14-1AA0□-□□□□		1	1 unit	143	10.380
400	2/1	A	3NJ62 24-1AA0□-□□□□		1	1 unit	143	18.900
630	3/2	A	3NJ62 34-1AA0□-□□□□		1	1 unit	143	20.000
<i>Manually operated, EFM</i>								
160	00/000	C	3NJ62 04-1AV0□-□□□□		1	1 unit	143	6.160
250	1	C	3NJ62 14-1AV0□-□□□□		1	1 unit	143	10.380
400	2/1	C	3NJ62 24-1AV0□-□□□□		1	1 unit	143	18.900
630	3/2	C	3NJ62 34-1AV0□-□□□□		1	1 unit	143	20.000
<i>Motorized operating mechanisms</i>								
160	00/000	C	3NJ62 04-2AA0□-□□□□		1	1 unit	143	6.160
250	1	C	3NJ62 14-2AA0□-□□□□		1	1 unit	143	10.380
400	2/1	C	3NJ62 24-2AA0□-□□□□		1	1 unit	143	18.900
630	3/2	C	3NJ62 34-2AA0□-□□□□		1	1 unit	143	20.000
<i>Motorized operating mechanism, EFM</i>								
160	00/000	C	3NJ62 04-2AV0□-□□□□		1	1 unit	143	6.160
250	1	C	3NJ62 14-2AV0□-□□□□		1	1 unit	143	10.380
400	2/1	C	3NJ62 24-2AV0□-□□□□		1	1 unit	143	18.900
630	3/2	C	3NJ62 34-2AV0□-□□□□		1	1 unit	143	20.000
				Order No. supplement	Add. price			
				0 0AA0	None			
Standard Order No. supplement (more Order No. supplements on page 17/63 onwards)								
Without auxiliary switches, ammeters, current transformers								

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses
for BS fuse links

Selection and ordering data

Rated current I_n A	Size	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3-pole, high switching capacity H								
<i>Manually operated</i>								
63	A3	C	3NJ62 43-3AA0 □-□□□□		1	1 unit	143	3.630
100	A3	C	3NJ62 53-3AA0 □-□□□□		1	1 unit	143	3.630
160	00T ¹⁾	C	3NJ62 63-3AA0 □-□□□□		1	1 unit	143	3.630
250	B2	C	3NJ62 73-3AA0 □-□□□□		1	1 unit	143	6.750
400	B4	C	3NJ62 83-3AA0 □-□□□□		1	1 unit	143	15.000
630	3T ¹⁾	C	3NJ62 93-3AA0 □-□□□□		1	1 unit	143	15.360
<i>Manually operated, EFM</i>								
160	00T ¹⁾	C	3NJ62 63-3AV0 □-□□□□		1	1 unit	143	3.630
250	B2	C	3NJ62 73-3AV0 □-□□□□		1	1 unit	143	6.750
400	B4	C	3NJ62 83-3AV0 □-□□□□		1	1 unit	143	15.000
630	3T ¹⁾	C	3NJ62 93-3AV0 □-□□□□		1	1 unit	143	15.360
<i>Motorized operating mechanisms</i>								
160	00T ¹⁾	C	3NJ62 63-4AA0 □-□□□□		1	1 unit	143	3.630
250	B2	C	3NJ62 73-4AA0 □-□□□□		1	1 unit	143	6.750
400	B4	C	3NJ62 83-4AA0 □-□□□□		1	1 unit	143	15.000
630	3T ¹⁾	C	3NJ62 93-4AA0 □-□□□□		1	1 unit	143	15.360
4-pole, standard switching capacity S								
<i>Manually operated</i>								
160	00T ¹⁾	C	3NJ62 64-1AA0 □-□□□□		1	1 unit	143	6.160
250	B2	C	3NJ62 74-1AA0 □-□□□□		1	1 unit	143	10.380
400	B4	C	3NJ62 84-1AA0 □-□□□□		1	1 unit	143	18.900
630	3T ¹⁾	C	3NJ62 94-1AA0 □-□□□□		1	1 unit	143	20.000
<i>Manually operated, EFM</i>								
160	00T ¹⁾	C	3NJ62 64-1AV0 □-□□□□		1	1 unit	143	6.160
250	B2	C	3NJ62 74-1AV0 □-□□□□		1	1 unit	143	10.380
400	B4	C	3NJ62 84-1AV0 □-□□□□		1	1 unit	143	18.900
630	3T ¹⁾	C	3NJ62 94-1AV0 □-□□□□		1	1 unit	143	20.000
<i>Motorized operating mechanisms</i>								
160	00T ¹⁾	C	3NJ62 64-2AA0 □-□□□□		1	1 unit	143	6.160
250	B2	C	3NJ62 74-2AA0 □-□□□□		1	1 unit	143	10.380
400	B4	C	3NJ62 84-2AA0 □-□□□□		1	1 unit	143	18.900
630	3T ¹⁾	C	3NJ62 94-2AA0 □-□□□□		1	1 unit	143	20.000
				Order No. supplement	Add. price			
Without auxiliary switches, ammeters, current transformers				▶	0 0AA0	None		

Standard Order No. supplement
(more Order No. supplements on page 17/63 onwards)

Without auxiliary switches, ammeters, current transformers

¹⁾ The fuse is available from Lawson fuses (UK) and does not correspond to BS 88.


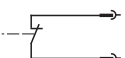
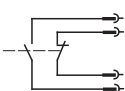
Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

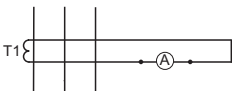
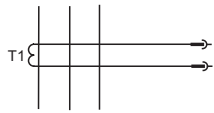
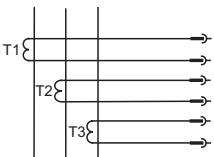
Options

1. Order No. supplement: Auxiliary switch wired to multi-function plug

		DT	Order No. supplement 3NJ62 ...-...□-....	Add. price
Without		▶	0	None
	1 NO	B	1	x
	1 NC	B	2	x
	1 NO + 1 NC	B	3	x

x = Additional price

2. Order No. supplement: Ammeter and current transformer wired

		Ammeters	Current transformers		DT	Order No. supplement 3NJ62 ...-...□□□□	Add. price	
			Primary current A	Secondary current A	Accuracy class			
For size NH 00 and BS 00T								
Without		Without	Without	Without	▶	0AA0	None	
1 current transformer to 1 ammeter								
	Moving iron	50	1	1	B	1DB1	x	
	Moving iron	50	5	1	B	1DB4	x	
	Moving iron	100	1	1	B	1DD1	x	
	Moving iron	100	5	1	B	1DD4	x	
	Moving iron	150	1	1	B	1DE1	x	
	Moving iron	150	5	1	B	1DE4	x	
	Bi-metal	50	1	1	B	2DB1	x	
	Bi-metal	50	5	1	B	2DB4	x	
	Bi-metal	100	1	1	B	2DD1	x	
	Bi-metal	100	5	1	B	2DD4	x	
Bi-metal	150	1	1	B	2DE1	x		
Bi-metal	150	5	1	B	2DE4	x		
1 current transformers to multi-function plug								
	Without	50	1	1	B	0BB1	x	
	Without	50	5	1	B	0BB4	x	
	Without	100	1	1	B	0BD1	x	
	Without	100	1	0.5	B	0BD2	x	
	Without	100	1	0.5 calibrated	D	0BD3	x	
	Without	100	5	1	B	0BD4	x	
	Without	100	5	0.5	B	0BD5	x	
	Without	100	5	0.5 calibrated	D	0BD6	x	
	Without	150	1	1	B	0BE1	x	
	Without	150	1	0.5	B	0BE2	x	
	Without	150	1	0.5 calibrated	D	0BE3	x	
	Without	150	5	1	B	0BE4	x	
	Without	150	5	0.5	B	0BE5	x	
	Without	150	5	0.5 calibrated	D	0BE6	x	
	3 current transformers to multi-function plug							
		Without	50	1	1	B	0CB1	x
		Without	50	5	1	B	0CB4	x
		Without	100	1	1	B	0CD1	x
Without		100	1	0.5	B	0CD2	x	
Without		100	1	0.5 calibrated	D	0CD3	x	
Without		100	5	1	B	0CD4	x	
Without		100	5	0.5	B	0CD5	x	
Without		100	5	0.5 calibrated	D	0CD6	x	
Without		150	1	1	B	0CE1	x	
Without		150	1	0.5	B	0CE2	x	
Without		150	1	0.5 calibrated	D	0CE3	x	
Without		150	5	1	B	0CE4	x	
Without		150	5	0.5	B	0CE5	x	
Without		150	5	0.5 calibrated	D	0CE6	x	

x = Additional price

Switch Disconnectors with Fuses

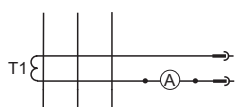
SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

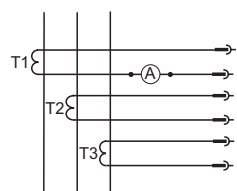
**2. Order No. supplement:
Ammeter and current transformer wired**

Ammeters	Current transformers			DT	Order No. supplement 3NJ62□□□□ ↑↑↑↑	Add. price
	Primary current A	Secondary current A	Accuracy class			

For size NH 00 and BS 00T (continued)



1 current transformer to 1 ammeter and multi-function plug						
Moving iron	50	1	1	B	1EB1	x
Moving iron	50	5	1	B	1EB4	x
Moving iron	100	1	1	B	1ED1	x
Moving iron	100	1	0.5	B	1ED2	x
Moving iron	100	1	0.5 calibrated	D	1ED3	x
Moving iron	100	5	1	B	1ED4	x
Moving iron	100	5	0.5	B	1ED5	x
Moving iron	100	5	0.5 calibrated	D	1ED6	x
Moving iron	150	1	1	B	1EE1	x
Moving iron	150	1	0.5	B	1EE2	x
Moving iron	150	1	0.5 calibrated	D	1EE3	x
Moving iron	150	5	1	B	1EE4	x
Moving iron	150	5	0.5	B	1EE5	x
Moving iron	150	5	0.5 calibrated	D	1EE6	x
Bi-metal	50	1	1	B	2EB1	x
Bi-metal	50	5	1	B	2EB4	x
Bi-metal	100	1	1	B	2ED1	x
Bi-metal	100	1	0.5	B	2ED2	x
Bi-metal	100	1	0.5 calibrated	D	2ED3	x
Bi-metal	100	5	1	B	2ED4	x
Bi-metal	100	5	0.5	B	2ED5	x
Bi-metal	100	5	0.5 calibrated	D	2ED6	x
Bi-metal	150	1	1	B	2EE1	x
Bi-metal	150	1	0.5	B	2EE2	x
Bi-metal	150	1	0.5 calibrated	D	2EE3	x
Bi-metal	150	5	1	B	2EE4	x
Bi-metal	150	5	0.5	B	2EE5	x
Bi-metal	150	5	0.5 calibrated	D	2EE6	x



3 current transformer to 1 ammeter and multi-function plug						
Moving iron	50	1	1	B	1FB1	x
Moving iron	50	5	1	B	1FB4	x
Moving iron	100	1	1	B	1FD1	x
Moving iron	100	1	0.5	B	1FD2	x
Moving iron	100	1	0.5 calibrated	D	1FD3	x
Moving iron	100	5	1	B	1FD4	x
Moving iron	100	5	0.5	B	1FD5	x
Moving iron	100	5	0.5 calibrated	D	1FD6	x
Moving iron	150	1	1	B	1FE1	x
Moving iron	150	5	0.5	B	1FE2	x
Moving iron	150	5	0.5 calibrated	D	1FE3	x
Moving iron	150	5	1	B	1FE4	x
Moving iron	150	5	0.5	B	1FE5	x
Moving iron	150	5	0.5 calibrated	D	1FE6	x
Bi-metal	50	1	1	B	2FB1	x
Bi-metal	50	5	1	B	2FB4	x
Bi-metal	100	1	1	B	2FD1	x
Bi-metal	100	1	0.5	B	2FD2	x
Bi-metal	100	1	0.5 calibrated	D	2FD3	x
Bi-metal	100	5	1	B	2FD4	x
Bi-metal	100	5	0.5	B	2FD5	x
Bi-metal	100	5	0.5 calibrated	D	2FD6	x
Bi-metal	150	1	1	B	2FE1	x
Bi-metal	150	1	0.5	B	2FE2	x
Bi-metal	150	1	0.5 calibrated	D	2FE3	x
Bi-metal	150	5	1	B	2FE4	x
Bi-metal	150	5	0.5	B	2FE5	x
Bi-metal	150	5	0.5 calibrated	D	2FE6	x

x = Additional price

17

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

Ammeters	Current transformers			DT	Order No. supplement 3NJ62□□□□	Add. price
	Primary current	Secondary current	Accuracy class			
	A	A			↑↑↑↑	

For size NH 1 and BS B2

	Without	Without	Without	Without	▶	0AA0	None	
1 current transformer to 1 ammeter								
	Moving iron	50	1	1	B	1DB1	x	
	Moving iron	50	5	1	B	1DB4	x	
	Moving iron	100	1	1	B	1DD1	x	
	Moving iron	100	5	1	B	1DD4	x	
	Moving iron	150	1	1	B	1DE1	x	
	Moving iron	150	5	1	B	1DE4	x	
	Moving iron	200	1	1	B	1DF1	x	
	Moving iron	200	5	1	B	1DF4	x	
	Moving iron	250	1	1	B	1DG1	x	
	Moving iron	250	5	1	B	1DG4	x	
	Bi-metal	50	1	1	B	2DB1	x	
	Bi-metal	50	5	1	B	2DB4	x	
	Bi-metal	100	1	1	B	2DD1	x	
	Bi-metal	100	5	1	B	2DD4	x	
	Bi-metal	150	1	1	B	2DE1	x	
	Bi-metal	150	5	1	B	2DE4	x	
	Bi-metal	200	1	1	B	2DF1	x	
	Bi-metal	200	5	1	B	2DF4	x	
Bi-metal	250	1	1	B	2DG1	x		
Bi-metal	250	5	1	B	2DG4	x		
1 current transformers to multi-function plug								
	Without	50	1	1	B	0BB1	x	
	Without	50	5	1	B	0BB4	x	
	Without	100	1	1	B	0BD1	x	
	Without	100	1	0.5	B	0BD2	x	
	Without	100	5	1	B	0BD4	x	
	Without	100	5	0.5	B	0BD5	x	
	Without	150	1	1	B	0BE1	x	
	Without	150	1	0.5	B	0BE2	x	
	Without	150	5	1	B	0BE4	x	
	Without	150	5	0.5	B	0BE5	x	
	Without	200	1	1	B	0BF1	x	
	Without	200	1	0.5	B	0BF2	x	
	Without	200	5	1	B	0BF4	x	
	Without	200	5	0.5	B	0BF5	x	
	Without	250	1	1	B	0BG1	x	
	Without	250	1	0.5	B	0BG2	x	
	Without	250	5	1	B	0BG4	x	
	Without	250	5	0.5	B	0BG5	x	
	3 current transformers to multi-function plug							
		Without	50	1	1	B	0CB1	x
Without		50	5	1	B	0CB4	x	
Without		100	1	1	B	0CD1	x	
Without		100	1	0.5	B	0CD2	x	
Without		100	5	1	B	0CD4	x	
Without		100	5	0.5	B	0CD5	x	
Without		150	1	1	B	0CE1	x	
Without		150	1	0.5	B	0CE2	x	
Without		150	5	1	B	0CE4	x	
Without		150	5	0.5	B	0CE5	x	
Without		200	1	1	B	0CF1	x	
Without		200	1	0.5	B	0CF2	x	
Without		200	5	1	B	0CF4	x	
Without		200	5	0.5	B	0CF5	x	
Without		250	1	1	B	0CG1	x	
Without		250	1	0.5	B	0CG2	x	
Without		250	5	1	B	0CG4	x	
Without		250	5	0.5	B	0CG5	x	

x = Additional price

Switch Disconnectors with Fuses

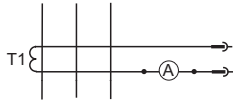
SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

Ammeters	Current transformers			DT	Order No. supplement 3NJ62□□□□	Add. price
	Primary current	Secondary current	Accuracy class			
	A	A			↑↑↑↑	

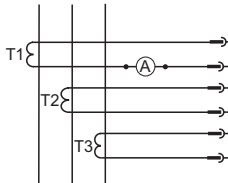
For size NH 1 and BS B2 (continued)

1 current transformer to 1 ammeter and multi-function plug



Moving iron	50	1	1	B	1EB1	x
Moving iron	50	5	1	B	1EB4	x
Moving iron	100	1	1	B	1ED1	x
Moving iron	100	1	0.5	B	1ED2	x
Moving iron	100	5	1	B	1ED4	x
Moving iron	100	5	0.5	B	1ED5	x
Moving iron	150	1	1	B	1EE1	x
Moving iron	150	1	0.5	B	1EE2	x
Moving iron	150	5	1	B	1EE4	x
Moving iron	150	5	0.5	B	1EE5	x
Moving iron	200	1	1	B	1EF1	x
Moving iron	200	1	0.5	B	1EF2	x
Moving iron	200	5	1	B	1EF4	x
Moving iron	200	5	0.5	B	1EF5	x
Moving iron	250	1	1	B	1EG1	x
Moving iron	250	1	0.5	B	1EG2	x
Moving iron	250	5	1	B	1EG4	x
Moving iron	250	5	0.5	B	1EG5	x
Bi-metal	50	1	1	B	2EB1	x
Bi-metal	50	5	1	B	2EB4	x
Bi-metal	100	1	1	B	2ED1	x
Bi-metal	100	1	0.5	B	2ED2	x
Bi-metal	100	5	1	B	2ED4	x
Bi-metal	100	5	0.5	B	2ED5	x
Bi-metal	150	1	1	B	2EE1	x
Bi-metal	150	1	0.5	B	2EE2	x
Bi-metal	150	5	1	B	2EE4	x
Bi-metal	150	5	0.5	B	2EE5	x
Bi-metal	200	1	1	B	2EF1	x
Bi-metal	200	1	0.5	B	2EF2	x
Bi-metal	200	5	1	B	2EF4	x
Bi-metal	200	5	0.5	B	2EF5	x
Bi-metal	250	1	1	B	2EG1	x
Bi-metal	250	1	0.5	B	2EG2	x
Bi-metal	250	5	1	B	2EG4	x
Bi-metal	250	5	0.5	B	2EG5	x

3 current transformer to 1 ammeter and multi-function plug



Moving iron	50	1	1	B	1FB1	x
Moving iron	50	5	1	B	1FB4	x
Moving iron	100	1	1	B	1FD1	x
Moving iron	100	1	0.5	B	1FD2	x
Moving iron	100	5	1	B	1FD4	x
Moving iron	100	5	0.5	B	1FD5	x
Moving iron	150	1	1	B	1FE1	x
Moving iron	150	1	0.5	B	1FE2	x
Moving iron	150	5	1	B	1FE4	x
Moving iron	150	5	0.5	B	1FE5	x
Moving iron	200	1	1	B	1FF1	x
Moving iron	200	1	0.5	B	1FF2	x
Moving iron	200	5	1	B	1FF4	x
Moving iron	200	5	0.5	B	1FF5	x
Moving iron	250	1	1	B	1FG1	x
Moving iron	250	1	0.5	B	1FG2	x
Moving iron	250	5	1	B	1FG4	x
Moving iron	250	5	0.5	B	1FG5	x
Bi-metal	50	1	1	B	2FB1	x
Bi-metal	50	5	1	B	2FB4	x
Bi-metal	100	1	1	B	2FD1	x
Bi-metal	100	1	0.5	B	2FD2	x
Bi-metal	100	5	1	B	2FD4	x
Bi-metal	100	5	0.5	B	2FD5	x
Bi-metal	150	1	1	B	2FE1	x
Bi-metal	150	1	0.5	B	2FE2	x
Bi-metal	150	5	1	B	2FE4	x
Bi-metal	150	5	0.5	B	2FE5	x
Bi-metal	200	1	1	B	2FF1	x
Bi-metal	200	1	0.5	B	2FF2	x
Bi-metal	200	5	1	B	2FF4	x
Bi-metal	200	5	0.5	B	2FF5	x
Bi-metal	250	1	1	B	2FG1	x
Bi-metal	250	1	0.5	B	2FG2	x
Bi-metal	250	5	1	B	2FG4	x
Bi-metal	250	5	0.5	B	2FG5	x

x = Additional price

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

Ammeters	Current transformers			DT	Order No. supplement 3NJ62□□□□	Add. price
	Primary current A	Secondary current A	Accuracy class			

For size NH 2 and BS B4

	Without	Without	Without		▶	0AA0	None
1 current transformer to 1 ammeter							
	Moving iron	300	1	1	B	1DH1	x
	Moving iron	300	5	1	B	1DH4	x
	Moving iron	400	1	1	B	1DJ1	x
	Moving iron	400	5	1	B	1DJ4	x
	Bi-metal	300	1	1	B	2DH1	x
	Bi-metal	300	5	1	B	2DH4	x
	Bi-metal	400	1	1	B	2DJ1	x
	Bi-metal	400	5	1	B	2DJ4	x
1 current transformers to multi-function plug							
	Without	300	1	1	B	0BH1	x
	Without	300	1	0.5	B	0BH2	x
	Without	300	1	0.5 calibrated	D	0BH3	x
	Without	300	5	1	B	0BH4	x
	Without	300	5	0.5	B	0BH5	x
	Without	300	5	0.5 calibrated	D	0BH6	x
	Without	400	1	1	B	0BJ1	x
	Without	400	1	0.5	B	0BJ2	x
	Without	400	1	0.5 calibrated	D	0BJ3	x
	Without	400	5	1	B	0BJ4	x
	Without	400	5	0.5	B	0BJ5	x
	Without	400	5	0.5 calibrated	D	0BJ6	x
3 current transformers to multi-function plug							
	Without	300	1	1	B	0CH1	x
	Without	300	1	0.5	B	0CH2	x
	Without	300	1	0.5 calibrated	D	0CH3	x
	Without	300	5	1	B	0CH4	x
	Without	300	5	0.5	B	0CH5	x
	Without	300	5	0.5 calibrated	D	0CH6	x
	Without	400	1	1	B	0CJ1	x
	Without	400	1	0.5	B	0CJ2	x
	Without	400	1	0.5 calibrated	D	0CJ3	x
	Without	400	5	1	B	0CJ4	x
	Without	400	5	0.5	B	0CJ5	x
	Without	400	5	0.5 calibrated	D	0CJ6	x
1 current transformer to 1 ammeter and multi-function plug							
	Moving iron	300	1	1	B	1EH1	x
	Moving iron	300	1	0.5	B	1EH2	x
	Moving iron	300	1	0.5 calibrated	D	1EH3	x
	Moving iron	300	5	1	B	1EH4	x
	Moving iron	300	5	0.5	B	1EH5	x
	Moving iron	300	5	0.5 calibrated	D	1EH6	x
	Moving iron	400	1	1	B	1EJ1	x
	Moving iron	400	1	0.5	B	1EJ2	x
	Moving iron	400	1	0.5 calibrated	D	1EJ3	x
	Moving iron	400	5	1	B	1EJ4	x
	Moving iron	400	5	0.5	B	1EJ5	x
	Moving iron	400	5	0.5 calibrated	D	1EJ6	x
	Bi-metal	300	1	1	B	2EH1	x
	Bi-metal	300	1	0.5	B	2EH2	x
	Bi-metal	300	1	0.5 calibrated	D	2EH3	x
	Bi-metal	300	5	1	B	2EH4	x
	Bi-metal	300	5	0.5	B	2EH5	x
	Bi-metal	300	5	0.5 calibrated	D	2EH6	x
	Bi-metal	400	1	1	B	2EJ1	x
	Bi-metal	400	1	0.5	B	2EJ2	x
	Bi-metal	400	1	0.5 calibrated	D	2EJ3	x
	Bi-metal	400	5	1	B	2EJ4	x
	Bi-metal	400	5	0.5	B	2EJ5	x
	Bi-metal	400	5	0.5 calibrated	D	2EJ6	x

x = Additional price

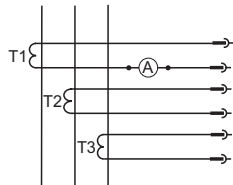
Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

Ammeters	Current transformers			DT	Order No. supplement 3NJ62 ...-...-□□□□	Add. price
	Primary current A	Secondary current A	Accuracy class			

For size NH 2 and BS B4 (continued)



3 current transformer to 1 ammeter and multi-function plug

Moving iron	300	1	1	B	1FH1	x
Moving iron	300	1	0.5	B	1FH2	x
Moving iron	300	1	0.5 calibrated	D	1FH3	x
Moving iron	300	5	1	B	1FH4	x
Moving iron	300	5	0.5	B	1FH5	x
Moving iron	300	5	0.5 calibrated	D	1FH6	x
Moving iron	400	1	1	B	1FJ1	x
Moving iron	400	1	0.5	B	1FJ2	x
Moving iron	400	1	0.5 calibrated	D	1FJ3	x
Moving iron	400	5	1	B	1FJ4	x
Moving iron	400	5	0.5	B	1FJ5	x
Moving iron	400	5	0.5 calibrated	D	1FJ6	x
Bi-metal	300	1	1	B	2FH1	x
Bi-metal	300	1	0.5	B	2FH2	x
Bi-metal	300	1	0.5 calibrated	D	2FH3	x
Bi-metal	300	5	1	B	2FH4	x
Bi-metal	300	5	0.5	B	2FH5	x
Bi-metal	300	5	0.5 calibrated	D	2FH6	x
Bi-metal	400	1	1	B	2FJ1	x
Bi-metal	400	1	0.5	B	2FJ2	x
Bi-metal	400	1	0.5 calibrated	D	2FJ3	x
Bi-metal	400	5	1	B	2FJ4	x
Bi-metal	400	5	0.5	B	2FJ5	x
Bi-metal	400	5	0.5 calibrated	D	2FJ6	x

x = Additional price

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

Ammeters	Current transformers			DT	Order No. supplement 3NJ62□□□□	Add. price
	Primary current A	Secondary current A	Accuracy class			

For size NH 3 and BS 3T

	Without	Without	Without	Without	▶	0AA0	None	
1 current transformer to 1 ammeter								
	Moving iron	300	1	1	B	1DH1	x	
	Moving iron	300	5	1	B	1DH4	x	
	Moving iron	400	1	1	B	1DJ1	x	
	Moving iron	400	5	1	B	1DJ4	x	
	Moving iron	500	1	1	B	1DK1	x	
	Moving iron	500	5	1	B	1DK4	x	
	Moving iron	600	1	1	B	1DL1	x	
	Moving iron	600	5	1	B	1DL4	x	
	Bi-metal	300	1	1	B	2DH1	x	
	Bi-metal	300	5	1	B	2DH4	x	
	Bi-metal	400	1	1	B	2DJ1	x	
	Bi-metal	400	5	1	B	2DJ4	x	
	Bi-metal	500	1	1	B	2DK1	x	
	Bi-metal	500	5	1	B	2DK4	x	
Bi-metal	600	1	1	B	2DL1	x		
Bi-metal	600	5	1	B	2DL4	x		
1 current transformers to multi-function plug								
	Without	300	1	1	B	0BH1	x	
	Without	300	1	0.5	B	0BH2	x	
	Without	300	1	0.5 calibrated	D	0BH3	x	
	Without	300	5	1	B	0BH4	x	
	Without	300	5	0.5	B	0BH5	x	
	Without	300	5	0.5 calibrated	D	0BH6	x	
	Without	400	1	1	B	0BJ1	x	
	Without	400	1	0.5	B	0BJ2	x	
	Without	400	1	0.5 calibrated	D	0BJ3	x	
	Without	400	5	1	B	0BJ4	x	
	Without	400	5	0.5	B	0BJ5	x	
	Without	400	5	0.5 calibrated	D	0BJ6	x	
	Without	500	1	1	B	0BK1	x	
	Without	500	1	0.5	B	0BK2	x	
	Without	500	1	0.5 calibrated	D	0BK3	x	
	Without	500	5	1	B	0BK4	x	
	Without	500	5	0.5	B	0BK5	x	
	Without	500	5	0.5 calibrated	D	0BK6	x	
	Without	600	1	1	B	0BL1	x	
	Without	600	1	0.5	B	0BL2	x	
	Without	600	1	0.5 calibrated	D	0BL3	x	
	Without	600	5	1	B	0BL4	x	
	Without	600	5	0.5	B	0BL5	x	
	Without	600	5	0.5 calibrated	D	0BL6	x	
	3 current transformers to multi-function plug							
		Without	300	1	1	B	0CH1	x
		Without	300	1	0.5	B	0CH2	x
		Without	300	1	0.5 calibrated	D	0CH3	x
		Without	300	5	1	B	0CH4	x
		Without	300	5	0.5	B	0CH5	x
Without		300	5	0.5 calibrated	D	0CH6	x	
Without		400	1	1	B	0CJ1	x	
Without		400	1	0.5	B	0CJ2	x	
Without		400	1	0.5 calibrated	D	0CJ3	x	
Without		400	5	1	B	0CJ4	x	
Without		400	5	0.5	B	0CJ5	x	
Without		400	5	0.5 calibrated	D	0CJ6	x	
Without		500	1	1	B	0CK1	x	
Without		500	1	0.5	B	0CK2	x	
Without		500	1	0.5 calibrated	D	0CK3	x	
Without		500	5	1	B	0CK4	x	
Without		500	5	0.5	B	0CK5	x	
Without		500	5	0.5 calibrated	D	0CK6	x	
Without		600	1	1	B	0CL1	x	
Without		600	1	0.5	B	0CL2	x	
Without		600	1	0.5 calibrated	D	0CL3	x	
Without		600	5	1	B	0CL4	x	
Without		600	5	0.5	B	0CL5	x	
Without		600	5	0.5 calibrated	D	0CL6	x	

x = Additional price

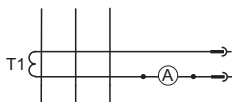
Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses
for LV HRC and BS fuse links

Ammeters	Current transformers			DT	Order No. supplement 3NJ62 ...-...-□□□□	Add. price
	Primary current A	Secondary current A	Accuracy class			

For size NH 3 and BS 3T (continued)



1 current transformer to 1 ammeter and multi-function plug

Moving iron	300	1	0.5 calibrated	D	1EH3	x
Moving iron	300	5	1	B	1EH4	x
Moving iron	300	5	0.5	B	1EH5	x
Moving iron	300	5	0.5 calibrated	D	1EH6	x
Moving iron	400	1	1	B	1EJ1	x
Moving iron	400	1	0.5	B	1EJ2	x
Moving iron	400	1	0.5 calibrated	D	1EJ3	x
Moving iron	400	5	1	B	1EJ4	x
Moving iron	400	5	0.5	B	1EJ5	x
Moving iron	400	5	0.5 calibrated	D	1EJ6	x
Moving iron	500	1	1	B	1EK1	x
Moving iron	500	1	0.5	B	1EK2	x
Moving iron	500	1	0.5 calibrated	D	1EK3	x
Moving iron	500	5	1	B	1EK4	x
Moving iron	500	5	0.5	B	1EK5	x
Moving iron	500	5	0.5 calibrated	D	1EK6	x
Moving iron	600	1	1	B	1EL1	x
Moving iron	600	1	0.5	B	1EL2	x
Moving iron	600	1	0.5 calibrated	D	1EL3	x
Moving iron	600	5	1	B	1EL4	x
Moving iron	600	5	0.5	B	1EL5	x
Moving iron	600	5	0.5 calibrated	D	1EL6	x
Bi-metal	300	1	1	B	2EH1	x
Bi-metal	300	1	0.5	B	2EH2	x
Bi-metal	300	1	0.5 calibrated	D	2EH3	x
Bi-metal	300	5	1	B	2EH4	x
Bi-metal	300	5	0.5	B	2EH5	x
Bi-metal	300	5	0.5 calibrated	D	2EH6	x
Bi-metal	400	1	1	B	2EJ1	x
Bi-metal	400	1	0.5	B	2EJ2	x
Bi-metal	400	1	0.5 calibrated	D	2EJ3	x
Bi-metal	400	5	1	B	2EJ4	x
Bi-metal	400	5	0.5	B	2EJ5	x
Bi-metal	400	5	0.5 calibrated	D	2EJ6	x
Bi-metal	500	1	1	B	2EK1	x
Bi-metal	500	1	0.5	B	2EK2	x
Bi-metal	500	1	0.5 calibrated	D	2EK3	x
Bi-metal	500	5	1	B	2EK4	x
Bi-metal	500	5	0.5	B	2EK5	x
Bi-metal	500	5	0.5 calibrated	D	2EK6	x
Bi-metal	600	1	1	B	2EL1	x
Bi-metal	600	1	0.5	B	2EL2	x
Bi-metal	600	1	0.5 calibrated	D	2EL3	x
Bi-metal	600	5	1	B	2EL4	x
Bi-metal	600	5	0.5	B	2EL5	x
Bi-metal	600	5	0.5 calibrated	D	2EL6	x

x = Additional price

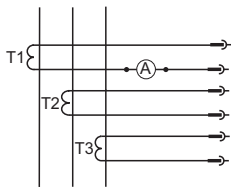
Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses for LV HRC and BS fuse links

Ammeters	Current transformers			DT	Order No. supplement 3NJ62□□□□	Add. price
	Primary current A	Secondary current A	Accuracy class			

For size NH 3 and BS 3T (continued)



3 current transformer to 1 ammeter and multi-function plug

Moving iron	300	1	1	B	1FH1	x
Moving iron	300	1	0.5	B	1FH2	x
Moving iron	300	1	0.5 calibrated	D	1FH3	x
Moving iron	300	5	1	B	1FH4	x
Moving iron	300	5	0.5	B	1FH5	x
Moving iron	300	5	0.5 calibrated	D	1FH6	x
Moving iron	400	1	1	B	1FJ1	x
Moving iron	400	1	0.5	B	1FJ2	x
Moving iron	400	1	0.5 calibrated	D	1FJ3	x
Moving iron	400	5	1	B	1FJ4	x
Moving iron	400	5	0.5	B	1FJ5	x
Moving iron	400	5	0.5 calibrated	D	1FJ6	x
Moving iron	500	1	1	B	1FK1	x
Moving iron	500	1	0.5	B	1FK2	x
Moving iron	500	1	0.5 calibrated	D	1FK3	x
Moving iron	500	5	1	B	1FK4	x
Moving iron	500	5	0.5	B	1FK5	x
Moving iron	500	5	0.5 calibrated	D	1FK6	x
Moving iron	600	1	1	B	1FL1	x
Moving iron	600	1	0.5	B	1FL2	x
Moving iron	600	1	0.5 calibrated	D	1FL3	x
Moving iron	600	5	1	B	1FL4	x
Moving iron	600	5	0.5	B	1FL5	x
Moving iron	600	5	0.5 calibrated	D	1FL6	x
Bi-metal	300	1	1	B	2FH1	x
Bi-metal	300	1	0.5	B	2FH2	x
Bi-metal	300	1	0.5 calibrated	D	2FH3	x
Bi-metal	300	5	1	B	2FH4	x
Bi-metal	300	5	0.5	B	2FH5	x
Bi-metal	300	5	0.5 calibrated	D	2FH6	x
Bi-metal	400	1	1	B	2FJ1	x
Bi-metal	400	1	0.5	B	2FJ2	x
Bi-metal	400	1	0.5 calibrated	D	2FJ3	x
Bi-metal	400	5	1	B	2FJ4	x
Bi-metal	400	5	0.5	B	2FJ5	x
Bi-metal	400	5	0.5 calibrated	D	2FJ6	x
Bi-metal	500	1	1	B	2FK1	x
Bi-metal	500	1	0.5	B	2FK2	x
Bi-metal	500	1	0.5 calibrated	D	2FK3	x
Bi-metal	500	5	1	B	2FK4	x
Bi-metal	500	5	0.5	B	2FK5	x
Bi-metal	500	5	0.5 calibrated	D	2FK6	x
Bi-metal	600	1	1	B	2FL1	x
Bi-metal	600	1	0.5	B	2FL2	x
Bi-metal	600	1	0.5 calibrated	D	2FL3	x
Bi-metal	600	5	1	B	2FL4	x
Bi-metal	600	5	0.5	B	2FL5	x
Bi-metal	600	5	0.5 calibrated	D	2FL6	x










x = Additional price

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses Accessories

Selection and ordering data








Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
For size NH 00, BS A3 and BS 00T								
Terminals								
 3NJ69 23-1BA00		Single terminal for 2-/3-pole devices, 10 ... 95 mm ² (1 set = 3 units)	A	3NJ69 23-1BA00	1	1 unit	143 0.210	
		Single terminal for 4-pole devices, 10 ... 95 mm ² (1 set = 4 units)	A	3NJ69 24-1BA00	1	1 unit	143 0.280	
Terminal covers								
 3NJ69 23-1DA00		For 2-/3-pole devices	A	3NJ69 23-1DA00	1	1 unit	143 0.063	
		Only for 4th pole	A	3NJ69 04-1DA00	1	1 unit	143 0.070	
Contact extension								
 3NJ69 23-1EB00		3-pole	A	3NJ69 23-1EB00	1	1 unit	143 1.700	
		4-pole	A	3NJ69 24-1EB00	1	1 unit	143 2.000	
Auxiliary switches								
 3NJ69 20-2BB00		1 NO contact (1 NO) with cover	A	3NJ69 20-2BB00	1	1 unit	143 0.080	
		1 NO contact (1 NO)	A	3NJ69 00-2BC00	1	1 unit	143 0.020	
		1 NC contact (1 NC) with cover	A	3NJ69 20-2CB00	1	1 unit	143 0.080	
 3NJ69 00-2BC00		1 NC contact (1 NC)	A	3NJ69 00-2CC00	1	1 unit	143 0.020	
Current transformers								
For main devices and contact extensions								
Ø = Feed-through opening diameter								
 3NJ69 20-3BD11	50 A/1 A	Class 1	1 VA, Ø 21 mm	A	3NJ69 20-3BB11	1	1 unit	143 0.160
	50 A/5 A	Class 1	1 VA, Ø 21 mm	A	3NJ69 20-3BB21	1	1 unit	143 0.160
	100 A/1 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 20-3BD11	1	1 unit	143 0.160
	100 A/1 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BD12	1	1 unit	143 0.160
	100 A/1 A	Class 0.5 calibrated	1.5 VA, Ø 14 mm	D	3NJ69 20-3BD13	1	1 unit	143 0.160
	100 A/5 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 20-3BD21	1	1 unit	143 0.160
	100 A/5 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BD22	1	1 unit	143 0.160
	100 A/5 A	Class 0.5 calibrated	1.5 VA, Ø 14 mm	D	3NJ69 20-3BD23	1	1 unit	143 0.160
	150 A/1 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 20-3BE11	1	1 unit	143 0.170
	150 A/1 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BE12	1	1 unit	143 0.170
	150 A/1 A	Class 0.5 calibrated	2.5 VA, Ø 14 mm	D	3NJ69 20-3BE13	1	1 unit	143 0.170
	150 A/5 A	Class 1	1.5 VA, Ø 21 mm	A	3NJ69 20-3BE21	1	1 unit	143 0.170
	150 A/5 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BE22	1	1 unit	143 0.170
	150 A/5 A	Class 0.5 calibrated	2.5 VA, Ø 14 mm	D	3NJ69 20-3BE23	1	1 unit	143 0.170
Current transformer busbars for current transformers with feed-through opening Ø 21 mm								
 3NJ69 20-3DB00		For 1 current transformers	A	3NJ69 20-3DB00	1	1 unit	143 0.070	
		For 3 current transformers	A	3NJ69 20-3DC00	1	1 unit	143 0.210	
		For 4 current transformers ¹⁾	A	3NJ69 20-3DD00	1	1 unit	143 0.280	
Current transformer busbars for current transformers with feed-through opening Ø 14 mm								
 3NJ69 20-3DC00		For 1 current transformers	A	3NJ69 20-3DE00	1	1 unit	143 0.070	
		For 3 current transformers	A	3NJ69 20-3DF00	1	1 unit	143 0.210	
 3NJ69 20-3DD00		For 4 current transformers ¹⁾	A	3NJ69 20-3DG00	1	1 unit	143 0.280	

¹⁾ Not available in combination with multi-function plugs.

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A








3NJ62 switch disconnectors with fuses Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH 00, BS A3 and BS 00T (continued)							
		Holders for ammeters					
3NJ69 00-4GA00	A	3NJ69 00-4GA00		1	1 unit	143	0.040
		For sizes 00, 1, 2, 3					
Ammeters							
Moving-iron measuring instruments for measuring input on transformer x/1A with double overload							
	A	50 A/1 A 0.6 VA	3NJ69 00-4HB11	1	1 unit	143	0.100
	A	100 A/1 A 0.6 VA	3NJ69 00-4HD11	1	1 unit	143	0.100
	A	150 A/1 A 0.6 VA	3NJ69 00-4HE11	1	1 unit	143	0.100
Moving-iron measuring instruments for measuring input on transformer x/5A with double overload							
3NJ69 00-4H...	A	50 A/5 A 0.6 VA	3NJ69 00-4HB21	1	1 unit	143	0.100
	A	100 A/5 A 0.6 VA	3NJ69 00-4HD21	1	1 unit	143	0.100
	A	150 A/5 A 0.6 VA	3NJ69 00-4HE21	1	1 unit	143	0.100
Bi-metal measuring instruments for measuring input on transformer x/1A with 1.2-times the overload							
	A	50 A/1 A 1 VA	3NJ69 00-4HB12	1	1 unit	143	0.100
	A	100 A/1 A 1 VA	3NJ69 00-4HD12	1	1 unit	143	0.100
	A	150 A/1 A 1 VA	3NJ69 00-4HE12	1	1 unit	143	0.100
Bi-metal measuring instruments for measuring input on transformer x/5A with 1.2-times the overload							
3NJ69 00-4H...	A	50 A/5 A 1 VA	3NJ69 00-4HB22	1	1 unit	143	0.100
	A	100 A/5 A 1 VA	3NJ69 00-4HD22	1	1 unit	143	0.100
	A	150 A/5 A 1 VA	3NJ69 00-4HE22	1	1 unit	143	0.100
Multi-function plugs							
	A	6 x 2.5 mm ² , with fixing screws	3NJ69 20-3EB00	1	1 unit	143	0.047
3NJ69 20-3EB00	A	8 x 2.5 mm ² , without fixing screws	3NJ69 20-3ED00	1	1 unit	143	0.047
	A	10 x 1.5 mm ² and 8 x 2.5 mm ² , without fixing screws	3NJ69 20-3EE00	1	1 unit	143	0.070
3NJ69 20-3ED00							
							
3NJ69 20-3EE00							
Front panel							
	A	For NH: 3NJ62 03-1AA... and 3NJ62 03-3AA... without/with EFM	3NJ69 23-4BB00	1	1 unit	143	0.400
3NJ69 23-4BB00	A	For BS: 3NJ62 03-1AA... and 3NJ62 03-3AA... without/with EFM	3NJ69 23-4BC00	1	1 unit	143	0.400

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
For size NH 1 and BS B2								
Terminals								
 3NJ69 33-1BA00		Single terminal for 2-/3-pole devices, 16 ... 300 mm ² (1 set = 3 units)	A	3NJ69 33-1BA00	1	1 unit	143 0.230	
		Single terminal for 4-pole devices, 16 ... 300 mm ² (1 set = 4 units)	A	3NJ69 34-1BA00	1	1 unit	143 0.310	
Terminal covers								
 3NJ69 33-1DA00		For 2-/3-pole devices	A	3NJ69 33-1DA00	1	1 unit	143 0.146	
		Internal terminal covers for 2-/3-pole devices	A	3NJ69 33-1DB00	1	1 unit	143 0.020	
		Only for 4th pole	A	3NJ69 04-1DA00	1	1 unit	143 0.070	
 3NJ69 33-1DB00								
Contact extension								
 3NJ69 33-1EB00		3-pole	A	3NJ69 33-1EB00	1	1 unit	143 2.400	
		4-pole	A	3NJ69 34-1EB00	1	1 unit	143 2.800	
Auxiliary switches								
 3NJ69 30-2BB00		1 NO contact (1 NO) with cover	A	3NJ69 30-2BB00	1	1 unit	143 0.050	
		1 NO contact (1 NO)	A	3NJ69 00-2BC00	1	1 unit	143 0.020	
		1 NC contact (1 NC) with cover	A	3NJ69 30-2CB00	1	1 unit	143 0.050	
		1 NC contact (1 NC)	A	3NJ69 00-2CC00	1	1 unit	143 0.020	
 3NJ69 00-2BC00								
Current transformers For main devices and contact extensions								
Ø = Feed-through opening diameter								
 3NJ69 20-3BD11	50 A/1 A	Class 1	1 VA, Ø 21 mm	A	3NJ69 20-3BB11	1	1 unit	143 0.160
	50 A/5 A	Class 1	1 VA, Ø 21 mm	A	3NJ69 20-3BB21	1	1 unit	143 0.160
	100 A/1 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 20-3BD11	1	1 unit	143 0.160
	100 A/1 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BD12	1	1 unit	143 0.160
	100 A/5 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 20-3BD21	1	1 unit	143 0.160
	100 A/5 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BD22	1	1 unit	143 0.160
	150 A/1 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 20-3BE11	1	1 unit	143 0.170
	150 A/1 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BE12	1	1 unit	143 0.170
	150 A/5 A	Class 1	1.5 VA, Ø 21 mm	A	3NJ69 20-3BE21	1	1 unit	143 0.170
	150 A/5 A	Class 0.5	1.5 VA, Ø 21 mm	A	3NJ69 20-3BE22	1	1 unit	143 0.170
	200 A/1 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 30-3BF11	1	1 unit	143 0.180
	200 A/1 A	Class 0.5	5 VA, Ø 21 mm	A	3NJ69 30-3BF12	1	1 unit	143 0.180
	200 A/5 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 30-3BF21	1	1 unit	143 0.180
	200 A/5 A	Class 0.5	2.5 VA, Ø 21 mm	A	3NJ69 30-3BF22	1	1 unit	143 0.180
	250 A/1 A	Class 1	5 VA, Ø 21 mm	A	3NJ69 30-3BG11	1	1 unit	143 0.180
	250 A/1 A	Class 0.5	5 VA, Ø 21 mm	A	3NJ69 30-3BG12	1	1 unit	143 0.180
250 A/5 A	Class 1	2.5 VA, Ø 21 mm	A	3NJ69 30-3BG21	1	1 unit	143 0.180	
250 A/5 A	Class 0.5	2.5 VA, Ø 21 mm	A	3NJ69 30-3BG22	1	1 unit	143 0.180	

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses
Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
For size NH 1 and BS B2 (continued)								
 3NJ69 30-3DB00	Current transformer busbars for current transformers with feed-through opening \varnothing 21 mm							
	For 1 current transformers	A	3NJ69 30-3DB00	1	1 unit	143	0.210	
	For 3 current transformers	A	3NJ69 30-3DC00	1	1 unit	143	0.310	
 3NJ69 30-3DC00	For 4 current transformers ¹⁾	A	3NJ69 30-3DD00	1	1 unit	143	0.410	
	 3NJ69 30-3DD00							
 3NJ69 00-4GA00	Holders for ammeters							
	For sizes 00, 1, 2, 3	A	3NJ69 00-4GA00	1	1 unit	143	0.040	
 3NJ69 00-4H...	Ammeters							
	Moving-iron measuring instruments for measuring input on transformer x/1A with double overload							
	50 A/1 A	0.6 VA	A	3NJ69 00-4HB11	1	1 unit	143	0.100
	100 A/1 A	0.6 VA	A	3NJ69 00-4HD11	1	1 unit	143	0.100
	150 A/1 A	0.6 VA	A	3NJ69 00-4HE11	1	1 unit	143	0.100
	200 A/1 A	0.6 VA	A	3NJ69 00-4HF11	1	1 unit	143	0.100
250 A/1 A	0.6 VA	A	3NJ69 00-4HG11	1	1 unit	143	0.100	
 3NJ69 00-4H...	Moving-iron measuring instruments for measuring input on transformer x/5A with double overload							
	50 A/5 A	0.6 VA	A	3NJ69 00-4HB21	1	1 unit	143	0.100
	100 A/5 A	0.6 VA	A	3NJ69 00-4HD21	1	1 unit	143	0.100
	150 A/5 A	0.6 VA	A	3NJ69 00-4HE21	1	1 unit	143	0.100
	200 A/5 A	0.6 VA	A	3NJ69 00-4HF21	1	1 unit	143	0.100
	250 A/5 A	0.6 VA	A	3NJ69 00-4HG21	1	1 unit	143	0.100
 3NJ69 00-4H...	Bi-metal measuring instruments for measuring input on transformer x/1A with 1.2-times the overload							
	50 A/1 A	1 VA	A	3NJ69 00-4HB12	1	1 unit	143	0.100
	100 A/1 A	1 VA	A	3NJ69 00-4HD12	1	1 unit	143	0.100
	150 A/1 A	1 VA	A	3NJ69 00-4HE12	1	1 unit	143	0.100
	200 A/1 A	1 VA	A	3NJ69 00-4HF12	1	1 unit	143	0.100
	250 A/1 A	1 VA	A	3NJ69 00-4HG12	1	1 unit	143	0.100
 3NJ69 00-4H...	Bi-metal measuring instruments for measuring input on transformer x/5A with 1.2-times the overload							
	50 A/5 A	1 VA	A	3NJ69 00-4HB22	1	1 unit	143	0.100
	100 A/5 A	1 VA	A	3NJ69 00-4HD22	1	1 unit	143	0.100
	150 A/5 A	1 VA	A	3NJ69 00-4HE22	1	1 unit	143	0.100
	200 A/5 A	1 VA	A	3NJ69 00-4HF22	1	1 unit	143	0.100
	250 A/5 A	1 VA	A	3NJ69 00-4HG22	1	1 unit	143	0.100
 3NJ69 20-3EB00 3NJ69 40-3EE00	Multi-function plugs							
	6 x 2.5 mm ² , with fixing screws	A	3NJ69 20-3EB00	1	1 unit	143	0.047	
	8 x 2.5 mm ² , without fixing screws	A	3NJ69 20-3ED00	1	1 unit	143	0.047	
	10 x 1.5 mm ² and 8 x 2.5 mm ² , without fixing screws	A	3NJ69 20-3EE00	1	1 unit	143	0.070	
 3NJ69 33-4BB00	Front panel							
	For NH: 3NJ62 13-1AA... and 3NJ62 13-3AA... without/with EFM	A	3NJ69 33-4BB00	1	1 unit	143	0.500	
	For BS: 3NJ62 13-1AA... and 3NJ62 13-3AA... without/with EFM	A	3NJ69 33-4BC00	1	1 unit	143	0.500	







¹⁾ Not available in combination with multi-function plug.

* You can order this quantity or a multiple thereof.

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses Accessories








Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH 2, NH 3, BS B4 and BS 3T							
Terminals							
 3NJ69 43-1CA00		Double terminal for 2-/3-pole devices, 2 x (16 mm² ... 300 mm²) (1 set = 6 units)	A	3NJ69 43-1CA00	1	1 unit	143 0.450
		Double terminal for 4-pole devices, 2 x (16 mm² ... 300 mm²) (1 set = 8 units)	A	3NJ69 44-1CA00	1	1 unit	143 0.600
Terminal covers							
 3NJ69 43-1DA00		For 2-/3-pole devices	A	3NJ69 43-1DA00	1	1 unit	143 0.195
		Only for 4th pole	A	3NJ69 04-1DA00	1	1 unit	143 0.070
Contact extension							
 3NJ69 44-1EB00		3-pole	A	3NJ69 43-1EB00	1	1 unit	143 8.400
		4-pole	A	3NJ69 44-1EB00	1	1 unit	143 9.200
Auxiliary switches							
 3NJ69 40-2BB00  3NJ69 00-2BC00		1 NO contact (1 NO) with cover	A	3NJ69 40-2BB00	1	1 unit	143 0.024
		1 NO contact (1 NO)	A	3NJ69 00-2BC00	1	1 unit	143 0.020
		1 NC contact (1 NC) with cover	A	3NJ69 40-2CB00	1	1 unit	143 0.024
		1 NC contact (1 NC)	A	3NJ69 00-2CC00	1	1 unit	143 0.020
Current transformers							
For main devices and contact extensions							
 3NJ69 40-3B...		300 A/1 A Class 1 5 VA	A	3NJ69 40-3BH11	1	1 unit	143 0.330
		300 A/1 A Class 0.5 5 VA	A	3NJ69 40-3BH12	1	1 unit	143 0.330
		300 A/1 A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BH13	1	1 unit	143 0.330
		300 A/5 A Class 1 5 VA	A	3NJ69 40-3BH21	1	1 unit	143 0.330
		300 A/5 A Class 0.5 5 VA	A	3NJ69 40-3BH22	1	1 unit	143 0.330
		300 A/5 A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BH23	1	1 unit	143 0.330
		400 A/1 A Class 1 5 VA	A	3NJ69 40-3BJ11	1	1 unit	143 0.430
		400 A/1 A Class 0.5 5 VA	A	3NJ69 40-3BJ12	1	1 unit	143 0.430
		400 A/1A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BJ13	1	1 unit	143 0.430
		400 A/5 A Class 1 5 VA	A	3NJ69 40-3BJ21	1	1 unit	143 0.430
		400 A/5 A Class 0.5 5 VA	A	3NJ69 40-3BJ22	1	1 unit	143 0.430
		400 A/5 A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BJ23	1	1 unit	143 0.430
		500 A/1 A Class 1 5 VA	A	3NJ69 40-3BK11	1	1 unit	143 0.460
		500 A/1 A Class 0.5 5 VA	A	3NJ69 40-3BK12	1	1 unit	143 0.460
		500 A/1 A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BK13	1	1 unit	143 0.460
		500 A/5 A Class 1 5 VA	A	3NJ69 40-3BK21	1	1 unit	143 0.460
		500 A/5 A Class 0.5 5 VA	A	3NJ69 40-3BK22	1	1 unit	143 0.460
		500 A/5 A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BK23	1	1 unit	143 0.460
		600 A/1 A Class 1 5 VA	A	3NJ69 40-3BL11	1	1 unit	143 0.460
		600 A/1 A Class 0.5 5 VA	A	3NJ69 40-3BL12	1	1 unit	143 0.460
		600 A/1 A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BL13	1	1 unit	143 0.460
		600 A/5 A Class 1 5 VA	A	3NJ69 40-3BL21	1	1 unit	143 0.460
		600 A/5 A Class 0.5 5 VA	A	3NJ69 40-3BL22	1	1 unit	143 0.460
		600 A/5 A Class 0.5 calibrated 5 VA	D	3NJ69 40-3BL23	1	1 unit	143 0.460

* You can order this quantity or a multiple thereof.

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses
Accessories






Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH 2, NH 3, BS B4 and BS 3T (continued)							
		Holders for ammeters					
3NJ69 00-4GA00		For sizes 00, 1, 2, 3					
		Ammeters					
		Moving-iron measuring instruments for measuring input on transformer x/1A with double overload					
3NJ69 00-4H11	A	300 A/1 A 0.6 VA		1	1 unit	143	0.100
	A	400 A/1 A 0.6 VA		1	1 unit	143	0.100
	A	500 A/1 A 0.6 VA		1	1 unit	143	0.100
	A	600 A/1 A 0.6 VA		1	1 unit	143	0.100
		Moving-iron measuring instruments for measuring input on transformer x/5A with double overload					
	A	300 A/5 A 0.6 VA		1	1 unit	143	0.100
	A	400 A/5 A 0.6 VA		1	1 unit	143	0.100
	A	500 A/5 A 0.6 VA		1	1 unit	143	0.100
	A	600 A/5 A 0.6 VA		1	1 unit	143	0.100
		Bi-metal measuring instruments for measuring input on transformer x/1A with 1.2-times the overload					
3NJ69 00-4H12	A	300 A/1 A 1 VA		1	1 unit	143	0.100
	A	400 A/1 A 1 VA		1	1 unit	143	0.100
	A	500 A/1 A 1 VA		1	1 unit	143	0.100
	A	600 A/1 A 1 VA		1	1 unit	143	0.100
		Bi-metal measuring instruments for measuring input on transformer x/5A with 1.2-times the overload					
	A	300 A/5 A 1 VA		1	1 unit	143	0.100
	A	400 A/5 A 1 VA		1	1 unit	143	0.100
	A	500 A/5 A 1 VA		1	1 unit	143	0.100
	A	600 A/5 A 1 VA		1	1 unit	143	0.100
		Multi-function plugs					
		8 x 2.5 mm ² , with fixing screws		1	1 unit	143	0.147
3NJ69 40-3EC00	A	8 x 2.5 mm ² , without fixing screws		1	1 unit	143	0.147
		12 x 1.5 mm ² and 8 x 2.5 mm ² , without fixing screws		1	1 unit	143	0.170
3NJ69 40-3ED00	A			1	1 unit	143	0.170
							
3NJ69 40-3EF00	A						
		Front panel					
3NJ69 43-4BB00	A	For NH: 3NJ62 23-1AA... and 3NJ62 23-3AA... without/with EFM		1	1 unit	143	0.700
	A	For BS: 3NJ62 23-1AA... and 3NJ62 23-3AA... without/with EFM		1	1 unit	143	0.700
	A	For NH: 3NJ62 33-1AA... and 3NJ62 33-3AA... without/with EFM		1	1 unit	143	0.700
	A	For BS: 3NJ62 33-1AA... and 3NJ62 33-3AA... without/with EFM		1	1 unit	143	0.700

* You can order this quantity or a multiple thereof.

Switch Disconnectors with Fuses

SENTRON 3NJ6 In-Line Switch Disconnectors with Fuses up to 630 A

3NJ62 switch disconnectors with fuses Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Common accessories							
 3NJ69 16-4EA00		Busbar covers Mounting height 200 mm, IP20	A	3NJ69 16-4EA00	1	1 unit	113 0.472
 3NJ69 00-4CB00		Blanking covers Mounting height 50 mm, IP41	A	3NJ69 00-4CB00	1	1 unit	143 0.800
 3NJ69 15-3BA00		Connection modules For power takeoff from field distribution bus up to 400 A	A	3NJ69 15-3BA00	1	1 unit	113 1.524
 3NJ69 00-4FB00		Guide rails Depth 200 mm (1 x left and 1 x right)	C	3NJ69 00-4FB00	1	1 unit	143 1.300
 3NJ69 00-4FC00		Depth 400 mm (1 x left and 1 x right)	C	3NJ69 00-4FC00	1	1 unit	143 1.800
		NH fuse puller tongs For NH00	C	XPT:8PT9624	1	1 unit	195 0.497
		For NH1, 2, 3	C	XPT:8PT9625	1	1 unit	195 0.505

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – General data

Overview

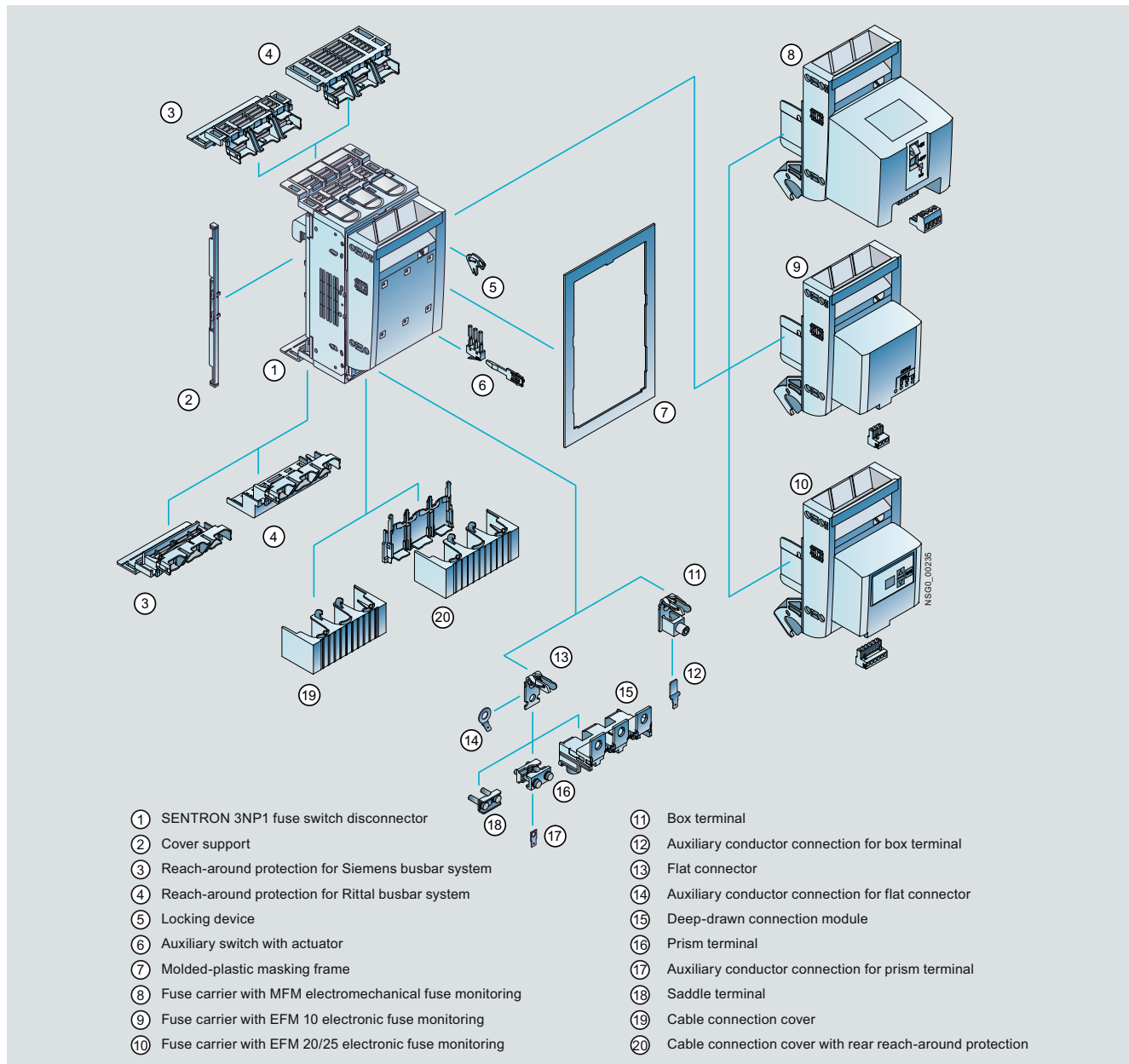


3NP1 Fuse Switch Disconnectors

All key product features at a glance

- Box terminals available for all sizes
- Connection of circular conductors and laminated conductors
- Fuse monitoring possible throughout
- Busbar supports can be built over
- Conversion of 5/10 mm thick busbars without parts which can be lost or broken off
- Convertibility of cable feeder at top/bottom without intervention in the internal conducting paths
- Optimum integration in various system environments through cover levels and on busbar systems with/without base
- Touch protection also with rear incoming unit
- Fuses are removed using a release shaft without the fuses being touched
- All units can be sealed and locked

Overview of components and accessory parts



Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – General data

Benefits

Advantages during planning and configuration

- Low level of equipment variance through easy convertibility of cable feeder at top/bottom (delivered from factory with cable feeder at bottom).
- Only one device variant for applications in industry and infrastructure thanks to touch and reach-around protection as a standard feature.
- Uniform grid sizes for easy configuration.

Advantages during operation and service

- The optional rear covers for the cable connections guarantee optimum touch protection even for distribution boards with access from the rear.
- Innovative design enables the highest safety for equipment and personnel.
- Fuses can be released and removed using a release shaft.
- Lockable and sealable design enables safe working and prevents unauthorized access.

Advantages during installation

- Only one device variant is required for cable feeders at top/bottom and there is no need to intervene in the internal conducting paths.
- One device variant with very high short-circuit values dispenses with having to order and install arc splitters to increase the electrical values.
- On all sizes it is possible to install two CO contacts for indicating the switch position.
- All devices feature all-round touch protection.
- Box terminals are available for all sizes and shorten the mounting time appreciably.
- Snapping on the sizes NH000 and NH00 shortens the mounting time greatly compared to fixing with screws.
- The screw-fixing method on sizes NH1, NH2 and NH3 provides for easy positioning and at the same time secure contacting of the larger and heavier device variants.
- Small space requirement through compact devices and busbar supports which can be built over.
- Device variants for busbar mounting can be converted to 5 mm or 10 mm thick busbars without parts which can be lost or broken off.

Application

Possible uses

3NP1 fuse switch disconnectors can be used for protecting and switching the most diverse electrical loads:

- Motor starter combinations
- In conjunction with SITOR fuses for the protection of frequency converters and soft starters
- Protection of compensation modules
- Cable feeders
- Group fusing of small loads

The devices are optimized for operation in all kinds of system environments:

- Low-voltage switchboards for power distribution and MCCs (e. g. main and sub-distribution boards)
- Distribution systems with cover levels of 32 and 70 mm or 45 and 70 mm
- Mechanical engineering
- Railway applications

Fuse monitors are used to detect, indicate and report faults:

- MFM – electromechanical fuse monitoring for AC/DC networks
- EFM 10 – electronic fuse monitoring for AC networks
- EFM 20 – electronic fuse monitoring with line monitoring for AC networks
- EFM 25 – electronic fuse monitoring with line monitoring for DC networks

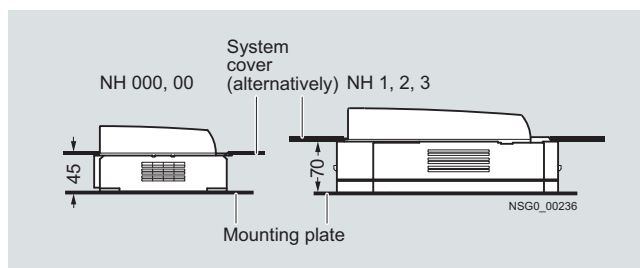
Standards and specifications

The 3NP1 fuse switch disconnectors are compliant with:

- IEC 60947-1, EN 60947-1
- IEC 60947-3, EN 60947-3

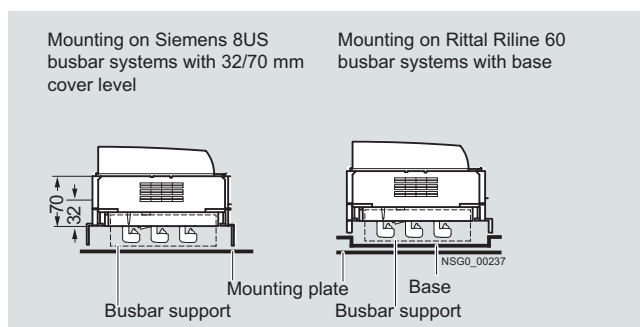
Mounting

Floor mounting



3NP1 fuse switch disconnector for floor mounting

Busbar mounting



3NP1 fuse switch disconnector for busbar mounting

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – General data

More information

Standards		IEC/EN 60439-1				
Type		3NP1 123...	3NP1 133...	3NP1 143...	3NP1 153...	3NP1 163...
Rated uninterrupted current I_U	A	160	160	250	400	630
For fuse links acc. to IEC 60269-1	Size	000	00 and 000	1 and 0	2 and 1	3 and 2
Conventional free-air thermal current I_{th}	A	160	160	250	400	630
Rated operational voltage U_e						
AC 50 Hz/60 Hz	V	690	690	690	690	690
DC (3 conducting paths series-connected)	V	440	440	440	440	440
DC (2 conducting paths series-connected)	V	220/240	220/240	220/240	220/240	220/240
Rated insulation voltage $U_i^{1)}$	V	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp}	kV	8	8	8	8	8
Rated conditional short-circuit current with fuses	Size/A	000 / 160	00 / 160	1 / 250	2 / 400	3 / 630
Rated current at 500 V / 690 V AC	kA	80	80	80	80	50
Permissible let-through current of the fuses, peak value	kA	10	15	25	40	50
Short-circuit strength with fuses	Size/A	000 / 160	00 / 160	1 / 250	2 / 400	3 / 630
Rated current at 500 V / 690 V, rms value	kA	120	120	120	100	100
Let-through I^2t value	kA ² s	56	158	780	2150	5400
Permissible let-through current of the fuses, peak value	kA	15	23	32	40	60
Rated switching capacity at 500 V AC	kA	2	6	17	17	17
Rated making and breaking capacity						
• At AC-21B, 22B, 23B	400 V AC A	160	160	250	400	630
• At AC-21B	500 V AC A	160	160	250	400	630
• At AC-22B	500 V AC A	125	160	250	400	630
• At AC-23B	500 V AC A	40	63	200	315	500
• At AC-21 B	690 V AC A	160	160	250	400	630
• At AC-22B	690 V AC A	50	125	250	400	500
• At AC-23B	690 V AC A	25	35	100	125	200
• At DC-21B	240 V DC A	160	160	250	400	630
• At DC-22B	240 V DC A	100	160	250	400	630
• At DC-23B	240 V DC A	80	100	200	250	400
• At DC-21B	440 V DC A	100	160	250	400	630
• At DC-22B	440 V DC A	50	125	200	315	500
• At DC-23B	440 V DC A	25	63	100	160	250
Capacitor switching capacity						
At 400 V AC						
• Capacitor rating	kvar	50	50	50	50	50
• Rated current I_n	A	72	72	72	72	72
At 525 V AC						
• Capacitor rating	kvar	50	50	50	50	50
• Rated current I_n	A	55	55	55	55	55
Permissible ambient temperature²⁾	°C	-25 ... +55 for operation, -50 ... +80 during storage				
Mechanical endurance, operating cycles		2000	2000	1600	1000	1000
Degree of protection (operator side)						
Without molded-plastic masking frame/cable lug cover		IP30 (switch closed) / IP20 (switch open)				
With molded-plastic masking frame/cable lug cover		IP40 (switch closed) / IP20 (switch open)				
Power loss of the switch at I_{th} (plus fuses)	W	9	12	23	34	48
Max. conductor cross-section of main conductor connection						
Flat connectors	mm ²	--	Up to 95 (M8)	Up to 150 (M10)	Up to 240 (M10)	Up to 300 (M10)
Box terminals	mm ²	1.5 ... 50	6 ... 70	70 ... 185	120 ... 240	150 ... 300
Prism terminal	mm ²	--	16 ... 95	70 ... 150	120 ... 240	150 ... 300
Saddle terminal	mm ²	--	1.5 ... 70	70 ... 150	120 ... 240	150 ... 300
Laminated conductors in box terminal	mm	8 x 8	9 x 8	10 x 20	10 x 32	10 x 32
Rated operational current of auxiliary switch						
3NP19.3-1FA00 auxiliary switch	A	0.25 ($I_{th} = 5$ A)				
3NP19.3-1FB00 auxiliary switch	A	0.1 ($I_{th} = 0.1$ A)				
Permissible mounting positions		Vertical and horizontal (no derating)				

¹⁾ Up to degree of pollution 2, above this $U_i = 690$ V





²⁾ Only with isolating links; otherwise, please observe specifications of fuse manufacturer.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Floor mounting

Selection and ordering data

Rated current I_U	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg
For 45 mm cover level								
<i>Basic units</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1CA10	1	1 unit	143	0.730
Box terminals								
	160	000	A	3NP1 123-1CA20	1	1 unit	143	0.470
	160	00 / 000	A	3NP1 133-1CA20	1	1 unit	143	0.730
<i>With MFM electromechanical fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1CA11	1	1 unit	143	1.170
Box terminals								
	160	00 / 000	A	3NP1 133-1CA21	1	1 unit	143	1.170
<i>With electronic EFM 10 fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1CA12	1	1 unit	143	0.870
Box terminals								
	160	000	A	3NP1 123-1CA22	1	1 unit	143	0.590
	160	00 / 000	A	3NP1 133-1CA22	1	1 unit	143	0.870
<i>With electronic EFM 20 fuse monitoring and line monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1CA13	1	1 unit	143	0.870
Box terminals								
	160	000	A	3NP1 123-1CA23	1	1 unit	143	0.590
	160	00 / 000	A	3NP1 133-1CA23	1	1 unit	143	0.870

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Floor mounting

Rated current I_u	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg

For 70 mm cover level

Basic units

Flat connectors

250	1 and 0	A	3NP1 143-1DA10		1	1 unit	143	2.190
400	2 and 1	A	3NP1 153-1DA10		1	1 unit	143	4.210
630	3 and 2	A	3NP1 163-1DA10		1	1 unit	143	6.310

Box terminals

250	1 and 0	A	3NP1 143-1DA20		1	1 unit	143	2.190
400	2 and 1	A	3NP1 153-1DA20		1	1 unit	143	4.660
630	3 and 2	A	3NP1 163-1DA20		1	1 unit	143	6.730



3NP1 143-1DA20

With MFM electromechanical fuse monitoring

Flat connectors

250	1 and 0	A	3NP1 143-1DA11		1	1 unit	143	2.630
400	2 and 1	A	3NP1 153-1DA11		1	1 unit	143	4.650
630	3 and 2	A	3NP1 163-1DA11		1	1 unit	143	6.750

Box terminals

250	1 and 0	A	3NP1 143-1DA21		1	1 unit	143	2.630
400	2 and 1	A	3NP1 153-1DA21		1	1 unit	143	5.100
630	3 and 2	▶	3NP1 163-1DA21		1	1 unit	143	7.170



3NP1 143-1DA21

With electronic EFM 10 fuse monitoring

Flat connectors

250	1 and 0	A	3NP1 143-1DA12		1	1 unit	143	2.330
400	2 and 1	A	3NP1 153-1DA12		1	1 unit	143	4.350
630	3 and 2	A	3NP1 163-1DA12		1	1 unit	143	6.450

Box terminals

250	1 and 0	A	3NP1 143-1DA22		1	1 unit	143	2.330
400	2 and 1	A	3NP1 153-1DA22		1	1 unit	143	4.800
630	3 and 2	A	3NP1 163-1DA22		1	1 unit	143	6.870



3NP1 143-1DA22

With electronic EFM 20 fuse monitoring and line monitoring

Flat connectors

250	1 and 0	A	3NP1 143-1DA13		1	1 unit	143	2.330
400	2 and 1	A	3NP1 153-1DA13		1	1 unit	143	4.350
630	3 and 2	A	3NP1 163-1DA13		1	1 unit	143	6.450

Box terminals

250	1 and 0	A	3NP1 143-1DA23		1	1 unit	143	2.330
400	2 and 1	A	3NP1 153-1DA23		1	1 unit	143	4.800
630	3 and 2	A	3NP1 163-1DA23		1	1 unit	143	6.870







3NP1 143-1DA23

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – For 40 mm busbar system

Selection and ordering data

Rated current I_n	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg
For cover level 32/70 mm, with reach-around protection for 8US busbar system and Rittal system without base								
<i>Basic units</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BB10	1	1 unit	143	0.980
Box terminals								
	160	000	A	3NP1 123-1BB20	1	1 unit	143	0.820
	160	00 / 000	A	3NP1 133-1BB20	1	1 unit	143	0.980
<i>With MFM electromechanical fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BB11	1	1 unit	143	1.420
Box terminals								
	160	00/000	A	3NP1 133-1BB21	1	1 unit	143	1.420
<i>With electronic EFM 10 fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BB12	1	1 unit	143	1.120
Box terminals								
	160	000	A	3NP1 123-1BB22	1	1 unit	143	0.940
	160	00 / 000	A	3NP1 133-1BB22	1	1 unit	143	1.120
<i>With electronic EFM 20 fuse monitoring and line monitoring</i>								
Flat connectors								
	160	00 / 000	C	3NP1 133-1BB13	1	1 unit	143	1.120
Box terminals								
	160	000	C	3NP1 123-1BB23	1	1 unit	143	0.940
	160	00 / 000	C	3NP1 133-1BB23	1	1 unit	143	1.120

Note:

Delivered from factory with cable feeder at bottom and convertible by the customer.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – For 40 mm busbar system

Rated current I_u	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg

For Rittal system with base

Basic units

Flat connectors

160 00 / 000

A **3NP1 133-1JB10**

1 1 unit 143 0.980

Box terminals

160 000

A **3NP1 123-1JB20**

1 1 unit 143 0.820

160 00 / 000

A **3NP1 133-1JB20**

1 1 unit 143 0.980



3NP1 133-1JB20

With MFM electromechanical fuse monitoring

Flat connectors

160 00 / 000

C **3NP1 133-1JB11**

1 1 unit 143 1.420

Box terminals

160 00 / 000

C **3NP1 133-1JB21**

1 1 unit 143 1.420



3NP1 133-1JB21

With electronic EFM 10 fuse monitoring

Flat connectors

160 00 / 000

C **3NP1 133-1JB12**

1 1 unit 143 1.120

Box terminals

160 000

C **3NP1 123-1JB22**

1 1 unit 143 0.940

160 00 / 000

C **3NP1 133-1JB22**

1 1 unit 143 1.120



3NP1 133-1JB22

With electronic EFM 20 fuse monitoring and line monitoring

Flat connectors

160 00 / 000

C **3NP1 133-1JB13**

1 1 unit 143 1.120

Box terminals

160 000

C **3NP1 123-1JB23**

1 1 unit 143 0.940

160 00 / 000

C **3NP1 133-1JB23**

1 1 unit 143 1.120



3NP1 133-1JB23

Note:





Delivered from factory with cable feeder at bottom and convertible by the customer.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – For 60 mm busbar system

Selection and ordering data

Rated current I_U	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg
For cover level 32/70 mm, with reach-around protection for 8US busbar system and Rittal Riline60 system without base								
<i>Basic units</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BC10	1	1 unit	143	0.980
	250	1 and 0	A	3NP1 143-1BC10	1	1 unit	143	2.850
	400	2 and 1	A	3NP1 153-1BC10	1	1 unit	143	4.760
	630	3 and 2	A	3NP1 163-1BC10	1	1 unit	143	6.840
Box terminals								
	160	000	A	3NP1 123-1BC20	1	1 unit	143	0.820
3NP1 133-1BC20	160	00 / 000	A	3NP1 133-1BC20	1	1 unit	143	0.980
	250	1 and 0	A	3NP1 143-1BC20	1	1 unit	143	2.850
	400	2 and 1	A	3NP1 153-1BC20	1	1 unit	143	4.990
	630	3 and 2	A	3NP1 163-1BC20	1	1 unit	143	7.040
<i>With MFM electromechanical fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BC11	1	1 unit	143	1.420
	250	1 and 0	A	3NP1 143-1BC11	1	1 unit	143	3.290
	400	2 and 1	A	3NP1 153-1BC11	1	1 unit	143	5.200
	630	3 and 2	A	3NP1 163-1BC11	1	1 unit	143	7.280
Box terminals								
	160	00 / 000	A	3NP1 133-1BC21	1	1 unit	143	1.420
3NP1 133-1BC21	250	1 and 0	A	3NP1 143-1BC21	1	1 unit	143	3.290
	400	2 and 1	A	3NP1 153-1BC21	1	1 unit	143	5.430
	630	3 and 2	A	3NP1 163-1BC21	1	1 unit	143	7.480
<i>With electronic EFM 10 fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BC12	1	1 unit	143	1.120
	250	1 and 0	A	3NP1 143-1BC12	1	1 unit	143	2.990
	400	2 and 1	A	3NP1 153-1BC12	1	1 unit	143	4.900
	630	3 and 2	A	3NP1 163-1BC12	1	1 unit	143	6.980
Box terminals								
	160	000	A	3NP1 123-1BC22	1	1 unit	143	0.940
3NP1 133-1BC22	160	00 / 000	A	3NP1 133-1BC22	1	1 unit	143	1.120
	250	1 and 0	A	3NP1 143-1BC22	1	1 unit	143	2.990
	400	2 and 1	A	3NP1 153-1BC22	1	1 unit	143	5.130
	630	3 and 2	A	3NP1 163-1BC22	1	1 unit	143	7.180
<i>With electronic EFM 20 fuse monitoring and line monitoring</i>								
Flat connectors								
	160	00 / 000	C	3NP1 133-1BC13	1	1 unit	143	1.120
	250	1 and 0	C	3NP1 143-1BC13	1	1 unit	143	2.990
	400	2 and 1	C	3NP1 153-1BC13	1	1 unit	143	4.900
	630	3 and 2	C	3NP1 163-1BC13	1	1 unit	143	6.980
Box terminals								
	160	000	C	3NP1 123-1BC23	1	1 unit	143	0.940
3NP1 133-1BC23	160	00 / 000	C	3NP1 133-1BC23	1	1 unit	143	1.120
	250	1 and 0	C	3NP1 143-1BC23	1	1 unit	143	2.990
	400	2 and 1	C	3NP1 153-1BC23	1	1 unit	143	5.130
	630	3 and 2	C	3NP1 163-1BC23	1	1 unit	143	7.180





Note:

Delivered from factory with cable feeder at bottom and convertible by the customer.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – For 60 mm busbar system

Rated current I_u	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg
For Rittal Riline60 system with base								
<i>Basic units</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1JC10		1	1 unit	143 0.980
	250	1 and 0	A	3NP1 143-1JC10		1	1 unit	143 2.850
	400	2 and 1	A	3NP1 153-1JC10		1	1 unit	143 4.760
	630	3 and 2	A	3NP1 163-1JC10		1	1 unit	143 6.840
Box terminals								
	160	000	A	3NP1 123-1JC20		1	1 unit	143 0.820
	160	00 / 000	A	3NP1 133-1JC20		1	1 unit	143 0.980
	250	1 and 0	A	3NP1 143-1JC20		1	1 unit	143 2.850
	400	2 and 1	A	3NP1 153-1JC20		1	1 unit	143 4.990
	630	3 and 2	A	3NP1 163-1JC20		1	1 unit	143 7.040
<i>With MFM electromechanical fuse monitoring</i>								
Flat connectors								
	160	00 / 000	C	3NP1 133-1JC11		1	1 unit	143 1.420
	250	1 and 0	C	3NP1 143-1JC11		1	1 unit	143 3.290
	400	2 and 1	C	3NP1 153-1JC11		1	1 unit	143 5.200
	630	3 and 2	C	3NP1 163-1JC11		1	1 unit	143 7.280
Box terminals								
	160	00 / 000	C	3NP1 133-1JC21		1	1 unit	143 1.420
	250	1 and 0	C	3NP1 143-1JC21		1	1 unit	143 3.290
	400	2 and 1	C	3NP1 153-1JC21		1	1 unit	143 5.430
	630	3 and 2	C	3NP1 163-1JC21		1	1 unit	143 7.480
<i>With electronic EFM 10 fuse monitoring</i>								
Flat connectors								
	160	00 / 000	C	3NP1 133-1JC12		1	1 unit	143 1.120
	250	1 and 0	C	3NP1 143-1JC12		1	1 unit	143 2.990
	400	2 and 1	C	3NP1 153-1JC12		1	1 unit	143 4.900
	630	3 and 2	C	3NP1 163-1JC12		1	1 unit	143 6.980
Box terminals								
	160	000	C	3NP1 123-1JC22		1	1 unit	143 0.940
	160	00 / 000	C	3NP1 133-1JC22		1	1 unit	143 1.120
	250	1 and 0	C	3NP1 143-1JC22		1	1 unit	143 2.990
	400	2 and 1	C	3NP1 153-1JC22		1	1 unit	143 5.130
	630	3 and 2	C	3NP1 163-1JC22		1	1 unit	143 7.180
<i>With electronic EFM 20 fuse monitoring and line monitoring</i>								
Flat connectors								
	160	00 / 000	C	3NP1 133-1JC13		1	1 unit	143 1.120
	250	1 and 0	C	3NP1 143-1JC13		1	1 unit	143 2.990
	400	2 and 1	C	3NP1 153-1JC13		1	1 unit	143 4.900
	630	3 and 2	C	3NP1 163-1JC13		1	1 unit	143 6.980
Box terminals								
	160	000	C	3NP1 123-1JC23		1	1 unit	143 0.940
	160	00 / 000	C	3NP1 133-1JC23		1	1 unit	143 1.120
	250	1 and 0	C	3NP1 143-1JC23		1	1 unit	143 2.990
	400	2 and 1	C	3NP1 153-1JC23		1	1 unit	143 5.130
	630	3 and 2	C	3NP1 163-1JC23		1	1 unit	143 7.180

Note:






Delivered from factory with cable feeder at bottom and convertible by the customer.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Accessories


Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH000							
<i>Connection methods</i>							
 3NP1 923-1BD00		Feeder terminals , 16 ... 95 mm ² (1 set = 3 units)	A	3NP1 923-1BD00	1	1 unit	143 0.097
 3NP1 923-1BE20		Three-tier terminals , 3 x 2.5 ... 16 mm ² for box terminal (1 set = 3 units)	A	3NP1 923-1BE20	1	1 unit	143 0.134
 3NP1 923-1BF10		Covering caps for 1 blank space on a three-phase busbar (1 set = 20 units)	A	3NP1 923-1BF10	1	1 unit	143 0.012
 3NP1 933-1BF30		Three-phase busbars $I_U = \text{max. } 225 \text{ A}$ (1 set = 5 units) For 2 x NH000	A	3NP1 923-1BF20	1	1 unit	143 0.268
		For 3x NH000	A	3NP1 923-1BF30	1	1 unit	143 0.436
		For 4x NH000	A	3NP1 923-1BF40	1	1 unit	143 0.650
 3NP1 933-1BF50		Link rails , $I_U = \text{max. } 225 \text{ A}$ (1 set = 3 units) for three-phase busbars	A	3NP1 923-1BF50	1	1 unit	143 0.263
		Auxiliary conductor connection , 0.25 ... 1 mm ² (1 set = 3 units) for box terminal	A	3NP1 923-1BG40	1	1 unit	143 0.004

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Accessories









Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH000 (continued)							
<i>Device covers, auxiliary switches</i>							
 3NP1 923-1CA10		Reach-around protection for busbar mounting (1x at top, 1x at bottom) For system Siemens 8US	A	3NP1 923-1CA10	1	1 unit	143 0.048
		For system Rittal	A	3NP1 923-1CA20	1	1 unit	143 0.053
 3NP1 923-1CB00		Cable connection covers only for busbar systems 40 mm / 60 mm, top and bottom	A	3NP1 923-1CB00	1	1 unit	143 0.039
 3NP1 923-1CF00		Cover supports (1 set = 2 units)	A	3NP1 923-1CF00	1	1 unit	143 0.012
 3NP1 923-1DA00		System covers Dimensions (H x W) 215 x 130 mm	A	3NP1 923-1DA00	1	1 unit	143 0.049
 3NP1 923-1EA00		Fixing kits For 1 standard mounting rail	A	3NP1 923-1EA00	1	1 unit	143 0.009
 3NP1 923-1EA00		Auxiliary switches					
 3NP1 920-1FA00		1 CO	A	3NP1 920-1FA00	1	1 unit	143 0.012
		1 CO, solid-state compatible	A	3NP1 920-1FB00	1	1 unit	143 0.012
 3NP1 923-1GA00		Fuse carriers Standard	A	3NP1 923-1GA00	1	1 unit	143 0.124
		With electronic EFM 10 fuse monitoring	A	3NP1 923-1GB20	1	1 unit	143 0.551
		With electronic EFM 20 fuse monitoring and line monitoring	A	3NP1 923-1GB30	1	1 unit	143 0.573
		With electronic EFM 25 fuse monitoring and line monitoring	A	3NP1 923-1GB50	1	1 unit	143 0.573
 3NP1 900-1HA00		Locking devices (1 set = 10 units)	A	3NP1 900-1HA00	1	1 unit	143 0.006

* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A




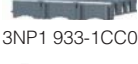

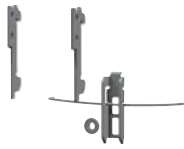


3NP1 for industrial applications,
power distribution – Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH00							
<i>Connection methods</i>							
 3NP1 933-1BA00		Saddle terminals , 1.5 ... 70 mm ² for flat connector (1 set = 3 units)	A	3NP1 933-1BA00	1	1 unit	143 0.081
 3NP1 933-1BB10		Prism terminals single, 16 ... 95 mm ² for flat connector (1 set = 3 units)	A	3NP1 933-1BB10	1	1 unit	143 0.121
 3NP1 933-1BC00		Connection modules , 6 ... 70 mm ² for flat connector for 32 mm cover level with box terminal	A	3NP1 933-1BC00	1	1 unit	143 0.145
 3NP1 933-1BE10		Three-tier terminals , 3 x 2.5 ... 16 mm ² for flat connector (1 set = 3 units)	A	3NP1 933-1BE10	1	1 unit	143 0.087
 3NP1 923-1BE20		Three-tier terminals , 3 x 2.5 ... 16 mm ² for box terminal (1 set = 3 units)	A	3NP1 923-1BE20	1	1 unit	143 0.134
 3NP1 933-1BG10		Auxiliary conductor connection , 0.25 ... 1 mm ² for flat connector (1 set = 3 units)	A	3NP1 933-1BG10	1	1 unit	143 0.006
 3NP1 933-1BG30		Auxiliary conductor connection , 0.25 ... 1 mm ² for prism terminal (1 set = 3 units)	A	3NP1 933-1BG30	1	1 unit	143 0.004
 3NP1 933-1BG40		Auxiliary conductor connection , 0.25 ... 1 mm ² for box terminal (1 set = 3 units)	A	3NP1 933-1BG40	1	1 unit	143 0.006

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Accessories







Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH00 (continued)							
<i>Device covers, auxiliary switches</i>							
 3NP1 933-1CA10		Reach-around protection for busbar mounting (1x at top, 1x at bottom)					
	A	For system Siemens 8US For system Rittal	3NP1 933-1CA10 3NP1 933-1CA20	1 1	1 unit 1 unit	143 143	0.058 0.044
 3NP1 933-1CB00	A	Cable connection covers (at top and bottom)	3NP1 933-1CB00	1	1 unit	143	0.045
 3NP1 933-1CC00	A	Cable connection covers with rear reach-around protection in case of busbar mounting (at top and bottom)	3NP1 933-1CC00	1	1 unit	143	0.093
 3NP1 933-1CD00	A	Cable connection covers with rear reach-around protection in case of floor mounting (at top and bottom)	3NP1 933-1CD00	1	1 unit	143	0.079
 3NP1 933-1CD00	A	Cover supports (1 set = 2 units)	3NP1 933-1CF00	1	1 unit	143	0.012
System covers							
	A	Dimensions (H x W) 215 x 130 mm	3NP1 933-1DA00	1	1 unit	143	0.024
Fixing kits							
 3NP1 933-1EB00	A	For 2 standard mounting rails 125/150 mm	3NP1 933-1EB00	1	1 unit	143	0.009
Auxiliary switches							
	A	1 CO	3NP1 930-1FA00	1	1 unit	143	0.012
	A	1 CO, solid-state compatible	3NP1 930-1FB00	1	1 unit	143	0.012
 3NP1 930-1FB00							
Fuse carriers							
	A	Standard	3NP1 933-1GA00	1	1 unit	143	0.165
	A	With MFM electromechanical fuse monitoring	3NP1 933-1GB10	1	1 unit	143	1.293
	A	With electronic EFM 10 fuse monitoring	3NP1 933-1GB20	1	1 unit	143	0.589
	A	With electronic EFM 20 fuse monitoring and line monitoring	3NP1 933-1GB30	1	1 unit	143	0.611
 3NP1 933-1GB10	A	With electronic EFM 25 fuse monitoring and line monitoring	3NP1 933-1GB50	1	1 unit	143	0.611
Locking devices							
	A	(1 set = 10 units)	3NP1 900-1HA00	1	1 unit	143	0.006

* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A



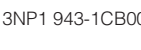





3NP1 for industrial applications,
power distribution – Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH1							
<i>Connection methods</i>							
 3NP1 943-1BA00		Saddle terminals , 70 ... 150 mm ² for flat connector (1 set = 3 units)	A	3NP1 943-1BA00	1	1 unit	143 0.144
 3NP1 943-1BB10		Prism terminals single, 70 ... 150 mm ² for flat connector (1 set = 3 units)	A	3NP1 943-1BB10	1	1 unit	143 0.270
 3NP1 943-1BB20		Prism terminals double, 2 x 35 ... 70 mm ² for flat connector (1 set = 3 units)	A	3NP1 943-1BB20	1	1 unit	143 0.311
 3NP1 943-1BG10		Auxiliary conductor connection , 0.25 ... 1 mm ² for flat connector (1 set = 3 units)	A	3NP1 943-1BG10	1	1 unit	143 0.009
 3NP1 943-1BG30		Auxiliary conductor connections , 0.25 ... 1 mm ² For saddle-type or prism terminals (1 set = 3 units)	A	3NP1 943-1BG30	1	1 unit	143 0.004
 3NP1 943-1BG40		Auxiliary conductor connection , 0.25 ... 1 mm ² for box terminal (1 set = 3 units)	A	3NP1 943-1BG40	1	1 unit	143 0.014

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Accessories











Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
For size NH1 (continued)								
<i>Device covers, auxiliary switches</i>								
 3NP1 943-1CA10	Reach-around protection for busbar mounting (1x at top, 1x at bottom)							
	For system Siemens 8US	A	3NP1 943-1CA10	1	1 unit	143	0.024	
 3NP1 943-1CA20	For system Rittal	A	3NP1 943-1CA20	1	1 unit	143	0.034	
	Cable connection covers (at top and bottom)		A	3NP1 943-1CB00	1	1 unit	143	0.172
 3NP1 943-1CB00								
 3NP1 943-1CD00	Cable connection covers with rear reach-around protection (at top and bottom)		A	3NP1 943-1CD00	1	1 unit	143	0.277
 3NP1 943-1CD00								
Cover supports (1 set = 2 units)		A	3NP1 943-1CF00	1	1 unit	143	0.026	
System covers								
Dimensions (H x W) 375 x 220 mm		A	3NP1 943-1DA00	1	1 unit	143	0.092	
Fixing kits								
For 2 standard mounting rails 125/150 mm		A	3NP1 943-1EB00	1	1 unit	143	0.017	
 3NP1 943-1EB00								
Auxiliary switches								
1 CO		A	3NP1 940-1FA00	1	1 unit	143	0.018	
1 CO, solid-state compatible		A	3NP1 940-1FB00	1	1 unit	143	0.018	
 3NP1 940-1FA00								
Fuse carriers								
Standard		A	3NP1 943-1GA00	1	1 unit	143	0.602	
With MFM electromechanical fuse monitoring		A	3NP1 943-1GB10	1	1 unit	143	1.726	
With electronic EFM 10 fuse monitoring		A	3NP1 943-1GB20	1	1 unit	143	1.022	
With electronic EFM 20 fuse monitoring and line monitoring		A	3NP1 943-1GB30	1	1 unit	143	1.044	
With electronic EFM 25 fuse monitoring and line monitoring		A	3NP1 943-1GB50	1	1 unit	143	1.044	
 3NP1 943-1GB20								
Locking devices								
(1 set = 10 units)		A	3NP1 900-1HA00	1	1 unit	143	0.006	

* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Accessories











Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH2							
<i>Connection methods</i>							
 3NP1 953-1BA00		Saddle terminals , 120 ... 240 mm ² for flat connector (1 set = 3 units)	A	3NP1 953-1BA00	1	1 unit	143 0.187
 3NP1 953-1BB10		Prism terminals single, 120 ... 240 mm ² for flat connector (1 set = 3 units)	A	3NP1 953-1BB10	1	1 unit	143 0.420
 3NP1 953-1BB20		Prism terminals double, 2 x 70 ... 120 mm ² for flat connector (1 set = 3 units)	A	3NP1 953-1BB20	1	1 unit	143 0.473
 3NP1 943-1BG10		Auxiliary conductor connection , 0.25 ... 1 mm ² , For flat connector (1 set = 3 units)	A	3NP1 943-1BG10	1	1 unit	143 0.009
 3NP1 953-1BG30		Auxiliary conductor connections , 0.25 ... 1 mm ² , For saddle-type or prism terminal (1 set = 3 units)	A	3NP1 953-1BG30	1	1 unit	143 0.006
 3NP1 953-1BG40		Auxiliary conductor connection , 0.25 ... 1 mm ² , for box terminal (1 set = 3 units)	A	3NP1 953-1BG40	1	1 unit	143 0.029
<i>Device covers, auxiliary switches</i>							
 3NP1 953-1CA10		Reach-around protection for busbar mounting (1x at top, 1x at bottom) For system Siemens 8US	A	3NP1 953-1CA10	1	1 unit	143 0.028
		For system Rittal	A	3NP1 953-1CA20	1	1 unit	143 0.038
 3NP1 953-1CB00		Cable connection covers (at top and bottom)	A	3NP1 953-1CB00	1	1 unit	143 0.242
		Cable connection covers with rear reach-around protection (at top and bottom)	A	3NP1 953-1CD00	1	1 unit	143 0.362
		Cover supports (1 set = 2 units)	A	3NP1 943-1CF00	1	1 unit	143 0.026
System covers							
		Dimensions (H x W) 375 x 245 mm	A	3NP1 953-1DA00	1	1 unit	143 0.097
Auxiliary switches							
		1 CO	A	3NP1 940-1FA00	1	1 unit	143 0.018
		1 CO, solid-state compatible	A	3NP1 940-1FB00	1	1 unit	143 0.018
 3NP1 940-1FA00							
Fuse carriers							
		Standard	A	3NP1 953-1GA00	1	1 unit	143 0.754
		With MFM electromechanical fuse monitoring	A	3NP1 953-1GB10	1	1 unit	143 1.797
		With electronic EFM 10 fuse monitoring	A	3NP1 953-1GB20	1	1 unit	143 1.093
		With electronic EFM 20 fuse monitoring and line monitoring	A	3NP1 953-1GB30	1	1 unit	143 1.115
		With electronic EFM 25 fuse monitoring and line monitoring	A	3NP1 953-1GB50	1	1 unit	143 1.115
 3NP1 953-1GB30							
Locking devices							
		(1 set = 10 units)	A	3NP1 900-1HA00	1	1 unit	143 0.006

* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP1 for industrial applications,
power distribution – Accessories

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For size NH3							
<i>Connection methods</i>							
 3NP1 963-1BA00		Saddle terminals , 150 ... 300 mm ² for flat connector (1 set = 3 units)	A	3NP1 963-1BA00	1	1 unit	143 0.210
 3NP1 963-1BB10		Prism terminals single, 150 ... 300 mm ² for flat connector (1 set = 3 units)	A	3NP1 963-1BB10	1	1 unit	143 0.643
 3NP1 963-1BB20		Prism terminals double, 2 x 150 ... 185 mm ² For flat connector (1 set = 3 units)	A	3NP1 963-1BB20	1	1 unit	143 0.681
 3NP1 943-1BG10		Auxiliary conductor connection , 0.25 ... 1 mm ² For flat connector (1 set = 3 units)	A	3NP1 943-1BG10	1	1 unit	143 0.009
 3NP1 953-1BG30		Auxiliary conductor connection , 0.25 ... 1 mm ² For saddle-type or prism terminals (1 set = 3 units)	A	3NP1 953-1BG30	1	1 unit	143 0.006
 3NP1 953-1BG40		Auxiliary conductor connection , 0.25 ... 1 mm ² for box terminal (1 set = 3 units)	A	3NP1 953-1BG40	1	1 unit	143 0.029
<i>Device covers, auxiliary switches</i>							
 3NP1 963-1CA10		Reach-around protection for busbar mounting (1x at top, 1x at bottom) For system Siemens 8US For system Rittal	A A	3NP1 963-1CA10 3NP1 963-1CA20	1 1	1 unit 1 unit	143 0.032 143 0.043
 3NP1 963-1CB00		Cable connection covers (at top and bottom) Cable connection cover With rear reach-around protection (at top and bottom)	A A	3NP1 963-1CB00 3NP1 963-1CD00	1 1	1 unit 1 unit	143 0.269 143 0.411
		Cover supports (1 set = 2 units)	A	3NP1 943-1CF00	1	1 unit	143 0.026
		System covers Dimensions (H x W) 375 x 290 mm	A	3NP1 963-1DA00	1	1 unit	143 0.116
 3NP1 940-1FA00		Auxiliary switches 1 CO 1 CO, solid-state compatible	A A	3NP1 940-1FA00 3NP1 940-1FB00	1 1	1 unit 1 unit	143 0.018 143 0.018
 3NP1 963-1GB50		Fuse carriers Standard With MFM electromechanical fuse monitoring With electronic EFM 10 fuse monitoring With electronic EFM 20 fuse monitoring and line monitoring With electronic EFM 25 fuse monitoring and line monitoring	A A A A A	3NP1 963-1GA00 3NP1 963-1GB10 3NP1 963-1GB20 3NP1 963-1GB30 3NP1 963-1GB50	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	143 0.825 143 1.966 143 1.262 143 1.284 143 1.284
		Locking devices (1 set = 10 units)	A	3NP1 900-1HA00	1	1 unit	143 0.006

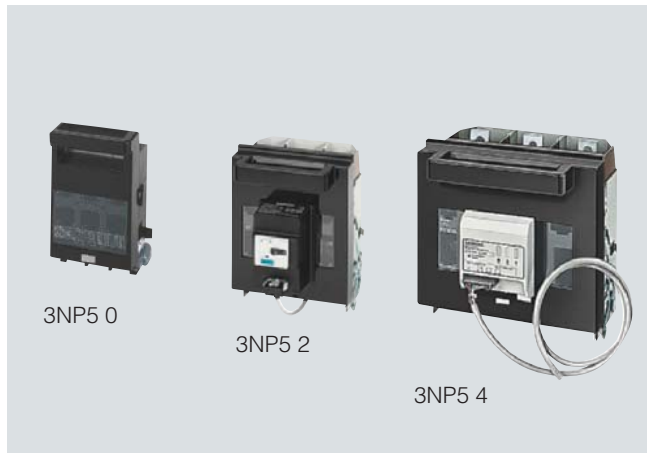
* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

3NP fuse switch disconnectors up to 630 A

3NP5 for extended technical requirements
General data

Overview



3NP5 fuse switch disconnector range

SENTRON 3NP5 fuse switch disconnectors are controls for the occasional manual switching/isolating of loads and distribution boards. They are able to switch on, load and switch off the specified rated current (including a specific overload).

With the SENTRON 3NP5 fuse switch disconnectors, all poles of downstream electric loads can be safely disconnected from the system under load.

Application

The SENTRON 3NP5 fuse switch disconnectors are ideally suited for surface mounting and installation in distribution boards (e. g. ALPHA, SIKUS), meter cabinets (e. g. ALPHA 400-ZS), and molded-plastic distribution systems such as 8HP.

The possibility of mounting them onto a range of different busbar systems allows their very diverse implementation in switchgear cabinet and control engineering.

The SENTRON 3NP5 fuse switch disconnectors are ideal for operation in combination with other switching devices, for example in capacitor modules for reactive-power compensation.

In conjunction with semiconductor protection fuses (e. g. SITOR), these are used for the effective protection of frequency converters and soft starters.

The SENTRON 3NP5 fuse switch disconnectors are suitable for use in any climate and comply with standards IEC 60947-1, IEC 60947-3 and DIN VDE 0660 Part 107.

In addition, the SENTRON 3NP5 series of fuse switch disconnectors complies with the requirements of BS 5419 and is also approved for operation in marine applications.

All SENTRON 3NP5 fuse switch disconnectors can be sealed as standard (or can be sealed through accessories).

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
General data

More information

Standards		IEC 60947-1, IEC 60947-3, VDE 0660 Part 107						
Type		3NP50	3NP52	3NP53	3NP54			
Rated uninterrupted current I_U	A	160	250	400	630			
For fuse links acc. to IEC 60269-1	Size	00	1 and 0	2 and 1	3 and 2			
Conventional free-air thermal current I_{th}	A	160	250	400	630			
Rated operational voltage U_e	V	690 440 (3 conducting paths series-connected), 220 (2 conducting paths series-connected and with fuse monitoring through 3RV)						
AC 50 Hz/60 Hz	V							
DC	V							
Rated insulation voltage U_i	V	690 ¹⁾	690 ¹⁾	690 ¹⁾	690 ¹⁾			
Rated impulse withstand voltage U_{imp}	kV	6	6	6	6			
Rated conditional short-circuit current with fuses (for fast switch-on)								
With fuse links								
Rated current	Size/A	00/160	1/250	2/400	3/630			
At 500 V AC (rms value)	kA	50	50	50	50			
Permissible let-through current of the fuses (peak value)	kA	15	25	40	50			
Short-circuit strength with fuses (with closed switch)								
With fuse links								
Rated current	Size/A	00/160	1/250	2/400	3/630			
At 500 V AC (rms value)	kA	100	100	50	50			
Maximum permissible let-through I^2t value	kA ² s	223	780	2150	5400			
Permissible let-through current of the fuses (peak value)	kA	23	32	40	60			
Rated short-circuit making capacity with isolating links²⁾	Size	00	1	2	3			
At 500 V AC (peak value)	kA	6	17	17	17			
Rated making and breaking capacity²⁾ (infeed from top or bottom ³⁾)								
Size		00	1	0	2	1	3	2
Breaking current I_C (p.f. = 0.35) at 400 V AC, with fuse links, rms value,	A	1600	2500	1600	4000	2500	5040	4000
Rated operational current I_e at AC-21B, AC-22B, AC-23B at 500 V AC, with fuse links	A	160	250	160	400	250	630	400
Breaking current I_C (p.f. = 0.35) (rms value)	A	1300	2500	1600	4000	2500	5040	4000
Rated operational current I_e at AC-21B, AC-22B, AC-23B at 690 V AC, with fuse links	A	160	250	160	400	250	630	400
Breaking current I_C (p.f. = 0.35) (rms value)	A	800	1280	1000	2520	1600	3200	2520
Rated operational current I_e at AC-21B, AC-22B	A	160	250	160	400	250	630	400
Rated operational current I_e at AC-23B	A	100	160	125	315	200	400	315
At 220 (440) V DC, with 2 (3) conducting paths series-connected and fuse links:								
• Breaking current I_C ($L/R = 15$ ms)	A	640	1000	640	1600	1600	2520	1600
• Rated operational current I_e at DC-23B	A	160	250	160	250	250	630	400
Capacitor switching capacity								
Capacitor rating at 400 V AC	kvar	80	90	150	250			
Rated current I_n at 525 V AC	A	116	130	216	361			
Capacitor rating	kvar	100	125	200	300			
Rated current I_n	A	110	137	220	330			
Permissible ambient temperature	°C	-25 ... +55 for operation ⁴⁾ , -50 ... +80 when stored						
Mechanical endurance , operating cycles		1600						
Degree of protection		IP00 ⁵⁾						
Without molded-plastic masking frame		IP30						
With molded-plastic masking frame with closed fuse carrier on the operator side		IP10						
With molded-plastic masking frame with open fuse carrier								
Power loss of the switch at I_{th} (without power loss of fuse links)								
Without busbar adapter	W	7.8 (16.3) ⁶⁾	7.5	15	39			
Main conductor connections								
Cable lug, max. conductor cross-section (stranded)	mm ²	2.5 ... 120	6 ... 150	6 ... 240	6 ... 240	6 ... 240	6 ... 2 × 240	
Busbar	mm	16 ... 22	22 ... 30	22 ... 30	22 ... 30	22 ... 30	22 ... 30	
Clamp terminals	mm ²	2.5 ... 50	35 ... 120	--	--	--	--	
Auxiliary switch 1 NO + 1 NC (accessories)								
(the same voltage potential must be applied to both NO and NC contact)								
At AC 50 Hz/60 Hz to 400 V, rated operational current I_e at AC-12/AC-15 A Flat connector (DIN 46244)	A	16/6	A 6.3 ... 0.8					
Permissible mounting positions		Vertical or horizontal (partially reduced switching capacity with horizontal mounting)						
Signaling contact for solid-state fuse monitoring		2 NO + 1 NC						
Rated operational current I_e								
At 250 V, DC-13	A	0.27						
At 240 V, AC-15	A	1.5						
Thermal free-air rated current I_{th}	A	5						

1) When observing degree of pollution 2 (instead of 3) operation is also possible up to $U_i = 1000$ V.

2) Rated making and breaking current according to IEC 60947-3
Rated making current
 $I = 10 \times I_e$ (AC-23); $3 \times I_e$ (AC-22); $1.5 \times I_e$ (AC-21)
Rated breaking current
 $I_e = 8 \times I_e$ (AC-23); $3 \times I_e$ (AC-22); $1.5 \times I_e$ (AC-21).

3) When using electronic fuse monitoring, infeed must be from the top.

4) When using isolating links. If using fuse links, please observe specifications of fuse manufacturer.

5) For 3NP52 with terminal clamp connection, degree of protection IP10.

6) With busbar adapter

Fuse Switch Disconnectors





SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
Floor mounting

Selection and ordering data

Rated uninter- rupted current I_u	Connection types (on both sides)		For LV HRC fuse links acc. to IEC 60269 1)	For isolat- ing links Size	Auxiliary switch on switch dis- connectors Version	DT	Degree of protection IP00, without fuse links, without isolating links, with termi- nal screws		PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Conne- ction	For conduc- tor cross- section					Order No.	Price per PU				
A		mm ²										kg

Completely compartmentalized, with high speed closing features

	160	Flat con- nectors ²⁾	2.5 ... 150 ³⁾	00 and 000	00	Without ⁴⁾ 1 NO + 1 NC	▶ B	3NP50 60-OCA00	1	1 unit	103	1.608
		Clamp terminals	1 conductor 2.5 ... 50 or 2 conduc- tors 1 × 2.5 ... 50 1 × 2.5 ... 35	00 and 000	00	Without ⁴⁾ 1 NO + 1 NC	A B	3NP50 60-OCA10	1 1	1 unit 1 unit	103 103	1.650 1.748
	250	Flat con- nectors	6 ... 150 ⁵⁾	1 and 0	1	Without 1 NO + 1 NC	▶ A	3NP52 60-OCA00	1	1 unit	103	5.475
		Clamp terminals	35 ... 120	1 and 0	1	Without 1 NO + 1 NC	C B	3NP52 60-OCA10	1 1	1 unit 1 unit	103 103	5.491 5.814
	400	Flat con- nectors	6 ... 240 ⁵⁾	2 and 1	2	Without 1 NO + 1 NC	▶ A	3NP53 60-OCA00	1	1 unit	103	6.532
		Clamp terminals	35 ... 120	1 and 0	1	Without 1 NO + 1 NC	C B	3NP53 60-OCA10	1 1	1 unit 1 unit	103 103	6.551
	630	Flat con- nectors	6 ... 2 × 240 ⁵⁾	3 and 2	3	Without 1 NO + 1 NC	▶ B	3NP54 60-OCA00	1	1 unit	103	7.945
		Clamp terminals	35 ... 120	1 and 0	1	Without 1 NO + 1 NC	C B	3NP54 60-OCA10	1 1	1 unit 1 unit	103 103	7.958

1) LV HRC fuse links, see Catalog ET B1.

2) For 3NP50 60 with flat connectors, appropriate 3NY1 106 cable lug covers must be used to provide finger-safe cover, according to DIN VDE 0106 Part 100 (see Accessories).

3) According to DIN 46234 or 16 mm² ... 95 mm² according to DIN 46235 (use M10 cable lug if necessary).

4) If auxiliary switch is retrofitted, additional drill holes are required on the switch.

5) According to DIN 46234 or DIN 46235; with cable lug to DIN 46235: Min. conductor cross-section 16 mm² (use M12 cable lug if necessary).

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
For 40 mm busbar system

Selection and ordering data

Rated uninter- rupted current I_u	Connection types (on both sides)		For LV HRC fuse links acc. to DIN 43620 ¹⁾	For iso- lating links	Auxiliary switch on switch dis- connectors	DT	Degree of protection IP00, without fuse links, without isolating links, with terminal screws	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Conne- ction	For conduc- tor cross- section									
A		mm ²									kg

Completely compartmentalized, with high speed closing features²⁾

Busbars with a width of 12 mm and thickness of 5 mm or 10 mm

160	Flat con- nectors	2.5 ... 150 ³⁾ Connection at bottom	00 and 000	Without 1 NO + 1 NC	C	3NP50 65-1CF00	1	1 unit	103	2.380
					B					
	Clamp ter- minal	1 conductor 2.5 ... 50 or 2 conductors 1 × 2.5 ... 50 1 × 2.5 ... 35 Connection at bottom	00 and 000	Without 1 NO + 1 NC	B	3NP50 65-1CG00	1	1 unit	103	2.433
					B					

¹⁾ For LV HRC fuse links, see [Catalog ET B1](#).

²⁾ For accessories and more devices on busbar systems, see ["Accessories"](#).

³⁾ According to DIN 46234 or 16 mm² ... 95 mm² according to DIN 46235
(use M cable lug if necessary).

3NP5 for extended technical requirements
For 60 mm busbar system

Overview

Note:

For switch versions "For installation in any distribution board" and
busbar adapters see page 17/107.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

**3NP5 for extended technical requirements
With fuse monitoring**

Selection and ordering data



Fuse monitoring by circuit breaker

Floor mounting

Rated uninterrupted current I_u	Connection types (on both sides)		For LV HRC fuse links acc. to DIN 43620 ¹⁾	Auxiliary switch		DT	Degree of protection IP00, without fuse links, without isolating links, with terminal screws	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Connection	For conductor cross-section		On switch disconnector	On MSP/circuit breaker						
A	mm ²	Size	Version	Version	Order No.	Price per PU	kg				

Completely compartmentalized, with high speed closing features with fuse monitoring by SIRIUS motor starter protector

With plug-in connection of the auxiliary switch connecting cable (length approx. 1 m) to the circuit breaker

	160	Flat connectors ²⁾	2.5 ... 150 ³⁾	00 and 000	1 NO + 1 NO +	1 NO +	▶	3NP50 60-0EA86	1	1 unit	103	2.484
					1 NC 1 NC	1 NC						
	Clamp terminals	1 conductor 2.5 ... 50	00 and 000	1 NO + 1 NO +	1 NO +	B	3NP50 60-0EB86	1	1 unit	103	2.616	
				2 conductor 1 x 2.5 ... 50 1 x 2.5 ... 35	1 NC 2 NO							1 NC
	250	Flat connectors	6 ... 150 ⁴⁾	1 and 0	1 NO + 1 NO +	1 NO +	▶	3NP52 60-0EA86	1	1 unit	103	6.014
					1 NC 1 NC	1 NC						
Clamp terminals		35 ... 120	1 and 0	1 NO + 1 NO +	1 NO +	B	3NP52 60-0EB86	1	1 unit	103	7.095	
				1 NC 2 NO	1 NC							B
400	Flat connectors	6 ... 240 ⁴⁾	2 and 1	1 NO + 1 NO +	1 NO +	▶	3NP53 60-0EA86	1	1 unit	103	7.083	
				1 NC 1 NC	1 NC							B
630	Flat connectors	6 ... 2 x 240 ⁴⁾	3 and 2	1 NO + 1 NO +	1 NO +	▶	3NP54 60-0EA86	1	1 unit	103	8.462	
				1 NC 1 NC	1 NC							B
					1 NO + 2 NO							
					1 NC							

1) For LV HRC fuse links, see Catalog ET B1.

2) For 3NP50 60 with flat connectors, appropriate 3NY1 106 cable lug covers must be used to provide finger-safe cover, according to DIN VDE 0106 Part 100 (see Accessories).

3) According to DIN 46234 or 16 mm² ... 95 mm² according to DIN 46235 (use M10 cable lug if necessary).

4) According to DIN 46234 or DIN 46235, with cable lug to DIN 46235: Min. conductor cross-section 16 mm² (use M12 cable lug if necessary).

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
With fuse monitoring

For 40 mm busbar system

Rated uninter- rupted current I_u	Connection types (on both sides)		For LV HRC fuse links acc. to DIN 43620 ¹⁾	Auxiliary switch		DT	Degree of protection IP00, without fuse links, without isolating links, without terminal screws	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Conne- ction	For conduc- tor cross-sec- tion		On switch discon- nector	On MSP/ circuit breaker						
A		mm ²	Size	Version	Version						kg
Completely compartmentalized, with high speed closing features with fuse monitoring by SIRIUS motor starter protector²⁾											
Busbars with a width of 12 mm and thickness of 5 mm or 10 mm											
160	Flat con- nectors	2.5 ... 150 ³⁾	00 and 000	1 NO +	1 NO +	A	3NP50 65-1EF86	1	1 unit	103	2.908
				1 NC	1 NC	B	3NP50 65-1EF26	1	1 unit	103	2.950
	Clamp terminals	2.5 ... 50 2 conduc- tor 1×2.5 ... 50 1×2.5 ... 35 Conne- ction at bot- tom	00 and 000	1 NO +	1 NO +	B	3NP50 65-1EG86	1	1 unit	103	3.020
				1 NC	1 NC	C	3NP50 65-1EG26	1	1 unit	103	2.973
				1 NO +	2 NO						
				1 NC							

¹⁾ LV HRC fuse links, see Catalog ET B1.

²⁾ For accessories and more devices on busbar systems, see "Accessories" and "SENTRON 8US Busbar Systems".

³⁾ According to DIN 46234 or 16 mm² ... 95 mm² according to DIN 46235 (use M10 cable lug if necessary).

For 60 mm busbar system

Note:

For switch versions "For installation in any distribution board" and busbar adapters see page 17/107.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
With fuse monitoring

Fuse monitoring by electronic fuse monitoring device

Floor mounting

Rated uninter- rupted current I_u	Connection types (on both sides)		For LV HRC fuse links acc. to DIN 43620 ¹⁾	Auxiliary switch		DT	Degree of protection IP00, without fuse links, without isolating links, with terminal screws	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Con- nection	For con- ductor cross- section		On switch discon- nector	On fuse monitor						
A		mm ²	Size	Version	Version						kg

**Completely compartmentalized, with high speed closing feature, with elec-
tronic fuse monitoring (self-powered), open-circuit principle**

**For rated operational voltages U_e from 400 V to 500 V AC,
infeed must come from above!**

With plug-in connection for connecting cables from auxiliary switches
(approx. 1 m long) to the fuse monitoring device, status indicator:
green LED illuminated, fault indication: green LED flashing, fuse fail-
ure: red LED (display per phase)



3NP50 60-0HA13

160	Flat con- nectors ²⁾	2.5 ... 120 ³⁾	00 and 000	1 NO + 1 NC	2 NO + 1 NC	B	3NP50 60-0HA13	1	1 unit	103	2.375
	Clamp terminals	1 con- ductor: 2.5 ... 50 2 con- ductors: 1x 2.5 ... 50 1x 2.5 ... 35	00 and 000	1 NO + 1 NC	2 NO + 1 NC	B	3NP50 60-0HB13	1	1 unit	103	2.500



3NP52 60-0HA13

250	Flat con- nectors	6 ... 150 ⁴⁾	1 and 0	1 NO + 1 NC	2 NO + 1 NC	B	3NP52 60-0HA13	1	1 unit	103	5.865
-----	----------------------	-------------------------	---------	----------------	----------------	---	-----------------------	---	--------	-----	-------



3NP53 60-0HA13

400	Flat con- nectors	6 ... 240 ⁴⁾	2 and 1	1 NO + 1 NC	2 NO + 1 NC	B	3NP53 60-0HA13	1	1 unit	103	6.951
-----	----------------------	-------------------------	---------	----------------	----------------	---	-----------------------	---	--------	-----	-------



3NP54 60-0HA13

630	Flat con- nectors	6 ... 240 ⁴⁾	3 and 2	1 NO + 1 NC	2 NO + 1 NC	B	3NP54 60-0HA13	1	1 unit	103	8.513
-----	----------------------	-------------------------	---------	----------------	----------------	---	-----------------------	---	--------	-----	-------

¹⁾ For LV HRC fuse links, see [Catalog ET B1](#).

²⁾ For 3NP50 60 with flat connectors, appropriate 3NY1 106 cable lug covers must be used to provide finger-safe cover, according to DIN VDE 0106 Part 100 (see [Accessories](#)).

³⁾ According to DIN 46234 or 16 mm² ... 95 mm² according to DIN 46235 (use M10 cable lug if necessary).

⁴⁾ According to DIN 46234 or DIN 46235; with cable lug to DIN 46235: Min. conductor cross-section 16 mm² (use M12 cable lug if necessary).

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
With fuse monitoring

For 40 mm busbar system

Rated uninter- rupted current I_u	Connection types (on both sides)		For LV HRC fuse links acc. to DIN 43620 ¹⁾	Auxiliary switches		DT	Degree of protection IP00, without fuse links, without isolating links, with terminal screws	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	Con- nection	For con- ductor cross- section		On switch discon- nector	On the fuse moni- tor						
A	mm ²	Size	Version	Version		Order No.	Price per PU				kg

Completely compartmentalized, with high speed closing feature, with electronic fuse monitoring (self-powered), open-circuit principle

For rated operational voltages U_e from 400 V to 500 V AC, infeed must come from above!

Busbars with a width of 12 mm and thickness of 5 mm or 10 mm



3NP50 65-1HF13

160	Flat con- nectors	2.5 ... 120 ²⁾ Con- nec- tion at bottom	00 and 000	1 NO + 1 NC	2 NO + 1 NC	B	3NP50 65-1HF13	1	1 unit	103	2.776
-----	----------------------	---	------------	----------------	----------------	---	-----------------------	---	--------	-----	-------

¹⁾ For LV HRC fuse links, see [Catalog ET B1](#).

²⁾ According to DIN 46234 or 16 mm² ... 95 mm² according to DIN 46235 (use M10 cable lug if necessary).

For 60 mm busbar system

Note:


For switch versions "For installation in any distribution board" and busbar adapters see page 17/107.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
Accessories

Selection and ordering data

	For fuse switch disconnectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Fuse carriers									
	3NP50 6-.C..0	B	3NY1 074		1	1 unit	103	0.620	
	3NP52 60-.C..0	B	3NY1 371		1	1 unit	103	0.263	
	3NP53 60-.C..0	B	3NY1 372		1	1 unit	103	1.510	
	3NP54 60-.C..0	B	3NY1 373		1	1 unit	103	1.690	
<u>With fuse monitoring by 3RV1 MSPs/circuit breakers</u>	3NP50 6-.E..6	B	3NY1 420		1	1 unit	103	1.405	
	3NP52 60-.E..6	B	3NY1 421		1	1 unit	103	1.900	
	(with auxiliary switch 1 NO + 1 NC), with plug-in connection, without connector and connecting cable	B	3NY1 422		1	1 unit	103	1.980	
	3NP54 60-.E..6	B	3NY1 423		1	1 unit	103	2.600	
<u>Plugs and connecting cables</u>									
	1 m long	3NP5 with 3RV1	B	3NY1 910	1	1 unit	103	0.097	
	3 m long		B	3NY1 911	1	1 unit	103	0.261	
	<u>With electronic fuse monitoring for 400 V ... 500 V</u>	3NP50 6-.H.13	B	3NY1 513-0	1	1 unit	103	1.235	
		3NP52 60-.H.13	C	3NY1 513-2	1	1 unit	103	2.130	
	(with auxiliary switch 2 NO + 1 NC), with plug-in connection, without connector and connecting cable	3NP53 60-.H.13	B	3NY1 513-3	1	1 unit	103	2.146	
		3NP54 60-.H.13	C	3NY1 513-4	1	1 unit	103	0.325	
<u>Plugs and connecting cables (6-pole)</u>									
	3 m long	3NP5 with EFM	B	3NY1 915	1	1 unit	103	0.372	
Auxiliary switches 1 NO + 1 NC									
	With actuating cams, screws and washers (mounting kit)	3NP50 ¹⁾	B	3NY3 033	1	1 unit	103	0.015	
	With fixing bracket and screws (mounting kit)	3NP52 ... 3NP54	B	3NY3 034	1	1 unit	103	0.015	
Arc chute									
	(3 units each are required for 3NP52, 3NP53 and 3NP54)	3NP50	B	3NY4 031	1	1 unit	103	0.218	
		3NP52	B	3NY4 011	1	1 unit	103	0.215	
		3NP53, 3NP54	B	3NY4 012	1	1 unit	103	0.240	
Molded-plastic masking frames									
	As replacement for masking frames from assembly kits for installation (without fixing brackets and small parts)	300 × 220 mm	3NY1 210	A	3NY1 102	1	1 unit	103	0.071
		300 × 245 mm	3NY1 211	A	3NY1 103	1	1 unit	103	0.075
		300 × 290 mm	3NY1 212	A	3NY1 104	1	1 unit	103	0.084

¹⁾ If retrofitted, drill holes required.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
Accessories
SITOR fuses for 3NP5 fuse switch disconnectors: Assignment table

For switch disconnectors			SITOR fuses				DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Type	Permissible load current ¹⁾	Required conductor cross-section Cu	Size	Operational class	Rated current	Rated voltage ²⁾								
	A	mm ²			A	V								
SITOR 3NE1 fuses for 3NP5														
3NP50	16	1.5	000	gR/gS	16	690	▶	3NE1 813-0		1	3 units	047	0.127	
	20	2.5	000	gR/gS	20	690	▶	3NE1 814-0		1	3 units	047	0.128	
	25	4	000	gR/gS	25	690	▶	3NE1 815-0		1	3 units	047	0.127	
	35	6	000	gR/gS	35	690	▶	3NE1 803-0		1	3 units	047	0.128	
	40	10	000	gR/gS	40	690	▶	3NE1 802-0		1	3 units	047	0.127	
	50	10	000	gR/gS	50	690	▶	3NE1 817-0		1	3 units	047	0.128	
	63	16	000	gR/gS	63	690	▶	3NE1 818-0		1	3 units	047	0.128	
	80	25	000	gR/gS	80	690	▶	3NE1 820-0		1	3 units	047	0.129	
	100	35	00	gR/gS	100	690	▶	3NE1 021-0		1	3 units	047	0.202	
	125	50	00	gRgS	125	690	▶	3NE1 022-0		1	3 units	047	0.202	
	125	50	00	gR	125	690	A	3NE1 022-2		1	3 units	047	0.203	
	3NP52	160	70	1	gR/gS	160	690	▶	3NE1 224-0		1	3 units	047	0.580
160		70	1	gR	160	690	A	3NE1 224-2		1	3 units	047	0.613	
200		95	1	gR/gS	200	690	▶	3NE1 225-0		1	3 units	047	0.582	
200		95	1	gR	200	690	A	3NE1 225-2		1	3 units	047	0.612	
250		120	1	gR/gS	250	690	▶	3NE1 227-0		1	3 units	047	0.580	
250		120	1	gR	250	690	A	3NE1 227-2		1	3 units	047	0.626	
3NP53	315	2 × 70	2	gR/gS	315	690	A	3NE1 230-0		1	3 units	047	0.581	
	315	2 × 70	2	gR	315	690	A	3NE1 230-2		1	3 units	047	0.615	
	350	2 × 95	2	gR/gS	350	690	▶	3NE1 331-0		1	3 units	047	0.766	
	350	2 × 95	2	gR	350	690	A	3NE1 331-2		1	3 units	047	0.754	
	400	2 × 95	2	gR/gS	400	690	▶	3NE1 332-0		1	3 units	047	0.743	
3NP54	450	2 × 120	2	gR/gS	450	690	A	3NE1 333-0		1	3 units	047	0.760	
	450	2 × 120	2	gR	450	690	A	3NE1 333-2		1	3 units	047	0.768	
	500	2 × 120	2	gR/gS	500	690	A	3NE1 334-0		1	3 units	047	0.766	
	560	2 × 150	3	gR/gS	560	690	A	3NE1 435-0		1	3 units	047	1.111	
	560	2 × 150	3	gR	560	690	A	3NE1 435-2		1	3 units	047	1.149	
	630	2 × 185	3	gR/gS	630	690	A	3NE1 436-0		1	3 units	047	1.114	
	625	2 × 185	3	gR	630	690	A	3NE1 436-2		1	3 units	047	1.179	
	710	2 × (40 × 5)	3	gR/gS	710	690	A	3NE1 437-0		1	3 units	047	1.117	
	690	2 × (40 × 5)	3	gR	690	600	D	3NE1 437-1		1	3 units	047	1.120	
	685	2 × (40 × 5)	3	gR	710	600	B	3NE1 437-2		1	3 units	047	1.153	
	800	2 × (50 × 5)	3	gR/gS	800	690	A	3NE1 438-0		1	3 units	047	1.124	
	750	2 × (50 × 5)	3	gR	750	600	B	3NE1 438-1		1	3 units	047	1.113	
	720	2 × (50 × 5)	3	gR	800	600	A	3NE1 438-2		1	3 units	047	1.184	
	655	2 × (40 × 5)	3	gR	670	690	A	3NE1 447-2		1	3 units	047	1.170	
	820	2 × (40 × 8)	3	gR	850	690	A	3NE1 438-2		1	3 units	047	1.184	
	SITOR fuses 3NE3 ... 3NE8, 3NC2 to 3NC8 for 3NP5													
3NP50	25	4	00	gR	25	690	▶	3NE8 015-1		1	3 units	047	0.205	
	33	6	00	gR	35	690	▶	3NE8 003-1		1	3 units	047	0.204	
	45	10	00	gR	50	690	▶	3NE8 017-1		1	3 units	047	0.203	
	54	16	00	gR	63	690	▶	3NE8 018-1		1	3 units	047	0.205	
	68	25	00	aR	80	690	▶	3NE8 020-1		1	3 units	047	0.203	
	89	35	00	aR	100	690	▶	3NE8 021-1		1	3 units	047	0.205	
	106	50	00	aR	125	690	▶	3NE8 022-1		1	3 units	047	0.213	
	130	70	00	aR	160	690	▶	3NE8 024-1		1	3 units	047	0.207	
	3NP52 ³⁾	32	6	0	gR	32	1000	▶	3NE4 101		1	3 units	047	0.278
		40	10	0	gR	40	1000	▶	3NE4 102		1	3 units	047	0.277
50		10	0	gR	50	1000	▶	3NE4 117		1	3 units	047	0.276	
63		16	0	gR	63	1000	▶	3NE4 118		1	3 units	047	0.279	
80		25	0	aR	80	1000	▶	3NE4 120		1	3 units	047	0.276	
95		35	0	aR	100	1000	▶	3NE4 121		1	3 units	047	0.278	
120		50	0	aR	125	1000	▶	3NE4 122		1	3 units	047	0.279	
150		70	0	aR	160	1000	▶	3NE4 124		1	3 units	047	0.279	
3NP53		100	35	1	aR	100	1000	A	3NE3 221		1	3 units	047	0.580
		120	50	1	aR	125	1000	A	3NE3 222		1	3 units	047	0.568
	150	70	1	aR	160	1000	▶	3NE3 224		1	3 units	047	0.573	
	190	95	1	aR	200	1000	▶	3NE3 225		1	3 units	047	0.570	
	230	120	1	aR	250	1000	▶	3NE3 227		1	3 units	047	0.580	
	285	185	1	aR	315	1000	▶	3NE3 230-OB		1	3 units	047	0.585	
	310	240	1	aR	350	1000	A	3NE3 231		1	3 units	047	0.590	
	330	240	1	aR	400	1000	A	3NE3 232-OB		1	3 units	047	0.576	
	360	2 × 150	1	aR	450	1000	▶	3NE3 233		1	3 units	047	0.720	
	210	120	2	aR	250	800	▶	3NE4 327-OB		1	3 units	047	0.753	
	270	240	2	aR	315	800	▶	3NE4 330-OB		1	3 units	047	0.760	
	400	2 × (30 × 5)	2	aR	450	800	▶	3NE4 333-OB		1	3 units	047	0.760	

¹⁾ In the case of cyclic loads, the currents may have to be reduced again (pre-cise values on request).

²⁾ When maintaining overvoltage category 2 (instead of 3) and degree of pollution 2 (instead of 3) to EN 60 947-1, the rated insulation voltage of the 3NP fuse switch disconnector is also $U_i = 1000$ V.

³⁾ Due to the mechanical stress on the relatively long fuse blades, SITOR 3NE41 fuses should be switchable only occasionally and only at zero current.

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
Accessories

For switch disconnectors			SITOR fuses				DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Type	Permissible load current ¹⁾	Required conductor cross-section Cu	Size	Operational class	Rated current	Rated voltage ²⁾							
	A	mm ²			A	V							
3NP54	360	240	2	aR	400	1000	A	3NE3 332-0B		1	3 units	047	0.759
	400	2 x 150	2	aR	450	1000	A	3NE3 333		1	3 units	047	0.748
	450	2 x 150	2	aR	500	1000	▶	3NE3 334-0B		1	3 units	047	0.753
	510	2 x 185	2	aR	560	1000	▶	3NE3 335		1	3 units	047	0.756
	580	2 x 185	2	aR	630	1000	▶	3NE3 336		1	3 units	047	0.760
	630	2 x 200	2	aR	710	900	▶	3NE3 337-8		1	3 units	047	0.762
	630	2 x 200	2	aR	800	800	▶	3NE3 338-8		1	3 units	047	0.764
	630	2 x 200	2	aR	900	690	▶	3NE3 340-8		1	3 units	047	0.753
	450	2 x (30 x 5)	2	aR	500	800	▶	3NE4 334-0B		1	3 units	047	0.754
	600	2 x (40 x 5)	2	aR	710	800	▶	3NE4 337		1	3 units	047	0.771
	145	70	3	gR	150	500	B	3NC2 423-3C		1	3 units	047	0.940
	180	95	3	gR	200	500	B	3NC2 425-3		1	3 units	047	1.057
	225	120	3	gR	250	500	B	3NC2 427-3		1	3 units	047	1.066
	255	185	3	gR	300	500	B	3NC2 428-3		1	3 units	047	1.078
	330	240	3	gR	350	500	B	3NC2 431-3C		1	3 units	047	0.940
	400	240	3	gR	400	500	B	3NC2 432-3C		1	3 units	047	0.940
	135	70	3	gR	150	660	B	3NC8 423-3		1	3 units	047	1.062
	180	95	3	gR	200	660	B	3NC8 425-3		1	3 units	047	1.063
	225	120	3	gR	250	660	B	3NC8 427-3		1	3 units	047	1.069
	300	240	3	gR	350	660	B	3NC8 431-3		1	3 units	047	1.072
	425	2 x 150	3	gR	500	660	B	3NC8 434-3		1	3 units	047	1.069
	800	3 x (60 x 6)	3	aR	1000	600	C	3NC8 444-3		1	3 units	047	1.085

¹⁾ In the case of cyclic loads, the currents may have to be reduced again (precise values on request).

²⁾ When maintaining overvoltage category 2 (instead of 3) and degree of pollution 2 (instead of 3) to EN 60947-1, the rated insulation voltage of the 3NP fuse switch disconnector is also $U_i = 1000$ V.

³⁾ Due to the mechanical stress on the relatively long fuse blades, SITOR 3NE41 fuses should be switchable only occasionally and only at zero current.









For technical specifications and dimensional drawings of the SITOR fuses see [Catalog ET B1](#).

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
Assembly kits for distribution boards

Selection and ordering data

	For fuse switch disconnectors	Dimensions mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
For installation in any distribution board									
Molded-plastic masking frames									
		Height × Width							
	For installation in the cabinet	3NP50 with and without auxiliary switch	215 × 135	A	3NY1 105	1	1 unit	103	0.045
		With auxiliary switch	215 × 135	A	3NY1 115	1	1 unit	103	0.044
	For installation in metal front plates	With and without auxiliary switch	220 × 160	A	3NY1 125	1	1 unit	103	0.062
	For covering the connection terminals	3NP50 with and without auxiliary switch	265 × 135	A	3NY1 107	1	1 unit	103	0.073
	For covering the cable lug connections	3NP50 with and without auxiliary switch	290 × 135	A	3NY1 106	1	1 unit	103	0.071
	For separate covering of the upper and lower cable lug connections	With auxiliary switch	290 × 135	A	3NY1 116	1	1 unit	103	0.071
		3NP50 with and without auxiliary switch	290 × 135	A	3NY1 108	1	1 unit	103	0.048
Assembly kits for flush mounting									
	With molded-plastic masking frame, fixing brackets and small parts. For disconnectors with and without auxiliary switches	3NP50 60	250 × 149	B	3NY1 208	1	1 unit	103	0.531
		3NP52 60	300 × 220	B	3NY1 210	1	1 unit	103	0.287
		3NP53 60	300 × 245	B	3NY1 211	1	1 unit	103	0.298
		3NP54 60	300 × 290	B	3NY1 212	1	1 unit	103	0.313
Covers for cable lug connections									
		Cover length							
	(1 set = 6 units) can be screwed onto free screw end to protect against accidental touch	3NP52	99	A	3NY1 241	1	1 unit	103	0.205
		3NP53/3NP54	95	B	3TX6 546-3B	1	1 unit	101	0.260
			120	B	3NY1 245	1	1 unit	103	0.336
Clamp terminals									
		Conductor cross-section							
	(1 set = 3 units)	3NP50	2.5 ... 50 mm ² 1)	B	3NY1 903	1	1 unit	103	0.108
		3NP52	35 ... 120 mm ²	B	3NY1 907	1	1 unit	103	0.225
									
Busbar adapters									
		Busbar width							
	For 60 mm busbar system	3NP50	108	A	8US12 91-4SB00	1	1 unit	143	0.551
		3NP52, 3NP53, 3NP54 ²⁾	250 (length 320 mm, M10 terminal screws, connecting cables must be manufactured)	A	8US12 10-4AG00	1	1 unit	143	3.060
									
	Sealing lugs	3NP50		B	3NY1 940	1	1 unit	103	0.010
	Retrofittable (1 pack = 10 units)								

1) Also available in 2-wire version: 1 × 2.5 mm² ... 50 mm² and 1 × 2.5 mm² - 35 mm².

2) Disconnector is wider than adapter. The adapter can, however, be expanded to 276 mm with two 8US19 98-2BM00 side modules.

* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

General data

Overview

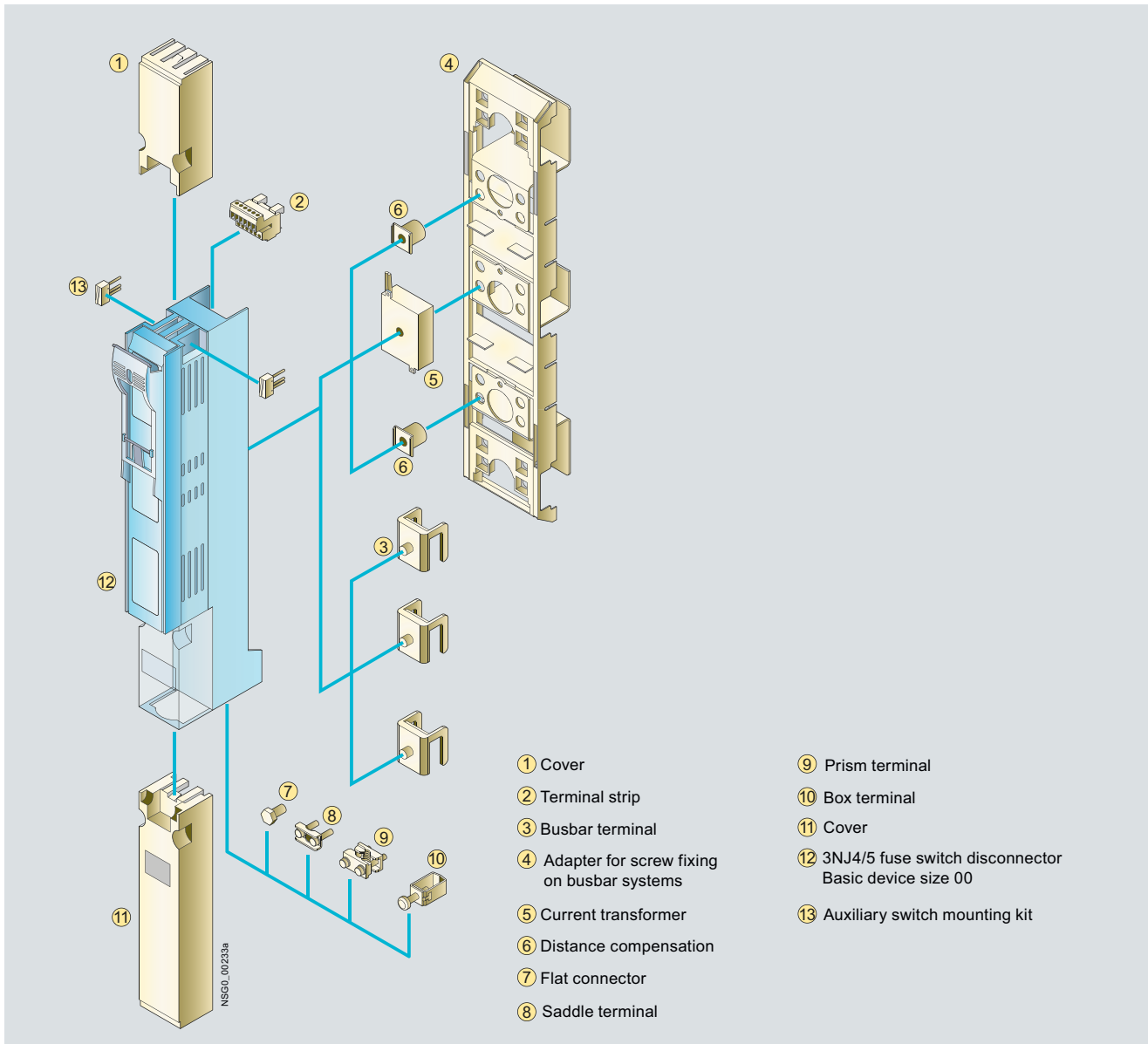


3NJ4/3NJ5 fuse switch disconnectors

All key product features at a glance

- Compliant with IEC/EN 60439-1, IEC/EN 60947-3
- Voltage levels up to 690 V AC
- Rated operational current from 160 A to 2000 A
- Fuse links according to IEC 60269 Part 1 can be used – nickel-plated fuse blades are not permissible due to the high transfer resistance
- In open position safe from touch by the back of the hand (exception 3NJ56: IP00)
- Parking position for maintenance
- 1-pole or 3-pole switchable
- Vertical and horizontal mounting position
- Climate-proof
- Degree of protection IP30 with closed fuse carriers, IP10 with open fuse carriers (exception 3NJ56: IP00)

Overview of all components and accessory parts: 3NJ4/3NJ5 in size 00

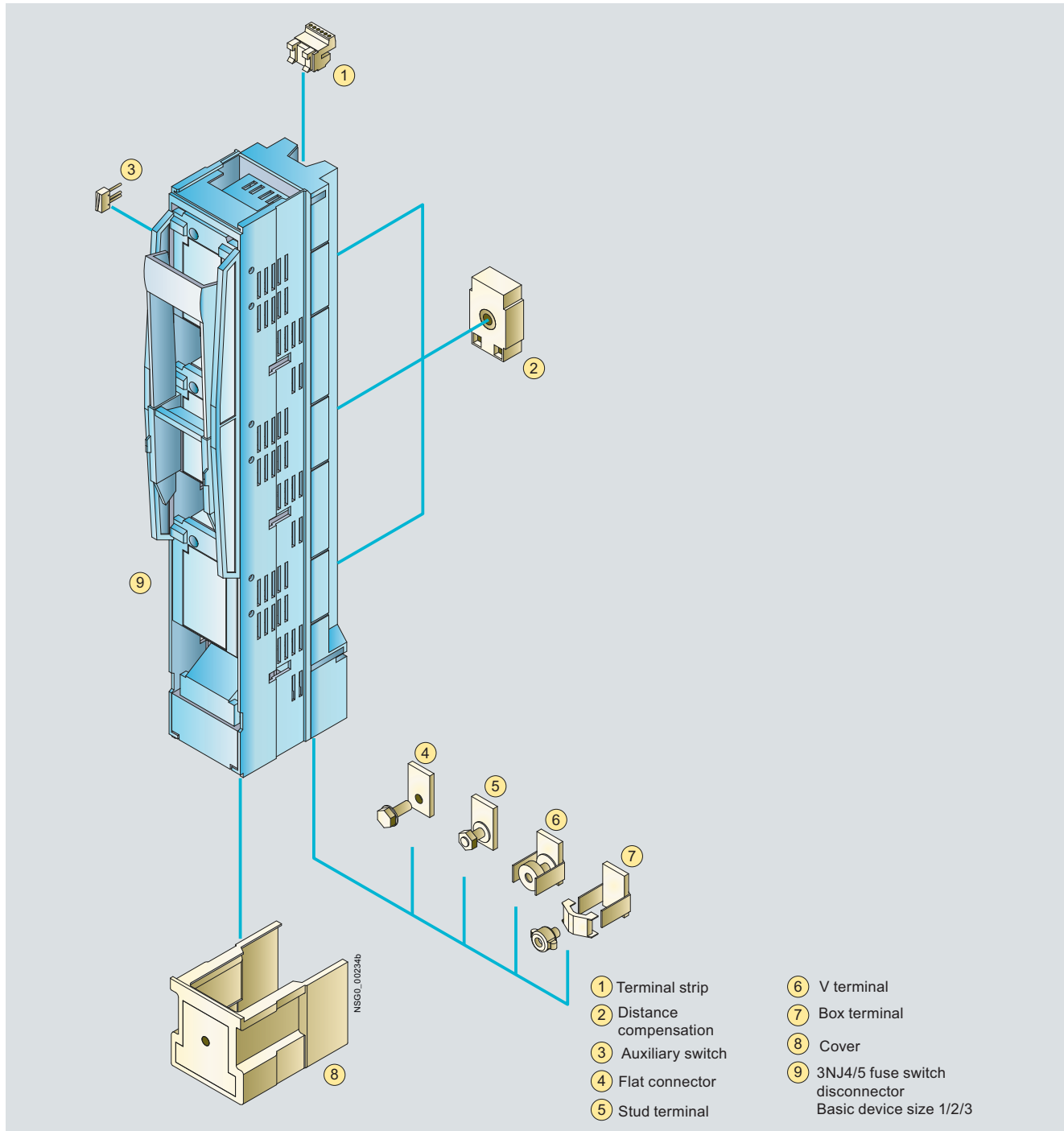


Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

General data

Overview of all components and accessory parts: 3NJ4/3NJ5 in sizes 1 to 3



Benefits

Parking position

For maintenance purposes, for example, the carriers of the 1-pole in-line fuse switch disconnectors of sizes 1 to 3 and the 3-pole in-line fuse switch disconnectors of size 00 can be mounted after being turned by 180° (fuse facing outwards).

This results in the following advantages:

- Visible disconnection point
- Depot for fuse links (parking position)
- No opportunity for mistakes on replacing the fuse links
- Additional touch protection in the vicinity of the lyre-shaped contacts

Application

SENTRON 3NJ41 and 3NJ56 single-pole and 3-pole in-line fuse switch disconnectors are designed for installation in low-voltage distribution boards, substations and cable distribution cabinets.

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

General data

More information

Standards		IEC 60947-1, IEC 60947-3, VDE 0660 Part 107									
Type		3NJ41 0 3NJ50	3NJ41 2	3NJ41 3	3NJ41 4	3NJ56	3NJ41 5	3NJ41 8	3NJ41 6	3NJ41 7	
Conventional thermal current											
Free-air with gG fuses, I_{th}	A	160	250	400	630	1250	630	800	1260	1600	
Free-air with isolating link, I_{th}	A	--	--	--	800	--	1000	1250	1600	2000	
Free-air with gTr fuses, I_{th}	A	--	--	--	--	1154	722	910	1154	1444	
Rated apparent power of the transformer, S_n	kVA	--	--	--	--	800	500	630	800	1000	
For fuse links and isolating links											
	Size	00	1	2	3	4a	3	3	2 x 3	2 x 3	
gG acc. to IEC 60269, I_n	A	160	250	400	630	1250	630	800	2 x 630	2 x 800	
Free-air with isolating link, I_n	A	--	--	--	--	--	1000	1250	2 x 800	2 x 1000	
gTr acc. to VDE acc. to 0636-2011, I_{rat}	A	--	--	--	--	1154	722	909	2 x 577	2 x 722	
gTr acc. to VDE acc. to 0636-2011, S_n	kVA	--	--	--	--	800	500	630	2 x 400	2 x 500	
Rated operational voltage U_e At AC 40 Hz ... 60 Hz	V	690	690	690	690	690	690	400	690	400	
Rated insulation voltage U_i	V	800	1000	1000	1000	1000	1000	690	1000	690	
Rated impulse withstand voltage U_{imp}	kV	8	12	12	12	12	12	8	12	8	
Rated conditional short-circuit current with fuses											
With gG fuse (rms value)	kA	80/50	110	110	110	80	110	50	80	50	
With gTr fuse (rms value)	kA	--	--	--	--	--	--	50	--	--	
Max. permissible power loss per fuse link	W	12	32	45	48	110	51	61	48	51	
Rated short-time withstand current I_{CW} rms value	kA	--	14.5	14.5	14.5	35	14.5	14.5	25	25	
Rated making and breaking capacity											
Rated operational current I_e for gG fuses											
At AC-21B	400 V AC	A	160	250	400	630	1250	630	800	2 x 630	2 x 800
AC-22B	400 V AC	A	160	250	400	630	1250	630	800	2 x 630	2 x 800
AC-23B	400 V AC	A	--	250	400	--	--	--	--	--	--
AC-21B	500 V AC	A	160	250	400	630	1250	--	--	--	--
AC-22B	500 V AC	A	160	250	400	630	1250	--	--	--	--
AC-23B	500 V AC	A	--	--	--	--	--	--	--	--	--
AC-21B	690 V AC	A	100	250	400	630	1250	--	--	--	--
AC-22B	690 V AC	A	100	250	--	--	--	--	--	--	--
AC-23B	690 V AC	A	--	--	--	--	--	--	--	--	--
Rated operational current I_e for gTr fuses											
At AC-22B	400 V AC	A	--	--	--	--	722	910	2 x 577	2 x 722	
Rated operational current I_e for isolating links											
At AC-22B	400 V AC	A	--	--	--	--	1000	1250	2 x 800	2 x 1000	
Capacitive switching capacity	kvar	--	105 ... 115	155 ... 185	250 ... 300	--	--	--	--	--	
Permissible ambient temperature	°C	-25 ... +55, > 35 °C with derating factors									
Mechanical endurance , operating cycles		1400	1400	800	800	500	800	500	500	500	
Electrical endurance , operating cycles		200	200	200	200	100	100	100	100	100	
Degree of protection											
With closed fuse carrier, with terminal cover and peripheral cover		IP30	IP30	IP30	IP30	IP10	IP30	IP30	IP30	IP30	
With open fuse carrier		IP10	IP10	IP10	IP10	IP00	IP10	IP10	IP10	IP10	
Power loss of the main current paths at I_{th}	W	18	23	54	115	190	275	155	350	375	
Main conductor connections											
Terminal screws											
Flat bars	mm	M8	M10	M12	M12	M16	2 x M12	2 x M12	3 x M12	4 x M12	
Cable lug, max. conductor cross-section (stranded)	mm ²	20	30	30	30	80	80 x 10	80 x 10	--	--	
Tightening torque	Nm	95	240	240	240 ¹⁾	2 x 300	2 x 300	2 x 300	3 x 300	4 x 300	
Clamp/V terminals	mm ²	12 ... 15	30 ... 35	35 ... 40	35 ... 40	50 ... 60	35 ... 40	35 ... 40	35 ... 40	35 ... 40	
Fixing screws		1.5 ... 70	25 ... 300	25 ... 300	25 ... 300	--	--	--	--	--	
Required tightening torque for mounting on bus-bars	Nm	M8	M12	M12	M12	M16	M12	M12	M12	M12	
		16 ... 18	35 ... 40	35 ... 40	35 ... 40	50 ... 60	35 ... 40	35 ... 40	35 ... 40	35 ... 40	

¹⁾ A special assembly kit is required for connection of 2 x 240 mm²; delivery on request.

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

1-pole switchable

Selection and ordering data

Rated operational current I_e For fuse links acc. to IEC 60269-1	Center-to-center spacing	Connection type (terminal screws/ clamp-type terminals included in the scope of supply) ¹⁾ optionally top or bottom (rotatable!)	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
---	--------------------------	---	----	-----------	--------------	-------------------	-----	----	-----------------------------

In-line fuse switch disconnectors, 1-pole switchable



3NJ41 21-3BF01

160	00 and 000	185	M8 flat connector	A	3NJ50 13-0BD00	1	1 unit	143	2.561
250	1	185	M10 flat connector	A	3NJ41 21-3BF01	1	1 unit	143	5.284
400	2 and 1	185	M12 flat connector	A	3NJ41 31-3BF01	1	1 unit	143	5.363
630	3 and 2	185	M12 flat connector	A	3NJ41 41-3BF01	1	1 unit	143	6.098
1250	4a	185	M16 × 60 stud terminal	A	3NJ56 43-0BB00	1	1 unit	143	23.608

In-line fuse switch disconnectors, 1-pole switchable, for integratable current transformers



3NJ41 21-3BF11

250	1	185	M10 flat connector	C	3NJ41 21-3BF11	1	1 unit	143	5.690
400	2 and 1	185	M12 flat connector	C	3NJ41 31-3BF11	1	1 unit	143	5.720
630	3 and 2	185	M12 flat connector	C	3NJ41 41-3BF11	1	1 unit	143	6.680




¹⁾ Fixing screws for mounting on busbars must be ordered separately.

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

3-pole switchable

Selection and ordering data

	Rated operational current I_e For fuse links acc. to IEC 60269-1		Center-to-center spacing mm	Connection type (terminal screws/ clamp-type terminals included in the scope of supply) ¹⁾ optionally top or bottom (rotatable!)	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
	A	Size										
In-line fuse switch disconnectors, 3-pole switchable												
	160	00 and 000	100	M8 flat connector	▶	3NJ41 03-3BF02					1.400	
			185	F70 box terminal	A	3NJ41 03-3BR02					1.479	
	250	1	185	M8 flat connector	A	3NJ50 33-0BD00					2.608	
				M10 flat connector	▶	3NJ41 23-3BF01					5.481	
	400	2 and 1	185	M12 stud terminal	A	3NJ41 23-3BJ01					5.512	
				V terminal	A	3NJ41 23-3BT01					5.908	
				M12 flat connector	▶	3NJ41 33-3BF01					5.540	
	630	3 and 2	185	M12 stud terminal	A	3NJ41 33-3BJ01					5.580	
				V terminal	A	3NJ41 33-3BT01					5.899	
				M12 flat connector	▶	3NJ41 43-3BF01					6.426	
			M12 stud terminal	A	3NJ41 43-3BJ01	6.321						
			V terminal	A	3NJ41 43-3BT01	6.675						
In-line fuse switch disconnectors, 3-pole switchable, with electronic fuse monitoring (EFM)												
	160	00 and 000	100	M8 flat connector	C	3NJ41 03-3CF02		1	1 unit	143	1.400	
	250	1	185	M10 flat connector	C	3NJ41 23-3CF01		1	1 unit	143	1.400	
	400	2 and 1	185	M12 flat connector	C	3NJ41 33-3CF01		1	1 unit	143	1.400	
	630	3 and 2	185	M12 flat connector	C	3NJ41 43-3CF01		1	1 unit	143	1.400	
In-line fuse switch disconnectors, 3-pole switchable, for integratable current transformers												
	160	00 and 000	100	M8 flat connector	▶	3NJ41 03-3BF12		1	1 unit	143	1.140	
	250	1	185	M10 flat connector	▶	3NJ41 23-3BF11		1	1 unit	143	5.890	
	400	2 and 1	185	M12 flat connector	▶	3NJ41 33-3BF11		1	1 unit	143	5.910	
	630	3 and 2	185	M12 flat connector	▶	3NJ41 43-3BF11		1	1 unit	143	6.870	
In-line fuse switch disconnectors, 3-pole switchable, for integratable current transformers, with electronic fuse monitoring (EFM)												
	160	00 and 000	100	M8 flat connector	C	3NJ41 03-3CF12		1	1 unit	143	1.400	
	250	1	185	M10 flat connector	C	3NJ41 23-3CF11		1	1 unit	143	1.400	
	400	2 and 1	185	M12 flat connector	C	3NJ41 33-3CF11		1	1 unit	143	1.400	
	630	3 and 2	185	M12 flat connector	C	3NJ41 43-3CF11		1	1 unit	143	1.400	
In-line fuse switch disconnectors, 3-pole switchable, for secondary-side fusing of transformers												
	500	500	185	722	1000	A	3NJ41 53-3BF01		1	1 unit	143	11.030
	630	630	185	909	1250	A	3NJ41 83-3BF01		1	1 unit	143	12.943
	800	2 x 400	185	2 x 577	1600	C	3NJ41 63-3BF01		1	1 unit	143	12.943
	1000	2 x 500	185	2 x 722	2000	C	3NJ41 73-3BF01		1	1 unit	143	12.943

3NJ41 63-3BF01

¹⁾ Fixing screws for mounting on busbars must be ordered separately.







* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

Accessories

Selection and ordering data

	For in-line fuse switch disconnectors or dimensions	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
	Cover Size 00 Additional touch protection with use of cable lugs	3NJ50 33, 3NJ5013	B	3NJ49 12-1FA02		1	1 unit	143	0.090
33NJ49 12-1AA01	Cover¹⁾ Size 1 to 3 Additional touch protection with use of cable lugs or connection from above	3NJ41 2 to 3NJ41 4, 3NJ41 5, 3NJ41 8	▶	3NJ49 12-1AA01		1	1 unit	143	0.103
	Covers size 3 For double blocks	3NJ41 4	A	3NJ49 12-1EA00		1	1 unit	143	0.200
3NJ49 12-1EA00	Covers size 00 (can also be used as masking frame) Top and bottom for covering of extended cable lugs and for combining 3NJ41 03 with 3NJ41 2 to 3NJ41 4 in-line disconnectors (1 set = 2 units: short and long ²⁾)	3NJ41 03	A	3NJ49 12-1DA02		1	1 unit	143	0.005
	Blanking covers For panel cut-out	50 mm wide	A	3NJ49 12-2AA00		1	1 unit	143	0.189
3NJ49 12-2AA01	According to the size of the switch disconnectors: sizes 1 to 3 (for fitting in the cutout of the control panels)	100 mm wide	A	3NJ49 12-2BA00		1	1 unit	143	0.215
	For 3NJ41 03	50 mm wide	A	3NJ49 12-2CA00		1	1 unit	143	0.090
3NJ49 12-2BA00	Fixing clips 2 units per side, for fixing the cover of the control panel front (1 set = 4 units, including fixing accessories)	3NJ41	A	3NJ49 18-0AA00		1	1 unit	143	0.130
									
3NJ49 12-2CA01									
									
3NJ49 18-0AAA00									








¹⁾ With cable lugs and connection from above, the terminal cover can be extended by connecting two units together.

²⁾ Can be shortened (in exchange for short cover, included in the scope of supply of the in-line disconnectors).

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

Accessories

	For fuse switch disconnectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
	Blanking cover for busbars To be fitted directly in the drilled holes of the busbars		A						
	① Busbar center-to-center spacing 185 mm	50 mm wide	A	3NJ49 12-3AA00	1	1 unit	143	0.148	
	② Busbar center-to-center spacing 185 mm	100 mm wide	A	3NJ49 12-3BA01	1	1 unit	143	0.372	
	③ Busbar center-to-center spacing 100 mm (Also for covering a blank space on 3NJ49 18-0DA02 or 3NJ59 30-3BB)	50 mm wide	A	3NJ49 12-3CA00	1	1 unit	143	0.105	
	Adapters for screw fixing on busbar systems								
	• For fitting of two 3NJ41 03 fuse switch disconnectors (= 1 holder) onto a busbar system with 185 mm center-to-center spacing (including adaptation of the installation depth to that of the 3NJ41 2 to 3NJ41 4 fuse switch disconnectors)	3NJ41 03	A	3NJ49 18-0DA02	1	1 unit	143	0.751	
	• For fitting two 3NJ50 fuse switch disconnectors (= 1 holder) (to adapt the overall depth of sizes 1 to 3)	3NJ50 13 and 3NJ50 33	D	3NJ59 30-3BB	1	1 unit	143	0.675	
	• For fitting one 3NJ41 03 fuse switch disconnectors (= 3 separate brackets) onto a busbar system with 60 mm center-to-center spacing		3NJ41 03	A	3NJ49 18-0EA00	1	1 unit	143	0.232
	Adapters with busbar terminals For fitting two 3NJ41 03 fuse switch disconnectors (= 1 holder) onto a busbar system with 185 mm center-to-center spacing (including adaptation of the overall depth to the 3NJ41 2 to 3NJ41 4 fuse switch disconnectors)		3NJ41 03	D	3NJ49 18-0DB02	1	1 unit	143	0.751
	Fixing screws For fitting 3NJ41 03 switch disconnectors with integratable current transformers onto adapters (1 set = 3 units)		3NJ41 03	B	3NJ49 18-0DC02	1	1 unit	143	0.200
	Busbar supports For 100 mm and 185 mm center-to-center spacing, for screwing on of busbars		3NJ41 and 3NJ5	▶	3NJ59 74-0AB	1	1 unit	143	0.463
	Grounding kit with connecting cable 25 mm²		3NJ414 to 3NJ418	D	3NJ49 10-1AA00	1	1 unit	143	4.200
	Busbar terminal		3NJ41 03	▶	3NJ49 11-3AA00	1	1 unit	143	0.176
	For rapid mounting of the in-line disconnectors onto the busbars (1 set = 3 units)		3NJ41 2 to 3NJ41 4	▶	3NJ49 11-3BA01	1	1 unit	143	0.607
	Busbar terminal								
									

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

Accessories








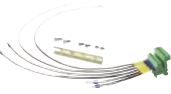
	For fuse switch disconnectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3NJ49 11-4AA00	Saddle terminal installation kit Copper terminal 1.5 mm ² to 70 mm ² (1 set = 3 units)	3NJ41 03	A	3NJ49 11-4AA00	1	1 unit	143	0.041
 3NJ49 11-1AA00	Prism terminal assembly kits Aluminum/copper terminal 10 mm ² to 70 mm ² (1 set = 3 units)	3NJ41 03	A	3NJ49 11-1AA00	1	1 unit	143	0.098
 3NJ4911-2BQ00	Box terminal assembly kits Aluminum/copper terminal 95 mm ² to 240 mm ² (for connection to version with flat connector) (1 set = 3 units)	3NJ41 2 to 3NJ41 4	A	3NJ49 11-2BQ00	1	1 unit	143	0.949
 3NJ49 11-5AA00	Connection assembly kit for NH 1, 2, 3 with flat connector 2 x 240 mm ²	3NJ41 2 to 3NJ41 4	A	3NJ49 11-5AA00	1	1 unit	143	0.500
 3NJ49 11-5BA00	2 x 300 mm ² /3x 120 mm ²	3NJ41 2 to 3NJ41 4	A	3NJ49 11-5BA00	1	1 unit	143	1.700
 3NJ49 11-5CA00	1 x 400 mm ²	3NJ41 2 to 3NJ41 4	A	3NJ49 11-5CA00	1	1 unit	143	1.800
 3NJ49 11-6AA00	Connection assembly kit for NH3 as double in-line blocks 3 x 300 mm ² /4 x 185 mm ²	3NJ41 4	A	3NJ49 11-6AA00	1	1 unit	143	2.800
 3NJ49 11-6BA00	4 x 240 mm ²	3NJ41 4	A	3NJ49 11-6BA00	1	1 unit	143	3.800

* You can order this quantity or a multiple thereof.

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A




Accessories

	For fuse switch disconnectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 3NJ49 11-6BA00	3NJ41 4	A	3NJ49 11-6CA00		1	1 unit	143	0.150
 3NJ49 13-6AA02	3NJ41 to 3NJ50	A	3NJ49 13-1AA01		1	1 unit	143	0.029
 3NJ49 14-8BA00	3NJ41 8	C	3NJ49 14-8AA00		1	1 unit	143	1.341
 3NJ49 14-8BA00		B	3NJ49 14-8BA00		1	1 unit	143	2.800
 3NJ49 18-1AA00		A	3NJ49 18-1AA00		1	1 unit	143	0.120
 3NJ49 15-1BA00	3NJ41 03 3NJ412 to 3NJ414	▶ ▶	3NJ49 15-1BA00 3NJ49 15-2BA00		1 1	1 unit 1 unit	143 143	0.020 0.095
 3NJ49 15-1CA00	3NJ41 03 3NJ41 2 to 3NJ41 4	▶ ▶	3NJ49 15-1CA00 3NJ49 15-2CA00		1 1	1 unit 1 unit	143 143	0.030 0.110
 3NJ49 15-2CA00								

Fuse Switch Disconnectors

SENTRON 3NJ4, 3NJ5 In-Line Fuse Switch Disconnectors up to 2000 A

Accessories

	For fuse switch disconnectors	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg		
 <p>3NJ49 15-1FB20</p>	Current transformers .../1 A									
	100/1 A, Cl. 0.5, 1.5 VA	3NJ41 03	C	3NJ49 15-1EA10		1	1 unit	143	0.250	
	100/1 A, Cl. 1, 2.0 VA	3NJ41 03	C	3NJ49 15-1EA20		1	1 unit	143	0.250	
	150/1 A, Cl. 0.5, 2.5 VA	3NJ41 03	C	3NJ49 15-1FA10		1	1 unit	143	0.250	
	150/1 A, Cl. 0.5 calibrated, 2.5 VA	3NJ41 03	D	3NJ49 15-1FA11		1	1 unit	143	0.250	
	150/1 A, Cl. 1, 3.0 VA	3NJ41 03	▶	3NJ49 15-1FA20		1	1 unit	143	0.250	
	75/1 A, Cl. 1, 1.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2DA20		1	1 unit	143	0.190	
	100/1 A, Cl. 0.5, 1.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2EA10		1	1 unit	143	0.190	
	100/1 A, Cl. 1, 2.0 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2EA20		1	1 unit	143	0.190	
	150/1 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2FA10		1	1 unit	143	0.190	
	150/1 A, Cl. 1, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2FA20		1	1 unit	143	0.190	
	250/1 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2GA10		1	1 unit	143	0.190	
	250/1 A, Cl. 0.5 calibrated, 2.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2GA11		1	1 unit	143	0.190	
	250/1 A, Cl. 1, 5.0 VA	3NJ41 2 to 3NJ41 4	▶	3NJ49 15-2GA20		1	1 unit	143	0.190	
	400/1 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2HA10		1	1 unit	143	0.190	
	400/1 A, Cl. 0.5 calibrated, 2.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2HA11		1	1 unit	143	0.190	
	400/1 A, Cl. 1, 5.0 VA	3NJ41 2 to 3NJ41 4	▶	3NJ49 15-2HA20		1	1 unit	143	0.190	
	 <p>3NJ49 15-2HA20</p>	500/1 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2JA10		1	1 unit	143	0.190
		500/1 A, Cl. 1, 5.0 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2JA20		1	1 unit	143	0.190
600/1 A, Cl. 0.5, 2.5 VA		3NJ41 2 to 3NJ41 4	C	3NJ49 15-2KA10		1	1 unit	143	0.190	
600/1 A, Cl. 0.5 calibrated, 2.5 VA		3NJ41 2 to 3NJ41 4	D	3NJ49 15-2KA11		1	1 unit	143	0.190	
600/1 A, Cl. 1, 5.0 VA		3NJ41 2 to 3NJ41 4	▶	3NJ49 15-2KA20		1	1 unit	143	0.190	
Current transformers .../5 A										
100/5 A, Cl. 0.5, 1.0 VA		3NJ41 03	C	3NJ49 15-1EB10		1	1 unit	143	0.250	
100/5 A, Cl. 1, 1.5 VA		3NJ41 03	C	3NJ49 15-1EB20		1	1 unit	143	0.250	
150/5 A, Cl. 0.5, 1.5 VA		3NJ41 03	C	3NJ49 15-1FB10		1	1 unit	143	0.250	
150/5 A, Cl. 0.5 calibrated, 1.5 VA		3NJ41 03	D	3NJ49 15-1FB11		1	1 unit	143	0.250	
150/5 A, Cl. 1, 2.5 VA	3NJ41 03	▶	3NJ49 15-1FB20		1	1 unit	143	0.250		
75/5 A, Cl. 1, 1.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2DB20		1	1 unit	143	0.190		
100/5 A, Cl. 0.5, 1.0 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2EB10		1	1 unit	143	0.190		
100/5 A, Cl. 1, 2.0 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2EB20		1	1 unit	143	0.190		
150/5 A, Cl. 0.5, 1.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2FB10		1	1 unit	143	0.190		
150/5 A, Cl. 1, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2FB20		1	1 unit	143	0.190		
250/5 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2GB10		1	1 unit	143	0.190		
250/5 A, Cl. 0.5 calibrated, 2.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2GB11		1	1 unit	143	0.190		
250/5 A, Cl. 1, 3.75 VA	3NJ41 2 to 3NJ41 4	▶	3NJ49 15-2GB20		1	1 unit	143	0.190		
400/5 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	C	3NJ49 15-2HB10		1	1 unit	143	0.190		
400/5 A, Cl. 0.5 calibrated, 2.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2HB11		1	1 unit	143	0.190		
400/5 A, Cl. 1, 5.0 VA	3NJ41 2 to 3NJ41 4	▶	3NJ49 15-2HB20		1	1 unit	143	0.190		
 <p>3NJ49 15-2HB20</p>	500/5 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2JB10		1	1 unit	143	0.190	
	500/5 A, Cl. 1, 5.0 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2JB20		1	1 unit	143	0.190	
	600/5 A, Cl. 0.5, 2.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2KB10		1	1 unit	143	0.190	
	600/5 A, Cl. 0.5 calibrated, 2.5 VA	3NJ41 2 to 3NJ41 4	D	3NJ49 15-2KB11		1	1 unit	143	0.190	
	600/5 A, Cl. 1, 5.0 VA	3NJ41 2 to 3NJ41 4	▶	3NJ49 15-2KB20		1	1 unit	143	0.190	

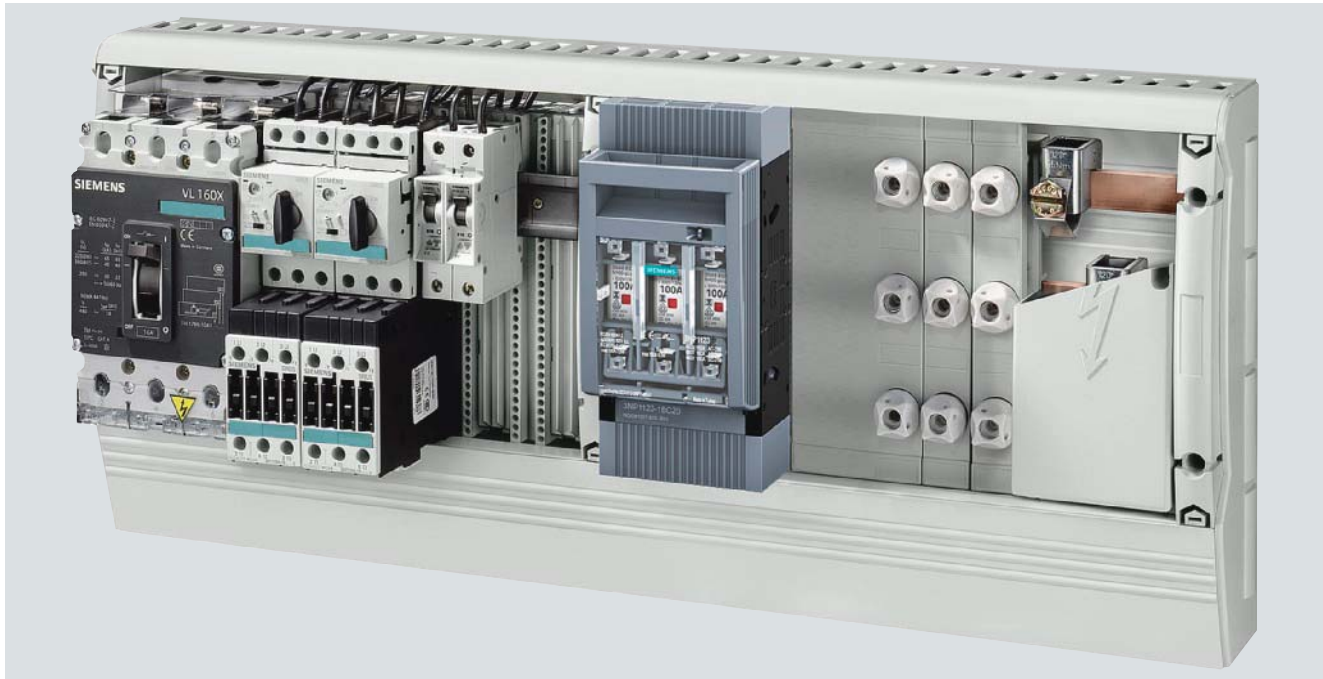
* You can order this quantity or a multiple thereof.

SENTRON 8US Busbar Systems

Introduction

General data

Overview



8US busbar systems with 40 mm busbar center-to-center spacing, completely compartmentalized

Benefits

Compared to conventional configuration in switchgear and control cabinets, this technique allows important cost savings and offers the following advantages: mechanical fixing and electrical contacting are achieved in one action; input wiring is dispensable, use of busbar terminals is reduced to a minimum and it provides a double utilization of the busbar space. All this is effective especially in cases where many tap-off units of the same performance range are required.

During operation, an easily traceable arrangement and rapid and uncomplicated replacement of single devices and assemblies are the most effective advantages. The busbar adapter system is completely finger-safe because it is covered by adapters and switching device holders. A high operational reliability is therefore guaranteed.

Application

Mounting current-limiting (protection) devices such as fuse switch disconnectors and circuit breakers, but also complete load feeders, directly onto busbars has become a commonly used technique.

8US busbar systems are designed for horizontal mounting of the busbars.

More information

Design

8US busbar systems with 40 mm and 60 mm busbar center-to-center spacing as well as flat copper profiles have now become firmly established on the world market. The permissible busbar temperature is a decisive factor when dimensioning the busbars. The busbar temperature is dependent on the current and the current distribution, on the busbar cross-section and the busbar surface, on the position of the busbars, convection and the ambient temperature. The values stated in the following table can only be considered as guide values because the conditions vary with each location. The values are based on uninterrupted current over the whole busbar length.

The busbar runs prove most advantageous when the incoming supply is centrally located and the load is distributed symmetrically on both sides.

Function

Short-circuit strength

The short-circuit strength of the busbar system is dependent on the distance of the busbar supports and on the busbar cross-section.

The short-circuit strength of the whole system is dependent on the short-circuit strength of the busbars and of the adapters with circuit breakers or switch disconnectors (see "Switch Disconnectors" and Chapter 16 "SENTRON Switching and Protection Devices for Power Distribution" --> "Molded-Case Circuit Breakers (MCCB)").

If one of these values is lower than the prospective short-circuit current at the place of installation, a current-limiting protective device has to be mounted upstream of the 8US busbar system. This may also be mounted as a feeder circuit breaker on the busbar system itself.

Technical specifications

Uninterrupted current for busbars, E-Cu bare, at 35 °C ambient temperature according to DIN 43671

Bar dimensions mm	System mm	Uninterrupted current at a busbar temperature of		
		65 °C A	85 °C A	105 °C A
12 × 5	40 + 60	188	248	295
15 × 5	40 + 60	222	293	349
20 × 5	60	274	362	430
25 × 5	60	327	432	513
30 × 5	60	379	500	595
12 × 10	40 + 60	302	398	474
20 × 10	60	427	564	670
30 × 10	60	573	756	900
Special profile up to 1600 A	60	1020	1020	1600

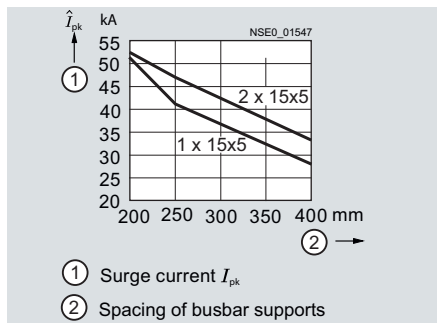
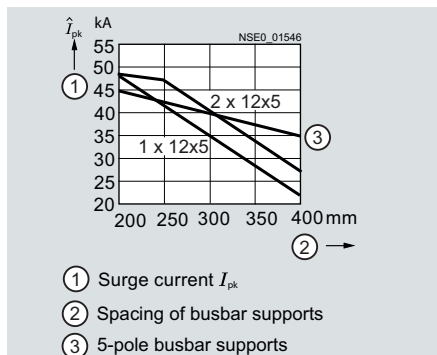
Technical specifications of the system components

Rated insulation voltage U_i	V AC	1000 ¹⁾
Short-circuit strength		
Of the 8US1 busbar adapters		Current limiting due to associated circuit breaker / load feeders up to 50 kA
Of the busbar systems		see Characteristic Curves
Material		
Of the 8US1 busbar supports, busbar adapters and device holders		Fiberglass-strengthened polyamide
Color		RAL 7035, light gray
Temperature resistance		
Busbar supports, busbar adapters, device holders, infeed and covers	°C	120
AWG connecting cables	°C	105
Cover profile	°C	110
Bases, partitions, edge profiles and blanking covers	°C	70
Approvals		
Busbar supports, busbar adapters, device holders and terminals		UR, CSA

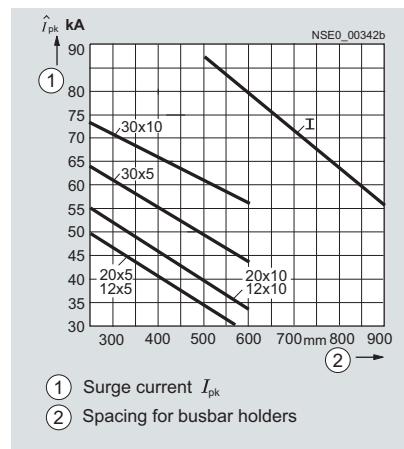
¹⁾ Reduction of U_i when using certain terminals in the 40-mm system, see page 17/122.

Characteristic curves as a function of rated peak withstand current

40 mm busbar system



60 mm busbar system



SENTRON 8US Busbar Systems

40 mm busbar system

General data

Overview



The 40 mm busbar system for the low performance range up to 400 A

The 40 mm busbar system is used in machinery and plant engineering, in motor control centers and in power distribution systems of the low performance range up to 400 A.

The busbar cross-sections are adapted to the rated currents and are available in the sizes 12 x 5 mm, 12 x 10 mm, 15 x 5 mm and 15 x 10 mm. The basic system is configured without covers. If touch protection is required, this is possible with busbar covers.

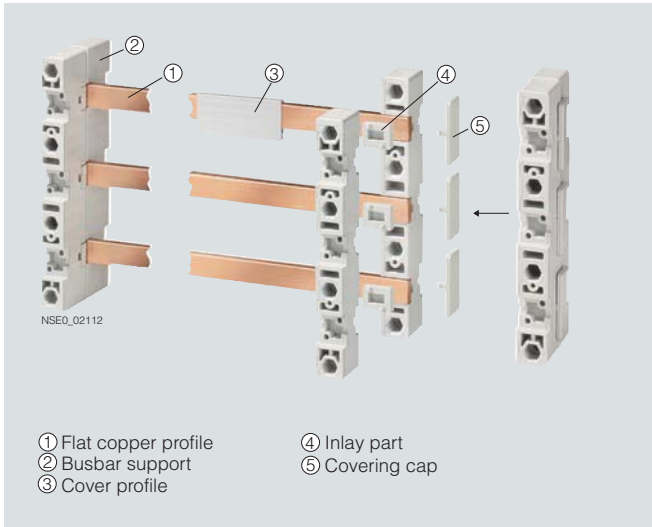
An optimized spectrum of busbar adapters and device holders offers numerous adaptation and mounting options. Terminals round off the product range of the 40 mm busbar system.

SENTRON 8US Busbar Systems

40 mm busbar system


Base assemblies

Overview



40 mm busbar system: Base assembly

Selection and ordering data

Description	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
②④⑤ Busbar supports End and intermediate holders for flat copper profiles 12 mm x 5 mm, 12 mm x 10 mm, 15 mm x 5 mm, 15 mm x 10 mm 3-pole, with inside fixing (PU = 2 busbar supports including inlay parts for bar thickness 5 mm and lateral finger-safe covers)	A	8US19 03-3AB00		1	1 unit	143	0,184
 8US19 03-3AB00 5-pole, 12 mm x 5 mm and 12 mm x 10 mm with inside fixing	L1-L3 + N + PE/N	A	8US19 03-5AA00	1	1 unit	143	0,137
① Flat copper profiles (flat profile, approx. 2.4 m long, bare, according to EN 12167) 12 mm x 5 mm 15 mm x 5 mm	B	8WC5 123		1	1 unit	143	1,100
	B	8WC5 121		1	1 unit	143	1,550
③ Cover profiles for busbars 12 mm x 5 mm 15 mm x 5 mm	1000 mm long	A	8US19 22-2CA00	1	10 units	143	0,200
	1000 mm long	A	8US19 22-2AA00	1	10 units	143	0,156

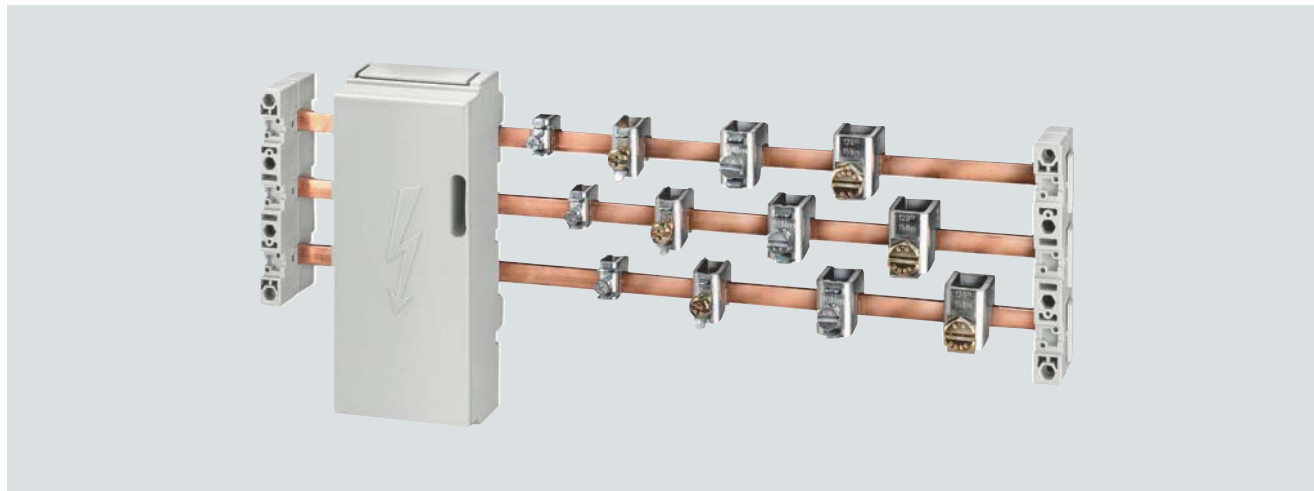
* You can order this quantity or a multiple thereof.

SENTRON 8US Busbar Systems

40 mm busbar system


Infeed and connection components

Overview



40 mm busbar system: Terminals and covers for infeed and connection components

Selection and ordering data

Description	Conductor cross-section mm ²	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Terminals for circular conductors¹⁾²⁾									
5 mm bar thickness									
 <p>Terminals</p>	12 mm × 5 mm, 15 mm × 5 mm	1.5 ... 16 ▶	8US19 21-2AA00		100	100 units	143	0,100	
		4 ... 35 ▶	8US19 21-2AB00		100	50 units	143	4,600	
		16 ... 70 ▶	8US19 21-2AD00		1	50 units	143	0,072	
		16 ... 120 ▶	8US19 21-2AC00		1	50 units	143	0,107	
		1.5 ... 16 ▶	8US19 21-2AA01		1	15 units	143	0,020	
		4 ... 35 ▶	8US19 21-2AB01		1	15 units	143	0,020	
		16 ... 70 ▶	8US19 21-2AD01		1	15 units	143	0,020	
		16 ... 120 ▶	8US19 21-2AC01		1	15 units	143	0,020	
	10 mm busbar thickness								
		12 mm × 10 mm, 15 mm × 10 mm	1.5 ... 16 ▶	8US19 21-2BA00		1	100 units	143	0,020
		4 ... 35 ▶	8US19 21-2BB00		1	50 units	143	0,040	
		16 ... 70 ▶	8US19 21-2BD00		1	50 units	143	0,070	
		16 ... 120 ▶	8US19 21-2BC00		1	50 units	143	0,100	
		1.5 ... 16 ▶	8US19 21-2BA01		1	15 units	143	0,020	
		4 ... 35 ▶	8US19 21-2BB01		1	15 units	143	0,040	
		16 ... 70 ▶	8US19 21-2BD01		1	15 units	143	0,070	
		16 ... 120 ▶	8US19 21-2BC01		1	15 units	143	0,100	
Covers for terminals for circular conductors (attachment to busbar)									
	For terminals up to 120 mm ² 200 mm long, 84 mm wide	▶	8US19 22-1GA00		1	10 units	143	0,126	

¹⁾ When using the 8US19 03-3AB00 busbar support in combination with the 8US19 21-2.D0. or 8US19 21-2.C0. terminals, U_i is reduced to 690 V.

²⁾ When using the 8US19 03-5AA00 busbar support with a 12 mm × 10 mm busbar, U_i is reduced to

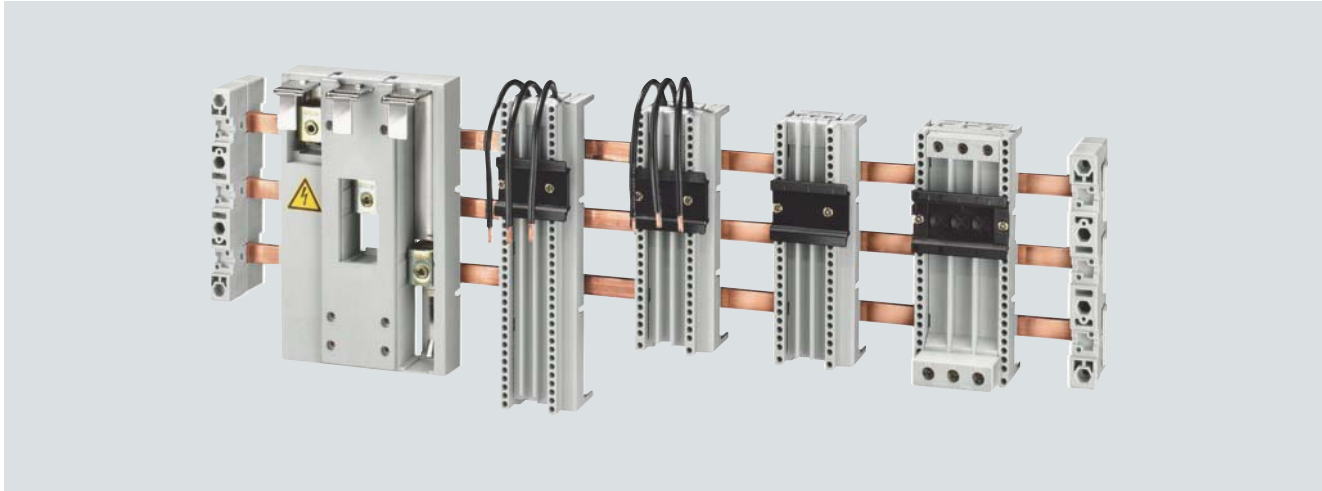
- a) 690 V when using the 8US19 21-2.A0. or 8US19 21-2.B0. terminals.
b) 480 V when using the 8US19 21-2.C0. or 8US19 21-2.D0. terminals.

SENTRON 8US Busbar Systems

40 mm busbar system

Busbar adapters and device holders





Overview



40 mm busbar system: Busbar adapters and device holders

Selection and ordering data

For flat copper profiles according to DIN 46433. Width: 12 mm and 15 mm, thickness 5 mm and 10 mm

	Busbar device adapters	Number of mounting rails (35 mm)	Rated current A	Con- nection lead AWG	Adapters		Rated voltage V	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
					Length mm	Width mm								
For SIRIUS														
Size S00/S0														
	MSPs/circuit breakers	1	25	12	121	45	690	▶	8US10 51-5DJ07		1	1 unit	143	0,106
	MSPs/circuit breakers + lateral auxiliary switch	1	25	12	121	55	690	▶	8US10 61-5DJ07		1	1 unit	143	0,119
	Contactors + overload relay	1	25	12	139	45	690	▶	8US10 51-5DK07		1	1 unit	143	0,164
	Direct start load feeders	1	25	12	182	45	690	▶	8US10 51-5DM07		1	1 unit	143	0,184
	Reversing feeder adapters	1	25	12	182	45	690	▶	8US10 51-5DM07		1	1 unit	143	0,184
	+ Device holders	1	--	--	182	45	--	▶	8US10 50-5AM00		1	1 unit	143	0,182
	+ Connecting wedges (2 units needed for attachment)	--	--	--	--	--	--	▶	8US19 98-1AA00		100	100 units	143	0,100
Size S00 – spring-type														
	Direct start load feeders	1	12.5	14	182	45	690	▶	8US10 51-5CM47		1	1 unit	143	0,193
Size S2														
	MSPs/circuit breakers	1	56	8	139	55	690	▶	8US10 61-5FK08		1	1 unit	143	0,231
	MSPs/circuit breakers + lateral auxiliary switch	1	56	8	139	55	690	▶	8US10 61-5FK08		1	1 unit	143	0,231
	Contactors + overload relay	1	56	8	182	55	690	▶	8US10 61-5FM08		1	1 unit	143	0,278
	Direct start load feeders	1	56	8	242	55	690	▶	8US10 61-5FP08		1	1 unit	143	0,308
	Connecting wedge													

* You can order this quantity or a multiple thereof.

SENTRON 8US Busbar Systems

40 mm busbar system

Busbar adapters and device holders

Busbar device adapters	Number of mounting rails (35 mm)	Rated current A	Con- nection lead AWG	Adapters		Rated voltage V	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
				Length mm	Width mm								
Size S3													
Circuit breakers	--	100	Busbars	182	70	Up to 460 ²⁾	▶	8US11 11-4SM00		1	1 unit	143	0.541
Circuit breakers	1	100	3	182	72	Up to 690 ³⁾	▶	8US10 11-4TM00		1	1 unit	143	0.478
For 3VL circuit breakers⁴⁾⁵⁾													
3VL1	--	160	Busbars	175	108	690	A	8US10 11-4SL01		1	1 unit	143	0.585
3VL2	--	160	Busbars	175	108	690	A	8US10 11-4SL01		1	1 unit	143	0.585
With terminals (at top) for any arrangement of components													
1.5 mm ² ... 4 mm ²	1	25	--	139	45	690	A	8US10 50-5RK07		1	1 unit	143	0,149
1.5 mm ² ... 4 mm ²	1	25	--	182	45	690	A	8US10 50-5RM07		1	1 unit	143	0,177
16 mm ² (top) and 35 mm ² (bottom) ⁶⁾	1	80	--	139	54	690	A	8US10 60-5AK00		1	1 unit	143	0.295
Device holders for lateral attachment to busbar device adapters of the same length													
Device holders	1	--	--	139	45	--	A	8US10 50-5AK00		1	1 unit	143	0,149
Device holders	1	--	--	139	55	--	A	8US10 60-5AK08		1	1 unit	143	0,162
Device holders	1	--	--	182	45	--	▶	8US10 50-5AM00		1	1 unit	143	0,182
Device holders	1	--	--	182	55	--	▶	8US10 60-5AM00		1	1 unit	143	0,197
Connecting wedges (2 units needed for attachment)	--	--	--	--	--	--	▶	8US19 98-1AA00		100	100 units	143	0,100
Side modules for extending busbar device adapters and device holders of the same length													
Side modules	--	--	--	139	13.5	--	A	8US19 98-2BK00		1	4 units	143	0.023
Side modules	--	--	--	182	13.5	--	A	8US19 98-2BM00		1	4 units	143	0.036

1) ≤ 400 V max. 50 kA, 400 V ... 460 V max. 25 kA.

2) Up to 525 V max. 30 kA, 525 V ... 690 V max. 12 kA.

3) Observe the short-circuit strength of the busbar system. Short-circuit strength > 50 kA on request.

4) Usable only for 3VL circuit breakers with line-side box terminal.

5) Can be used simultaneously as feeder unit and tap-off unit.

SENTRON 8US Busbar Systems

40 mm busbar system

Busbar adapters and device holders

For 3NP1 fuse switch disconnectors for snapping onto 40 mm busbar systems

Rated current I_U	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg
For cover level 32 / 70 mm, with reach-around protection for 8US busbar system								
<i>Basic units</i>								
Flat connectors								
160	00 / 000	A	3NP1 133-1BB10		1	1 unit	143	0.980
Box terminals								
160	000	A	3NP1 123-1BB20		1	1 unit	143	0.820
160	00 / 000	A	3NP1 133-1BB20		1	1 unit	143	0.980
<i>With MFM electromechanical fuse monitoring</i>								
Flat connectors								
160	00 / 000	A	3NP1 133-1BB11		1	1 unit	143	1.420
Box terminals								
160	00/000	A	3NP1 133-1BB21		1	1 unit	143	1.420
<i>With electronic EFM 10 fuse monitoring</i>								
Flat connectors								
160	00 / 000	A	3NP1 133-1BB12		1	1 unit	143	1,120
Box terminals								
160	000	A	3NP1 123-1BB22		1	1 unit	143	0.940
160	00 / 000	A	3NP1 133-1BB22		1	1 unit	143	1,120
<i>With electronic EFM 20 fuse monitoring and line monitoring</i>								
Flat connectors								
160	00 / 000	C	3NP1 133-1BB13		1	1 unit	143	1,120
Box terminals								
160	000	C	3NP1 123-1BB23		1	1 unit	143	0.940
160	00 / 000	C	3NP1 133-1BB23		1	1 unit	143	1,120

Note:

Delivered from factory with cable feeder at bottom and convertible by the customer.

For accessories for 3NP1 fuse switch disconnectors see page 17/107.

SENTRON 8US Busbar Systems

40 mm busbar system

Accessories

Selection and ordering data

Description	Busbar length mm	Busbar width mm	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Busbar connection pieces for bars									
12 mm x 5 mm, 12 mm x 10 mm, 15 mm x 5 mm, 15 mm x 10 mm, 20 mm x 5 mm, 20 mm x 10 mm	55		A	8US19 21-2BF00		1	12 units	143	0.070
Mounting rails (35 mm) – plastic									
Complete with fixing screws	45		A	8US19 98-7CA15		1	10 units	143	0.009
	55		A	8US19 98-7CA16		1	10 units	143	0,100
	72		A	8US19 98-4AA00		1	10 units	143	0,143
	90		A	8US19 98-7CA08		1	10 units	143	0,187
	110		A	8US19 98-7CA10		1	10 units	143	0.219
Connection holders									
Fixes the circuit breaker to the mounting rail ¹⁾ (for SIRIUS size S00/S0)			A	8US19 98-1DA00		100	20 units	143	0,100
Screw holders									
For supplementary screw mounting of the feeder (for SIRIUS size S00/S0)			B	8US19 98-1CA00		100	20 units	143	0,100
Spacers									
Fixes the feeder to the busbar adapter (for SIRIUS size S00/S0)			▶	8US19 98-1BA00		100	100 units	143	0,100
Connecting wedges									
For mechanical linking of adapters and device holders (2 units per combination)			▶	8US19 98-1AA00		100	100 units	143	0,100
Load-side terminal strips for busbar adapters									
Complete with supporting element for attachment to busbar adapter and device holder									
3 × 2.5 mm ² (400 V) and 4 × 1.5 mm ² (250 V)	91	45	A	8US19 98-8AM07		1	1 unit	143	0.061
7 × 2.5 mm ² (400 V)	91	54	D	8US19 98-8AA10		1	1 unit	143	0.072



Mounting rail



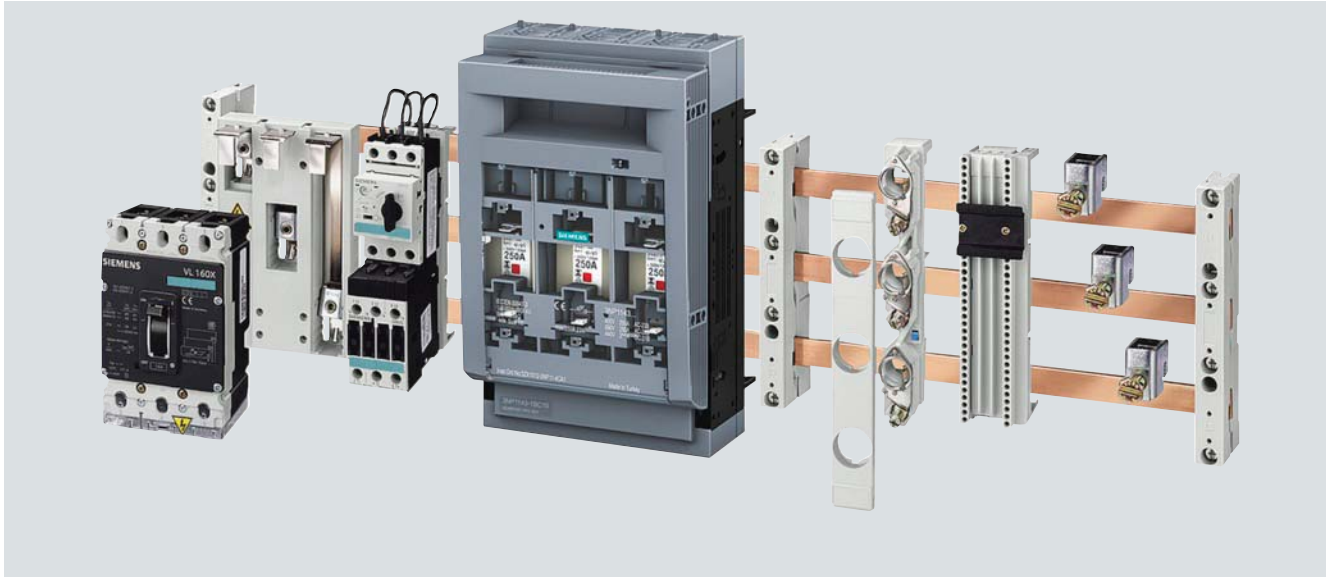
Connecting wedge



8US19 98-8AA10

¹⁾ For 45 mm and 55 mm mounting rail.

Overview



The 60 mm busbar system for the medium and top performance range up to 1600 A, here with for example the 3NP1 switch disconnector, size 3

The 60 mm busbar system is used preferably in control cabinet installation, in motor control centers and in power distribution systems of the medium power range (630 A) and top performance range (1600 A, special profile).

The 60 mm busbar system can be used as a basic system without covers, as a partly compartmented system or as a fully compartmented system with base. The busbar cross-sections are available in the sizes 12 x 5 mm to 30 x 10 mm and as a special profile.

Busbar adapters for SIRIUS, 3VL circuit breakers, 3KA and 3KL switch disconnectors, and 3NP1 and 3NP5 fuse switch disconnectors offer numerous options for configuring this busbar system. Feeder units, terminals and other accessories open up a large range of application.

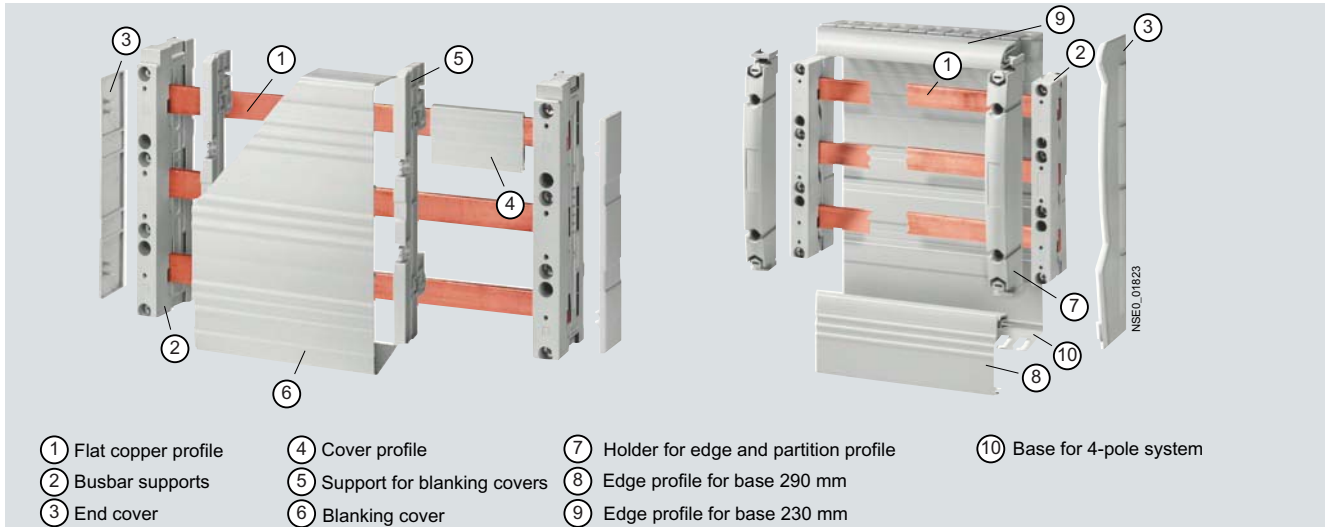
Busbars with a special profile are suitable for applications up to 1600 A. All components of the 60 mm busbar system can be fitted.

SENTRON 8US Busbar Systems

60 mm busbar system




Base assemblies up to 630 A

Overview



60 mm busbar system: Base assemblies up to 630 A













Selection and ordering data

Description	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
							kg	
② Busbar supports								
End and intermediate holders for flat copper profiles 12 mm x 5 mm, 12 mm x 10 mm, 15 mm x 5 mm, 15 mm x 10 mm, 20 mm x 5 mm, 20 mm x 10 mm, 25 mm x 5 mm, 25 mm x 10 mm, 30 mm x 5 mm, 30 mm x 10 mm								
 8US19 23-1AA01	PE/N	A	8US19 23-1AA01	1	10 units	143	0.200	
	3-pole, with outside fixing	L1-L3	A	8US19 23-2AA01	1	10 units	143	0.200
 8US19 23-3AA01	3-pole, with inside fixing	L1-L3	A	8US19 23-3AA01	1	10 units	143	0.200
	4-pole, with inside fixing	L1-L3 + PE/N	A	8US19 23-4AA00	1	10 units	143	0.269
 8US19 23-5AA00	2-pole, with outside fixing		A	8US19 23-5AA00	1	10 units	143	0.200

SENTRON 8US Busbar Systems

60 mm busbar system

Base assemblies up to 630 A






Description	Length	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	mm	mm							kg	
③ End covers										
For covering unterminated busbar ends										
 8US19 22-1AC00	L1-L3		A	8US19 22-1AC00		1	10 units	143	0.020	
 8US19 22-1AB00	L1-L3 + PE/N		A	8US19 22-1AB00		1	1 unit	143	0.055	
For 5SH3 532 holder										
 5SH3 533	Height 230 mm (3-pole)		B	5SH3 533		1	4 units	016	0.038	
 5SH3 534	Height 290 mm (4-pole or 3-pole + cable duct), 1 pack = 2 units (1x right, 1x left)		C	5SH3 534		1	4 units	016	0.048	
④ Cover profiles for busbars										
 8US19 22-2CA00	12 mm × 5 mm	1000	A	8US19 22-2CA00		1	10 units	143	0.200	
 8US19 22-2AA00	15 mm × 5 mm, 20 mm × 5 mm, 25 mm × 5 mm, 30 mm × 5 mm	1000	A	8US19 22-2AA00		1	10 units	143	0,156	
 8US19 22-2BA00	12 mm × 10 mm, 15 mm × 10 mm, 20 mm × 10 mm, 25 mm × 10 mm, 30 mm × 10 mm	1000	A	8US19 22-2BA00		1	10 units	143	0,105	
⑦ Holders for edge profiles and partitions										
 5SH3 532	For 5SH3 528 and 5SH3 530		B	5SH3 532		1	2 units	016	0,106	
Edge profiles¹⁾										
 5SH3 528	For base 230 mm 17 mm × 36 mm, for 3-pole version	1100	B	5SH3 528		1	2 units	016	0.311	
 5SH3 530	For base 290 mm 77 mm × 36 mm, for 4-pole version	1100	C	5SH3 530		1	2 units	016	0.583	
⑤ Supports (for blanking covers)										
 5SH3 536	Mounting on busbar (2 units per section of blanking cover)	1000	190	B	5SH3 536		1	4 units	016	0.040
⑥ Blanking covers										
 5SH3 537	Mounting on 5SH3 536 support for blanking covers	1000	202	A	5SH3 537		1	2 units	016	0.075

¹⁾ When configuring a 3-pole busbar system with the base 230 mm, only ④ 5SH3 528 is required.
When configuring a 4-pole busbar system (or a 3-pole with cable duct) with the 290 mm base, ④ 5SH3 528 and ⑤ 5SH3 530 are required.

SENTRON 8US Busbar Systems

60 mm busbar system

Base assemblies up to 630 A

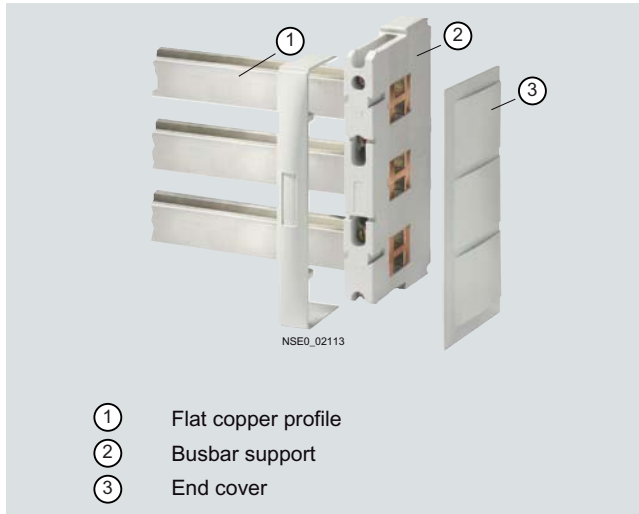
Description	Length	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
	mm	mm							kg
⑩ Bases									
 5SH3 526	3-pole system	1100	230	B	5SH3 526	1	1 unit	016	1,100
	4-pole system (or 3-pole system with cable duct)	1100	290	C	5SH3 527	1	2 units	016	1,300
Partition profiles (for additional touch protection on systems without base)									
 5SH3 531	Slotted 17 mm × 86 mm	1100		C	5SH3 531	1	2 units	016	0,365
	Closed 17 mm × 86 mm	1100		A	8US19 22-1HA00	1	2 units	143	0,070
① Flat copper profiles (flat profile, approx. 2.4 m long, bare, according to EN 12167)									
 8WC5	12 mm × 5 mm			B	8WC5 123	1	1 unit	143	1,100
	15 mm × 5 mm			B	8WC5 121	1	1 unit	143	1,550
	20 mm × 5 mm			B	8WC5 126	1	1 unit	143	1,780
	25 mm × 5 mm			B	8WC5 131	1	1 unit	143	2,240
	30 mm × 5 mm			B	8WC5 133	1	1 unit	143	2,680
	20 mm × 10 mm			B	8WC5 128	1	1 unit	143	3,200
	30 mm × 10 mm			B	8WC5 134	1	1 unit	143	5,360
① Flat copper profiles (flat profile, approx. 2 m long, tinned, according to EN 12167)									
	12 mm × 5 mm			B	8WC5 051	1	1 unit	143	1,100
	15 mm × 5 mm			B	8WC5 052	1	1 unit	143	1,550
	20 mm × 5 mm			B	8WC5 053	1	1 unit	143	1,780
	25 mm × 5 mm			B	8WC5 054	1	1 unit	143	2,240
	30 mm × 5 mm			B	8WC5 055	1	1 unit	143	2,680
	20 mm × 10 mm			B	8WC5 063	1	1 unit	143	3,200
	30 mm × 10 mm			B	8WC5 065	1	1 unit	143	5,360
Busbar connection pieces for bars									
 8US19 21-2BE00	For flat profiles (max. 630 A)								
	20 mm × 5 mm, 20 mm × 10 mm, 25 mm × 5 mm, 25 mm × 10 mm, 30 mm × 5 mm, 30 mm × 10 mm	40		A	8US19 21-2BE00	1	6 units	143	0,070
	For flat profiles (max. 630 A)								
	12 mm × 5 mm, 12 mm × 10 mm, 15 mm × 5 mm, 15 mm × 10 mm, 20 mm × 5 mm, 20 mm × 10 mm	55		A	8US19 21-2BF00	1	12 units	143	0,070
	For flat profiles (max. 630 A)								

SENTRON 8US Busbar Systems

60 mm busbar system

Base assemblies up to 1600 A






Overview



- ① Flat copper profile
- ② Busbar support
- ③ End cover

60 mm busbar system: Base assembly up to 1600 A

Selection and ordering data

Description	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
 Busbar supports 3-pole, end and intermediate holder with finger-safe busbar cover (1 pack = 2 busbar supports + finger-safe end covers)	L1-L3	A	8US19 43-3AA00	1	1 unit	143	1,310
 Flat copper profiles (approx. 2.4 m long, tinned) Special profile up to 1600 A	720 mm ²	A	8US19 48-2AA00	1	1 unit	143	15.360
Cover profile For flat copper profile	1000 mm long	A	8US19 22-2DA00	1	5 units	143	0.200
Busbar connection pieces For special profiles/TT profiles up to 1600 A		A	8US19 41-2BF00	1	3 units	143	1,134
 Partitions, closed 76 mm wide, 2400 mm long For additional touch protection at the top/bottom		C	8US1922-1JA00	1	1 unit	143	0.700
 Support (for blanking covers) Mounting on busbar (2 units per section of blanking cover)	1000	B	5SH3 536	1	4 units	016	0.040
 Blanking cover Mounting on 5SH3 536 support for blanking covers	1000	A	5SH3 537	1	2 units	016	0.075

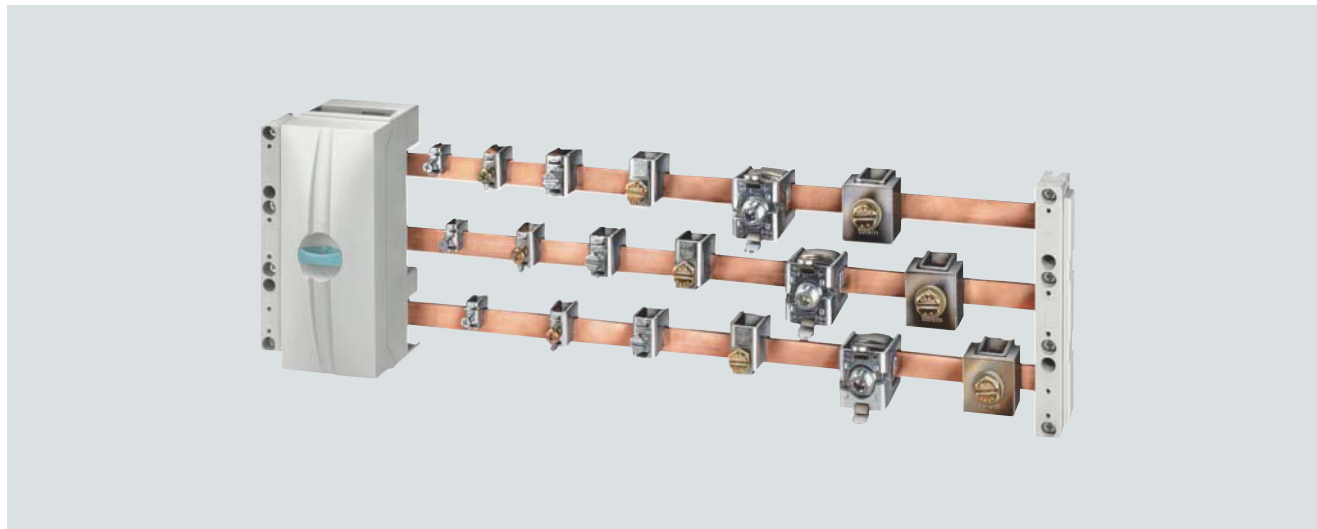
* You can order this quantity or a multiple thereof.

SENTRON 8US Busbar Systems

60 mm busbar system





Infeed and connection components

Overview



60 mm busbar system: Terminals and covers for infeed and connection components







Selection and ordering data

Description	Conductor cross-section mm ²	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Infeeds								
 Connecting terminal plate with cover 3-pole, 200 mm length, 54 mm width	6 ... 50	A	8US19 21-1BA00		1	1 unit	143	0,397
	35 ... 120	A	8US19 21-1AA00		1	1 unit	143	0,607
Outgoing modules for PE/N								
 Connection module for 4-pole (PE/N) up to 16 mm long, 18 mm wide must be attached to an adapter/device holder	242 mm long, 18 mm wide	A	8US12 00-0AA00		1	1 unit	143	0,142
SR60 connecting terminal plates								
 3-pole (shown without cover)	150 ... 300	C	5SH3 535		1	1 unit	016	1,657
Terminal sets								
 3-pole without cover for round cables	120 ... 300	A	8US19 41-2AA03		1	1 unit	143	0,160

SENTRON 8US Busbar Systems

60 mm busbar system

Infeed and connection components

Description	Conductor cross-section mm ²	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
Terminal sets									
 8US19 41-2AA04	3-pole without cover for flat bars up to 32 x 20 mm	A	8US19 41-2AA04		1	1 unit	143	0,140	
 8US19 22-1GC00	Covers for 8US19 41-2AA03/04 terminal set	A	8US19 22-1GC00		1	1 unit	143	0,150	
Terminals for circular conductors									
5 mm busbar thickness¹⁾									
 Terminals	12 mm x 5 mm,	1.5 ... 16 ▶	8US19 21-2AA00		100	100 units	143	0,100	
	15 mm x 5 mm,	4 ... 35 ▶	8US19 21-2AB00		100	50 units	143	4,600	
	20 mm x 5 mm,	16 ... 70 ▶	8US19 21-2AD00		1	50 units	143	0,072	
	25 mm x 5 mm,	16 ... 120 ▶	8US19 21-2AC00		1	50 units	143	0,107	
	30 mm x 5 mm	1.5 ... 16 ▶	8US19 21-2AA01		1	15 units	143	0,020	
		4 ... 35 ▶	8US19 21-2AB01		1	15 units	143	0,020	
		16 ... 70 ▶	8US19 21-2AD01		1	15 units	143	0,020	
		16 ... 120 ▶	8US19 21-2AC01		1	15 units	143	0,020	
20 mm x 5 mm, 25 mm x 5 mm, 30 mm x 5 mm	95 ... 185 ▶	8US19 41-2AA01		1	6 units	143	0,315		
	150 ... 300 ▶	8US19 41-2AA02		1	3 units	143	0,425		
10 mm busbar thickness									
 Terminals	12 mm x 10 mm, 15 mm x 10 mm, 20 mm x 10 mm, 25 mm x 10 mm, 30 mm x 10 mm	1.5 ... 16 ▶	8US19 21-2BA00		1	100 units	143	0,020	
		4 ... 35 ▶	8US19 21-2BB00		1	50 units	143	0,040	
		16 ... 70 ▶	8US19 21-2BD00		1	50 units	143	0,070	
		16 ... 120 ▶	8US19 21-2BC00		1	50 units	143	0,100	
		1.5 ... 16 ▶	8US19 21-2BA01		1	15 units	143	0,020	
		4 ... 35 ▶	8US19 21-2BB01		1	15 units	143	0,040	
		16 ... 70 ▶	8US19 21-2BD01		1	15 units	143	0,070	
		16 ... 120 ▶	8US19 21-2BC01		1	15 units	143	0,100	
20 mm x 10 mm, 25 mm x 10 mm, 30 mm x 10 mm	95 ... 185 ▶	8US19 41-2AA01		1	6 units	143	0,315		
	150 ... 300 ▶	8US19 41-2AA02		1	3 units	143	0,425		
Covers for terminals for circular conductors (attachment to busbar)									
 8US19 22-1GA00	For terminals up to 120 mm ² 200 mm long, 84 mm wide	▶	8US19 22-1GA00		1	10 units	143	0,126	
	For terminals up to 300 mm ² 200 mm long, 270 mm wide	▶	8US19 22-1GA02		1	1 unit	143	0,696	
Terminals									
 8US19 41-2BB00	For cable lugs up to 240 mm ² , 10 mm bar thickness	(threaded bolts M10)	A	8US19 41-2AC00		1	6 units	143	0,368
	For copper bars or laminated conductors 20 mm x 5 mm, 20 mm x 10 mm, 25 mm x 5 mm, 25 mm x 10 mm, 30 mm x 5 mm, 30 mm x 10 mm		A	8US19 41-2BB00		1	6 units	143	0,307
	For 2 x 40 mm x 10 mm		A	8US19 41-2BA00		1	3 units	143	0,824

¹⁾ Cannot be used on a special profile up to 1600 A.

²⁾ Only for 20 mm x 5 mm, 20 mm x 10 mm, 25 mm x 5 mm, 25 mm x 10 mm, 30 mm x 5 mm and 30 mm x 10 mm.

SENTRON 8US Busbar Systems

60 mm busbar system

Busbar adapters and device holders

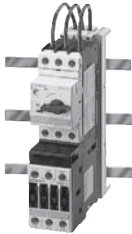
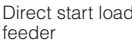

Overview



60 mm busbar system: Busbar adapters and device holders

Selection and ordering data

For flat copper profiles according to DIN 46433. Width 12 mm to 30 mm, thickness 5 mm and 10 mm, and special profiles up to 1600 A


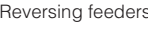


Busbar device adapters	Number of mounting rails (35 mm)	Rated current A	Con- nection lead AWG	Adapters		Rated volt- age V	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg	
				Length mm	Width mm									
For SIRIUS														
Size S00/S0														
	MSPs/circuit breakers	1	25	12	182	45	690	▶	8US12 51-5DM07		1	1 unit	143	0,183
	Contactors + overload relay	1	25	12	182	45	690	▶	8US12 51-5DM07		1	1 unit	143	0,183
	Direct start load feeders	1	25	12	182	45	690	▶	8US12 51-5DM07		1	1 unit	143	0,183
	Reversing feeder adapters	1	25	12	182	45	690	▶	8US12 51-5DM07		1	1 unit	143	0,183
	Direct start load feeder + Device holders ¹⁾	1	--	--	182	45	--	▶	+ 8US12 50-5AM00		1	1 unit	143	0,158
	Connecting wedge (2 units needed for attachment)	--	--	--	--	--	--	▶	+ 8US19 98-1AA00	100	100 units	143	0,100	
Size S00 – spring-type														
	Direct start load feeders	1	12.5	14	182	45	690	▶	8US12 51-5CM47		1	1 unit	143	0,190

¹⁾ Only for size "S00"; the 55 mm wide 8US1260-5AM00 device holder must be used for size "S0"

SENTRON 8US Busbar Systems

60 mm busbar system

Busbar adapters and device holders

Busbar device adapters	Number of mounting rails (35 mm)	Rated current	Con-nection lead	Adapters		Rated voltage	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
				Length	Width									
		A	AWG	mm	mm	V							kg	
Size S2														
	MSPs/circuit breakers	1	56	8	182	55	690	▶	8US12 61-5FM08		1	1 unit	143	0.263
	Contactors + overload relay	1	56	8	182	55	690	▶	8US12 61-5FM08		1	1 unit	143	0.263
	Direct start load feeders	1	56	8	242	55	690	▶	8US12 61-5FP08		1	1 unit	143	0.292
	Reversing feeder adapters +	1	56	8	242	55	690	▶	8US12 61-5FP08		1	1 unit	143	0.292
	Device holders ¹⁾	--	--	--	242	54	--	▶	8US12 60-5AP00		1	1 unit	143	0.243
	Reversing feeders + Connecting wedges (2 units needed for attachment)	--	--	--	--	--	--	▶	8US19 98-1AA00		100	100 units	143	0,100
	Connecting wedge													
Size S3														
	MSPs/circuit breakers	--	100	Busbars	182	70	Up to 460 ³⁾	▶	8US11 11-4SM00		1	1 unit	143	0.541
	MSPs/circuit breakers ²⁾	1	100	4	182	72	Up to 690 ⁴⁾	A	8US12 11-4TM00		1	1 unit	143	0.498
For 3VL circuit breakers⁶⁾														
	3VL1 ⁷⁾	--	160	Busbars	175	108	690	A	8US12 11-4SL01		1	1 unit	143	0.597
	3VL2 ⁷⁾	--	160	Busbars	175	108	690	A	8US12 11-4SL01		1	1 unit	143	0.597
	3VL3 ⁷⁾	--	250	Busbars	175	108	690	A	8US12 11-4SL00		1	1 unit	143	0.662
	3VL1 to 3VL4 and also with RCD module ⁷⁾	--	400	M10 stud terminal	320	184	690	A	8US12 10-4AF00		1	1 unit	143	2.769
								A	8US19 27-4AF01		1	1 unit	143	0.575
	8US10 11-4SL01	--	580	M8 stud terminal	325	184	690	A	8US12 13-4AF00		1	1 unit	143	2.880
for switch disconnectors														
	3KA52 ⁵⁾ 3KA53 ⁵⁾ 3KL52 ⁵⁾ 3KL53 ⁵⁾	--	630	M10 stud terminal	320	184	690	A	8US12 10-4AF00		1	1 unit	143	2.769
	3KA55 ⁵⁾ 3KA57 ⁵⁾ 3KA58 ⁵⁾ 3KL55 ⁵⁾ 3KL57 ⁵⁾	--	630	M10 stud terminal	320	250	690	A	8US12 10-4AG00		1	1 unit	143	3.060

1) Spacer and fixing screw for reversing contactor are included in the scope of supply.

2) According to UL 508 rated current 80A.

3) ≤ 400 V max. 50 kA, 400 V ... 460 V max. 25 kA.

4) Up to 525 V max. 30 kA, 525 V ... 690 V max. 12 kA.

5) Without connecting cables. The connecting cable between adapter and device should be manufactured in accordance with the rated current as a round cable, e. g. H07V-R with cable lug, or as a flat conductor for a M10 bolt terminal.




6) Observe the short-circuit strength of the busbar system. Short-circuit strength > 50 kA on request.

7) Usable only for 3VL circuit breakers with line-side box terminal.

SENTRON 8US Busbar Systems

60 mm busbar system

Busbar adapters and device holders

Busbar device adapters	Number of mounting rails (35 mm)	Rated current A	Con- nection lead AWG	Adapters		Rated volt- age V	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
				Length mm	Width mm								
For 3NP5 fuse switch disconnectors													
3NP50 60 (NH00)	--	160	Busbars	175	108	690	A	8US12 91-4SB00		1	1 unit	143	0,551
3NP52 ¹⁾ , 3NP53 ¹⁾ , 3NP54 ²⁾	--	630	M10 stud terminal	320	250	690	A	8US12 10-4AG00		1	1 unit	143	3,060
Busbar device adapters with terminals (at top) for any arrange- ment of components													
1.5 mm ² ... 4 mm ²	1	25	--	182	45	690	A	8US12 50-5RM07		1	1 unit	143	0,174
	8US12 50-5RM07												
Device holders for lateral attachment to busbar device adapters of the same length													
Device hold- ers	1	--	--	182	45	--	▶	8US12 50-5AM00		1	1 unit	143	0,158
Device hold- ers	1	--	--	182	55	--	▶	8US12 60-5AM00		1	1 unit	143	0,202
Device hold- ers	--	--	--	242	54	--	▶	8US12 60-5AP00		1	1 unit	143	0,243
Connecting wedges (2 units needed for attachment)	--	--	--	--	--	--	▶	8US19 98-1AA00		100	100 units	143	0,100
	Connecting wedge												
Side modules for extending busbar device adapters and device holders of the same length													
Side modules	--	--	--	182	13.5	--	A	8US19 98-2BM00		1	4 units	143	0,036
Side modules	--	--	--	200	9	--	A	8US19 98-2BJ10		1	1 unit	143	0,023
	8US19 98-2BM00												

1) Without connecting cables. The connecting cable between adapter and device should be manufactured in accordance with the rated current as a round cable, e. g. H07V-R with cable lug, or as a flat conductor for a M10 bolt terminal.





2) Without connecting cables. The connecting cable between adapter and device should be manufactured in accordance with the rated current as a round cable, e. g. H07V-R, bared at both ends for tunnel terminals.

SENTRON 8US Busbar Systems

60 mm busbar system

Busbar adapters and device holders

For 3NP1 fuse switch disconnectors for snapping onto 60 mm busbar systems

Rated current I_U	LV HRC fuse links acc. to IEC 60269-1	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
A	Size							kg
For cover level 32 / 70 mm, with reach-around protection for 8US busbar system								
<i>Basic units</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BC10	1	1 unit	143	0.980
	250	1 and 0	A	3NP1 143-1BC10	1	1 unit	143	2.850
	400	2 and 1	A	3NP1 153-1BC10	1	1 unit	143	4.760
	630	3 and 2	A	3NP1 163-1BC10	1	1 unit	143	6.840
Box terminals								
	160	000	A	3NP1 123-1BC20	1	1 unit	143	0.820
3NP1 133-1BC20	160	00 / 000	A	3NP1 133-1BC20	1	1 unit	143	0.980
	250	1 and 0	A	3NP1 143-1BC20	1	1 unit	143	2.850
	400	2 and 1	A	3NP1 153-1BC20	1	1 unit	143	4.990
	630	3 and 2	A	3NP1 163-1BC20	1	1 unit	143	7.040
<i>With MFM electromechanical fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BC11	1	1 unit	143	1.420
	250	1 and 0	A	3NP1 143-1BC11	1	1 unit	143	3.290
	400	2 and 1	A	3NP1 153-1BC11	1	1 unit	143	5.200
	630	3 and 2	A	3NP1 163-1BC11	1	1 unit	143	7.280
Box terminals								
3NP1 133-1BC21	160	00 / 000	A	3NP1 133-1BC21	1	1 unit	143	1.420
	250	1 and 0	A	3NP1 143-1BC21	1	1 unit	143	3.290
	400	2 and 1	A	3NP1 153-1BC21	1	1 unit	143	5.430
	630	3 and 2	A	3NP1 163-1BC21	1	1 unit	143	7.480
<i>With electronic EFM 10 fuse monitoring</i>								
Flat connectors								
	160	00 / 000	A	3NP1 133-1BC12	1	1 unit	143	1,120
	250	1 and 0	A	3NP1 143-1BC12	1	1 unit	143	2,990
	400	2 and 1	A	3NP1 153-1BC12	1	1 unit	143	4,900
	630	3 and 2	A	3NP1 163-1BC12	1	1 unit	143	6,980
Box terminals								
3NP1 133-1BC22	160	000	A	3NP1 123-1BC22	1	1 unit	143	0,940
	160	00 / 000	A	3NP1 133-1BC22	1	1 unit	143	1,120
	250	1 and 0	A	3NP1 143-1BC22	1	1 unit	143	2,990
	400	2 and 1	A	3NP1 153-1BC22	1	1 unit	143	5,130
	630	3 and 2	A	3NP1 163-1BC22	1	1 unit	143	7,180
<i>With electronic EFM 20 fuse monitoring and line monitoring</i>								
Flat connectors								
	160	00 / 000	C	3NP1 133-1BC13	1	1 unit	143	1,120
	250	1 and 0	C	3NP1 143-1BC13	1	1 unit	143	2,990
	400	2 and 1	C	3NP1 153-1BC13	1	1 unit	143	4,900
	630	3 and 2	C	3NP1 163-1BC13	1	1 unit	143	6,980
Box terminals								
3NP1 133-1BC23	160	000	C	3NP1 123-1BC23	1	1 unit	143	0,940
	160	00 / 000	C	3NP1 133-1BC23	1	1 unit	143	1,120
	250	1 and 0	C	3NP1 143-1BC23	1	1 unit	143	2,990
	400	2 and 1	C	3NP1 153-1BC23	1	1 unit	143	5,130
	630	3 and 2	C	3NP1 163-1BC23	1	1 unit	143	7,180

Note:

Delivered from factory with cable feeder at bottom and convertible by the customer.

For accessories for 3NP1 fuse switch disconnectors see page 17/88.

SENTRON 8US Busbar Systems




















60 mm busbar system

Bus-mounting fuse bases

Selection and ordering data

- According to DIN VDE 0636
- With open captive ± screws
- For attachment to industry-standard, unprocessed copper busbars with 12 mm to 30 mm bar width.

For flat copper profiles according to DIN 46433. Width 12 mm to 30 mm, thickness 5 mm and 10 mm, and special profiles up to 1600 A

Size	Rated current A	Rated voltage V	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
Mounting components									
NEOZED SR60 bus-mounting bases									
	For 5 mm bar thickness, for NEOZED adapter sleeves, 3-pole D02								
	63	400	A	5SG6 202		1	4 units	016	0,141
	Excess width with clearance for wiring D02								
	63	400	B	5SG6 204		1	4 units	016	0,154
	For bar thickness 10 mm for NEOZED adapter sleeves 3-pole D02								
	63	400	B	5SG6 203		1	4 units	016	0,138
	Excess width with clearance for wiring D02								
	63	400	B	5SG6 205		1	4 units	016	0,149
DIAZED SR60 bus-mounting bases									
	For bar thickness 5 mm, for use of DIAZED SR60 adapter rings, 3-pole DII								
	25	500	B	5SF6 014		1	2 units	016	0,230
	DIII								
	63	690	B	5SF6 214		1	2 units	016	0,318
	For use of DIAZED screw adapters 3-pole DII								
	25	500	B	5SF6 015		1	2 units	016	0,222
	DIII								
	63	690	B	5SF6 215		1	2 units	016	0,310
	For bar thickness 10 mm For use of DIAZED SR60 adapter rings 3-pole DII								
	25	500	B	5SF6 016		1	2 units	016	0,233
	DIII								
	63	690	B	5SF6 216		1	2 units	016	0,316
	For use of DIAZED screw adapters 3-pole DII								
	25	500	B	5SF6 017		1	2 units	016	0,220
	DIII								
	63	690	B	5SF6 217		1	2 units	016	0,328
Mounting components									
NEOZED SR60 covers									
	D02								
			27	A	5SH5 241		1	4 units	016
	Excess width with clearance for wiring D02								
			36	B	5SH5 242		1	4 units	016
	With double width for more free space for wiring D02								
			54	C	5SH5 243		1	4 units	016
DIAZED SR60 covers									
	DII								
			42	B	5SH2 042		1	2 units	016
	DIII								
			57	B	5SH2 242		1	2 units	016
	With double width for more free space for wiring DII								
			84	C	5SH2 043		1	2 units	016
	DIII								
			114	C	5SH2 243		1	2 units	016





SENTRON 8US Busbar Systems

60 mm busbar system

Accessories

Selection and ordering data

For flat copper profiles according to DIN 46433. Width 12 mm to 30 mm, thickness 5 mm and 10 mm, and special profiles up to 1600 A

Description	Length	Width	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.	
	mm	mm							kg	
Busbar connection pieces for bars										
 8US19 21-2BF00	20 mm × 5 mm, 20 mm × 10 mm, 25 mm × 5 mm, 25 mm × 10 mm, 30 mm × 5 mm, 30 mm × 10 mm	40	A	8US19 21-2BE00		1	6 units	143	0.070	
	12 mm × 5 mm, 12 mm × 10 mm, 15 mm × 5 mm, 15 mm × 10 mm, 20 mm × 5 mm, 20 mm × 10 mm	55	A	8US19 21-2BF00		1	12 units	143	0.070	
Mounting rails (35 mm) – plastic										
  Mounting rail	Complete with fixing screws			8US19 98-7CA15		1	10 units	143	0.009	
			45	A	8US19 98-7CA16		1	10 units	143	0,100
			72	A	8US19 98-4AA00		1	10 units	143	0,143
			90	A	8US19 98-7CA08		1	10 units	143	0,187
		110	A	8US19 98-7CA10		1	10 units	143	0,219	
Connection holders										
	Fixes the circuit breaker to the mounting rail ¹⁾ (for SIRIUS size S00/S0)		A	8US19 98-1DA00		100	20 units	143	0,100	
Screw holders										
	For supplementary screw mounting of the feeder (for SIRIUS size S00/S0)		B	8US19 98-1CA00		100	20 units	143	0,100	
Spacers										
	Fixes the feeder to the busbar adapter (for SIRIUS size S00/S0)		▶	8US19 98-1BA00		100	100 units	143	0,100	
Connecting wedges										
	For mechanical linking of busbar adapter and device holder (2 units per combination)		▶	8US19 98-1AA00		100	100 units	143	0,100	
Load-side terminal strips for busbar adapters										
 Load-side terminal strip	Complete with supporting element for attachment to busbar adapter and device holder									
	3 × 2.5 mm ² (400 V) and 4 × 1.5 mm ² (250 V)	91	45	A	8US19 98-8AM07	1	1 unit	143	0.061	
	7 × 2.5 mm ² (400 V)	91	54	D	8US19 98-8AA10	1	1 unit	143	0.072	

¹⁾ For 45 mm and 55 mm mounting rail.

SENTRON 8US Busbar Systems

Notes



Software for Power Distribution



18/2 Introduction

Planning the Power Distribution System with SIMARIS

18/4 SIMARIS design

18/5 SIMARIS curves

Configuring, Visualizing and Controlling with SIMATIC

18/6 SIMATIC PCS 7 powerrate

18/8 SIMATIC WinCC powerrate

18/10 SIMATIC PCS 7 Library PAC3200

18/11 3WL/3VL function block library for SIMATIC PCS 7

18/12 PAC3200 function block library for SIMATIC WinCC

Configuring, Visualizing and Controlling with SENTRON

18/13 Switch ES Power

Technical Information

can be found at

www.siemens.com/lowvoltage/support

under Product List:

- Technical Specifications

under Entry List:

- Updates
- Downloads
- FAQ
- Manuals
- Characteristic curves
- Certificates

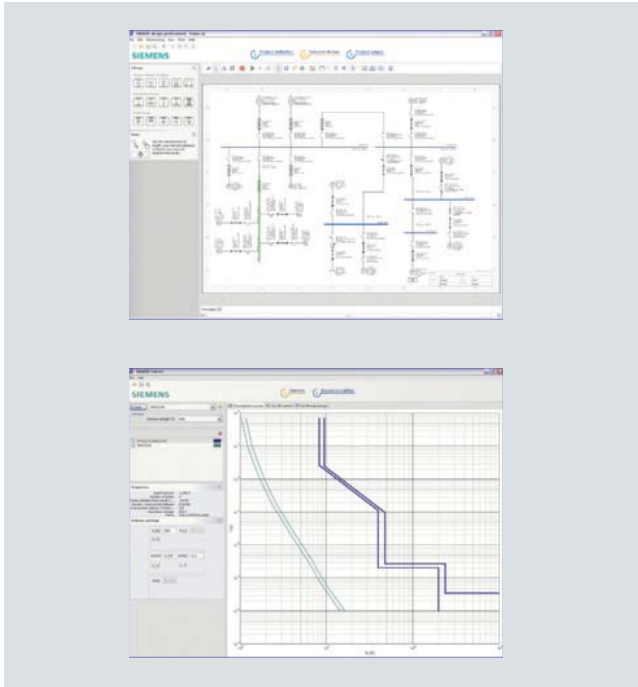
and at

www.siemens.com/lowvoltage/configurators

- Configurators

Introduction

Overview



SIMARIS design

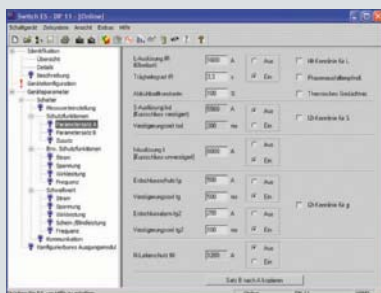
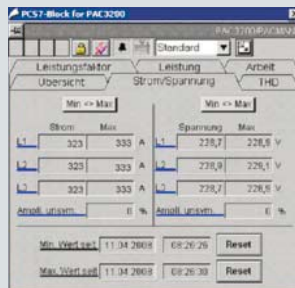
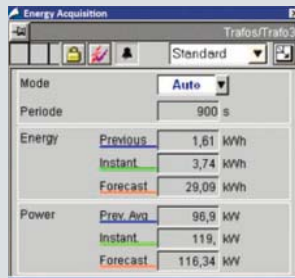
Software tool for the quick and effective dimensioning of power distribution for non-residential and industrial buildings:

- Dimensioning on the basis of real products according to acknowledged technical rules and standards (VDE, IEC)
- Automatic access to an integrated product database
- Easy implementation and modification in the planning and realization concept
- Reduction of routine work

SIMARIS curves

Software tool for quick and easy comparison of the tripping characteristics of Siemens low-voltage controls:

- Characteristic curve display and overview
- Device selection via order number or selection aid
- Saving of selected devices as favorites
- Saving of several characteristic curves, incl. settings, as over-all project



SIMATIC PCS 7 powerrate, SIMATIC WinCC powerrate

SIMATIC PCS 7 and WinCC powerrate are add-ons to PCS 7 and WinCC respectively and throw light on power consumption from the infeed to the load.

- Identification of power-intensive consumer devices and processes in order to introduce measures for improving power efficiency
- Comparison of consumption profiles for greater efficiency of process design
- Optimizing the company according to energy parameters based on an assessment of consumption and costs
- Complying with the contractually agreed power limit, thus preventing higher power supply costs or penalty payments

SIMATIC PCS 7 Library PAC3200 and SENTRON PAC3200 function block library for SIMATIC WinCC

The SENTRON PAC3200 function block libraries enable the seamless integration of the SENTRON PAC3200 multifunction measuring instrument in the PCS 7 process world or in WinCC.

3WL/3VL function block library for SIMATIC PCS 7

The 3WL/3VL function block library enables the seamless integration of the 3WL/3VL circuit breakers in the PCS 7 process world.

Switch ES Power

Shared software platform for communication-capable SENTRON 3WL and SENTRON 3VL circuit breakers:

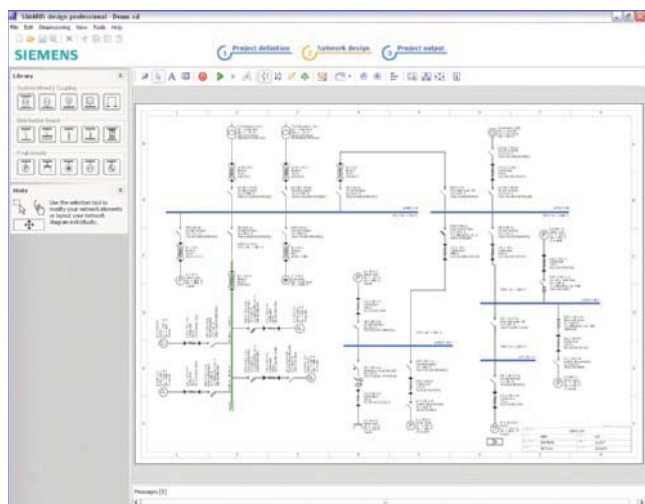
- Parameterization, documentation, operation and monitoring in one software
- Clear representation of all available parameters
- All the available status information and measured values are displayed in dialog boxes
- Software for SENTRON 3WL and SENTRON 3VL

Software for Power Distribution

Planning the Power Distribution System with SIMARIS

SIMARIS design

Overview



SIMARIS design is a software tool for the quick and effective dimensioning of power distribution for non-residential and industrial buildings.

In the planning phase already, the complete circuit can be dimensioned on the basis of real products. This avoids additional costs due to uncoordinated systems in the implementation phase. The right components and distribution systems for the case in question are selected automatically in the light of the product data stored in SIMARIS design.

Every configuration of the electric power distribution is subject to frequent change and adaptation in the implementation phase as well as in the planning phase. SIMARIS design incorporates each change into the supply concept and automatically checks its reliability in terms of the regulations and standards currently in force.

Even an analysis of selectivity, for example for safety power supply elements, can be simply performed with SIMARIS design. All these steps are precisely documented in SIMARIS design.

More information and order options can be found on the Internet at: www.siemens.com/simarisdg

Benefits

- Reduction of routine work
- Dimensioning on the basis of real products according to acknowledged technical rules and standards
- Integrated product database
- Detailed knowledge of products and systems not required
- Easy implementation and modification in the planning and realization concept
- Clear-cut presentation of changes with specification of the revision date
- Detailed parts lists with exact product descriptions
- Easy adaptation to changes in use or expansions
- Comprehensive documentation with simple data transfer (Office, CAD etc.)

Application

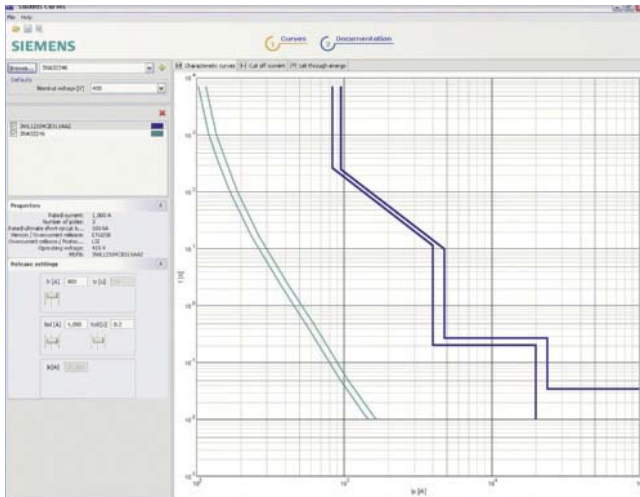
SIMARIS design is suitable for dimensioning electric power distribution systems in all industrial and non-residential buildings. From shopping centers to hospitals and production buildings – with SIMARIS design it is possible to reduce the amount of work required for the overall planning of power distribution systems and hence the time spent on selecting and dimensioning the necessary equipment.

Software for Power Distribution

Planning the Power Distribution System with SIMARIS

SIMARIS curves

Overview



SIMARIS curves is a software tool for quick and easy comparison of the tripping characteristics of Siemens low-voltage controls and fuses.

With SIMARIS curves it is possible to simulate parameter settings on protection equipment in order to obtain an overview of the selectivity conditions in the system. The respective characteristic curve is selected by direct entry of the Siemens order number or with a user-friendly selection tool. Individual products with defined attributes can be saved as favorites and be called up again. Tripping characteristics with tolerance ranges are offered along with let-through current and let-through power characteristic curves. A clearly structured print-out provides documentation of the selected curves and their respective settings.

More information and order options can be found on the Internet at: www.siemens.com/simariscurves

Benefits

- Characteristic curve display and overview
- Overview of selectivity conditions
- Clearly structured catalog selection
- Device selection via order number or selection aid
- Saving of selected devices as favorites
- Saving of several characteristic curves, including settings, as overall project
- User-friendly system documentation

Application

SIMARIS curves is a software tool for displaying tripping characteristics, let-through power curves and let-through current curves of Siemens low-voltage controls and fuses. From shopping centers to hospitals and production buildings – with SIMARIS curves the required curves can be quickly called up and documented in the required output language.

Software for Power Distribution

Configuring, Visualizing and Controlling with SIMATIC

SIMATIC PCS 7 powerrate

Overview



SIMATIC PCS 7 is an add-on to PCS 7 which throws light on power consumption from the feed to the load. Power data are continuously collected, archived and processed further. With an exact knowledge of the consumption profile it is possible to identify savings potential, optimize your power supply conditions and hence lower your power costs. Monitoring the contractually agreed power limit helps on the one hand to prevent unnecessarily high power prices or penalties and on the other hand to make full use of the fixed power limit.

Batch-related consumption recording enables the exact recording and evaluation of power consumption per batch.

The integration of switches through digital inputs/outputs enables the monitoring or indication of switch status and, with suitable authorization, remote switching. With integration through DPV1, selected measured values and signals of the SENTRON PAC3200 and SENTRON PAC4200 multifunction measuring instruments can be indicated online.

Data recorded and archived by SIMATIC PCS 7 powerrate can be exported to Excel, and they can also be presented in different reports.

Full integration in PCS 7 enables the easy use of standard interfaces or standard functionalities from PCS 7.

Components

SIMATIC PCS 7 powerrate is made up of the following components:

- Function blocks for the acquisition and processing of power data
- Faceplates for the presentation and processing of power data
- Function blocks for implementing load management (calculating trends, monitoring limits, enabling/disabling loads)
- Function blocks for batch-related consumption recording
- Function blocks for the integration of measuring devices and switches
- Other function blocks for example for time synchronization, data buffering or data exchange with archives
- Faceplates for presenting results and for entering values (e. g. for configuration or from manual measured values)
- Excel-based reports for allocating power data to cost centers, for batch-related evaluations and for determining and presenting the duration curve
- Exporting data to Excel

Benefits

- Identification of power-intensive consumer devices and processes in order to introduce measures for improving power efficiency
- Comparison of consumption profiles for greater efficiency of process design
- Optimizing the company according to energy parameters based on an assessment of consumption and costs
- Complying with the contractually agreed power limit, thus preventing higher power supply costs or penalty payments
- Integration of the SENTRON PAC3200 and SENTRON PAC4200 measuring devices, with a quick overview of selected measured values and signals
- Integration of switches, with an overview of switch status and switching possibilities
- Exact assignment and comparison of the consumption data of certain work processes through batch-related consumption recording

Application

SIMATIC PCS 7 powerrate is used in all areas in which PCS 7 is used and energy efficiency considerations play a major role. Full integration in PCS 7 means that there is no need for a special system environment. Predefined function blocks and symbols give you the assurance of building on tested and certified product components, with interfaces which enable customized expandability.

Software for Power Distribution

Configuring, Visualizing and Controlling with SIMATIC

SIMATIC PCS 7 powerrate

Selection and ordering data

SIMATIC PCS 7 V 6.1 SP1, V 6.1 SP2 and V 7.0 SP1

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIMATIC PCS 7 powerrate V 3.0							
<ul style="list-style-type: none"> Trial license Engineering license limited to 30 days 	B	3ZS2 785-1CC30-0YG7		1	1 unit	133	0.230
<ul style="list-style-type: none"> Engineering license and unlimited runtime license for operation on one PCS 7 OS (single workstation system or server) and any number of automation systems (AS). For use on additional PCS 7 OS units you need one engineering license per PCS 7 OS. The PAC3200 and 3VL/3WL function block libraries for SIMATIC PCS 7 are supplied free in addition to the license. 	B	3ZS2 785-1CC30-0YG0		1	1 unit	133	0.230
Upgrade from SIMATIC PCS 7 powerrate V 2.0 to V 3.0							
<ul style="list-style-type: none"> Engineering license and unlimited runtime license for operation on one PCS 7 OS (single workstation system or server) and any number of automation systems (AS). For use on additional PCS 7 OS units you need one engineering license per PCS 7 OS. The PAC3200 and 3VL/3WL function block libraries for SIMATIC PCS 7 are supplied free in addition to the license. 	B	3ZS2 785-1CC30-0YEO		1	1 unit	133	0.230

More information

You can find further general information on the Internet at:
www.siemens.com/powermanagementsystem

Information how to use SIMATIC PCS 7 powerrate can be found under:
support.automation.siemens.com/WW/view/en/38823708

Software for Power Distribution

Configuring, Visualizing and Controlling with SIMATIC

SIMATIC WinCC powerrate

Overview



SIMATIC WinCC powerrate is an add-on to WinCC which throws light on power consumption from the infeed to the load. Power data are continuously collected, archived and processed further. With an exact knowledge of the consumption profile it is possible to identify savings potential, optimize your power supply conditions and hence lower your power costs. Monitoring the contractually agreed power limit helps on the one hand to prevent unnecessarily high power prices or penalties and on the other hand to make full use of the fixed power limit.

Batch-related consumption recording enables the exact recording and evaluation of power consumption per batch.

The integration of switches through digital inputs/outputs enables the monitoring or indication of switch status and, with suitable authorization, remote switching. With integration through DPV1, selected measured values and signals of the SENTRON PAC3200 and SENTRON PAC4200 multifunction measuring instruments can be indicated online.

Data recorded and archived by SIMATIC WinCC powerrate can be exported to Excel, and they can also be presented in different reports.

Full integration in WinCC enables the easy use of standard interfaces or standard functionalities from WinCC.

Components

SIMATIC Win CC powerrate is made up of the following components:

- Function blocks for the acquisition and processing of power data
- Faceplates for the presentation and processing of power data
- Function blocks for implementing load management (calculating trends, monitoring limits, enabling/disabling loads)
- Function blocks for batch-related consumption recording
- Function blocks for the integration of measuring devices and switches
- Other function blocks for example for time synchronization, data buffering or data exchange with archives
- Faceplates for presenting results and for entering values (e. g. for configuration or from manual measured values)
- Excel-based reports for allocating power data to cost centers, for batch-related evaluations and for determining and presenting the duration curve
- Exporting data to Excel

Benefits

- Identification of power-intensive consumer devices and processes in order to introduce measures for improving power efficiency
- Comparison of consumption profiles for greater efficiency of process design
- Optimizing the company according to energy parameters based on an assessment of consumption and costs
- Complying with the contractually agreed power limit, thus preventing higher power supply costs or penalty payments
- Integration of the SENTRON PAC3200 and SENTRON 4200 measuring devices, with a quick overview of selected measured values and signals
- Integration of switches, with an overview of switch status and switching possibilities
- Exact assignment and comparison of the consumption data of certain work processes through batch-related consumption recording

Application

SIMATIC WinCC powerrate is used in all areas in which WinCC is used and energy efficiency considerations play a major role. Full integration in WinCC means that there is no need for a special system environment. Predefined function blocks and symbols give you the assurance of building on tested product components, with interfaces which enable customized expandability. SIMATIC WinCC powerrate V 3.0 can be used with SIMATIC S7-317 and higher.

Software for Power Distribution

Configuring, Visualizing and Controlling with SIMATIC

SIMATIC WinCC powerrate

Selection and ordering data

SIMATIC WinCC V 6.2 SP2 and V 7.0

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIMATIC WinCC powerrate V 3.0							
<ul style="list-style-type: none"> Trial license Engineering license limited to 30 days 	B	3ZS2 795-1CC30-0YG7		1	1 unit	133	0.230
<ul style="list-style-type: none"> Engineering license and unlimited runtime license for operation on one WinCC OS (single workstation system or server) and any number of automation systems (AS). For use on additional WinCC OS units you need one engineering license per WinCC OS. The PAC3200 function block library for SIMATIC WinCC is supplied free in addition to the license. 	B	3ZS2 795-1CC30-0YG0		1	1 unit	133	0.230
Upgrade from SIMATIC WinCC powerrate V 2.0 to V 3.0							
<ul style="list-style-type: none"> Engineering license and unlimited runtime license for operation on one WinCC OS (single workstation system or server) and any number of automation systems (AS). For use on additional WinCC OS units you need one engineering license per WinCC OS. The PAC3200 function block library for SIMATIC WinCC is supplied free in addition to the license. 	B	3ZS2 795-1CC30-0YE0		1	1 unit	133	0.230

More information

You can find further general information on the Internet at:
www.siemens.com/powermanagementsystem

Information how to use SIMATIC WinCC powerrate can be found under:
support.automation.siemens.com/WW/view/en/38823708

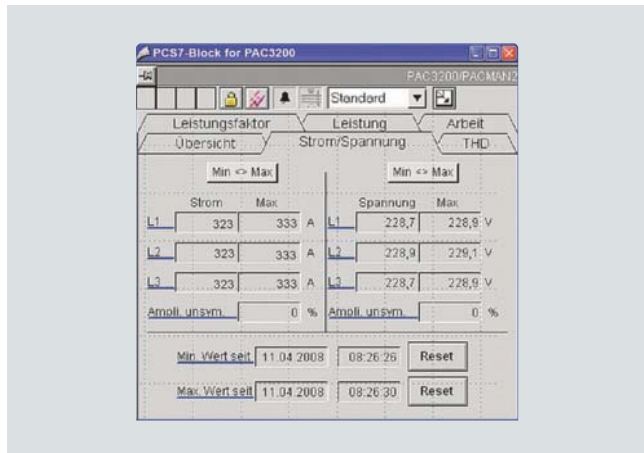
* You can order this quantity or a multiple thereof.

Software for Power Distribution

Configuring, Visualizing and Controlling with SIMATIC

SIMATIC PCS 7 Library PAC3200

Overview



The PCS 7 function block library – SIMATIC PCS 7 Library PAC3200 – for the SENTRON PAC3200 multifunction measuring instrument enables the seamless integration of the multifunction instrument in the PCS 7 process world.

It comprises one driver block, one diagnostics block and the faceplates. The function blocks in the SIMATIC S7 supply energy data to the faceplates in the user interface of the process control system, generate signals and guarantee connection to the maintenance system of PCS 7.

Faceplates

Faceplates serve as a user interface for operating and monitoring and enable technologically important values and functions of the SENTRON PAC3200 to be displayed and performed as a PCS 7 object.

Between the faceplates and the function blocks as well as between the function blocks and the SENTRON PAC3200 there exist on the system side bidirectional communication connections not only for displaying values in the faceplates but also for forwarding input data to the device.

This makes the SENTRON PAC3200 power monitoring device an integral component of PCS 7.

Supported operating systems are the same as for SIMATIC PCS 7.

Benefits

- Full integration of SENTRON PAC3200 in the PCS 7 process control system through PROFIBUS DPV1 using a certified PCS 7 add-on module
- Reading out and displaying device data
- Inputting limit values for monitoring through the driver block
- Resetting values on the device (min/max values)

Application

SIMATIC PCS 7 Library PAC3200 is used in all areas in which PCS 7 is used. Full integration in PCS 7 means that there is no need for a special system environment. Predefined function blocks and symbols give you the assurance of building on tested and certified product components.

Selection and ordering data

SIMATIC PCS 7 V 6.1 SP1, PCS 7 V 7.0 SP1 and PCS 7 V 7.1

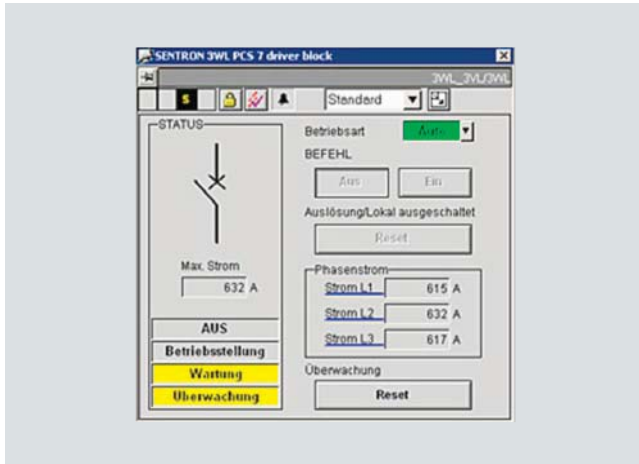
Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SIMATIC PCS 7 Library PAC3200							
<ul style="list-style-type: none"> • Engineering license for operation on one PCS 7 OS (single workstation system or server) and an automation system (AS). For use on additional PCS 7 OS units you need one engineering license per PCS 7 OS. 	B	3ZS2 781-1CC10-0YG0		1	1 unit	133	0.250
<ul style="list-style-type: none"> • Runtime license for operation on an additional AS 	B	3ZS2 781-1CC10-6YH0		1	1 unit	133	0.250

Software for Power Distribution

Configuring, Visualizing and Controlling with SIMATIC

3WL/3VL function block library for SIMATIC PCS 7

Overview



The PCS 7 3WL/3VL function block library for the SENTRON circuit breakers enables the quick and easy integration of the SENTRON circuit breakers in the PCS 7 process world.

It comprises one driver block, one diagnostics block and the faceplates. The function blocks in the SIMATIC S7 supply current, power and energy values to the faceplates in the user interface of the process control system, generate signals and guarantee connection to the maintenance system of PCS 7.

Faceplates

Faceplates serve as a user interface for operating and monitoring and enable the SENTRON circuit breakers to be displayed and operated as a PCS 7 object.

The 3WL/3VL function block library for SIMATIC PCS 7 enables constant system transparency. Critical system conditions are quickly identified and costs due to failures prevented. System availability is permanently increased.

This makes the SENTRON circuit breaker an integral component of PCS 7.

Supported operating systems are the same as for SIMATIC PCS 7.

Benefits

- Full integration of SENTRON circuit breakers in the PCS 7 process control system through PROFIBUS DPV1 using a certified PCS 7 add-on module
- Remote switching and monitoring
- Reading out of maintenance information
- Automatic information in case of overload, short-circuit and faults
- Reading out and displaying device data
- Limit monitoring through the driver block
- Resetting values on the device (min/max values)

Application

The 3WL/3VL function block library for SIMATIC PCS 7 is used in all areas in which PCS 7 is used. Full integration in PCS 7 means that there is no need for a special system environment. Pre-defined function blocks and symbols give you the assurance of building on tested and certified product components.

Selection and ordering data

SIMATIC PCS 7 V 6.1 SP1 and PCS 7 V 7.0 SP1

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
3WL/3VL function block library for SIMATIC PCS 7							
<ul style="list-style-type: none"> • Engineering license for operation on one PCS 7 OS (single workstation system or server) and an automation system (AS). For use on additional PCS 7 OS units you need one engineering license per PCS 7 OS. 	B	3ZS2 782-1CC10-0YG0		1	1 unit	133	0.250
<ul style="list-style-type: none"> • Runtime license for operation on an additional AS 	B	3ZS2 782-1CC10-6YH0		1	1 unit	133	0.250

* You can order this quantity or a multiple thereof.

Software for Power Distribution

Configuring, Visualizing and Controlling with SIMATIC

PAC3200 function block library for SIMATIC WinCC

Overview



The SENTRON PAC3200 function block library for SIMATIC WinCC enables the seamless integration of the SENTRON PAC3200 multifunction measuring instrument in WinCC.

It comprises one driver block, one diagnostics block and the faceplates. The blocks in the SIMATIC S7 supply energy data to the faceplates in the user interface of WinCC, generate signals and guarantee connection to the maintenance system of WinCC.

Faceplates

The faceplates serve as a user interface for operating and monitoring and enable technologically important values and functions of the SENTRON PAC3200 to be displayed and performed in WinCC.

Between the faceplates and the function blocks as well as between the function blocks and the SENTRON PAC3200 there exist on the system side bidirectional communication connections not only for displaying values in the faceplates but also for forwarding input data to the device.

This makes the SENTRON PAC3200 multifunction measuring instrument an integral component of WinCC.

System requirements

The SENTRON PAC3200 function block library for SIMATIC WinCC is released for

- WinCC V 6.2 SP2
- WinCC V 7.0 and
- WinCC V 7.0 SP1

WinCC options AS-OS Engineering and Basic Process Control must be installed. The function block library is available for both S7-300 and S7-400. At least one S7 CPU317-2DP is required for use in the S7-300 area. At least one S7 CPU414-2 is required for use in the S7-400 area.

Supported operating systems are the same as for SIMATIC WinCC.

Benefits

- Full integration of the SENTRON PAC3200 in SIMATIC WinCC through PROFIBUS DPV1 The function block library is a certified WinCC add-on module
- Reading out and displaying device data
- Inputting limit values for monitoring through the driver block
- Resetting values on the device (min/max values)

Application

The SENTRON PAC3200 function block library for SIMATIC WinCC is used in all areas in which WinCC is used. Full integration in WinCC means that there is no need for a special system environment. Predefined function blocks and symbols give you the assurance of building on tested and certified product components.

Selection and ordering data

SIMATIC WinCC V 6.2 SP2, WinCC V 7.0 and WinCC V 7.0 SP 1

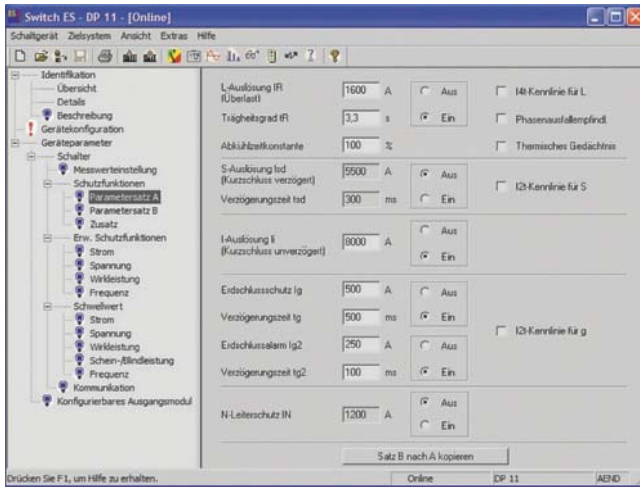
Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx. kg
SENTRON PAC3200 function block library for SIMATIC WinCC							
<ul style="list-style-type: none"> • Engineering license for operation on one WinCC OS (single workstation system or server) and an automation system (AS). For use on additional WinCC OS units you need one engineering license per WinCC OS. 	B	3ZS2 791-1CC10-0YG0		1	1 unit	133	0.250
<ul style="list-style-type: none"> • Runtime license for operation on an additional AS 	B	3ZS2 791-1CC10-6YH0		1	1 unit	133	0.250

Software for Power Distribution

Configuring, Visualizing and Controlling with SENTRON

Switch ES Power

Overview



Adjustment of parameter set A with Switch ES Power

Switch ES Power is the shared software platform for communication-capable SENTRON circuit breakers. This has the advantage that all device-specific setting options are identical in terms of appearance and handling.

Switch ES Power can be used to configure, document, operate and monitor the SENTRON 3WL and SENTRON 3VL circuit breakers through PROFIBUS DP.

More information can be found on the Internet at:

www.siemens.com/sentron

Benefits

- Parameterization, documentation, operation and monitoring in one software
- Documentation of measured values and settings
- Clear representation of all available parameters
- All the available status information and measured values are clearly displayed in dialog boxes
- Software for SENTRON 3WL and SENTRON 3VL
- Easy connection build-up through acyclic PROFIBUS DPV1 data traffic
- Identical storage format for parameters with the Breaker Data Adapter (BDA)
- Easy-to-operate Windows interface
- No programming knowhow is required for operation

Object manager of Switch ES Power

- Uniform data management for circuit breaker parameters
- Automatic parameterization if components are replaced

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	Weight per PU approx.
							kg

Switch ES Power

Calibration, documentation, operation and monitoring of SENTRON 3WL/3VL A circuit breakers through PROFIBUS DP; runs under Windows 95/98/NT/2000/XP Professional, including online help, English or German selectable; including Object Manager (OM) for Switch ES Power for integration in STEP7

System requirements:

PROFIBUS card: CP5512, CP5611, CP5613 or CP5614 and MPI interface on PG7xx and its driver software, see interactive Catalog CA01, CD-ROM drive

System requirements for OM Switch ES Power:

SIMATIC: S7, M7, C7, PCS 7
STEP 7: version 5.2 or higher
CD-ROM drive

3ZS2 311-0CC10-0YA0

1 1 unit 133 0.200

Software for Power Distribution

Notes



BETA

Low-Voltage Circuit Protection



19/2 Introduction

Miniature Circuit Breakers

- 19/4 Miniature circuit breakers, 5SP and 5SY
- 19/21 Miniature circuit breakers with plug-in terminals, 5SJ6 ...-KS
- 19/23 Miniature circuit breakers 1 + N in 1 MW, 5SY6 0
- 19/25 Additional components
- 19/31 Busbars
- 19/39 Miniature circuit breakers according to UL 489 and IEC, 5SJ4 ...-HG
- 19/45 Circuit breaker terminals, 5SK9

Residual Current Protective Devices

- 19/47 RCCBs, type A, 5SM3
- 19/51 SIQUENCE, universal current-sensitive RCCBs type B and type B+, 5SM3 and 5SU1
- 19/54 Additional components
- 19/55 RC units, type A, 5SM2
- 19/58 RCBOs, type A, 5SU1
- 19/61 Busbars
- 19/63 Accessories

Low-Voltage Fuse Systems

- 19/64 NEOZED fuse systems
- 19/70 DIAZED fuse systems
- 19/76 3NW cylindrical fuse systems
- 19/79 3NW ...-0HG Class CC fuse systems
- 19/81 5ST2, 5ST3 busbars for fuse systems
- 19/86 3NA, 3ND LV HRC fuse links
- 19/94 3NX1 LV HRC signal detectors
- 19/95 3NH LV HRC fuse bases
- Ch. 17 3NP1 LV HRC fuse switch disconnectors
- Ch. 17 3NP5 LV HRC fuse switch disconnectors for extended technical requirements

SITOR Semiconductor Fuses

- 19/101 SITOR, LV HRC design
- 19/109 SITOR, cylindrical fuse design
- 19/111 SILIZED, NEOZED and DIAZED design

SR60 Busbar Systems

- 19/112 Distribution board components
- 19/116 Built-in components
- 19/120 Mounting components

Overvoltage Protection Devices

- 19/122 Lightning arresters, type 1
- 19/123 Combination surge arresters, type 1 and type 2
- 19/124 Surge arresters, type 2
- 19/127 Surge arresters, type 3
- 19/128 Accessories for surge arresters
- 19/129 Surge arresters for measuring and control technology

Socket Outlets

- 19/131 5TE6 8 socket outlets

Three-Phase Measuring Devices

- 19/133 7KT1 30 multimeters
- 19/135 7KT1 31, 7KT1 34, 7KT1 35 multi-counters
- 19/137 7KT1 39 LAN couplers
- 19/139 7KT1 5 E-counters
- 19/140 7KT1 2 current transformers
- 19/140 7KT9 0 measuring selector switches

Single-Phase Measuring Devices

- 19/141 7KT1 53, 7KT1 14 E-counters
- 19/142 7KT1 11, 7KT1 12 digital measuring devices
- 19/142 7KT1 0 analog measuring devices
- 19/143 7KT5 8 time and pulse counters
- 19/144 7KT5 5, 7KT5 6 time counters for front mounting

For Austria there is a separate catalog "BETA Low-Voltage Circuit Protection", with special products according to Austrian regulations.

Note:

More devices from the BETA low-voltage circuit protection range can be found in the Catalog ET B1 · 2010. You can download the up-to-date catalog from www.siemens.com/e-installation-catalogs.

BETA Low-Voltage Circuit Protection

Introduction

Overview



Miniature circuit breakers
5SP4, 5SP5, 5SY4, 5SY5,
5SY6, 5SY7, 5SY8



Miniature circuit breakers
with plug-in terminal
5SJ6 ...-KS



Miniature circuit
breakers 1 + N in 1 MW
5SY6 0



Miniature circuit
breakers according to
UL 489 and IEC
5SJ4 ...-HG



Circuit breaker
terminals
5SK9

Miniature circuit breakers

Tripping characteristic	A, B, C, D	B, C	B, C	B, C, D	--	
Rated current	A	0.3 ... 125	10 ... 20	2 ... 40	0.3 ... 63	0.5 ... 10
Rated switching capacity	kA	6, 10, 15, 25	6	6	14/10	--



NEOZED fuse
systems
5SE2, 5SG



DIAZED fuse
systems
5SA ... 5SD,
5SF, 5SH



Cylindrical fuse
systems
3NW6, 3NW7,
3NW8



Class CC fuse
system
3NW1, 3NW2
3NW3, 3NW7



LV HRC fuse
links
3NA, 3ND



LV HRC signal
detectors
3NX



LV HRC fuse
bases
3NH

Low-Voltage Fuse Systems

Operational classes	gG	gG	gG, aM	Slow/quick/slow, current limiting	gG, aM	--	--
Rated voltage	V AC V DC	400 250	500/690/750 500/600/750	400/500	600 150/300	400/500/690 250/440	690 600 250/440
Rated current range	A	2 ... 100	2 ... 100	0.5 ... 100	0.6 ... 30	2 ... 1250	160 ... 1250



Lightning arresters, type 1
5SD7



Combination surge arresters,
type 1 and type 2
5SD7



Surge arresters, type 2
5SD7



Surge arresters, type 3
5SD7

Overvoltage protection devices

Rated voltage	V AC	230/400	230/400	230 ... 415	24 ... 400
Rated arrester voltage	V AC	350	350	260 ... 350	24 ... 230
Discharge capacity	kA	25/100	25/100	15/30; 20/40	1 ... 3



Multimeters
7KT1 30



Multicounters
7KT1 31, 7KT1 34,
7KT1 35



LAN couplers
7KT1 39



E-counters
7KT1 5



E-counters
Instabus KNX
7KT1 1



Current
transformers
7KT1 2



Measuring
selector
switches
7KT9 0

Three-phase measuring devices

Application	Display of 23 electrical measured values for switchgear assemblies, infeed or outgoing feeders.	Display of 35 electrical measured values and consumption values in switchgear assemblies, infeed or outgoing feeders.	Up-to-date consumption data of the multimeter available worldwide over LAN data communication.	Measurement of consumption data and plant capacity utilization in three-phase systems of system components, offices or holiday apartments.	Straight-through transformers for installation in distribution boards and non-contact measuring of primary currents.	For switching over the phases for voltmeters and ammeters
-------------	---	---	--	--	--	---



RCCBs,
type A

5SM3



SIQUENCE, universal
current-sensitive RCCBs,
type B and type B+
5SM3, 5SU1



RC units,
type A

5SM2



RCBOs,
type A

5SU1

Residual current protective devices

Types of current	Type A	Type B	Type A	Type A
Rated current A	16 ... 125	16 ... 125	0.3 ... 100	6 ... 125
Rated residual current mA	10 ... 1000	30 ... 500	10 ... 1000	10 ... 300



SITOR,
LV HRC design

3NC, 3NE



SITOR,
cylindrical fuse design

3NC

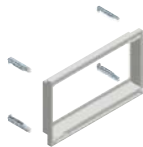


SILIZED,
NEOZED and DIAZED design

5SE1, 5SD

SITOR Semiconductor Fuses

Operational classes	aR, gR, gS	aR	gR
Rated voltage V AC	500 ... 2500	600/660/690	400/500
V DC	700	400/700	250/500
Rated current range A	16 ... 1600	1 ... 100	10 ... 100



Distribution board
components
8GK, 8JH, 8JK, 8US



Built-in components
5SF, 5SG, 5SH



Mounting components
5SH, 8US



Socket outlets
5TE6 8

SR60 busbar systems

Application	Busbars, busbar supports and covers	NEOZED/DIAZED bus-mounting bases, NEOZED bus-mounting switch disconnectors	Bases, blanking covers, edges
-------------	-------------------------------------	--	-------------------------------

Socket outlets

Application	Power supply for maintenance of distribution boards
-------------	---



E-counters

7KT1 53
7KT1 14



Digital measuring
devices
7KT1 11, 7KT1 12



Analog measuring devices
7KT1 0



Time and
pulse counters
7KT5 8



Time counters for front
mounting
7KT5 5, 7KT5 6

Single-phase measuring devices

Application	Measuring of kWh in single-phase networks	Measuring of voltages and currents with large three-digit LED displays	Measuring of voltages and currents for monitoring input and output currents	For monitoring operating hours and starting operations for planning preventative maintenance tasks and preventing sudden shutdowns	For monitoring operating hours and starting operations for planning preventative maintenance tasks and preventing sudden shutdowns
-------------	---	--	---	--	--

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

Overview

MCBs are used to protect plants in buildings and for industrial applications. The devices can be used as main control switches for the disconnection or isolation of plants.

For industrial applications and in plant engineering, miniature circuit breakers can be supplemented with additional components, such as auxiliary switches, fault signal contacts, shunt releases, undervoltage releases, remote-controlled mechanisms and RC units.

The devices are approved for worldwide use according to IEC standards for systems up to 250/440 V AC. 60 V DC per pole is permitted in DC systems.

For North America, we also have additional certification according to UL 1077 for use as "supplementary protectors" in systems up to AC 480Y/277 V. For use in ship building, the devices also have numerous certifications according to shipping classifications; BV, DNV, GL and LRS. For further information, please refer to the section "Configuration".

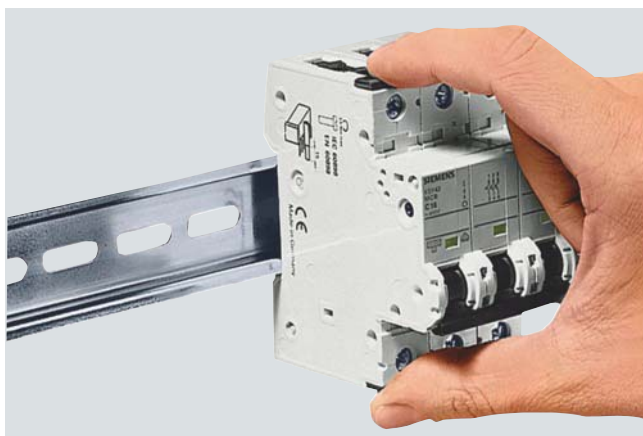
Benefits



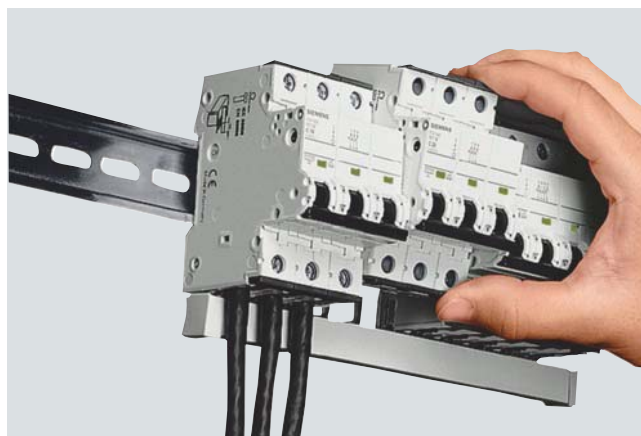
- The infeed can be either from the top or the bottom as the terminals are identical.
- Clear and visible conductor connection that can be easily checked in front of the busbar.
- Large and easily accessible wiring space enables easy insertion of conductor in the terminal.



- Integrated movable terminal covers located at the cable entries ensure the terminals are fully insulated when the screws are tightened.
- The effective touch protection when grasping the device considerably exceeds the requirements of BGV A3 (labor safety specification).



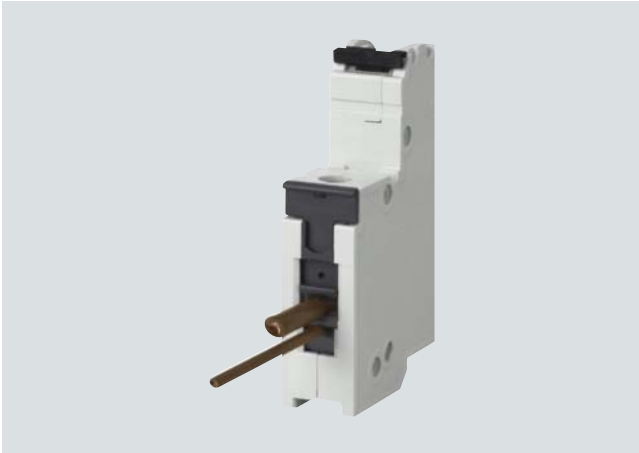
- Manual snap-on fixing and release systems that require no tools enable fast assembly and disassembly of MCBs.
- Marked labeling field on all modular installation devices for uniform, quick and easy identification.



- The MCBs can be quickly and easily removed from the busbar assembly by hand if connections need to be changed.
- Time saving if parts need to be replaced because the busbars no longer need to be freed from the adjacent devices.

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY



- Double terminal chambers enable 2 conductors of different cross-section to be accommodated (up to 10 mm² in the bottom chamber and 35 mm² in the top chamber).






- Adapted handle locking device for 5SY, 5SJ and 5SP miniature circuit breakers. Suitable for locks of 3 mm to 6 mm diameter.

BETA Protecting

Miniature Circuit Breakers (MCBs)




Miniature circuit breakers,
5SP and 5SY

Selection and ordering data

6 000 3	I_n	MW	DT	Characteristic B	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg
							Unit(s)	Unit(s)		
MCBs 6000 A										
	1P, 230/400 V AC									
	2	1	B	5SY6 102-6	1	1	002	0.165		
	4		B	5SY6 104-6	1	1	002	0.165		
	6		▶	5SY6 106-6	1	1/12	002	0.165		
	10		▶	5SY6 110-6	1	1/12	002	0.165		
	13		A	5SY6 113-6	1	1/12	002	0.165		
	16		▶	5SY6 116-6	1	1/12	002	0.165		
	20		A	5SY6 120-6	1	1/12	002	0.165		
	25		A	5SY6 125-6	1	1/12	002	0.165		
	32		A	5SY6 132-6	1	1/12	002	0.165		
	40		B	5SY6 140-6	1	1	002	0.165		
	50		B	5SY6 150-6	1	1	002	0.165		
	63		B	5SY6 163-6	1	1	002	0.165		
	1P+N, 230 V AC									
	6	2	A	5SY6 506-6	1	1	002	0.330		
	10		A	5SY6 510-6	1	1	002	0.330		
	13		A	5SY6 513-6	1	1/6	002	0.330		
	16		A	5SY6 516-6	1	1/6	002	0.330		
	20		B	5SY6 520-6	1	1	002	0.330		
	25		B	5SY6 525-6	1	1	002	0.330		
	32		B	5SY6 532-6	1	1	002	0.330		
	40		C	5SY6 540-6	1	1	002	0.330		
	50		C	5SY6 550-6	1	1	002	0.330		
63	C		5SY6 563-6	1	1	002	0.330			
	2P, 400 V AC									
	6	2	A	5SY6 206-6	1	1/6	002	0.330		
	10		A	5SY6 210-6	1	1/6	002	0.330		
	13		B	5SY6 213-6	1	1	002	0.330		
	16		A	5SY6 216-6	1	1/6	002	0.330		
	20		B	5SY6 220-6	1	1	002	0.330		
	25		B	5SY6 225-6	1	1	002	0.330		
	32		A	5SY6 232-6	1	1	002	0.330		
	40		B	5SY6 240-6	1	1	002	0.330		
	50		C	5SY6 250-6	1	1	002	0.330		
63	C		5SY6 263-6	1	1	002	0.330			
	3P, 400 V AC									
	6	3	A	5SY6 306-6	1	1	002	0.495		
	10		A	5SY6 310-6	1	1/4	002	0.495		
	13		B	5SY6 313-6	1	1	002	0.495		
	16		▶	5SY6 316-6	1	1/4	002	0.495		
	20		A	5SY6 320-6	1	1	002	0.495		
	25		A	5SY6 325-6	1	1	002	0.495		
	32		A	5SY6 332-6	1	1/4	002	0.495		
	40		A	5SY6 340-6	1	1	002	0.495		
	50		B	5SY6 350-6	1	1	002	0.495		
63	B		5SY6 363-6	1	1	002	0.495			
	3P+N, 400 V AC									
	6	4	B	5SY6 606-6	1	1	002	0.660		
	10		B	5SY6 610-6	1	1	002	0.660		
	13		B	5SY6 613-6	1	1	002	0.660		
	16		A	5SY6 616-6	1	1	002	0.660		
	20		A	5SY6 620-6	1	1	002	0.660		
	25		B	5SY6 625-6	1	1	002	0.660		
	32		B	5SY6 632-6	1	1	002	0.660		
	40		C	5SY6 640-6	1	1	002	0.660		
	50		C	5SY6 650-6	1	1	002	0.660		
63	C		5SY6 663-6	1	1	002	0.660			
	4P, 400 V AC									
	6	4	C	5SY6 406-6	1	1	002	0.660		
	10		B	5SY6 410-6	1	1	002	0.660		
	13		C	5SY6 413-6	1	1	002	0.660		
	16		A	5SY6 416-6	1	1	002	0.660		
	20		A	5SY6 420-6	1	1	002	0.660		
	25		A	5SY6 425-6	1	1	002	0.660		
	32		B	5SY6 432-6	1	1	002	0.660		
	40		B	5SY6 440-6	1	1	002	0.660		
	50		B	5SY6 450-6	1	1	002	0.660		
	63		B	5SY6 463-6	1	1	002	0.660		

BETA Protecting Miniature Circuit Breakers (MCBs)




Miniature circuit breakers,
5SP and 5SY

6 000				Characteristic C			Characteristic D					
I_n	MW	DT	Order No.	Price per PU	PG	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
									Unit(s)	Unit(s)	kg	
MCBs 6000 A												
1P, 230/400 V AC												
	0.3	1	A	5SY6 114-7		003 C	5SY6 114-8		1	1	004	0.165
	0.5		A	5SY6 105-7		003 A	5SY6 105-8		1	1	004	0.165
	1		▶	5SY6 101-7		003 A	5SY6 101-8		1	1	004	0.165
	1.6		A	5SY6 115-7		003 C	5SY6 115-8		1	1	004	0.147
	2		▶	5SY6 102-7		003 A	5SY6 102-8		1	1/12	004	0.165
	3		A	5SY6 103-7		003 A	5SY6 103-8		1	1	004	0.165
	4		▶	5SY6 104-7		003 A	5SY6 104-8		1	1	004	0.165
	6		▶	5SY6 106-7		003 A	5SY6 106-8		1	1/12	004	0.165
	8		A	5SY6 108-7		003 A	5SY6 108-8		1	1	004	0.165
	10		▶	5SY6 110-7		003 A	5SY6 110-8		1	1	004	0.165
	13		A	5SY6 113-7		003 A	5SY6 113-8		1	1	004	0.165
	16		▶	5SY6 116-7		003 A	5SY6 116-8		1	1	004	0.165
	20		▶	5SY6 120-7		003 A	5SY6 120-8		1	1	004	0.165
	25		▶	5SY6 125-7		003 A	5SY6 125-8		1	1	004	0.165
	32		▶	5SY6 132-7		003 B	5SY6 132-8		1	1	004	0.165
	40		A	5SY6 140-7		003 B	5SY6 140-8		1	1	004	0.165
	50		A	5SY6 150-7		003 B	5SY6 150-8		1	1	004	0.165
	63		A	5SY6 163-7		003 B	5SY6 163-8		1	1	004	0.165
1P+N, 230 V AC												
	0.3	2	B	5SY6 514-7		003 C	5SY6 514-8		1	1	004	0.330
	0.5		A	5SY6 505-7		003 B	5SY6 505-8		1	1	004	0.330
	1		A	5SY6 501-7		003 C	5SY6 501-8		1	1	004	0.330
	1.6		B	5SY6 515-7		003 B	5SY6 515-8		1	1	004	0.330
	2		A	5SY6 502-7		003 B	5SY6 502-8		1	1	004	0.330
	3		A	5SY6 503-7		003 B	5SY6 503-8		1	1	004	0.330
	4		A	5SY6 504-7		003 B	5SY6 504-8		1	1	004	0.330
	6		A	5SY6 506-7		003 A	5SY6 506-8		1	1	004	0.330
	8		B	5SY6 508-7		003 B	5SY6 508-8		1	1	004	0.330
	10		A	5SY6 510-7		003 B	5SY6 510-8		1	1	004	0.330
	13		A	5SY6 513-7		003 C	5SY6 513-8		1	1	004	0.330
	16		▶	5SY6 516-7		003 A	5SY6 516-8		1	1	004	0.330
	20		A	5SY6 520-7		003 C	5SY6 520-8		1	1	004	0.330
	25		A	5SY6 525-7		003 C	5SY6 525-8		1	1	004	0.330
	32		A	5SY6 532-7		003 C	5SY6 532-8		1	1	004	0.330
	40		B	5SY6 540-7		003 C	5SY6 540-8		1	1	004	0.330
	50		B	5SY6 550-7		003 C	5SY6 550-8		1	1	004	0.330
	63		B	5SY6 563-7		003 C	5SY6 563-8		1	1	004	0.330
2P, 400 V AC												
	0.3	2	B	5SY6 214-7		003 B	5SY6 214-8		1	1	004	0.330
	0.5		A	5SY6 205-7		003 A	5SY6 205-8		1	1	004	0.330
	1		A	5SY6 201-7		003 A	5SY6 201-8		1	1	004	0.330
	1.6		A	5SY6 215-7		003 A	5SY6 215-8		1	1	004	0.330
	2		▶	5SY6 202-7		003 A	5SY6 202-8		1	1/6	004	0.330
	3		A	5SY6 203-7		003 A	5SY6 203-8		1	1	004	0.330
	4		▶	5SY6 204-7		003 A	5SY6 204-8		1	1/6	004	0.330
	6		▶	5SY6 206-7		003 A	5SY6 206-8		1	1/6	004	0.330
	8		A	5SY6 208-7		003 A	5SY6 208-8		1	1	004	0.330
	10		▶	5SY6 210-7		003 A	5SY6 210-8		1	1/6	004	0.330
	13		A	5SY6 213-7		003 B	5SY6 213-8		1	1	004	0.330
	16		▶	5SY6 216-7		003 A	5SY6 216-8		1	1	004	0.330
	20		▶	5SY6 220-7		003 A	5SY6 220-8		1	1	004	0.330
	25		A	5SY6 225-7		003 A	5SY6 225-8		1	1	004	0.330
	32		A	5SY6 232-7		003 A	5SY6 232-8		1	1	004	0.330
	40		A	5SY6 240-7		003 B	5SY6 240-8		1	1	004	0.330
	50		A	5SY6 250-7		003 B	5SY6 250-8		1	1	004	0.330
	63		A	5SY6 263-7		003 B	5SY6 263-8		1	1	004	0.330

BETA Protecting




Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

6 000		I_n	MW	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
3	Order No.				Price per PU	PG	DT	Order No.	Price per PU	Unit(s)				
MCBs 6000 A														
3P, 400 V AC														
	0.3	3	C	5SY6 314-7		003	C	5SY6 314-8		1	1	004	0.495	
	0.5		A	5SY6 305-7		003	C	5SY6 305-8		1	1	004	0.495	
	1		A	5SY6 301-7		003	A	5SY6 301-8		1	1	004	0.495	
	1.6		B	5SY6 315-7		003	C	5SY6 315-8		1	1	004	0.495	
	2		A	5SY6 302-7		003	A	5SY6 302-8		1	1	004	0.495	
	3		A	5SY6 303-7		003	A	5SY6 303-8		1	1	004	0.495	
	4		A	5SY6 304-7		003	A	5SY6 304-8		1	1	004	0.495	
	6		▶	5SY6 306-7		003	A	5SY6 306-8		1	1	004	0.495	
	8		A	5SY6 308-7		003	B	5SY6 308-8		1	1	004	0.495	
	10		▶	5SY6 310-7		003	A	5SY6 310-8		1	1	004	0.495	
	13		A	5SY6 313-7		003	B	5SY6 313-8		1	1	004	0.495	
	16		▶	5SY6 316-7		003	A	5SY6 316-8		1	1	004	0.495	
	20		▶	5SY6 320-7		003	A	5SY6 320-8		1	1	004	0.495	
	25		▶	5SY6 325-7		003	A	5SY6 325-8		1	1	004	0.495	
32		▶	5SY6 332-7		003	A	5SY6 332-8		1	1	004	0.495		
40		A	5SY6 340-7		003	A	5SY6 340-8		1	1	004	0.495		
50		A	5SY6 350-7		003	A	5SY6 350-8		1	1	004	0.495		
63		A	5SY6 363-7		003	A	5SY6 363-8		1	1	004	0.495		
3P+N, 400 V AC														
	0.3	4	C	5SY6 614-7		003	C	5SY6 614-8		1	1	004	0.660	
	0.5		C	5SY6 605-7		003	C	5SY6 605-8		1	1	004	0.660	
	1		C	5SY6 601-7		003	C	5SY6 601-8		1	1	004	0.660	
	1.6		C	5SY6 615-7		003	C	5SY6 615-8		1	1	004	0.660	
	2		A	5SY6 602-7		003	C	5SY6 602-8		1	1	004	0.660	
	3		C	5SY6 603-7		003	C	5SY6 603-8		1	1	004	0.660	
	4		B	5SY6 604-7		003	C	5SY6 604-8		1	1	004	0.660	
	6		A	5SY6 606-7		003	A	5SY6 606-8		1	1	004	0.660	
	8		C	5SY6 608-7		003	C	5SY6 608-8		1	1	004	0.660	
	10		A	5SY6 610-7		003	B	5SY6 610-8		1	1	004	0.660	
	13		B	5SY6 613-7		003	C	5SY6 613-8		1	1	004	0.660	
	16		▶	5SY6 616-7		003	B	5SY6 616-8		1	1	004	0.660	
	20		A	5SY6 620-7		003	B	5SY6 620-8		1	1	004	0.660	
	25		A	5SY6 625-7		003	B	5SY6 625-8		1	1	004	0.660	
32		A	5SY6 632-7		003	B	5SY6 632-8		1	1	004	0.660		
40		A	5SY6 640-7		003	B	5SY6 640-8		1	1	004	0.660		
50		A	5SY6 650-7		003	B	5SY6 650-8		1	1	004	0.660		
63		A	5SY6 663-7		003	B	5SY6 663-8		1	1	004	0.660		
4P, 400 V AC														
	0.3	4	C	5SY6 414-7		003	C	5SY6 414-8		1	1	004	0.660	
	0.5		C	5SY6 405-7		003	C	5SY6 405-8		1	1	004	0.660	
	1		B	5SY6 401-7		003	C	5SY6 401-8		1	1	004	0.660	
	1.6		C	5SY6 415-7		003	C	5SY6 415-8		1	1	004	0.660	
	2		A	5SY6 402-7		003	C	5SY6 402-8		1	1	004	0.660	
	3		B	5SY6 403-7		003	C	5SY6 403-8		1	1	004	0.660	
	4		B	5SY6 404-7		003	C	5SY6 404-8		1	1	004	0.660	
	6		A	5SY6 406-7		003	B	5SY6 406-8		1	1	004	0.660	
	8		B	5SY6 408-7		003	C	5SY6 408-8		1	1	004	0.660	
	10		A	5SY6 410-7		003	A	5SY6 410-8		1	1	004	0.660	
	13		A	5SY6 413-7		003	C	5SY6 413-8		1	1	004	0.660	
	16		▶	5SY6 416-7		003	A	5SY6 416-8		1	1	004	0.660	
	20		A	5SY6 420-7		003	A	5SY6 420-8		1	1	004	0.660	
	25		▶	5SY6 425-7		003	A	5SY6 425-8		1	1	004	0.660	
32		▶	5SY6 432-7		003	A	5SY6 432-8		1	1	004	0.660		
40		▶	5SY6 440-7		003	A	5SY6 440-8		1	1	004	0.660		
50		A	5SY6 450-7		003	A	5SY6 450-8		1	1	004	0.660		
63		A	5SY6 463-7		003	▶	5SY6 463-8		1	1	004	0.660		

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY




10 000 3		I_n	MW	DT	Characteristic A		Characteristic B		PU	PS*	PG	Weight per PU approx.		
		A			Order No.	Price per PU	PG	DT	Order No.	Price per PU	Unit(s)	Unit(s)	PG	kg
MCBs 10000 A														
1P, 230/400 V AC														
	0.5	1	C	5SY4 105-5	001	--	001	--	1	1	1	1	002	0.165
	1		A	5SY4 101-5	001	--	001	--	1	1	1	1	002	0.165
	1.6		B	5SY4 115-5	001	--	001	--	1	1	1	1	002	0.165
	2		A	5SY4 102-5	001	--	001	--	1	1	1	1	002	0.165
	3		A	5SY4 103-5	001	--	001	--	1	1	1	1	002	0.165
	4		A	5SY4 104-5	001	--	001	--	1	1/12	1	1/12	002	0.165
	6		A	5SY4 106-5	001	A	5SY4 106-6	001	1/12	1	1/12	002	002	0.165
	8		B	5SY4 108-5	001	--	001	--	1	1	1	1	002	0.165
	10		A	5SY4 110-5	001	▶	5SY4 110-6	001	1/12	1	1/12	002	002	0.165
	13		C	5SY4 113-5	001	A	5SY4 113-6	001	1	1	1	1	002	0.165
	16		A	5SY4 116-5	001	▶	5SY4 116-6	001	1/12	1	1/12	002	002	0.165
	20		A	5SY4 120-5	001	A	5SY4 120-6	001	1	1	1	1	002	0.165
	25		A	5SY4 125-5	001	▶	5SY4 125-6	001	1	1	1	1	002	0.165
	32		B	5SY4 132-5	001	A	5SY4 132-6	001	1	1	1	1	002	0.165
	40		B	5SY4 140-5	001	B	5SY4 140-6	001	1	1	1	1	002	0.165
50		C	5SY4 150-5	001	B	5SY4 150-6	001	1	1	1	1	002	0.165	
63		C	5SY4 163-5	001	B	5SY4 163-6	001	1	1	1	1	002	0.165	
80		--	--	001	C	5SY4 180-6	001	1	1	1	1	002	0.162	
1P+N, 230 V AC														
	1	2	C	5SY4 501-5	001	--	001	--	1	1	1	1	002	0.330
	1.6		B	5SY4 515-5	001	--	001	--	1	1	1	1	002	0.330
	2		B	5SY4 502-5	001	--	001	--	1	1	1	1	002	0.330
	3		C	5SY4 503-5	001	--	001	--	1	1	1	1	002	0.330
	4		B	5SY4 504-5	001	--	001	--	1	1	1	1	002	0.330
	6		C	5SY4 506-5	001	A	5SY4 506-6	001	1	1	1	1	002	0.330
	8		C	5SY4 508-5	001	--	001	--	1	1	1	1	002	0.330
	10		B	5SY4 510-5	001	A	5SY4 510-6	001	1	1	1	1	002	0.330
	13		C	5SY4 513-5	001	A	5SY4 513-6	001	1/6	1	1/6	002	002	0.330
	16		C	5SY4 516-5	001	A	5SY4 516-6	001	1/6	1	1/6	002	002	0.330
	20		C	5SY4 520-5	001	B	5SY4 520-6	001	1	1	1	1	002	0.330
	25		C	5SY4 525-5	001	B	5SY4 525-6	001	1	1	1	1	002	0.330
	32		C	5SY4 532-5	001	B	5SY4 532-6	001	1	1	1	1	002	0.330
	40		C	5SY4 540-5	001	C	5SY4 540-6	001	1	1	1	1	002	0.330
	50		C	5SY4 550-5	001	C	5SY4 550-6	001	1	1	1	1	002	0.330
63		C	5SY4 563-5	001	C	5SY4 563-6	001	1	1	1	1	002	0.330	
2P, 400 V AC														
	0.5	2	C	5SY4 205-5	001	--	001	--	1	1	1	1	002	0.330
	1		B	5SY4 201-5	001	--	001	--	1	1	1	1	002	0.330
	1.6		B	5SY4 215-5	001	--	001	--	1	1	1	1	002	0.330
	2		A	5SY4 202-5	001	--	001	--	1	1	1	1	002	0.330
	3		B	5SY4 203-5	001	--	001	--	1	1	1	1	002	0.330
	4		A	5SY4 204-5	001	--	001	--	1	1	1	1	002	0.330
	6		A	5SY4 206-5	001	A	5SY4 206-6	001	1	1	1	1	002	0.330
	8		C	5SY4 208-5	001	--	001	--	1	1	1	1	002	0.330
	10		A	5SY4 210-5	001	A	5SY4 210-6	001	1/6	1	1/6	002	002	0.330
	13		C	5SY4 213-5	001	B	5SY4 213-6	001	1	1	1	1	002	0.330
	16		A	5SY4 216-5	001	▶	5SY4 216-6	001	1/6	1	1/6	002	002	0.330
	20		B	5SY4 220-5	001	A	5SY4 220-6	001	1	1	1	1	002	0.330
	25		B	5SY4 225-5	001	A	5SY4 225-6	001	1	1	1	1	002	0.330
	32		A	5SY4 232-5	001	B	5SY4 232-6	001	1	1	1	1	002	0.330
	40		B	5SY4 240-5	001	B	5SY4 240-6	001	1	1	1	1	002	0.330
	50		C	5SY4 250-5	001	B	5SY4 250-6	001	1	1	1	1	002	0.330
	63		C	5SY4 263-5	001	B	5SY4 263-6	001	1	1	1	1	002	0.330
	80		--	--	001	C	5SY4 280-6	001	1	1	1	1	002	0.324

* You can order this quantity or a multiple thereof.

BETA Protecting




Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

10 000		I_n	MW	DT	Characteristic A			Characteristic B			PG	Weight per PU approx. kg
3	Order No.				Price per PU	PG	DT	Order No.	Price per PU	PU		
								Unit(s)				
MCBs 10000 A												
3P, 400 V AC												
	0.5	3	C	5SY4 305-5		001	--		1	1		0.495
	1		C	5SY4 301-5		001	--		1	1		0.495
	1.6		C	5SY4 315-5		001	--		1	1		0.495
	2		B	5SY4 302-5		001	--		1	1		0.495
	3		C	5SY4 303-5		001	--		1	1		0.495
	4		B	5SY4 304-5		001	--		1	1		0.495
	6		B	5SY4 306-5		001	A	5SY4 306-6	1	1	002	0.495
	8		C	5SY4 308-5		001	--		1	1		0.495
	10		B	5SY4 310-5		001	▶	5SY4 310-6	1	1	002	0.495
	13		C	5SY4 313-5		001	B	5SY4 313-6	1	1	002	0.495
	16		A	5SY4 316-5		001	▶	5SY4 316-6	1	1/4	002	0.495
	20		B	5SY4 320-5		001	A	5SY4 320-6	1	1	002	0.495
	25		B	5SY4 325-5		001	A	5SY4 325-6	1	1	002	0.495
	32		B	5SY4 332-5		001	▶	5SY4 332-6	1	1/4	002	0.495
	40		B	5SY4 340-5		001	A	5SY4 340-6	1	1	002	0.495
	50		B	5SY4 350-5		001	A	5SY4 350-6	1	1	002	0.495
63		C	5SY4 363-5		001	A	5SY4 363-6	1	1	002	0.495	
80		--	--			B	5SY4 380-6	1	1	002	0.486	
3P+N, 400 V AC												
	1	4	C	5SY4 601-5		001	--		1	1		0.660
	1.6		C	5SY4 615-5		001	--		1	1		0.660
	2		C	5SY4 602-5		001	--		1	1		0.660
	3		C	5SY4 603-5		001	--		1	1		0.660
	4		C	5SY4 604-5		001	--		1	1		0.660
	6		C	5SY4 606-5		001	B	5SY4 606-6	1	1	002	0.660
	8		C	5SY4 608-5		001	--		1	1		0.660
	10		C	5SY4 610-5		001	B	5SY4 610-6	1	1	002	0.660
	13		C	5SY4 613-5		001	C	5SY4 613-6	1	1	002	0.660
	16		C	5SY4 616-5		001	A	5SY4 616-6	1	1	002	0.660
	20		C	5SY4 620-5		001	B	5SY4 620-6	1	1	002	0.660
	25		C	5SY4 625-5		001	A	5SY4 625-6	1	1	002	0.660
	32		C	5SY4 632-5		001	B	5SY4 632-6	1	1	002	0.660
	40		C	5SY4 640-5		001	C	5SY4 640-6	1	1	002	0.660
50		C	5SY4 650-5		001	C	5SY4 650-6	1	1	002	0.660	
63		C	5SY4 663-5		001	A	5SY4 663-6	1	1	002	0.660	
4P, 400 V AC												
	1	4	C	5SY4 401-5		001	--		1	1		0.660
	1.6		C	5SY4 415-5		001	--		1	1		0.660
	2		C	5SY4 402-5		001	--		1	1		0.660
	3		C	5SY4 403-5		001	--		1	1		0.660
	4		C	5SY4 404-5		001	--		1	1		0.660
	6		C	5SY4 406-5		001	A	5SY4 406-6	1	1	002	0.660
	8		C	5SY4 408-5		001	--		1	1		0.660
	10		C	5SY4 410-5		001	B	5SY4 410-6	1	1	002	0.660
	13		C	5SY4 413-5		001	C	5SY4 413-6	1	1	002	0.660
	16		C	5SY4 416-5		001	A	5SY4 416-6	1	1	002	0.660
	20		C	5SY4 420-5		001	C	5SY4 420-6	1	1	002	0.660
	25		C	5SY4 425-5		001	B	5SY4 425-6	1	1	002	0.660
	32		C	5SY4 432-5		001	B	5SY4 432-6	1	1	002	0.660
	40		C	5SY4 440-5		001	B	5SY4 440-6	1	1	002	0.660
	50		C	5SY4 450-5		001	B	5SY4 450-6	1	1	002	0.660
	63		C	5SY4 463-5		001	B	5SY4 463-6	1	1	002	0.660
80		--	--			B	5SY4 480-6	1	1	002	0.648	

BETA Protecting Miniature Circuit Breakers (MCBs)




Miniature circuit breakers,
5SP and 5SY

10 000		I _n	MW	DT	Characteristic C			Characteristic D			PG	Weight per PU approx. kg
3					Order No.	Price per PU	PG	DT	Order No.	Price per PU		
		A						Unit(s)	Unit(s)			
MCBs 10000 A												
1P, 230/400 V AC												
	0.3	1	B	5SY4 114-7		003	C	5SY4 114-8	1	1	004	0.165
	0.5		A	5SY4 105-7		003	B	5SY4 105-8	1	1	004	0.165
	1		▶	5SY4 101-7		003	A	5SY4 101-8	1	1	004	0.165
	1.6		A	5SY4 115-7		003	B	5SY4 115-8	1	1	004	0.165
	2		▶	5SY4 102-7		003	A	5SY4 102-8	1	1/12	004	0.165
	3		A	5SY4 103-7		003	A	5SY4 103-8	1	1	004	0.165
	4		▶	5SY4 104-7		003	A	5SY4 104-8	1	1/12	004	0.165
	5		C	5SY4 111-7		003	--	--	1	1		0.165
	6		▶	5SY4 106-7		003	A	5SY4 106-8	1	1	004	0.165
	8		A	5SY4 108-7		003	A	5SY4 108-8	1	1	004	0.165
	10		▶	5SY4 110-7		003	A	5SY4 110-8	1	1/12	004	0.165
	13		A	5SY4 113-7		003	B	5SY4 113-8	1	1	004	0.165
	15		C	5SY4 118-7		003	--	--	1	1		0.165
	16		▶	5SY4 116-7		003	A	5SY4 116-8	1	1	004	0.165
	20		▶	5SY4 120-7		003	A	5SY4 120-8	1	1	004	0.165
	25		▶	5SY4 125-7		003	B	5SY4 125-8	1	1	004	0.165
	30		B	5SY4 130-7		003	--	--	1	1		0.165
	32		▶	5SY4 132-7		003	B	5SY4 132-8	1	1	004	0.165
	35		B	5SY4 135-7		003	--	--	1	1		0.165
40		A	5SY4 140-7		003	B	5SY4 140-8	1	1	004	0.165	
45		B	5SY4 145-7		003	--	--	1	1		0.165	
50		A	5SY4 150-7		003	B	5SY4 150-8	1	1	004	0.165	
60		B	5SY4 160-7		003	--	--	1	1		0.165	
63		B	5SY4 163-7		003	B	5SY4 163-8	1	1	004	0.165	
80		B	5SY4 180-7		003	--	--	1	1		0.161	
1P+N, 230 V AC												
	0.3	2	C	5SY4 514-7		003	C	5SY4 514-8	1	1	004	0.330
	0.5		B	5SY4 505-7		003	C	5SY4 505-8	1	1	004	0.330
	1		A	5SY4 501-7		003	B	5SY4 501-8	1	1	004	0.330
	1.6		C	5SY4 515-7		003	C	5SY4 515-8	1	1	004	0.330
	2		A	5SY4 502-7		003	A	5SY4 502-8	1	1	004	0.330
	3		A	5SY4 503-7		003	B	5SY4 503-8	1	1	004	0.330
	4		A	5SY4 504-7		003	B	5SY4 504-8	1	1	004	0.330
	6		A	5SY4 506-7		003	A	5SY4 506-8	1	1	004	0.330
	8		B	5SY4 508-7		003	C	5SY4 508-8	1	1	004	0.330
	10		A	5SY4 510-7		003	A	5SY4 510-8	1	1	004	0.330
	13		A	5SY4 513-7		003	B	5SY4 513-8	1	1	004	0.330
	16		A	5SY4 516-7		003	A	5SY4 516-8	1	1	004	0.330
	20		A	5SY4 520-7		003	B	5SY4 520-8	1	1	004	0.330
	25		A	5SY4 525-7		003	B	5SY4 525-8	1	1	004	0.330
	32		A	5SY4 532-7		003	B	5SY4 532-8	1	1	004	0.330
	40		B	5SY4 540-7		003	C	5SY4 540-8	1	1	004	0.330
	50		C	5SY4 550-7		003	C	5SY4 550-8	1	1	004	0.330
	63		C	5SY4 563-7		003	C	5SY4 563-8	1	1	004	0.330
	80		B	5SY4 580-7		003	--	--	1	1		0.323
2P, 400 V AC												
	0.3	2	A	5SY4 214-7		003	B	5SY4 214-8	1	1	004	0.330
	0.5		A	5SY4 205-7		003	A	5SY4 205-8	1	1	004	0.330
	1		A	5SY4 201-7		003	A	5SY4 201-8	1	1	004	0.330
	1.6		A	5SY4 215-7		003	A	5SY4 215-8	1	1	004	0.330
	2		A	5SY4 202-7		003	A	5SY4 202-8	1	1	004	0.330
	3		A	5SY4 203-7		003	A	5SY4 203-8	1	1	004	0.330
	4		A	5SY4 204-7		003	A	5SY4 204-8	1	1	004	0.330
	5		C	5SY4 211-7		003	--	--	1	1		0.330
	6		A	5SY4 206-7		003	A	5SY4 206-8	1	1	004	0.330
	8		A	5SY4 208-7		003	A	5SY4 208-8	1	1	004	0.330
	10		▶	5SY4 210-7		003	A	5SY4 210-8	1	1	004	0.330
	13		A	5SY4 213-7		003	A	5SY4 213-8	1	1	004	0.330
	15		C	5SY4 218-7		003	--	--	1	1		0.330
	16		▶	5SY4 216-7		003	A	5SY4 216-8	1	1	004	0.330
	20		A	5SY4 220-7		003	A	5SY4 220-8	1	1	004	0.330
	25		A	5SY4 225-7		003	A	5SY4 225-8	1	1	004	0.330
	30		C	5SY4 230-7		003	--	--	1	1		0.330
	32		A	5SY4 232-7		003	A	5SY4 232-8	1	1	004	0.330
	35		B	5SY4 235-7		003	--	--	1	1		0.330
	40		A	5SY4 240-7		003	A	5SY4 240-8	1	1	004	0.330
	45		B	5SY4 245-7		003	--	--	1	1		0.330
	50		A	5SY4 250-7		003	B	5SY4 250-8	1	1	004	0.330
	60		B	5SY4 260-7		003	--	--	1	1		0.330
63		A	5SY4 263-7		003	B	5SY4 263-8	1	1	004	0.330	
80		B	5SY4 280-7		003	--	--	1	1/6		0.323	

* You can order this quantity or a multiple thereof.





BETA Protecting Miniature Circuit Breakers (MCBs)





Miniature circuit breakers,
5SP and 5SY

10 000 3	I_n	MW	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
				Order No.	Price per PU	PG DT	Order No.	Price per PU	Unit(s)				
MCBs 10000 A													
3P, 400 V AC													
	0.3	3	C	5SY4 314-7		003 C	5SY4 314-8		1	1	004	0.495	
	0.5		B	5SY4 305-7		003 B	5SY4 305-8		1	1	004	0.495	
	1		A	5SY4 301-7		003 A	5SY4 301-8		1	1	004	0.495	
	1.6		C	5SY4 315-7		003 B	5SY4 315-8		1	1	004	0.495	
	2		A	5SY4 302-7		003 A	5SY4 302-8		1	1	004	0.495	
	3		A	5SY4 303-7		003 A	5SY4 303-8		1	1	004	0.495	
	4		A	5SY4 304-7		003 A	5SY4 304-8		1	1	004	0.495	
	5		C	5SY4 311-7		003	--		1	1		0.495	
	6		▶	5SY4 306-7		003 A	5SY4 306-8		1	1	004	0.495	
	8		A	5SY4 308-7		003 B	5SY4 308-8		1	1	004	0.495	
	10		▶	5SY4 310-7		003 A	5SY4 310-8		1	1	004	0.495	
	13		A	5SY4 313-7		003 B	5SY4 313-8		1	1	004	0.495	
	15		C	5SY4 318-7		003	--		1	1		0.495	
	16		▶	5SY4 316-7		003 A	5SY4 316-8		1	1/4	004	0.495	
	20		▶	5SY4 320-7		003 A	5SY4 320-8		1	1	004	0.495	
	25		▶	5SY4 325-7		003 A	5SY4 325-8		1	1	004	0.495	
	30		C	5SY4 330-7		003	--		1	1		0.495	
	32		▶	5SY4 332-7		003 A	5SY4 332-8		1	1	004	0.495	
	35		C	5SY4 335-7		003	--		1	1		0.495	
	40		A	5SY4 340-7		003 A	5SY4 340-8		1	1	004	0.495	
45		B	5SY4 345-7		003	--		1	1		0.495		
50		A	5SY4 350-7		003 A	5SY4 350-8		1	1	004	0.495		
60		C	5SY4 360-7		003	--		1	1		0.495		
63		A	5SY4 363-7		003 A	5SY4 363-8		1	1	004	0.495		
80		B	5SY4 380-7		003	--		1	1		0.482		
3P+N, 400 V AC													
	0.3	4	C	5SY4 614-7		003 C	5SY4 614-8		1	1	004	0.660	
	0.5		C	5SY4 605-7		003 C	5SY4 605-8		1	1	004	0.660	
	1		C	5SY4 601-7		003 C	5SY4 601-8		1	1	004	0.660	
	1.6		C	5SY4 615-7		003 C	5SY4 615-8		1	1	004	0.660	
	2		B	5SY4 602-7		003 C	5SY4 602-8		1	1	004	0.660	
	3		B	5SY4 603-7		003 C	5SY4 603-8		1	1	004	0.660	
	4		C	5SY4 604-7		003 C	5SY4 604-8		1	1	004	0.660	
	6		B	5SY4 606-7		003 C	5SY4 606-8		1	1	004	0.660	
	8		C	5SY4 608-7		003 C	5SY4 608-8		1	1	004	0.660	
	10		A	5SY4 610-7		003 B	5SY4 610-8		1	1	004	0.660	
	13		B	5SY4 613-7		003 C	5SY4 613-8		1	1	004	0.660	
	16		A	5SY4 616-7		003 A	5SY4 616-8		1	1	004	0.660	
	20		A	5SY4 620-7		003 B	5SY4 620-8		1	1	004	0.660	
	25		A	5SY4 625-7		003 A	5SY4 625-8		1	1	004	0.660	
	32		A	5SY4 632-7		003 A	5SY4 632-8		1	1	004	0.660	
	40		A	5SY4 640-7		003 A	5SY4 640-8		1	1	004	0.660	
	50		B	5SY4 650-7		003 A	5SY4 650-8		1	1	004	0.660	
63		A	5SY4 663-7		003 B	5SY4 663-8		1	1	004	0.660		
80		B	5SY4 680-7		003	--		1	1		0.647		
4P, 400 V AC													
	0.3	4	C	5SY4 414-7		003 C	5SY4 414-8		1	1	004	0.660	
	0.5		C	5SY4 405-7		003 C	5SY4 405-8		1	1	004	0.660	
	1		C	5SY4 401-7		003 C	5SY4 401-8		1	1	004	0.660	
	1.6		C	5SY4 415-7		003 C	5SY4 415-8		1	1	004	0.660	
	2		B	5SY4 402-7		003 C	5SY4 402-8		1	1	004	0.660	
	3		C	5SY4 403-7		003 C	5SY4 403-8		1	1	004	0.660	
	4		B	5SY4 404-7		003 C	5SY4 404-8		1	1	004	0.660	
	6		A	5SY4 406-7		003 B	5SY4 406-8		1	1	004	0.660	
	8		C	5SY4 408-7		003 C	5SY4 408-8		1	1	004	0.660	
	10		A	5SY4 410-7		003 A	5SY4 410-8		1	1	004	0.660	
	13		C	5SY4 413-7		003 C	5SY4 413-8		1	1	004	0.660	
	16		A	5SY4 416-7		003 ▶	5SY4 416-8		1	1	004	0.660	
	20		A	5SY4 420-7		003 A	5SY4 420-8		1	1	004	0.660	
	25		A	5SY4 425-7		003 A	5SY4 425-8		1	1	004	0.660	
	32		A	5SY4 432-7		003 ▶	5SY4 432-8		1	1	004	0.660	
	40		A	5SY4 440-7		003 A	5SY4 440-8		1	1	004	0.660	
	50		A	5SY4 450-7		003 A	5SY4 450-8		1	1	004	0.660	
63		A	5SY4 463-7		003 A	5SY4 463-8		1	1	004	0.660		
80		B	5SY4 480-7		003	--		1	1		0.647		

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

10 000		I_n	MW	DT	Characteristic B		Price per PU	PU	PS*	PG	Weight per PU approx.
		A			Order No.			Unit(s)	Unit(s)		kg
MCBs 10000 A, high current											
1P, 230/400 V AC											
	80	1.5		B	5SP4 180-6			1	1	002	0.258
	100			C	5SP4 191-6			1	1	002	0.258
	125			B	5SP4 192-6			1	1	002	0.258
2P, 400 V AC											
	80	3		C	5SP4 280-6			1	1	002	0.516
	100			C	5SP4 291-6			1	1	002	0.516
	125			C	5SP4 292-6			1	1	002	0.516
3P, 400 V AC											
	80	4.5		B	5SP4 380-6			1	1	002	0.762
	100			B	5SP4 391-6			1	1	002	0.762
	125			C	5SP4 392-6			1	1	002	0.762
4P, 400 V AC											
	80	6		B	5SP4 480-6			1	1	002	1.032
	100			C	5SP4 491-6			1	1	002	1.032
	125			C	5SP4 492-6			1	1	002	1.032





10 000		I_n	MW	DT	Characteristic C		Price per PU	PG	DT	Characteristic D		Price per PU	PU	PS*	PG	Weight per PU approx.
		A			Order No.					Order No.			Unit(s)	Unit(s)		kg
MCBs 10000 A, high current																
1P, 230/400 V AC																
	80	1.5	A		5SP4 180-7			003	B	5SP4 180-8			1	1	004	0.258
	100		A		5SP4 191-7			003	C	5SP4 191-8			1	1	004	0.258
	125		A		5SP4 192-7			003	--	--			1	1		0.258
2P, 400 V AC																
	80	3	A		5SP4 280-7			003	C	5SP4 280-8			1	1	004	0.516
	100		A		5SP4 291-7			003	C	5SP4 291-8			1	1	004	0.516
	125		A		5SP4 292-7			003	--	--			1	1		0.516
3P, 400 V AC																
	80	4.5	A		5SP4 380-7			003	A	5SP4 380-8			1	1	004	0.762
	100		A		5SP4 391-7			003	A	5SP4 391-8			1	1	004	0.762
	125		A		5SP4 392-7			003	--	--			1	1		0.762
4P, 400 V AC																
	80	6	A		5SP4 480-7			003	A	5SP4 480-8			1	1	004	1.032
	100		A		5SP4 491-7			003	C	5SP4 491-8			1	1	004	1.032
	125		A		5SP4 492-7			003	--	--			1	1		1.032

* You can order this quantity or a multiple thereof.

BETA Protecting


Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

10 000 3	I_n	MW	DT	Characteristic B			Characteristic C			PU	PS*	PG	Weight per PU approx.
				Order No.	Price per PU	PG DT	Order No.	Price per PU	Unit(s)				
MCBs 10000 A, universal current													
1P, 230/400 V AC, 220 V DC													
	0.3	1	--			C	5SY5 114-7		1	1	003	0.165	
	0.5		--			B	5SY5 105-7		1	1	003	0.165	
	1		--			A	5SY5 101-7		1	1	003	0.147	
	1.6		--			A	5SY5 115-7		1	1	003	0.165	
	2		--			A	5SY5 102-7	002	1	1	003	0.165	
	3		--			A	5SY5 103-7		1	1	003	0.165	
	4		--			A	5SY5 104-7	002	1	1	003	0.165	
	6		--			A	5SY5 106-6	002	1	1	003	0.165	
	8		--			A	5SY5 108-7		1	1	003	0.165	
	10		--			A	5SY5 110-6	002	1	1	003	0.165	
	13		--			C	5SY5 113-6	002	1	1	003	0.165	
	16		--			A	5SY5 116-6	002	1	1	003	0.165	
	20		--			C	5SY5 120-6	002	1	1	003	0.165	
	25		--			C	5SY5 125-6	002	1	1	003	0.165	
	32		--			C	5SY5 132-6	002	1	1	003	0.165	
40		--			C	5SY5 140-6	002	1	1	003	0.165		
50		--			C	5SY5 150-6	002	1	1	003	0.165		
63		--			C	5SY5 163-6	002	1	1	003	0.165		
1P, 230/400 V AC, 220 V DC													
	80	1.5	--			B	5SP5 180-7		1	1	003	0.258	
	100		--			B	5SP5 191-7		1	1	003	0.258	
	125		--			B	5SP5 192-7		1	1	003	0.258	
			--										
2P, 400 V AC, 440 V DC													
	0.3	2	--			C	5SY5 214-7		1	1	003	0.330	
	0.5		--			B	5SY5 205-7		1	1	003	0.330	
	1		--			A	5SY5 201-7		1	1	003	0.330	
	1.6		--			B	5SY5 215-7		1	1	003	0.330	
	2		--			▶	5SY5 202-7		1	1	003	0.330	
	3		--			▶	5SY5 203-7		1	1	003	0.330	
	4		--			A	5SY5 204-7		1	1	003	0.330	
	6		--			A	5SY5 206-6	002	1	1/6	003	0.330	
	8		--			B	5SY5 208-7		1	1	003	0.330	
	10		--			A	5SY5 210-6	002	1	1	003	0.330	
	13		--			C	5SY5 213-6	002	1	1	003	0.330	
	16		--			A	5SY5 216-6	002	1	1	003	0.330	
	20		--			A	5SY5 220-6	002	1	1	003	0.330	
	25		--			C	5SY5 225-6	002	1	1	003	0.330	
	32		--			B	5SY5 232-6	002	1	1	003	0.330	
40		--			C	5SY5 240-6	002	1	1	003	0.330		
50		--			C	5SY5 250-6	002	1	1	003	0.330		
63		--			C	5SY5 263-6	002	1	1	003	0.330		
2P, 400 V AC, 440 V DC													
	80	3	--			B	5SP5 280-7		1	1	003	0.516	
	100		--			B	5SP5 291-7		1	1	003	0.516	
	125		--			B	5SP5 292-7		1	1	003	0.516	

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

10 000 3	I_n	MW	DT	Characteristic B				Characteristic C				Weight per PU approx. kg												
				Order No.	Price per PU	PG	DT	Order No.	Price per PU	PU	PS*		PG											
A												Unit(s)	Unit(s)											
																								
MCBs 10000 A, universal current																								
4P, 400 V AC, 880 V DC																								
	0.3	1		--				C	5SY5 414-7			1	1	003	0.660									
	0.5			--				C	5SY5 405-7			1	1	003	0.660									
	1			--				C	5SY5 401-7			1	1	003	0.660									
	1.6			--				C	5SY5 415-7			1	1	003	0.660									
	2			--				C	5SY5 402-7			1	1	003	0.660									
	3			--				C	5SY5 403-7			1	1	003	0.660									
	4			--				C	5SY5 404-7			1	1	003	0.660									
	6		C	5SY5 406-6			002	C	5SY5 406-7			1	1	003	0.660									
	8			--				C	5SY5 408-7			1	1	003	0.660									
	10		C	5SY5 410-6			002	C	5SY5 410-7			1	1	003	0.660									
	13		C	5SY5 413-6			002	C	5SY5 413-7			1	1	003	0.660									
	16		C	5SY5 416-6			002	C	5SY5 416-7			1	1	003	0.660									
	20		C	5SY5 420-6			002	C	5SY5 420-7			1	1	003	0.660									
	25		C	5SY5 425-6			002	C	5SY5 425-7			1	1	003	0.660									
	32		C	5SY5 432-6			002	C	5SY5 432-7			1	1	003	0.660									
	40		C	5SY5 440-6			002	C	5SY5 440-7			1	1	003	0.660									
	50		C	5SY5 450-6			002	C	5SY5 450-7			1	1	003	0.660									
	63		C	5SY5 463-6			002	C	5SY5 463-7			1	1	003	0.660									

* You can order this quantity or a multiple thereof.




BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

15 000 3		I_n	MW	DT	Characteristic B Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
MCBs 15000 A										
1P, 230/400 V AC										
	6	1		▶	5SY7 106-6		1	1	002	0.165
	10			▶	5SY7 110-6		1	1	002	0.165
	13			C	5SY7 113-6		1	1	002	0.165
	16			▶	5SY7 116-6		1	1	002	0.165
	20			B	5SY7 120-6		1	1	002	0.165
	25			B	5SY7 125-6		1	1	002	0.165
	32			B	5SY7 132-6		1	1	002	0.165
	40			C	5SY7 140-6		1	1	002	0.165
	50			C	5SY7 150-6		1	1	002	0.165
63			C	5SY7 163-6		1	1	002	0.165	
1P+N, 230 V AC										
	6	2		C	5SY7 506-6		1	1	002	0.330
	10			C	5SY7 510-6		1	1	002	0.330
	13			C	5SY7 513-6		1	1	002	0.330
	16			C	5SY7 516-6		1	1	002	0.330
	20			C	5SY7 520-6		1	1	002	0.330
	25			C	5SY7 525-6		1	1	002	0.330
	32			C	5SY7 532-6		1	1	002	0.330
	40			C	5SY7 540-6		1	1	002	0.330
	50			C	5SY7 550-6		1	1	002	0.330
63			C	5SY7 563-6		1	1	002	0.330	
2P, 400 V AC										
	6	2		B	5SY7 206-6		1	1	002	0.330
	10			B	5SY7 210-6		1	1	002	0.330
	13			C	5SY7 213-6		1	1	002	0.330
	16			B	5SY7 216-6		1	1	002	0.330
	20			B	5SY7 220-6		1	1	002	0.330
	25			B	5SY7 225-6		1	1	002	0.330
	32			C	5SY7 232-6		1	1	002	0.330
	40			C	5SY7 240-6		1	1	002	0.330
	50			C	5SY7 250-6		1	1	002	0.330
63			C	5SY7 263-6		1	1	002	0.330	
3P, 400 V AC										
	6	3		B	5SY7 306-6		1	1	002	0.495
	10			B	5SY7 310-6		1	1	002	0.495
	13			C	5SY7 313-6		1	1	002	0.495
	16			A	5SY7 316-6		1	1	002	0.495
	20			B	5SY7 320-6		1	1	002	0.495
	25			B	5SY7 325-6		1	1	002	0.495
	32			B	5SY7 332-6		1	1	002	0.495
	40			B	5SY7 340-6		1	1	002	0.495
	50			B	5SY7 350-6		1	1	002	0.495
63			C	5SY7 363-6		1	1	002	0.495	
3P+N, 400 V AC										
	6	4		C	5SY7 606-6		1	1	002	0.660
	10			C	5SY7 610-6		1	1	002	0.660
	13			C	5SY7 613-6		1	1	002	0.660
	16			C	5SY7 616-6		1	1	002	0.660
	20			C	5SY7 620-6		1	1	002	0.660
	25			C	5SY7 625-6		1	1	002	0.660
	32			C	5SY7 632-6		1	1	002	0.660
	40			C	5SY7 640-6		1	1	002	0.660
	50			C	5SY7 650-6		1	1	002	0.660
63			C	5SY7 663-6		1	1	002	0.660	
4P, 400 V AC										
	6	4		C	5SY7 406-6		1	1	002	0.660
	10			B	5SY7 410-6		1	1	002	0.660
	13			C	5SY7 413-6		1	1	002	0.660
	16			B	5SY7 416-6		1	1	002	0.660
	20			B	5SY7 420-6		1	1	002	0.660
	25			C	5SY7 425-6		1	1	002	0.660
	32			C	5SY7 432-6		1	1	002	0.660
	40			C	5SY7 440-6		1	1	002	0.660
	50			C	5SY7 450-6		1	1	002	0.660
63			C	5SY7 463-6		1	1	002	0.660	

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY




15 000		I_n	MW	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
3					Order No.	Price per PU	PG	DT	Order No.	Price per PU				
MCBs 15000 A														
1P, 230/400 V AC														
	0.3	1	B	5SY7 114-7		003	C	5SY7 114-8		1	1	004	0.165	
	0.5		B	5SY7 105-7		003	C	5SY7 105-8		1	1	004	0.165	
	1		A	5SY7 101-7		003	C	5SY7 101-8		1	1	004	0.165	
	1.6		B	5SY7 115-7		003	C	5SY7 115-8		1	1	004	0.165	
	2		▶	5SY7 102-7		003	C	5SY7 102-8		1	1	004	0.165	
	3		A	5SY7 103-7		003	C	5SY7 103-8		1	1	004	0.165	
	4		A	5SY7 104-7		003	B	5SY7 104-8		1	1	004	0.165	
	6		▶	5SY7 106-7		003	B	5SY7 106-8		1	1	004	0.165	
	8		B	5SY7 108-7		003	C	5SY7 108-8		1	1	004	0.165	
	10		▶	5SY7 110-7		003	B	5SY7 110-8		1	1	004	0.165	
	13		B	5SY7 113-7		003	C	5SY7 113-8		1	1	004	0.165	
	16		▶	5SY7 116-7		003	B	5SY7 116-8		1	1	004	0.165	
	20		A	5SY7 120-7		003	C	5SY7 120-8		1	1	004	0.165	
	25		B	5SY7 125-7		003	C	5SY7 125-8		1	1	004	0.165	
32		B	5SY7 132-7		003	C	5SY7 132-8		1	1	004	0.165		
40		B	5SY7 140-7		003	C	5SY7 140-8		1	1	004	0.165		
50		C	5SY7 150-7		003	C	5SY7 150-8		1	1	004	0.165		
63		B	5SY7 163-7		003	C	5SY7 163-8		1	1	004	0.165		
1P+N, 230 V AC														
	0.3	2	C	5SY7 514-7		003	C	5SY7 514-8		1	1	004	0.330	
	0.5		C	5SY7 505-7		003	C	5SY7 505-8		1	1	004	0.330	
	1		B	5SY7 501-7		003	C	5SY7 501-8		1	1	004	0.330	
	1.6		C	5SY7 515-7		003	C	5SY7 515-8		1	1	004	0.330	
	2		B	5SY7 502-7		003	C	5SY7 502-8		1	1	004	0.330	
	3		B	5SY7 503-7		003	C	5SY7 503-8		1	1	004	0.330	
	4		B	5SY7 504-7		003	B	5SY7 504-8		1	1	004	0.330	
	6		A	5SY7 506-7		003	C	5SY7 506-8		1	1	004	0.330	
	8		C	5SY7 508-7		003	C	5SY7 508-8		1	1	004	0.330	
	10		A	5SY7 510-7		003	C	5SY7 510-8		1	1	004	0.330	
	13		B	5SY7 513-7		003	C	5SY7 513-8		1	1	004	0.330	
	16		A	5SY7 516-7		003	B	5SY7 516-8		1	1	004	0.330	
	20		B	5SY7 520-7		003	C	5SY7 520-8		1	1	004	0.330	
	25		B	5SY7 525-7		003	C	5SY7 525-8		1	1	004	0.330	
32		B	5SY7 532-7		003	C	5SY7 532-8		1	1	004	0.330		
40		C	5SY7 540-7		003	C	5SY7 540-8		1	1	004	0.330		
50		C	5SY7 550-7		003	C	5SY7 550-8		1	1	004	0.330		
63		C	5SY7 563-7		003	C	5SY7 563-8		1	1	004	0.330		
2P, 400 V AC														
	0.3	2	C	5SY7 214-7		003	C	5SY7 214-8		1	1	004	0.330	
	0.5		B	5SY7 205-7		003	C	5SY7 205-8		1	1	004	0.330	
	1		A	5SY7 201-7		003	B	5SY7 201-8		1	1	004	0.330	
	1.6		C	5SY7 215-7		003	C	5SY7 215-8		1	1	004	0.330	
	2		A	5SY7 202-7		003	A	5SY7 202-8		1	1	004	0.330	
	3		A	5SY7 203-7		003	B	5SY7 203-8		1	1	004	0.330	
	4		A	5SY7 204-7		003	A	5SY7 204-8		1	1	004	0.330	
	6		▶	5SY7 206-7		003	A	5SY7 206-8		1	1	004	0.330	
	8		B	5SY7 208-7		003	B	5SY7 208-8		1	1	004	0.330	
	10		▶	5SY7 210-7		003	A	5SY7 210-8		1	1	004	0.330	
	13		B	5SY7 213-7		003	C	5SY7 213-8		1	1	004	0.330	
	16		▶	5SY7 216-7		003	A	5SY7 216-8		1	1	004	0.330	
	20		A	5SY7 220-7		003	B	5SY7 220-8		1	1	004	0.330	
	25		A	5SY7 225-7		003	B	5SY7 225-8		1	1	004	0.330	
32		A	5SY7 232-7		003	C	5SY7 232-8		1	1	004	0.330		
40		A	5SY7 240-7		003	C	5SY7 240-8		1	1	004	0.330		
50		B	5SY7 250-7		003	C	5SY7 250-8		1	1	004	0.330		
63		B	5SY7 263-7		003	C	5SY7 263-8		1	1	004	0.330		

* You can order this quantity or a multiple thereof.

BETA Protecting

Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

15 000		I_n	MW	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
3	Order No.				Price per PU	PG	DT	Order No.	Price per PU	Unit(s)				
MCBs 15000 A														
3P, 400 V AC														
	0.3	3	C	5SY7 314-7		003	C	5SY7 314-8	1	1	004	0.495		
	0.5		C	5SY7 305-7		003	C	5SY7 305-8	1	1	004	0.495		
	1		C	5SY7 301-7		003	C	5SY7 301-8	1	1	004	0.495		
	1.6		C	5SY7 315-7		003	C	5SY7 315-8	1	1	004	0.495		
	2		B	5SY7 302-7		003	C	5SY7 302-8	1	1	004	0.495		
	3		C	5SY7 303-7		003	C	5SY7 303-8	1	1	004	0.495		
	4		A	5SY7 304-7		003	C	5SY7 304-8	1	1	004	0.495		
	6		A	5SY7 306-7		003	C	5SY7 306-8	1	1	004	0.495		
	8		C	5SY7 308-7		003	B	5SY7 308-8	1	1	004	0.495		
	10		A	5SY7 310-7		003	B	5SY7 310-8	1	1	004	0.495		
	13		B	5SY7 313-7		003	C	5SY7 313-8	1	1	004	0.495		
	16		▶	5SY7 316-7		003	A	5SY7 316-8	1	1	004	0.495		
	20		▶	5SY7 320-7		003	B	5SY7 320-8	1	1	004	0.495		
	25		▶	5SY7 325-7		003	A	5SY7 325-8	1	1	004	0.495		
32		▶	5SY7 332-7		003	B	5SY7 332-8	1	1	004	0.495			
40		▶	5SY7 340-7		003	B	5SY7 340-8	1	1	004	0.495			
50		▶	5SY7 350-7		003	B	5SY7 350-8	1	1	004	0.495			
63		▶	5SY7 363-7		003	B	5SY7 363-8	1	1	004	0.495			
3P+N, 400 V AC														
	0.3	4	C	5SY7 614-7		003	C	5SY7 614-8	1	1	004	0.660		
	0.5		C	5SY7 605-7		003	C	5SY7 605-8	1	1	004	0.660		
	1		C	5SY7 601-7		003	C	5SY7 601-8	1	1	004	0.660		
	1.6		C	5SY7 615-7		003	C	5SY7 615-8	1	1	004	0.660		
	2		C	5SY7 602-7		003	C	5SY7 602-8	1	1	004	0.660		
	3		C	5SY7 603-7		003	C	5SY7 603-8	1	1	004	0.660		
	4		C	5SY7 604-7		003	C	5SY7 604-8	1	1	004	0.660		
	6		C	5SY7 606-7		003	C	5SY7 606-8	1	1	004	0.660		
	8		C	5SY7 608-7		003	C	5SY7 608-8	1	1	004	0.660		
	10		B	5SY7 610-7		003	C	5SY7 610-8	1	1	004	0.660		
	13		C	5SY7 613-7		003	C	5SY7 613-8	1	1	004	0.660		
	16		A	5SY7 616-7		003	C	5SY7 616-8	1	1	004	0.660		
	20		B	5SY7 620-7		003	C	5SY7 620-8	1	1	004	0.660		
	25		B	5SY7 625-7		003	C	5SY7 625-8	1	1	004	0.660		
32		B	5SY7 632-7		003	C	5SY7 632-8	1	1	004	0.660			
40		B	5SY7 640-7		003	C	5SY7 640-8	1	1	004	0.660			
50		B	5SY7 650-7		003	C	5SY7 650-8	1	1	004	0.660			
63		B	5SY7 663-7		003	C	5SY7 663-8	1	1	004	0.660			
4P, 400 V AC														
	0.3	4	C	5SY7 414-7		003	C	5SY7 414-8	1	1	004	0.660		
	0.5		C	5SY7 405-7		003	C	5SY7 405-8	1	1	004	0.660		
	1		C	5SY7 401-7		003	C	5SY7 401-8	1	1	004	0.660		
	1.6		C	5SY7 415-7		003	C	5SY7 415-8	1	1	004	0.660		
	2		C	5SY7 402-7		003	C	5SY7 402-8	1	1	004	0.660		
	3		C	5SY7 403-7		003	C	5SY7 403-8	1	1	004	0.660		
	4		B	5SY7 404-7		003	C	5SY7 404-8	1	1	004	0.660		
	6		B	5SY7 406-7		003	C	5SY7 406-8	1	1	004	0.660		
	8		C	5SY7 408-7		003	C	5SY7 408-8	1	1	004	0.660		
	10		▶	5SY7 410-7		003	B	5SY7 410-8	1	1	004	0.660		
	13		C	5SY7 413-7		003	C	5SY7 413-8	1	1	004	0.660		
	16		▶	5SY7 416-7		003	B	5SY7 416-8	1	1	004	0.660		
	20		A	5SY7 420-7		003	B	5SY7 420-8	1	1	004	0.660		
	25		▶	5SY7 425-7		003	B	5SY7 425-8	1	1	004	0.660		
32		▶	5SY7 432-7		003	B	5SY7 432-8	1	1	004	0.660			
40		A	5SY7 440-7		003	B	5SY7 440-8	1	1	004	0.660			
50		A	5SY7 450-7		003	B	5SY7 450-8	1	1	004	0.660			
63		▶	5SY7 463-7		003	B	5SY7 463-8	1	1	004	0.660			

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY




I_n	MW	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
			Order No.	Price per PU	PG DT	Order No.	Price per PU	Unit(s)				
MCBs 25 kA												
1P, 230/400 V AC												
0.3	1	C	5SY8 114-7		003 C	5SY8 114-8		1	1	004	0.165	
0.5		C	5SY8 105-7		003 C	5SY8 105-8		1	1	004	0.165	
1		B	5SY8 101-7		003 C	5SY8 101-8		1	1	004	0.165	
1.6		C	5SY8 115-7		003 C	5SY8 115-8		1	1	004	0.165	
2		A	5SY8 102-7		003 B	5SY8 102-8		1	1	004	0.165	
3		C	5SY8 103-7		003 C	5SY8 103-8		1	1	004	0.165	
4		B	5SY8 104-7		003 C	5SY8 104-8		1	1	004	0.165	
6		A	5SY8 106-7		003 C	5SY8 106-8		1	1	004	0.165	
8		C	5SY8 108-7		003 C	5SY8 108-8		1	1	004	0.165	
10		A	5SY8 110-7		003 C	5SY8 110-8		1	1	004	0.165	
13		C	5SY8 113-7		003 C	5SY8 113-8		1	1	004	0.165	
16		A	5SY8 116-7		003 C	5SY8 116-8		1	1	004	0.165	
20		A	5SY8 120-7		003 C	5SY8 120-8		1	1	004	0.165	
25		C	5SY8 125-7		003 C	5SY8 125-8		1	1	004	0.165	
32		B	5SY8 132-7		003 C	5SY8 132-8		1	1	004	0.165	
40		C	5SY8 140-7		003 C	5SY8 140-8		1	1	004	0.165	
50		C	5SY8 150-7		003 C	5SY8 150-8		1	1	004	0.165	
63		C	5SY8 163-7		003 C	5SY8 163-8		1	1	004	0.165	
1P+N, 230 V AC												
0.3	2	C	5SY8 514-7		003 C	5SY8 514-8		1	1	004	0.330	
0.5		C	5SY8 505-7		003 C	5SY8 505-8		1	1	004	0.330	
1		C	5SY8 501-7		003 C	5SY8 501-8		1	1	004	0.330	
1.6		C	5SY8 515-7		003 C	5SY8 515-8		1	1	004	0.330	
2		C	5SY8 502-7		003 C	5SY8 502-8		1	1	004	0.330	
3		C	5SY8 503-7		003 C	5SY8 503-8		1	1	004	0.330	
4		C	5SY8 504-7		003 C	5SY8 504-8		1	1	004	0.330	
6		B	5SY8 506-7		003 C	5SY8 506-8		1	1	004	0.330	
8		C	5SY8 508-7		003 C	5SY8 508-8		1	1	004	0.330	
10		B	5SY8 510-7		003 C	5SY8 510-8		1	1	004	0.330	
13		C	5SY8 513-7		003 C	5SY8 513-8		1	1	004	0.330	
16		B	5SY8 516-7		003 C	5SY8 516-8		1	1	004	0.330	
20		C	5SY8 520-7		003 C	5SY8 520-8		1	1	004	0.330	
25		C	5SY8 525-7		003 C	5SY8 525-8		1	1	004	0.330	
32		B	5SY8 532-7		003 C	5SY8 532-8		1	1	004	0.330	
40		C	5SY8 540-7		003 B	5SY8 540-8		1	1	004	0.330	
50		B	5SY8 550-7		003 B	5SY8 550-8		1	1	004	0.330	
63		B	5SY8 563-7		003 B	5SY8 563-8		1	1	004	0.330	
2P, 400 V AC												
0.3	2	C	5SY8 214-7		003 C	5SY8 214-8		1	1	004	0.330	
0.5		C	5SY8 205-7		003 C	5SY8 205-8		1	1	004	0.330	
1		B	5SY8 201-7		003 C	5SY8 201-8		1	1	004	0.330	
1.6		C	5SY8 215-7		003 C	5SY8 215-8		1	1	004	0.330	
2		B	5SY8 202-7		003 B	5SY8 202-8		1	1	004	0.330	
3		C	5SY8 203-7		003 C	5SY8 203-8		1	1	004	0.330	
4		A	5SY8 204-7		003 C	5SY8 204-8		1	1	004	0.330	
6		A	5SY8 206-7		003 A	5SY8 206-8		1	1	004	0.330	
8		C	5SY8 208-7		003 C	5SY8 208-8		1	1	004	0.330	
10		A	5SY8 210-7		003 B	5SY8 210-8		1	1	004	0.330	
13		C	5SY8 213-7		003 C	5SY8 213-8		1	1	004	0.330	
16		A	5SY8 216-7		003 C	5SY8 216-8		1	1	004	0.330	
20		B	5SY8 220-7		003 C	5SY8 220-8		1	1	004	0.330	
25		B	5SY8 225-7		003 B	5SY8 225-8		1	1	004	0.330	
32		B	5SY8 232-7		003 C	5SY8 232-8		1	1	004	0.330	
40		C	5SY8 240-7		003 C	5SY8 240-8		1	1	004	0.330	
50		C	5SY8 250-7		003 C	5SY8 250-8		1	1	004	0.330	
63		C	5SY8 263-7		003 C	5SY8 263-8		1	1	004	0.330	

* You can order this quantity or a multiple thereof.

BETA Protecting

Miniature Circuit Breakers (MCBs)

Miniature circuit breakers,
5SP and 5SY

I_n	MW	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
			Order No.	Price per PU	PG DT	Order No.	Price per PU	Unit(s)				
MCBs 25 kA												
3P, 400 V AC												
	0.3	3	C	5SY8 314-7		003 C	5SY8 314-8		1	1	004	0.495
	0.5		A	5SY8 305-7		003 C	5SY8 305-8		1	1	004	0.495
	1		C	5SY8 301-7		003 C	5SY8 301-8		1	1	004	0.495
	1.6		C	5SY8 315-7		003 C	5SY8 315-8		1	1	004	0.495
	2		C	5SY8 302-7		003 C	5SY8 302-8		1	1	004	0.495
	3		C	5SY8 303-7		003 C	5SY8 303-8		1	1	004	0.495
	4		C	5SY8 304-7		003 C	5SY8 304-8		1	1	004	0.495
	6		B	5SY8 306-7		003 C	5SY8 306-8		1	1	004	0.495
	8		C	5SY8 308-7		003 C	5SY8 308-8		1	1	004	0.495
	10		B	5SY8 310-7		003 C	5SY8 310-8		1	1	004	0.495
	13		C	5SY8 313-7		003 C	5SY8 313-8		1	1	004	0.495
	16		A	5SY8 316-7		003 C	5SY8 316-8		1	1	004	0.495
	20		C	5SY8 320-7		003 C	5SY8 320-8		1	1	004	0.495
	25		A	5SY8 325-7		003 B	5SY8 325-8		1	1	004	0.495
	32		A	5SY8 332-7		003 B	5SY8 332-8		1	1	004	0.495
	40		B	5SY8 340-7		003 C	5SY8 340-8		1	1	004	0.495
50		B	5SY8 350-7		003 B	5SY8 350-8		1	1	004	0.495	
63		B	5SY8 363-7		003 C	5SY8 363-8		1	1	004	0.495	
3P+N, 400 V AC												
	0.3	4	C	5SY8 614-7		003 C	5SY8 614-8		1	1	004	0.660
	0.5		C	5SY8 605-7		003 C	5SY8 605-8		1	1	004	0.660
	1		C	5SY8 601-7		003 C	5SY8 601-8		1	1	004	0.660
	1.6		C	5SY8 615-7		003 C	5SY8 615-8		1	1	004	0.660
	2		C	5SY8 602-7		003 C	5SY8 602-8		1	1	004	0.660
	3		C	5SY8 603-7		003 C	5SY8 603-8		1	1	004	0.660
	4		C	5SY8 604-7		003 C	5SY8 604-8		1	1	004	0.660
	6		C	5SY8 606-7		003 C	5SY8 606-8		1	1	004	0.660
	8		C	5SY8 608-7		003 C	5SY8 608-8		1	1	004	0.660
	10		C	5SY8 610-7		003 C	5SY8 610-8		1	1	004	0.660
	13		C	5SY8 613-7		003 C	5SY8 613-8		1	1	004	0.660
	16		B	5SY8 616-7		003 C	5SY8 616-8		1	1	004	0.660
	20		C	5SY8 620-7		003 C	5SY8 620-8		1	1	004	0.660
	25		C	5SY8 625-7		003 C	5SY8 625-8		1	1	004	0.660
	32		B	5SY8 632-7		003 C	5SY8 632-8		1	1	004	0.660
	40		C	5SY8 640-7		003 C	5SY8 640-8		1	1	004	0.660
50		C	5SY8 650-7		003 C	5SY8 650-8		1	1	004	0.660	
63		A	5SY8 663-7		003 C	5SY8 663-8		1	1	004	0.660	
4P, 400 V AC												
	0.3	4	C	5SY8 414-7		003 C	5SY8 414-8		1	1	004	0.660
	0.5		C	5SY8 405-7		003 C	5SY8 405-8		1	1	004	0.660
	1		C	5SY8 401-7		003 C	5SY8 401-8		1	1	004	0.660
	1.6		C	5SY8 415-7		003 C	5SY8 415-8		1	1	004	0.660
	2		C	5SY8 402-7		003 C	5SY8 402-8		1	1	004	0.660
	3		C	5SY8 403-7		003 C	5SY8 403-8		1	1	004	0.660
	4		C	5SY8 404-7		003 C	5SY8 404-8		1	1	004	0.660
	6		C	5SY8 406-7		003 C	5SY8 406-8		1	1	004	0.660
	8		C	5SY8 408-7		003 C	5SY8 408-8		1	1	004	0.660
	10		B	5SY8 410-7		003 C	5SY8 410-8		1	1	004	0.660
	13		C	5SY8 413-7		003 C	5SY8 413-8		1	1	004	0.660
	16		A	5SY8 416-7		003 C	5SY8 416-8		1	1	004	0.660
	20		A	5SY8 420-7		003 C	5SY8 420-8		1	1	004	0.660
	25		A	5SY8 425-7		003 C	5SY8 425-8		1	1	004	0.660
	32		A	5SY8 432-7		003 C	5SY8 432-8		1	1	004	0.660
	40		A	5SY8 440-7		003 C	5SY8 440-8		1	1	004	0.660
50		A	5SY8 450-7		003 C	5SY8 450-8		1	1	004	0.660	
63		A	5SY8 463-7		003 C	5SY8 463-8		1	1	004	0.660	

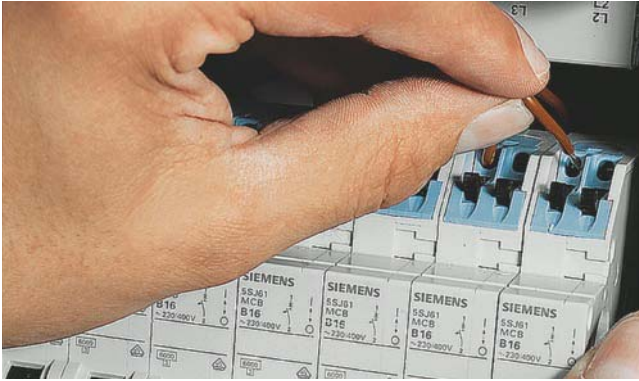
BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers with plug-in terminal,
5SJ6...-KS

Overview

Miniature circuit breakers with plug-in terminals are used for the protection of socket outlets and lighting circuits with the most common rated currents of 10 to 20 A.

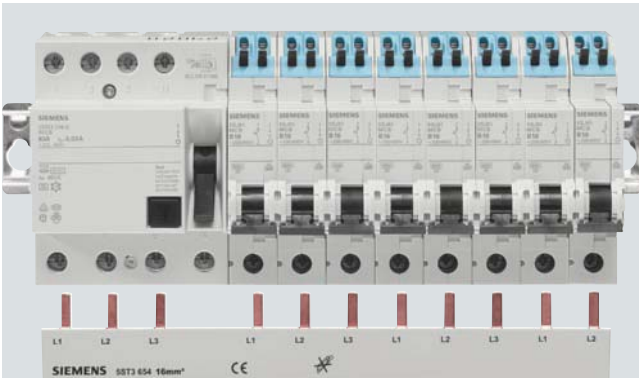
Benefits



- Double, screwless independent outgoing terminals for fast connection of conductors.



- The plug-in terminals offer angled, easily accessible cable entries for manual insertion, which saves mounting time
- Separate removal of individual conductors requires no tools and provides a high level of operational reliability.
- No end sleeves required for finely stranded conductors. This saves mounting time.







- Conventional pin busbars are used for the incoming terminal. This ensures clear, manageable and convenient access to all connections within the framework of the Siemens connection concept.

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers with plug-in terminal,
5SJ6...-KS

Selection and ordering data

6 000				Characteristic B			Characteristic C						
3	I_n	MW	DT	Order No.	Price per PU	PG	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
										Unit(s)	Unit(s)	kg	
MCBs with plug-in terminals													
1P													
	10	1	B	5SJ6 110-6KS		002	B	5SJ6 110-7KS		1	1	003	0.111
	13		B	5SJ6 113-6KS		002	B	5SJ6 113-7KS		1	1/12	003	0.111
	16		A	5SJ6 116-6KS		002	B	5SJ6 116-7KS		1	1	003	0.111
	20		B	5SJ6 120-6KS		002	B	5SJ6 120-7KS		1	1/12	003	0.111
1P+N													
	10	2	B	5SJ6 510-6KS		002	B	5SJ6 510-7KS		1	1/6	003	0.185
	13		B	5SJ6 513-6KS		002	B	5SJ6 513-7KS		1	1/6	003	0.185
	16		B	5SJ6 516-6KS		002	B	5SJ6 516-7KS		1	1/6	003	0.185
	20		B	5SJ6 520-6KS		002	B	5SJ6 520-7KS		1	1/6	003	0.185
2P													
	10	2	B	5SJ6 210-6KS		002	B	5SJ6 210-7KS		1	1/6	003	0.225
	13		B	5SJ6 213-6KS		002	B	5SJ6 213-7KS		1	1/6	003	0.225
	16		B	5SJ6 216-6KS		002	B	5SJ6 216-7KS		1	1/6	003	0.225
	20		B	5SJ6 220-6KS		002	B	5SJ6 220-7KS		1	1/6	003	0.225
3P													
	10	3	B	5SJ6 310-6KS		002	B	5SJ6 310-7KS		1	1/4	003	0.345
	13		B	5SJ6 313-6KS		002	B	5SJ6 313-7KS		1	1/4	003	0.345
	16		B	5SJ6 316-6KS		002	B	5SJ6 316-7KS		1	1/4	003	0.345
	20		B	5SJ6 320-6KS		002	B	5SJ6 320-7KS		1	1/4	003	0.345

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers 1 + N in 1 MW,
5SY6 0

Overview

These miniature circuit breakers are used for the protection of plants with switched neutral conductors in distribution boards with little space. They are only a single modular width.

Compact busbars facilitate installation in space saving distribution boards.

The devices are approved for worldwide use according to IEC standards for systems up to 250 V AC. 60 V DC per pole is permitted in DC systems according to IEC standards.

Benefits



- Auxiliary switches and fault signal contacts from the high-capacity range can be freely mounted on these miniature circuit breakers. This increases availability and cuts down on logistics.



- For 3-pole busbars, the 5ST3 6 busbar system is used – a universal system, suitable for all miniature circuit breakers.



- By actuating the latching slide, the miniature circuit breakers can be quickly and easily removed from the assembly.





- The infeed can be implemented either from the top or the bottom. Additional terminals with lateral insertion of conductors facilitate mounting when using large conductor cross-sections.


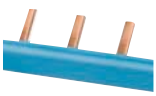
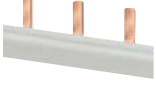
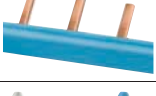

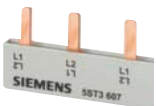

BETA Protecting

Miniature Circuit Breakers (MCBs)

Miniature circuit breakers 1 + N in 1 MW,
5SY6 0

Selection and ordering data

6 000 3		I_n	MW	DT	Characteristic B			Characteristic C			PU	PS*	PG	Weight per PU approx. kg
					Order No.	Price per PU	PG	DT	Order No.	Price per PU				
Miniature circuit breakers 1+N (1P+N), 230 V AC														
N pole right														
	2	1	--			A	5SY6 002-7		1	1	003	0.107		
	4		--			A	5SY6 004-7		1	1	003	0.106		
	6		A	5SY6 006-6		002 A	5SY6 006-7		1	1	003	0.100		
	8		--			D	5SY6 008-7		1	1	003	0.100		
	10		A	5SY6 010-6		002 A	5SY6 010-7		1	1	003	0.100		
	13		A	5SY6 013-6		002 A	5SY6 013-7		1	1	003	0.100		
	16		A	5SY6 016-6		002 A	5SY6 016-7		1	1	003	0.100		
	20		A	5SY6 020-6		002 A	5SY6 020-7		1	1	003	0.100		
	25		A	5SY6 025-6		002 A	5SY6 025-7		1	1	003	0.100		
	32		A	5SY6 032-6		002 A	5SY6 032-7		1	1	003	0.100		
40		A	5SY6 040-6		002 D	5SY6 040-7		1	1	003	0.100			
N pole left														
	2	1	--			A	5SY6 002-7KL		1	1	003	0.100		
	4		--			A	5SY6 004-7KL		1	1	003	0.100		
	6		A	5SY6 006-6KL		002 D	5SY6 006-7KL		1	1	003	0.100		
	8		--			D	5SY6 008-7KL		1	1	003	0.100		
	10		D	5SY6 010-6KL		002 A	5SY6 010-7KL		1	1	003	0.100		
	13		D	5SY6 013-6KL		002 D	5SY6 013-7KL		1	1	003	0.100		
	16		A	5SY6 016-6KL		002 D	5SY6 016-7KL		1	1	003	0.100		
	20		D	5SY6 020-6KL		002 D	5SY6 020-7KL		1	1	003	0.100		
	25		D	5SY6 025-6KL		002 D	5SY6 025-7KL		1	1	003	0.100		
	32		D	5SY6 032-6KL		002 D	5SY6 032-7KL		1	1	003	0.100		
40		D	5SY6 040-6KL		002 D	5SY6 040-7KL		1	1	003	0.100			

	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg
5ST3 7 busbar system, 10 mm², 12 MW, for MCBs 1+N in 1 MW of the compact range, can be cut, with end caps									
	Single-phase								
	For 12 MCB 1+N, gray	1	216	A	5ST3 762	1	10	027	0.029
	For 12 MCB 1+N, blue		216	A	5ST3 763	1	10	027	0.029
5ST3 7 busbar system, 10 mm², for MCBs 1+N in 1 MW of the compact range, can be cut, without end caps									
	Single-phase								
	For MCBs 1+N, gray	1	1016	A	5ST3 764	1	10	027	0.134
	For MCBs 1+N, blue		1016	A	5ST3 765	1	10	027	0.134
End caps for 5ST3 76 busbars									
	1 set comprises a right and a left cap								
	Gray			A	5ST3 766	1 set	10 sets	027	
	Blue			A	5ST3 767	1 set	10 sets	027	
5ST3 6 busbar system, 10 mm², for MCBs, fixed lengths, cannot be cut, fully insulated									
	Three-phase								
	For 2 MCB 3P	1	102	A	5ST3 613	1	10	027	0.039
	For 3 MCB 3P		257.5	A	5ST3 614	1	10	027	0.060
	For 4 MCB 3P		210	▶	5ST3 615	1	10	027	0.076
Terminals for 5ST3 76									
	Side terminals			A	5ST3 768	1	25	027	0.011
	For conductors up to 25 mm ²								

BETA Protecting Miniature Circuit Breakers (MCBs)

Additional components

Overview

This mounting concept enables all additional 5ST3 components to be combined with Siemens miniature circuit breakers as well as with 5SU1 RCBOs.

Auxiliary contacts

The auxiliary switch (AS) signals the contact position of the miniature circuit breaker regardless of whether the miniature circuit breaker was tripped by hand or by a fault. An additional version for the switching of small currents and small voltages for the control of programmable control systems (PLCs) according to EN 61131-2 is available. The version "auxiliary switch with test button" enables the testing of auxiliary contacts without the need to switch the miniature circuit breaker.

The fault signal contact (FC) signals the automatic tripping of the miniature circuit breaker in the event of a fault, e. g. due to an overload or a short circuit. The contact position does not change when the miniature circuit breaker is tripped by hand.

Test and reset button

The version "fault signal contact with test and reset button" enables the testing of auxiliary contacts without the need to switch the miniature circuit breaker. With this version, if the miniature circuit breaker is automatically tripped in the event of a fault, this also automatically trips the RESET button integrated in the handle of the fault signal contact. After the miniature circuit breaker has been tripped, the reset button can be manually acknowledged, which deletes the pending fault signal.

Auxiliary releases

Undervoltage releases are integrated e. g. in an EMERGENCY-STOP loop, thus ensuring that the miniature circuit breaker trips in the event of an emergency, which in turn ensures disconnection of the control circuit according to EN 60204. In the event that the voltage is interrupted or too low, it also trips, i. e. prevents the miniature circuit breaker from switching on.

Shunt trips are used for the remote tripping of miniature circuit breakers. Remote-controlled mechanisms are used for the remote switching (ON/OFF) of miniature circuit breakers and the remote switching (ON) of RC units.

Remote control

Remote-controlled mechanisms also enable local manual switching. A blocking function permits maintenance work. In the event that a miniature circuit breaker or RC unit is tripped, an acknowledgment must be carried out prior to switching back on. The remote-controlled mechanism has an operating mode selector switch with the functions: "Locked", "Manual" and "Remote Switching". The mechanism can be mechanically latched and locked, which serves to protect personnel during maintenance work.

RC units

RC units are combined with miniature circuit breakers of A, B, C and D characteristics. They then form a combination of RCCB and MCB for personnel, fire and line protection. The combinations can be individually assembled to suit the requirement.

For information on RC units, please refer to the section "Residual current protective devices".

Benefits

- Universal mountability of all additional components



- The 5SY and 5SP miniature circuit breakers are ideal for the quick and easy mounting of auxiliary switches and fault signal contacts. Captive metal brackets on additional components ensure the quick and easy mounting of devices on the miniature circuit breakers without the need for tools.



- The auxiliary switches with test button enable easy testing of the control circuits by hand during operation of the complete system without the need to switch the miniature circuit breaker.



- Fault signal contacts with test and reset button enable the simple testing of auxiliary circuits and, in the event of a fault, acknowledgement of the fault over the reset button, without the need to switch the miniature circuit breakers.
- Auxiliary switches for small outputs enable their use with PLCs.
- Bus systems, such as *instabus* KNX, AS-Interface bus or PROFIBUS, are integrated in the communication over binary inputs and actuators.

Auxiliary switches (AS)

- Huge range of applications, thanks to additional versions for the switching of small currents and voltages for the control of programmable control systems (PLCs) according to EN 61131-2.

Remote-controlled mechanisms (RC)


- The remote-controlled mechanism has an operating mode selector switch with the functions: "Locked", "Manual" and "Remote switching". The mechanism can be mechanically latched and locked, which serves to protect personnel during maintenance work.

BETA Protecting

Miniature Circuit Breakers (MCBs)

Additional components






Selection and ordering data

	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
					Unit(s)	Unit(s)		kg
	Auxiliary switches (AS)							
	For 5SY, 5SP miniature circuit breakers, 5SU1 RCBOs and 5TE8 switches							
	1 NO + 1 NC	0.5 ▶	5ST3 010		1	1	027	0.050
	• for low loading		5ST3 013		1	1	027	0.050
	2 NO	A	5ST3 011		1	1	027	0.050
• for low loading	B	5ST3 014		1	1	027	0.050	
2 NC	A	5ST3 012		1	1	027	0.050	
• for low loading	B	5ST3 015		1	1	027	0.050	
	Auxiliary switches (AS) with test button							
	For 5SY, 5SP miniature circuit breakers, 5SU1 RCBOs and 5TE8 switches							
	1 NO + 1 NC	0.5 A	5ST3 010-2		1	1	027	0.045
	• for low loading	A	5ST3 013-2		1	1	027	0.045
	2 NO	A	5ST3 011-2		1	1	027	0.045
• for low loading	A	5ST3 014-2		1	1	027	0.045	
2 NC	A	5ST3 012-2		1	1	027	0.045	
• for low loading	A	5ST3 015-2		1	1	027	0.045	
	Fault signal contacts (FC)							
	For 5SY, 5SP miniature circuit breakers and 5SU1 RCBOs							
	1 NO + 1 NC	0.5 ▶	5ST3 020		1	1	027	0.050
	2 NO	B	5ST3 021		1	1	027	0.050
2 NC	A	5ST3 022		1	1	027	0.050	
	Fault signal contacts (FC) with test and acknowledgement button							
	For 5SY, 5SP miniature circuit breakers and 5SU1 RCBOs							
	1 NO + 1 NC	0.5 A	5ST3 020-2		1	1	027	0.050
	2 NO	A	5ST3 021-2		1	1	027	0.050
2 NC	A	5ST3 022-2		1	1	027	0.050	
	Undervoltage releases (UR)							
	For 5SY, 5SP miniature circuit breakers and 5SU1 RCBOs but not for 5SY6 0..							
	With integrated auxiliary switch							
	230 AC	1 A	5ST3 040		1	1	027	0.115
	110 DC	B	5ST3 041		1	1	027	0.115
	24 DC	B	5ST3 042		1	1	027	0.115
	Without integrated auxiliary switch							
230 AC	1 A	5ST3 043		1	1	027	0.115	
110 DC	B	5ST3 044		1	1	027	0.115	
24 DC	A	5ST3 045		1	1	027	0.115	
	Shunt trips (ST)							
	For 5SY, 5SP miniature circuit breakers and 5SU1 RCBOs but not for 5SY6 0..							
	2 NO	1 ▶	5ST3 030		1	1	027	0.098
2 NC	1 ▶	5ST3 031		1	1	027	0.098	
	Remote-controlled mechanisms (RC)							
	For 5SY, 5SP4 miniature circuit breakers and 5SU1 RCBOs							
	230 AC	3.5 A	5ST3 050		1	1	027	0.395
	Handle couplers for additional components							
	For mounting the additional components: auxiliary switches, fault signal contacts, shunt trips and undervoltage releases onto 5SU1 RCBOs, you require a handle coupler (1 set = 5 units).		▶	5ST3 805-1	1 set	1 set	027	0.008

* You can order this quantity or a multiple thereof.

BETA Protecting Miniature Circuit Breakers (MCBs)

Additional components






	Rated residual current	Rated current	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	$I_{\Delta n}$ mA	I_n A					Unit(s)	Unit(s)		kg
RC units, type A, instantaneous tripping										
For 5SY miniature circuit breakers but not for 5SY5 and 5SY6 0..										
2P, 230 ... 400 V AC, 50 ... 60 Hz										
	10	0.3 ... 16	2	B	5SM2 121-6		1	1	007	0.180
	30	0.3 ... 40		▶	5SM2 322-6		1	1	007	0.170
	300			A	5SM2 622-6		1	1	007	0.170
	30	0.3 ... 63	A	5SM2 325-6	1		1	007	0.170	
	100		B	5SM2 425-6	1		1	007	0.170	
	300		B	5SM2 625-6	1		1	007	0.170	
500		B	5SM2 725-6	1	1	007	0.170			
3P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	A	5SM2 332-6		1	1	007	0.260
	300			A	5SM2 632-6		1	1	007	0.260
	30	0.3 ... 63	B	5SM2 335-6	1		1	007	0.260	
	100		B	5SM2 435-6	1		1	007	0.260	
	300		B	5SM2 635-6	1		1	007	0.260	
	500		B	5SM2 735-6	1		1	007	0.260	
4P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	▶	5SM2 342-6		1	1	007	0.290
	300			▶	5SM2 642-6		1	1	007	0.290
	30	0.3 ... 63	A	5SM2 345-6	1		1	007	0.290	
	100		B	5SM2 445-6	1		1	007	0.290	
	300		A	5SM2 645-6	1		1	007	0.290	
	500		A	5SM2 745-6	1		1	007	0.290	
for 5SP4 miniature circuit breakers										
2P, 125 ... 230 V AC, 50 ... 60 Hz										
	30	80 ... 100	3.5	B	5SM2 327-6		1	1	007	0.410
	300			B	5SM2 627-6		1	1	007	0.410
4P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	80 ... 100	5	B	5SM2 347-6		1	1	007	0.630
	300			A	5SM2 647-6		1	1	007	0.630

* You can order this quantity or a multiple thereof.

BETA Protecting

Miniature Circuit Breakers (MCBs)

Additional components

	Rated residual current	Rated current	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	$I_{\Delta n}$ mA	I_n A					Unit(s)	Unit(s)		kg
RC units, type A, super resistant K										
For 5SY miniature circuit breakers but not for 5SY5 and 5SY6 0..										
2P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	2	B	5SM2 322-6KK01		1	1	007	0.350
	30	0.3 ... 63		B	5SM2 325-6KK01		1	1	007	0.350
3P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	B	5SM2 332-6KK01		1	1	007	0.365
	30	0.3 ... 63		B	5SM2 335-6KK01		1	1	007	0.365
4P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	B	5SM2 342-6KK01		1	1	007	0.290
	30	0.3 ... 63		B	5SM2 345-6KK01		1	1	007	0.290
RC units, type A, selective S										
For 5SY miniature circuit breakers but not for 5SY5 and 5SY6 0..										
2P, 230 ... 400 V AC, 50 ... 60 Hz										
	300	0.3 ... 40	2	A	5SM2 622-8		1	1	007	0.170
	300	0.3 ... 63		B	5SM2 625-8		1	1	007	0.170
3P, 230 ... 400 V AC, 50 ... 60 Hz										
	300	0.3 ... 63	3	B	5SM2 635-8		1	1	007	0.260
	500			B	5SM2 735-8		1	1	007	0.400
	1000			B	5SM2 835-8		1	1	007	0.260
4P, 230 ... 400 V AC, 50 ... 60 Hz										
	300	0.3 ... 63	3	A	5SM2 645-8		1	1	007	0.290
	500			A	5SM2 745-8		1	1	007	0.400
	1000			A	5SM2 845-8		1	1	007	0.290
for 5SP4 miniature circuit breakers										
2P; 125 ... 230 V AC, 50 ... 60 Hz										
	300	80 ... 100	3.5	B	5SM2 627-8		1	1	007	0.410
4P; 230 ... 400 V AC, 50 ... 60 Hz										
	300	80 ... 100	5	A	5SM2 647-8		1	1	007	0.630
	1000			A	5SM2 847-8		1	1	007	0.630

BETA Protecting Miniature Circuit Breakers (MCBs)





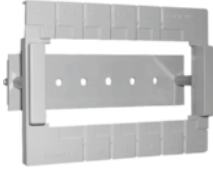

Additional components

Version	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
					Unit(s)	Unit(s)		kg
			Terminal covers For miniature circuit breakers for additional covering of the screw openings per pole, sealable. On 5SY prevents the device also being removed from the standard mounting rail.					
		B	5ST3 800		1	10	027	0.001
			Handle locking devices Prevents inadvertent manual on and off switching, sealable For 5SP and 5SY miniature circuit breakers For padlock with max. 3 mm shackle					
		A	5ST3 801		1	1	027	0.008
			For 5SJ, 5SP and 5SY miniature circuit breakers For padlock with max. 3 ... 6 mm shackle					
		A	5ST3 806		1	5	027	0.007
			Padlocks For 5ST3 801 and 5ST3 806 handle locking device ▶					
			5ST3 802		1	1	027	0.027
			Locking devices Consisting of 5ST3 801 handle locking device and 5ST3 802 padlock					
		B	5ST3 803		1 set	1 set	027	0.035
			Spacers Can be placed on either side of the standard mounting rail, so that two spacers allow for convenient cable routing					
		0.5	▶	5TG8 240	1	2	027	0.010
			Fixing parts Made of plastic, for use with a mounting plate					
		B	5ST2 201		1	1	027	0.012
			Inscription labels 15 mm × 9 mm, 3 frames à 44 labels, can be mounted on casing collar, white, self-adhesive					
		B	5ST2 173		1 set	1 set	027	0.038
			Labeling systems Inscriptions on self-adhesive labels for a neat and uniform appearance in the power distribution system. The labeling program can be downloaded to your PC free of charge: www.siemens.com/labeling-tool Recommended ELAT-3-747 labels for printing out on standard printers can be ordered at BRADY: www.bradycorp.com					

* You can order this quantity or a multiple thereof.

BETA Protecting Miniature Circuit Breakers (MCBs)

Additional components

Version	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
				Unit(s)	Unit(s)		kg
 <p>Terminal covers, gray For surface mounting, degree of protection IP40, sealable, with TH 35 standard mounting rail</p> <ul style="list-style-type: none"> • Up to 2.5 MW • Up to 4.5 MW 	B	5SW3 004		1	1	008	0.084
	B	5SW3 005		1	1	008	0.114
 <p>Wall enclosures, gray For flush mounting, degree of protection IP40, with TH 35 standard mounting rail</p> <ul style="list-style-type: none"> • Up to 2.5 MW • Up to 4.5 MW 	B	5SW3 006		1	1/4	008	0.126
	B	5SW3 007		1	1	008	0.147
 <p>Molded-plastic enclosures, gray For surface mounting, degree of protection IP54, sealable, with transparent hinged lid, with TH 35 standard mounting rail For 4.5 MW</p>	A	5SW1 200		1	1	008	0.450
 <p>Covers Can be assembled as mini distribution board, suitable for all devices, cover parts prepared for rail mounting of conventional label caps, comprising:</p> <ul style="list-style-type: none"> • End plates (can be snapped onto TH 35 standard mounting rail) • Angle section (approx. 1 m long) • Alternatively flat profile (as a cover between the rows of devices length approx. 1 m) 	A	5ST2 134		1	10	027	0.022
	A	5ST2 135		1	5	027	0.330
	B	5ST2 136		1	5	027	0.260
 <p>Holder for installation in front panels Universal application for devices from 1 MW to 6 MW Cutout dimensions: Height 45^{+0.5} mm Width 23, 41, 59, 77, 95 or 113 mm</p>	B	7LF9 006		1	1	025	0.071
 <p>Intermediate frame for 70 mm devices in N distribution boards Versions</p> <ul style="list-style-type: none"> • 1 row • 2 rows • 3 rows • 4 rows <p>8GB4 563</p>	A	8GB4 561		1	1	032	0.900
	A	8GB4 562		1	1	032	1.100
	A	8GB4 563		1	1	032	1.300
	A	8GB4 564		1	1	032	1.500

More information about ALPHA distribution boards, ALPHA SIMBOX small distribution boards and intermediate frames can be found in the Catalog ET A1, Chapter ALPHA SIMBOX Small Distribution Boards.

More information

More information about additional components for miniature circuit breakers can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs.

* You can order this quantity or a multiple thereof.

BETA Protecting Miniature Circuit Breakers (MCBs)

Busbars
Standard 5ST3 6, 5ST3 7

Overview

The busbar system with pin-type connections can be used for all 5SJ6 ...-KS and 5SY miniature circuit breakers with or without mounted auxiliary switch (AS) or fault signal contact (FC).

Busbars in 10 mm² and 16 mm² versions are available.

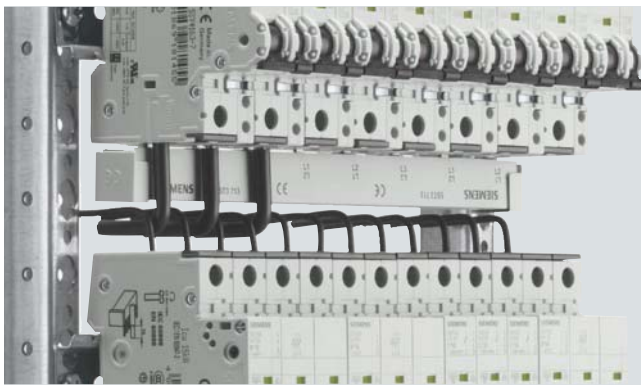
The 5ST3 7 busbar system with busbars that can be cut to any length required.

The extremely flexible 5ST3 6 busbar system with fixed lengths also enables installation in any length as the busbars can be overlapped. No further need for time-consuming tasks, such as cutting, cutting to length, deburring, cleaning of cut surfaces and mounting of end caps.

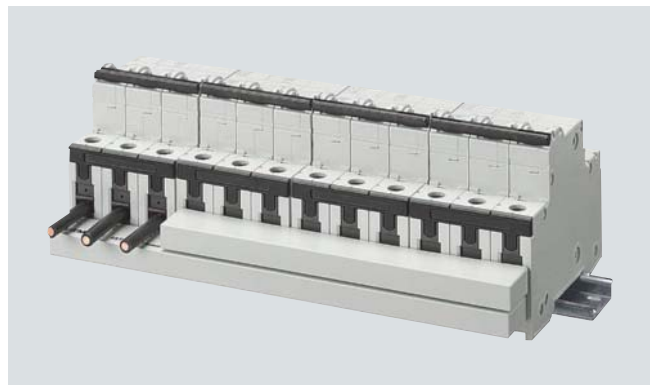
Any free pins on the busbars can be made finger-safe by covering with touch protection.

For further information on bus-mounting miniature circuit breakers with residual current operated circuit breakers, please refer to the chapter "Residual current protective devices".

Benefits



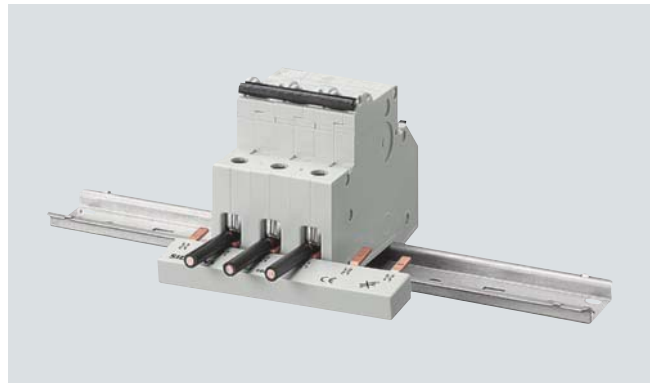
- Between the devices, the busbar, located at the bottom and behind the conductor, provides an optimum wiring space with easy view of the inserted conductor. This enables easy control of connections.



- The ability to overlap the busbar mounting enables a cross-section enlargement of up to 32 mm² using the respective components, 10 and 16 mm².



- Combinations of any number of units are possible by overlapping the fixed-length busbars.




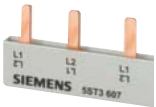
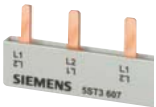





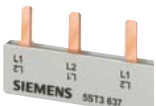
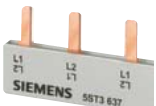

- The fact that the connection of the conductor is always clearly visible facilitates control and insertion of conductors of all pole types and considerably reduces mounting times.

BETA Protecting

Miniature Circuit Breakers (MCBs)

Busbars
Standard 5ST3 6, 5ST3 7


Selection and ordering data

	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	MW	mm				Unit(s)	Unit(s)		kg
5ST3 6 busbar system, 10 mm², for miniature circuit breakers									
Fixed lengths, cannot be cut, fully insulated									
Single-phase									
	For 2 MCB 1P	1	33	A	5ST3 600	1	10	027	0.005
	For 6 MCB 1P		105	A	5ST3 601	1	10	027	0.018
	For 12 MCB 1P		210	A	5ST3 602	1	10	027	0.036
Single-phase For MCB with AS or FC									
	For 2 MCB 1P	1.5	40	A	5ST3 603	1	10	027	0.008
	For 6 MCB 1P		156,5	A	5ST3 604	1	10	027	0.024
	For 9 MCB 1P		237	A	5ST3 605	1	10	027	0.036
Two-phase									
	For 2 MCB 2P	1	75,5	A	5ST3 606	1	10	027	0.016
	For 3 MCB 2P		105	A	5ST3 607	1	10	027	0.024
	For 6 MCB 2P		210	A	5ST3 608	1	10	027	0.048
Three-phase									
	For 2 MCB 3P	1	102	A	5ST3 613	1	10	027	0.039
	For 3 MCB 3P		157,5	A	5ST3 614	1	10	027	0.060
	For 4 MCB 3P		210	A	5ST3 615	1	10	027	0.076
Three-phase For MCB with AS or FC									
	For 2 MCB 3P	1+1+1.5	115	A	5ST3 616	1	10	027	0.040
	For 4 MCB 3P		237	A	5ST3 617	1	10	027	0.080
	For 6 MCB 1P	1.5	125	A	5ST3 618	1	10	027	0.044
For 9 MCB 1P		229	A	5ST3 620	1	10	027	0.066	
4-phase									
	For 2 MCB 4P or 3P+N	1	145	A	5ST3 621	1	10	027	0.051
	For 3 MCB 4P or 3P+N		215	A	5ST3 622	1	10	027	0.078
	For 6 MCB 2P or 1P+N		215	A	5ST3 623	1	10	027	0.078
Three-phase									
	For 1 RC unit 4P N right and 8 MCB 1P	1	210	A	5ST3 624	1	10	027	0.075
	For 1 RC unit 4P N left and 8 MCB 1P	1	192	A	5ST3 667	1	10	027	0.061
5ST3 6 busbars, 16 mm², for miniature circuit breakers									
Fixed lengths, cannot be cut, fully insulated									
Single-phase									
	For 2 MCB 1P	1	33	A	5ST3 630	1	10	027	0.008
	For 6 MCB 1P		105	A	5ST3 631	1	10	027	0.025
	For 12 MCB 1P		210	A	5ST3 632	1	10	027	0.048
Single-phase For MCB with AS or FC									
	For 2 MCB 1P	1.5	40	A	5ST3 633	1	10	027	0.013
	For 6 MCB 1P		156,5	A	5ST3 634	1	10	027	0.039
	For 9 MCB 1P		237	A	5ST3 635	1	10	027	0.059
Two-phase									
	For 2 MCB 2P	1	75,5	A	5ST3 636	1	10	027	0.024
	For 3 MCB 2P		105	A	5ST3 637	1	10	027	0.039
	For 6 MCB 2P		210	A	5ST3 638	1	10	027	0.076
Two-phase For MCB with AS or FC									
	For 2 MCB 2P	1 + 1.5	75,5	A	5ST3 640	1	10	027	0.026
	For 3 MCB 2P		120,5	A	5ST3 641	1	10	027	0.045
	For 5 MCB 2P		210	A	5ST3 642	1	10	027	0.084

* You can order this quantity or a multiple thereof.

BETA Protecting Miniature Circuit Breakers (MCBs)

Busbars
Standard 5ST3 6, 5ST3 7

	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	MW	mm				Unit(s)	Unit(s)		kg
5ST3 6 busbars, 16 mm², for miniature circuit breakers									
Fixed lengths, cannot be cut, fully insulated									
Three-phase									
For 2 MCB 3P	1	102,5	A	5ST3 643		1	10	027	0.058
For 3 MCB 3P		157,5	A	5ST3 644		1	10	027	0.083
For 4 MCB 3P		210	▶	5ST3 645		1	10	027	0.110
Three-phase For MCB with AS or FC									
For 2 MCB 3P	1+1+1.5	115	A	5ST3 646		1	10	027	0.060
For 4 MCB 3P		237	A	5ST3 647		1	10	027	0.120
For 6 MCB 1P	1.5	156	A	5ST3 648		1	10	027	0.061
For 9 MCB 1P		245	A	5ST3 650		1	10	027	0.093
5ST3 6 busbars, 16 mm², for miniature circuit breakers									
Fixed lengths, cannot be cut, fully insulated									
4-phase									
For 2 MCB 4P or 3P+N	1		A	5ST3 651		1	10	027	0.080
For 3 MCB 4P or 3P+N			A	5ST3 652		1	10	027	0.116
For 6 MCB 2P or 1P+N			A	5ST3 653		1	10	027	0.116
Three-phase									
For 1 RC unit 4P N right and 8 MCB 1P	1	210	A	5ST3 654		1	10	027	0.114
For 1 RC unit 4P N left and 8 MCB 1P	1	210	A	5ST3 668		1	10	027	0.099
Touch protection for free terminals									
Yellow, RAL 1004 5 x 1 pin									
			A	5ST3 655		1	10	027	0.003
Assortments									
10 mm ²									
20 x 5ST3 613 + 10 x 5ST3 614 + 50 x 5ST3 615 + 50 x 5ST3 655			A	5ST3 656		1 set	1 set	027	5.490
16 mm ²									
20 x 5ST3 643 + 10 x 5ST3 644 + 50 x 5ST3 645 + 50 x 5ST3 655			A	5ST3 657		1 set	1 set	027	7.640
5ST3 7 busbar system, 10 mm², 12 MW									
For miniature circuit breakers									
Can be cut, with end caps									
Single-phase, angled									
For 12 MCB 1P	1	214	A	5ST3 730		1	1	027	0.040
For 9 MCB 1P with AS or FC	1.5		A	5ST3 732		1	1	027	0.040
Two-phase									
For 6 MCB 2P	1		A	5ST3 734		1	1	027	0.060
For 4 MCB 2P with AS or FC	1+1.5		A	5ST3 736		1	1	027	0.060
Three-phase									
For 4 MCB 3P	1		▶	5ST3 738		1	1	027	0.100
For 3 MCB 3P with AS or FC	1+1+1.5		A	5ST3 741		1	1	027	0.100
For 3 MCB 1P with AS or FC	1.5		A	5ST3 743		1	1	027	0.100
4-phase									
For 3 MCB 4P or 3P+N	1		A	5ST3 745		1	1	027	0.150
5ST3 7 busbar system, 10 mm², 56 MW									
For miniature circuit breakers									
Can be cut, without end caps									
Single-phase, angled									
For MCB 1P	1	1016	A	5ST3 731		1	1	027	0.190
For MCB 1P with AS or FC	1.5		A	5ST3 733		1	1	027	0.190
Two-phase									
For MCB 2P	1		A	5ST3 735		1	1	027	0.290
For MCB 2P with AS or FC	1+1.5		A	5ST3 737		1	1	027	0.290
Three-phase									
For MCB 3P	1		A	5ST3 740		1	1	027	0.430
For MCB 3P with AS or FC	1+1+1.5		A	5ST3 742		1	1	027	0.430
For MCB 1P with AS or FC	1.5		A	5ST3 744		1	1	027	0.430
4-phase									
For MCB 4P or 3P+N	1		A	5ST3 746		1	1	027	0.700

* You can order this quantity or a multiple thereof.

BETA Protecting

Miniature Circuit Breakers (MCBs)

Busbars Standard 5ST3 6, 5ST3 7

	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
	MW	mm				Unit(s)	Unit(s)		kg	
	5ST3 7 busbar system, 16 mm², 12 MW For miniature circuit breakers Can be cut, without end caps									
	Single-phase, angled									
	For MCB 1P	1	214	▶	5ST3 700		1	1	027	0.040
	For MCB 1P with AS or FC	1.5		A	5ST3 702		1	1	027	0.040
	Two-phase									
	For MCB 2P	1		A	5ST3 704		1	1	027	0.060
	For MCB 2P with AS or FC	1+1.5		A	5ST3 706		1	1	027	0.060
	Three-phase									
	For MCB 3P	1		▶	5ST3 708		1	1	027	0.100
	For MCB 3P with AS or FC	1+1+1.5		A	5ST3 711		1	1	027	0.100
For MCB 1P with AS or FC	1.5		A	5ST3 713		1	1	027	0.100	
4-phase										
For MCB 4P or 3P+N	1		A	5ST3 715		1	1	027	0.150	
	5ST3 7 busbar system, 16 mm², 56 MW For miniature circuit breakers Can be cut, without end caps									
	Single-phase, angled									
	For MCB 1P	1	1016	A	5ST3 701		1	1	027	0.190
	For MCB 1P with AS or FC	1.5		A	5ST3 703		1	1	027	0.190
	Two-phase									
	For MCB 2P	1		A	5ST3 705		1	1	027	0.290
	For MCB 2P with AS or FC	1+1.5		A	5ST3 707		1	1	027	0.290
	Three-phase									
	For MCB 3P	1		▶	5ST3 710		1	1	027	0.430
	For MCB 3P with AS or FC	1+1+1.5		A	5ST3 712		1	1	027	0.430
For MCB 1P with AS or FC	1.5		A	5ST3 714		1	1	027	0.430	
4-phase										
For MCB 4P or 3P+N	1		A	5ST3 716		1	1	027	0.700	
	End caps for 5ST3 7, can be cut									
	For single-phase busbars			▶	5ST3 748		1	10	027	0.001
	For two- and three-phase busbars			▶	5ST3 750		1	10	027	0.001
	For 4-phase busbars			▶	5ST3 718		1	10	027	0.001
	5ST3 7 busbar system, 10 mm², 12 MW For MCBs 1+N in 1 MW of the compact range, can be cut, with end caps									
	Single-phase									
	For 12 MCB 1+N, gray		216	A	5ST3 762		1	10	027	0.029
	For 12 MCB 1+N, blue			A	5ST3 763		1	10	027	0.029
	5ST3 7 busbar system, 10 mm², 56 MW For MCBs 1+N in 1 MW of the compact range, can be cut, without end caps									
	Single-phase									
	For MCBs 1+N, gray		1016	A	5ST3 764		1	10	027	0.134
	For MCBs 1+N, blue			A	5ST3 765		1	10	027	0.134
	End caps for 5ST3 76									
	1 set comprises a right and a left cap									
	Gray			A	5ST3 766		1 set	10 sets	027	
Blue			A	5ST3 767		1 set	10 sets	027		
	Terminals for 5ST3 76									
	Terminal version S For conductors up to 25 mm ²			A	5ST3 768		1	25	027	0.011

BETA Protecting Miniature Circuit Breakers (MCBs)

Busbars
according to UL 508, 5ST3 7 . . . - . HG

Overview

Products according to UL standards are used in North America, but also in several other countries. In particular when exporting machines or electrical switchgear and equipment to the USA, acceptance and delivery are possible only if the relevant UL standards are satisfied.

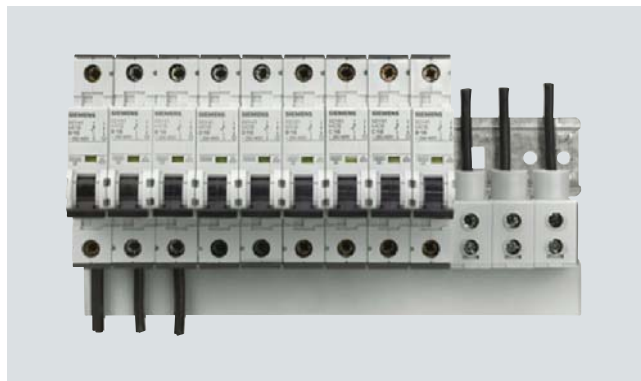
The 5ST3 7 . . . - .HG busbar system according to UL 508 and CSA is suitable for universal use worldwide with all 5SY and 5SP miniature circuit breakers for Supplementary Protection certified according to UL 1077 as well as for 3NW and 3NC fuse holders certified according to UL 512.

The busbars are available in single-, two- and three-phase version with different pin spacings and with two cross-sections 18 mm² and 25 mm². Infeed can be directly into the terminals of the miniature circuit breaker or through connection terminals. The connection terminals are available in two versions – for direct infeed at the busbar or for infeed directly at the miniature circuit breaker/fuse holder. Pins that are not required can be covered with touch protection covers.

Benefits



- Bus mounting with infeed through a connection terminal directly on the miniature circuit breaker up to a conductor cross-section of 35 mm².



- Infeed directly on the miniature circuit breaker up to a cross-section of 35 mm² and connection terminal directly on the busbar up to a conductor cross-section of 50 mm².
- Suitable for universal use according to both IEC and UL standards
- Can be used for 5SY, 5SP miniature circuit breakers and for Class CC, cylindrical and SITOR fuse holders
- UL-tested combination – device and busbar
- Different cross-sections 18 mm² and 25 mm²



- Bus mounting with infeed at the fuse holder for conductor cross-sections up to 35 mm²

BETA Protecting Miniature Circuit Breakers (MCBs)

Busbars
according to UL 508, 5ST3 7 . . . - . HG

Selection and ordering data

	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	MW	mm				Unit(s)	Unit(s)		kg
5ST3 7 . . . - . HG busbars according to UL 508, 18 mm², can be cut, without end caps									
Single-phase									
	1	1000	A	5ST3 701-0HG		1	10	012	0.330
	1.5	1000	A	5ST3 703-0HG		1	10	012	0.330
Two-phase									
	1	1000	A	5ST3 705-0HG		1	10	012	0.508
	1+1.5	1000	A	5ST3 707-0HG		1	10	012	0.508
Three-phase									
	1	1000	A	5ST3 710-0HG		1	10	012	0.800
	1+1+1.5	1000	A	5ST3 712-0HG		1	10	012	0.800
	1.5	1000	A	5ST3 714-0HG		1	10	012	0.820
5ST3 7 . . . - . HG busbars according to UL 508, 25 mm², can be cut, without end caps									
Single-phase									
	1.5	1000	A	5ST3 701-2HG		1	10	012	0.450
Two-phase									
	1.5	1000	A	5ST3 705-2HG		1	10	012	0.690
Three-phase									
	1.5	1000	A	5ST3 710-2HG		1	10	012	1.090
End caps for 5ST3 7 . . . - . HG									
			A	5ST3 748-0HG		1	10	012	0.001
			A	5ST3 750-0HG		1	10	012	0.001
Connection terminals according to UL 508									
Infeed to device									
			A	5ST3 770-0HG		1	10	012	0.035
Infeed to busbar									
			A	5ST3 770-1HG		1	10	012	0.016
Touch protection covers for busbars acc. to UL 508									
			A	5ST3 655-0HG		1	10	012	0.003

BETA Protecting Miniature Circuit Breakers (MCBs)

Busbars
Universal, 5ST3 5

Overview

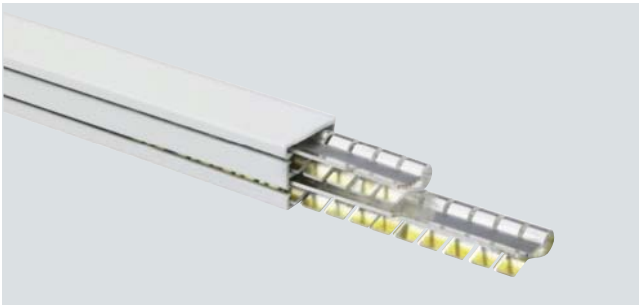
Busbars serve the safe and fast connection of modular installation devices, such as miniature circuit breakers, residual current operated circuit breakers and switching and control devices.

With the universal busbar system, different devices - with and without additional components and in various versions - can be

quickly and easily connected with each other by means of a few components for numerous possible applications. For example, residual current operated circuit breakers 3+N can be combined with miniature circuit breakers 1+N in a single modular width for cost-effective splitting of the phases.

Benefits

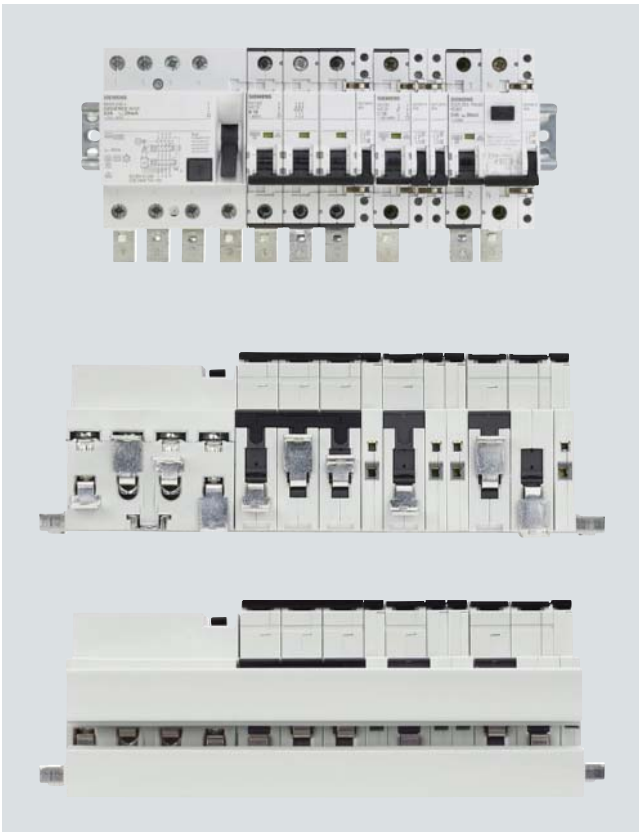
- The universal busbar system can be used for all modular installation devices such as 5SY, 5SX, 5SM, 5SU
- A safe bus-mounting system can be quickly assembled with few components
- Individual connection of devices using standardized connection pins, with plug-in design for easy and comfortable connecting
- Free choice of phase sequence



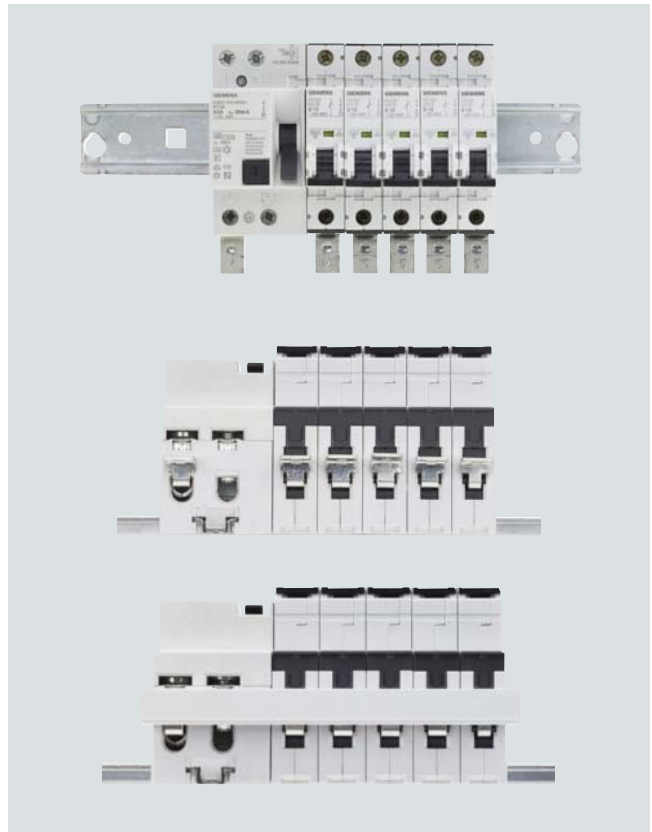
- Two-phase insulating parts with plug-on mount for implementing two-phase or multi-phase bus mounting



- Single-phase insulating parts with plug-on mount for implementing single-phase or multi-phase bus mounting



- Universal multi-phase bus mounting of 3 phases + N with 2 x two-phase insulating parts with plug-on mount for combination of different modular installation devices with additional components


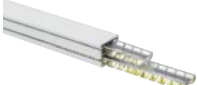








- Single-phase bus mounting with one single-phase insulating part with plug-on mount for combination of RCCB and MCB

BETA Protecting Miniature Circuit Breakers (MCBs)

Busbars
Universal, 5ST3 5

Selection and ordering data

	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
	mm				Unit(s)	Unit(s)		kg	
	Universal busbar system, 16 mm², 1000 mm, can be cut, without end caps Single-phase Insulating parts with plug-on mount		1000	A	5ST3 500-0	1	12	027	0.433
			1000	A	5ST3 501-0	1	12	027	0.823
	Connection pins, terminal spacing 1 MW for RCCBs or MCBs Connection pin 6/12 For L/N		12	A	5ST3 510-0	1	50	027	0.007
			21	A	5ST3 511-0	1	50	027	0.008
	Connection pins, terminal spacing 0.5 MW for MCBs 1 + N in a single modular width Connection pin 4/23 For L 1		23	A	5ST3 512-0	1	50	027	0.006
	Connection pin 4/3 For L 2		3	A	5ST3 513-0	1	50	027	0.005
			9	A	5ST3 514-0	1	50	027	0.005
	Connection pin 4/21 For N		21	A	5ST3 515-0	1	50	027	0.005
Accessories									
	Touch protection profiles		1000	A	5ST3 507-0	1	12	027	0.003
	End caps 1 unit for 3 phases + N or can be divided into 1 x 2-phase or 2 x 1-phase insulating part			A	5ST3 508-0	1	12	027	0.020

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers
according to UL 489 and IEC, 5SJ4 . . . - . HG

Overview

UL standards are applied in North America and a number of other countries. This is of particular importance to European exporters of electrical switchgear equipment for machines who export to the USA, as their products will only be accepted if they meet the relevant UL standards.

Countless devices from the Siemens low-voltage circuit protection range comply with UL standards and are therefore suitable for implementation worldwide in both IEC/EN and UL applications within the framework of their specified use.

Miniature circuit breakers certified to UL 489 permit use as an all-round solution for protection tasks in distribution boards, control cabinets and control systems to UL 508A as "branch protectors". In particular, they are also approved for the protection of electrical circuits in heating, ventilation and air conditioning systems (HVAC), as well as for DC applications up to 60 V/125 V.

This covers a wide range of protection tasks, in residential and non-residential buildings, as well as in industry. The tripping characteristics B, C and D to EN/IEC 60898 have been adapted so that they fall in the permissible tripping range to UL 489, as well as for applications at 25 °C and 40 °C.

This means that the devices are approved for use according to both standards. The enclosure dimensions of the devices correspond to DIN format. This means that the device series are suitable for universal use worldwide to IEC or UL standards.

The key difference between the three device series is their application in different power supply systems.

- 5SJ4 ...-HG40: 240/120 V AC, 1-pole, "same polarity only",
- 5SJ4 ...-HG41: 240 V AC, 1, 2 and 3-pole,
- 5SJ4 ...-HG42: 480Y/277 V AC, 1, 2 and 3-pole.

The terminals are suitable for "field wiring". This means that the devices can be installed not only in factory-finished distribution boards and control cabinets, but also on-site in a customer system.

All additional components such as auxiliary switches (AS), fault signal contacts (FC) and shunt trips (ST) are mountable on the miniature circuit breakers according to UL 489 and IEC 5SJ4 ...-HG. Captive metal brackets on the additional components ensure fast and reliable mounting on the miniature circuit breakers.

Single-, two- and three-phase busbars in 3 lengths with 6, 12 or 18 pins are available as accessories for all device series. The infeed is over connection terminals, which are available in two versions, for direct infeed at either the busbar or the miniature circuit breakers. Pins that are not required can be covered with touch protection covers.

Benefits

- Can be used globally for all applications in residential, non-residential and industrial buildings. This facilitates the planning of plants and enhances export opportunities
- The devices can be used according to IEC/EN 60898 and UL 489, which means these devices can be installed anywhere in the world.
- Miniature circuit breakers with 480Y/277 V to 40 A, with 240/120 V and 240 V to 63 A
- Can be used with both alternating voltage and direct voltage up to 125 V
- Rated switching capacity up to 14 kA according to UL 489 and up to 15 kA according to IEC 60947-2
- Quick mounting with busbars up to 115 A and feeder terminals up to 50 mm².



- Infeed direct at miniature circuit breaker for conductor cross-sections up to 35 mm²



- Busbar mounting with central infeed directly on the busbar up to conductor cross-section of 50 mm²



- Accessories: Auxiliary switches, fault signal contacts and shunt trips up to 480 V can be easily mounted on these miniature circuit breakers.

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers
according to UL 489 and IEC, 5SJ4 . . . - . HG

Selection and ordering data

I_n	Width	DT	Characteristic B			PU	PS*	PG	Weight per PU approx. kg
			Order No.	Price per PU	Unit(s)				
A	MW ¹⁾					Unit(s)	Unit(s)		
MCBs "same polarity only" 1P, 240 V AC									
6	1	B	5SJ4 106-6HG40			1	1	012	0.120
10		B	5SJ4 110-6HG40			1	1	012	0.120
13		C	5SJ4 113-6HG40			1	1	012	0.120
15		C	5SJ4 118-6HG40			1	1	012	0.120
16		C	5SJ4 116-6HG40			1	1	012	0.120
20		C	5SJ4 120-6HG40			1	1	012	0.120
25		C	5SJ4 125-6HG40			1	1	012	0.120
30		C	5SJ4 130-6HG40			1	1	012	0.120
32		C	5SJ4 132-6HG40			1	1	012	0.120
35		C	5SJ4 135-6HG40			1	1	012	0.120
40		C	5SJ4 140-6HG40			1	1	012	0.120
45		C	5SJ4 145-6HG40			1	1	012	0.120
50		C	5SJ4 150-6HG40			1	1	012	0.120
60		C	5SJ4 160-6HG40			1	1	012	0.120
63		C	5SJ4 163-6HG40			1	1	012	0.120



¹⁾ 1 MW (modular width) = 18 mm.

I_n	Width	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx. kg
			Order No.	Price per PU	PG	DT	Order No.	Price per PU				
A	MW ¹⁾								Unit(s)	Unit(s)		
MCBs "same polarity only" 1P, 240 V AC												
0.3	1	C	5SJ4 114-7HG40		012	C	5SJ4 114-8HG40		1	1	012	0.120
0.5		C	5SJ4 105-7HG40		012	C	5SJ4 105-8HG40		1	1	012	0.120
1		B	5SJ4 101-7HG40		012	C	5SJ4 101-8HG40		1	1	012	0.120
1.6		C	5SJ4 115-7HG40		012	C	5SJ4 115-8HG40		1	1	012	0.120
2		B	5SJ4 102-7HG40		012	C	5SJ4 102-8HG40		1	1	012	0.120
3		B	5SJ4 103-7HG40		012	C	5SJ4 103-8HG40		1	1	012	0.120
4		B	5SJ4 104-7HG40		012	C	5SJ4 104-8HG40		1	1	012	0.120
5		C	5SJ4 111-7HG40		012	C	5SJ4 111-8HG40		1	1	012	0.120
6		B	5SJ4 106-7HG40		012	C	5SJ4 106-8HG40		1	1	012	0.120
8		B	5SJ4 108-7HG40		012	C	5SJ4 108-8HG40		1	1	012	0.120
10		B	5SJ4 110-7HG40		012	C	5SJ4 110-8HG40		1	1	012	0.120
13		C	5SJ4 113-7HG40		012	C	5SJ4 113-8HG40		1	1	012	0.120
15		C	5SJ4 118-7HG40		012	C	5SJ4 118-8HG40		1	1	012	0.120
16		B	5SJ4 116-7HG40		012	C	5SJ4 116-8HG40		1	1	012	0.120
20		B	5SJ4 120-7HG40		012	C	5SJ4 120-8HG40		1	1	012	0.120
25		B	5SJ4 125-7HG40		012	C	5SJ4 125-8HG40		1	1	012	0.120
30		C	5SJ4 130-7HG40		012	C	5SJ4 130-8HG40		1	1	012	0.120
32		C	5SJ4 132-7HG40		012	C	5SJ4 132-8HG40		1	1	012	0.120
35		C	5SJ4 135-7HG40		012	C	5SJ4 135-8HG40		1	1	012	0.120
40		C	5SJ4 140-7HG40		012	C	5SJ4 140-8HG40		1	1	012	0.120
45		C	5SJ4 145-7HG40		012	C	5SJ4 145-8HG40		1	1	012	0.120
50		C	5SJ4 150-7HG40		012	C	5SJ4 150-8HG40		1	1	012	0.120
60		C	5SJ4 160-7HG40		012	C	5SJ4 160-8HG40		1	1	012	0.120
63		C	5SJ4 163-7HG40		012	C	5SJ4 163-8HG40		1	1	012	0.120



¹⁾ 1 MW (modular width) = 18 mm.

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers
according to UL 489 and IEC, 5SJ4 . . . - . HG



I_n	Width	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
			Order No.	Price per PU	PG DT	Order No.	Price per PU	Unit(s)				
MCBs 1P, 240 V AC												
0.3	1	C	5SJ4 114-7HG41		012 C	5SJ4 114-8HG41		1	1	012	0.155	
0.5		C	5SJ4 105-7HG41		012 C	5SJ4 105-8HG41		1	1	012	0.155	
1		C	5SJ4 101-7HG41		012 C	5SJ4 101-8HG41		1	1	012	0.155	
1.6		C	5SJ4 115-7HG41		012 C	5SJ4 115-8HG41		1	1	012	0.155	
2		C	5SJ4 102-7HG41		012 C	5SJ4 102-8HG41		1	1	012	0.155	
3		C	5SJ4 103-7HG41		012 C	5SJ4 103-8HG41		1	1	012	0.155	
4		C	5SJ4 104-7HG41		012 C	5SJ4 104-8HG41		1	1	012	0.155	
5		C	5SJ4 111-7HG41		012 C	5SJ4 111-8HG41		1	1	012	0.155	
6		C	5SJ4 106-7HG41		012 C	5SJ4 106-8HG41		1	1	012	0.155	
8		C	5SJ4 108-7HG41		012 C	5SJ4 108-8HG41		1	1	012	0.155	
10		C	5SJ4 110-7HG41		012 C	5SJ4 110-8HG41		1	1	012	0.155	
13		C	5SJ4 113-7HG41		012 C	5SJ4 113-8HG41		1	1	012	0.155	
15		C	5SJ4 118-7HG41		012 C	5SJ4 118-8HG41		1	1	012	0.155	
16		C	5SJ4 116-7HG41		012 C	5SJ4 116-8HG41		1	1	012	0.155	
20		C	5SJ4 120-7HG41		012 C	5SJ4 120-8HG41		1	1	012	0.155	
25		C	5SJ4 125-7HG41		012 C	5SJ4 125-8HG41		1	1	012	0.155	
30		C	5SJ4 130-7HG41		012 C	5SJ4 130-8HG41		1	1	012	0.155	
32		C	5SJ4 132-7HG41		012 C	5SJ4 132-8HG41		1	1	012	0.155	
35		C	5SJ4 135-7HG41		012 C	5SJ4 135-8HG41		1	1	012	0.155	
40		C	5SJ4 140-7HG41		012 C	5SJ4 140-8HG41		1	1	012	0.155	
45		C	5SJ4 145-7HG41		012 C	5SJ4 145-8HG41		1	1	012	0.155	
50		C	5SJ4 150-7HG41		012 C	5SJ4 150-8HG41		1	1	012	0.155	
60		C	5SJ4 160-7HG41		012 C	5SJ4 160-8HG41		1	1	012	0.155	
63		C	5SJ4 163-7HG41		012 C	5SJ4 163-8HG41		1	1	012	0.155	
MCBs 2P, 240 V AC												
0.3	2	C	5SJ4 214-7HG41		012 C	5SJ4 214-8HG41		1	1	012	0.310	
0.5		C	5SJ4 205-7HG41		012 C	5SJ4 205-8HG41		1	1	012	0.310	
1		C	5SJ4 201-7HG41		012 C	5SJ4 201-8HG41		1	1	012	0.310	
1.6		C	5SJ4 215-7HG41		012 C	5SJ4 215-8HG41		1	1	012	0.310	
2		C	5SJ4 202-7HG41		012 C	5SJ4 202-8HG41		1	1	012	0.310	
3		C	5SJ4 203-7HG41		012 C	5SJ4 203-8HG41		1	1	012	0.310	
4		C	5SJ4 204-7HG41		012 C	5SJ4 204-8HG41		1	1	012	0.310	
5		C	5SJ4 211-7HG41		012 C	5SJ4 211-8HG41		1	1	012	0.310	
6		C	5SJ4 206-7HG41		012 C	5SJ4 206-8HG41		1	1	012	0.310	
8		C	5SJ4 208-7HG41		012 C	5SJ4 208-8HG41		1	1	012	0.310	
10		C	5SJ4 210-7HG41		012 C	5SJ4 210-8HG41		1	1	012	0.310	
13		C	5SJ4 213-7HG41		012 C	5SJ4 213-8HG41		1	1	012	0.310	
15		C	5SJ4 218-7HG41		012 C	5SJ4 218-8HG41		1	1	012	0.310	
16		C	5SJ4 216-7HG41		012 C	5SJ4 216-8HG41		1	1	012	0.310	
20		C	5SJ4 220-7HG41		012 C	5SJ4 220-8HG41		1	1	012	0.310	
25		C	5SJ4 225-7HG41		012 C	5SJ4 225-8HG41		1	1	012	0.310	
30		C	5SJ4 230-7HG41		012 C	5SJ4 230-8HG41		1	1	012	0.310	
32		C	5SJ4 232-7HG41		012 C	5SJ4 232-8HG41		1	1	012	0.310	
35		C	5SJ4 235-7HG41		012 C	5SJ4 235-8HG41		1	1	012	0.310	
40		C	5SJ4 240-7HG41		012 C	5SJ4 240-8HG41		1	1	012	0.310	
45		C	5SJ4 245-7HG41		012 C	5SJ4 245-8HG41		1	1	012	0.310	
50		C	5SJ4 250-7HG41		012 C	5SJ4 250-8HG41		1	1	012	0.310	
60		C	5SJ4 260-7HG41		012 C	5SJ4 260-8HG41		1	1	012	0.310	
63		C	5SJ4 263-7HG41		012 C	5SJ4 263-8HG41		1	1	012	0.310	

¹⁾ 1 MW (modular width) = 18 mm.

BETA Protecting

Miniature Circuit Breakers (MCBs)

Miniature circuit breakers
according to UL 489 and IEC, 5SJ4 . . . - . HG

I_n	Width	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
			Order No.	Price per PU	PG DT	Order No.	Price per PU	PG DT				
A	MW ¹⁾							Unit(s)	Unit(s)		kg	
MCBs 3P, 240 V AC												
	0.3	3	C	5SJ4 314-7HG41		012 C	5SJ4 314-8HG41		1	1	012	0.465
	0.5		C	5SJ4 305-7HG41		012 C	5SJ4 305-8HG41		1	1	012	0.465
	1		C	5SJ4 301-7HG41		012 C	5SJ4 301-8HG41		1	1	012	0.465
	1.6		C	5SJ4 315-7HG41		012 C	5SJ4 315-8HG41		1	1	012	0.465
	2		C	5SJ4 302-7HG41		012 C	5SJ4 302-8HG41		1	1	012	0.465
	3		C	5SJ4 303-7HG41		012 C	5SJ4 303-8HG41		1	1	012	0.465
	4		C	5SJ4 304-7HG41		012 C	5SJ4 304-8HG41		1	1	012	0.465
	5		C	5SJ4 311-7HG41		012 C	5SJ4 311-8HG41		1	1	012	0.465
	6		C	5SJ4 306-7HG41		012 C	5SJ4 306-8HG41		1	1	012	0.465
	8		C	5SJ4 308-7HG41		012 C	5SJ4 308-8HG41		1	1	012	0.465
	10		C	5SJ4 310-7HG41		012 C	5SJ4 310-8HG41		1	1	012	0.465
	13		C	5SJ4 313-7HG41		012 C	5SJ4 313-8HG41		1	1	012	0.465
	15		C	5SJ4 318-7HG41		012 C	5SJ4 318-8HG41		1	1	012	0.465
	16		C	5SJ4 316-7HG41		012 C	5SJ4 316-8HG41		1	1	012	0.465
	20		C	5SJ4 320-7HG41		012 C	5SJ4 320-8HG41		1	1	012	0.465
	25		C	5SJ4 325-7HG41		012 C	5SJ4 325-8HG41		1	1	012	0.465
	30		C	5SJ4 330-7HG41		012 C	5SJ4 330-8HG41		1	1	012	0.465
	32		C	5SJ4 332-7HG41		012 C	5SJ4 332-8HG41		1	1	012	0.465
	35		C	5SJ4 335-7HG41		012 C	5SJ4 335-8HG41		1	1	012	0.465
	40		C	5SJ4 340-7HG41		012 C	5SJ4 340-8HG41		1	1	012	0.465
	45		C	5SJ4 345-7HG41		012 C	5SJ4 345-8HG41		1	1	012	0.465
	50		C	5SJ4 350-7HG41		012 C	5SJ4 350-8HG41		1	1	012	0.465
	60		C	5SJ4 360-7HG41		012 C	5SJ4 360-8HG41		1	1	012	0.465
	63		C	5SJ4 363-7HG41		012 C	5SJ4 363-8HG41		1	1	012	0.465
MCBs 1P, 480Y/277 V AC												
	0.3	1	C	5SJ4 114-7HG42		012 C	5SJ4 114-8HG42		1	1	012	0.155
	0.5		C	5SJ4 105-7HG42		012 C	5SJ4 105-8HG42		1	1	012	0.155
	1		C	5SJ4 101-7HG42		012 C	5SJ4 101-8HG42		1	1	012	0.155
	1.6		C	5SJ4 115-7HG42		012 C	5SJ4 115-8HG42		1	1	012	0.155
	2		C	5SJ4 102-7HG42		012 C	5SJ4 102-8HG42		1	1	012	0.155
	3		C	5SJ4 103-7HG42		012 C	5SJ4 103-8HG42		1	1	012	0.155
	4		C	5SJ4 104-7HG42		012 C	5SJ4 104-8HG42		1	1	012	0.155
	5		C	5SJ4 111-7HG42		012 C	5SJ4 111-8HG42		1	1	012	0.155
	6		C	5SJ4 106-7HG42		012 C	5SJ4 106-8HG42		1	1	012	0.155
	8		C	5SJ4 108-7HG42		012 C	5SJ4 108-8HG42		1	1	012	0.155
	10		C	5SJ4 110-7HG42		012 C	5SJ4 110-8HG42		1	1	012	0.155
	13		C	5SJ4 113-7HG42		012 C	5SJ4 113-8HG42		1	1	012	0.155
	15		C	5SJ4 118-7HG42		012 C	5SJ4 118-8HG42		1	1	012	0.155
	16		C	5SJ4 116-7HG42		012 C	5SJ4 116-8HG42		1	1	012	0.155
	20		C	5SJ4 120-7HG42		012 C	5SJ4 120-8HG42		1	1	012	0.155
	25		C	5SJ4 125-7HG42		012 C	5SJ4 125-8HG42		1	1	012	0.155
	30		C	5SJ4 130-7HG42		012 C	5SJ4 130-8HG42		1	1	012	0.155
	32		C	5SJ4 132-7HG42		012 C	5SJ4 132-8HG42		1	1	012	0.155
	35		C	5SJ4 135-7HG42		012	--		1	1		0.155
	40		C	5SJ4 140-7HG42		012	--		1	1		0.155

¹⁾ 1 MW (modular width) = 18 mm.

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers
according to UL 489 and IEC, 5SJ4 . . . - . HG

I_n	Width	DT	Characteristic C			Characteristic D			PU	PS*	PG	Weight per PU approx.
			Order No.	Price per PU	PG DT	Order No.	Price per PU	Unit(s)				
MCBs 2P, 480Y/277 V AC												
0.3	2	C	5SJ4 214-7HG42		012 C	5SJ4 214-8HG42		1	1	012	0.310	
0.5		C	5SJ4 205-7HG42		012 C	5SJ4 205-8HG42		1	1	012	0.310	
1		C	5SJ4 201-7HG42		012 C	5SJ4 201-8HG42		1	1	012	0.310	
1.6		C	5SJ4 215-7HG42		012 C	5SJ4 215-8HG42		1	1	012	0.310	
2		C	5SJ4 202-7HG42		012 C	5SJ4 202-8HG42		1	1	012	0.310	
3		C	5SJ4 203-7HG42		012 C	5SJ4 203-8HG42		1	1	012	0.310	
4		C	5SJ4 204-7HG42		012 C	5SJ4 204-8HG42		1	1	012	0.310	
5		C	5SJ4 211-7HG42		012 C	5SJ4 211-8HG42		1	1	012	0.310	
6		C	5SJ4 206-7HG42		012 C	5SJ4 206-8HG42		1	1	012	0.310	
8		C	5SJ4 208-7HG42		012 C	5SJ4 208-8HG42		1	1	012	0.310	
10		C	5SJ4 210-7HG42		012 C	5SJ4 210-8HG42		1	1	012	0.310	
13		C	5SJ4 213-7HG42		012 C	5SJ4 213-8HG42		1	1	012	0.310	
15		C	5SJ4 218-7HG42		012 C	5SJ4 218-8HG42		1	1	012	0.310	
16		C	5SJ4 216-7HG42		012 C	5SJ4 216-8HG42		1	1	012	0.310	
20		C	5SJ4 220-7HG42		012 C	5SJ4 220-8HG42		1	1	012	0.310	
25		C	5SJ4 225-7HG42		012 C	5SJ4 225-8HG42		1	1	012	0.310	
30		C	5SJ4 230-7HG42		012 C	5SJ4 230-8HG42		1	1	012	0.310	
32		C	5SJ4 232-7HG42		012 C	5SJ4 232-8HG42		1	1	012	0.310	
35		C	5SJ4 235-7HG42		012	--		1	1		0.310	
40		C	5SJ4 240-7HG42		012	--		1	1		0.310	
MCBs 3P, 480Y/277 V AC												
0.3	3	C	5SJ4 314-7HG42		012 C	5SJ4 314-8HG42		1	1	012	0.465	
0.5		C	5SJ4 305-7HG42		012 C	5SJ4 305-8HG42		1	1	012	0.465	
1		C	5SJ4 301-7HG42		012 C	5SJ4 301-8HG42		1	1	012	0.465	
1.6		C	5SJ4 315-7HG42		012 C	5SJ4 315-8HG42		1	1	012	0.465	
2		C	5SJ4 302-7HG42		012 C	5SJ4 302-8HG42		1	1	012	0.465	
3		C	5SJ4 303-7HG42		012 C	5SJ4 303-8HG42		1	1	012	0.465	
4		C	5SJ4 304-7HG42		012 C	5SJ4 304-8HG42		1	1	012	0.465	
5		C	5SJ4 311-7HG42		012 C	5SJ4 311-8HG42		1	1	012	0.465	
6		C	5SJ4 306-7HG42		012 C	5SJ4 306-8HG42		1	1	012	0.465	
8		C	5SJ4 308-7HG42		012 C	5SJ4 308-8HG42		1	1	012	0.465	
10		C	5SJ4 310-7HG42		012 C	5SJ4 310-8HG42		1	1	012	0.465	
13		C	5SJ4 313-7HG42		012 C	5SJ4 313-8HG42		1	1	012	0.465	
15		C	5SJ4 318-7HG42		012 C	5SJ4 318-8HG42		1	1	012	0.465	
16		C	5SJ4 316-7HG42		012 C	5SJ4 316-8HG42		1	1	012	0.465	
20		C	5SJ4 320-7HG42		012 C	5SJ4 320-8HG42		1	1	012	0.465	
25		C	5SJ4 325-7HG42		012 C	5SJ4 325-8HG42		1	1	012	0.465	
30		C	5SJ4 330-7HG42		012 C	5SJ4 330-8HG42		1	1	012	0.465	
32		C	5SJ4 332-7HG42		012 C	5SJ4 332-8HG42		1	1	012	0.465	
35		C	5SJ4 335-7HG42		012	--		1	1		0.465	
40		C	5SJ4 340-7HG42		012	--		1	1		0.465	

¹⁾ 1 MW (modular width) = 18 mm.

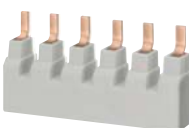

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers
according to UL 489 and IEC, 5SJ4 . . . - .HG

Accessories

	Width MW ¹⁾	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
 <p>Auxiliary switches (AS) according to UL 489</p> <p>1 NO + 1 NC 2 NO 2 NC</p>	0.5	C	5ST3 010-0HG		1	1	012	0.071
		C	5ST3 011-0HG		1	1	012	0.050
		C	5ST3 012-0HG		1	1	012	0.050
 <p>Fault signal contacts (FC) according to UL 489</p> <p>1 NO + 1 NC 2 NO 2 NC</p>	0.5	C	5ST3 020-0HG		1	1	012	0.050
		C	5ST3 021-0HG		1	1	012	0.050
		C	5ST3 022-0HG		1	1	012	0.050
 <p>Shunt trips (ST) according to UL 489</p> <p>110 ... 480 V AC 24 ... 60 V AC/DC</p>	1	▶	5ST3 030-0HG		1	1	012	0.098
		▶	5ST3 031-0HG		1	1	012	0.098

¹⁾ 1 MW (modular width) = 18 mm.

	Pin spacing MW ¹⁾	Length mm	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
 <p>Busbars acc. to UL 489 specially for 5SJ4 ... -HG.. MCBs fixed lengths, cannot be cut²⁾</p> <p>Single-phase For 6 MCB 1P For 12 MCB 1P For 18 MCB 1P</p> <p>Two-phase For 3 MCB 2P For 6 MCB 2P For 9 MCB 2P</p> <p>Three-phase For 2 MCB 3P For 4 MCB 3P For 6 MCB 3P</p>	1	100	A	5ST3 663-0HG		1	10	012	0.056
		205	A	5ST3 663-1HG		1	10	012	0.112
		310	A	5ST3 663-2HG		1	10	012	0.170
	1	100	A	5ST3 664-0HG		1	10	012	0.065
		205	A	5ST3 664-1HG		1	10	012	0.137
		310	A	5ST3 664-2HG		1	10	012	0.211
	1	100	A	5ST3 665-0HG		1	10	012	0.067
		205	A	5ST3 665-1HG		1	10	012	0.155
		310	A	5ST3 665-2HG		1	10	012	0.243
 <p>Terminals acc. to UL 489 specially for 5SJ4 ... -HG.. MCBs</p> <p>Infeed on the MCB max. 35 mm²</p> <p>Infeed on the busbar max. 50 mm²</p>			A	5ST3 666-0HG		1	10	012	0.033
			A	5ST3 666-2HG		1	10	012	0.034




¹⁾ 1 MW (modular width) = 18 mm.

²⁾ Any free pins on the busbars must be covered with the 5ST3 666-1HG touch protection cover.

BETA Protecting Miniature Circuit Breakers (MCBs)

Miniature circuit breakers acc. to UL 489 and IEC
Circuit breaker terminals, 5SK9

Miniature circuit breakers according to UL 489 and IEC, 5SJ4 ...-HG

	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	MW ¹⁾	mm				Unit(s)	Unit(s)		kg
	Touch protection covers for busbars acc. to UL 489 3 × 1 pin			A	5ST3 666-1HG	1	10	012	0.003
	Handle locking devices Can be sealed against unwanted manual ON/OFF switching, padlock with max. 3 mm shackle			A	5ST3 801	1	1	027	0.008
	Padlocks For 5ST3 801 handle locking device			▶	5ST3 802	1	1	027	0.027

¹⁾ 1 MW (modular width) = 18 mm.

Overview

Circuit breaker terminals, 5SK9

Circuit breaker terminals are used for short-circuit protection or for protection against overloading and short-circuiting in auxiliary and control circuits after control transformers. All terminals are designed for 2 wires. The terminal block labeling accessories are used for inscription.

Benefits





- Integration of line protection switching function in the terminal technology of control cabinets in compact 12 mm design
- Display of switching position or the "Tripped" state for the fast detection of faults
- Switching/isolating function facilitates fault locating
- Device versions with integral auxiliary switch (AS) signal the contact position
- Device versions with floating through-type connection parallel to the switching contacts facilitate line connection.

These devices are listed as "Supplementary Protectors" acc. to UL 1077 (UL Recognized Components) and CSA 235 (CSA Component Accepted).

BETA Protecting Miniature Circuit Breakers (MCBs)

Circuit breaker terminals, 5SK9

Selection and ordering data

Version	I_n	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg	
 <p>Terminal size 1.5 mm² With short-circuit release</p>	1	A	5SK9 011-1KK24		1	10	027	0.053	
	2	A	5SK9 011-1KK25		1	10	027	0.052	
	4	B	5SK9 011-1KK26		1	10	027	0.053	
	6	A	5SK9 011-1KK27		1	10	027	0.053	
	10	B	5SK9 011-1KK28		1	10	027	0.050	
	<p>With overload and short-circuit release</p>	1	A	5SK9 011-2KK24		1	10	027	0.053
		2	A	5SK9 011-2KK25		1	10	027	0.052
		4	A	5SK9 011-2KK26		1	10	027	0.053
		6	A	5SK9 011-2KK27		1	10	027	0.053
		10	B	5SK9 011-2KK28		1	10	027	0.050
		 <p>Terminal size 2.5 mm² With short-circuit release, auxiliary switch with 1 NO and 1 NC</p>	1	B	5SK9 011-6KK24		1	5	027
	2		B	5SK9 011-6KK25		1	5	027	0.093
	4		B	5SK9 011-6KK26		1	5	027	0.092
	6		B	5SK9 011-6KK27		1	5	027	0.093
10	B		5SK9 011-6KK28		1	5	027	0.090	
<p>With overload and short-circuit release, auxiliary switch with 1 NC and through-type connection</p>	1		B	5SK9 011-4KK24		1	5	027	0.089
	2		A	5SK9 011-4KK25		1	5	027	0.092
	4		A	5SK9 011-4KK26		1	5	027	0.091
	6		B	5SK9 011-4KK27		1	5	027	0.105
	10		B	5SK9 011-4KK28		1	5	027	0.088
	<p>With overload and short-circuit release, auxiliary switch with 1 NO and 1 NC</p>		0.5	B	5SK9 011-8KK23		1	5	027
1			A	5SK9 011-8KK24		1	5	027	0.092
2			A	5SK9 011-8KK25		1	5	027	0.097
4			A	5SK9 011-8KK26		1	5	027	0.092
6		A	5SK9 011-8KK27		1	5	027	0.090	
10		B	5SK9 011-8KK28		1	5	027	0.090	
<p>Feeder terminals Rated uninterrupted current 76 A Connection up to 16 mm²</p>		A	5ST1 822-7KK00		1	10	027	0.012	
	 <p>Link rails, single-phase Rated uninterrupted current 65 A</p>		A	5ST1 822-7KK02		1	20	027	0.015
5 connecting pins • Length 104 mm • For terminals: 5SK9 011-4KK2., 5SK9 011-6KK2., 5SK9 011-8KK2.			A	5ST1 822-7KK07		1	20	027	0.013
9 connecting pins • Length 104 mm • For terminals: 5SK9 011-1KK2., 5SK9 011-2KK2.			A	5ST1 822-7KK01		1	20	027	0.031
10 connecting pins • Length 206 mm • For terminals: 5SK9 011-4KK2., 5SK9 011-6KK2.			A	5ST1 822-7KK06		1	20	027	0.036
 <p>Link rails, two-phase Rated uninterrupted current 120 A For terminal: 5SK9 011-4KK2.</p>			A	5ST1 822-7KK04		1	10	027	0.031
		5 connecting pins/pole • Length 104 mm		A	5ST1 822-7KK03		1	10	027
9 connecting pins/pole • Length 206 mm									

BETA Protecting Residual Current Protective Devices

RCCBs, type A, 5SM3

Overview

RCCBs of type A are used in all systems up to 240/415 V AC. They trip in the event of both sinusoidal AC residual currents and pulsating DC residual currents.

RCCBs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for additional protection against direct contact. RCCBs with a rated residual current of 10 mA are primarily used in areas that represent an increased risk for personnel.

Since the amendment of DIN VDE 0100-410 came into effect in June 2007, all socket outlet current circuits up to 20 A must now also be fitted with residual current protective devices with a rated residual current of max. 30 mA. This also applies to outdoor electrical circuits up to 32 A for the connection of portable equipment.

Devices with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults. RCCBs with a rated residual current of 100 mA are primarily used outside Europe.

Note:
DIN VDE 0100 is the German version of IEC 60364.

SIGRES

SIGRES RCCBs were developed for use in harsh ambient conditions, such as swimming baths as protection against chlorine and ozone, in the agricultural sector (ammonia), on building sites and in the chemical industry (nitrogen oxide, sulfur dioxide, solvents), in the food processing industry (hydrogen sulfide) and in unheated rooms (dampness). The patented active condensation protection requires a permanent power supply and the in-feed from below with the RCCBs switched off.

For use under ambient conditions according to the product standard (EN 61008-1), the actuation interval for pressing the test button can be extended to once a year.

Super resistant **K**

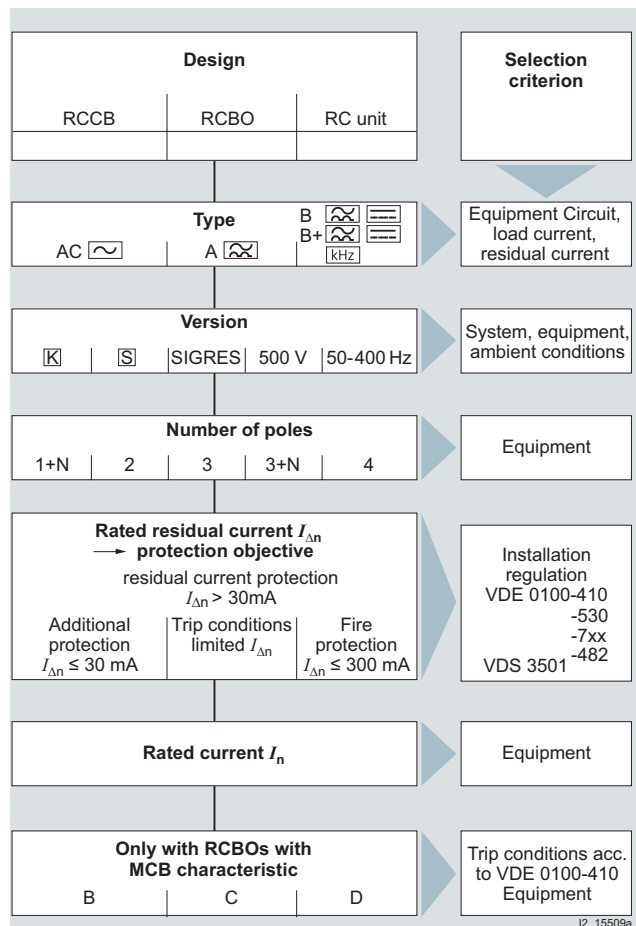
Super resistant (short-time delayed) RCCBs comply with the maximum permissible break times for instantaneous devices. However, by implementing a short-time delay they prevent unnecessary trippings, and thus plant faults, when pulse-shaped leakage currents occur - as is the case when capacitors are switched on.

Selective **S**

Can be used as upstream group switch for selective tripping contrary to a downstream, instantaneous or super resistant RCCB.

Benefits

- Instantaneous RCCBs with the N-connection on the left-hand side enable simple bus mounting with standard pin busbars with MCBs installed on the right-hand side
- Instantaneous RCCBs with the N connection on the right-hand side can be bus-mounted with MCBs using a special pin busbar
- Instantaneous devices have a surge current withstand capability with current waveform 8/20 μ s of more than 1 kA, super resistant of more than 3 kA and selective of more than 5 kA. This ensures safe operation
- SIGRES has an extremely long service life due to patented active condensation protection and the same dimensions for fast and simple exchange of already installed instantaneous RCCBs
- Super resistant devices increase plant availability, as unnecessary tripping is prevented in systems with short-time voltage peaks
- Selective RCCBs increase plant availability, as in the event of a fault, a staggered tripping time enables the selective tripping of RCCBs connected in series
- Auxiliary switches or remote controlled mechanisms are also available as additional components
- The operating handle and the test button can be locked by means of a handle locking device.



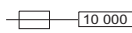





Selection aid for determining a suitable residual current protective device

BETA Protecting

Residual Current Protective Devices

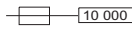






RCCBs, type A, 5SM3

Selection and ordering data

	Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.		
	$I_{\Delta n}$	I_n											
	mA	A	A					Unit(s)	Unit(s)		kg		
RCCBs, type A instantaneous													
1P+N; 125 ... 230 V AC; 50 ... 60 Hz													
N-connection, right													
	10	16	63	2	A	5SM3 111-6		1	1	007	0.230		
	30	16	63	2	A	5SM3 311-6		1	1	007	0.230		
		25				5SM3 312-6		1	1	007	0.230		
		40				5SM3 314-6		1	1	007	0.230		
		63	100		2.5	A	5SM3 316-6		1	1	007	0.320	
		80				B	5SM3 317-6		1	1	007	0.320	
		100			2	B	5SM3 318-6KK		1	1	007	0.245	
		125				B	5SM3 315-6KK		1	1	007	0.245	
	Up to 40 A												
		100	25	63	2	B	5SM3 412-6		1	1	007	0.230	
		40				B	5SM3 414-6		1	1	007	0.230	
		63	100		2.5	B	5SM3 416-6		1	1	007	0.300	
		80				B	5SM3 417-6		1	1	007	0.300	
		100	125		2	B	5SM3 418-6KK		1	1	007	0.245	
		125				B	5SM3 415-6KK		1	1	007	0.245	
300		25	63	2	A	5SM3 612-6		1	1	007	0.210		
		40				A	5SM3 614-6		1	1	007	0.210	
		63	100		2.5	B	5SM3 616-6		1	1	007	0.280	
63 A and 80 A													
		80				B	5SM3 617-6		1	1	007	0.280	
		100	125		2	B	5SM3 618-6KK		1	1	007	0.245	
		125				B	5SM3 615-6KK		1	1	007	0.245	
	N-connection, left												
	100 A and 125 A	10	16	63	2	B	5SM3 111-6KL		1	1	007	0.280	
		30	16	63	2	B	5SM3 311-6KL		1	1	007	0.280	
			25				5SM3 312-6KL		1	1	007	0.280	
			40				5SM3 314-6KL		1	1	007	0.280	
			63	100		2.5	B	5SM3 316-6KL		1	1	007	0.310
		100	40	63	2	B	5SM3 414-6KL		1	1	007	0.280	
		63	100		2.5	B	5SM3 416-6KL		1	1	007	0.310	
	300	25	63	2	B	5SM3 612-6KL		1	1	007	0.280		
		40				B	5SM3 614-6KL		1	1	007	0.280	
		63	100		2.5	B	5SM3 616-6KL		1	1	007	0.310	
3P+N, 230 ... 400 V AC, 50 ... 60 Hz													
N-connection, right													
	30	25	100	4	▶	5SM3 342-6		1	1	007	0.500		
		40				▶	5SM3 344-6		1	1	007	0.500	
		63				▶	5SM3 346-6		1	1	007	0.500	
		80				A	5SM3 347-6		1	1	007	0.500	
		100				▶	5SM3 348-6		1	1	007	0.538	
		125	125			A	5SM3 345-6		1	1	007	0.500	
	Up to 80 A	100	40	100	4	A	5SM3 444-6		1	1	007	0.460	
			63			A	5SM3 446-6		1	1	007	0.460	
			100			▶	5SM3 448-6		1	1	007	0.538	
			125	125		B	5SM3 445-6		1	1	007	0.480	
	300	25	100	4	A	5SM3 642-6		1	1	007	0.440		
		40				A	5SM3 644-6		1	1	007	0.440	
		63				A	5SM3 646-6		1	1	007	0.440	
		80				A	5SM3 647-6		1	1	007	0.440	
		100				▶	5SM3 648-6		1	1	007	0.538	
		125	125			A	5SM3 645-6		1	1	007	0.480	
	100 A and 125 A	500	25	100	4	B	5SM3 742-6		1	1	007	0.440	
			40			A	5SM3 744-6		1	1	007	0.440	
			63			A	5SM3 746-6		1	1	007	0.440	
			100			▶	5SM3 748-6		1	1	007	0.538	
		125	125		A	5SM3 745-6		1	1	007	0.480		

BETA Protecting Residual Current Protective Devices

RCCBs, type A, 5SM3


Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
$I_{\Delta n}$ mA	I_n A	 10 000 A					Unit(s)	Unit(s)		kg	
RCCBs, type A instantaneous											
3P+N, 230 ... 400 V AC, 50 ... 60 Hz											
N-connection, left											
	30	25 40 63 80	100	4	B ▶ B B B	5SM3 342-6KL 5SM3 344-6KL 5SM3 346-6KL 5SM3 347-6KL	1 1 1 1	1 1 1 1	007 007 007 007	0.500 0.500 0.500 0.500	
	300	25 40 63 80	100	4	B B B B	5SM3 642-6KL 5SM3 644-6KL 5SM3 646-6KL 5SM3 647-6KL	1 1 1 1	1 1 1 1	007 007 007 007	0.440 0.440 0.440 0.440	
		500	63	100	4	A	5SM3 746-6KL	1	1	007	0.460
		RCCBs, type A Instantaneous, special versions									
1P+N; 24 ... 125 V AC; 50 ... 60 Hz											
	30	16	63	2	B	5SM3 311-6KK13	1	1	007	0.280	
	3P+N; 500 V AC; 50 ... 60 Hz										
	30	25 40 63	63	4	B B B	5SM3 352-6 5SM3 354-6 5SM3 356-6	1 1 1	1 1 1	007 007 007	0.500 0.500 0.500	
	300	25 40 63	63	4	B B B	5SM3 652-6 5SM3 654-6 5SM3 656-6	1 1 1	1 1 1	007 007 007	0.440 0.440 0.440	
		3P+N, 230 ... 400 V AC, 50 ... 400 Hz									
		30	25 40	80	4	B B	5SM3 342-6KK03 5SM3 344-6KK03	1 1	1 1	007 007	0.500 0.500
	RCCBs, type A SIGRES instantaneous										
1P+N; 125 ... 230 V AC; 50 ... 60 Hz											
	30	25 40	63	2	B B	5SM3 312-6KK12 5SM3 314-6KK12	1 1	1 1	007 007	0.230 0.230	
		63 80	100	2.5	B B	5SM3 316-6KK12 5SM3 317-6KK12	1 1	1 1	007 007	0.320 0.320	
	3P+N, 230 ... 400 V AC, 50 ... 60 Hz										
		30	25 40 63 80	100	4	B B B B	5SM3 342-6KK12 5SM3 344-6KK12 5SM3 346-6KK12 5SM3 347-6KK12	1 1 1 1	1 1 1 1	007 007 007 007	0.500 0.500 0.500 0.500
300			40 63	100	4	B B	5SM3 644-6KK12 5SM3 646-6KK12	1 1	1 1	007 007	0.440 0.440

* You can order this quantity or a multiple thereof.

BETA Protecting

Residual Current Protective Devices

RCCBs, type A, 5SM3

Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
$I_{\Delta n}$ mA	I_n A	 10 000 A					Unit(s)	Unit(s)		kg
RCCBs, type A SIGRES selective [S] 3P+N, 230 ... 400 V AC, 50 ... 60 Hz										
	300	63	100	4	B	5SM3 646-8KK12	1	1	007	0.440
RCCBs, type A Super resistant [K] 1P+N; 125 ... 230 V AC; 50 ... 60 Hz										
	30	25	63	2	B	5SM3 312-6KK01	1	1	007	0.230
		40			B	5SM3 314-6KK01	1	1	007	0.230
		63	100	2.5	B	5SM3 316-6KK01	1	1	007	0.320
	300	63	100	2.5	B	5SM3 616-6KK01	1	1	007	0.320
3P+N, 230 ... 400 V AC, 50 ... 60 Hz										
	30	25	100	4	B	5SM3 342-6KK01	1	1	007	0.500
		40			B	5SM3 344-6KK01	1	1	007	0.500
		63			B	5SM3 346-6KK01	1	1	007	0.500
	300	40	100	4	B	5SM3 644-6KK01	1	1	007	0.492
		63			B	5SM3 646-6KK01	1	1	007	0.491
		80			B	5SM3 647-6KK01	1	1	007	0.493
RCCBs, type A Selective [S] 1P+N; 125 ... 230 V AC; 50 ... 60 Hz										
	100	63	100	2.5	B	5SM3 416-8	1	1	007	0.300
	300	40	63	2	B	5SM3 614-8	1	1	007	0.250
		63	100	2.5	A	5SM3 616-8	1	1	007	0.280
		80	100		B	5SM3 617-8	1	1	007	0.320
3P+N, 230 ... 400 V AC, 50 ... 60 Hz										
N-connection, right										
	100	40	100	4	B	5SM3 444-8	1	1	007	0.460
		63			B	5SM3 446-8	1	1	007	0.460
	300	40	100	4	A	5SM3 644-8	1	1	007	0.440
		63			A	5SM3 646-8	1	1	007	0.440
		100			B	5SM3 648-8	1	1	007	0.538
		125	125		A	5SM3 645-8	1	1	007	0.480
	500	125	125	4	B	5SM3 745-8	1	1	007	0.480
	1000	63	100	4	A	5SM3 846-8	1	1	007	0.515
N-connection, left										
	300	63	100	4	B	5SM3 646-8KL	1	1	007	0.440

Up to 80 A

BETA Protecting Residual Current Protective Devices

SIQUENCE, universal current-sensitive RCCBs
type B and type B+, 5SM3 and 5SU1

Overview

Frequency converters, medical devices and UPS systems are seeing increasing use in industry. Smooth DC residual currents or currents with low residual ripple may occur in the event of faults on these devices.

Type A residual current protective devices are unable to detect these smooth DC residual currents. Furthermore, such smooth DC residual currents make Type A devices increasingly insensitive to AC residual currents and pulsating DC residual currents. Hence if a fault occurs, there is no tripping and the desired protection function is no longer assured.

UC-sensitive residual current protective devices of Types B and B+ have an additional transformer which is supplied with a control signal. Hence it is possible to evaluate the change of the transformer's operating range caused by smooth DC residual currents. The desired protection function is thus assured.

The residual current protective devices of Type B are suitable for use in three-phase current systems before input circuits with rectifiers. They are not intended for use in DC systems and in networks with operating frequencies other than 50 or 60 Hz.

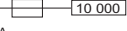







The devices in this series are designed as residual current operated circuit breakers (RCCBs) up to 80 A and as residual current circuit breakers with integral overcurrent protection (RCBOs) for 100 A or 125 A in Characteristics C or D.

Type B+ residual current protective devices additionally offer enhanced, preventative fire protection. In these versions, the tripping value is limited to a maximum of 420 mA up to 20 kHz.

Benefits

- Universal current-sensitive residual current protective devices detect not only AC residual currents and pulsating DC residual currents, but also smooth DC residual currents, thus ensuring the desired protective function with all types of residual current
- With type B, the tripping characteristic is adapted to the increase of leakage currents at higher frequencies in systems with capacitive impedances and results in increased operating safety.
- Type B+ versions offer enhanced preventative fire protection and correspond to the prestandards DIN V VDE V 0664-110 and/or DIN V VDE V 0664-210 and VdS Directive 3501.
- The RCBO is a compact device for up to 125 A. It provides not only personnel, property and fire protection but also overload and short-circuit protection for cables. This enables great savings and installation costs.
- All RCBOs offer external remote tripping over terminals Y1/Y2. This supports implementation of central OFF circuits

Selection and ordering data







	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	Max. permissible short-circuit back-up fuse  10 000 A	MW	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
SIQUENCE RCCBs, type B Super resistant [K]											
1P+N; 230 V AC; 50 ... 60 Hz											
	30	16	100	4	A	5SM3 321-4		1	1	015	0.590
		25				5SM3 322-4					
		40				5SM3 324-4					
		63				5SM3 326-4					
	300	16	100	4	A	5SM3 621-4		1	1	015	0.600
		25				5SM3 622-4					
		40				5SM3 624-4					
		63				5SM3 626-4					
3P+N; 230 ... 400 V AC; 50 ... 60 Hz											
	30	25	100	4	A	5SM3 342-4		1	1	015	0.600
		40				5SM3 344-4					
		63				5SM3 346-4					
		80				5SM3 347-4					
	300	25	100	4	▶	5SM3 642-4		1	1	015	0.520
		40				5SM3 644-4					
		63				5SM3 646-4					
		80				5SM3 647-4					
	500	63	100	4	B	5SM3 746-4		1	1	015	0.520
		80				5SM3 747-4					
SIQUENCE RCCBs, type B Selective [S]											
3P+N; 230 ... 400 V AC; 50 ... 60 Hz											
	300	63	100	4	B	5SM3 646-5		1	1	015	0.520
		80				5SM3 647-5					
	500	63	100	4	B	5SM3 746-5		1	1	015	0.520
		80				5SM3 747-5					

* You can order this quantity or a multiple thereof.

BETA Protecting




Residual Current Protective Devices

SIQUENCE, universal current-sensitive RCCBs type B and type B+, 5SM3 and 5SU1

	Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	Max. permissible short-circuit back-up fuse  A	MW	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
SIQUENCE RCCBs, type B+ Super resistant [K]											
	1P+N; 230 V AC; 50 ... 60 Hz										
	30	16	100	4	C	5SM3 321-4KK14		1	1	015	0.587
		25				5SM3 322-4KK14					
		40				5SM3 324-4KK14					
		63				5SM3 326-4KK14					
	300	16	100	4	C	5SM3 621-4KK14		1	1	015	0.600
		25				5SM3 622-4KK14					
		40				5SM3 624-4KK14					
		63				5SM3 626-4KK14					
	SIQUENCE RCCBs, type B+ Super resistant [K]										
	3P+N; 230 ... 400 V AC; 50 ... 60 Hz										
	30	25	100	4	C	5SM3 342-4KK14		1	1	015	0.600
		40				5SM3 344-4KK14					
		63				5SM3 346-4KK14					
		80				5SM3 347-4KK14					
	300	25	100	4	C	5SM3 642-4KK14		1	1	015	0.600
		40				5SM3 644-4KK14					
		63				5SM3 646-4KK14					
		80				5SM3 647-4KK14					
	SIQUENCE RCCBs, type B+ Selective [S]										
	3P+N; 230 ... 400 V AC; 50 ... 60 Hz										
	300	63	100	4	C	5SM3 646-5KK14		1	1	015	0.600
		80				5SM3 647-5KK14					
SIQUENCE RCBOs, type B Super resistant [K], rated switching capacity 10 kA											
	4P; 400 V AC; 50 ... 60 Hz										
	Characteristic C										
	30	100	11	B	5SU1 374-7AK81		1	1	017	2.050	
		125			5SU1 374-7AK82						
	300	100	11	B	5SU1 674-7AK81		1	1	017	2.050	
		125			5SU1 674-7AK82						
	Characteristic D										
	30	100	11	B	5SU1 374-8AK81		1	1	017	2.050	
	300	100	11	B	5SU1 674-8AK81		1	1	017	2.050	
	SIQUENCE RCBOs, type B Super resistant [K]										
	4P; 480 V AC; 50 ... 60 Hz										
	Characteristic C										
	300	100	11	B	5SU1 674-7CK81		1	1	017	2.050	
		125			5SU1 674-7CK82						
	Characteristic D										
	300	100	11	B	5SU1 674-8BK81		1	1	017	1.950	
300	100	11	B	5SU1 674-8BK81		1	1	017	1.950		

BETA Protecting Residual Current Protective Devices

**SIQUENCE, universal current-sensitive RCCBs
type B and type B+, 5SM3 and 5SU1**

Rated residual current	Rated current	Max. permissible short-circuit back-up fuse	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
$I_{\Delta n}$ mA	I_n A	 10 000					Unit(s)	Unit(s)		kg
										
SIQUENCE RCBOs, type B+ Super resistant [K], rated switching capacity 10 kA 4P; 400 V AC; 50 ... 60 Hz										
Characteristic C										
30	100		11	C	5SU1 374-7DK81		1	1	017	2.067
	125			C	5SU1 374-7DK82		1	1	017	2.053
300	100		11	C	5SU1 674-7DK81		1	1	017	2.069
	125			C	5SU1 674-7DK82		1	1	017	2.088
Characteristic D										
30	100		11	C	5SU1 374-8DK81		1	1	017	2.084
300	100		11	C	5SU1 674-8DK81		1	1	017	2.082
<hr/> 4P; 480 V AC; 50 ... 60 Hz										
Characteristic C										
300	100		11	C	5SU1 674-7FK81		1	1	017	2.050
	125			C	5SU1 674-7FK82		1	1	017	2.050
<hr/> 										
SIQUENCE RCBOs, type B+ Selective [S], rated switching capacity 10 kA 4P; 400 V AC; 50 ... 60 Hz										
Characteristic C										
300	125		11	C	5SU1 674-7EK82		1	1	017	2.082
Characteristic D										
300	100		11	C	5SU1 674-8EK81		1	1	017	2.078

More information

More information about SIQUENCE residual current protective devices, universal-current sensitive RCCBs type B and type B+, 5SM3 and 5SU1, can be found in Catalog ET B1 · 2010.

You can download the up-to-date catalog from www.siemens.com/e-installation-catalogs.

BETA Protecting

Residual Current Protective Devices

Additional components

Overview

Auxiliary switches (AS) signal the contact position of the RCCB.





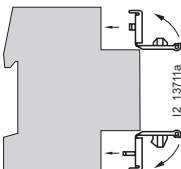
Remote-controlled mechanisms are used for the remote ON/OFF switching of RCCBs. They also enable local manual switching. A blocking function permits maintenance work. If the RCCB is tripped, an acknowledgment must be carried out prior to switching back on.

The leakage current measurement device detects the leakage currents - like the circuit breaker - thus providing a direct statement as to the current loading of the RCCB. It is used to measure leakage currents up to 300 mA. This requires a voltmeter with an internal resistance more than $1 \text{ M}\Omega/\text{V}$ and a measuring range for AC voltages of $U_{\text{eff}} = 1 \text{ mV}$ to 2 V . For the fault-free operation of an RCCB, the measured leakage current should be no greater than $1/3$ of the rated residual current.

Benefits



- Using captive brackets, the remote-controlled mechanism can be attached (or retrofitted) to the right-hand side of the basic device without the need for tools
- Bus systems, such as *instabus* KNX, AS-Interface bus or PROFIBUS, can be integrated in the communication over binary inputs
- The leakage current measurement device enables the systematic selection of the rated residual current, thus helping to prevent the inadvertent tripping of RCCBs.

Selection and ordering data

Version	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
					Unit(s)	Unit(s)		kg
 <p>Auxiliary switches (AS) For 5SM3 RCCBs up to 80 A</p>	1 NO + 1 NC	0.5	▶ 5SW3 300		1	1/10	008	0.042
	2 NC	0.5	C 5SW3 301		1	1/10	008	0.042
	2 NO	0.5	A 5SW3 302		1	1/10	008	0.042
 <p>Auxiliary switches (AS) For 5SM3 RCCBs, 100 ... 125 A, 3P+N</p>	1 NO + 1 NC	0.5	B 5SW3 330		1	1	008	0.040
 <p>Remote-controlled mechanisms (RC) For 5SM3 RCCBs up to 80 A Rated voltage $U_n = 230 \text{ V AC}$</p>	3.5	B	5ST3 051		1	1	027	0.395
 <p>Leakage current measurement device Rated voltage $U_n = 500 \text{ V AC}$; 50 ... 60 Hz, 4P Rated residual current $I_{\Delta n} = 0 \dots 300 \text{ mA}$ Rated current $I_n = 63 \text{ A}$</p>	4	B	5SM1 930-0		1	1	008	0.430
 <p>Covers for connection terminals For residual current operated circuit breakers up to 80 A, sealable (2 units in plastic bag)</p>		2	A 5SW3 010		1	1/50	008	0.003
		2.5	A 5SW3 011		1	1/50	008	0.004
		4	A 5SW3 008		1	1/50	008	0.006

BETA Protecting Residual Current Protective Devices

Additional components
RC units, type A, 5SM2

Version	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
					Unit(s)	Unit(s)		kg
 <p>Locking devices for RCCBs up to 80 A, sealable and lockable 4.5 mm hole diameter</p>		B	5SW3 303		1	10	008	0.008
 <p>Padlocks For 5SW3 303 locking device</p>		▶	5ST3 802		1	1	027	0.027
<p>Locking devices with padlock Comprising 5SW3 303 locking device and 5ST3 802 padlock</p>		B	5SW3 312		1 set	1 set	008	0.035

More information

Gossen-Metrawatt offers suitable test devices for RCCB function tests and for testing protective measures.

Information is available at:

Gossen-Metrawatt GmbH
Thomas-Mann-Str. 16-20
D-90471 Nuremberg
Germany

Tel. +49 (0) 9 11/86 02-111
Fax +49 (0) 9 11/86 02-777

www.gmc-instruments.com

E-mail: info@gmc-instruments.com

Overview

RC units, type A, 5SM2

RC units of type A can be used in all systems up to 240/415 V AC. They trip in the event of both sinusoidal AC fault currents and pulsating DC residual currents.

RCCBs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, and for additional protection against direct contact.

Devices with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.

RC units are combined with MCBs with characteristics A, B, C and D, provided that these are available in the MCB range. The two components are simply plugged together without the need for any tools.

They then form a combination of RCCB and MCB for personnel, fire and line protection.

Super resistant **K**

Super resistant (short-time delayed) RC units satisfy the maximum permissible break times for instantaneous devices. However, by implementing a short-time delay they prevent unnecessary trippings, and thus plant faults, when pulse-shaped leakage currents occur - as is the case when capacitors are switched on.

Selective **S**

Can be used as upstream group switch for selective tripping contrary to a downstream, instantaneous or super resistant RCCB.

The dimensioning of the rated residual current depends on the size of the plant.

Benefits

- Our wide variety of RC unit types and comprehensive range of miniature circuit breakers offer a huge spectrum of combinations for all applications
- All devices have an current withstand capability of more than 1 kA, thus ensuring safe and reliable operation
- All additional components for miniature circuit breakers can be retrofitted on the right-hand side
- All 100 A and 125 A RC units offer external remote tripping over terminals Y1/Y2. This supports implementation of central OFF circuits
- Both components can be simply plugged into each other and secured with captive metal brackets - no tools required. This saves considerable time when mounting.








* You can order this quantity or a multiple thereof.

BETA Protecting

Residual Current Protective Devices






RC units, type A, 5SM2

Selection and ordering data

	Rated residual current	Rated current	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	$I_{\Delta n}$ mA	I_n A					Unit(s)	Unit(s)		kg
RC units, type A instantaneous										
For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..										
2P, 230 ... 400 V AC, 50 ... 60 Hz										
	10	0.3 ... 16	2	B	5SM2 121-6		1	1	007	0.180
	30	0.3 ... 40		▶	5SM2 322-6		1	1	007	0.170
	300			A	5SM2 622-6		1	1	007	0.170
	30	0.3 ... 63		A	5SM2 325-6		1	1	007	0.170
	100			B	5SM2 425-6		1	1	007	0.170
	300			B	5SM2 625-6		1	1	007	0.170
500			B	5SM2 725-6		1	1	007	0.170	
<hr/>										
For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..										
3P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	A	5SM2 332-6		1	1	007	0.260
	300			A	5SM2 632-6		1	1	007	0.260
	30	0.3 ... 63		B	5SM2 335-6		1	1	007	0.260
	100			B	5SM2 435-6		1	1	007	0.260
	300			B	5SM2 635-6		1	1	007	0.260
	500			B	5SM2 735-6		1	1	007	0.260
<hr/>										
For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..										
4P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	▶	5SM2 342-6		1	1	007	0.290
	300			▶	5SM2 642-6		1	1	007	0.290
	30	0.3 ... 63		A	5SM2 345-6		1	1	007	0.290
	100			B	5SM2 445-6		1	1	007	0.290
	300			A	5SM2 645-6		1	1	007	0.290
	500			A	5SM2 745-6		1	1	007	0.290
<hr/>										
For 5SP4 miniature circuit breakers (B and C characteristic)										
2P; 125 ... 230 V AC, 50 ... 60 Hz										
	30	80 ... 100	3.5	B	5SM2 327-6		1	1	007	0.410
	300			B	5SM2 627-6		1	1	007	0.410
<hr/>										
For 5SP4 miniature circuit breakers (B and C characteristic)										
4P; 230 ... 400 V AC, 50 ... 60 Hz										
	30	80 ... 100	5	B	5SM2 347-6		1	1	007	0.630
	300			A	5SM2 647-6		1	1	007	0.630

BETA Protecting Residual Current Protective Devices

RC units, type A, 5SM2

	Rated residual current	Rated current	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
	$I_{\Delta n}$ mA	I_n A					Unit(s)	Unit(s)		kg	
	RC units, type A Super resistant K										
	For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..										
	2P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	2	B	5SM2 322-6KK01		1	1	007	0.350	
	30	0.3 ... 63		B	5SM2 325-6KK01		1	1	007	0.350	
	3P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	B	5SM2 332-6KK01		1	1	007	0.365	
	30	0.3 ... 63		B	5SM2 335-6KK01		1	1	007	0.365	
	4P, 230 ... 400 V AC, 50 ... 60 Hz										
	30	0.3 ... 40	3	B	5SM2 342-6KK01		1	1	007	0.290	
30	0.3 ... 63		B	5SM2 345-6KK01		1	1	007	0.290		
	RC units, type A Selective S										
	For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..										
	2P, 230 ... 400 V AC, 50 ... 60 Hz										
	300	0.3 ... 40	2	A	5SM2 622-8		1	1	007	0.170	
	300	0.3 ... 63		B	5SM2 625-8		1	1	007	0.170	
	3P, 230 ... 400 V AC, 50 ... 60 Hz										
	1000	0.3 ... 40	3	B	5SM2 832-8		1	1	007	0.365	
	300	0.3 ... 63	3	B	5SM2 635-8		1	1	007	0.260	
	500			B	5SM2 735-8		1	1	007	0.400	
	1000			B	5SM2 835-8		1	1	007	0.260	
	For 5SY miniature circuit breakers, but not for 5SY5 and 5SY6 0..										
	4P, 230 ... 400 V AC, 50 ... 60 Hz										
	300	0.3 ... 63	3	A	5SM2 645-8		1	1	007	0.290	
	500			A	5SM2 745-8		1	1	007	0.400	
1000			A	5SM2 845-8		1	1	007	0.290		
	For 5SP4 miniature circuit breakers (B and C characteristic)										
	2P; 125 ... 230 V AC, 50 ... 60 Hz										
300	80 ... 100	3.5	B	5SM2 627-8		1	1	007	0.410		
	For 5SP4 miniature circuit breakers (B and C characteristic)										
	4P; 230 ... 400 V AC, 50 ... 60 Hz										
	300	80 ... 100	5	A	5SM2 647-8		1	1	007	0.630	
1000			A	5SM2 847-8		1	1	007	0.630		

* You can order this quantity or a multiple thereof.

BETA Protecting Residual Current Protective Devices

RCBOs, type A, 5SU1

Overview

RCBOs are a combination of an RCCB and a miniature circuit breaker in a compact design for personnel, fire and line protection. For personnel and fire protection, the residual current part of the type A trips in the event of sinusoidal AC residual currents and pulsating DC residual currents.

RCBOs with a rated residual current of maximum 30 mA are used for personnel, material and fire protection, as well as for protection against direct contact. RCBOs with a rated residual current of 10 mA are primarily used in areas that represent an increased risk for personnel and the outdoor installations of residential buildings.

Devices with a rated residual current of maximum 300 mA are used as preventative fire protection in case of insulation faults.

The MCB part of the RCBO protects lines against overload and short circuits and is available in characteristics B and C.

Since the amendment of DIN VDE 0100-410 came into effect in June 2007, all socket outlet current circuits up to 20 A must now also be fitted with residual current protective devices with a rated residual current of max. 30 mA. This also applies to outdoor electrical circuits up to 32 A for the connection of portable equipment.

In order to implement this protection, we recommend the national use of RCBOs with 30 mA.

Note:
DIN VDE 0100 is the German version of IEC 60364.

Assignment to each individual branch circuit helps prevent the unwanted tripping of fault-free circuits induced by the accumulation of operation-related leakage currents or by transient current pulses during switching operations.

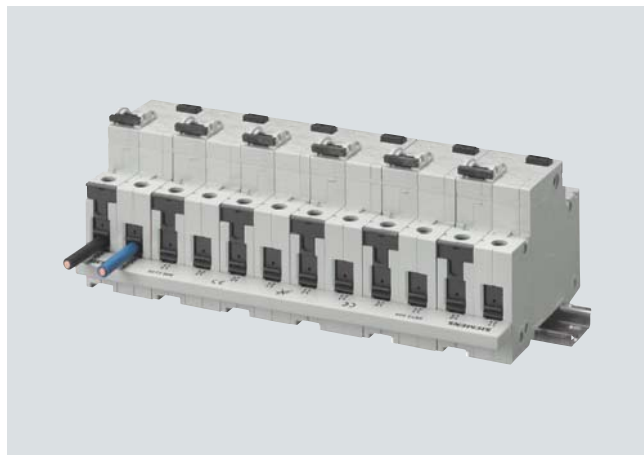
RCBOs comprise one part for fault-current detection and one part for overcurrent detection. They are equipped with a delayed overload/time-dependent thermal release (thermal bimetal) for low overcurrents and with an instantaneous electromagnetic release for higher overload and short-circuit currents.

The special contact materials used guarantee a long service life and offer a high degree of protection against contact welding.

Additional components of the 5SY miniature circuit breakers can be mounted at the side and carry out additional functions.

For further details on additional components, please refer to "Miniature circuit breakers".

Benefits



For all versions

- Clear and visible conductor connection that can be easily checked in front of the busbar.
- Large and easily accessible wiring space enables easy insertion of conductor in the terminals.
- The surge current withstand capability of more than 1 kA ensures safe and reliable operation
- All additional components for miniature circuit breakers can be retrofitted on the right-hand side.

For all 10 kA versions up to 40 A

- Integrated movable terminal covers located at the cable entries ensure the terminals are fully insulated when the screws are tightened. The effective touch protection when grasping the device considerably exceeds the requirements of BGV A3.
- The RCBOs can be quickly and easily removed from the assembly by hand if connections need to be changed. This saves time if parts need to be replaced because the busbars no longer need to be freed from the adjacent miniature circuit breakers.



For all 125 A versions

- The RCBOs offer external remote tripping over terminals Y1/Y2. This supports implementation of central OFF circuits.

BETA Protecting Residual Current Protective Devices

RCBOs, type A, 5SU1

Selection and ordering data







Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	DT	Tripping characteristic B				Tripping characteristic C				Weight per PU approx. kg			
				Order No.	Price per PU	PG	DT	Order No.	Price per PU	PU	PS*		PG		
													Unit(s)	Unit(s)	kg
RCBOs, type A Instantaneous															
1P+N; 230 V AC; 50 ... 60 Hz															
6 000															
3															
30	6	2	A	5SU1 356-6KK06		011	A	5SU1 356-7KK06		1	1	011	0.260		
				--			B	5SU1 356-7KK08		1	1	011	0.260		
		8	A	5SU1 356-6KK10		011	▶	5SU1 356-7KK10		1	1	011	0.260		
				5SU1 356-6KK13		011	A	5SU1 356-7KK13		1	1	011	0.260		
	10	▶	5SU1 356-6KK16		011	▶	5SU1 356-7KK16		1	1	011	0.260			
			5SU1 356-6KK20		011	B	5SU1 356-7KK20		1	1	011	0.260			
	25	B	5SU1 356-6KK25		011	A	5SU1 356-7KK25		1	1	011	0.260			
			5SU1 356-6KK32		011	B	5SU1 356-7KK32		1	1	011	0.260			
	40	B	5SU1 356-6KK40		011	B	5SU1 356-7KK40		1	1	011	0.260			
			5SU1 656-6KK06		011	B	5SU1 656-7KK06		1	1	011	0.260			
	300	6	2	B	5SU1 656-6KK10		011	A	5SU1 656-7KK10		1	1	011	0.260	
					5SU1 656-6KK13		011	B	5SU1 656-7KK13		1	1	011	0.260	
					5SU1 656-6KK16		011	A	5SU1 656-7KK16		1	1	011	0.260	
					5SU1 656-6KK20		011	B	5SU1 656-7KK20		1	1	011	0.260	
		25	B	5SU1 656-6KK25		011	B	5SU1 656-7KK25		1	1	011	0.260		
				5SU1 656-6KK32		011	B	5SU1 656-7KK32		1	1	011	0.260		
5SU1 656-6KK40					011	B	5SU1 656-7KK40		1	1	011	0.260			
5SU1 656-6KK40					011	B	5SU1 656-7KK40		1	1	011	0.260			
RCBOs, type A Instantaneous															
1P+N; 230 V AC; 50 ... 60 Hz															
10 000															
3															
10	6	2	B	5SU1 154-6KK06		011	B	5SU1 154-7KK06		1	1	011	0.260		
				5SU1 154-6KK10		011	B	5SU1 154-7KK10		1	1	011	0.260		
		10	B	5SU1 154-6KK13		011	B	5SU1 154-7KK13		1	1	011	0.260		
				5SU1 154-6KK16		011	▶	5SU1 154-7KK16		1	1	011	0.260		
	13	▶	5SU1 354-6KK06		011	▶	5SU1 354-7KK06		1	1	011	0.260			
			--			B	5SU1 354-7KK08		1	1	011	0.260			
	10	B	5SU1 354-6KK10		011	▶	5SU1 354-7KK10		1	1	011	0.260			
			5SU1 354-6KK13		011	B	5SU1 354-7KK13		1	1	011	0.260			
	16	▶	5SU1 354-6KK16		011	▶	5SU1 354-7KK16		1	1	011	0.260			
			5SU1 354-6KK20		011	B	5SU1 354-7KK20		1	1	011	0.260			
	25	B	5SU1 354-6KK25		011	B	5SU1 354-7KK25		1	1	011	0.260			
			5SU1 354-6KK32		011	B	5SU1 354-7KK32		1	1	011	0.260			
	40	B	5SU1 354-6KK40		011	B	5SU1 354-7KK40		1	1	011	0.260			
			5SU1 654-6KK06		011	B	5SU1 654-7KK06		1	1	011	0.260			
	300	6	2	B	5SU1 654-6KK10		011	B	5SU1 654-7KK10		1	1	011	0.260	
					5SU1 654-6KK13		011	B	5SU1 654-7KK13		1	1	011	0.260	
5SU1 654-6KK16						011	B	5SU1 654-7KK16		1	1	011	0.260		
5SU1 654-6KK20						011	B	5SU1 654-7KK20		1	1	011	0.260		
25		B	5SU1 654-6KK25		011	B	5SU1 654-7KK25		1	1	011	0.260			
			5SU1 654-6KK32		011	B	5SU1 654-7KK32		1	1	011	0.260			
			5SU1 654-6KK40		011	B	5SU1 654-7KK40		1	1	011	0.260			
			5SU1 654-6KK40		011	B	5SU1 654-7KK40		1	1	011	0.260			
RCBOs, type A Instantaneous															
2P; 230 V AC; 50 ... 60 Hz															
10 000															
3															
30	6	3	B	5SU1 324-6FA06		011	B	5SU1 324-7FA06		1	1	011	0.403		
				5SU1 324-6FA10		011	▶	5SU1 324-7FA10		1	1	011	0.403		
				5SU1 324-6FA13		011	B	5SU1 324-7FA13		1	1	011	0.403		
				5SU1 324-6FA16		011	▶	5SU1 324-7FA16		1	1	011	0.403		
	10	B	5SU1 324-6FA20		011	B	5SU1 324-7FA20		1	1	011	0.403			
			5SU1 324-6FA25		011	B	5SU1 324-7FA25		1	1	011	0.403			
	25	B	5SU1 324-6FA32		011	B	5SU1 324-7FA32		1	1	011	0.403			
			5SU1 324-6FA40		011	B	5SU1 324-7FA40		1	1	011	0.403			

* You can order this quantity or a multiple thereof.

BETA Protecting

Residual Current Protective Devices

RCBOs, type A, 5SU1

Rated residual current $I_{\Delta n}$ mA	Rated current I_n A	MW	DT	Tripping characteristic B			Tripping characteristic C			PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
				Order No.	Price per PU	PG	DT	Order No.	Price per PU				
RCBOs, type A Instantaneous													
2P; 400 V AC; 50 ... 60 Hz													
10 000													
30	125	6.5	B	5SU1 324-6KK82		011	B	5SU1 324-7KK82		1	1	011	0.930
300	125		B	5SU1 624-6KK82		011	B	5SU1 624-7KK82		1	1	011	0.930
													
4P; 400 V AC; 50 ... 60 Hz													
10 000													
30	125	11	B	5SU1 344-6KK82		011	B	5SU1 344-7KK82		1	1	011	1.900
300	125		B	5SU1 644-6KK82		011	B	5SU1 644-7KK82		1	1	011	1.900
													
RCBOs, type A Super resistant K													
1P+N; 230 V AC; 50 ... 60 Hz													
10 000													
3													
30	10	2	--				B	5SU1 354-7VK10		1	1	011	0.260
	16		--				B	5SU1 354-7VK16		1	1	011	0.260
	20		--				B	5SU1 354-7VK20		1	1	011	0.260
	25		--				B	5SU1 354-7VK25		1	1	011	0.260
													
RCBOs, type A Selective S													
2P; 400 V AC; 50 ... 60 Hz													
10 000													
300	125	6.5	B	5SU1 624-6WK82		011	B	5SU1 624-7WK82		1	1	011	0.930
													
4P; 400 V AC; 50 ... 60 Hz													
10 000													
300	125	11	B	5SU1 644-6WK82		011	B	5SU1 644-7WK82		1	1	011	1.900
													
Version													
DT													
Order No.													
Price per PU													
PU													
PS* Unit(s)													
PG													
Weight per PU approx. kg													
Handle couplers for additional components													
For mounting the additional components: auxiliary switches, fault signal contacts, shunt trips and undervoltage releases onto 5SU1 RCBOs, you require a handle coupler (1 set = 5 units).													
													
5ST3 805-1													
1 set													
1 set													
027													
0.008													

Note:

The same additional components are used for RCBOs as for miniature circuit breakers. See "Miniature circuit breakers".

More information

More information about RCBOs, type A, 5SU1 can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from

www.siemens.com/e-installation-catalogs.

BETA Protecting Residual Current Protective Devices

Busbars

Overview

4-pole 5SM3 RCCBs are bus-mounted either together or in combination with miniature circuit breakers. RCCBs with an N conductor connection on the left-hand side facilitate installation because normal busbars are used, as for miniature circuit breakers.

Busbars are available in 10 mm² and 16 mm².

The extremely flexible 5ST3 6 busbar system with fixed lengths enables installation in any length as the busbars can be overlapped.

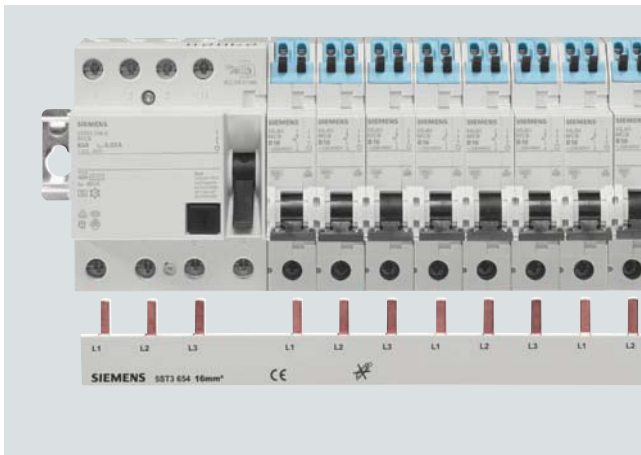
No further need for time-consuming tasks, such as cutting, cutting to length, deburring, cleaning of cut surfaces and mounting of end caps.

Any free pins on the busbars can be made finger-safe by covering with touch protection.

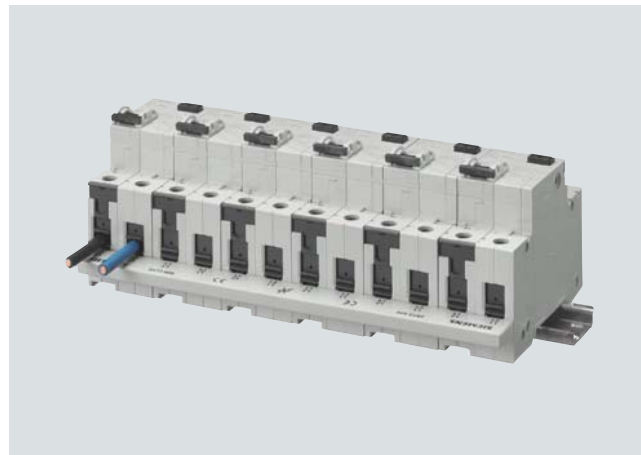
If several RCBOs are bus-mounted together, this is implemented with two-phase busbars, which are used as 1+N busbars.

Benefits

- Connection of miniature circuit breakers to 4-pole RCCBs with N-connection right with three-phase busbar, using busbar specially designed for this application. No cutting or end caps required.
- Connection of miniature circuit breakers to 4-pole RCCBs with N-connection left with three-phase busbar that can be cut. No additional items to be stored and busbars that are always available.



- Connection of 1P+N RCBOs with two-phase busbar. No cutting or end caps required.



- Bus mounting of RCCBs on busbar (three-phase +N) that can be cut. A proven and frequently used application

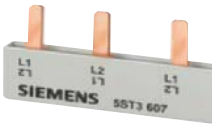
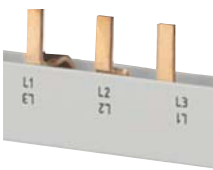







BETA Protecting

Residual Current Protective Devices

Busbars







Selection and ordering data

Version	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	MW	mm				Unit(s)	Unit(s)		kg
 <p>5ST3 6 busbar systems, fixed lengths, cannot be cut, fully insulated</p> <p>For 1 RC block 4P, N connection right, and 8 MCBs 1P</p> <ul style="list-style-type: none"> • Three-phase 10 mm² • Three-phase 16 mm² <p>For 6 RCBOs 1P+N together</p> <ul style="list-style-type: none"> • Two-phase 10 mm² • Two-phase 16 mm² 	1	210	A	5ST3 624		1	10	027	0.075
	1	210	A	5ST3 654		1	10	027	0.114
		210	A	5ST3 608		1	10	027	0.048
		210	A	5ST3 638		1	10	027	0.076
 <p>5ST3 7 busbar systems, 12 MW, can be cut, with end caps</p> <p>For 1 RC block 4P, N connection right, and 8 MCBs 1P</p> <ul style="list-style-type: none"> • Three-phase 16 mm² <p>For 6 RCBOs 1P+N</p> <ul style="list-style-type: none"> • Two-phase 10 mm² • Two-phase 16 mm² 			A	5ST3 717		1	25	027	0.150
	1	216	A	5ST3 734		1	1	027	0.060
	1	216	A	5ST3 704		1	1	027	0.060
<p>5ST3 7 busbar systems, with end caps, can be cut, finger-safe</p> <p>For RCBO 1P+N and MCB 2P</p> <ul style="list-style-type: none"> • Four-phase 10 mm⁴ • Four-phase 16 mm⁴ <p>For RC block 4P, N connection right and 6 MCBs 1P+N</p> <ul style="list-style-type: none"> • Four-phase 10 mm⁴ • Four-phase 16 mm⁴ 	1	1008	A	5ST3 770-2		1	10	027	0.400
	1	1008	A	5ST3 770-3		1	10	027	0.550
	1	288	A	5ST3 770-4		1	10	027	0.100
	1	288	A	5ST3 770-5		1	10	027	0.160
 <p>End caps for 5ST3 7, can be cut</p> <p>For two-phase busbars</p>				5ST3 750		1	10	027	0.001
 <p>Touch protection</p> <p>For free connections, yellow (RAL 1004) 5 x 1 pin</p>			A	5ST3 655		1	10	027	0.003
 <p>Busbars, 12 MW, with fork-type connections, can be cut, with end caps</p> <p>For bus mounting RCCBs together</p> <ul style="list-style-type: none"> • Three-phase + N, 16 mm² 	1	216	A	5ST2 145		1	1	027	0.315
 <p>End caps for 5ST3 7, can be cut</p> <p>For three-phase busbars</p>			A	5ST2 156		1	10	027	0.017
 <p>Terminals up to 35 mm² (stranded), for direct infeed of 5ST2 145 busbar</p> <p>Side-by-side mounting possible</p>			A	5ST2 157		1	5	027	0.030

BETA Protecting Residual Current Protective Devices

Accessories

Accessories

Version	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
 <p>Terminal covers, gray For surface mounting, degree of protection IP40, sealable, with TH 35 standard mounting rail</p> <ul style="list-style-type: none"> • Up to 2.5 MW • Up to 4.5 MW 	B	5SW3 004		1	1	008	0.084
	B	5SW3 005		1	1	008	0.114
 <p>Wall enclosures, gray For flush mounting, degree of protection, IP40, with TH 35 standard mounting rail</p> <ul style="list-style-type: none"> • Up to 2.5 MW • Up to 4.5 MW 	B	5SW3 006		1	1/4	008	0.126
	B	5SW3 007		1	1	008	0.147
 <p>Molded-plastic enclosures, gray For surface mounting, degree of protection IP54, sealable, with TH 35 standard mounting rail, with transparent hinged lid For 4.5 MW</p>	A	5SW1 200		1	1	008	0.450
 <p>Covers Can be assembled as mini distribution board, suitable for all devices, cover parts prepared for rail mounting of conventional label caps, comprising:</p> <ul style="list-style-type: none"> • End plates (can be snapped onto standard mounting rail) • Angle section (approx. 1 m long) • Alternatively flat profile (as a cover between the rows of devices, length approx. 1 m) 	A	5ST2 134		1	10	027	0.022
	A	5ST2 135		1	5	027	0.330
	B	5ST2 136		1	5	027	0.260
 <p>Fixing parts Plastic 4 MW</p>	B	5ST2 201		1	1	027	0.012
 <p>Inscription labels (white) 15 mm x 9 mm, 3 frames à 44 labels, any attachment and inscription, self-adhesive</p>	B	5ST2 173		1 set	1 set	027	0.038

Labeling systems

Inscriptions on self-adhesive labels for a neat and uniform appearance in the power distribution system. The labeling program can be downloaded to your PC free of charge:

www.siemens.com/beta

Recommended ELAT-3-747 labels for printing out on standard printers can be ordered from BRADY:

www.bradycorp.com

BETA Protecting Low-Voltage Fuse Systems

NEOZED fuse systems

Overview

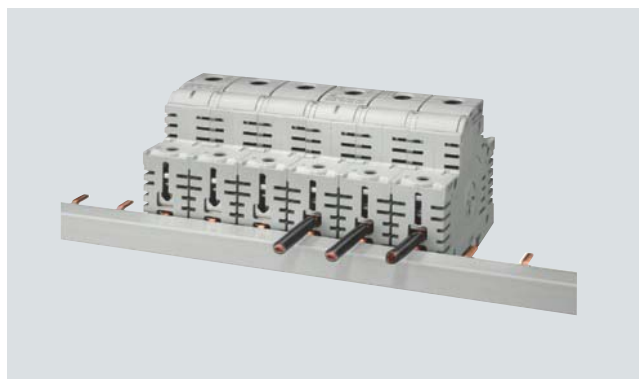
The NEOZED fuse system is primarily used in distribution technology and industrial switchgear assemblies. The system is easy to use and is also approved for domestic installation.

MINIZED switch disconnectors are primarily used in switchgear assemblies and control engineering. They are approved for switching loads and also for safe switching in the event of short circuits. The MINIZED D02 is also suitable for use in the pre-counter sector in household applications in compliance with the recommendations of the BDEW (association of German utilities) according to TAB 2007.

Due to its small footprint, the NEOZED disconnecter is primarily used in control engineering.

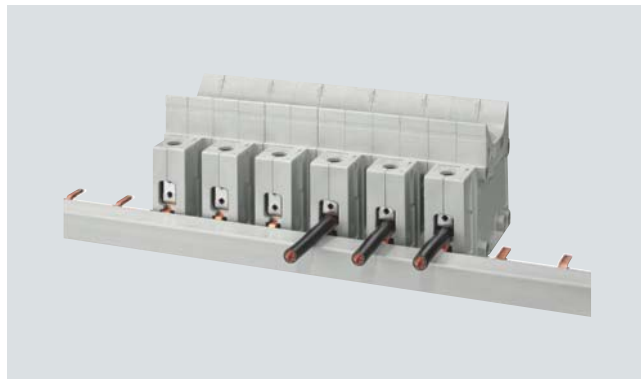
The NEOZED fuse bases are the most cost-effective solution for the application of NEOZED fuses. All NEOZED bases must be fed from the bottom to ensure that the threaded ring is insulated during removal of the fuse link. The terminals of the NEOZED bases are available in different versions and designs to support the various installation methods.

Benefits



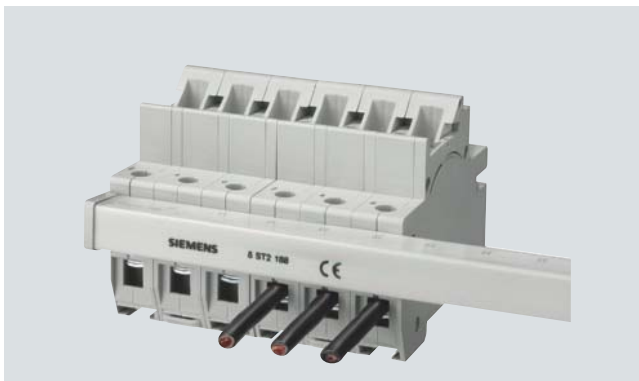
MINIZED switch disconnectors

- Clear and visible conductor connection that can be easily checked. This facilitates insertion of the conductor and saves time
- With draw-out technology for off-circuit replacement of fuses. This provides enhanced safety
- The infeed of the devices can be from the top or the bottom. This enables flexible application.



NEOZED fuse bases made of molded plastic

- Clear and visible conductor connection that can be easily checked. This facilitates insertion of the conductor and saves time
- Greater safety for personnel thanks to terminals with touch protection acc. to BGV A3 (labor safety specification) at incoming and outgoing feeder. This ensures enhanced safety
- Two type ranges with different terminals offer expanded application options.



NEOZED fuse disconnectors









- With draw-out technology for off-circuit replacement of fuses. This provides enhanced safety
- Extremely narrow design with a single MW per pole. This saves space and costs.



NEOZED fuse bases made of ceramic

- Different terminal versions support a huge range of different installation methods. This ensures greater flexibility
- These bases are the most widely used devices for applications with NEOZED fuses. An unrivaled cost-effective solution.






Selection and ordering data

	Size	Number of poles	I_n	Identification color	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
			A						Unit(s)	Unit(s)		kg
NEOZED fuse links Rated voltage 400 V AC/250 V DC operational class gG												
	D01	2		Pink		▶	5SE2 302		1	10	016	0.006
		4		Brown		▶	5SE2 304		1	10	016	0.006
		6		Green		▶	5SE2 306		1	10/500	016	0.006
		10		Red		▶	5SE2 310		1	10/500	016	0.007
		13		Black	A	▶	5SE2 013-2A		1	10	016	0.007
		16		Gray		▶	5SE2 316		1	10/500	016	0.007
	D02	20		Blue		▶	5SE2 320		1	10	016	0.012
		25		Yellow		▶	5SE2 325		1	10	016	0.013
		32		Black	B	▶	5SE2 332		1	10	016	0.014
		35		Black		▶	5SE2 335		1	10	016	0.014
		40		Black	B	▶	5SE2 340		1	10	016	0.014
		50		White		▶	5SE2 350		1	10	016	0.015
		63		Copper		▶	5SE2 363		1	10	016	0.016
	D03	80		Blue		▶	5SE2 280		1	10	016	0.039
		100		Red		▶	5SE2 300		1	10	016	0.042
MINIZED switch disconnectors with fuses Using draw-out technology with touch protection to BGV A3 (adapter sleeves are not included in the scope of supply)												
	D02	1P	63		1.5	▶	5SG7 113		1	1	016	0.145
		1P+N	63		3	B	5SG7 153		1	1	016	0.267
		2P	63		3	B	5SG7 123		1	1	016	0.283
		3P	63		4.5	▶	5SG7 133		1	1	016	0.421
		3P+N	63		6	B	5SG7 163		1	1	016	0.540
		Versions for Austria only, permanently fitted adapter sleeves, including fuse link										
	D02	3P	25		4.5	B	5SG7 133-8BA25		1	1	016	0.420
			35			B	5SG7 133-8BA35		1	1	016	0.420
			50			B	5SG7 133-8BA50		1	1	016	0.420
Locking caps In MINIZED D02 switch disconnectors for applications in the precounter sector												
						C	5SH5 532		1	1	016	0.012
Reducers For fuse links D01, in MINIZED switch disconnectors D02												
						C	5SH5 527		1	10/100	016	0.003
Auxiliary switches (AS) For MINIZED switch disconnectors D02												
		1 NO + 1 NC			0.5	▶	5ST3 010		1	1	027	0.050
		2 NO				A	5ST3 011		1	1	027	0.050
		2 NC				A	5ST3 012		1	1	027	0.050
		For technical specifications, see chapter Miniature circuit breakers -> Additional components										
Auxiliary switches (AS) with TEST button For MINIZED switch disconnectors D02												
		1 NO + 1 NC			0.5	A	5ST3 010-2		1	1	027	0.045
		2 NO				A	5ST3 011-2		1	1	027	0.045
		2 NC				A	5ST3 012-2		1	1	027	0.045
		For technical specifications, see chapter Miniature circuit breakers -> Additional components										

* You can order this quantity or a multiple thereof.











BETA Protecting Low-Voltage Fuse Systems

NEOZED fuse systems

	Size	Number of poles	I_n	Matching cover ¹⁾	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
			A						Unit(s)	Unit(s)		kg
MINIZED fuse switch disconnectors												
For industrial applications Using draw-out technology with touch protection BGV A3 (NEOZED adapter sleeves cannot be used)												
	D01	1P	16		1	A	5SG7 610		1	1	016	0.070
		1P+N	16		2	B	5SG7 650		1	1	016	0.150
		2P	16		2	B	5SG7 620		1	1	016	0.150
		3P	16		3	A	5SG7 630		1	1	016	0.220
		3P+N	16		4	B	5SG7 660		1	1	016	0.300
NEOZED comfort bases made of molded plastic												
With touch protection acc. to BGV A3												
	D01	1P	16	--	1.5	▶	5SG1 301		1	3	016	0.123
	D02		63	--		▶	5SG1 701		1	3	016	0.120
	D01	3P	16	--	4.5	▶	5SG5 301		1	1	016	0.371
	D02		63	--		▶	5SG5 701		1	1	016	0.360
NEOZED fuse bases made of molded plastic												
With touch protection acc. to BGV A3												
With cover												
	D01	1P	16	(A1)	1.5	A	5SG1 330		1	6	016	0.068
	D02		63	(A1)	1.5	A	5SG1 730		1	6	016	0.087
Without cover												
	D01	1P	16	A1	1.5	B	5SG1 331		1	6	016	0.056
	D02		63	A1	1.5	A	5SG1 731		1	6	016	0.080
With cover												
	D01	3P	16	(A2)	4.5	A	5SG5 330		1	2	016	0.216
	D02		63	(A2)	4.5	A	5SG5 730		1	2	016	0.252

For busbars, see page 19/82 ff.

¹⁾ Covers in brackets are included in the scope of supply.
Covers without brackets are not included in scope of supply.

	Size	Number of poles	I_n	Matching cover ¹⁾	Terminals ²⁾	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
			A							Unit(s)	Unit(s)		kg
NEOZED fuse bases made of ceramic													
With cover													
	D01	1P	16	(A4)	BB	1.5	▶	5SG1 553		1	6	016	0.083
	D02		63	(A10)	SS	1.5	▶	5SG1 653		1	6	016	0.093
	D02		63	(A10)	KS	1.5	▶	5SG1 693		1	6	016	0.090
Without cover													
	D01	1P	16	A4	BB	1.5	B	5SG1 595		1	6	016	0.071
	D02		63	A10	SS	1.5	▶	5SG1 655		1	6	016	0.081
	D02		63	A10	KS	1.5	B	5SG1 695		1	6	016	0.078
	D03		100	A6, A9	KS	2.5	A	5SG1 812		1	10	016	0.176
For screw connection only, without cover													
	D01	1P	16	A4	BB	1.5	B	5SG1 590		1	6	016	0.061
	D02		63	A10	SS	1.5	B	5SG1 650		1	6	016	0.078
	D03		100	A6, A9	KS	2.5	B	5SG1 810		1	10	016	0.176
With cap													
	D01	1P	16	(A8)	BB	1.5	▶	5SG1 594		1	6	016	0.105
	D02		63	(A8)	SS	1.5	B	5SG1 694		1	6	016	0.115
	D03		100	(A9)	KS	2.5	B	5SG1 813		1	10	016	0.242
With cover													
	D01	3P	16	(A5)	BB	4.5	▶	5SG5 553		1	2	016	0.263
	D02		63	(A11)	SS	4.5	▶	5SG5 653		1	2	016	0.240
	D02		63	(A11)	KS	4.5	▶	5SG5 693		1	2	016	0.290
Without cover													
	D01	3P	16	A5	BB	4.5	B	5SG5 555		1	2	016	0.228
	D02		63	A11	SS	4.5	B	5SG5 655		1	2	016	0.265
	D02		63	A11	KS	4.5	B	5SG5 695		1	2	016	0.255
For screw connection only, without cover													
	D01	3P	16	A5	BB	4.5	B	5SG5 550		1	2	016	0.228
	D02		63	A11	SS	4.5	B	5SG5 650		1	2	016	0.260
	D02		63	A11	KS	4.5	B	5SG5 690		1	2	016	0.250
NEOZED covers													
Made of molded plastic, plug-in for fuse base made of molded plastic													
	D01, D02			A1		1.5	C	5SH5 244		1	15	016	0.008
	D01, D02			A2		4.5	C	5SH5 245		1	5	016	0.017
For fuse bases made of ceramic													
	D01			A4		1.5	B	5SH5 251		1	15	016	0.012
	D02			A10		1.5	B	5SH5 253		1	15	016	0.020

¹⁾ Covers in brackets are included in the scope of supply.
Covers without brackets are not included in the scope of supply.

²⁾ For terminal versions, see page 19/69.

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

NEOZED fuse systems

	Size	Matching cover	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg	
							Unit(s)	Unit(s)			
NEOZED covers											
	D01	A5	4.5	C	5SH5 252		1	5	016	0.035	
	D02	A11	4.5	C	5SH5 254		1	5	016	0.045	
	Screw-on										
	D03	A6	2.5	B	5SH5 233		1	20	016	0.021	
NEOZED caps											
Made of molded plastic, plug-in											
	D01, D02	A8		B	5SH5 235		1	5	016	0.034	
	Screw-on										
	D03	A9		C	5SH5 234		1	10	016	0.066	
NEOZED screw caps											
Molded plastic, with inspection hole											
	D01			▶	5SH4 116		1	10/1000	016	0.007	
	D02			▶	5SH4 163		1	10/200	016	0.008	
Ceramic											
	D01, sealable			A	5SH4 316		1	10	016	0.014	
	D02, sealable			A	5SH4 363		1	10	016	0.015	
	D03			A	5SH4 100		1	3	016	0.070	
Ceramic, with inspection hole											
	D01			▶	5SH4 317		1	20	016	0.014	
	D02			▶	5SH4 362		1	20	016	0.017	
	Size	For fuse links	Identification color	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg
		A						Unit(s)	Unit(s)		
NEOZED adapter sleeves											
	D01	2	Pink	▶	5SH5 002		1	10	016	0.001	
		4	Brown	▶▶	5SH5 004		1	10	016	0.001	
		6	Green	▶▶▶	5SH5 006		1	10	016	0.001	
		10/13	Red	▶▶▶▶	5SH5 010		1	10	016	0.001	
	D02	20	Blue	▶▶	5SH5 020		1	10	016	0.001	
		25	Yellow	▶▶▶	5SH5 025		1	10	016	0.001	
		32/35/40	Black	▶▶▶▶	5SH5 035		1	10	016	0.001	
		50	White	▶▶▶▶▶	5SH5 050		1	10	016	0.001	
	D03	80	Silver		5SH5 080		1	25	016	0.001	
For fuse links D01 in base D02 and MINIZED switch disconnectors D02											
	D02	2	Pink		5SH5 402		1	10	016	0.001	
		4	Brown		5SH5 404		1	10	016	0.001	
		6	Green		5SH5 406		1	10	016	0.001	
		10/13	Red		5SH5 410		1	10	016	0.001	
		16	Gray		5SH5 416		1	10	016	0.001	

Size	For fuse links	Identification color	MW	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
NEOZED adapter sleeve fitters										
A				A	5SH5 100		1	1/10	016	0.016
NEOZED retaining springs										
	For fuse links D01 in screw caps.			A	5SH5 400		1	25	016	0.001
	D02 2 ... 16			A	5SH5 417		1	25	016	0.001
	For fuse links D01 in screw caps DL			A	5SH5 417		1	25	016	0.001
	DL 2 ... 16			A	5SH5 417		1	25	016	0.001
Busbar adapters										
	For mounting MINIZED D02 switch disconnectors on busbars 12 × 5 mm at a distance of 40 mm		4.5	C	5SH5 503		1	1	016	0.280
	Rated current 63 A, 16 mm ²									

More information



Fuse base D01 with terminal type BB

- Incoming feeder, clamp-type terminal B
- Outgoing feeder, clamp-type terminal B



Fuse base D02 with terminal type KS

- Incoming feeder, screw head contact K
- Outgoing feeder, saddle terminal S



Fuse base D02 with terminal type SS

- Incoming feeder, saddle terminal S
- Outgoing feeder, saddle terminal S

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

DIAZED fuse systems

Overview

The DIAZED fuse system is one of the oldest fuse systems in the world. It was developed by Siemens as far back as 1906. It is still the standard fuse system in many countries to this day. It is particularly widely used in the harsh environments of industrial applications.

The series is available with rated voltages from 500 to 750 V.

All DIAZED bases must be fed from the bottom to ensure an insulated threaded ring when the fuse link is being removed. Reliable contact of the fuse links is only ensured when used together with DIAZED screw adapters.

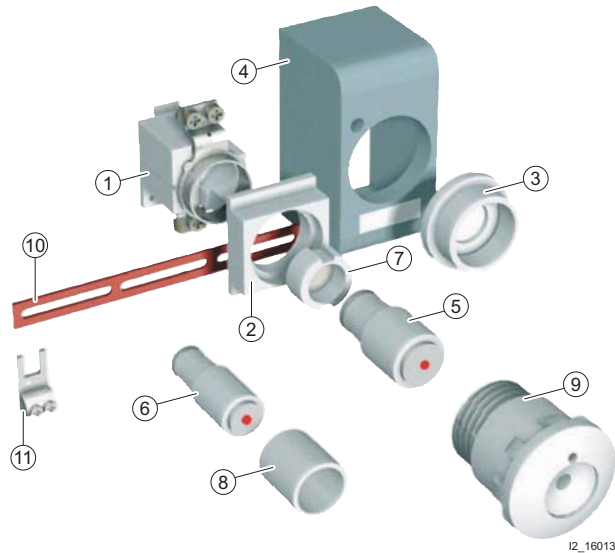
The terminals of the DIAZED bases are available in different versions and designs to support the various installation methods.

The high-performing EZR bus-mounting system for screw connection is an outstanding feature. The busbars, which are particularly suited for bus-mounting bases, have a load capacity of up to 150 A with lateral infeed.

DIAZED stands for **D**iametral gestuftes **z**weiteiliges Sicherungssystem mit **E**disongewinde (diametral two-step fuse system with Edison screw).










Benefits

DIAZED fuse systems are a result of the well-designed modular system, the components can be combined in any way to meet the various requirements and to facilitate different installation methods.



- ① DIAZED base
- ② DIAZED cover
- ③ DIAZED cover ring
- ④ DIAZED cap
- ⑤ DIAZED DII fuse link
- ⑥ DIAZED NDz fuse link
- ⑦ DIAZED screw adapter
- ⑧ DIAZED adapter sleeve
- ⑨ DIAZED screw cap
- ⑩ Busbar, oblong hole, single-phase
- ⑪ Terminal, fork-type terminal, non-insulated









Selection and ordering data

	Size	U_n	I_n	Identification color	Thread	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
		V AC/ V DC	A						Unit(s)	Unit(s)		kg
DIAZED fuse links												
Operational class gG												
	DII	500/500	2	Pink	E27	▶	5SB2 11		1	5	016	0.026
			4	Brown		▶	5SB2 21		1	5	016	0.026
			6	Green		▶	5SB2 31		1	5	016	0.026
			10	Red		▶	5SB2 51		1	5	016	0.027
			16	Gray		▶	5SB2 61		1	5	016	0.028
			20	Blue		▶	5SB2 71		1	5	016	0.029
			25	Yellow		▶	5SB2 81		1	5	016	0.031
	DIII	500/500	32	Black	E33	B	5SB4 010		1	5	016	0.048
			35	Black		A	5SB4 11		1	5	016	0.050
			50	White		A	5SB4 21		1	5	016	0.051
			63	Copper		A	5SB4 31		1	5	016	0.054
	DIV	500/400	80	Silver	R1¼"	B	5SC2 11		1	3	016	0.110
			100	Red		B	5SC2 21		1	3	016	0.110
Characteristic: slow												
	TNDz	500/500	2	Pink	E16	B	5SA2 11		1	10	016	0.013
			4	Brown		B	5SA2 21		1	10	016	0.013
			6	Green		B	5SA2 31		1	10	016	0.013
			10	Red		B	5SA2 51		1	10	016	0.013
			16	Gray		B	5SA2 61		1	10	016	0.013
			20	Blue		B	5SA2 71		1	10	016	0.015
			25	Yellow		B	5SA2 81		1	10	016	0.016
Characteristic: quick												
	NDz	500/500	2	Pink	E16	B	5SA1 11		1	10	016	0.013
			4	Brown		B	5SA1 21		1	10	016	0.013
			6	Green		B	5SA1 31		1	10	016	0.013
			10	Red		B	5SA1 51		1	10	016	0.013
			16	Gray		B	5SA1 61		1	10	016	0.013
			20	Blue		B	5SA1 71		1	10	016	0.015
			25	Yellow		B	5SA1 81		1	10	016	0.016
	DII	500/500	2	Pink	E27	B	5SB1 11		1	5	016	0.026
			4	Brown		B	5SB1 21		1	5	016	0.026
			6	Green		B	5SB1 31		1	5	016	0.026
			10	Red ¹⁾		B	5SB1 41		1	5	016	0.026
			10	Red		A	5SB1 51		1	5	016	0.027
			16	Gray		A	5SB1 61		1	5	016	0.028
			20	Blue		A	5SB1 71		1	5	016	0.029
	DIII	500/500	25	Yellow	E33	A	5SB1 81		1	5	016	0.031
			35	Black		A	5SB3 11		1	5	016	0.050
			50	White		A	5SB3 21		1	5	016	0.051
	DIV	500/500	63	Copper	R1¼"	A	5SB3 31		1	5	016	0.054
			80	Silver		B	5SC1 11		1	3	016	0.110
			100	Red		B	5SC1 21		1	3	016	0.110
Operational class gG, use 5SF1 and 5SF5 fuse bases made of ceramic, for 2 A ... 25 A, use DII screw adapters												
	DIII	690/600	2	Pink	E33	B	5SD8 002		1	5	016	0.068
			4	Brown		B	5SD8 004		1	5	016	0.068
			6	Green		B	5SD8 006		1	5	016	0.068
			10	Red		B	5SD8 010		1	5	016	0.068
			16	Gray		B	5SD8 016		1	5	016	0.069
			20	Blue		B	5SD8 020		1	5	016	0.071
			25	Yellow		B	5SD8 025		1	5	016	0.072
			35	Black		B	5SD8 035		1	5	016	0.078
			50	White		B	5SD8 050		1	5	016	0.080
			63	Copper		B	5SD8 063		1	5	016	0.082









¹⁾ Use screw adapter 6 A.

BETA Protecting Low-Voltage Fuse Systems

DIAZED fuse systems

	Size	U_n	I_n	Identifica- tion color	Thread	Terminals	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
		V AC/ V DC	A							Unit(s))	Unit(s))		kg
DIAZED fuse links													
Characteristic: quick, also for direct current railway facilities use for 2 A ... 25 A DII screw adapter													
	DIII	750/750	2	Pink	E33		A	5SD6 01		1	5	016	0.068
			4	Brown			B	5SD6 02		1	5	016	0.068
			6	Green			B	5SD6 03		1	5	016	0.068
			10	Red			B	5SD6 04		1	5	016	0.068
			16	Gray			B	5SD6 05		1	5	016	0.069
			20	Blue			B	5SD6 06		1	5	016	0.071
			25	Yellow			A	5SD6 07		1	5	016	0.072
			35	Black			B	5SD6 08		1	5	016	0.078
			50	White			B	5SD6 10		1	5	016	0.080
			63	Copper			B	5SD6 11		1	5	016	0.082
	DIAZED fuse bases made of ceramic												
1P, for standard mounting rail													
	NDz	500/500	25		E16	KK	A	5SF1 012		1	5	016	0.060
	DII		25		E27	BB	▶	5SF1 005		1	5	016	0.093
	DIII ¹⁾		63		E33	BS	▶	5SF1 205		1	5	016	0.191
	DIII ¹⁾		63		E33	SS	B	5SF1 215		1	5	016	0.154
1P, for screw connection													
	NDz	500/500	25		E16	KK	A	5SF1 01		1	5	016	0.055
	DII		25		E27	BB	A	5SF1 024		1	5	016	0.093
	DIII ¹⁾		63		E33	BS	A	5SF1 224		1	5	016	0.137
	DIII ¹⁾		63		E33	SS	B	5SF1 214		1	5	016	0.141
1P, with flat connection													
	DIV		100		R1¼"		B	5SF1 401		1	1	016	0.380
3P, for standard mounting rail, with cap and N-type fixpoint terminal													
	DII	500/500	3 × 25		E27	BB	B	5SF5 067		1	1	016	0.400
	DIII ¹⁾		3 × 63		E33	BB	B	5SF5 237		1	1	016	0.580
3P, for screw connection, with cap and N-type fixpoint terminal													
	DII	500/500	3 × 25		E27	KB	B	5SF5 066		1	1	016	0.410
	DIII ¹⁾		3 × 63		E33	KB	B	5SF5 236		1	1	016	0.590
DIAZED fuse bases made of molded plastic													
With touch protection acc. to BGV A3													
1P, for standard mounting rail or screw connection													
	DII	500/500	25		E27		▶	5SF1 060		1	3/108	016	0.152
	DIII ¹⁾		63		E33		▶	5SF1 260		1	3/132	016	0.186
3P													
	DII	500/500	3 × 25		E27		▶	5SF5 068		1	1/36	016	0.457
	DIII ¹⁾		3 × 63		E33		▶	5SF5 268		1	1/44	016	0.538

¹⁾ Can also be used for 690 V AC/600 V DC.

	Size	U_n	I_n	Thread	Terminals	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V AC/V DC		A						Unit(s)	Unit(s)		kg
DIAZED components 750 V												
	DIAZED fuse bases 1P, for screw connection with fine thread and cap											
	DIII	750/750	63	E33S	KK	A	5SF4 230		1	1	016	0.460
	DIAZED screw caps Made of ceramic, with fine thread											
	DIII	750/750	63	E33S		A	5SH1 161		1	5	016	0.084
DIAZED EZR bus-mounting bases												
	1P, to snap onto EZR busbars For screw connection											
	DII	500/500	25	E27	B	B	5SF6 005		1	5	016	0.072
	DIII	500/500	63	E33	B	B	5SF6 205		1	5	016	0.135
DIAZED screw caps												
	Ceramic											
	NDz	500/500	25	E16		A	5SH1 11		1	5/200	016	0.016
	Molded plastic, with inspection hole, black, not for SILIZED fuse links											
	DII	500/500	25	E27		▶	5SH1 221		1	5/200	016	0.026
	DIII ¹⁾		63	E33		▶	5SH1 231		1	5/5000	016	0.042
	Ceramic											
	DII	500/500	25	E27		▶	5SH1 12		1	50/30000	016	0.034
	DIII ¹⁾		63	E33		▶	5SH1 13		1	30	016	0.059
	Ceramic, with inspection hole, sealable											
	DII	500/500	25	E27		A	5SH1 22		1	50/5000	016	0.050
	DIII ¹⁾		63	E33		A	5SH1 23		1	30/5000	016	0.076
	Ceramic											
	DIV	500/500	100	R1¼"		C	5SH1 141		1	1	016	0.181
	Ceramic, prolonged version											
	DIII	690/600	63	E33		A	5SH1 170		1	5	016	0.086

¹⁾ Can also be used for 690 V AC/600 V DC.



BETA Protecting Low-Voltage Fuse Systems

DIAZED fuse systems

	Size	Thread	For fuse links A	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
DIAZED screw adapters										
	NDz	E16	2	C	5SH3 28		1	20	016	0.002
			4	C	5SH3 31		1	20	016	0.002
			6	C	5SH3 05		1	20	016	0.002
			10	C	5SH3 06		1	20	016	0.002
			16	C	5SH3 07		1	20	016	0.002
Also for 5SF2 30 up to 750 V										
	DII	E27	2	▶	5SH3 10		1	25/5000	016	0.015
			4	▶	5SH3 11		1	25/5000	016	0.015
			6	▶	5SH3 12		1	25/250	016	0.015
			10	▶	5SH3 13		1	25/10000	016	0.015
			16	▶	5SH3 14		1	25/10000	016	0.014
			20	▶	5SH3 15		1	25/5000	016	0.012
Also for 5SF2 30 up to 750 V										
	DIII	E33	35	▶	5SH3 17		1	25/10000	016	0.019
			50	▶	5SH3 18		1	25/5000	016	0.018
			63	▶	5SH3 20		1	1/250	016	0.017
DIAZED adapter sleeves										
	DIV	R1¼"	80	C	5SH3 21		1	10/1000	016	0.006
			100	C	5SH3 22		1	10/1000	016	0.005
DIAZED adapter sleeves for screw caps										
	For NDz/TNDz fuse links in base DII			C	5SH3 01		1	10	016	0.012
	For DII fuse links in base DIII			B	5SH3 02		1	10	016	0.023
DIAZED adapter sleeve fitters										
	DII/DIII			A	5SH3 703		1	1	016	0.025
DIAZED cover made of molded plastic										
Not for SILIZED fuse links										
	DII	5 bases = 12 MW	E27	▶	5SH2 032		1	10/620	016	0.017
	DIII	4 bases = 12 MW	E33	▶	5SH2 232		1	10/620	016	0.020
DIAZED caps made of molded plastic										
	NDz	E16		A	5SH2 01		1	5	016	0.028
	DII	E27		A	5SH2 02		1	5	016	0.038
	DIII	E33		A	5SH2 22		1	5	016	0.048

BETA Protecting Low-Voltage Fuse Systems

DIAZED fuse systems

Size	Thread	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
					Unit(s)	Unit(s)		kg
DIAZED cover rings								
Ceramic DII and DIII, also for EZR bus-mounting base								
	NDz	E16	C	5SH3 30	1	5	016	0.020
	DII	E27	B	5SH3 32	1	10	016	0.029
	DIII	E33	B	5SH3 34	1	10	016	0.035
Made of molded plastic, also for EZR bus-mounting base								
	DII	E27	A	5SH3 401	1	5/60	016	0.013
	DIII	E33	A	5SH3 411	1	5/60	016	0.014

More information



Fuse base DIII with terminal type BS

- Outgoing feeder (top), saddle terminal S
- Incoming feeder (bottom), clamp-type terminal B



Fuse base NDZ with terminal type KK

- Outgoing feeder (top), screw head contact K
- Incoming feeder (bottom), screw head contact K



Fuse base DII with terminal type BB

- Outgoing feeder (top), clamp-type terminal B
- Incoming feeder (bottom), clamp-type terminal B



Fuse base DII with terminal type SS

- Outgoing feeder (top), saddle terminal S
- Incoming feeder (bottom), saddle terminal S

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

3NW cylindrical fuse systems

Overview

Cylindrical fuses are standard in Europe. There are a range of different cylindrical fuse links and holders that comply with the standards IEC 60269-1, -2 and -3. They are suitable for use in industrial applications. In South West Europe they are also approved for use in residential buildings.

The cylindrical fuse holders are also approved to UL 512. The cylindrical fuse holders are tested and approved as fuse disconnectors in accordance with the switching device standard IEC 60947-3. They are not suitable for switching loads.



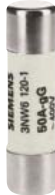

Cylindrical fuse holders can be supplied with or without signal detectors. In the case of devices with signal detectors, a small electronic device with LED is located behind an inspection window in the plug-in module. If the inserted fuse link is tripped, this is indicated by the LED flashing.

An auxiliary switch, which can be laterally mounted, enables the forwarding of the switching state of the fuse holder, and thus an integration of the fuses in the automation processes.

Benefits




- The devices with pole number 1P+N are available in a single modular width. This reduces the footprint by 50 %.
- The sliding catch for type ranges 8 × 32 mm and 10 × 38 mm enables the removal of individual devices from the assembly
- Space for a spare fuse in the plug-in module enables the fast replacement of fuses. This saves time and money and increases plant availability.
- A flashing LED signals that a fuse link has been tripped. This enables fast detection during runtime.






Selection and ordering data

Size	I_n	U_n	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
mm × mm	A	V AC				Unit(s)	Unit(s)		kg	
Cylindrical fuse links operational class gG										
	8 × 32	2	400	B	3NW6 302-1		1	10	018	0.004
		4		B	3NW6 304-1		1	10	018	0.004
		6		B	3NW6 301-1		1	10	018	0.004
		10		B	3NW6 303-1		1	10	018	0.004
		16		B	3NW6 305-1		1	10	018	0.004
		20		B	3NW6 307-1		1	10	018	0.004
	10 × 38	2	500	▶	3NW6 002-1		1	10	018	0.008
		4		▶	3NW6 004-1		1	10	018	0.008
		6		▶	3NW6 001-1		1	10	018	0.008
		8		B	3NW6 008-1		1	10	018	0.008
		10		▶	3NW6 003-1		1	10	018	0.008
		12		B	3NW6 006-1		1	10/100	018	0.008
		16		▶	3NW6 005-1		1	10	018	0.008
		20		B	3NW6 007-1		1	10	018	0.008
		25		B	3NW6 010-1		1	10	018	0.008
		32	400	B	3NW6 012-1		1	10	018	0.008
	14 × 51	4	500	B	3NW6 104-1		1	10	018	0.019
		6		B	3NW6 101-1		1	10	018	0.019
		8		B	3NW6 108-1		1	10/100	018	0.019
		10		B	3NW6 103-1		1	10	018	0.019
		12		B	3NW6 106-1		1	10/100	018	0.019
		16		B	3NW6 105-1		1	10	018	0.019
		20		B	3NW6 107-1		1	10	018	0.019
		25		B	3NW6 110-1		1	10	018	0.019
		32		B	3NW6 112-1		1	10	018	0.019
		40		B	3NW6 117-1		1	10	018	0.019
	50	400	B	3NW6 120-1		1	10	018	0.019	
	22 × 58	8	500	B	3NW6 208-1		1	10/100	018	0.051
		10		B	3NW6 203-1		1	10/100	018	0.051
		12		B	3NW6 206-1		1	10/100	018	0.051
		16		B	3NW6 205-1		1	10	018	0.051
		20		B	3NW6 207-1		1	10	018	0.051
		25		B	3NW6 210-1		1	10	018	0.051
		32		B	3NW6 212-1		1	10	018	0.051
		40		B	3NW6 217-1		1	10	018	0.051
		50		B	3NW6 220-1		1	10	018	0.051
		63		B	3NW6 222-1		1	10	018	0.051
		80		B	3NW6 224-1		1	10	018	0.051
		100	400	B	3NW6 230-1		1	10	018	0.051

BETA Protecting Low-Voltage Fuse Systems

3NW cylindrical fuse systems




Size	I_n	U_n	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
mm x mm	A	V AC				Unit(s)	Unit(s)		kg	
Cylindrical fuse links operational class aM										
	10 x 38	0.5	500	B	3NW8 000-1		1	10	018	0.003
		1		B	3NW8 011-1		1	10	018	0.008
		2		B	3NW8 002-1		1	10	018	0.008
		4		B	3NW8 004-1		1	10	018	0.008
		6		B	3NW8 001-1		1	10	018	0.008
		8		B	3NW8 008-1		1	10	018	0.003
		10		A	3NW8 003-1		1	10	018	0.008
		12		B	3NW8 006-1		1	10/100	018	0.008
		16		B	3NW8 005-1		1	10	018	0.008
		20		B	3NW8 007-1		1	10	018	0.008
		25	400	B	3NW8 010-1		1	10	018	0.008
	14 x 51	2	500	B	3NW8 102-1		1	10/50	018	0.019
		4		B	3NW8 104-1		1	10	018	0.019
		6		B	3NW8 101-1		1	10/50	018	0.019
		8		B	3NW8 108-1		1	10/50	018	0.019
		10		B	3NW8 103-1		1	10	018	0.019
		12		B	3NW8 106-1		1	10/50	018	0.019
		16		B	3NW8 105-1		1	10	018	0.019
		20		B	3NW8 107-1		1	10	018	0.019
		25		B	3NW8 110-1		1	10	018	0.019
		32		B	3NW8 112-1		1	10	018	0.019
		40		B	3NW8 117-1		1	10	018	0.019
	22 x 58	10	500	B	3NW8 203-1		1	10/50	018	0.051
		12		B	3NW8 206-1		1	10/50	018	0.051
		16		B	3NW8 205-1		1	10/50	018	0.051
		20		B	3NW8 207-1		1	10	018	0.051
		25		B	3NW8 210-1		1	10	018	0.051
		32		B	3NW8 212-1		1	10	018	0.051
		40		B	3NW8 217-1		1	10	018	0.051
		50		B	3NW8 220-1		1	10	018	0.051
		63		B	3NW8 222-1		1	10	018	0.051
		80		B	3NW8 224-1		1	10	018	0.051
		100	400	B	3NW8 230-1		1	10	018	0.051

Number of poles	I_n	For fuse links of size	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
	A	mm x mm					Unit(s)	Unit(s)		kg	
Cylindrical fuse holders with signal detector											
	1P										
		20	8 x 32	1	C	3NW7 314		1	1	018	0.059
		32	10 x 38	1	A	3NW7 014		1	1	018	0.059
		50	14 x 51	1.5	B	3NW7 112		1	1	018	0.095
		100	22 x 58	2	B	3NW7 212		1	1	018	0.145
	1P+N										
		20	8 x 32	1	C	3NW7 354		1	1	018	0.072
		32	10 x 38	1	A	3NW7 054		1	1	018	0.072
		50	14 x 51	3	B	3NW7 152		1	1	018	0.215
		100	22 x 58	4	B	3NW7 252		1	1	018	0.330
	2P										
		20	8 x 32	2	C	3NW7 324		1	1	018	0.123
		32	10 x 38	2	A	3NW7 024		1	1	018	0.123
		50	14 x 51	3	B	3NW7 122		1	1	018	0.195
		100	22 x 58	4	B	3NW7 222		1	1	018	0.300
	3P										
		20	8 x 32	3	C	3NW7 334		1	1	018	0.180
		32	10 x 38	3	A	3NW7 034		1	1	018	0.180
		50	14 x 51	4.5	B	3NW7 132		1	1	018	0.295
		100	22 x 58	6	B	3NW7 232		1	1	018	0.480
	3P+N										
		20	8 x 32	3	C	3NW7 364		1	1	018	0.193
		32	10 x 38	3	A	3NW7 064		1	1	018	0.193
		50	14 x 51	6	B	3NW7 162		1	1	018	0.315
		100	22 x 58	8	B	3NW7 262		1	1	018	0.475

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

3NW cylindrical fuse systems

Number of poles	I_n	For fuse links of size mm × mm	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg
	A						Unit(s)	Unit(s)		
Without signal detector										
	1P									
	20	8 × 32	1	A	3NW7 313		1	25	018	0.056
	32	10 × 38	1	▶	3NW7 013		1	1/12	018	0.056
	50	14 × 51	1.5	▶	3NW7 111		1	1	018	0.095
	100	22 × 58	2	▶	3NW7 211		1	1	018	0.145
	1P+N									
	20	8 × 32	1	A	3NW7 353		1	1	018	0.069
	32	10 × 38	1	▶	3NW7 053		1	1	018	0.069
	50	14 × 51	3	B	3NW7 151		1	1	018	0.215
	100	22 × 58	4	B	3NW7 251		1	1	018	0.330
	2P									
	20	8 × 32	2	A	3NW7 323		1	1	018	0.118
	32	10 × 38	2	▶	3NW7 023		1	1/6	018	0.118
	50	14 × 51	3	▶	3NW7 121		1	1	018	0.195
	100	22 × 58	4	▶	3NW7 221		1	1	018	0.300
	3P									
	20	8 × 32	3	A	3NW7 333		1	1	018	0.172
	32	10 × 38	3	▶	3NW7 033		1	1/4	018	0.172
	50	14 × 51	4.5	▶	3NW7 131		1	1	018	0.295
	100	22 × 58	6	▶	3NW7 231		1	1	018	0.691
	3P+N									
	20	8 × 32	3	A	3NW7 363		1	1	018	0.185
	32	10 × 38	3	▶	3NW7 063		1	1	018	0.185
	50	14 × 51	6	A	3NW7 161		1	1	018	0.315
	100	22 × 58	8	A	3NW7 261		1	1	018	0.475
Auxiliary switches										
	For indicating disconnection of the fuse link, solely for application of striker fuse links. For retrofitting using the factory-fitted brackets. Contact: 250 V AC, 5 A. Minimum contact load: 12 V, 25 mA									
	For fuse bases	14 × 51	0.5	B	3NW7 901		1	1	018	0.050
	For fuse bases	22 × 58		B	3NW7 902		1	1	018	0.050
For indicating the switching state of the fuse holder. For subsequent mounting with factory-fitted brackets. Contact: 230 V AC, 6 A/110 V DC, 1 A. Minimum contact load: 12 V, 25 mA. Terminals 1.5 mm ² - 0.5 Nm										
	For fuse holders	10 × 38	0.5	B	3NW7 903		1	1	018	0.034

More information

Mounting

Fuse holders size 8 mm × 32 mm and 10 mm × 38 mm have a sliding catch that enables the removal of individual devices from the assembly.

The infeed can be from the top or the bottom. Because the cylindrical fuse holders are fitted with the same anti-slip terminals at the top and the bottom, the devices can also be bus-mounted at the top or the bottom.

Auxiliary switches

Auxiliary switches are available for cylindrical fuse holders. These are simply clipped onto the base using the factory-fitted brackets.

Sizes 8 mm × 32 mm and 10 mm × 38 mm:
The auxiliary switches support the remote display of the ON/OFF switching state of the fuse holder.

Sizes 14 mm × 51 mm and 22 mm × 58 mm:
The auxiliary switches support the remote display of fuse failure. However, fuse links with strikers are required for this function. When the fuse is tripped, a small striking pin - the striker - shoots out of the front of the fuse. Over an armature link in the auxiliary switch, the kinetic energy of this striker is used to switch a mini switch, which then initializes this signal over a floating contact.

BETA Protecting Low-Voltage Fuse Systems

3NW. ...-0HG Class CC fuse systems

Overview

Class CC fuses are used for "branch circuit protection".

The encapsulated fuse holders are tested and designed to the US National Electrical Code NEC 210.20(A) so that in uninterrupted duty only 80 % of the rated current is permitted as operational current.

An operational current of 100 % of the rated current (30 A) is only permitted short-time.

The devices are prepared for the inscription labels of the ALPHA FIX terminal blocks 8WH8 120-7AA15 and 8WH8 120-7XA05.

There are three different series:

- Characteristic slow: 3NW1 ...-0HG
For the protection of control transformers, reactors, inductances. Significantly slower than the minimum requirements of 12 s at $2 \times I_n$ as specified by UL for Class CC fuses.
- Characteristic quick: 3NW2 ...-0HG
For a wide range of applications, for the protection of lighting installations, heating, control systems.
- Characteristic slow: current-limiting 3NW3 ...-0HG
slow for overloads and quick for short circuits. High current limiting for the protection of motor circuits.

Benefits

- For switchgear assemblies and mechanical engineers who export their plants. Compliance with the American standard is as follows:
- Approved according to UL and CSA for typical "Branch Circuit Protection" applications. This facilitates export.
- Modern design with touch protection to BGV A3 ensures safe installation.

Selection and ordering data

Number of poles	U_n	I_n	MW	DT	Order No.	Price	PU	PS*	PG	Weight
	V	A				per PU				
Class CC fuse holders										
1P	600	30	1	C	3NW7 513-0HG		1	12	018	0.056
2P	600	30	2	C	3NW7 523-0HG		1	6	018	0.118
3P	600	30	3	C	3NW7 533-0HG		1	4	018	0.172




$I_n^{1)}$	DT	Characteristic: slow			Characteristic quick						
		Order No.	Price per PU	PG	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
A							Unit(s)	Unit(s)		kg	
Class CC fuse links											
0.6 (6/10)	C	3NW1 006-0HG		018	--		1	10		0.008	
0.8 (8/10)	C	3NW1 008-0HG		018	--		1	10		0.008	
1	C	3NW1 010-0HG		018	C	3NW2 010-0HG		1	10	018	0.008
1.5 (1 1/2)	C	3NW1 015-0HG		018	--		1	10		0.008	
2	C	3NW1 020-0HG		018	C	3NW2 020-0HG		1	10	018	0.008
3	C	3NW1 030-0HG		018	C	3NW2 030-0HG		1	10	018	0.008
4	C	3NW1 040-0HG		018	C	3NW2 040-0HG		1	10	018	0.008
5	C	3NW1 050-0HG		018	C	3NW2 050-0HG		1	10	018	0.008
6	C	3NW1 060-0HG		018	C	3NW2 060-0HG		1	10	018	0.008
8	C	3NW1 080-0HG		018	C	3NW2 080-0HG		1	10	018	0.008
10	C	3NW1 100-0HG		018	C	3NW2 100-0HG		1	10	018	0.008
12		--			C	3NW2 120-0HG		1	10	018	0.008
15	C	3NW1 150-0HG		018	C	3NW2 150-0HG		1	10	018	0.008
20	C	3NW1 200-0HG		018	C	3NW2 200-0HG		1	10	018	0.008
25	C	3NW1 250-0HG		018	C	3NW2 250-0HG		1	10	018	0.008
30	C	3NW1 300-0HG		018	--		1	10		0.008	



* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

3NW. ...-0HG Class CC fuse systems

A	DT	Characteristic: slow current limiting			PG	Weight per PU approx. kg	
		Order No.	Price per PU	PU			
A				Unit(s)	Unit(s)		
Class CC fuse links							
		--					
	0.6 (6/10)						
	0.8 (8/10)						
	1	C	3NW3 010-0HG		1	10	018 0.008
	1.5 (1 ½)		--				
	2	C	3NW3 020-0HG		1	10	018 0.008
	3	C	3NW3 030-0HG		1	10	018 0.008
	4	C	3NW3 040-0HG		1	10	018 0.008
	5	C	3NW3 050-0HG		1	10	018 0.008
	6	C	3NW3 060-0HG		1	10	018 0.008
	8	C	3NW3 080-0HG		1	10	018 0.008
	10	C	3NW3 100-0HG		1	10	018 0.008
	12	C	3NW3 120-0HG		1	10	018 0.008
	15	C	3NW3 150-0HG		1	10	018 0.008
	20	C	3NW3 200-0HG		1	10	018 0.008
25	C	3NW3 250-0HG		1	10	018 0.008	
30	C	3NW3 300-0HG		1	10	018 0.008	

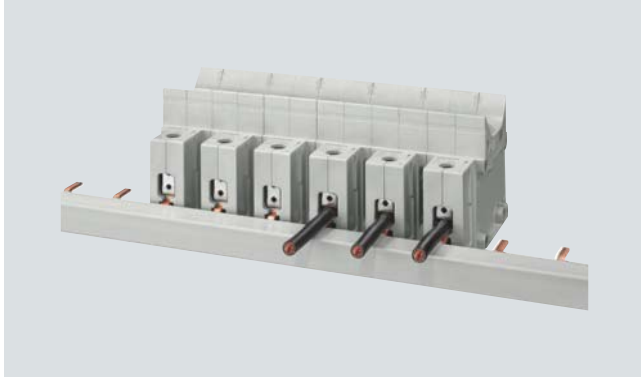
1) Values in brackets, American designation.

Overview

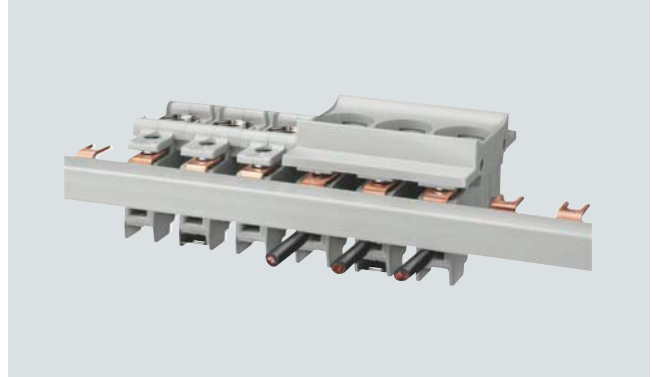
Busbars with pin-type connections can be used for NEOZED safety switching devices and fuse bases. Busbars are available in 10 mm² and 16 mm².

Busbars with fork plugs are used for the most frequently used NEOZED fuse bases made of ceramic.

Benefits



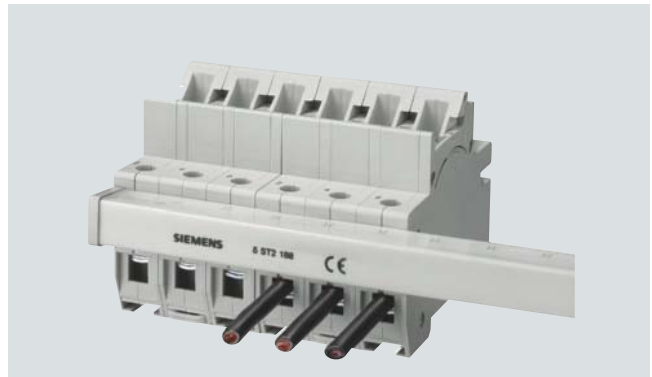
- Clear and visible conductor connection that can be easily checked when using NEOZED comfort base D02. This facilitates the insertion of conductors and saves time.



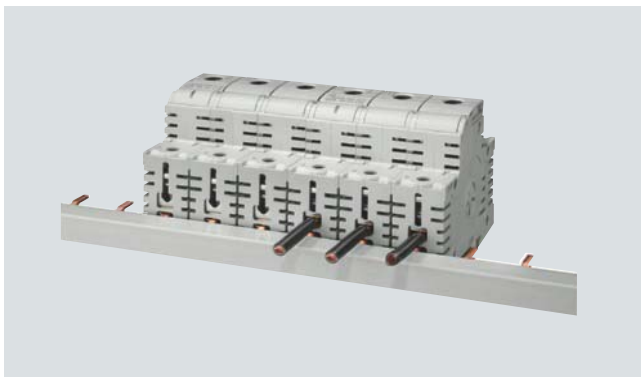
- Bus mounting of NEOZED fuse bases made of molded plastic on three-phase busbar with fork plug, which can be cut to length. Frequently used.



- Bus mounting of NEOZED fuse bases made of ceramic on three-phase busbar with fork plug, which can be cut to length. Most common application.



- Bus mounting of MINIZED fuse switch disconnectors D01 with 3-phase pin busbar, which can be cut to length. Tried and tested.



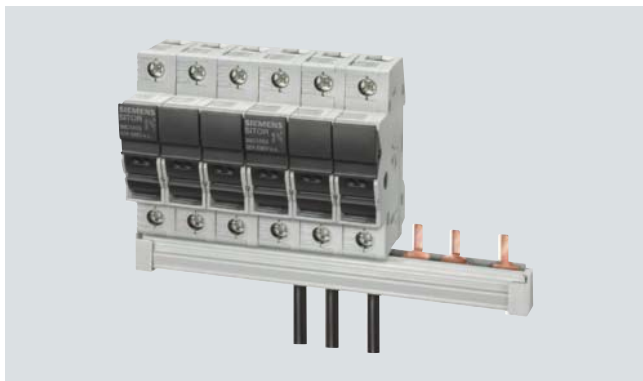
- Clear and visible conductor connection that can be easily checked when using MINIZED switch disconnectors D02. This facilitates the insertion of conductors and saves time.



- Bus mounting of cylindrical fuse holders 8 mm x 32 mm and 10 mm x 38 mm with three-phase pin busbar, which can be cut to length.

BETA Protecting Low-Voltage Fuse Systems

5ST2, 5ST3 busbars for fuse systems

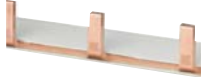




- Bus mounting of SITOR cylindrical fuse holders 10 mm × 38 mm with the same terminal connection as Class CC fuse holder with three-phase pin busbars, which can be cut to length.



- Bus mounting with infeed through a connection terminal directly on the fuse holder up to a conductor cross-section of 35 mm².

Selection and ordering data

	Phase	Conductor cross-section mm ²	Load capacity up to A	Pin spacing MW	Length mm	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
Busbars												
For MINIZED D02 switch disconnectors, for NEOZED D01/D02 comfort bases made of molded plastic 5SG1 301, 5SG1 701, 5SG5 301, 5SG5 701												
For NEOZED D01/D02 fuse bases made of ceramic, for 14 × 51 mm cylindrical fuse holders, for SITOR 14 × 51 mm cylindrical fuse holders Terminal version S (saddle-type terminal connection) Can be cut to length, without end caps												
	Single-phase	16	130	1.5	1016	A	5ST3 703		1	1	027	0.190
	Three-phase	16	120	1.5	1016	A	5ST3 714		1	1	027	0.430
For MINIZED D01 fuse switch disconnectors												
Can be cut to length, without end caps												
	Single-phase	16	120	1	1000	B	5ST2 190		1	1	027	0.500
	Two-phase					B	5ST2 191		1	1	027	0.710
	Three-phase					B	5ST2 192		1	1	027	1.100
Can be cut to length, with 2 end caps												
	Single-phase	16	120	1	220	B	5ST2 186		1	1	027	0.090
	Two-phase					B	5ST2 187		1	1	027	0.160
	Three-phase					B	5ST2 188		1	1	027	0.230

BETA Protecting Low-Voltage Fuse Systems








5ST2, 5ST3 busbars for fuse systems

Phase	Conductor cross-section mm ²	Load capacity up to A	Pin spacing MW	Length mm	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
For NEOZED fuse bases D01/D02 made of molded plastic 5SG1 .30, 5SG1 .31, 5SG5 .30 For NEOZED D01/D02 fuse bases made of ceramic, terminal types B and K (clamp-type terminal, screw head contact) Non-insulated											
Single-phase	20	116	1.5	1000	▶	5SH5 321		1	1	016	0.214
	36	168	1.5		▶	5SH5 322		1	1	016	0.321
Can be cut to length, without end caps											
Single-phase	24	160	1.5	1000	A	5SH5 517		1	1	016	0.550
Three-phase	16	120	1.5	1000	▶	5SH5 320		1	1	016	0.843
For 8 × 32 mm and 10 × 38 mm cylindrical fuse holders , for SITOR 10 × 38 mm cylindrical fuse holders, for Class CC cylindrical fuse holders Can be cut to length, without end caps											
Single-phase	16	120	1	1016	A	5ST3 701		1	1	027	0.190
Two-phase		120	1		A	5ST3 705		1	1	027	0.290
Three-phase	16	120	1	1016	▶	5ST3 710		1	1	027	0.430
Cannot be cut to length, fully insulated											
Single-phase	16		1	214	▶	5ST3 700		1	1	027	0.040
Two-phase			1		A	5ST3 704		1	1	027	0.060
Three-phase			1		▶	5ST3 708		1	1	027	0.100
End caps for busbars For single-phase 5ST3 7, 5SH5 5 busbars 156 ▶ 5ST3 748											
For three-phase 5ST3 7 and 5SH5 320 busbars ▶ 5ST3 750											
Touch protection for free connection of pin busbars Yellow (RAL 1004) 5 x 1 pin A 5ST3 655											

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

5ST2, 5ST3 busbars for fuse systems

	Phase	Conductor cross-section mm ²	Load capacity up to A	Length mm	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg	
Terminals												
	For NEOZED fuse bases D01/D02 made of ceramic, For DIAZED fuse bases DII/DIII made of ceramic, For cylindrical fuse holders Terminal version S For conductors					▶ 5SH5 327		1	10/300	016	0.014	
		Terminal versions B and K For conductors					▶ 5SH5 328		1	10/300	016	0.014
			For the infeed of fork-type or pin busbars For conductors					5ST2 157		1	5	027
Busbars												
For 1-pole DIAZED fuse bases made of ceramic with terminal versions BB and BS												
	Size DII, for 19 bases Single-phase					5SH3 500		1	1/25	016	0.095	
		Size DIII, for 25 bases Single-phase					5SH3 501		1	1/25	016	0.180
Busbars												
For DIAZED bus-mounting bases/EZR with thread for screw adapters												
	For size DII, 42 5SF6 005 bases Single-phase					5SH3 54		1	5	016	0.740	
	For size DIII, 34 5SF6 205 bases Single-phase					5SH3 55		1	5	016	0.740	
Bus-mounting terminals												
	For DIAZED EZR bus-mounting bases Non-insulated											
	For conductors					A	8JH4 122		1	10	046	0.012
For conductors					A	8JH4 124		1	10	046	0.024	

5ST3 7...-HG busbar systems acc. to UL 508

	Pin spacing	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	MW	mm				Unit(s)	Unit(s)		kg
5ST3 7...-HG busbars acc. to UL 508, 18 mm², can be cut, without end caps									
Single-phase									
	• For fuse holders 10 x 38 Class CC (3NC1 091, 3NW7 513-0HG) or MCB 1P (5SY)	1	1000	A	5ST3 701-0HG	1	10	012	0.330
	• For fuse holders 14 x 51 (3NC1 491, 3NW7 111) or MCB 1P (5SY, 5SP) with AS or FC	1.5	1000	A	5ST3 703-0HG	1	10	012	0.330
Two-phase									
	• For fuse holders 10 x 38/Class CC (3NC1 092, 3NW7 523-0HG) or MCB 2P (5SY)	1	1000	A	5ST3 705-0HG	1	10	012	0.508
three-phase									
	• For fuse holders 10 x 38/Class CC (3NC1 093, 3NW7 533-0HG) or MCB 3P (5SY)	1	1000	A	5ST3 710-0HG	1	10	012	0.800
	• For fuse holders 14 x 51 (3NC1 493, 3NW7 131) or MCB 1P (5SY, 5SP) with AS or FC	1.5	1000	A	5ST3 714-0HG	1	10	012	0.820
5ST3 7...-HG busbars acc. to UL 508, 25 mm², can be cut, without end caps									
Single-phase									
	• For fuse holders 14 x 51 (3NC1 491, 3NW7 111) or MCB 1P (5SP)	1.5	1000	A	5ST3 701-2HG	1	10	012	0.450
Two-phase									
	• For fuse holders 14 x 51 (3NC1 492, 3NW7 121) or MCB 2P (5SP)	1.5	1000	A	5ST3 705-2HG	1	10	012	0.690
three-phase									
	• For fuse holders 14 x 51 (3NC1 493, 3NW7 131) or MCB 3P (5SP)	1.5	1000	A	5ST3 710-2HG	1	10	012	1.090
End caps for 5ST3 7...-HG									
	• For single-phase busbars			A	5ST3 748-0HG	1	10	012	0.001
	• For two- and three-phase busbars			A	5ST3 750-0HG	1	10	012	0.001
Connection terminals acc. to UL 508									
Infeed to device									
	• 35 mm ²			A	5ST3 770-0HG	1	10	012	0.035
Infeed to busbar									
	• 50 mm ²			A	5ST3 770-1HG	1	10	012	0.016
Touch protection covers for busbars acc. to UL 508									
	• 5 x 1 pin			A	5ST3 655-0HG	1	10	012	0.003

BETA Protecting Low-Voltage Fuse Systems

3NA, 3ND LV HRC fuse links

Overview

LV HRC (NH type) fuse systems are used for installation systems in non-residential, commercial and industrial buildings, as well as in the systems of power supply companies. They therefore protect essential building parts and installations.

LV HRC fuse systems are fuse systems designed for operation by skilled personnel. There are no constructional requirements for non-interchangeability of rated current and touch protection.

The components and auxiliary equipment are designed in such a way as to ensure the safe replacement of LV HRC fuse systems or isolation of systems.

LV HRC fuse links are available in the sizes 000, 00, 0, 1, 2, 3, 4 and 4a.

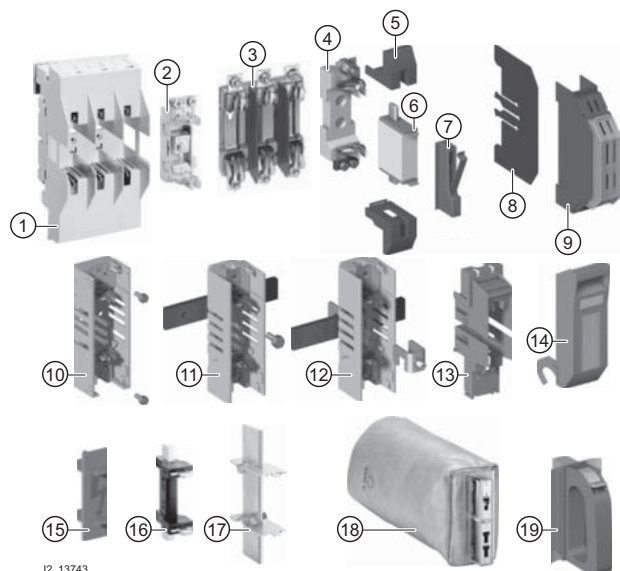
LV HRC fuse links are available in the following operational classes:

- gG for cable and line protection
- aM for the short-circuit protection of switching devices in motor circuits
- gR or aR for the protection of power semiconductors
- gS: the new gS operational class combines cable and line protection with semiconductor protection.

LV HRC fuse links of size 000 can also be used in LV HRC fuse bases, LV HRC fuse switch disconnectors, LV HRC fuse strips as well as in LV HRC in-line fuse switch disconnectors of size 00.

The fuse links 300 A, 355 A and 425 A comply with the standard but do not have the VDE mark.

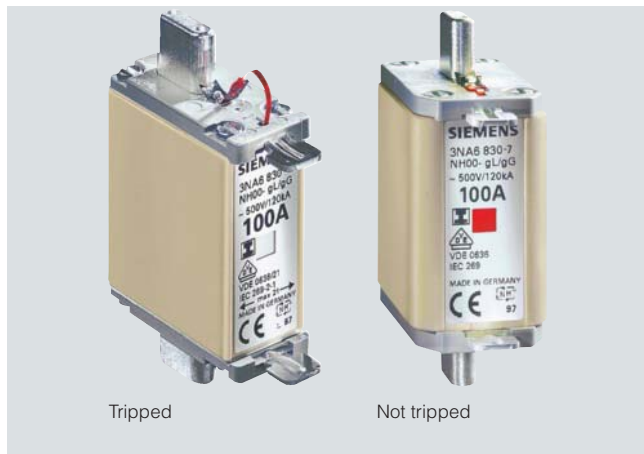
LV HRC components



I2_13743

- ① LV HRC fuse base from the SR60 busbar system
- ② LV HRC fuse base for busbar mounting
- ③ LV HRC fuse base, 3P
- ④ LV HRC fuse base, 1P
- ⑤ LV HRC contact covers
- ⑥ LV HRC fuse link
- ⑦ LV HRC signal detectors
- ⑧ LV HRC partition
- ⑨ LV HRC protective cover
- ⑩ LV HRC fuse bases with slewing equipment
- ⑪ - for screw connection on mounting plate
- ⑫ - for screw connection on busbar system
- ⑬ - for claw fixing on busbar
- ⑭ LV HRC protective covers for LV HRC fuse bases with slewing equipment
- ⑮ LV HRC slewing equipment
- ⑯ LV HRC fuse base cover
- ⑰ LV HRC isolating link with insulated grip lugs
- ⑱ LV HRC isolating link with non-insulated grip lugs
- ⑲ LV HRC fuse puller with sleeve
- ⑳ LV HRC fuse puller

Benefits




Tripped

Not tripped







Tripped

Not tripped

- LV HRC fuse links with combination alarm signal the tripping of a fuse by a clear color change from red to white. This enables fast identification and replacement of the tripped fuse links. This increases plant availability.
- The insulated grip lugs made of metal are integrated in the top and bottom covers of the fuse link in molded plastic and provide greater safety when replacing. The mark shown below indicates that the grip lugs are insulated .

- In the standard series with front indicator, the front-mounted red indicator signals the tripping of a fuse.
- LV HRC fuse links are always equipped with silver-plated contact pins. This means that they are non-corroding and have less contact resistance. This ensures the long-term operational safety of the plant.





Selection and ordering data

Size	Width mm	I_n A	U_n V AC/ V DC	DT	Insulated grip lugs Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg	
							Unit(s)	Unit(s)			
LV HRC fuse links with combination alarm Operational class gG											
	000	21	10	400/--	B	3NA6 803-4		1	3	013	0.135
			16		B	3NA6 805-4		1	3	013	0.135
			20		B	3NA6 807-4		1	3	013	0.135
			25		B	3NA6 810-4		1	3	013	0.135
			32		B	3NA6 812-4		1	3	013	0.135
			35		B	3NA6 814-4		1	3	013	0.135
			40		B	3NA6 817-4		1	3	013	0.135
			50		B	3NA6 820-4		1	3	013	0.135
			63		B	3NA6 822-4		1	3	013	0.135
			80		B	3NA6 824-4		1	3	013	0.135
100	B	3NA6 830-4		1	3	013	0.135				
	00	30	80	400/--	B	3NA6 824-4KK		1	3	013	0.200
			100		B	3NA6 830-4KK		1	3	013	0.200
			125		B	3NA6 832-4		1	3	013	0.200
			160		B	3NA6 836-4		1	3	013	0.200
	1	30	35	400/--	B	3NA6 114-4		1	3	013	0.290
			40		B	3NA6 117-4		1	3	013	0.290
			50		B	3NA6 120-4		1	3	013	0.290
			63		B	3NA6 122-4		1	3	013	0.290
			80		B	3NA6 124-4		1	3	013	0.290
			100		B	3NA6 130-4		1	3	013	0.290
			125		B	3NA6 132-4		1	3	013	0.290
			160		B	3NA6 136-4		1	3	013	0.290
			47.2		B	3NA6 140-4		1	3	013	0.430
			B		3NA6 142-4		1	3	013	0.430	
B	3NA6 144-4		1	3	013	0.430					
	2	47.2	50	400/--	B	3NA6 220-4		1	3	013	0.450
			63		B	3NA6 222-4		1	3	013	0.450
			80		B	3NA6 224-4		1	3	013	0.450
			100		B	3NA6 230-4		1	3	013	0.450
			125		B	3NA6 232-4		1	3	013	0.450
			160		B	3NA6 236-4		1	3	013	0.450
			200		B	3NA6 240-4		1	3	013	0.450
			224		B	3NA6 242-4		1	3	013	0.450
			250		B	3NA6 244-4		1	3	013	0.450
			57.8		B	3NA6 250-4		1	3	013	0.650
			B		3NA6 252-4		1	3	013	0.650	
			B		3NA6 254-4		1	3	013	0.650	
B	3NA6 260-4		1	3	013	0.650					

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems





3NA, 3ND LV HRC fuse links

Size	Width	I_n	U_n	DT	Non-insulated grip lugs		Insulated grip lugs		PU	PS*	PG	Weight per PU approx. kg	
					Order No.	Price per PU	Order No.	Price per PU					
LV HRC fuse links with combination alarm													
Operational class gG													
	21	2	500/	B	3NA7 802		013	B	3NA6 802	1	3	013	0.135
		4	250	B	3NA7 804		013	B	3NA6 804	1	3	013	0.135
		6		B	3NA7 801		013	B	3NA6 801	1	3	013	0.135
		10		B	3NA7 803		013	B	3NA6 803	1	3	013	0.136
		16		▶	3NA7 805		013	▶	3NA6 805	1	3	013	0.136
		20		▶	3NA7 807		013	▶	3NA6 807	1	3	013	0.136
		25		▶	3NA7 810		013	▶	3NA6 810	1	3	013	0.600
		32		B	3NA7 812		013	B	3NA6 812	1	3	013	0.136
		35		▶	3NA7 814		013	▶	3NA6 814	1	3	013	0.440
		40		B	3NA7 817		013	B	3NA6 817	1	3	013	0.136
		50		▶	3NA7 820		013	▶	3NA6 820	1	3	013	0.128
		63		▶	3NA7 822		013	▶	3NA6 822	1	3	013	0.120
		80		▶	3NA7 824		013	▶	3NA6 824	1	3	013	0.128
		100		▶	3NA7 830		013	▶	3NA6 830	1	3	013	0.120
	00	80	500/	B	3NA7 824-7		013	B	3NA6 824-7	1	3	013	0.211
		100	250	B	3NA7 830-7		013	B	3NA6 830-7	1	3	013	0.211
		125		▶	3NA7 832		013	▶	3NA6 832	1	3	013	0.200
		160		▶	3NA7 836		013	A	3NA6 836	1	3	013	0.200
	1	16	500/	B	3NA7 105		013	B	3NA6 105	1	3	013	0.290
		20	440	B	3NA7 107		013	B	3NA6 107	1	3	013	0.290
		25		B	3NA7 110		013	B	3NA6 110	1	3	013	0.290
		35		B	3NA7 114		013	B	3NA6 114	1	3	013	0.290
		40		B	3NA7 117		013	B	3NA6 117	1	3	013	0.290
		50		B	3NA7 120		013	B	3NA6 120	1	3	013	0.290
		63		B	3NA7 122		013	B	3NA6 122	1	3	013	0.290
		80		B	3NA7 124		013	▶	3NA6 124	1	3	013	0.290
		100		B	3NA7 130		013	▶	3NA6 130	1	3	013	0.290
		125		▶	3NA7 132		013	▶	3NA6 132	1	3	013	0.290
		160		▶	3NA7 136		013	▶	3NA6 136	1	3	013	0.290
		47.2	200	▶	3NA7 140		013	▶	3NA6 140	1	3	013	0.440
		224		B	3NA7 142		013	B	3NA6 142	1	3	013	0.440
		250		▶	3NA7 144		013	▶	3NA6 144	1	3	013	0.400
	2	35	500/	B	3NA7 214		013	B	3NA6 214	1	3	013	0.450
		50	440	B	3NA7 220		013	B	3NA6 220	1	3	013	0.450
		63		B	3NA7 222		013	B	3NA6 222	1	3	013	0.450
		80		B	3NA7 224		013	B	3NA6 224	1	3	013	0.450
		100		B	3NA7 230		013	B	3NA6 230	1	3	013	0.450
		125		B	3NA7 232		013	B	3NA6 232	1	3	013	0.450
		160		▶	3NA7 236		013	▶	3NA6 236	1	3	013	0.450
		200		▶	3NA7 240		013	▶	3NA6 240	1	3	013	0.450
		224		B	3NA7 242		013	B	3NA6 242	1	3	013	0.450
		250		▶	3NA7 244		013	▶	3NA6 244	1	3	013	0.450
		57.8	300		--			B	3NA6 250	1	3	013	0.641
		315		▶	3NA7 252			▶	3NA6 252	1	3	013	0.660
		355			--			B	3NA6 254	1	3	013	0.641
		400		▶	3NA7 260			▶	3NA6 260	1	3	013	0.660

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems





3NA, 3ND LV HRC fuse links

Size	Width mm	I_n A	U_n V AC/ V DC	DT	Non-insulated grip lugs	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg					
					Order No.										
LV HRC fuse links with front indicator Operational class gG															
	21	2	500/250	▶	3NA3 802		1	3	013	0.133					
		4		▶	3NA3 804						1	3	013	0.133	
		6		▶	3NA3 801						1	3	013	0.133	
		10		▶	3NA3 803						1	3	013	0.133	
		16		▶	3NA3 805						1	3	013	0.133	
		20		▶	3NA3 807						1	3	013	0.133	
		25		▶	3NA3 810						1	3	013	0.133	
		32		▶	3NA3 812						1	3	013	0.133	
		35		▶	3NA3 814						1	3/90	013	0.133	
		40		▶	3NA3 817						1	3	013	0.133	
		50		▶	3NA3 820						1	3/90	013	0.133	
		63		▶	3NA3 822						1	3/90	013	0.133	
		80		▶	3NA3 824						1	3/90	013	0.133	
		100		▶	3NA3 830						1	3/90	013	0.133	
		125		▶	3NA3 832-8						1	3/60	013	0.160	
160	▶	3NA3 836-8	1	3/60	013	0.160									
	30	35	500/250	B	3NA3 814-7		1	3	013	0.200					
		50		B	3NA3 820-7						1	3	013	0.200	
		63		B	3NA3 822-7						1	3	013	0.200	
		80		B	3NA3 824-7						1	3	013	0.200	
		100		B	3NA3 830-7						1	3	013	0.200	
		125		▶	3NA3 832						1	3	013	0.217	
		160		▶	3NA3 836						1	3	013	0.217	
	30	6	500/440	B	3NA3 001		1	3	013	0.340					
		10		B	3NA3 003						1	3	013	0.340	
		16		B	3NA3 005						1	3	013	0.340	
		20		B	3NA3 007						1	3	013	0.340	
		25		B	3NA3 010						1	3	013	0.340	
		32		B	3NA3 012						1	3	013	0.340	
		35		B	3NA3 014						1	3	013	0.340	
		40		B	3NA3 017						1	3	013	0.340	
		50		B	3NA3 020						1	3	013	0.340	
		63		A	3NA3 022						1	3	013	0.340	
		80		B	3NA3 024						1	3	013	0.340	
		100		A	3NA3 030						1	3	013	0.340	
		125		A	3NA3 032						1	3	013	0.340	
		160		A	3NA3 036						1	3	013	0.340	
				30	16						500/440	B	3NA3 105		1
20	B		3NA3 107		1	3	013	0.290							
25	B		3NA3 110		1	3	013	0.290							
35	B		3NA3 114		1	3	013	0.300							
40	B		3NA3 117		1	3	013	0.300							
50	B		3NA3 120		1	3	013	0.300							
63	▶		3NA3 122		1	3	013	0.300							
80	▶		3NA3 124		1	3	013	0.300							
100	▶		3NA3 130		1	3	013	0.300							
125	▶		3NA3 132		1	3	013	0.300							
160	▶		3NA3 136		1	3	013	0.300							
47.2	200		▶		3NA3 140	1	3	013	0.440						
	224		A		3NA3 142	1	3	013	0.440						
	250		▶		3NA3 144	1	3	013	0.440						

* You can order this quantity or a multiple thereof.





BETA Protecting Low-Voltage Fuse Systems

3NA, 3ND LV HRC fuse links

Size	Width mm	I_n A	U_n V AC/ V DC	DT	Non-insulated grip lugs	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
					Order No.					
LV HRC fuse links with front indicator Operational class gG										
	47.2	35	500/440	B	3NA3 214		1	3	013	0.453
		50		B	3NA3 220					
		63		A	3NA3 222					
		80		A	3NA3 224					
		100		A	3NA3 230					
		125		A	3NA3 232					
		160		▶	3NA3 236					
		200		▶	3NA3 240					
		224		▶	3NA3 242					
		250		▶	3NA3 244					
		300		A	3NA3 250					
		315		▶	3NA3 252					
		355		▶	3NA3 254					
		400		▶	3NA3 260					
	57.8	200	500/440	B	3NA3 340		1	3	013	0.647
		224		B	3NA3 342					
		250		A	3NA3 344					
		300		B	3NA3 350					
		315		▶	3NA3 352					
		355		A	3NA3 354					
		400		▶	3NA3 360					
		425		A	3NA3 362					
		500		▶	3NA3 365					
		630		▶	3NA3 372					
Can only be used with 3NH3 530 LV HRC fuse base										
	101.8	630	500/440	B	3NA3 472		1	1	013	2.500
		800		A	3NA3 475					
		1000		A	3NA3 480					
		1250		A	3NA3 482					
Can only be used with 3NH7 520 LV HRC fuse base										
	101.8	500	500/440	B	3NA3 665		1	1	013	2.700
		630		B	3NA3 672					
		800		A	3NA3 675					
		1000		A	3NA3 680					
		1250		A	3NA3 682					

BETA Protecting Low-Voltage Fuse Systems







3NA, 3ND LV HRC fuse links

Size-	Width	I_n	U_n	DT	Non-insulated grip lugs		Insulated grip lugs		PU	PS*	PG	Weight per PU approx. kg	
					Order No.	Price per PU	PG	DT					Order No.
LV HRC fuse links with combination alarm													
Operational class gG													
	21	2	690/	B	3NA7 802-6		013	B	3NA6 802-6	1	3	013	0.136
		4	250	B	3NA7 804-6		013	B	3NA6 804-6	1	3	013	0.136
		6		B	3NA7 801-6		013	B	3NA6 801-6	1	3	013	0.136
		10		B	3NA7 803-6		013	B	3NA6 803-6	1	3	013	0.136
		16		B	3NA7 805-6		013	B	3NA6 805-6	1	3	013	0.136
		20		B	3NA7 807-6		013	B	3NA6 807-6	1	3	013	0.136
		25		B	3NA7 810-6		013	B	3NA6 810-6	1	3	013	0.136
		32		B	3NA7 812-6		013	B	3NA6 812-6	1	3	013	0.136
35		B	3NA7 814-6		013	B	3NA6 814-6	1	3	013	0.136		
	30	40	690/	B	3NA7 817-6		013	B	3NA6 817-6	1	3	013	0.211
		50	250	B	3NA7 820-6		013	B	3NA6 820-6	1	3	013	0.211
		63		B	3NA7 822-6		013	B	3NA6 822-6	1	3	013	0.211
		80		B	3NA7 824-6		013	B	3NA6 824-6	1	3	013	0.211
		100		B	3NA7 830-6		013	B	3NA6 830-6	1	3	013	0.211
	1	50	690/	B	3NA7 120-6		013	B	3NA6 120-6	1	3	013	0.290
		63	440	B	3NA7 122-6		013	B	3NA6 122-6	1	3	013	0.290
		80		B	3NA7 124-6		013	B	3NA6 124-6	1	3	013	0.290
		100		B	3NA7 130-6		013	B	3NA6 130-6	1	3	013	0.290
		125		B	3NA7 132-6		013	B	3NA6 132-6	1	3	013	0.290
		160		B	3NA7 136-6		013	B	3NA6 136-6	1	3	013	0.290
		47.2	200	B	3NA7 140-6		013	B	3NA6 140-6	1	3	013	0.440
	2	80	690/	B	3NA7 224-6		013	B	3NA6 224-6	1	3	013	0.450
		100	440	B	3NA7 230-6		013	B	3NA6 230-6	1	3	013	0.450
		125		B	3NA7 232-6		013	B	3NA6 232-6	1	3	013	0.450
		160		B	3NA7 236-6		013	B	3NA6 236-6	1	3	013	0.450
		200		B	3NA7 240-6		013	B	3NA6 240-6	1	3	013	0.450
		57.8	224	B	3NA7 242-6		013	B	3NA6 242-6	1	3	013	0.660
		250		B	3NA7 244-6		013	B	3NA6 244-6	1	3	013	0.660
		300		B	3NA7 250-6		013	B	3NA6 250-6	1	3	013	0.660
		315		B	3NA7 252-6		013	B	3NA6 252-6	1	3	013	0.660

* You can order this quantity or a multiple thereof.






BETA Protecting Low-Voltage Fuse Systems

3NA, 3ND LV HRC fuse links

Size	Width mm	I_n A	U_n V AC/ V DC	DT	Non-insulated grip lugs	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg		
					Order No.							
LV HRC fuse links with front indicator Operational class gG												
	000	21	690/250	▶	▶			1	3	013	0.135	
					▶							3NA3 802-6
					▶							3NA3 804-6
					▶							3NA3 801-6
					▶							3NA3 803-6
					▶							3NA3 805-6
					▶							3NA3 807-6
					▶							3NA3 810-6
	00	30	690/250	B	▶			1	3	013	0.200	
					▶							3NA3 812-6
					▶							3NA3 814-6
					▶							3NA3 817-6
					▶							3NA3 820-6
	1	30	690/440	B	▶			1	3	013	0.290	
					▶							3NA3 822-6
					▶							3NA3 824-6
					▶							3NA3 830-6
	2	47.2	690/440	B	▶			1	3	013	0.426	
					▶							3NA3 120-6
					▶							3NA3 122-6
					▶							3NA3 124-6
					▶							3NA3 130-6
					▶							3NA3 132-6
					▶							3NA3 136-6
					▶							3NA3 140-6
	3	57.8	690/440	B	▶			1	3	013	0.660	
					▶							3NA3 224-6
					▶							3NA3 230-6
					▶							3NA3 232-6
					▶							3NA3 236-6
					▶							3NA3 240-6
					▶							3NA3 242-6
					▶							3NA3 244-6
	3	71.2	690/440	B	▶			1	3	013	1.000	
					▶							3NA3 344-6
					▶							3NA3 352-6
					▶							3NA3 354-6
					▶							3NA3 360-6
					▶							3NA3 362-6
▶	3NA3 365-6											

BETA Protecting Low-Voltage Fuse Systems

3NA, 3ND LV HRC fuse links

Size	Width mm	I_n A	U_n V AC/ V DC	DT	Non-insulated grip lugs	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg						
					Order No.											
LV HRC fuse links with front indicator																
Operational class aM																
	000	21	500/--	B	6			1	3	014	0.130					
					10							3ND1 803	1	3	014	0.130
					16							3ND1 805	1	3	014	0.130
					20							3ND1 807	1	3	014	0.130
					25							3ND1 810	1	3	014	0.130
					32							3ND1 812	1	3	014	0.130
					35							3ND1 814	1	3	014	0.130
					40							3ND1 817	1	3	014	0.130
					50							3ND1 820	1	3	014	0.130
					63							3ND1 822	1	3	014	0.130
80	3ND1 824	1	3	014	0.130											
	00	30	500/--	B	100			1	3	014	0.192					
					125							3ND1 832	1	3	014	0.192
					160							3ND1 836	1	3	014	0.192
	1	30	690/--	B	63			1	3	014	0.290					
					80							3ND2 124	1	3	014	0.290
					100							3ND2 130	1	3	014	0.440
		47.2			125							3ND2 132	1	3	014	0.440
					160							3ND2 136	1	3	014	0.440
					200							3ND2 140	1	3	014	0.440
250	3ND2 144	1	3	014	0.440											
	2	47.2	690/--	B	125			1	3	014	0.440					
					160							3ND2 236	1	3	014	0.440
					200							3ND2 240	1	3	014	0.440
					250							3ND2 244	1	3	014	0.440
		57.8			315							3ND2 252	1	3	014	0.650
					355							3ND2 254	1	3	014	0.650
					400							3ND2 260	1	3	014	0.650
	3	57.8	690/--	B	315			1	3	014	0.650					
					355							3ND2 354	1	3	014	0.650
					400							3ND2 360	1	3	014	0.650
		71.2			500							3ND1 365	1	3	014	1.030
					630							3ND1 372	1	3	014	1.000

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

3NX1 LV HRC signal detectors

Overview

LV HRC (NH type) signal detectors are used for remotely indicating that the LV HRC fuse links have been tripped. Three different solutions are available:

- 3NX1 021 signal detectors with signal detector links
The LV HRC signal detectors with signal detector link support monitoring of LV HRC fuse links with non-insulated grip lugs of sizes 000 to 4 at 10 A or more.
The signal detector link is connected in parallel to the LV HRC fuse link. In the event of a fault, the LV HRC fuse links are released simultaneously with the fuse signaling link. A tripping pin switches a floating microswitch.

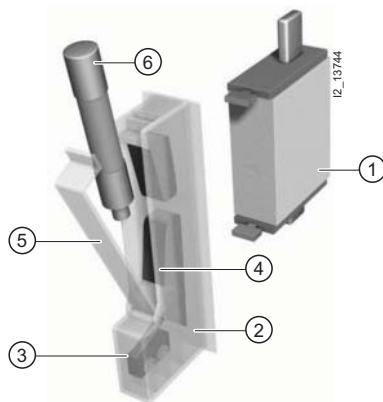
- 3NX1 024 signal detector top
The signal detector top can be used with LV HRC fuse links, sizes 000, 00, 1 and 2, which are equipped with non-insulated grip lugs and have a front indicator or combination alarm. It is simply plugged into the grip lugs.
- 5TT3 170 fuse monitors
If a fuse is tripped, the front indicator springs open and switches a floating microswitch. This solution should not be used for safety-relevant plants. For this purpose, we recommend our electronic fuse monitors.

Benefits

Uniform solution for all sizes

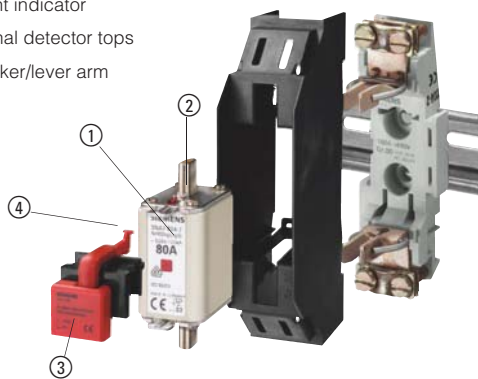
LV HRC signal detectors reliably indicate when a fuse has tripped. Tripped fuses are quickly located. This saves time and increases plant availability.

- ① LV HRC fuse link
- ② LV HRC signal detectors
- ③ Microswitch
- ④ Spring contact
- ⑤ Hinged lid
- ⑥ Signal detector links






The LV HRC signal detector top is a cost-effective solution for monitoring Siemens LV HRC fuse links of sizes 000, 00, 1 and 2.

- ① LV HRC fuse link
- ② Front indicator
- ③ Signal detector tops
- ④ Rocker/lever arm



Selection and ordering data

	Size	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
					Unit(s)	Unit(s)		kg
	000 to 4	A	3NX1 021		1	1	014	0.036
	000 to 4	A	3NX1 022		1	3	014	0.015
		C	3NX1 023		1	3	014	0.015
	000, 00, 1, 2	▶	3NX1 024		1	1	014	0.010

BETA Protecting Low-Voltage Fuse Systems

3NX1 LV HRC signal detectors
3NH LV HRC fuse bases

3NX1 LV HRC signal detectors

U_e	I_n	U_c	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
V AC	A	V					Unit(s)	Unit(s)		kg
Fuse monitors For all low-voltage fuse systems. Can be used in asymmetric systems afflicted with harmonics and regenerative feedback motors. Signal also for disconnected loads.										
230	4	3 AC 380 ... 415	2	▶	5TT3 170		1	1	027	0.150



For more information on fuse monitors, please refer to Chapter "Monitoring of electrical values" in Catalog ET B1.

Overview

3NH LV HRC fuse bases

Terminals for all applications

Terminals are as different as the requirements of individual systems.

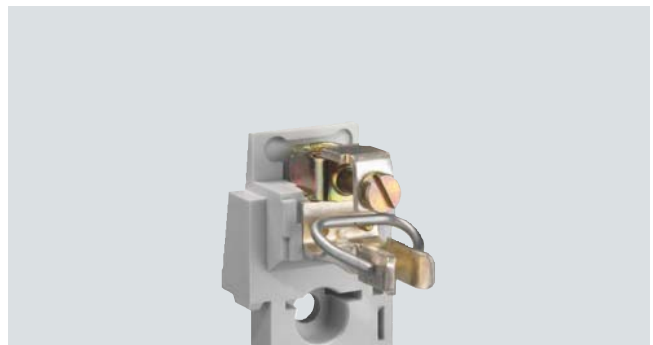


Flat terminals with screws are suitable for connecting busbars or cable lugs. They have a torsion-proof screw connection with shim, spring washer and nut. When tightening the nut, always ensure compliance with the specified torque due to the considerable leverage effect.

The double busbar terminal differs from the flat terminal in that it supports connection of two busbars, one on the top and one at the bottom of the flat terminal.



In the case of flat terminals with nuts, connection of the nut to the terminal lug is torsion-proof. When tightening the nut, the torque must be observed because of the considerable leverage effect.



The modern box terminal ensures efficient and reliable connection to the conductors. They support connection of conductors with or without end sleeves.



Up to three conductors can be clamped to the terminal strip.

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

3NH LV HRC fuse bases



The plug-in terminal is equipped for connecting two conductors.










One conductor can be clamped to the saddle-type terminal.

Benefits



- The silver-plated lyre-shaped contact provides a large contact area for the contact pin of the LV HRC fuse link. This improves heat transmission and lowers the temperature. It also minimizes aging of the fuse link in the maximum load range, in particular when using SITOR fuses
- The large contact area also facilitates replacement of LV HRC fuse links
- The spring washer that tensions the contact is mechanically galvanized. This will prevent hydrogen embrittlement. The contact is resistant to aging and there will be no dreaded annealing of contacts, which considerably improves operating safety.







Selection and ordering data

Size	I_n	Version	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
						Unit(s)	Unit(s)		kg	
LV HRC fuse bases										
Made of molded plastic, for standard rail mounting or screw fixing										
	000/00	160 1P								
		With flat terminals, screw	▶	3NH3 051		1	1/10	014	0.119	
		With saddle-type terminals	▶	3NH3 052		1	1/10	014	0.114	
		125 With box terminals, up to 50 mm ²	▶	3NH3 053		1	1/10	014	0.109	
Made of ceramic for screw fixing										
	000/00	160 1P								
		With flat terminals, screw	▶	3NH3 030		1	3	014	0.235	
		With plug-in terminals	B	3NH3 031		1	3	014	0.230	
		With saddle-type terminals	▶	3NH3 032		1	3	014	0.266	
		With flat terminals and terminal strip	B	3NH3 035		1	3	014	0.230	
		With flat terminals, nut	B	3NH3 038		1	3	014	0.207	
		With flat and saddle-type terminals	B	3NH3 050		1	3	014	0.227	
		3P (incl. two partitions)								
		With flat terminals	▶	3NH4 030		1	1	014	0.700	
		With plug-in terminals	B	3NH4 031		1	1	014	0.800	
With saddle-type terminals	B	3NH4 032		1	1	014	0.800			
With flat terminals and terminal strip	B	3NH4 035		1	1	014	0.750			
Made of ceramic for screw fixing										
	0	160 1P								
		With flat terminals	A	3NH3 120		1	3	014	0.460	
		With plug-in terminals	B	3NH3 122		1	3	014	0.460	
Made of ceramic for screw fixing										
	1	250 1P								
		With flat terminals	▶	3NH3 230		1	3	014	0.789	
		With double busbar terminals	B	3NH3 220		1	3	014	0.789	
Ceramic support on base plate for screw fixing										
	1	250 3P (incl. two partitions)								
		With flat terminals	A	3NH4 230		1	1	014	2.100	
Made of ceramic for screw fixing										
	2	400 1P								
		With flat terminals	▶	3NH3 330		1	1	014	0.843	
		With double busbar terminals	A	3NH3 320		1	1	014	1.000	
Made of ceramic for screw fixing										
	3	630 1P								
		With flat terminals	▶	3NH3 430		1	1	014	1.100	
		With double busbar terminals	A	3NH3 420		1	1	014	1.100	









* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

3NH LV HRC fuse bases

Size	I_n	Version	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
						Unit(s)	Unit(s)		kg	
LV HRC fuse bases										
Ceramic support on base plate for screw fixing (IEC design)										
	4	1250 1P	With flat terminals	A	3NH3 530		1	1	014	3.000
LV HRC bus-mounting bases made of molded plastic										
For busbars 12 mm x 5 mm to 12 mm x 10 mm, busbar spacing 40 mm										
	000/00	160 1P	With saddle-type terminals at top	B	3NH3 036		1	1	014	0.150
			With saddle-type terminals at bottom	B	3NH3 037		1	1	014	0.150
	000/00	80 3P, in tandem design	3 outgoing feeders at top and bottom respectively, with saddle-type terminal	B	3NH4 037		1	1	014	0.800
			With 4 partitions	B	3NH4 045		1	1	014	0.800
			With 2 non-interrupted partitions	B						
LV HRC fuse bases with slewing equipment										
With flat terminals and additional saddle-type terminals (included)										
	000/00	160 1P	With screw fixing for mounting plate	A	3NH7 030		1	1	014	1.000
			With claw fixing for non-perforated busbar	B	3NH7 031		1	1	014	1.000
			With screw fixing for perforated busbar	B	3NH7 032		1	1	014	1.000
	1	250 1P	With screw fixing for mounting plate	A	3NH7 230		1	1	014	2.500
			With claw fixing for non-perforated busbar	B	3NH7 231		1	1	014	2.500
			With screw fixing for perforated busbar	B	3NH7 232		1	1	014	2.500
	3	630 1P	With screw fixing for mounting plate	B	3NH7 330		1	1	014	4.800
			With claw fixing for non-perforated busbar	B	3NH7 331		1	1	014	4.800
			With screw fixing for perforated busbar, can be used as disconnecter	B	3NH7 332		1	1	014	4.800





3NH LV HRC fuse bases

Size	I_n	Version	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
						Unit(s)	Unit(s)		kg	
LV HRC fuse bases with slewing equipment										
	4a	1250	1P With screw fixing for mounting plate	A	3NH7 520		1	1	014	5.200
LV HRC contact covers for LV HRC fuse bases										
	Touch protection for contact pieces									
000/00				▶	3NX3 105		1	2/20	014	0.013
0				▶	3NX3 114		1	2/40	014	0.010
1				▶	3NX3 106		1	2/20	014	0.027
2				▶	3NX3 107		1	2/12	014	0.031
3				▶	3NX3 108		1	2/10	014	0.038
LV HRC partitions for LV HRC fuse bases										
	As intermediate phase and end barrier									
000/00		Type								
0		3NH3 0/3NH4 0		▶	3NX2 023		1	2	014	0.025
1		3NH3 1		▶	3NX2 030		1	2	014	0.050
2		3NH3 2		▶	3NX2 024		1	2	014	0.053
3		3NH3 3		▶	3NX2 025		1	2	014	0.066
3		3NH3 4		▶	3NX2 026		1	2	014	0.101
LV HRC protective covers IP2X										
	For LV HRC fuse bases									
000/00		1P and 3P		B	3NX3 115		1	10	014	0.039
LV HRC covers										
	For plugging into IP2X LV HRC protective covers									
000/00				B	3NX3 116		1	10	014	0.014
LV HRC contact covers for LV HRC bus-mounting bases										
	Touch protection for contact pieces									
000/00										
		Outgoing terminal		▶	3NX3 105		1	2/20	014	0.013
		Incoming terminal		▶	3NX3 113		1	2/50	014	0.006
LV HRC partitions for 3NH3 0 LV HRC bus-mounting bases										
	As intermediate partition									
000/00				C	3NX2 027		1	2	014	0.017
	As end barrier									
000/00				C	3NX2 028		1	2/50	014	0.020

* You can order this quantity or a multiple thereof.

BETA Protecting Low-Voltage Fuse Systems

3NH LV HRC fuse bases

	Size	Version	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg	
						Unit(s)	Unit(s)			
	Non-interrupted partitions									
000/00	For 3NH4 0 LV HRC bus-mounting bases		C	3NX2 031		1	2/30	014	0.050	
	Fuse-base covers, for LV HRC fuse bases, red With inscription "isolating point"									
	000/00 1, 2, 3			C	3NX1 003		1	3	014	0.050
				C	3NX1 004		1	3	014	0.100
	Fuse pullers									
	000 to 4	For LV HRC fuse links								
				▶	3NX1 013		1	1	014	0.280
				▶	3NX1 014		1	1	014	0.480
	Isolating links for LV HRC fuse bases and fuse switch disconnectors With insulated grip lugs									
	000/00	Silver-plated		▶	3NG1 002		1	3/30	014	0.080
	0			C	3NG1 102		1	1/10	014	0.110
	1			▶	3NG1 202		1	1/10	014	0.170
	2			▶	3NG1 302		1	1/5	014	0.240
	3			▶	3NG1 402		1	1/5	014	0.290
	With non-insulated grip lugs									
4	Tinned		B	3NG1 503		1	6	014	0.708	
4a	Nickel-plated		B	3NG1 505		1	1/5	014	0.730	

Overview

SITOR fuses protect power semiconductors from the effects of a short circuit because the super-quick disconnect characteristic is far quicker than that of conventional LV HRC (NH type) fuse systems. They protect expensive devices and system components such as converters with fuses in the input and in the DC link, UPS systems and soft starters for motors.

Panel mounting requirements have given rise to various connection versions and designs.

The fuses with blade contacts comply with IEC 60269-2 and are suitable for installation in LV HRC fuse bases, in LV HRC fuse switch disconnectors and in switch disconnectors with fuses. They also include fuses with slotted blade contacts for screw fixing with 110 mm mounting dimension, whose sizes comply with IEC 60269-4.

Fuses with slotted blade contacts for screw fixing with 80 mm or 110 mm mounting dimension are often screwed directly onto busbars for optimum heat dissipation. Even better heat transmission is provided by the compact fuses with M10 or M12 female thread, which are also mounted directly onto busbars.

Bolt-on links with 80 mm mounting dimension are another panel-mounting version for direct busbar mounting.

The fuses for SITOR thyristor sets, railway rectifiers or electrolysis systems were developed specially for these applications.

To find out which LV HRC fuse bases and safety switching devices can be used with the SITOR fuses, please refer to the chapter "Low-voltage fuse systems".

Fuse characteristic curves, configuration notes and the assignment of SITOR fuses to 3NP and 3KL fuse bases and safety switching devices can be found in catalog ET B1 Add-On Fuse Characteristic Curves and Configuration Notes and on the Internet.

The new type ranges for size 3 have a round rather than square ceramic body. These series are characterized by small I^2t values with low power dissipation and high capability under alternating load. The dimensions and functional dimensions correspond to the current standards IEC 60269-4/EN 60269-4 (VDE 0636-4).

Note:

The ordering data of the fuses are listed in ascending order of the rated voltage in the selection tables.

Benefits

- SITOR fuses have a high varying load factor, which ensures a high level of operational reliability and plant availability - even when subject to constant load change.
- The use of SITOR fuses in LV HRC fuse bases or Siemens switch disconnectors has been tested with regard to heat dissipation and maximum current loading. This makes planning and dimensioning easier and prevents consequential damage.
- Our high standard of quality ensures good compliance with the characteristic curve and accuracy. This ensures long-term protection of devices.

Operational classes







Fuses are categorized according to function and operational classes. SITOR semiconductor fuses, in LV HRC design, are available in the following operational classes:

- aR: for the short-circuit protection of power semiconductors (partial range protection)
- gR: for the protection of power semiconductors (full range protection)
- gS: The gS operational class combines cable and line protection with semiconductor protection (full range protection).

BETA Protecting SITOR Semiconductor Fuses




SITOR, LV HRC design

Selection and ordering data

Size	I_e	U_e	Operational class	Breaking I^2t value	Power loss	Varying load factor	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
A	V AC			A ² s	W	WL				Unit(s)	Unit(s)		kg	
SITOR, LV HRC design														
With slotted blade contacts for M10 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	3	150	500	gR	33000	35	0.85	B	3NC2 423-3C		1	3	047	0.940
		200			64000	40	0.85	B	3NC2 425-3C		1	3	047	0.940
		250			99000	50	0.85	B	3NC2 427-3C		1	3	047	0.940
		300			132000	65	0.85	B	3NC2 428-3C		1	3	047	0.940
		350	aR		249000	60	0.85	B	3NC2 431-3C		1	3	047	0.940
		400			390000	50	0.85	B	3NC2 432-3C		1	3	047	0.940
With slotted blade contacts with two M10 oblong slots, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	3	150	500	gR	33000	35	0.85	D	3NC2 423-0C		1	3	047	0.940
		200			64000	40	0.85	D	3NC2 425-0C		1	3	047	0.940
		250			99000	50	0.85	D	3NC2 427-0C		1	3	047	0.940
		300			132000	65	0.85	D	3NC2 428-0C		1	3	047	0.940
		350	aR		249000	60	0.85	C	3NC2 431-0C		1	3	047	0.940
		400			390000	50	0.85	D	3NC2 432-0C		1	3	047	0.940
With blade contacts for mounting in LV HRC fuse bases or switch disconnectors														
	3	710	600	gR	2460000	65	1.0	D	3NE1 437-1		1	3	047	1.120
		800			3350000	72	1.0	B	3NE1 438-1		1	3	047	1.113
With slotted blade contacts for M10 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	3	150	690	gR	17600	40	0.85	B	3NC8 423-3C		1	3	047	0.940
		200			38400	55	0.85	B	3NC8 425-3C		1	3	047	0.940
		250			70400	72	0.85	B	3NC8 427-3C		1	3	047	0.940
		350			176000	95	0.85	B	3NC8 431-3C		1	3	047	0.940
		500			448000	130	0.85	B	3NC8 434-3C		1	3	047	0.940
		1000	aR		2480000	140	0.9	C	3NC8 444-3C		1	3	047	0.940
With slotted blade contacts for M10 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	1	160	690	gR	18600	30	1.0	B	3NE1 224-3		1	3	047	0.610
		200			51800	28	1.0	B	3NE1 225-3		1	3	047	0.610
		250			80900	35	1.0	B	3NE1 227-3		1	3	047	0.610
		315			168000	42	1.0	B	3NE1 230-3		1	3	047	0.610
With slotted blade contacts for M10 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	2	350	690	gR	177000	44	1.0	B	3NE1 331-3		1	3	047	0.750
		400			224000	54	1.0	B	3NE1 332-3		1	3	047	0.750
		450			276500	62	1.0	B	3NE1 333-3		1	3	047	0.750
		500			398000	65	1.0	B	3NE1 334-3		1	3	047	0.750

BETA Protecting SITOR Semiconductor Fuses





SITOR, LV HRC design

Size	I_e	U_e	Operational class	Breaking I^2t value	Power loss	Varying load factor	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
A	V AC	A ² s	W	WL					Unit(s)	Unit(s)		kg		
SITOR, LV HRC design														
With slotted blade contacts for M12 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	3	560	690	gR	890000	60	1.0	B	3NE1 435-3		1	3	047	1.150
		630			1390000	62	1.0	B	3NE1 436-3		1	3	047	1.150
		670			1640000	65	1.0	B	3NE1 447-3		1	3	047	1.150
		710			1818000	72	1.0	B	3NE1 437-3		1	3	047	1.150
		800			2475000	82	1.0	B	3NE1 438-3		1	3	047	1.150
		850			3640000	76	1.0	B	3NE1 448-3		1	3	047	1.150
SITOR, LV HRC design														
With slotted blade contacts with two oblong slots for M10 screw fixing, or for installation in LV HRC fuse bases or switch disconnectors														
	3	150	690	gR	17600	40	0.85	B	3NC8 423-0C		1	3	047	0.940
		200			38400	55	0.85	B	3NC8 425-0C		1	3	047	0.940
		250			70400	72	0.85	B	3NC8 427-0C		1	3	047	0.940
		350			176000	95	0.85	B	3NC8 431-0C		1	3	047	0.940
		500			448000	130	0.85	B	3NC8 434-0C		1	3	047	0.940
SITOR, LV HRC design														
With M8 bolt-on links, mounting dimension: 80 mm, for screwing onto busbars														
	000	20	690/ 700 ¹⁾	gR	83	7	0.9	B	3NE8 714-1		1	10	047	0.130
		25			140	9	0.9	B	3NE8 715-1		1	10	047	0.130
		32			285	10	0.9	A	3NE8 701-1		1	10	047	0.131
		40			490	12	0.9	A	3NE8 702-1		1	10	047	0.131
		50			815	15	0.9	A	3NE8 717-1		1	10	047	0.132
		63		aR	1550	16	0.95	A	3NE8 718-1		1	10	047	0.132
		80			2700	18	0.9	▶	3NE8 720-1		1	10	047	0.131
		100			4950	19	0.95	▶	3NE8 721-1		1	10	047	0.130
		125			9100	23	0.95	▶	3NE8 722-1		1	10	047	0.131
		160			17000	31	0.9	▶	3NE8 724-1		1	10	047	0.132
		200			30000	36	0.9	▶	3NE8 725-1		1	10	047	0.130
		250			55000	42	0.9	▶	3NE8 727-1		1	10	047	0.133
		315			85500	54	0.85	▶	3NE8 731-1		1	10	047	0.134






¹⁾ DC voltages according to UL.

BETA Protecting SITOR Semiconductor Fuses

SITOR, LV HRC design

Size	I_e	U_e	Operational class	Breaking I^2t value	Power loss	Varying load factor	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
A	V AC	A ² s	W	WL					Unit(s)	Unit(s)		kg		
SITOR, LV HRC design														
With blade contacts for mounting in LV HRC fuse bases or switch disconnectors														
	000	16	690	gS	200	3.0	1.0	▶	3NE1 813-0		1	3	047	0.127
		20			430	3.5	1.0	▶	3NE1 814-0		1	3	047	0.128
		25			780	4.0	1.0	▶	3NE1 815-0		1	3	047	0.127
		35			1700	5.0	1.0	▶	3NE1 803-0		1	3	047	0.128
		40			3000	5.0	1.0	▶	3NE1 802-0		1	3	047	0.127
		50			4400	6.0	1.0	▶	3NE1 817-0		1	3	047	0.128
		63			9000	7.0	1.0	▶	3NE1 818-0		1	3	047	0.128
		80			18000	8.0	1.0	▶	3NE1 820-0		1	3	047	0.129
	00	100	690	gS	33000	10	1.0	▶	3NE1 021-0		1	3	047	0.202
		125			63000	11	1.0	▶	3NE1 022-0		1	3	047	0.202
	1	160	690	gS	60000	24	1.0	▶	3NE1 224-0		1	3	047	0.580
		200			100000	27	1.0	▶	3NE1 225-0		1	3	047	0.582
		250			200000	30	1.0	▶	3NE1 227-0		1	3	047	0.580
		315			310000	38	1.0	A	3NE1 230-0		1	3	047	0.581
2	350	690	gS	430000	42	1.0	▶	3NE1 331-0		1	3	047	0.766	
	400			590000	45	1.0	▶	3NE1 332-0		1	3	047	0.743	
	450			750000	53	1.0	A	3NE1 333-0		1	3	047	0.760	
	500			950000	56	1.0	A	3NE1 334-0		1	3	047	0.766	
	3	560	690	gS	1700000	50	1.0	A	3NE1 435-0		1	3	047	1.111
630				2350000	55	1.0	A	3NE1 436-0		1	3	047	1.114	
710				3400000	60	1.0	A	3NE1 437-0		1	3	047	1.117	
800				5000000	59	1.0	A	3NE1 438-0		1	3	047	1.124	
	00	80	690	gR	5800	10.5	1.0	A	3NE1 020-2		1	3	047	0.203
		100			11000	11.5	1.0	A	3NE1 021-2		1	3	047	0.203
		125			23000	13.5	1.0	A	3NE1 022-2		1	3	047	0.203
	1	160	690	gR	18600	30	1.0	A	3NE1 224-2		1	3	047	0.613
200				51800	28	1.0	A	3NE1 225-2		1	3	047	0.612	
250				80900	35	1.0	A	3NE1 227-2		1	3	047	0.626	
315				168000	42	1.0	A	3NE1 230-2		1	3	047	0.615	
2		350	690	gR	177000	44	1.0	A	3NE1 331-2		1	3	047	0.754
	400			224000	54	1.0	B	3NE1 332-2		1	3	047	0.760	
	450			276500	62	1.0	A	3NE1 333-2		1	3	047	0.768	
	500			398000	65	1.0	A	3NE1 334-2		1	3	047	0.768	
	3	560	690	gR	890000	60	1.0	A	3NE1 435-2		1	3	047	1.149
630				1390000	62	1.0	A	3NE1 436-2		1	3	047	1.179	
670				1640000	65	1.0	A	3NE1 447-2		1	3	047	1.170	
710				1818000	72	1.0	B	3NE1 437-2		1	3	047	1.153	
800				2475000	82	1.0	A	3NE1 438-2		1	3	047	1.184	
850				3640000	76	1.0	A	3NE1 448-2		1	3	047	1.207	
														







* You can order this quantity or a multiple thereof.








Size	I_e	U_e	Operational class	Breaking I^2t value	Power loss	Varying load factor	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
A	V AC	A ² s	W	WL					Unit(s)	Unit(s)		kg		
SITOR, LV HRC design														
With blade contacts for mounting in LV HRC fuse bases or fuse switch disconnectors (contd.)														
	00	25	690	gR	180	7	0.95	▶	3NE8 015-1		1	3	047	0.205
		35			400	9	0.95	▶	3NE8 003-1		1	3	047	0.204
		50			700	14	0.95	▶	3NE8 017-1		1	3	047	0.203
		63			1400	16	0.95	▶	3NE8 018-1		1	3	047	0.205
		80		aR	2400	19	0.95	▶	3NE8 020-1		1	3	047	0.203
		100			4200	22	0.95	▶	3NE8 021-1		1	3	047	0.205
		125			6500	28	0.95	▶	3NE8 022-1		1	3	047	0.213
	160			13000	38	0.95	▶	3NE8 024-1		1	3	047	0.207	
With slotted blade contacts for M12 screw fixing, mounting dimension: 80 mm														
	3	630	690	aR	244000	120	0.85	C	3NC3 236-1		1	3	047	0.785
		710			346000	130	0.85	D	3NC3 237-1		1	3	047	0.785
		800			498000	135	0.9	C	3NC3 238-1		1	3	047	0.785
		900			677000	145	0.9	D	3NC3 240-1		1	3	047	0.785
		1000			975000	155	0.95	C	3NC3 241-1		1	3	047	0.785
		1100			1382000	165	0.95	D	3NC3 242-1		1	3	047	0.785
		1250			1990000	175	0.95	C	3NC3 243-1		1	3	047	0.785
		1400	500		2100000	200	0.95	D	3NC3 244-1		1	3	047	0.785
		1600			2860000	240	0.9	D	3NC3 245-1		1	3	047	0.785
		With M12 female thread at both ends for direct busbar mounting												
3		630	690	aR	244000	125	0.9	C	3NC3 236-6		1	3	047	0.765
		710			346000	130	0.9	D	3NC3 237-6		1	3	047	0.765
		800			498000	135	0.95	C	3NC3 238-6		1	3	047	0.765
		900			677000	140	0.95	D	3NC3 240-6		1	3	047	0.765
		1000			975000	145	1.0	C	3NC3 241-6		1	3	047	0.765
		1100			1382000	150	1.0	D	3NC3 242-6		1	3	047	0.765
		1250			1990000	155	1.0	C	3NC3 243-6		1	3	047	0.765
		1400	500		2100000	175	1.0	C	3NC3 244-6		1	3	047	0.765
		1600			2860000	195	0.95	C	3NC3 245-6		1	3	047	0.765
With slotted blade contacts for M10 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	2	250	800	aR	29700	105	0.85	▶	3NE4 327-0B		1	3	047	0.753
		315			60700	120	0.85	▶	3NE4 330-0B		1	3	047	0.760
		450			191000	140	0.85	▶	3NE4 333-0B		1	3	047	0.760
		500			276000	155	0.85	▶	3NE4 334-0B		1	3	047	0.754
		710			923000	155	0.85	▶	3NE4 337		1	3	047	0.771
With blade contacts for mounting in LV HRC fuse bases or switch disconnectors														
	0	32	1000	gR	280	12	0.9	▶	3NE4 101		1	3	047	0.278
		40			500	13	0.9	▶	3NE4 102		1	3	047	0.277
		50			800	16	0.9	▶	3NE4 117		1	3	047	0.276
		63		aR	1500	20	0.9	▶	3NE4 118		1	3	047	0.279
		80			3000	22	0.9	▶	3NE4 120		1	3	047	0.276
		100			6000	24	0.9	▶	3NE4 121		1	3	047	0.278
		125			14000	30	0.9	▶	3NE4 122		1	3	047	0.279
		160			29000	35	0.9	▶	3NE4 124		1	3	047	0.279

* You can order this quantity or a multiple thereof.

BETA Protecting SITOR Semiconductor Fuses

SITOR, LV HRC design








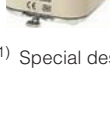
Size	I_e	U_e	Operational class	Breaking I^2t value	Power loss	Varying load factor	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
A	V AC			A ² s	W	WL				Unit(s)	Unit(s)		kg	
SITOR, LV HRC design														
With slotted blade contacts for M10 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	1	100	1000	aR	4800	28	0.95	A	3NE3 221		1	3	047	0.580
		125			7200	36	0.95	A	3NE3 222		1	3	047	0.568
		160			13000	42	0.95	▶	3NE3 224		1	3	047	0.573
		200			30000	42	0.95	▶	3NE3 225		1	3	047	0.570
		250			48000	50	0.95	▶	3NE3 227		1	3	047	0.580
		315			80000	65	0.95	▶	3NE3 230-0B		1	3	047	0.585
		350			100000	75	0.9	A	3NE3 231		1	3	047	0.590
		400			135000	85	0.9	A	3NE3 232-0B		1	3	047	0.576
		450			175000	95	0.9	▶	3NE3 233		1	3	047	0.720
		2	400	1000	aR	135000	85	1.0	A	3NE3 332-0B		1	3	047
		450			175000	90	1.0	A	3NE3 333		1	3	047	0.748
		500			260000	90	1.0	▶	3NE3 334-0B		1	3	047	0.753
		560			360000	95	1.0	▶	3NE3 335		1	3	047	0.756
		630			600000	100	1.0	▶	3NE3 336		1	3	047	0.760
		710	900	aR	800000	105	1.0	▶	3NE3 337-8		1	3	047	0.762
		800	800		850000	130	0.95	▶	3NE3 338-8		1	3	047	0.764
		900	690		920000	165	0.95	▶	3NE3 340-8		1	3	047	0.753
With slotted blade contacts for M10 screw fixing, mounting dimension: 130 mm														
		3	100	1000	aR	13500	25	1.0	D	3NE3 421-0C		1	3	047
		224			54000	85	1.0	B	3NE3 626-0C		1	3	047	1.120
		315			218000	80	1.0	B	3NE3 430-0C		1	3	047	1.120
		400			364000	110	1.0	B	3NE3 432-0C		1	3	047	1.120
		450			488000	110	1.0	B	3NE3 635-0C		1	3	047	1.120
		500			870000	95	1.0	B	3NE3 434-0C		1	3	047	1.120
		630			1280000	132	1.0	D	3NE3 636-0C		1	3	047	1.120
	710			1950000	145	1.0	D	3NE3 637-0C		1	3	047	1.120	
With M10 female thread at both ends for direct mounting on busbars														
	3	450	1000	aR	488000	110	1.0	D	3NE3 635-6		1	3	047	1.184
With slotted blade contacts for M12 screw fixing, mounting dimension: 140 mm														
	3	710	1000	aR	1950000	145	1.0	D	3NE3 637-1C		1	3	047	1.120
With slotted blade contacts for M12 screw fixing, mounting dimension: 110 mm, or for installation in LV HRC fuse bases or fuse switch disconnectors														
	3	630	1000	aR	418000	145	0.85	C	3NC3 336-1		1	3	047	1.020
		710			569000	150	0.85	D	3NC3 337-1		1	3	047	1.020
		800			819000	155	0.85	C	3NC3 338-1		1	3	047	1.020
		900			1160000	165	0.9	D	3NC3 340-1		1	3	047	1.020
		1000			1670000	170	0.9	C	3NC3 341-1		1	3	047	1.020
		1100	800		1910000	185	0.9	D	3NC3 342-1		1	3	047	1.020
		1250			2600000	210	0.9	D	3NC3 343-1		1	3	047	1.020

Size	I_e	U_e	Operational class	Breaking I^2t value	Power loss	Varying load factor	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
A	V AC	A ² s	W	WL					Unit(s)	Unit(s)		kg		
SITOR, LV HRC design														
With M12 female thread at both ends for direct busbar mounting														
	3	630	1000	aR	418000	130	0.90	C	3NC3 336-6		1	3	047	0.980
		710			569000	140	0.90	D	3NC3 337-6		1	3	047	0.980
		800			819000	150	0.90	C	3NC3 338-6		1	3	047	0.980
		900			1160000	160	0.95	D	3NC3 340-6		1	3	047	0.980
		1000			1670000	165	0.95	C	3NC3 341-6		1	3	047	0.980
		1100	800		1910000	175	0.95	D	3NC3 342-6		1	3	047	0.980
		1250			2600000	185	0.95	C	3NC3 343-6		1	3	047	0.980
With slotted blade contacts for M12 screw fixing, mounting dimension: 110 mm														
	3	315	1250	aR	72500	80	0.95	B	3NC3 430-1		1	3	047	0.950
		400			163000	95	0.95	B	3NC3 432-1		1	3	047	0.950
		500			290000	115	0.90	B	3NC3 434-1		1	3	047	0.950
		630			650000	120	0.95	B	3NC3 436-1		1	3	047	0.950
		800	1100		985000	145	0.90	B	3NC3 438-1		1	3	047	1.150
With M12 female thread at both ends for direct busbar mounting														
	3	315	1250	aR	72500	80	0.95	B	3NC3 430-6		1	3	047	0.910
		400			163000	95	0.95	B	3NC3 432-6		1	3	047	0.910
		500			290000	115	0.90	B	3NC3 434-6		1	3	047	0.910
		630			650000	120	0.95	B	3NC3 436-6		1	3	047	0.910
		800	1100		985000	145	0.95	B	3NC3 438-6		1	3	047	1.110
With slotted blade contacts for M10 screw fixing, mounting dimension: 210 mm														
	3	160	1500	aR	54000	56	1.0	D	3NE5 424-0C		1	2	047	1.860
		224			138000	80	1.0	C	3NE5 426-0C		1	2	047	1.860
		315			311000	115	1.0	D	3NE5 430-0C		1	2	047	1.860
		350			428000	135	1.0	D	3NE5 431-0C		1	2	047	1.860
		450			870000	145	0.95	D	3NE5 433-0C		1	2	047	1.860
		450			870000	145	0.95	D	3NE5 433-1C		1	2	047	1.860
With slotted blade contacts for M10 screw fixing, mounting dimension: 170 mm														
	3	250	1500	aR	84000	130	1.0	D	3NE5 627-0C		1	3	047	1.520
		450			590000	160	1.0	B	3NE5 633-0C		1	3	047	1.520
		600			1950000	145	1.0	D	3NE5 643-0C		1	3	047	1.520
With slotted blade contacts for M10 screw fixing, mounting dimension: 210 mm														
	3	200	2000	aR	138000	75	1.0	D	3NE7 425-0C		1	2	047	1.860
		250			218000	110	1.0	D	3NE7 427-0C		1	2	047	1.860
		350			555000	120	1.0	D	3NE7 431-0C		1	2	047	1.860
		400			870000	150	1.0	D	3NE7 432-0C		1	2	047	1.860
		450			960000	160	1.0	D	3NE7 633-0C		1	2	047	1.860
		630			1950000	220	1.0	D	3NE7 636-0C		1	2	047	1.860
With slotted blade contacts for M12 screw fixing, mounting dimension: 210 mm														
	3	450	2000	aR	960000	160	1.0	C	3NE7 633-1C		1	2	047	1.860
		525			1120000	210	1.0	D	3NE7 648-1C		1	2	047	1.860
		630			1950000	220	1.0	C	3NE7 636-1C		1	1	047	1.860
		710			3110000	275	1.0	B	3NE7 637-1C		1	2	047	1.860

* You can order this quantity or a multiple thereof.

BETA Protecting SITOR Semiconductor Fuses

SITOR, LV HRC design

Size	I_e	U_e	Operational class	Breaking I^2t value	Power loss	Varying load factor	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
A	V AC			A ² s	W	WL				Unit(s)	Unit(s)		kg	
SITOR, LV HRC design														
With slotted blade contacts for M12 screw fixing, mounting dimension: 260 mm														
	3	400	2500	aR	620,000	250	1.0	D	3NE9 632-1C		1	1	047	2.350
		500			1,270,000	235	1.0	D	3NE9 634-1C		1	1	047	2.350
		630			2,800,000	275	1.0	D	3NE9 636-1C		1	1	047	2.350
Fuses for special applications														
For screwing onto water-cooled busbars, for rectifiers in electrolysis systems														
	-- ¹⁾	350	800	aR	260,000	80	0.9	X	3NC5 531		1	3	047	0.671
		600	1000		888,000	150	0.9	D	3NC5 840		1	3	047	1.408
		630	800		888,000	145	0.9	C	3NC5 841		1	3	047	1.185
		800	1000		1,728,000	170	0.9	D	3NC5 838		1	3	047	1.196
		710	900		620,000	150	0.9	D	3NE6 437-7		1	3	047	1.168
		1250	600		2,480,000	210	0.9	D	3NE9 450-7		1	3	047	1.245
With M10 female thread at both ends for direct busbar mounting, for air-cooled rectifiers in electrolysis systems														
	-- ¹⁾	710	900	gR	620,000	150	0.9	D	3NE6 437		1	3	047	1.093
		850	600		2,480,000	85	1.0	D	3NE9 440-6		1	3	047	1.082
		900	900	aR	1,920,000	170	0.9	C	3NE6 444		1	3	047	1.175
		1250	600		2,480,000	210	0.9	D	3NE9 450		1	3	047	1.114
Fuse with installation holder for SITOR 6QG10 thyristor sets														
	--	200	1000	aR	44,000	50	0.85	D	3NE3 525-5		1	2	047	0.744
		450			395,000	90	0.85	D	3NE3 535-5		1	2	047	0.746
Fuse with installation holder for SITOR 6QG11 thyristor sets														
	-- ¹⁾	50	1000	gR	1,100	20	0.85	C	3NE4 117-5		1	2	047	0.303
		100		aR	7,400	35	0.85	B	3NE4 121-5		1	2	047	0.309
		170		aR	60,500	43	0.85	B	3NE4 146-5		1	2	047	0.311
Fuse female thread at both ends for SITOR 6QG12 thyristor sets														
	-- ¹⁾	250	800	aR	29,700	105	0.85	▶	3NE4 327-6B		1	3	047	0.692
		315			60,700	120	0.85	▶	3NE4 330-6B		1	3	047	0.688
		450			191,000	140	0.85	▶	3NE4 333-6B		1	3	047	0.690
		500			276,000	155	0.85	▶	3NE4 334-6B		1	3	047	0.688
		710			923,000	155	0.95	▶	3NE4 337-6		1	3	047	0.689
With M12 female thread at both ends for direct busbar mounting for railway supply rectifiers														
	-- ¹⁾	250	680	aR	635,000	25	0.9	D	3NC7 327-2		1	3	047	0.725
		350			1,430,000	32	0.9	D	3NC7 331-2		1	3	047	0.740

¹⁾ Special design.

BETA Protecting SITOR Semiconductor Fuses

SITOR, cylindrical fuse design

Overview

SITOR cylindrical fuses protect power semiconductors against the effects of short circuits because the super quick disconnect characteristic is far quicker than that of conventional fuses. They protect expensive devices and system components such as solid-state contactors, electronic relays (solid state), converters with fuses in the input and in the DC link, UPS systems and soft starters for motors up to 100 A.

The cylindrical design is approved for industrial applications. The cylindrical fuse links comply with IEC 60269.

Cylindrical fuse holders also comply with IEC 60269 and UL 512. The cylindrical fuse holders for 10 x 38 mm and 14 x 51 mm have been tested and approved as fuse switch disconnectors and the cylindrical fuse holders for 22 x 58 mm as fuse disconnectors according to the switching device standard IEC 60947-3. The utilization category and the tested current and voltage values are specified in the Table "Technical Specifications".


The cylindrical fuse holders have been specially developed for the application of SITOR fuse links with regard to heat tolerance and heat dissipation and are therefore not recommended for standard applications.

Cylindrical fuse bases do not offer the same comprehensive touch protection as the fuse holders, but have better heat dissipation. The single-pole cylindrical fuse bases for 14 x 51 mm and 22 x 58 mm allow modular expansion to multipole bases.

Benefits

- Cylindrical fuses have an extremely compact design and a correspondingly small footprint
- The cylindrical fuses have IEC and UL approval and are suitable for universal use worldwide.
- The use of SITOR cylindrical fuses in the cylindrical fuse holders and bases has been tested with regard to heat dissipation and maximum current loading. This makes planning and dimensioning easier and prevents consequential damage.
- The use of fuse holders as switch disconnectors expands the area of application of these devices and increases operating safety.


Selection and ordering data

Size	I_e	U_e	Breaking I^2t value	Power loss	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.			
mm x mm	A	V AC/ V DC	A ² s	W				Unit(s)	Unit(s)		kg			
Cylindrical fuse links, operational class aR														
	10 x 38	3	600/400	8	1.2	A	3NC1 003	1	10	047	0.009			
				20	1.5	▶	3NC1 006	1	10	047	0.009			
				30	2	B	3NC1 008	1	10	047	0.009			
				60	2.5	▶	3NC1 010	1	10	047	0.009			
				110	3	B	3NC1 012	1	10	047	0.009			
				150	3.5	▶	3NC1 016	1	10	047	0.009			
				200	4.8	▶	3NC1 020	1	10	047	0.009			
				250	6	▶	3NC1 025	1	10	047	0.009			
				500	7.5	▶	3NC1 032	1	10	047	0.009			
				14 x 51	1	660/700 ¹⁾	1.2	5	B	3NC1 401	1	10	047	0.020
							10	3	▶	3NC1 402	1	10	047	0.020
							15	2.5	B	3NC1 403	1	10	047	0.020
25	3	▶	3NC1 404				1	10	047	0.020				
690/700 ¹⁾	9	1.5	B				3NC1 405	1	10	047	0.020			
	12	1.5	▶				3NC1 406	1	10	047	0.020			
20	4	▶	3NC1 410				1	10	047	0.020				
75	5.5	▶	3NC1 415				1	10	047	0.020				
120	6	▶	3NC1 420				1	10	047	0.020				
250	7	▶	3NC1 425				1	10	047	0.020				
300	9	B	3NC1 430				1	10	047	0.020				
700	7.6	▶	3NC1 432				1	10	047	0.021				
900	8	▶	3NC1 440				1	10	047	0.021				
1800	9	▶	3NC1 450				1	10	047	0.021				
22 x 58	100	690/700 ¹⁾	220				4.6	B	3NC2 220	1	5	047	0.056	
			300				5.6	B	3NC2 225	1	5	047	0.056	
			450				7	B	3NC2 232	1	5	047	0.056	
			700				8.5	B	3NC2 240	1	5	047	0.056	
			1350	9.5	▶	3NC2 250	1	5	047	0.056				
			600/700 ¹⁾	2600	11	▶	3NC2 263	1	5	047	0.056			
				5500	13.5	▶	3NC2 280	1	5	047	0.057			
				8000	16	▶	3NC2 200	1	5	047	0.057			
			1500	9.5	B	3NC2 250-5	1	5	047	0.056				
			3000	11	B	3NC2 263-5	1	5	047	0.056				
			6000	13.5	B	3NC2 280-5	1	5	047	0.057				
			8500	16	B	3NC2 200-5	1	5	047	0.057				


¹⁾ DC voltages according to UL.


BETA Protecting SITOR Semiconductor Fuses


SITOR, cylindrical fuse design

Size	I_e	U_e	Breaking I^2t value	Power loss	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
mm × mm	A	V AC/ V DC	A ² s	W				Unit(s)	Unit(s)		kg
Cylindrical fuse links with striking pin, operational class aR											
	14 × 51	10	690/700 ¹⁾	90	4	B	3NC1 410-5	1	10	047	0.020
		15		100	5.5	B	3NC1 415-5	1	10	047	0.020
		20		500	6	B	3NC1 420-5	1	10	047	0.020
		25		400	7	C	3NC1 425-5	1	10	047	0.020
		30		500	9	C	3NC1 430-5	1	10	047	0.020
		32		600	7.6	B	3NC1 432-5	1	10	047	0.020
		40		900	8	B	3NC1 440-5	1	10	047	0.020
		50		2000	9	B	3NC1 450-5	1	10	047	0.020
	22 × 58	20	690/700 ¹⁾	240	5	C	3NC2 220-5	1	10	047	0.056
		25		350	6	C	3NC2 225-5	1	5	047	0.056
	32		500	8	B	3NC2 232-5	1	5	047	0.056	
	40		800	9	B	3NC2 240-5	1	5	047	0.056	


¹⁾ DC voltages according to UL.

Size	Version	Rated voltage	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
mm × mm		V AC				Unit(s)	Unit(s)		kg
Cylindrical fuse holders Can be used as fuse switch disconnectors/discon. ¹⁾									
	10 × 38	1P	690	▶	3NC1 091	1	12	047	0.065
		2P		▶	3NC1 092	1	6	047	0.131
		3P		▶	3NC1 093	1	4	047	0.197
	14 × 51	1P		▶	3NC1 491	1	6	047	0.125
		2P		▶	3NC1 492	1	3	047	0.233
		3P		B	3NC1 493	1	2	047	0.350
	22 × 58	1P		▶	3NC2 291	1	1	047	0.193
		2P		▶	3NC2 292	1	3	047	0.381
		3P		B	3NC2 293	1	2	047	0.584

Cylindrical fuse holders Can be used as fuse switch disconnectors, with signaling switches for fuse links with striking pin ¹⁾									
	14 × 51	1P	690	B	3NC1 491-5	1	6	047	0.125
	22 × 58	1P		B	3NC2 291-5	1	6	047	0.193

Cylindrical fuse bases									
	10 × 38	1P	600	B	3NC1 038-1	1	10	047	0.042
		2P		C	3NC1 038-2	1	8	047	0.077
		3P		B	3NC1 038-3	1	6	047	0.113
	14 × 51	1P	690	B	3NC1 451-1	1	3	047	0.120
	22 × 58	1P		B	3NC2 258-1	1	3	047	0.238

Cylindrical fuse clips									
	For fuses 10 × 38			C	3NC1 038	1	20	047	0.002
	For fuses 14 × 51			B	3NC1 451	1	20	047	0.005

Fuse tongs									
	10 × 38, 14 × 51, 22 × 58			B	3NC1 000	1	1	047	0.069

¹⁾ Please observe the utilization category and current / voltage values specified in the "Technical specifications" table.

Overview

SILIZED is the brand name for NEOZED fuses (D0 fuses) and DIAZED fuses (D fuses) with super quick characteristic for semiconductor protection. The fuses are used together with fuse bases, fuse screw caps and accessories of the standard fuse system.

SILIZED fuses protect power semiconductors from the effects of short circuits because the super quick disconnect characteristic is far quicker than that of conventional fuses. They protect expensive devices and system components such as solid-state contactors, static relays, converters with fuses in the input and in the DC link, UPS systems and soft starters for motors up to 100 A.

If using fuse bases and fuse screw caps made of molded plastic, always take into account the maximum permissible values of power loss due to the high power dissipation (power loss) of the SILIZED fuses. If using these components, the following maximum permissible power losses apply:

- NEOZED D02: 5.5 W
- DIAZED DII: 4.5 W
- DIAZED DIII: 7.0 W



For this reason, sometimes a thermal permanent load of only 50 % is possible.


The DIAZED screw adapter DII for 25 A is used for the 30 A fuse link.

Benefits

- SILIZED fuses have an extremely compact design. This means they have a very small footprint - particularly the NEOZED version
- The rugged and well-known DIAZED design complies with IEC 60269-3. It is globally renowned and can be used in many countries.
- A huge range of fuse bases and accessories are available for the NEOZED and DIAZED versions of the SILIZED fuses. This increases the application options in many devices.

Selection and ordering data

	Size	I_e	U_e	Breaking I^2t value	Power loss	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	A		V AC/ V DC	A ² s	W				Unit(s)	Unit(s)		kg
SILIZED fuse links, NEOZED design operational class gR												
	D01	10	400/250	73	6.9	B	5SE1 310		1	10	016	0.006
		16		120	6.2	B	5SE1 316		1	10	016	0.007
	D02	20		190	8.1	B	5SE1 320		1	10	016	0.012
		25		215	8.2	B	5SE1 325		1	10	016	0.012
		35		470	16.7	B	5SE1 335		1	10	016	0.012
		50		1960	12.0	B	5SE1 350		1	10	016	0.013
		63		4230	15.5	B	5SE1 363		1	10	016	0.014

	Size	I_e	U_e	Breaking I^2t value	Power loss	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	A		V AC/ V DC	A ² s	W				Unit(s)	Unit(s)		kg
SILIZED fuse links, DIAZED design operational class gR												
	DII	16	500/500	60	12.1	A	5SD4 20		1	5	016	0.028
		20		139	12.3	A	5SD4 30		1	5	016	0.029
		25		205	12.5	A	5SD4 40		1	5	016	0.031
		30		310	13.5	A	5SD4 80		1	5	016	0.031
		35		539	14.8	A	5SD4 50		1	5	016	0.050
DIII	50	1250	18.5	A	5SD4 60	1	5	016	0.051			
	63	1890	28	A	5SD4 70	1	5	016	0.054			
	DIV	80	4200	34.3	B	5SD5 10	1	3	016	0.110		
		100	8450	41.5	B	5SD5 20	1	3	016	0.110		

* You can order this quantity or a multiple thereof.

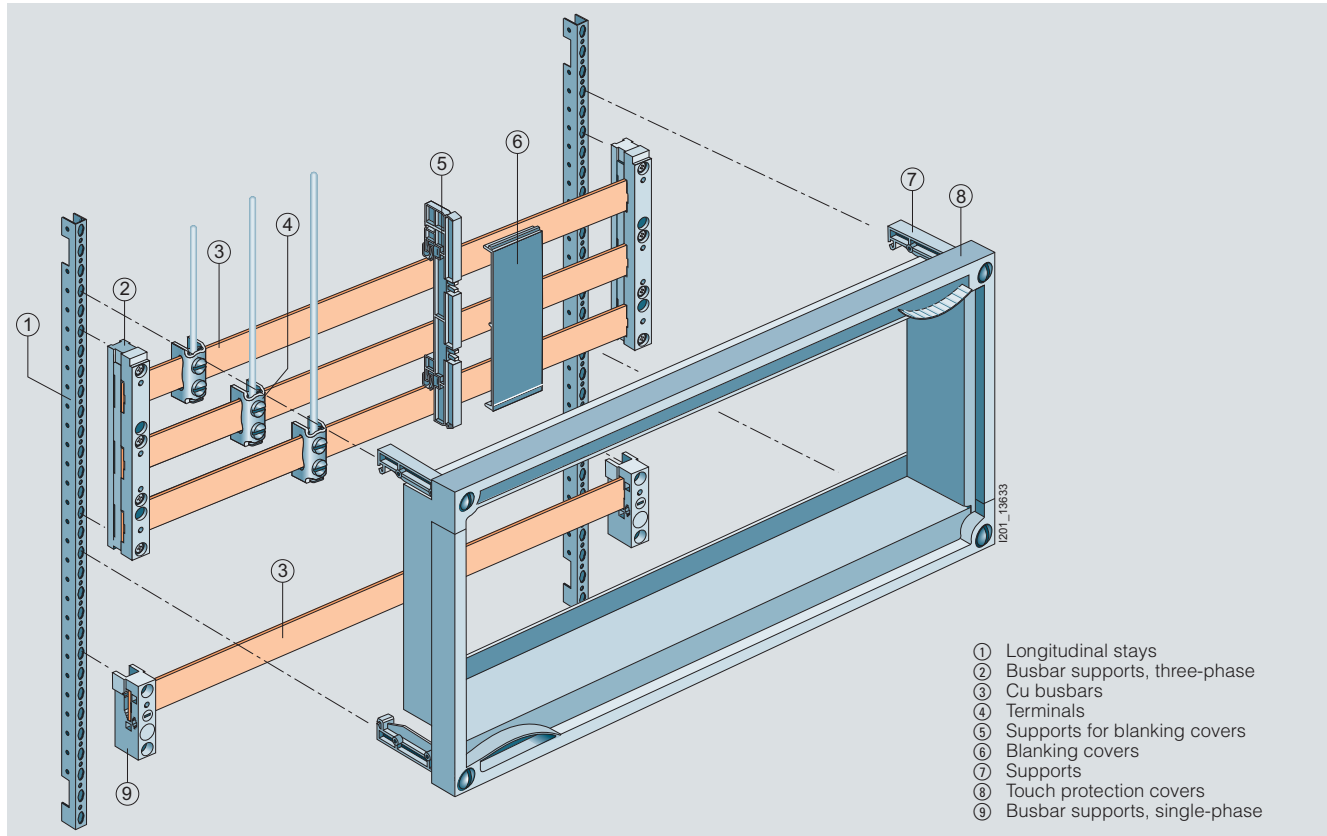
BETA Protecting SR60 Busbar Systems

Distribution board components

Overview

The use of busbar systems with their versatile rail-adaptable connection, switching and installation devices is an ideal and cost-effective electrotechnical enhancement of modern distribu-

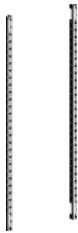




tion boards due to their small footprint, compact design and quick assembly contacts. Mounting is implemented on longitudinal stays. The busbar spacing is 60 mm.



Benefits

- Only a few distribution board components are required to ensure the integration of busbars in the distribution board. This saves time and space.
- The touch protection cover is sealable as standard and is quick and easy to attach to the supports thanks to the use of quick-release locking technology.




Selection and ordering data



		Dimensions	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
		mm				Unit(s)	Unit(s)		kg	
	Longitudinal stays									
	For mounting the assembly kits in unequipped distribution boards, two longitudinal stays are required 1 set = 2 stays									
	Height									
	600	250	A	8GK4 851-4KK00		1 set	1 set	039	1.000	
	750	250	A	8GK4 851-5KK00		1 set	1 set	039	1.300	
	900	250	A	8GK4 851-6KK00		1 set	1 set	039	1.500	
	1050	250	A	8GK4 851-7KK00		1 set	1 set	039	1.800	
	1200	250	A	8GK4 851-8KK00		1 set	1 set	039	2.080	
	1350	250	A	8GK4 852-8KK00		1 set	1 set	039	2.340	
	Busbar supports									
	For busbars with a thickness of 5 or 10 mm and a busbar height of 12, 15, 20, 25 or 30 mm, for mounting on longitudinal stays, with fixing screws three-phase		A	8GK9 711-0KK03		1	1	039	1.100	
	N/PE busbar supports									
	For flat copper profiles For 5/10 mm busbars		A	5SH3 540		1	1	016	0.059	
	Cu busbars									
	Cu cross-section	Length								
	12 × 5 mm, current intensity 250 A	250	250	A	8GK9 731-0KK10		1	5	039	0.100
		500	250	A	8GK9 731-0KK20		1	5	039	0.330
		750	250	A	8GK9 731-0KK30		1	5	039	0.500
		1000	250	A	8GK9 731-0KK40		1	5	039	0.660
		1250	250	A	8GK9 731-0KK50		1	5	039	0.830
	20 × 5 mm, current intensity 320 A	250	250	A	8GK9 733-0KK10		1	5	039	0.290
		500	250	A	8GK9 733-0KK20		1	5	039	0.570
		750	250	A	8GK9 733-0KK30		1	5	039	0.850
		1000	250	A	8GK9 733-0KK40		1	5	039	1.120
		1250	250	A	8GK9 733-0KK50		1	5	039	1.470
	30 × 5 mm, current intensity 450 A	250	250	A	8GK9 735-0KK10		1	5	039	0.400
		500	250	A	8GK9 735-0KK20		1	5	039	0.750
		750	250	A	8GK9 735-0KK30		1	5	039	1.460
		1000	250	A	8GK9 735-0KK40		1	5	039	2.170
		1250	250	A	8GK9 735-0KK50		1	5	039	2.880
	30 × 10 mm, current intensity 630 A	250	250	A	8GK9 736-0KK10		1	5	039	0.750
		500	250	A	8GK9 736-0KK20		1	5	039	1.720
		750	250	A	8GK9 736-0KK30		1	5	039	2.600
		1000	250	A	8GK9 736-0KK40		1	5	039	3.400
		1250	250	A	8GK9 736-0KK50		1	5	039	4.600
		Cover profiles for busbars								
		Busbar thickness 5 mm								
Width 12 mm		1000	A	8US19 22-2CA00		1	10	143	0.200	
Width 15, 20, 25, 30 mm		1000	A	8US19 22-2AA00		1	10	143	0.156	
Busbar thickness 10 mm										
Width 12, 15, 20, 25, 30 mm	1000	A	8US19 22-2BA00		1	10	143	0.105		

* You can order this quantity or a multiple thereof.

BETA Protecting SR60 Busbar Systems







Distribution board components

	Conductor cross-section mm ²	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg
					Unit(s)	Unit(s)		
 <p>Infeed connection module, three-phase For 5/10 mm busbars with cover With screwless terminals, 200 mm long, 20 mm wide</p>	1.5 ... 16	A	5SH3 538		1	5	016	0.181
	6 ... 50	A	8US19 21-1BA00		1	1	143	0.397
	35 ... 120	A	8US19 21-1AA00		1	1	143	0.607
 <p>With screw terminals 200 mm long, 54 mm wide 200 mm long, 81 mm wide</p>	150 ... 300	C	5SH3 535		1	1	016	1.657
 <p>(pictured without a cover, but supplied complete with cover)</p>								

Dimensions	Conductor cross-section mm ²	Tightening torque Nm	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx. kg	
						Unit(s)	Unit(s)			
Terminals for circular conductors										
 <p>8US19 21-2AA00</p>	Busbar thickness 5 mm	1.5 ... 16	▶	8US19 21-2AA00		100	100	143	0.100	
		4 ... 35	▶	8US19 21-2AB00		100	50	143	4.600	
		16 ... 70	▶	8US19 21-2AD00		1	50	143	0.072	
		16 ... 120	▶	8US19 21-2AC00		1	50	143	0.107	
	Busbar thickness 10 mm	1.5 ... 16	▶	8US19 21-2BA00		1	100	143	0.020	
	4 ... 35	▶	8US19 21-2BB00		1	50	143	0.040		
	16 ... 70	▶	8US19 21-2BD00		1	50	143	0.070		
	16 ... 120	▶	8US19 21-2BC00		1	50	143	0.100		
Terminals for one busbar										
	Busbar thickness 5 mm Width 12 mm	1.5 ... 6	1.4	A	8JH4 102		1	10	046	0.010
		16 ... 35	3.0	A	8JH4 104		1	10	046	0.030
		16 ... 70	6.0	A	8JH4 105		1	10	046	0.030
		16 ... 95	10.0	A	8JH4 106		1	10	046	0.070
		25 ... 120	10.0	A	8JK3 061		1	10	046	0.090

* You can order this quantity or a multiple thereof.

Distribution board components

	Dimensions	Conductor cross-section	Tightening torque	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
		mm ²	Nm				Unit(s)	Unit(s)		kg
	Extension terminals									
	For busbars 12 mm × 5 mm (busbar not included in scope of supply) (1 set = 2 units)		6.0	A	8JK3 201		1 set	10 sets	046	0.100
	Terminals for circular conductors									
	20 mm × 5 mm to 30 mm × 10 mm		150 ... 240	A	8US19 41-2BB00		1	6	143	0.307
	Connection modules									
	For 32 mm cover level with box terminal 6 ... 70 mm ²			A	3NP1 933-1BC00		1	1	143	0.145
	Dimensions (H × W)			DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	mm × mm						Unit(s)	Unit(s)		kg
	Assembly kits									
	Comprising touch protection cover and 4 supports									
	Cutout width									
	For three-phase busbar systems									
	216 mm	300 × 250		A	8GK4 801-2KK13		1	1	039	0.500
	466 mm	300 × 500		A	8GK4 801-2KK23		1	1	039	0.700
	716 mm	300 × 750		A	8GK4 801-2KK33		1	1	039	0.900
	216 mm	450 × 250		A	8GK4 801-3KK13		1	1	039	0.650
	466 mm	450 × 500		A	8GK4 801-3KK23		1	1	039	0.900
	716 mm	450 × 750		A	8GK4 801-3KK33		1	1	039	1.150
	Support for blanking cover									
	For blanking cover mounting on busbar (2 units required for each section of blanking cover)			B	5SH3 536		1	4/160	016	0.040
	Blanking cover									
	Mounting on 5SH3 536 support for blanking covers									
	Length 1000 mm	Height 202 mm		A	5SH3 537		1	2	016	0.075

More information

Number of built-in components that can be mounted

Height	Width	Cut-out width	D02/63 A 5SH5 241	D02/63 A 5SH5 242	D02/63 A 5SH5 243	DII/25 A 5SH2 042	DIII/63 A 5SH2 242	5SG7 230 bus- mounting switch disconnectors D02
mm	mm	mm	(27 mm wide)	(36 mm wide)	(54 mm wide)	(42 mm wide)	(57 mm wide)	(26.8 mm wide)
300	250	216	8	6	4	5	3	8
	500	466	17	12	8	11	8	17
	750	716	26	19	13	17	12	26
450	250	216	8	6	4	5	3	8
	500	466	17	12	8	11	8	17
	750	715	26	19	13	17	12	26

More information about the SR60 distribution board components of the busbar system can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs.

* You can order this quantity or a multiple thereof.

BETA Protecting SR60 Busbar Systems

Built-in components

Overview

Rail-adaptable built-in components, such as NEOZED and DIAZED bus-mounting bases, adapters for modular installation devices, LV HRC fuse switch disconnectors and NEOZED bus-mounting fuse switch disconnectors are made of glass-fiber reinforced, thermoplastic polyester. The material ensures required mechanical, chemical and electrical properties.

Efficient power distribution up to 630 A.

There are many ways for users to mount the SR60 busbar system:

1. Mounting in the distribution board

The busbar supports are mounted on longitudinal stays. Once the built-in components have been mounted and connected, the touch protection cover (front cover) protects against accidental contact with live parts.

2. Mounting in control cabinets

The demand for comprehensive touch protection has generated new solutions: Built-in components, such as bus-mounting fuse bases, have integrated rear reach-through guard, thus enabling the configuration of cost-effective overall solutions.

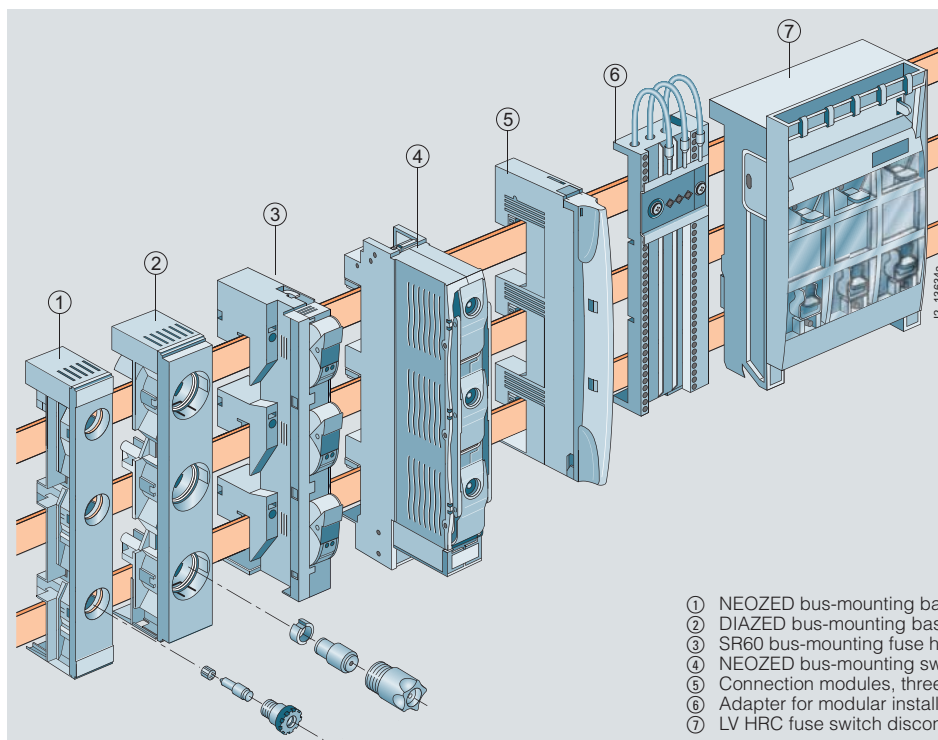
The two previously available optional solutions can now be replaced with new technology: the touch protection over base and the respective edges, or touch protection by means of partitions.

Overall, increased efficiency and cost savings for the plant manufacturer.

The fuse holders for cylindrical fuses, size 10 × 38 and for American fuses, Class CC, can be used in the international plant engineering industry. In addition, Siemens offers a wide range of UL-approved components for the design of switchgear assemblies in accordance with UL 508 A.

For further information, see chapter BETA devices approved to UL standard in Catalog LV 16 · 2009.

Fuse holders are available with a connection module 16 mm² and screwless terminals; this offers users maximum safety and comfort.









- ① NEOZED bus-mounting bases, 3-pole
- ② DIAZED bus-mounting bases, 3-pole
- ③ SR60 bus-mounting fuse holders, 3-pole
- ④ NEOZED bus-mounting switch disconnectors, 3-pole
- ⑤ Connection modules, three-phase
- ⑥ Adapter for modular installation devices according to DIN 43880
- ⑦ LV HRC fuse switch disconnectors

Benefits

- The direct contact of the rail-adaptable switching and installation devices on the Cu busbars reduces distribution panels and mounting times, and
- The transfer resistance of the connections are drastically reduced, when compared to conventional installation. This prevents unnecessary temperature rises.
- New touch-protected built-in components ensure comprehensive touch protection without the previously required partitions
- International implementation due to UL-approved components
- Enhanced effectiveness and increased safety due to screwless terminals.

Selection and ordering data












	Size	Rated current	Rated voltage	MW	DT	Order No.	Price	PU	PS*	PG	Weight
		A	V				per PU	Unit(s)	Unit(s)		per PU
											approx.
											kg
	NEOZED SR60 bus-mounting bases with touch protection, 3P For 5/10 mm busbars										
	27 mm wide										
	D02	63	400	1.5	B	5SG6 206		1	4	016	0.175
	36 mm wide										
	D02	63	400	2	B	5SG6 207		1	4	016	0.188
	NEOZED SR60 bus-mounting bases, 3P, standard version For 5/10 mm busbars										
	D02	63	400	1.5	A	5SG6 202		1	4/104	016	0.141
	NEOZED SR60 covers for standard version										
	D02	Extra wide, with clearance for wiring		1.5	A	5SH5 241		1	4/200	016	0.026
	D02			2	B	5SH5 242		1	4/140	016	0.031
	With double width for more clearance for wiring										
	D02			3	C	5SH5 243		1	4/120	016	0.040
	DIAZED SR60 bus-mounting bases with touch protection, 3P For 5/10 mm busbars										
	For use of DIAZED SR60 adapter rings										
	DII	25	500	2.3	B	5SF6 018		1	4	016	0.301
	DIII	63	500 V AC/DC (acc. to DIN VDE 0636-3 also 690 V AC/600 V DC)	3.2	B	5SF6 218		1	4	016	0.402
	For use of DIAZED screw adapters										
	DII	25	500	2.3	B	5SF6 020		1	4	016	0.291
	DIII	63	500 V AC/DC (acc. to DIN VDE 0636-3 also 690 V AC/600 V DC)	3.2	B	5SF6 220		1	4	016	0.392

For NEOZED screw caps, adapter sleeves and fuse links, see Catalog ET B1 · 2010, Chapter, "Low-voltage fuse systems, NEOZED fuse systems".

You can download the up-to-date catalog from www.siemens.com/e-installation-catalogs.




BETA Protecting SR60 Busbar Systems

Built-in components

	Size	Rated current	Rated voltage	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	A	V						Unit(s)	Unit(s)		kg
	DIAZED SR60 bus-mounting bases, 3P, standard version For 5/10 mm busbars										
	For use of DIAZED screw adapter rings										
	DII	25	500	2.3	B	5SF6 014		1	2/52	016	0.230
	DIII	63	500 V AC/DC (acc. to DIN VDE 0636-3 also 690 V AC/600 V DC)	3.2	B	5SF6 214		1	2/52	016	0.318
	For use of DIAZED screw adapters										
	DII	25	500	2.3	B	5SF6 015		1	2/52	016	0.222
DIII	63	500 V AC/DC (acc. to DIN VDE 0636-3 also 690 V AC/600 V DC)	3.2	B	5SF6 215		1	2/52	016	0.310	
	DIAZED SR60 covers for standard version										
	DII			2.3	B	5SH2 042		1	2/120	016	0.050
	DIII			3.2	B	5SH2 242		1	2/120	016	0.061
	DIAZED SR60 adapter rings Only for DIAZED SR60 bus-mounting bases										
	DII	2			C	5SH3 071		1	10/1500	016	0.005
		4			C	5SH3 072		1	10/1500	016	0.005
		6			C	5SH3 073		1	10/3000	016	0.005
		10			C	5SH3 074		1	10/4000	016	0.005
		16			C	5SH3 075		1	10/5000	016	0.005
		20			C	5SH3 076		1	10/3000	016	0.004
	DIII	2			C	5SH3 078		1	10	016	0.008
		4			C	5SH3 080		1	10	016	0.008
		6			C	5SH3 081		1	10	016	0.008
		10			C	5SH3 082		1	10	016	0.008
		16			C	5SH3 083		1	10	016	0.008
		20			C	5SH3 084		1	10	016	0.006
		25			C	5SH3 085		1	10/1000	016	0.007
		35			C	5SH3 086		1	10/3500	016	0.006
		50			C	5SH3 087		1	10/600	016	0.005
		SR60 bus-mounting fuse holders, 3P For 5/10 mm busbars with screwless terminals									
For cylindrical fuses 10 x 38 mm  											
--		30	690	1.5	A	3NW7 431		1	1	018	0.185
For UL-listed fuses Class CC  											
--	30	600	1.5	A	3NW7 431-OHG		1	1	018	0.186	
For UL-listed fuses Class CC   with LED signal detector											
--	30	600	1.5	A	3NW7 432-OHG		1	1	018	0.188	
	NEOZED SR60 bus-mounting switch disconnectors, 3P For 5/10 mm busbars										
	D02	63*	400	1.5	A	5SG7 230		1	1/30	016	0.700
	*For loads > 35 A, use 5SH5 526 lateral modules										
SR60 bus-mounting disconnectors, 3P, for 10 x 38 mm cylindrical fuses For 5/10 mm busbars											
--	32	690	1.5	A	3NW7 430		1	1/40	018	0.700	



For DIAZED screw caps, screw adapters and fuse links, see Catalog ET B1 · 2010, Chapter, "Low-voltage fuse systems, DIAZED fuse systems".

You can download the up-to-date catalog from www.siemens.com/e-installation-catalogs.

Size	Rated current	Rated voltage	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	A	V					Unit(s)	Unit(s)		kg
Auxiliary switches for signaling the switching state of the NEOZED bus-mounting switch disconnectors and disconnectors										
	1 W		0.5	C	5SH5 525		1	1/50	016	0.007
Lateral modules										
	For better heat dissipation from 35 A with NEOZED bus-mounting switch disconnectors									
			0.5	C	5SH5 526		1	5/50	016	0.060
Reducers										
	For NEOZED fuse links D01 In the SR60 bus-mounting switch disconnector									
				C	5SH5 527		1	10/100	016	0.003
SR60 LV HRC bus-mounting fuse bases, 3P, size 00										
	For 5/10 mm busbars With cover, connections at top Terminals up to 70 mm ² With saddle-type terminals 690									
				A	3NH4 052		1	4	014	0.641

For DIAZED screw caps, screw adapters and fuse links, see [Catalog ET B1 · 2010, Chapter, "Low-voltage fuse systems, DIAZED fuse systems"](#).

You can download the up-to-date catalog from www.siemens.com/e-installation-catalogs.

Number of mounting rails (TH 35)	Rated current	Conductor cross-section	Adapters L x W	U _n	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
	A	mm ²	mm x mm	V				Unit(s)	Unit(s)		kg	
Busbar adapters with terminals at top												
	1	25	4	182 x 45	690	A	8US12 50-5RM07		1	1	143	0.174
Busbar adapters with connecting cables at top												
	1	25	4	182 x 45	690	▶	8US12 51-5DM07		1	1	143	0.183
	1	56	10	182 x 55	690	▶	8US12 61-5FM08		1	1	143	0.263
Busbar adapters with Cage Clamp terminals												
	1	12.5	2.5	182 x 45	690	▶	8US12 51-5CM47		1	1	143	0.190
Device holders for lateral mounting on busbar adapters of the same length												
	1	--	--	182 x 45	--	▶	8US12 50-5AM00		1	1	143	0.158
Connecting wedges (2 units needed for mounting)												
	--	--	--	--	--	▶	8US19 98-1AA00		100	100	143	0.100
Lateral modules for extending busbar adapters and device holders of the same length												
	--	--	--	182 x 13.5	--	A	8US19 98-2BM00		1	4	143	0.036

* You can order this quantity or a multiple thereof.

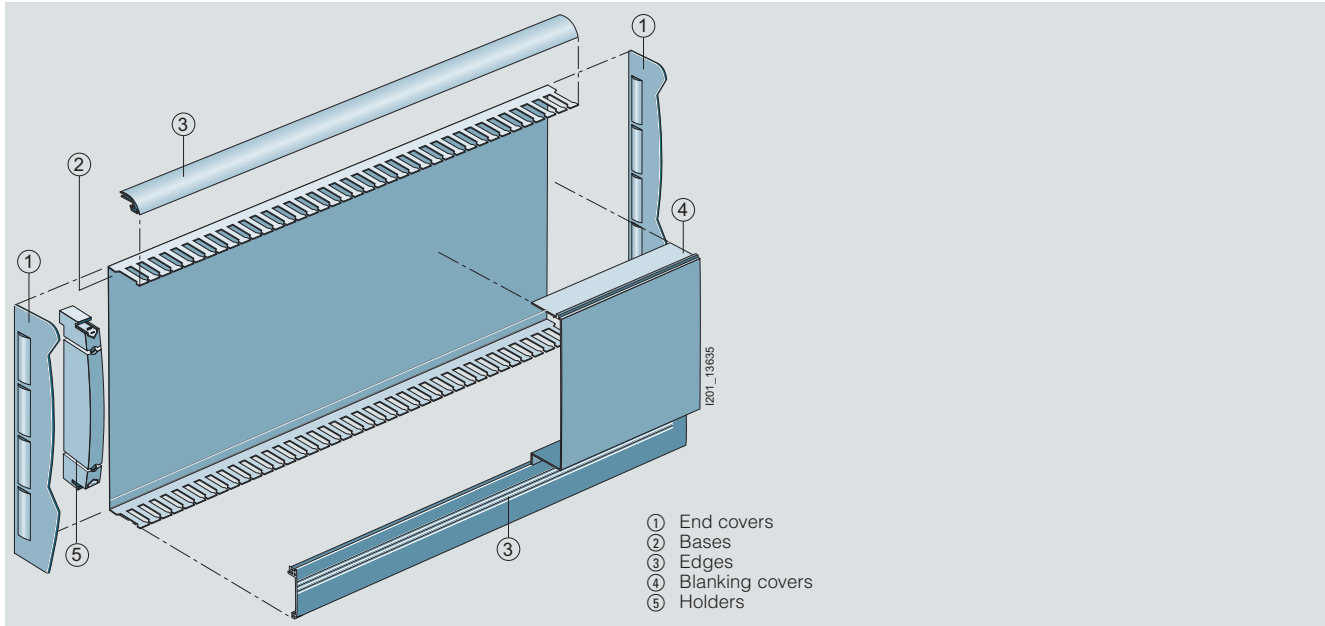
BETA Protecting SR60 Busbar Systems

Mounting components

Overview

The mounting components enable an enclosed design on a mounting plate.





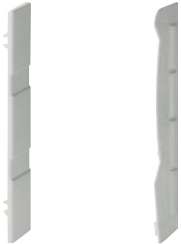



The base, the holders for the edges, the edges, the supports for blanking covers with blanking cover and the end covers form a complete enclosure with degree of protection IP20.



Benefits

- The mounting components enable a closed design for the SR60 busbar system in any switchgear assembly.
- The touch protection rating to IP20 means that operation is safe, even for non-specialists.

Selection and ordering data

	Length	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	mm				Unit(s)	Unit(s)		kg
 <p>Bases Height 230 mm, for 3 busbars 290 mm, for 4 busbars</p>	1100	B	5SH3 526		1	1	016	1.100
		C	5SH3 527		1	2	016	1.300
 <p>Blanking covers Mounting on 5SH3 536 support for blanking covers, height 202 mm</p>	1000	A	5SH3 537		1	2	016	0.075
 <p>Edges 17 × 36 mm, for 3 busbars 77 × 36 mm, for 4 busbars</p>	1100	B	5SH3 528		1	2	016	0.311
		C	5SH3 530		1	2	016	0.583
 <p>Partitions For additional touch protection on systems without bases, slotted 17 × 86 mm</p>	1100	C	5SH3 531		1	2	016	0.365
 <p>End covers For covering free busbar ends L1-L3, for 8US19 23-2AA01 or 8US19 23-3AA01 L1-L3 + PE/N, 4P, for 8US19 23-4AA00 (1 pack = 2 units, (1× right, 1× left)) For 5SH3 532 holder Height 230 mm (3P) Height 290 mm (4P or 3P + wiring duct), (1 pack = 2 units (1× right, 1× left))</p> <p>8US19 22-1AC00 5SH3 534</p>		A	8US19 22-1AC00		1	10	143	0.020
		A	8US19 22-1AB00		1	1	143	0.055
		B	5SH3 533		1	4	016	0.038
		C	5SH3 534		1	4/40	016	0.048
 <p>Holder For 5SH3 528, 5SH3 530 and 5SH3 531 edges and partitions</p>		B	5SH3 532		1	2	016	0.106
 <p>Support for blanking cover For mounting blanking cover on busbar (2 units required for each section of blanking cover)</p>		B	5SH3 536		1	4/160	016	0.040
 <p>Busbar supports for SR60 busbar systems For busbars with a thickness of 5 or 10 mm and a busbar height of 12, 15, 20, 25 or 30 mm</p> <p>L1-L3, 3P, with outer mounting L1-L3, 3P, with inner mounting L1-L3 + PE/N, 4P, with inner mounting</p>		A	8US19 23-2AA01		1	10	143	0.200
		A	8US19 23-3AA01		1	10	143	0.200
		A	8US19 23-4AA00		1	10	143	0.269

* You can order this quantity or a multiple thereof.

BETA Protecting Overvoltage Protection Devices

Lightning arresters, type 1

Overview

Type 1 lightning arresters protect low-voltage systems against overvoltages and high surge currents that can be triggered by direct or indirect lightning strikes.

The protection level is lowered to 1.5 kV by the lightning arrester.

The lightning arresters are enclosed and suitable for mounting in the precounter sector.




All spark gaps are triggered. For this reason, decoupling reactors are no longer required for the installation of overvoltage protection devices.

The lightning arresters are tested using wave-shaped lightning impulses, 25 ... 100 kA with waveform 10/350 μ s.

Benefits

- The rated arrester voltage is a uniform 350 V AC. This increases safety in systems with extended voltage overshoots.
- All lightning arresters are fitted with a mechanical fault indication that does not require an extra power supply. This means they can be installed in the precounter sector, where electrical plants can be protected particularly effectively.
- The protective modules are plug-in versions. No dismantling of electrical wires required when replacing the protective modules. When taking insulation measurements, the protective modules are simply removed in order to disconnect from the power supply.
- All lightning arresters have a remote signaling contact, which signals if the device fails.

Selection and ordering data

Version	Discharge capacity kA	MW	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
 Lightning arresters 1P For single-conductor systems with remote signaling	25	2	A	5SD7 411-1		1	1	008	0.424
 2P For TN-S and TT systems with remote signaling	100	4	B	5SD7 412-1		1	1	008	0.732
 3P For TN-C systems with remote signaling	75	6	A	5SD7 413-1		1	1	008	0.909
 4P For TN-S and TT systems with remote signaling	100	8	A	5SD7 414-1		1	1	008	1.310

BETA Protecting Overvoltage Protection Devices

Combination surge arresters, type 1 and type 2

Overview

Type 1 and type 2 combination surge arresters protect low-voltage systems against the overvoltages and high currents that can be triggered by direct lightning strikes. They are tested by wave-shaped lightning impulses, 25 ... 100 kA with waveform 10/350 μ s.

The protection level is lowered to 1.5 kV by the combination surge arresters.

A thermal isolating arrester disconnecter offers a high degree of protection against overload.

All spark gaps are triggered. For this reason, decoupling reactors are no longer required for the installation of overvoltage protection devices.

Benefits

- The rated arrester voltage is a uniform 350 V AC. This increases safety in systems with extended voltage overshoots.
- All combination surge arresters are fitted with a mechanical fault indication that does not require an extra power supply.
- The protective modules are plug-in versions. No dismantling of electrical wires required when replacing the protective modules. When taking insulation measurements, the protective modules are simply removed, in order to ensure disconnection from the power supply.
- The same type 2 overvoltage protective modules are used as for the slim version of the surge arresters (5SD7 42.). This simplifies stock keeping.
- All combination surge arresters have a remote signaling contact, which signals if the device fails.

Selection and ordering data

Version	Discharge capacity kA	MW	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
Combination surge arresters									
 1P For single-conductor systems with remote signaling	25	2	A	5SD7 441-1		1	1	008	0.356
 2P For TN-S and TT systems with remote signaling	100	4	B	5SD7 442-1		1	1	008	0.770
 3P For TN-C systems with remote signaling	75	6	A	5SD7 443-1		1	1	008	1.040
 4P For TN-S and TT systems with remote signaling	100	8	A	5SD7 444-1		1	1	008	1.430

* You can order this quantity or a multiple thereof.

BETA Protecting Overvoltage Protection Devices

Surge arresters, type 2

Overview

Surge arresters type 2 are used after lightning arresters type 1 in main distribution boards or sub-distribution boards. They protect low-voltage systems against transient overvoltages.

The type 2 surge arrester lowers the protection level to 1.4 to 1.5 kV. A remote signaling contact indicates whether a protective module has been disconnected from the network by the thermal arrester disconnecter or whether it is just not plugged in.

All spark gaps are triggered. For this reason, decoupling reactors are no longer required for the installation of overvoltage protection devices.






To ensure fault-free operation of photovoltaic systems, it is essential to have standardized protection against lightning and overvoltages. SPDs (5SD7 483-.) for the DC side protect the photovoltaic generator and the inverter against overvoltages.

The SPDs 5SD7 473- . and 5SD7 485- . are available specially for the protection of IT systems.

Benefits

- The rated arrester voltage is a uniform 350 V AC. This increases safety in systems with extended voltage overshoots.
- All type 2 surge arresters are fitted with a mechanical fault indication that does not require an extra power supply
- A thermal isolating arrester installed in each device offers a high degree of protection. In the event of overload, the surge arrester is disconnected from the mains - the plant continues running.
- The protective modules are plug-in versions. No dismantling of electrical wires required when replacing the protective modules. When taking insulation measurements, the protective modules are simply removed in order to disconnect from the power supply.
- All surge arresters are available with a remote signaling contact, which signals if the device fails.



Selection and ordering data




Version	Max. continuous voltage U_C	Discharge surge current I_n/I_{max}	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V	kA					Unit(s)	Unit(s)		kg
Surge arresters, standard design										
• 1P, plug-in										
	- Without remote signaling	350 AC	20/40	1	A	5SD7 461-0	1	1	008	0.130
	- With remote signaling	350 AC	20/40	1	A	5SD7 461-1	1	1	008	0.134
• N/PE, 1P, plug-in										
	- Without remote signaling	260 AC	20/40	1	A	5SD7 481-0	1	1	008	0.131
	- With remote signaling									
• 3P, plug-in, 3+0 circuit for TN-C systems										
	- Without remote signaling	350 AC	20/40	3	A	5SD7 463-0	1	1	008	0.393
	- With remote signaling	350 AC	20/40	3	B	5SD7 463-1	1	1	008	0.403
• 3P, plug-in, 3+0 circuit for IT systems										
	- Without remote signaling	580 AC	15/30	3	A	5SD7 473-0	1	1	008	0.384
	- With remote signaling	580 AC	15/30	3	A	5SD7 473-1	1	1	008	0.371
• 3P, plug-in in order to protect the DC part of the photovoltaic systems up to DC 1000 V acc. to IEC 60364-7-712										
	- Without remote signaling	1000 DC	15/30	3	A	5SD7 483-0	1	1	008	0.344
	- With remote signaling	1000 DC	15/30	3	A	5SD7 483-1	1	1/44	008	0.352

* You can order this quantity or a multiple thereof.

BETA Protecting Overvoltage Protection Devices

Surge arresters, type 2

Version	Max. continuous voltage U_C	Discharge surge current I_p/I_{max}	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V	kA					Unit(s)	Unit(s)		kg
 <ul style="list-style-type: none"> • 4P, plug-in, 3+1 circuit for TN-S and TT systems - Without remote signaling - With remote signaling 	350 AC	20/40	4	A	5SD7 464-0		1	1	008	0.433
	350 AC	20/40	4	A	5SD7 464-1		1	1	008	0.443
 <ul style="list-style-type: none"> • 4P, plug-in, 4+0 circuit for IT systems with N conductor incorporated in the cable - Without remote signaling - With remote signaling 	440 AC	20/40	4	A	5SD7 485-0		1	1/44	008	0.445
	440 AC	20/40	4	A	5SD7 485-1		1	1	008	0.455

Version	Discharge surge current I_p/I_{max}	Width	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.	
	kA	mm (MW)				Unit(s)	Unit(s)		kg	
Surge arresters, narrow design										
 <ul style="list-style-type: none"> • 2P For TN-S and TT systems - Without remote signaling - With remote signaling 	20/40	24 (1 1/3)	A	5SD7 422-0		1	1	008	0.220	
	20/40	24 (1 1/3)	B	5SD7 422-1		1	1	008	0.227	
 <ul style="list-style-type: none"> • 3P For TN-C systems - Without remote signaling - With remote signaling 	20/40	36 (2)	A	5SD7 423-0		1	1	008	0.320	
	20/40	36 (2)	B	5SD7 423-1		1	1	008	0.330	
 <ul style="list-style-type: none"> • 4P For TN-S and TT systems - Without remote signaling - With remote signaling 	20/40	48 (2 2/3)	A	5SD7 424-0		1	1	008	0.408	
	20/40	48 (2 2/3)	A	5SD7 424-1		1	1	008	0.416	

BETA Protecting Overvoltage Protection Devices

Surge arresters, type 3

Overview

Type 3 surge arresters are installed downstream of type 2 surge arresters in sub-distribution boards close to the loads in single or multiphase systems and further limit the overvoltage in order to protect the connected loads.

In the voltage variants 24, 60, 120 and 240 V it is possible to use the surge arresters type 3 in AC and DC networks.

Benefits

- The protective modules are plug-in versions. No mounting work required when replacing the protective modules
- All type 3 surge arresters are fitted with a mechanical fault indication that does not require an extra power supply
- Remote signaling is performed by an optocoupler with an open collector output in case of failure.

Selection and ordering data

Version	Rated voltage U_N	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V AC/V DC					Unit(s)	Unit(s)		kg
Surge arresters, plug-in									
• 2P									
With remote signaling	24	1	A	5SD7 432-4		1	1	008	0.027
	60	1	B	5SD7 432-3		1	1	008	0.026
	120	1	B	5SD7 432-2		1	1	008	0.081
	230	1	A	5SD7 432-1		1	1	008	0.071
• 4P									
With remote signaling	230/400	2	A	5SD7 434-1		1	1	008	0.056











* You can order this quantity or a multiple thereof.

BETA Protecting Overvoltage Protection Devices

Accessories for surge arresters

Selection and ordering data

Version	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg
 <p>Male connectors for lightning arresters, type 1, and combination surge arresters, type 1 and type 2</p> <ul style="list-style-type: none"> Lightning arresters L/N I_{fi} 50 kA_{rms} for 5SD7 41. lightning arresters Lightning arresters N/PE for 5SD7 41. lightning arresters and 5SD7 44. combination surge arresters. 	B	5SD7 418-1		1	1	008	0.240
	B	5SD7 418-0		1	1	008	0.240
 <p>Male connectors for lightning arresters, type 1, and combination surge arresters, type 1 and type 2</p> <ul style="list-style-type: none"> Lightning arresters L/N I_{fi} 50 kA_{rms} Lightning arresters N/PE for 5SD7 41. lightning arresters and 5SD7 44. combination surge arresters. 	B	5SD7 448-1		1	1	008	0.129
	B	5SD7 418-0		1	1	008	0.240
 <p>Male connectors for surge arresters, type 2, and combination surge arresters, type 1 and type 2</p> <ul style="list-style-type: none"> Surge arresters L/N for 5SD7 42. surge arresters and 5SD7 44. combination surge arresters. Lightning arresters N/PE for 5SD7 41. lightning arresters and 5SD7 44. combination surge arresters. 	B	5SD7 428-1		1	1	008	0.052
	B	5SD7 428-0		1	1	008	0.049
 <p>Male connector for 5SD7 46. combination surge arresters, type 2</p> <ul style="list-style-type: none"> Surge arresters L/N Surge arresters N/PE 	B	5SD7 468-1		1	1	008	0.051
	B	5SD7 488-0		1	1	008	0.040
 <p>Male connector for 5SD7 485. combination surge arresters, type 2</p> <ul style="list-style-type: none"> Surge arresters for IT systems 	A	5SD7 488-1		1	1	008	0.053
 <p>Male connector for 5SD7 473-, 5SD7 483. combination surge arresters, type 2</p> <ul style="list-style-type: none"> Surge arresters for photovoltaic systems and IT systems 	A	5SD7 498-1		1	1	008	0.065
 <p>Male connector for 5SD7 432-. combination surge arresters, type 3</p> <ul style="list-style-type: none"> Rated voltage $U_N = 230$ V Rated voltage $U_N = 120$ V Rated voltage $U_N = 60$ V Rated voltage $U_N = 24$ V 	B	5SD7 437-1		1	1	008	0.028
	B	5SD7 437-2		1	1	008	0.027
	B	5SD7 437-3		1	1	008	0.026
	B	5SD7 437-4		1	1	008	0.027
 <p>Male connector for 5SD7 434-1 combination surge arresters, type 3</p>	B	5SD7 438-1		1	1	008	0.162

BETA Protecting Overvoltage Protection Devices

Surge arresters for
measuring and control technology

Overview

The new surge arresters for measuring and control technology are overvoltage protection modules, which comprise one basic element and one male connector, i. e. two components. Their application area is the protection of signal circuits.

The cable shields of basic elements can be either directly or indirectly grounded.

The mounting width of the new surge arresters is 1 MW.

Through the number of integrated paths, it is possible to protect up to four signal cores or two twin-wires against overvoltages.



Benefits

- The two-component design offers users maximum maintenance convenience. The basic element is always a fixed integral part of the installation. No laborious interventions, e. g. in the case of repair work
- The benefits:
 - Two-component design, comprising one male connector and one basic element
 - Interruption-free and impedance neutral plugging in and pulling out of the male connector
 - Reverse polarity protection through mechanical encoding
 - Surge current carrying capable contacting to standard mounting rail thanks to snap-on technique – no further laborious wiring of the reference potential.
- The arrangement of suppressor diodes between signal cores achieves a fine protection in connection with a fast response. The low capacitive coupling of the suppressor diodes to the signal cores enables high data transmission rates
- The use of gas-filled surge arresters ensures a high discharge capacity.

BETA Protecting Overvoltage Protection Devices

Surge arresters for
measuring and control technology

Selection and ordering data

Version	MW	DT	Order No.	Price per PU	PU Unit(s)	PS* Unit(s)	PG	Weight per PU approx. kg	
	Basic element								
	1	B	5SD7 512-1		1	1	008	0.052	
	<ul style="list-style-type: none"> For male connectors with protection circuit for a 2-wire ungrounded signal circuit Jumper between terminals 3/4 (GND) and 9/10 For 5SD7 520-1 and 5SD7 530-3 male connectors 								
	1	B	5SD7 522-1		1	1	008	0.056	
	<ul style="list-style-type: none"> For male connectors with protection circuit for a 2-wire ungrounded signal circuit Jumper between terminals 3/4 (GND) and 9/10 For 5SD7 522-1 and 5SD7 550-4 male connectors 								
	1	B	5SD7 522-0		1	1	008	0.057	
	<ul style="list-style-type: none"> For male connectors with protection circuit for a 2-wire ungrounded signal circuit Gas arrester between terminals 3/4 (GND) and 9/10 For 5SD7 522-1 and 5SD7 550-4 male connectors 								
	1	B	5SD7 541-1		1	1	008	0.056	
	<ul style="list-style-type: none"> For male connectors with protection circuit for four conductors single-sided grounded signal circuit Jumper between terminals 3/4 (GND) and 9/10 For 5SD7 541-7 male connectors 								
	1	B	5SD7 500-0		1	1	008	0.050	
<ul style="list-style-type: none"> Jumper between terminals 3/4 (GND) and 9/10 For 5SD7 502-0 male connectors 									
	1	B	5SD7 530-3		1	1	008	0.020	
	<ul style="list-style-type: none"> Male connector - PROFIBUS Protection for 2 signal cores with shared reference potential For 5SD7 512-1 basic element 								
	1	B	5SD7 520-1		1	1	008	0.020	
	<ul style="list-style-type: none"> Male connector for analog telecommunication interfaces Protection for 2-wire Telecom cable (U_{k0} or T-DSL) For 5SD7 512-1 basic element 								
	1	B	5SD7 522-7		1	1	008	0.024	
	<ul style="list-style-type: none"> Male connector, 24 V AC Protection for 2-wire ungrounded signal circuit. Fine protection element between the respective wires For 5SD7 522-0 and 5SD7 522-1 basic elements 								
	1	B	5SD7 550-4		1	1	008	0.026	
	<ul style="list-style-type: none"> Male connector, 12 V DC Protection for fieldbus systems and signal circuits in 3 or 4-wire method For 5SD7 522-0 and 5SD7 522-1 basic elements 								
1	B	5SD7 541-7		1	1	008	0.026		
<ul style="list-style-type: none"> Male connector, 24 V DC Protection for 4 signal cores with shared reference potential For 5SD7 541-1 basic element 									
1	B	5SD7 502-0		1	1	008	0.020		
<ul style="list-style-type: none"> Male connector, 2-wire Coarse protection for 2 single-sided signal leads For 5SD7 500-0 basic element 									

Overview

The socket outlets for mounting in distribution boards to DIN 43880 and on standard mounting rails to DIN 60715 have since become standard in modern switchgear assemblies/distribution boards. They are used for tasks such as the connection of plug-in communication devices in communication distribution boards, in switchgear assemblies for maintenance purposes or in private plants for the occasional use of devices with heavy starting and separate fusing.

The socket outlet range complies with a number of different standards and is available according to the standards of the following countries: VDE for Germany, CEE7 for Belgium/France, CEI for Italy and UL for USA.





In distribution boards with 55 mm mounting depth the socket outlet can only be used without the hinged lid. The lids can be retrofitted on all devices. To make installation easier, the touch-protected terminals L, N and PE are located on the side of the socket outlet.

In system components where equipment is still live, even after the main control switch has been disconnected, this must be indicated according to DIN VDE 0105-1 and IEC/EN 60204-1/ DIN VDE 0113-1. Yellow socket outlets are used for these applications.

Benefits

- Complete program according to VDE, UL, CEI and CEE for worldwide application.
- By pulling on the hinges, the hinged lid stays open at more than 180°. This facilitates manual insertion of plugs.

Selection and ordering data




	U_e	I_e	Conductor cross-section	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V AC	A	mm ²					Unit(s)	Unit(s)		kg
	SCHUKO-socket outlets acc. to DIN VDE 0620-1										
	• Without hinged lid										
	230	16	6	2.5	▶	5TE6 800		1	1	027	0.089
	SCHUKO-socket outlets acc. to DIN VDE 0620-1										
	• With hinged lid										
	230	16	6	2.5	▶	5TE6 801		1	1	027	0.094
	SCHUKO-socket outlets acc. to DIN VDE 0620-1										
	• Without hinged lid, yellow RAL 1018										
	230	16	6	2.5	▶	5TE6 810		1	1	027	0.089
	Socket outlets acc. to CEI 23-50										
	• With hinged lid										
	230	16	6	2.5	▶	5TE6 802		1	1	027	0.094

* You can order this quantity or a multiple thereof.

BETA Switching

Socket Outlets

5TE6 8 socket outlets

	U_e	I_e	Conductor cross-section	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V AC	A	mm ²					Unit(s)	Unit(s)		kg
	Socket outlets according to CEE 7, Standard sheet V • Without hinged lid, with grounding pin					2.5 ▶	5TE6 803	1	1	027	0.090
	230	16	6								
	Socket outlets according to UL 498 • Without hinged lid					2.5 ▶	5TE6 804	1	1	027	0.088
	125	15	6								
	Hinged lids for 5TE6 socket outlets				2.5 B	5TE9 120		1	1	027	0.020

More information

More information about socket outlets can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs

BETA Measuring Three-Phase Measuring Devices

7KT1 30 multimeters

Overview

Multimeters are mainly used in power distribution boards for in-feeds into buildings and plants. They replace the more common analog voltmeters and ammeters with measuring point changeover, as well as measuring devices for power outputs and power factor p.f.



The standard measured quantity to be indicated in the 5 display fields of the multimeter can be tailored to customer requirements. Versions for direct connection 63 A or for transformers /5 A with adjustable transformer primary current from 5 to 5000 A support a wide range of applications.

The green 7-segment displays for the measured values and the orange indicators of the units of measurement directly alongside the measured values make for easy reading.

Benefits

- Clear display of all necessary measured values
- All measured values can be read from a distance
- Customized setting of the measured quantities for the standard display
- Wide range of application thanks to flexible adaptation to measuring current transformers
- Detection of connection errors during start-up saves considerable time when trying to locate faults
- Large, 11 mm high, green 7-segment displays for measured values makes for easy reading
- Indication of units of measurement directly alongside the related measured values provide a clear overview.

Selection and ordering data

	U_e	I_e	U_c	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V AC	A AC	V AC					Unit(s)	Unit(s)		kg
Multimeters											
For the display of 23 electrical values, of which 5 values can be continuously displayed.											
Standard rail mounting											
	For direct connection					7KT1 300		1	1	027	0.400
	3 × 230/400	63	230	6	B						
7KT1 300	For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A					7KT1 301		1	1	027	0.380
	3 × 230/400	Trans-former /5	230	6	B						
Front mounting											
	For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A, mounting dimensions 96 mm × 96 mm					7KT1 302		1	1	027	0.378
	3 × 230/400	Trans-former /5	230	--	B						
7KT1 302											

* You can order this quantity or a multiple thereof.

BETA Measuring Three-Phase Measuring Devices

7KT1 30 multimeters

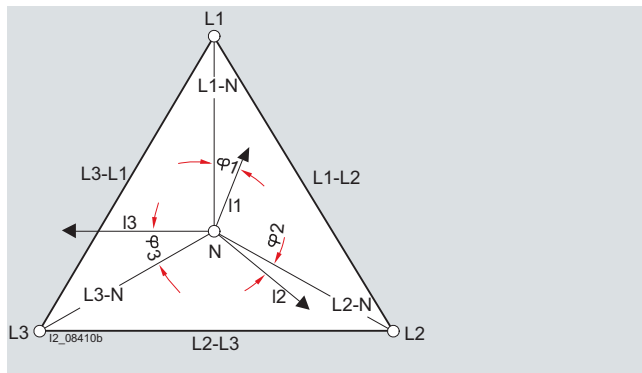
More information

Voltage measurement

The multimeter measures the delta voltages L1 against L2; L2 against L3 and L3 against L1 or the star voltages L1, L2, L3 against N.

ΣL symbol for the three-phase system

This indicates that all physical units shown under this symbol are always 3 phase.



Readout data

You can continuously display 5 measured quantities from the following 23 options.

No.	Measured value	Display	Unit	Assignment
1	Active power	D1	W	L1
2	Voltage	D1	V	L1
3	Current	D1	A	L1
4	Apparent power	D1	VA	L1
5	P.f.	D1	P.f.	L1
6	Voltage	D1	V	L1 – L2
7	Active power	D2	W	L2
8	Voltage	D2	V	L2
9	Current	D2	A	L2
10	Apparent power	D2	VA	L2
11	P.f.	D2	P.f.	L2
12	Voltage	D2	V	L2 – L3
13	Active power	D3	W	L3
14	Voltage	D3	V	L3
15	Current	D3	A	L3
16	Apparent power	D3	VA	L3
17	P.f.	D3	P.f.	L3
18	Voltage	D3	V	L3 – L1
19	Active power	D1, D2, D3, D5	W	ΣL
20	Apparent power	D1, D2, D3, D5	VA	ΣL
21	reactive power	D5	var	ΣL
22	Frequency	D4	Hz	ΣL
23	P.f.	D1, D2, D3, D4	P.f.	ΣL

2 set values are also indicated:

24	Transformer setting	D5	CT/A	/5
25	Transformer setting		CT/A	5 ... 5000

Matrix selection

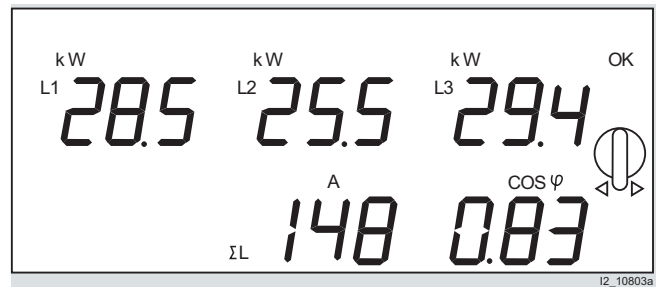
Conventional measuring instruments display voltages, currents, powers, etc. in a rigid sequence on several "screens". These multimeters allow users to define their own standard for measured quantities per display field, so that they can be implemented far more universally and flexibly.

A special feature is the analysis of the different loads on the phases. Phase displacement and unsymmetrical or unbalanced loads can cause partial overloads. These multimeters offer a range of different options for combining and assessing measured values.

The display fields are selected using rotary switches and the desired indications confirmed with OK. By making the horizontal selection e. g. W, V, A or p.f., and the vertical selection, e. g. L1, L1 – L2 or ΣL , users can then define the desired measured quantities for this display field.

The vertical data on the display can be assigned to any measured value in the horizontal data. The letters M(ega) and k(ilo) are automatically assigned according to measuring range, i. e. measured value, e. g. kW or MW. Capacitive loads are automatically indicated by a capacitor, inductive loads by a coil.

The following diagram shows an example of what your matrix selection might look like.



More information about multimeters can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs.

BETA Measuring Three-Phase Measuring Devices

7KT1 31, 7KT1 34, 7KT1 35 multimeters

Overview

Multimeters are mainly used in power distribution boards for in-feeds into buildings and plants. They replace the more common analog voltmeters and ammeters with measuring point changeover, as well as measuring devices for power outputs and power factor p.f.

The standard measured quantity to be indicated in the 6 display fields of the multimeter can be tailored to customer requirements. The measured values of all measured quantities can also be displayed quickly and easily over the operator buttons. Versions for direct connection 63 A or for transformers /5 A with adjustable transformer primary current from 5 to 5000 A support a wide range of applications.

The green 7-segment displays for the measured values and the orange indicators of the units of measurement directly alongside the measured values make for easy reading.

Benefits

- Clear display of all necessary measured values
- All measured values can be read from a distance
- Customized setting of the measured quantities for the standard display Fast display of all measured quantities over operator buttons
- Wide range of application thanks to flexible adaptation to measuring current transformers
- Detection of incorrect connections during installation
- Communication with LAN, Modbus or PROFIBUS DP enables integration in an energy management system
- Software package for data transmission over LAN and visualization of measured data with Microsoft EXCEL enables implementation of customized solutions.

Selection and ordering data

	U_e	I_e	U_c	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V AC	A AC	V AC					Unit(s)	Unit(s)		kg
Multimeters											
For the display of 35 electrical values, of which 5 or 6 values can be continuously displayed. For three-phase, 3/4 conductor connection, with S0 interface											
Without communication interface											
Standard rail mounting											
For direct connection											
	3 × 230/400	63	230	6	B	7KT1 310		1	1	027	0.420
For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A											
	3 × 230/400	Transformer /5	230	6	B	7KT1 311		1	1	027	0.410
Front mounting											
For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A, mounting dimensions 96 mm × 96 mm											
	3 × 230/400	Transformer /5	230	--	B	7KT1 312		1	1	027	0.410
With RS485 interface and RTU Modbus protocol or for connection to LAN networks over 7KT1 390 LAN coupler											
Standard rail mounting											
For direct connection											
	3 × 230/400	63	230	6	B	7KT1 340		1	1	027	0.470
For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A											
	3 × 230/400	Transformer /5	230	6	B	7KT1 341		1	1	027	0.423
Front mounting											
For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A, mounting dimensions 96 mm × 96 mm											
	3 × 230/400	Transformer /5	230	--	B	7KT1 342		1	1	027	0.397



7KT1 310



7KT1 312

* You can order this quantity or a multiple thereof.

BETA Measuring Three-Phase Measuring Devices

7KT1 31, 7KT1 34, 7KT1 35 multimeters

U_e	I_e	U_c	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
V AC	A AC	V AC					Unit(s)	Unit(s)		kg
With PROFIBUS DP V0 interface										
Standard rail mounting										
For direct connection										
3 × 230/400	63	230	6	B	7KT1 350		1	1	027	0.415
For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A										
3 × 230/400	Trans- former /5	230	6	B	7KT1 351		1	1	027	0.415
Front mounting										
For transformer connection 5 ... 5000 A, adjustable in 5 A increments, secondary current 5 A, mounting dimensions 96 mm × 96 mm										
3 × 230/400	Trans- former /5	230	--	B	7KT1 352		1	1	027	0.460

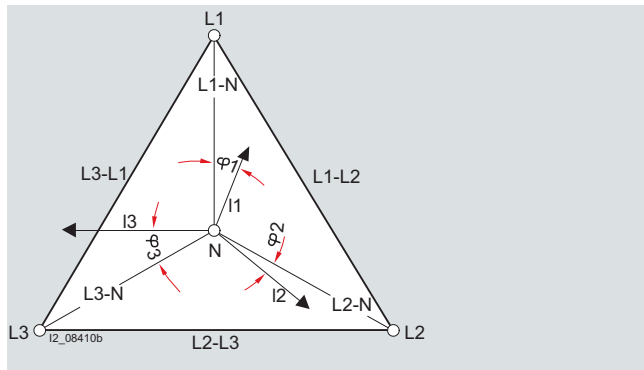
More information

Voltage measurement

Depending on the selected connection type, the multimeter measures the delta voltages L1 against L2; L2 against L3 and L3 against L1 or the star voltages L1, L2, L3 against N.

ΣL symbol for the three-phase system

This indicates that all physical units shown under this symbol are always 3 phase.



More information about multimeters can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs.

Readout data

You can continuously display 6 measured quantities from the following 35 options:

No.	Measured value	Display	Unit	Assignment
1	Active power	D1	W	L1
2	Voltage	D1	V	L1
3	Current	D1	A	L1
4	Apparent power	D1	VA	L1
5	P.f.	D1	P.f.	L1
6	Voltage	D1	V	L1 – L2
7	Active power	D2	W	L2
8	Voltage	D2	V	L2
9	Current	D2	A	L2
10	Apparent power	D2	VA	L2
11	P.f.	D2	P.f.	L2
12	Voltage	D2	V	L2 – L3
13	Active power	D3	W	L3
14	Voltage	D3	V	L3
15	Current	D3	A	L3
16	Apparent power	D3	VA	L3
17	P.f.	D3	P.f.	L3
18	Voltage	D3	V	L3 – L1
19	Temperatures	D6	°C	–
20	Current, N conductor	D6	A	ΣL
21	Active power	D4	W	ΣL
22	reactive power	D5	var	ΣL
23	Apparent power	D5	var	ΣL
24	Frequency	D6	Hz	ΣL
25	P.f.	D1, D2, D3, D6	P.f.	ΣL
26	Active energy tariff 1	D4	Wh	$\Sigma L \rightarrow$
27	Active energy tariff 2	D4	Wh	$\Sigma L \rightarrow$
28	Active energy tariff 1	D4	Wh	$\Sigma L \leftarrow$
29	Active energy tariff 2	D4	Wh	$\Sigma L \leftarrow$
30	Reactive energy tariff 1	D5	varh	ΣL , ind.
31	Reactive energy tariff 2	D5	varh	ΣL , ind.
32	Reactive energy tariff 1	D5	varh	ΣL , cap.
33	Reactive energy tariff 2	D5	varh	ΣL , cap.
34	Apparent energy tariff 1	D5	VAh	ΣL
35	Apparent energy tariff 2	D5	VAh	ΣL
2 set values are also indicated:				
36	Transformer setting	D4	CT/A	/5
37	Transformer setting	D5	CT/A	5 ... 5000

All the measured values are transmitted via LAN.

* You can order this quantity or a multiple thereof.

BETA Measuring Three-Phase Measuring Devices

7KT1 39 LAN couplers

Data transmission from LAN coupler to PC

This data transmission is PC-controlled. A software tool runs in the background on the PC and uses the network to cyclically retrieve any measured data from all available LAN couplers and save it to the hard disk.

Software tool

The supplied software tool has the following functions:

- Background transmission of measurement data from multi-counters and E-counters and a number of LAN couplers
- Full display of device measured data through a macro based on MS Excel
- Adjustable limit value signals for measured quantities
- Violations of limit values are signaled with time stamp.

You will find further information on Modbus operation on the Internet at: www.siemens.com/beta

Display of measured data on the PC

A Visual Basic macro for MS Excel is supplied with the LAN coupler for the display of measured data on a PC. Among other things, this software tool lets you display all 35 measured data of a 7KT1 34 multimeter on a single panel. You can then select the various measuring devices you want to display from a small list box. The software also lets you set alarm limits for up to 10 measured quantities of a multimeter.

If a measured value exceeds or falls below the specified limits, the relevant indication is output, complete with time stamp from the PC clock.

Measwert	Anzeige	Einheit	Zuordnung	Wert	kleiner	Alarmgrenzen	Verzögerung	Datum	Alarm	Wert
7	Wirkleistung	1	W	L1	166430					
8	Spannung	1	V	L1	226					
9	Strom	1	A	L1	848					
10	Scheinleistung	1	VA	L1	167944					
11	cos φ	1	cosφ	L1	0,88					
12	Spannung	1	V	L1-L3	408					
13	Wirkleistung	2	W	L2	166423					
14	Spannung	2	V	L2	226					
15	Strom	2	A	L2	799					
16	Scheinleistung	2	VA	L2	168954					
17	cos φ	2	cosφ	L2	11,00					
18	Spannung	2	V	L2-L3	13487					
19	Wirkleistung	3	W	L3	46					
20	Spannung	3	V	L3	1987					
21	Strom	3	A	L3	66					
22	Scheinleistung	3	VA	L3	219					
23	cos φ	3	cosφ	L3	47,00					
24	Spannung	3	V	L3-L1	428					
25	Wirkleistung	4	W	ZL	2221					
26	Scheinleistung	1,2,3,4	VA	ZL	11					
27	Blindleistung	4	VAR	ZL	3714					
28	Frequenz	6	Hz	ZL	38					
29	cos φ	1,2,3,4	cosφ	ZL	1781,00					

Display of measured data of a multimeter

Simultaneous display of measured data on more than one PC

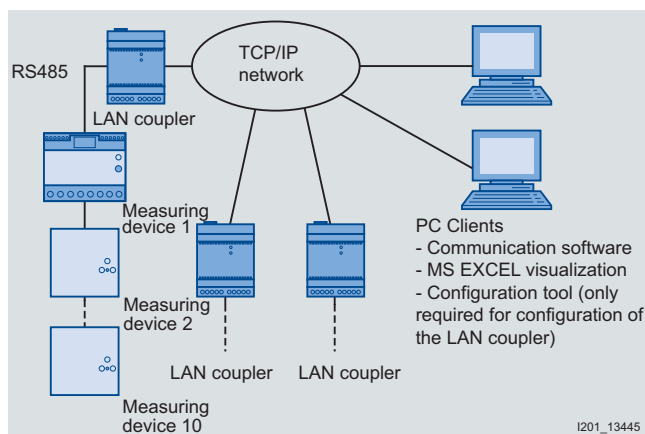
The software supplied with the LAN coupler supports display of measured data on any number of PCs connected to the network over a client-server architecture.

A PC acts as the server, similar to an Intranet or Internet server. This PC runs the software components that retrieve the measurement data from the LAN coupler and save it to hard disk. The MS Excel macro can be used to visualize the measured data on both the server PC and the clients.

Other client PCs can access the data pool of the server PC to visualize the measured data.

Open software architecture

The architecture of the software tool is open and can be customized to suit user requirements. The MS Excel macros are freely accessible and can also be customized by the user.



Block diagram of a system

BETA Measuring Three-Phase Measuring Devices

7KT1 5 E-counters

Overview

The E-counters (power meters) are used to record the amount of electrical energy exported or imported. Siemens compact E-counters are designed as modular devices for alternating current and can be mounted on standard mounting rails. They comply with the counter standard EN 50470-1 and -3 and come with an LCD.

The three-phase counters are available for direct connection up to 80 A and also in versions with transformer connection (.../5 A to 10000/5 A).

The E-counters store both active energy and reactive energy and they all comply with accuracy class 1 (for active energy).

All E-counters have a pulse output (S0) and are designed for 2 tariff measurements. The calibrated versions are in accordance with the new Measuring Instruments Directive 2004/22/EC (MID).

At the same time the E-counters have an integrated optical interface (IrDA) for connecting communication modules. Integration of the E-counters, e. g. in energy management systems, is thus possible.

For single-phase E-counters see page 19/141.

Benefits

- Compliant with the new counter standard EN 50470-1 and -3
- Easy-to-read LCD
- Versions calibrated in accordance with the new Measuring Instruments Directive 2004/22/EC (MID) can be used for invoicing purposes
- Exact recording thanks to accuracy class 1 (for active energy)




- Direct connection up to 80 A, transformer current connection .../5 A



- Sealable terminal covers

Selection and ordering data

	U_e	I_e	U_c	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
	V AC	A AC	V AC					Unit(s)	Unit(s)		kg
 Digital three-phase E-counters For direct connection, double rate For direct connection, double rate, calibrated version For transformer connection, double rate	230	80	230	4	B	7KT1 543		1	1	027	0.386
	230	80	230	4	B	7KT1 545		1	1	027	0.386
	230	Trans- former /5	230	4	B	7KT1 540		1	1	027	0.281

More information

More information about E-counters can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs.

* You can order this quantity or a multiple thereof.

BETA Measuring Three-Phase Measuring Devices

7KT1 2 current transformers
7KT9 0 measuring selector switches

Overview

7KT1 2 current transformers

This three-phase current transformer can be used in distribution boards according to DIN 43880. The measuring leads are routed vertically through the standard mounting rail. This type of current transformer is suitable for incoming or outgoing feeders in connection with the installation of a 5TE8 switch or a 5TE1 disconnecter, as the primary connecting leads do not have to be interrupted.

The current transformer is designed for cables of up to 13 mm in diameter, e. g. H07V-R with 50 mm² conductor cross-section.

Benefits

- The current transformer has accuracy class 1 in accordance with EN 60044-1. This value is better than most measuring devices in this area of application.
- The versions designed for a transformer ratio of 60/5 A, 100/5 A and 150/5 A enable an even broader range of applications.

Selection and ordering data

U_e	I_e	I_{sec}	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
V AC	A AC	A AC					Unit(s)	Unit(s)		kg
Current transformers										
720	3 × 60 3 × 100 3 × 150	5	6	B B B	7KT1 200 7KT1 201 7KT1 202		1 1 1	1 1 1	027 027 027	0.460 0.460 0.465



Overview

7KT9 0 measuring selector switches

Measuring selector switches are used as CO contacts of the phases for voltages and currents in three-phase systems for voltmeters and ammeters.

The design of these switches is adapted to match the modular installation devices. They support use in compliance with EN 60947-3.

Benefits

- The devices have a rated insulation voltage of 660 V. This permits use in many systems.

Selection and ordering data

U_e	I_e	U_c	MW	DT	Order No.	Price per PU	PU	PS*	PG	Weight per PU approx.
V AC	A AC	V AC					Unit(s)	Unit(s)		kg
Voltmeter selector switches										
400	12	6	3	A	7KT9 010		1	1/48	027	0.110
Ammeter selector switches for operation with current transformer										
400	12	6	3	A	7KT9 011		1	1	027	0.110



BETA Measuring Single-Phase Measuring Devices

7KT1 53, 7KT1 14 E-counters

Overview

The E-counters (power meters) are used to record the amount of electrical energy exported or imported. Siemens compact E-counters are designed as modular devices for alternating current and can be mounted on standard mounting rails. They comply with the counter standard EN 50470-1 and -3 and come with an LCD.

The single-phase counters are available for direct connection up to 80 A. They store both active energy and reactive energy and they all comply with accuracy class 1 (for active energy).

All E-counters have a pulse output (S0) and are designed for 1-tariff or 2-tariff measurements depending on the version. The calibrated versions are in accordance with the new Measuring Instruments Directive 2004/22/EC (MID).

At the same time the E-counters have an integrated optical interface (IrDA) for connecting communication modules. Integration of the E-counters, e. g. in energy management systems, is thus possible.

For three-phase E-counters see page 19/139.

Benefits

Digital 7KT1 53. E-counters

- Compliant with the new counter standard EN 50470-1 and -3
- Easy-to-read LCD
- Versions calibrated in accordance with the new Measuring Instruments Directive 2004/22/EC (MID) can be used for invoicing purposes
- Exact recording thanks to accuracy class 1 (for active energy)
- Sealable terminal covers





- Direct connection up to 80 A

7KT1 140 E-counters for active energy

- The drum-type register with digit size 4 mm × 1.2 mm enables easy reading
- The short-circuit proof pulse output protects the device if it is assembled incorrectly.

Selection and ordering data

	U_e	I_e	U_c	MW	DT	Order No.	Price per PU	PE	PS*/P. unit	PG	Weight per PU approx.			
	V AC	AC A	V AC					Unit(s)	Unit(s)		kg			
	Digital single-phase E-counters													
	• For direct connection, single rate 80					4	B	7KT1 530	1	1	027	0.164		
	• For direct connection, double rate 80					4	B	7KT1 531	1	1	027	0.164		
• For direct connection, double rate, calibrated version 80					4	B	7KT1 533	1	1	027	0.164			
	E-counters for active energy													
	With 7-digit drum-type register 4 mm × 1.2 mm with S0 interface, for single-phase operation Direct connection, single rate					230	80	230	2	B	7KT1 140	1	1	027

More information

More information about E-counters can be found in Catalog ET B1 · 2010.
The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs

* You can order this quantity or a multiple thereof.

BETA Measuring Single-Phase Measuring Devices

7KT1 11, 7KT1 12 digital measuring devices
7KT1 0 analog measuring devices

Overview

7KT1 11, 7KT1 12 digital measuring devices



These devices for measuring voltages and currents can be used for monitoring incoming and outgoing currents or device currents in electric plants. They are suitable for direct connection in a single-phase system or with measuring transducers in three-phase systems.

The measuring ranges of the ammeter are set at the device with a coding switch.

Benefits

- The ammeters have 14 measuring ranges from 0 ... 20 A to 0 ... 999 A, which can be set using a coding switch. This ensures universal application.

Selection and ordering data

	U_e	I_e	U_C	MW	DT	Order No.	Price per PU	PE	PS*/P. unit	PG	Weight per PU approx.
	V AC	AC A	V AC					Unit(s)	Unit(s)		kg
	Digital voltmeters					7KT1 110		1	1	027	0.190
	230	600		2	B						
	Digital ammeters for direct and current transformer connection					7KT1 120		1	1	027	0.200
	230		0 ... 20 trans-formers/5	2	B						

More information

More information about digital measuring devices can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs

Overview


7KT1 0 analog measuring devices

These devices for measuring voltages and currents can be used for monitoring incoming and outgoing currents or device currents in electric plants. They are suitable for direct connection in a single-phase system or with measuring transducers in three-phase systems.

Benefits

- The 7KT1 020 ammeter can be equipped with changeable scales for primary currents of 60, 150 or 400 A AC, depending on the transformer ratio of the installed current transformer. The changeable scales are included in the scope of delivery. This ensures universal application.
- Permanent overload up to 20 % does not damage the device. This means safety for your plant.

Selection and ordering data

	U_{meas}	I_{meas}	MW	DT	Order No.	Price per PU	PE	PS*/P. unit	PG	Weight per PU approx.	
	V AC	AC A					Unit(s)	Unit(s)		kg	
	Analog voltmeters					7KT1 000		1	1	027	0.105
	500		4	B							
	Analog ammeters for direct connection										
		25	4	B	7KT1 010						
	40	B	7KT1 011	1	1	027	0.125				
	60	B	7KT1 012	1	1	027	0.135				
Analog ammeters for current transformer connection with 3 different interchangeable scales					7KT1 020		1	1	027	0.105	
0 ... 60 A,	0 ... 60/5 0	4	B								
0 ... 150 A and	... 150/5 0										
0 ... 400 A	... 400/5										

BETA Measuring Single-Phase Measuring Devices

7KT5 8 time and pulse counters

Overview

Time and pulse counters are used for the reliable monitoring of production and service times, which enables the exact planning and monitoring of production sequences, maintenance cycles and warranty times.



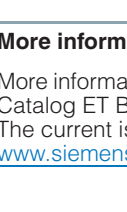
As well as the proven electromechanical time and pulse counters for mounting in distribution boards, we also supply digital time and pulse counters.

The fields of application for both counter types are very diverse, such as the recording of operating hours of machines, systems or building management systems, as well as pulse counting for general volume flow counting, registration of starting frequencies, starting cycles or production quantities in systems and machines.

Benefits

- Time and pulse counters help to plan maintenance intervals and ensure high plant availability.
- Versions without zero position and with electric or manual zero position for all applications.
- Flexible application of the digital counters for control supply voltages of 12 to 150 V DC and 24 to 240 V AC in a single device.

Selection and ordering data

	U_c	Fre- quency	MW	DT	Order No.	Price per PU	PE	PS*/ P. unit	PG	Weight per PU approx.	
	V	Hz					Unit(s)	Unit(s)		kg	
	Time counters										
	Mechanical counting mechanism, display 00000.00 h without resetting										
	12 ... 24	--	2	A	7KT5 801		1	1	027	0.095	
	24 AC	50		A	7KT5 802		1	1	027	0.095	
	115 AC			B	7KT5 803		1	1	027	0.095	
	230 AC			A	7KT5 804		1	1	027	0.095	
	115 AC	60		B	7KT5 806		1	1	027	0.095	
230 AC			B	7KT5 807		1	1	027	0.095		
	Pulse counters										
	Mechanical counting mechanism, display 0000000 □□ without zero position										
	12 ... 24	--	2	B	7KT5 811		1	1	027	0.095	
	24 AC	50/60		B	7KT5 812		1	1	027	0.095	
	230 AC			B	7KT5 814		1	1	027	0.095	
	Electronic time counters										
	LCD 000000.0 h without zero position										
	12 ... 150 DC, 24 ... 240	-- 50/60	2	B	7KT5 821		1	1	027	0.080	
	with electrical resetting										
	12 ... 150 DC, 24 ... 240	-- 50/60		B	7KT5 822		1	1	027	0.080	
	with electrical and mechanical resetting										
	12 ... 150 DC, 24 ... 240	-- 50/60		B	7KT5 823		1	1	027	0.080	
Electronic pulse counters											
LCD display 0000000 □□											
with electrical and mechanical resetting											
12 ... 150 DC, 24 ... 240	-- 50/60	2	B	7KT5 833		1	1	027	0.080		

More information

More information about time and pulse counters can be found in Catalog ET B1 · 2010.

The current issue of the catalog can be downloaded from www.siemens.com/e-installation-catalogs

BETA Measuring Single-Phase Measuring Devices

7KT5 5, 7KT5 6 time counters for front mounting

Overview



Time and pulse counters for control cabinets, control and mechanical engineering are used, e. g. in boilers, machine tools or compressors. The pulse counters count the starting frequencies. This supports planning for preventative maintenance.

In-time and regular maintenance is the best protection against unexpected shutdowns.

Benefits

- Time and pulse counters help to plan maintenance intervals and ensure high plant availability.

Selection and ordering data

	U_c	Fre- quency	MW	DT	Order No.	Price per PU	PE	PS*/ P. unit	PG	Weight per PU approx.	
	V	Hz					Unit(s)	Unit(s)		kg	
 	Time counters										
	Mechanical counting mechanism, display 00000.00 h, for front-panel mounting, front frame 48 mm x 48 mm										
	10 ... 80	–		A	7KT5 500		1	1	027	0.045	
	24 AC	50		A	7KT5 505		1	1	027	0.045	
	115 AC			A	7KT5 501		1	1	027	0.045	
	230 AC			A	7KT5 502		1	1	027	0.045	
	115 AC	60		A	7KT5 503		1	1	027	0.045	
	230 AC			A	7KT5 504		1	1	027	0.045	
	For front-panel mounting, front frame 72 mm x 72 mm with narrow frame according to DIN 43700										
	10 ... 50	–		2 B	7KT5 600		1	1	027	0.120	
115 AC	50		B	7KT5 601		1	1	027	0.120		
230 AC			A	7KT5 602		1	1	027	0.120		
115 AC	60		B	7KT5 603		1	1	027	0.120		
230 AC			B	7KT5 604		1	1	027	0.120		
Covers for 7KT5 5 time counters											
55 mm x 55 mm				B	7KT9 020		1	1	027	0.015	
Sealing rings for 7KT9 020 covers											
IP43 installation in switchboards with smooth surfaces (1 set = 5 units)				C	7KT9 000		1 set	1 set	027	0.020	
Terminal covers for 7KT5 6 time counters											
Degree of protection IP20 with connected conductors				B	7KT9 021		1	1	027	0.010	

Appendix



20/2	Glossary
20/3	Training
20/4	Ordering notes
20/7	Further documentation
20/8	Standards and approvals
20/27	Quality management
20/28	Siemens contacts
20/29	Solution partners
20/30	External partners
20/31	Online services
20/32	Service & Support
20/33	Software licenses
20/34	Subject index
20/44	Order number index including export markings
20/78	Terms of sale and delivery, export regulations

Glossary

Semiconductor protection

Semiconductor safety fuse, semiconductor fuse

A semiconductor fuse is an extremely fast responding fuse for protecting semiconductor devices.

There are two versions of semiconductor fuses:

- **Partial-range fuses** provide optimum protection for the power semiconductor against the effects of short-circuit currents. Additional fuses or circuit breakers are required for protecting the device and the cable and leads in the overload range.
- **All-range fuses** protect the power semiconductor and the connected cables and lines against overload and short-circuit. Here a distinction is drawn between fuses with the smallest possible breaking I^2t value (gR) and fuses with the smallest possible power loss and a characteristic curve adapted exactly to the line protection (double protection fuses gS).

Function class

The function class defines the breaking characteristic of the fuses:

- **Function class a**
Partial-range fuses:
Fuse links, that carry currents at least up to their rated current and can interrupt currents above a specific multiple of their rated current (minimum breaking current) up to their rated breaking capacity. The range between the rated current of the fuse link and the minimum breaking current is a forbidden range.
- **Function class g**
All-range fuses:
Fuse links that can continuously carry currents up to at least their rated current and can interrupt currents from the smallest melting current through to the rated breaking capacity.

Operational class

The operational class is the designation of the function class of a fuse link in connection with the object to be protected.

- **Operational class gS**
Full range semiconductor protection – preferably for use in safety switching devices
- **Operational class gR**
Full-range semiconductor protection
- **Operational class aR**
Partial-range semiconductor protection

Faster and more applicable know-how: Hands-on training from the manufacturer

SITRAIN® – the Siemens Training for Automation and Industrial Solutions – provides you with comprehensive support in solving your tasks.

Training by the market leader in automation and plant engineering enables you to make independent decisions with confidence. Especially where the optimum and efficient use of products and plants are concerned. You can eliminate deficiencies in existing plants, and exclude expensive faulty planning right from the beginning.



First-class know-how directly pays for itself: In shorter startup times, high-quality end products, faster troubleshooting and reduced downtimes. In other words, increased profits and lower costs.

Achieve more with SITRAIN

- Shorter times for startup, maintenance and servicing
- Optimized production operations
- Reliable configuration and startup
- Minimization of plant downtimes
- Flexible plant adaptation to market requirements
- Compliance with quality standards in production
- Increased employee satisfaction and motivation
- Shorter familiarization times following changes in technology and staff

Contacts

Visit our site in the Internet at:

<http://www.siemens.com/sitrain>

or let us advise you personally. You can request our latest training catalog from:

SITRAIN Customer Support Germany:

Phone: +49 (0)1805 / 23 56 11

Fax: +49 (0)1805 / 23 56 12

(0.14 €/min. from a German landline network, mobile telephone prices may vary)

E-Mail: info@sitrain.com

SITRAIN highlights

Top trainers

Our trainers are skilled teachers with direct practical experience. Course developers have close contact with product development, and directly pass on their knowledge to the trainers.

Practical experience

The practical experience of our trainers enables them to teach theory effectively. But since theory can be pretty drab, we attach great importance to practical exercises which can comprise up to half of the course time. You can therefore immediately implement your new knowledge in practice. We train you on state-of-the-art methodically/didactically designed training equipment. This training approach will give you all the confidence you need.

Wide variety

With a total of about 300 local attendance courses, we train the complete range of Siemens Industry products as well as interaction of the products in systems.

Tailor-made training

We are only a short distance away. You can find us at more than 50 locations in Germany, and in 62 countries worldwide. You wish to have individual training instead of one of our 300 courses? Our solution: We will provide a program tailored exactly to your personal requirements. Training can be carried out in our Training Centers or at your company.

The right mixture: Blended learning

"Blended learning" means a combination of various training media and sequences. For example, a local attendance course in a Training Center can be optimally supplemented by a teach-yourself program as preparation or follow-up. Additional effect: Reduced traveling costs and periods of absence.



Ordering notes

Logistics

General

With regard to delivery service, communications and environmental protection, our logistics service ensures "quality from the moment of ordering right through to delivery". By designing our infrastructure according to customer requirements and implementing electronic order processing, we have successfully optimized our logistics processes.

We are proud of our personal consulting service, on-time deliveries and 1-day transport within Germany.

To achieve this, we supply the preferred types marked with ex warehouse.

We regard the ISO 9001 certification and consistent quality checks as an integral part of our services.

Electronic order processing is fast, cost-efficient and error-free. Please contact us if you want to benefit from these advantages.

Packaging, packing units

The packaging in which our equipment is dispatched provides protection against dust and mechanical damage during transport, thus ensuring that you receive our products in a perfect state.

We select our packaging for maximum environmental compatibility and reusability (e. g. crumpled paper instead of polystyrene chips for protection during transport in packages up to 32 kg) and, in particular, with a view to reducing waste.

With our multi-unit packaging and reusable packaging, we offer you specific types of packaging that are both kind to the environment and tailored to your requirements:

Your advantages at a glance:

- Lower order costs.
- Cost savings through uniform-type packaging: low/no disposal costs.
- Reduced time and cost thanks to short unpacking times.
- "Just-in-time" delivery directly to the production line helps reduce stock: cost savings through reduction of storage area. cost savings through reduction of storage area.
- Fast assembly thanks to supply in sets.
- Standard Euro boxes - corresponding to the Euro pallet modular system - suitable for most conveyor systems.
- Active contribution to environmental protection.

Unless stated otherwise in the "Selection and ordering data" of this catalog, our products are supplied individually packed.

For small parts/accessories, we offer you economical packaging units as standard packs containing more than one item, e. g. 5, 10, 50 or 100 units. It is essential that whole number multiples of these quantities be ordered to ensure satisfactory quality of the products and problem-free order processing.

The products are delivered in a neutral carton. The label includes warning notices, the CE mark, the open arrow recycling symbol, and product description information in English and German. In addition to the Order No. (MLFB) and the number of items in the packaging, the Instr. Order No. is also specified for the operating instructions. It can be obtained from your local Siemens representative (you will find a list of your local Siemens representatives at www.siemens.com/automation/partner).

The device Order No. of most devices can also be acquired through the EAN barcode to simplify ordering and storage logistics. The Order Nos. are assigned electronically to the EAN code in the master data of low-voltage controls and distribution.

Ordering notes

Multi-unit and reusable packagings

The devices listed in the table on page 20/6 can be ordered in multi-unit or reusable packagings (further versions on request).

If ordering multi-unit or reusable packagings for the first time, please first consult your local Siemens representative with regard to pack type, quantity, delivery time and the precise order designation. For transport reasons, the use of reusable packaging is recommended only for Germany and EU countries.

For both pack types, the quantity of devices ordered (per Order No.) must be divisible by the pack quantity. If this is not the case, the electronic order processing system rounds up to the next integer multiple of packagings.

Multi-unit packaging

Products in a quantity sufficient to fill a multi-unit packaging:
1/2 (W96) and 1/4 (W97) ENK

As standard, multi-unit packs contain uniform-type, unpacked individual products (1 device type) in an appropriately sized carton made of recyclable cardboard. The products of the SIRIUS range can be ordered in units of 1/1, 1/2, 1/4 and 1/8 standard Euro boxes (ENK).

When ordering products in multi-unit packagings, the Order No. of the product concerned must be supplemented with **"-Z"** and, in addition, the order code **X90**, or for products from the SIRIUS range, the order code **W9..**

Example:
3RT10 24-1AB00-Z W96
+ quantity: 48

Reusable packaging (uniform type)

Standard reusable packagings contain uniform-type, non-packed individual products (1 device type) in a reusable standard Euro box (ENK) made of durable molded plastic with foam inserts for protection during transport.

The standard Euro box (ENK) also serves as transport packaging. The reusable packagings (ENK) plus foam inserts are returned by the customer (free of charge) to the supply base.

For products packed in reusable packaging, the Order No. must be supplemented with **"-Z"** and the order code **X95**.

Example:
3RT10 24-1AB00-Z X95
+ quantity: 96

Please contact your Siemens representative (you will find Siemens representatives at www.siemens.com/automation/partner) to clarify the delivery details or conditions for delivery in reusable packagings. Suitable arrangements will then be agreed with you.

Ordering notes

Set deliveries (reusable, different devices)

On request, we also deliver order-related packs of larger quantities of different unpacked devices in standard Euro boxes.

Please contact your Siemens representative (you will find Siemens representatives at www.siemens.com/automation/partner) to clarify the delivery details or conditions for set supply or delivery in reusable packagings. Suitable arrangements will then be agreed with you.

Packaging dimensions

Packaging	Length	Height	Width
	mm	mm	mm
ENK	598	220	396
W95	576	192	380
W96	380	187	290
W97	290	187	190
W98	290	98	190

Multi-unit and reusable packaging, quantity in units, supplied in indivisible pack quantities

Devices	Reusable	Multi-unit			
	X95 (1/1 ENK)	W95 (1/1 ENK)	W96 (1/2 ENK)	W97 (1/4 ENK)	W98 (1/8 ENK)
Contactors, sizes S00 ... S2					
3RT10 1...A/B..1/2	144	144	90	42	20
3RT10 2...A..0	96	96	48	24	12
3RT10 2...A..4	52	52	24	12	6
3RT10 2...B..0	66	66	35	17	10
3RT10 3...A..0/4	30	30	15	--	--
3RT10 3...B..0	24	24	15	--	--
3RT10 3...B..4	24	24	15	--	--
Snap-on auxiliary switch blocks, size S00:					
3RH19 11-F./GA/HA..	600	600	280	140	70
Contactors relays, size S00					
3RH11 ...A/B..0	144	144	90	42	20
Motor starter protectors, sizes S00 ... S2:					
3RV10 11-...0	96	96	48	24	12
3RV10 21-...0/5	61/61	61/61	29/29	14/14	5/5
3RV10 31-...0/5	24/24	24/--	12/12	5/--	2/--
Thermally delayed overload relays, sizes S00 ... S2:					
3RU11 16-...B0/B1	128/128	128/--	64/--	32/--	16/--
3RU11 26-...B0	88	--	45	22	14
3RU11 36-...B0	36	36	18	9	5
Fuseless load feeders up to 12 A, size S00:					
3RA11 10-...A..-1BB4	52	52	--	--	--
Solid-state timing relays:					
3RP15 05-...30	137	--	--	27	16
3RP15 1/2-...A.30	192	--	96	48	24
3RP15 2-...B.30	137	--	--	--	16
3RP15 4-...B.31	137	--	--	--	--
3RP15 74-...N.30	192	--	--	48	--

Devices	Reusable	Multi-unit		
	X95	X90	W95	W96
3SB pushbuttons and indicator lights				
Complete units and actuators (except EMERGENCY-STOP, mushroom pushbuttons and key-operated switches)	--	50	--	--
Complete units and actuators (EMERGENCY-STOP, mushroom pushbuttons and key-operated switches)	--	20	--	--
Contact blocks	--	150	--	--
Holder	--	100	--	--
Supports, blanking plugs	--	50	--	--
Safety relays				
3TK28	116	--	116	60

Orders for special versions

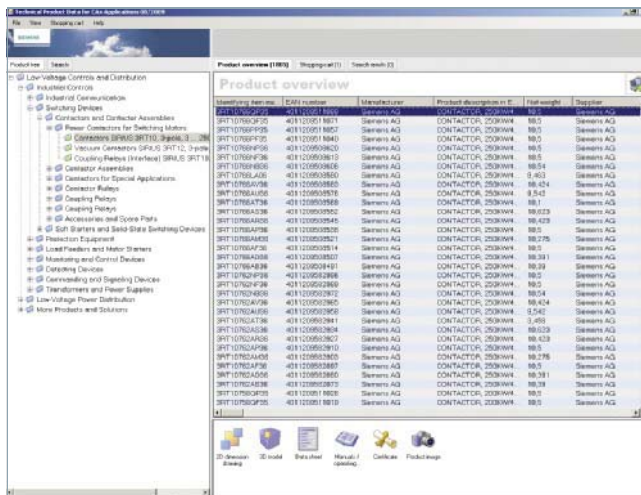
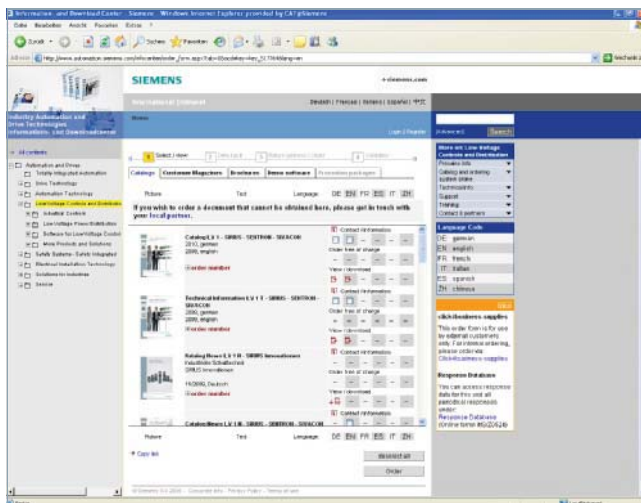
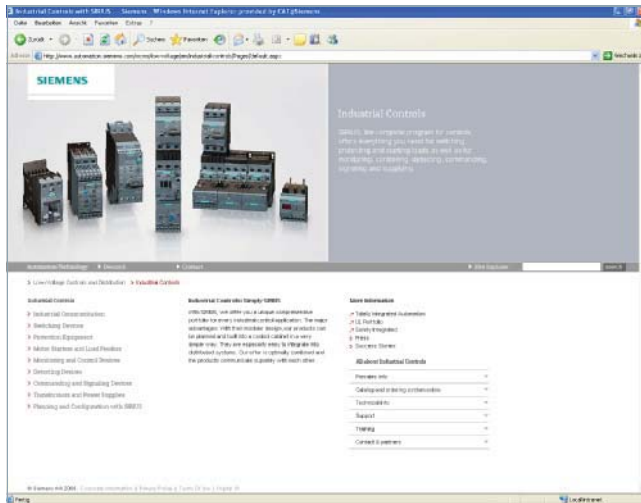
For ordering products that differ from the versions listed in the catalog, the order number specified in the catalog must be supplemented with "--Z"; the required features must be specified by means of the alphanumeric order codes or in plain text.

Small orders

When small orders are placed, the costs associated with order processing are greater than the order value. We recommend therefore that you combine several small orders. Where this is not possible, we unfortunately have to charge a processing supplement of € 20.-- to cover our costs for order processing and invoicing for all orders with a net goods value of less than € 250.--.

Further documentation

Overview



We regard product support as just as important as the products and systems themselves.

Visit our site in the Internet for a comprehensive range of material on SIRIUS, SENTRON and SIVACON, such as

- Operating instructions and manuals for direct download
- Online registration for seminars and events
- Up-to-date answers to your queries and problems
- Software upgrades and updates for fast download
- Telephone assistance in more than 190 countries
- Photos and graphics for external use

and much, much more - all conveniently and easily accessible.

Address:

www.siemens.com/industrial-controls

You will find information material such as catalogs, customer magazines, brochures and trial versions of software for low-voltage controls and distribution in the Internet at:

www.siemens.com/industrial-controls/catalogs

Here you can order your copy of the available documentation or download it in common file formats (PDF, ZIP).

For your configuration systems we can provide technical and graphic data in electronic form for the range of low-voltage control products:

Technical Product Data for ProCAX Applications

Edition 08/2009

For the further processing of low-voltage control products in CAE/CAD systems the DVD provides:

- Technical product master data in CSV and Excel format
- Graphic product data
 - 2D dimensional drwgs in DXF format (other formats optional)
 - 3D models in STEP format
 - Internal circuit diagrams
 - EPLAN electric P 8 macros
- Documentation in the form of PDF files
 - Product data sheets
 - Manuals
 - Operating instructions
 - Characteristic curves
 - Certificates
- Product photos
- Texts for tenders in GAEB and Text format

Order No.: E86060-D1000-A207-A7-6300

Token fee 10.-- €

Standards and approvals

Overview

Approvals, test certificates, characteristic curves

An overview of the certificates available for low-voltage control products along with more technical documentation can be consulted daily in the Internet at:

www.siemens.com/industrial-controls/support

Title	Date
Certificates Declaration of Conformity, EC-Declaration of Conformity, Manufacturer EC-Declaration of Conformity, 2005 for products: 3RA02 more>>	2005-11-25 ID: 2837908
Certificates Declaration of Conformity, EC-Declaration of Conformity, Manufacturer 2001 for products: 3RT20, 3RH2, 3RA22, 3RA24, 3RH29 more>>	2005-11-20 ID: 2876903
Certificates Declaration of Conformity, EC-Declaration of Conformity, Manufacturer EC-Declaration of conformity, 2002 for products: 3RU2 more>>	2005-11-20 ID: 2876900
Certificates General Product Approval, CSA, USA COC 1110581 for products: 3RV1011, 3RV1411, 3RV1811, 3RV101 more>>	2005-11-05 ID: 4348031

Product support: Approvals / Certificates

Title	Date
Characteristics Tripping Characteristics, 800 8960 99 000 [048 K]Z] english Overload tripping Siles Compact for products: 3RA8120-0AB20, 3RA8120-0AB20, 3RA8120-0AF20, more>>	2009-03-02 ID: 2836799
Characteristics Tripping Characteristics, NEP560097802000D502 [034 K]B] english Overload tripping class 20E 0,1 - 0,4 A for products: 3RA8120-0AB20, 3RA8120-0AC20, 3RA8120-0AF20, more>>	2005-05-05 ID: 28215949
Characteristics Tripping Characteristics, NEP_560098582000D502 [038 K]B] english Overload tripping Siles class 10E 0,1 - 0,4 A for products: 3RA8120-0AB20, 3RA8120-0AC20, 3RA8120-0AF20, more>>	2005-05-05 ID: 28216113
Characteristics Tripping Characteristics, 800 8961 99 000 [015 K]Z] english Overload tripping Siles Compact for products: 3RA8120-0AB20, 3RA8120-0BC20, 3RA8120-0BF20, more>>	2009-03-02 ID: 28462299
Characteristics Tripping Characteristics, NEP5600971800D501 [030 K]B] english	2005-05-05 ID: 28215988

Product support: Characteristic curves

Safety characteristics

In the following standards, the so-called B10 values for calculating the safety integrity or safety integrity level (SIL) in functional safety at a high or continuous demand rate are required also for electromechanical switchgear:

- IEC 62061 "Safety of machines - Functional safety of safety-related electrical, electronic and programmable electronic control systems",
- ISO 13849-1:2006 "Safety of machines - Safety-related components of controls - Part 1: General principles".

Failure rates of electromechanical components are required for calculating the safety integrity or safety integrity level (SIL) in functional safety at a low rate of demand. Further requirements are laid down in IEC 61511-1 "Functional safety - Safety instrumented systems for the process industry sector - Part 1: Framework, definitions, system, hardware and software requirements".

The German versions of the above standards are:

- EN 62061 (VDE 0113-50), October 2005, which since 31.12.2005 has been harmonized as EN 62061 under the Machinery Directive,
- EN ISO 13849-1:2008,
- EN 61511-1 (VDE 810-1).

Definitions

$\lambda(t) dt$ is the probability that a unit which has not failed by a certain time t will fail in the following interval $(t; t + dt)$.

Failure rates have the dimension 1/time unit, e. g. 1/h.

Failure rates for components are often specified in FIT (failures in time unit): 1 FIT equals $10^{-9}/h$.

From the failure rate it is possible to derive a (mathematical) distribution function of the failure probability:

$$F(t) = 1 - \exp(-\lambda t)$$

with λ as constant failure rate

- The mean value of this exponential distribution is also referred to as:
 - Mean Time To Failure (MTTF) in the case of irreparable components; 63.2 % of components fail by the MTTF.
 - Mean Operating Time Between Failures (MTBF) in the case of repairable components.
- $MTTF = 1/\lambda$
(MTTF is a statistical mean value but no guarantee for endurance)

Electromechanical components are often irreparable components. In general, the failure rate of monitored units changes with age.

The B10 value for devices subject to wear is expressed in number of operating cycles:

- it is the number of operating cycles after which 10 % of the test specimens fail in the course of an endurance test (or: the number of operating cycles after which 10 % of the devices have failed).

For low demand rates (mainly in the process industry), the failure rate and not the B10 value is used to determine the failure probability.

Standards and approvals

Standard B10 values at a high demand rate

With the help of the B10 value and a simplified formula (see section 6.7.8.2.1 of EN 62061), the user can then calculate the total failure rate of an electromechanical component:

$$\lambda = 0.1 \times C/B10$$

with C = operating cycles per hour. C is specified by the user.

The failure rate is made up of safe (λ_S) and dangerous (λ_D) failures:

$$\lambda = \lambda_S + \lambda_D$$

or

$$\lambda_D = [\text{share of dangerous failures in \%}] \times \lambda$$

$$\lambda_S = [\text{share of safe failures in \%}] \times \lambda$$

The failure rate of the dangerous failures λ_D of the components used is needed for further calculations.

Listed in the following table are the standard B10 values and the share of dangerous failures for SIRIUS product groups at a high demand rate.

Standard B10 values (at a high demand rate)		
SIRIUS product group (electromechanical components)	Standard B10 value (operating cycles)	Share of dangerous failures
EMERGENCY-STOP control devices (with positive-opening contacts)		
- Rotate-to-unlatch	100 000 ¹⁾	20 %
- Pull-to-unlatch	30 000 ¹⁾	20 %
Cable-operated switches for EMERGENCY-STOP function (with positive-opening contacts)	1 000 000 ¹⁾	20 %
Standard position switches (with positive-opening contacts)	10 000 000 ²⁾	20 %
Position switches with separate actuator (with positive-opening contacts)	1 000 000 ¹⁾	20 %
Position switches with solenoid interlocking (with positive-opening contacts)	1 000 000 ¹⁾	20 %
Hinge switches (with positive-opening contacts)	1 000 000 ¹⁾	20 %
Pushbuttons (non-latching) (with positive-opening contacts)	10 000 000 ²⁾	20 %
Contactors/motor starters (with positive-opening contacts or mirror contacts)	1 000 000 ²⁾	75 % ³⁾

¹⁾ Limited primarily by mechanical wear.

²⁾ Limited primarily by contact wear.

³⁾ Through fault detection using positive-opening auxiliary switches it is possible to improve the SIL level.

The B10_d value used in EN ISO 13849-1:2008 is determined as follows:

$$B10_d = \frac{B10}{\text{Share of dangerous failures}}$$

Calculation example

A protective door is monitored by a position switch with a separate actuator.

The protective door is opened 4 times an hour.

The overall failure rate of the position switch is:

$$\lambda = 0.1 \cdot C/B10 \text{ [failures/h]}$$

$$\lambda = 0.1 \cdot 4/1000000 = 4 \cdot 10^{-7} \text{ [failures/h]}$$

The dangerous failure rate is calculated with:

$$\lambda_D = 20 \% \text{ of } \lambda = 0.2 \cdot 4 \cdot 10^{-7} \text{ [failures/h]}$$

$$\lambda_D = 8 \cdot 10^{-8} \text{ [failures/h]}$$

Standard failure rates (at a low demand rate)

On the basis of the failure rates it is possible to calculate the average probability of failure on demand (PFD_{avg}) of a PLT protective device.

A so-called low demand rate is assumed, meaning the rate of demand on the safety-related system amounts to no more than once a year and is not greater than double the frequency of the repeat test.

A repeat test once a year is recommended for electromechanical components in order to reveal passive faults.

For special applications it is possible, in agreement with the inspecting institution (e. g. a technical inspectorate, government agency or the like) to extend the test intervals by using suitable solutions (e. g. a multi-channel version etc.).

Under the above conditions and in compliance with the requirements laid down in IEC 61511 it is possible to achieve SIL 2 with a single-channel design and SIL 3 with a two-channel design.

Listed in the following table are the standard failure rates and the share of dangerous failures for SIRIUS product groups at a low demand rate.

Standard failure rates at a low demand rate		
SIRIUS product group (electromechanical components)	Standard failure rates (in FIT) ¹⁾	Share of dangerous failures ²⁾
EMERGENCY-STOP control devices (with positive-opening contacts)	100 ³⁾	20 %
Cable-operated switches for EMERGENCY-STOP function (with positive-opening contacts)	100 ³⁾	20 %
Standard position switches (with positive-opening contacts)	100	20 %
Position switches with separate actuator (with positive-opening contacts)	100	20 %
Position switches with solenoid interlocking (with positive-opening contacts)	100	20 %
Hinge switches (with positive-opening contacts)	100	20 %
Pushbuttons (non-latching) (with positive-opening contacts)	100	20 %
Contactors/motor starters (with positive-opening contacts or mirror contacts)	100	< 40 % ⁴⁾

¹⁾ The failure rates specified in the table were limited to 100 FIT.

²⁾ Valid only under the previously mentioned conditions.

³⁾ Limited likewise to 100 FIT due to overruling protection with latching.

⁴⁾ Through fault detection using positive-opening auxiliary switches it is possible to improve the SIL level.

Standards and approvals

Standards

IEC	EN	DIN VDE	Title
60947-1	60947-1	--	Low-voltage controlgear and switchgear - General requirements
60947-2	60947-2	--	• Circuit-breakers
60947-3	60947-3	--	• Switches, disconnectors, switch-disconnectors and fuse-combination units
60947-4-1	60947-4-1	--	• Contactors and motor starters - Electromechanical contactors and motor starters
60947-4-2	60947-4-2	--	• Contactors and motor starters - Semiconductor motor controllers and starters, soft starters
60947-4-3	60947-4-3	--	• AC semiconductor controllers and contactors for non-motor loads
60947-5-1	60947-5-1	--	• Control circuit devices and switching elements - Electromechanical control circuit devices
60947-5-2	60947-5-2	--	• Control circuit devices and switching elements - Proximity switches
60947-5-3	60947-5-3	--	• Control circuit devices and switching elements - Requirements for proximity devices with defined behaviour under fault conditions
60947-5-5	60947-5-5	--	• Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
60947-5-6	60947-5-6	--	• Control devices and switching elements - DC interface for proximity switches and switching amplifiers (NAMUR)
60947-5-7	60947-5-7	--	• Requirements for proximity devices with analog output
60947-5-8	60947-5-8	--	• Control circuit devices and switching elements - Three-position enabling switches
60947-5-9	60947-5-9	--	• Control circuit devices and switching elements - Flow rate switches
60947-6-1	60947-6-1	--	• Multiple function equipment - Transfer switching equipment
60947-6-2	60947-6-2	--	• Multiple function equipment - Control and protective switching devices (or equipment) (CPS)
60947-7-1	60947-7-1	--	• Ancillary equipment: Terminal blocks for copper conductors
60947-7-2	60947-7-2	--	• Ancillary equipment: Protective conductor terminal blocks for copper conductors
60947-7-3	60947-7-3	--	• Ancillary equipment: Safety requirements for fuse terminal blocks
60947-8	60947-8	--	• Control units for built-in thermal protection (PTC) for rotating electrical machines
62026-1	--	--	• Controller-device interfaces (CDIs) - General rules
62026-2	50295	--	• Controller-device interfaces (CDIs) - Actuator-Sensor Interface (AS-i)
60269-1	60269-1	--	Low-voltage fuses: General requirements
60269-4	60269-4	--	• Supplementary requirements for fuse links the protection of semiconductor devices
60050-441	--	--	International Electrotechnical Vocabulary: Switchgear, controlgear and fuses
60439-1	60439-1	--	Low-voltage switchgear and controlgear assemblies: Type-tested and partially type-tested assemblies
--	50274	--	Low-voltage switchgear and controlgear assemblies - Protection from electric shock - Protection from accidental touching of dangerous active parts
61140	61140	--	Protection from electric shock - General requirements for apparatus and equipment
60664-1	60664-1	--	Insulation coordination for electrical equipment in low-voltage systems; Principles, requirements and tests
60204-1	60204-1	--	Electrical equipment of machines: General requirements
--	50178	--	Equipment of electrical power installations with electronic equipment
60079-14	60079-14	--	Electrical apparatus for potentially explosive gas atmospheres
60079-2	60079-2	--	Installing electrical apparatus in potentially explosive gas atmospheres (except mining)
60079-2	60079-2	--	Electrical equipment for potentially explosive gas atmospheres - Part 2 Pressurized enclosures M "p"
61810-1	61810-1	--	Electromechanical elementary relays (electromechanical switching relays without a fixed time response); General and safety-related requirements
61812-1	61812-1	--	Relays with a fixed time response (timing relays) for industrial applications - Part 1: Requirements and tests
60999-1	60999-1	--	Connecting materials - Safety requirements for screw terminals and screwless clamping points for electrical copper conductors - Part 1: General requirements and special requirements for terminals for conductors from 0.2 mm ² to 35 mm ²
61558-1	61558-1	0570-1 ¹⁾	Safety of transformers, power supply units, reactors and similar - Part 1: General requirements and tests
61558-2-1	61558-2-1	0570-2-1 ¹⁾	-Part 2-1: Particular requirements for mains transformers and power supply units which include mains transformers, for general use
61558-2-2	61558-2-2	0570-2-2 ¹⁾	-Part 2-2: Particular requirements for control transformers
61558-2-4	61558-2-4	0570-2-4 ¹⁾	-Part 2-4: Particular requirements for isolating transformers for general use
61558-2-6	61558-2-6	0570-2-6 ¹⁾	-Part 2-6: Particular requirements for safety transformers for general use
61558-2-9	61558-2-9	0570-2-9 ¹⁾	-Part 2-9: Particular requirements for mains transformers for handheld lamps of protection class III, for tungsten lamps
61558-2-12	61558-2-12	0570-2-12 ¹⁾	-Part 2-12: Particular requirements for magnetic-type voltage regulators
61558-2-13	61558-2-13	0570-2-13 ¹⁾	-Part 2-13: Particular requirements for autotransformers
61558-2-15	61558-2-15	0570-2-15 ¹⁾	-Part 2-15: Special requirements for isolating transformers for supply of medical premises
61558-2-20	61558-2-20	0570-2-20 ¹⁾	-Part 2-20: Particular requirements for small reactors
62041	62041	0570-10 ¹⁾	Safety of transformers, power supply units, reactors and similar - EMC requirements:
60076-11	60076-11	--	Power transformers - Part 11: Dry transformers
--	--	0552	Standards for variable-ratio transformers with moving contacts perpendicular to the coiling direction
61000-4-1	61000-4-1	--	Electromagnetic compatibility (EMC) - Part 4: Testing and measuring techniques; Main Section 1: Overview of measuring techniques for interference immunity; Basic EMC standard
61000-6-3	61000-6-3	--	Electromagnetic compatibility (EMC); Basic specification for emitted interference in residential and commercial environments as well as in light industry
61000-6-4	61000-6-4	--	Electromagnetic compatibility (EMC); Basic specification for emitted interference in industrial environments
60044-1	60044-1	--	Measuring transducers: Current transformers

1) VDE classification (not DIN VDE).

Standards and approvals

UL	CSA C22.2	ASME	JIS	Title
506	--	--	--	Specialty transformers
508	--	--	--	Industrial control equipment
489	--	--	--	Molded case circuit breakers, molded case switches, and circuit breaker enclosures
1012	--	--	--	Power units other than CLASS 2
1561	--	--	--	Dry-type general purpose and power transformers
5085	--	--	--	Low-voltage transformers
60601-1	--	--	--	Medical electrical equipment, Part 1: General requirements for safety (IEC 60601, EN 60601, VDE 0750-1)
1604	--	--	--	Electrical equipment for use in CLASS I and II, Division 2 and CLASS III hazardous (Classified) locations
1059	--	--	--	Terminal blocks
486A-486B	--	--	--	Wire connectors
486E	--	--	--	Equipment wiring terminals for use with aluminum and/or copper conductors
50	--	--	--	Enclosures for electrical equipment. Non-environmental considerations
--	No. 66	--	--	Specialty transformers
--	No. 14	--	--	Industrial control equipment
--	No. 5	--	--	Molded case circuit breakers, molded case switches, and circuit breaker enclosures
--	No. 107-1	--	--	General use power supplies
--	--	A17.5 / B 44.1	--	Elevator and escalator electrical equipment
--	--	--	C 8201-4-1	Low-voltage switchgear and controlgear; Contactors and motor-starters

Approval requirements valid in different countries

Siemens low-voltage switchgear and controlgear are designed, manufactured and tested according to the relevant German standards (DIN and VDE), IEC publications and European standards (EN) as well as CSA and UL standards. The standards assigned to the single devices are stated in the relevant parts of this catalog.

As far as is economically viable, the requirements of the various standards valid in other countries are also taken into account in the design of the equipment.

In some countries (see table below), an approval is required for certain low-voltage switchgear and controlgear components. Depending on the market requirements, these components have been submitted for approval to the authorized testing institutes.




In some cases, CSA for Canada and UL for the USA only approve special switchgear versions. Such special versions are listed separately from the standard versions in the individual parts of this catalog.

For this equipment, partial limitations of the maximum permissible voltages, currents and ratings can be imposed, or special approval and, in some cases, special identification is required.

For use on board ship, the specifications of the marine classification societies must be observed (see table below). In some cases, they require type tests of the components to be approved.

The present state of approval is shown in the "Overview of approved equipment" tables on page 20/15 to page 20/26.

Testing bodies, approval identification and approval requirements

Country	Canada ¹⁾	USA ¹⁾	China
Government-appointed or private, officially recognized testing bodies	CSA UL (USA)	UL	CQC
Approval symbol			
Approval requirements	+	+	+
Remarks	UL and CSA are authorized to grant approvals according to Canadian or US regulations. Please note: these approvals are frequently not recognized and additional approval often has to be obtained from the national testing authority.		CCC

For more information about UL and CSA see page 20/14.

¹⁾ For guide numbers and file numbers for approvals, please visit www.siemens.com/automation/support and select "Product Support".

Marine classification societies

Country	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA
Name	Germanischer Lloyd	Lloyds Register of Shipping	Bureau Veritas	Det Norske Veritas	Russian Maritime Register of Shipping	Registro Italiano Navale	Polski Rejestr Statków	American Bureau of Shipping
Codes	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS

Standards and approvals

CE mark of conformity

Manufacturers of products which fall within the subject area to which EC directives apply must identify their products, operating instructions or packaging with a CE mark of conformity.

The CE mark of conformity confirms that a product fulfills the appropriate basic requirements of all pertinent directives. The mark of conformity is a mandatory requirement for putting products into circulation throughout the EC.

All the products in this catalog are in conformance with the EC directives and bear the CE mark of conformity.

- Low-voltage directive
- EMC directive
- Machinery directive
- Ex protection directive

The CE mark of conformity: **CE**.

ALPHA/LOVAG

The Low-Voltage Controls and Distribution Division of Siemens AG is a member of the "Gesellschaft zur Prüfung und Zertifizierung von Niederspannungsgeräten e.V. ALPHA" (Society for Testing and Certification of Low-Voltage Controlgear), Frankfurt am Main.

The responsibility of manufacturers and the high quality of products are promoted by ALPHA by means of supportive procedural guidelines for testing equipment according to the currently valid standards.

Providing specific conditions are fulfilled, ALPHA can also issue officially recognized product certificates if required. As a member of LOVAG, ALPHA is also working towards obtaining international recognition for declarations of conformity and certificates.

LOVAG (Low-Voltage Agreement Group) is a body comprising international specialists from certification bodies and industry who are working together to create a standardized European certificate.

List of LOVAG members

ALPHA	Germany
ASEFA	France
ACAE	Italy
SGS CEBC	Belgium
Intertek Semko AB	Sweden
APPLUSS + LGAI	Spain
VEIKI-VNL	Hungary



Accident prevention

Test certificates and approvals from the BIA (German statutory industrial accident insurance institution in Bonn) and from SUVA (Swiss institute for accident prevention) are available for some devices in safety control systems. For details, see the respective product descriptions.

Ex protection certificates for SIRIUS controls

Motor protection devices that protect a motor installed in a potentially explosive atmosphere against overloading must comply with certain special requirements. These requirements are laid down in the following standards:

- EN 60079-0
- EN 60079-1
- EN 60079-7
- EN 60079-14
- EN 60079-17
- EN 60947-1
- EN 60947-4-1
- EN 60947-5-1
- EN 60947-8

Certification

July 1, 2003 saw the dawning of a new era in the field of explosion protection. Since this date, only those devices and protection systems that have been certified for operation in potentially explosive atmospheres according to directive 94/9/EC can be brought into circulation within the European Union.

Only those motor protection devices that have been constructed according to the above-mentioned standards and which have a conformity declaration from the manufacturer based on a prototype test certificate may be brought into circulation within the member states of the EC.

The quality management system of the manufacturer is also subjected to certain requirements and a "QM certificate" must be obtained for the manufacturer from a recognized authority.

Certification of the QM system

A certificate of approval for quality assurance production has been issued by DEKRA EXAM GmbH¹⁾ with the number BVS 05 ATEX ZQS/E111 of DEKRA EXAM GmbH¹⁾ according to Directive 94/9/EC.

This certificate is valid for equipment groups I and II and categories M2 and 2: Safety and control devices for electrical equipment.

Certificates

For the 3RV, 3RU, 3RB, 3UF, 3RN and 3RW motor protection devices, the corresponding conformity declarations and prototype test certificates for Category 2G, and to some extent 2D, are available and can be supplied on request. [More details can also be found in the section "Type overview of approved devices for potentially explosive areas \(ATEX explosion protection\)" on page 20/25.](#)

Identifying markings

All equipment must be marked in according to the ATEX guideline. The ATEX identification code contains the equipment group, the approved environment, the number of the certification authority and other technical data that was determined from the type test.

¹⁾ DEKRA EXAM GmbH

The certification authority of the "DEKRA EXAM GmbH" numbered as authority number 0158 according to Article 9 of Directive 94/9/EC of the European Parliament and Council dated March 23, 1994, certifies that Siemens Amberg and Cham maintains a quality system for production that satisfies Appendix IV of this Directive.

Certificate of the AS-International Association for AS-Interface products

AS-Interface products are tested and certified by the AS-International Association. The products have been tested in an accredited test laboratory according to testing guidelines.

Standards and approvals

Special standards for the USA and Canada

In the USA and Canada, for machine tools and processing machines in particular, supply lines are laid using rubber insulated cable enclosed in heavy-duty steel piping similar to that used for gas or water pipe systems.

The tubing system must be completely watertight and electrically conductive (especially sleeving and elbows). Since the tubing system can also be grounded, the cable entries of enclosed units equipped with heavy-gauge or metric threads must be fitted with metal adapters between these threads and the tube thread. The necessary adapters are specified for the switchgear as accessories; they should be ordered separately unless otherwise specified.











Low-voltage switchgear and controlgear for auxiliary circuits (e. g. contactor relays, commanding and signaling devices and auxiliary switches/auxiliary contacts in general) are generally

only approved by CSA and UL for "**Heavy Duty**" or "**Standard Duty**" and are identified either with these specifications in addition to the maximum permissible voltage or by using an abbreviation.

The abbreviations are harmonized with IEC 60947-5-1 Appendix 1 Table A.1 and correspond to the stated utilization categories.

For various switching devices detailed in the catalog, a note has been included to the effect that, above a certain voltage, the auxiliary switches/auxiliary contacts can only be used if they have the same polarity. This means that the input terminals can only be connected to the same pole of the actuating voltage, e. g. "600 V AC above 300 V AC same polarity".

Different features of UL approvals (for USA and Canada)

Recognized Component	Listed Product
Devices are identified on the rating plate using the "UL recognition mark": USA:  c  us Canada: c   us	Devices are identified using the "UL listing mark" on the rating plate e. g. USA:  LISTED 165 C Canada: c  LISTED 165 C IND. CONT. EQ. IND. CONT. EQ. (165 C stands for: Siemens, I IA CD Division, Amberg plant)
Devices are approved as modules for "factory wiring", i. e.: as devices for installation in control systems, which are selected, installed, wired and tested entirely by trained personnel in factories, workshops or elsewhere, according to the operating conditions .	Devices are approved for "field wiring", i. e.: <ul style="list-style-type: none"> • As devices for installation in control systems, which are completely wired by trained personnel in factories, workshops or elsewhere. • As single devices for sale in retail outlets in the USA/Canada.
If devices are  or c  approved as "listed products", they are also approved as  or c  "recognized components".	

For more information about UL and CSA see page 20/11.

Special standards for Russia, Australia and China

GOST approval for Russia



A GOST approval is required for all products that are to be sold in Russia. The GOST mark has been obligatory on the packaging of all devices since mid-1998.

All devices delivered to any part of the Russian Federation must have this customs certification.

C-Tick licensing for Australia



The C-Tick license is required for marketing Siemens components in Australia. Electronic devices must provide proof of EMC clearance in Australia, similar to the CE mark of conformity laid down by the EMC directive applicable in the EC and bear the "C-Tick" mark. These requirements have been in force since October 1st, 1999.

CCC approval



Since August 1, 2003, CCC approval is required for many products that are marketed in China.

Type overview of approved devices

Devices	Type	Approvals			Marine classifications									
		Canada 1) 2)	USA 1)	1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		Ⓢ	Ⓢ	Ⓢ	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS	
Chapter 2														
AS-Interface safety monitors	3RK1 105	+	+	×	--	+	+	+	+	+	+	+	+	
AS-Interface safety modules	3RK1 205	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK1 405	+	+	×	--	+	+	+	+	+	+	+	+	
Masters														
CP 243-2	6GK7 243	+	+	×	--	+	+	--	+	--	o	--	--	
CP 343-2/2P (V2.1)	6GK7 343-2	+	+	×	--	+	+	--	+	--	o	--	--	
CP 343-2/2P (V3.0)	6GK7 343-2/2P	o	o	×	--	+	+	--	+	--	--	--	--	
Routers														
DP/AS-i F-LINK	3RK3 141	+	+	×	o	--	--	--	--	--	--	--	--	
IE/AS-i LINK PN IO	6GK1 411	+	+	×	--	+	+	+	+	+	+	+	+	
DP/AS-i LINK Advanced	6GK1 415	+	+	×	--	+	+	+	+	--	+	+	+	
DP/AS-Interface LINK 20E	6GK1 415	+	+	×	--	+	+	+	+	--	+	+	+	
I/O modules for operation in the field														
Digital I/O modules, IP67 - K60	3RK1 200	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK1 40.	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK2 200	+	+	×	--	+	+	+	+	--	+	+	+	
	3RK2 400	+	+	×	--	+	+	+	+	--	+	+	+	
Digital I/O modules, IP67 - K45	3RK1 200	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK1 400	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK2 100	+	+	×	--	+	+	+	+	--	o	+	+	
	3RK2 200	+	+	×	--	+	+	+	+	--	o	+	+	
	3RK2 400	+	+	×	--	+	+	+	+	--	o	+	+	
Digital I/O modules, IP67 - K20	3RK1 200	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK2 200	+	+	×	--	+	+	+	+	--	o	+	+	
	3RK2 400	+	+	×	--	+	+	+	+	--	o	+	+	
Analog I/O modules, IP67 - K60	3RK1 107	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK1 207	+	+	×	--	+	+	+	+	+	+	+	+	
I/O modules for operation in the control cabinet, IP20														
Slimline	3RK1 100	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK1 200	+	+	×	--	+	+	+	+	+	+	+	+	
	3RK1 40.	+	+	×	--	+	+	+	+	+	+	+	+	
F90 module	3RG9 002	+	+	×	--	+	+	+	+	--	+	+	+	
	3RG9 004	+	+	×	--	+	+	+	+	--	+	+	+	
Special integrated solutions	3RK1 400	+	+	×	--	+	+	+	+	+	+	+	+	
Modules with special functions	3RK1 200	+	+	×	--	+	+	+	+	+	+	+	+	
Counter modules														
Ground-fault detection modules	3RK1 408	+	+	×	--	+	+	+	+	+	+	+	+	
Overtoltage modules	3RK1 901	+	+	×	--	+	+	+	+	+	+	+	+	
AS-Interface connections for LOGO!	3RK1 400	+	+	×	--	+	+	+	+	+	+	+	+	
Power supply units	3RX9 501/502	+	+	×	--	+	+	+	+	--	+	+	+	
AS-Interface, IP20	3RX9 503													
Transmission media														
AS-Interface shaped cables	3RX9 01	--	--	--	--	+	+	+	+	+	+	+	+	
	3RX9 02	--	--	--	--	+	+	+	+	+	+	+	+	

+ Standard version approved.

-- Not yet submitted for approval.

o Device submitted for approval, please inquire.

x Ⓢ approval not required because Ⓢ approved.

1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.

2) Ⓢ and Ⓢ approvals are available in accordance with US approval.

Standards and approvals

Devices	Type	Approvals			Marine classifications									
		Canada 1) 2)	USA 1)	1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		Ⓒ	Ⓓ	UL	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS	
Chapter 2 (continued)														
System components														
Repeater	6GK1 210	+	+	×	--	+	+	+	+	--	+	+	+	
Extension plug	3RK1 901	+	+	×	--	+	+	+	+	+	+	+	+	
Addressing units	3RK1 904-2	--	--	--	--	--	--	--	--	--	--	--	--	
AS-Interface analyzer	3RK1 904-3	--	--	--	--	--	--	--	--	--	--	--	--	
Chapter 3														
SIRIUS 3RT10 contactors	3RT10 1.	+	+	×	+	+	+	+	+	+	+	+	+	
	3RT10 2.	+	+	×	+	+	+	+	+	+	+	+	+	
	3RT10 3.	+	+	×	+	+	+	+	+	+	+	+	+	
	3RT10 4.	+	+	×	+	+	+	+	+	+	+	+	+	
	3RT10 5.-A	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 5.-N	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 5.-P	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 5.-Q	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 6.-A	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 6.-N	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 6.-P	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 6.-Q	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 7.-A	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 7.-N	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 7.-P	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT10 7.-Q	+	+	×	+	+	+	+	+	--	o	--	+	
	SIRIUS 3RT12 vacuum contactors	3RT12 6.-A	+	+	×	+	+	+	+	+	--	o	--	+
		3RT12 6.-N	+	+	×	+	+	+	+	+	--	o	--	+
3RT12 7.-A		+	+	×	+	+	+	+	+	--	o	--	+	
3RT12 7.-N		+	+	×	+	+	+	+	+	--	o	--	+	
SIRIUS 3RT14 contactors for switching resistive loads	3RT14 4.	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 56.-A	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 56.-N	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 56.-P	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 56.-Q	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 66.-A	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 66.-N	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 66.-P	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 66.-Q	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 76.-A	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 76.-N	+	+	×	+	+	+	+	+	--	o	--	+	
	3RT14 76.-P	+	+	×	+	+	+	+	+	--	o	--	+	
3RT14 76.-Q	+	+	×	+	+	+	+	+	--	o	--	+		
SIRIUS 3RT 4-pole contactors	3RT13	+	+	×	+	--	--	--	--	--	--	--	--	
	3RT15	+	+	×	+	--	--	--	--	--	--	--	--	
SIRIUS 3RT16 capacitor contactors	3RT16	+	+	×	+	--	--	--	--	--	--	--	--	
SIRIUS 3RH contactor relays (extended oper- ating range)	3RH11 22-2K	+	+	×	+	+	+	+	+	+	+	+	+	

+ Standard version approved.

-- Not yet submitted for approval.

o Device submitted for approval, please inquire.

x UL approval not required because Ⓒ approved.

1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.

2) Ⓒ and UL approvals are available in accordance with US approval.


Standards and approvals

Devices	Type	Approvals			Marine classifications									
		Canada 1) 2)	USA 1)	1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		Ⓒ	Ⓓ	Ⓔ	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS	
Chapter 3 (continued)														
SIRIUS coupling relays	3RT10	+	+	x	+	+	+	+	+	+	+	+	+	
	3RH11	+	+	x	+	+	+	+	+	+	+	+	+	
	Accessories for 3RT and 3RH													
	3RH19 11	+	+	x	+	+	+	+	+	+	+	+	+	
	3RH19 21	+	+	x	+	+	+	+	+	+	+	+	+	
	3RT19 .6-1....	+	+	x	+	+	+	+	+	+	+	+	+	
	3RT19 .6-2....	+	+	x	m	+	+	+	+	+	+	+	+	
	3RT19 46-4GH07	+	+	x	+	--	--	--	--	--	--	--	--	
Coupling relays with narrow design	3RS18	+	+	x	+	--	--	--	--	--	--	--	--	
	3TX7 01 ¹⁾	+	+	x	+	--	--	--	--	--	--	--	--	
	3TX7 002, 3TX7 003	+	+	x	+	--	--	--	--	--	--	--	--	
	3TX7 004, 3TX7 005	+	+	x	+	--	--	--	--	--	--	--	--	
Plug-in relays, relay couplers	LZS:MT	+ ²⁾	--	+	m	--	--	--	--	--	--	--	--	
	LZS:PT	+ ²⁾	--	+	m	--	--	--	--	--	--	--	--	
	LZS:RT	+ ²⁾	--	+	m	--	--	--	--	--	--	--	--	
SIRIUS 3RA13 reversing contactor assemblies	3RA13 1.	+	+	x	+	+	+	+	+	+	+	+	+	
SIRIUS 3RA14 we-delta contactor assemblies	3RA14 1	--	--	x	+	+	+	+	+	+	--	+		
Accessories for 3RA1	3RA19 13-2B	+	+	x	m	+	+	+	+	+	+	+	+	
	3RA19 13-3K	--	--	--	m	+	+	+	+	+	+	+	+	
	3RA19 23-2B	+	+	x	m	+	+	+	+	+	+	+	+	
	3RA19 23-3B	+	+	x	m	+	+	+	+	+	+	+	+	
	3RA19 24-..	+	+	x	m	+	+	+	+	+	+	+	+	
	3RA19 33-2B	+	+	x	m	+	+	+	+	+	+	+	+	
	3RA19 43-2B	+	+	x	m	+	+	+	+	+	+	+	+	
	3RA19 .6-4B	+	+	x	m	+	+	+	+	+	+	+	+	
Three-phase EMC inter- ference suppression modules	3RT19 16	+	+	--	m	+	+	+	+	+	+	+	+	
3TF68/3TF69 contactors	3TF68 33-0C/44-0C	+ ³⁾	+ ³⁾	x	+ ³⁾	--	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF68 33-1D/44-1D	+ ³⁾	+ ³⁾	x	+ ³⁾	--	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF68 33-1Q/44-1Q	+ ³⁾	+ ³⁾	x	+ ³⁾	--	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF68 33-8C/44-8C	+ ³⁾	+ ³⁾	x	+ ³⁾	--	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF68 33-8D/44-8D	+ ³⁾	+ ³⁾	x	+ ³⁾	--	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF68 33-8Q/44-8Q	+ ³⁾	+ ³⁾	x	+ ³⁾	--	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF69 33-0C/44-0C	+ ³⁾	+ ³⁾	x	+ ³⁾	+ ³⁾	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF69 33-1D/44-1D	+ ³⁾	+ ³⁾	x	+ ³⁾	+ ³⁾	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF69 33-1Q/44-1Q	+ ³⁾	+ ³⁾	x	+ ³⁾	+ ³⁾	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF69 33-8C/44-8C	+ ³⁾	+ ³⁾	x	+ ³⁾	+ ³⁾	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF69 33-8D/44-8D	+ ³⁾	+ ³⁾	x	+ ³⁾	+ ³⁾	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TF69 33-8Q/44-8Q	+ ³⁾	+ ³⁾	x	+ ³⁾	+ ³⁾	--	--	+ ³⁾	+ ³⁾	--	--	--	
	3TG10 contactors	3TG10 ...-0	+	+	x	+	--	--	--	--	--	--	--	--
3TD reversing contactor assemblies	3TD68	+	+	x	--	--	--	--	--	--	--	--	--	
Surge suppressors	3TX7 4, 3TX7 522	+	+	x	--	--	--	--	--	--	--	--	--	
3TK1 contactors with 4 NO main contacts	3TK1	+ ²⁾	+	x	+	--	--	--	--	--	--	--	--	
3T contactors with extended operating range	3T... ..-0L	+	+	x	--	--	--	--	--	--	--	--	--	
Contactor relays	3RH11/12, 3RH14	+	+	x	+	+	+	+	+	+	+	+	--	
	3TH42, 3TH43	+	+	x	+	+	+	+	+	+	+	+	--	
Chapter 4														
SIRIUS solid-state soft starters	3RW30	+	+	x	+	--	--	--	--	--	--	--	--	
	3RW40 2 ... 40 4	+	+	x	+	x	x	--	x	--	0	--	--	
	3RW40 5, 3RW40 7	+	+	x	+	+	+	--	+	--	0	--	--	
	3RW44	+	+	x	+	+	+	+	+	--	+	--	--	
SIRIUS solid-state switching devices for resistive loads	3RF2	+	+	x	m ⁴⁾	--	--	--	--	--	--	--	--	
SIRIUS solid-state switching devices for motorized loads	3RF2	+	+	x	+	--	--	--	--	--	--	--	--	

+ Standard version approved.

-- Not yet submitted for approval.

o Device submitted for approval, please inquire.

x  approval not required because © approved.

m For exporting products to the People's Republic of China, CCC marking is not necessary.

1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.2) c© and c approvals are available in accordance with US approval.

3) Not all versions are approved. Request required.

4) CCC approval is not available because there are no Chinese standards. "Free of CCC" has been submitted to SLC for approval so that these devices can be imported into China.

Standards and approvals

Devices	Type	Approvals			Marine classifications									
		Canada 1) 2)	USA 1)	1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		Ⓒ	Ⓒ	UL	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS	
Chapter 5														
SIRIUS motor starter protectors up to 100 A⁴⁾ for motor protection	3RV10 11	+	+	x	+	+	+	+	+	+	+	+	+	
	3RV10 21	+	+	x	+	+	+	+	+	+	+	+	+	
	3RV10 31	+	+	x	+	+	+	+	+	+	+	+	+	
	3RV10 4.	+	+	x	+	+	+	+	+	+	+	+	+	
Motor protection with overload relay function	3RV11 21	+	+	x	+	--	+	--	+	--	+	+	+	
	3RV11 31	+	+	x	+	--	+	--	+	--	+	+	+	
	3RV11 42	+	+	x	+	--	+	--	+	--	+	+	+	
Starter combinations	3RV13 21	+	+	x	+	+	+	--	+	+	+	+	+	
	3RV13 31	+	+	x	+	+	+	--	+	+	+	+	+	
	3RV13 4.	+	+	x	+	+	+	--	+	+	+	+	+	
Fuse monitoring	3RV16 11-0BD10	+	+	x	+	--	--	--	+	--	+	+	+	
Transformer protection	3RV14 21	+	+	x	+	+	+	+	+	+	+	+	+	
	3RV14 31	+	+	x	+	+	+	+	+	+	+	+	+	
System protection acc. to UL 489 Transformer protection acc. to UL 489	3RV17 21	+	+	x	+	0	0	--	--	--	0	--	--	
	3RV17 42	+	+	x	+	0	0	--	--	--	0	--	--	
	3RV18 21	+	+	x	+	0	0	--	--	--	0	--	--	
Accessories⁵⁾														
Auxiliary switches	3RV19 01	+	+	x	+	+	+	+	+	+	+	+	+	
Undervoltage releases/ shunt releases	3RV19 .2	+	+	x	+	+	+	+	+	+	+	+	+	
Door-coupling rotary operating mechanism	3RV19 36/46	+	+	x	m	--	--	--	--	--	--	--	--	
Busbars Isolator modules Scale covers Molded-plastic enclosures Solder pin connections Cast aluminum enclosures Terminal blocks type E	3RV19 .7	+	+	x	m	+	+	+	+	+	+	+	+	
	3RV19 .8-1A	+	+	x	m	+	+	+	+	+	+	+	+	
	3RV19 08	--	--	--	m	+	+	+	+	+	+	+	+	
	3RV19 13	--	--	--	m	--	--	--	--	--	--	--	--	
	3RV19 18	+	x	+	m	+	+	+	+	+	+	+	+	
	3RV19 23	--	--	--	m	--	--	--	--	--	--	--	--	
	3RV19 28-1H	+	+	x	m	+	+	+	+	+	+	+	+	
	3RV19 15, 3RV19 25, 3RV19 35	+	+	x	m	+	+	+	+	+	+	+	+	
Feeder terminals type E														
Signaling switches	3RV19 21-1M	+	+	x	+	+	+	+	+	+	+	+	+	
SIRIUS molded case motor starter protectors up to 800 A Motor protection	3RV10 6	--	--	--	--	+	+	+	+	--	+	--	+	
	3RV10 7	--	--	--	--	+	+	+	+	--	+	--	+	
	3RV10 8	--	--	--	--	+	+	0	+	--	+	--	+	
Starter combinations	3RV13 5	--	--	--	--	+	--	--	+	--	--	--	+	
	3RV13 53-6MM10	--	--	--	--	+	+	--	+	--	+	--	+	
	3RV13 6	--	--	--	--	+	+	+	+	--	+	--	+	
	3RV13 7	--	--	--	--	+	+	+	+	--	+	--	+	
	3RV13 8	--	--	--	--	+	+	0	+	--	+	--	+	
SIRIUS 3RU11 thermal overload relays	3RU11 1.	+	+	x	+	+	+	+	+	+	+	+	+	
	3RU11 2.	+	+	x	+	+	+	+	+	+	+	+	+	
	3RU11 3.	+	+	x	+	+	+	+	+	+	+	+	+	
	3RU11 4.	+	+	x	+	+	+	+	+	+	+	+	+	
SIRIUS 3RB2 solid-state overload relays	3RB20, 3RB21	+	+	x	+	+	+	0	+	--	0	--	+	
	3RB22, 3RB23	+	+	x	+	+	+	0	+	--	0	--	0	
Accessories	3RU19 .6-3A	+	+	x	+	+	+	+	+	+	+	+	+	
	3RU19 00-1	+	+	x	+	+	+	+	+	+	+	+	+	
	3RU19 00-2	+	+	x	+	+	+	+	+	+	+	+	+	
	3RB29 .3-0AA1	+	+	x	0	+	+	--	+	--	--	--	--	


+ Standard version approved.

-- Not yet submitted for approval.

0 Device submitted for approval, please inquire.

x  approval not required because Ⓒ approved.

m For exporting products to the People's Republic of China, CCC marking is not necessary.

1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.2) Ⓒ and  approvals are available in accordance with US approval.

3) Approval as "Type E" combination motor controller and as tap conductor protection device.

4) Approval for motorized loads only (not for transformers).

5) For approved rated data, please see Chapter 5, "Protection Equipment: Motor Starter Protectors".

Standards and approvals

Devices	Type	Approvals			Marine classifications									
		Canada 1) 2)	USA 1)	1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		Ⓒ	Ⓓ	Ⓐ	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS	
Chapter 6														
3RA1 load feeders	3RA11, 3RA12	+ ³⁾	+ ³⁾	x	+	+	+	+	+	--	--	+	--	
Compact feeders														
Direct-on-line starters	3RA61	+ ³⁾	+ ³⁾	x	+	o	o	o	o	o	o	+	+	
Reversing starters	3RA62	+ ³⁾	+ ³⁾	x	+	o	o	o	o	o	o	+	+	
Direct-on-line starters for I/O-Link	3RA64	+	+	x	o	o	o	o	o	o	o	+	+	
Reversing starters for I/O-Link	3RA65	+	+	x	o	o	o	o	o	o	o	+	+	
Add-on modules for AS-Interface	3RA69	+	+	x	o	o	o	o	o	o	o	+	+	
Accessories for 3RA6	3RA69	+	+	x	+	o	o	o	o	o	o	+	+	
Infeed systems for 3RA6	3RA68	+	+	x	m	o	o	o	o	o	o	+	+	
ET 200S motor starters and safety motor starters	3RK1 301	+	+	x	+	--	--	--	--	--	--	--	--	
ET 200pro motor starters	3RK1 304	+ ⁴⁾	+	x	+	--	--	--	--	--	--	--	--	
M200D motor starters														
AS-i Basic	3RK1 315	o	o	x	o	--	--	--	--	--	--	--	--	
AS-i Standard	3RK1 325	o	o	x	o	--	--	--	--	--	--	--	--	
Communication modules - for PROFIBUS	3RK1 305	o	o	x	o	--	--	--	--	--	--	--	--	
- for PROFINET	3RK1 335	o	o	x	o	--	--	--	--	--	--	--	--	
Motor starter modules - for PROFIBUS/PROFINET	3RK1 395	o	o	x	o	--	--	--	--	--	--	--	--	
Compact starters for AS-Interface, 400 V AC	3RK1 322	+	+	x	+	+/Δ	+/Δ	+/Δ	+/Δ	o	+/Δ	+/Δ	+/Δ	
ECOFAS motor starters	3RK1 303/323	+	+	x	--	--	--	--	--	--	--	--	--	
MCU motor starters														
Locally controlled	3RK4 353	--	--	--	--	--	--	--	--	--	--	--	--	
I/O-controlled	3RK4 340	--	--	--	--	--	--	--	--	--	--	--	--	
For AS-Interface	3RK4 320	--	--	--	--	--	--	--	--	--	--	--	--	
Encapsulated starters	3RE	--	--	--	--	--	--	--	--	--	--	--	--	
Motor starters 24 V DC	3RK1 400-1	--	--	--	--	--	--	--	--	--	--	--	--	
Energy communication field installation system	3RK1 9	+	+	x	--	--	--	--	--	--	--	--	--	

+ Standard version approved.

-- Not yet submitted for approval.

o Device submitted for approval, please inquire.

x Ⓐ approval not required because Ⓒ approved.

Δ Note remarks on marine products (AS-Interface), see www.siemens.com/automation/support.

m For exporting products to the People's Republic of China, CCC marking is not necessary.

1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.

2) Ⓒ and Ⓐ approvals are available in accordance with US approval.

3) Approval as "Type E" combination motor controller and as tap conductor protection device.

4) Not all versions are approved. Request required.


Standards and approvals

Devices	Type	Approvals			Marine classifications									
		Canada 1) 2)	USA 1)	1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		Ⓢ	Ⓢ	Ⓢ	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS	
Chapter 7														
SIMOCODE	3UF7	+	+	×	+	+	+	+	+	--	--	--	+	
Current transformers	3UF18	+	+	×	--	--	--	--	--	--	--	--	--	
LOGO!														
Basic modules	6ED1 052	+	+	×	+	+	+	+	+	--	--	+	+	
Expansion modules	6ED1 055	+	+	×	+	+	+	+	+	--	--	+	+	
Communication modules	6BK1 700													
AS-Interface connection	3RK1 400	+	+	×	--	+	+	+	+	+	+	+	+	
LOGO! Contact	6ED1 057	+	+	×	+	--	--	--	--	--	--	--	--	
Timing relays														
	3RP15	+ ²⁾	+	×	+	+	+	+	+	+	+	+	--	
	3RP20	+ ²⁾	+	--	+	+	+	+	+	+	+	+	--	
	3RT19.6-2	+	+	--	+	+	+	+	+	+	+	+	--	
	7PV15	+	+	+	+	+	+	+	+	+	+	+	--	
SIRIUS monitoring relays														
	3UG3	+ ²⁾	+	+	--	--	--	--	--	--	--	--	--	
	3UG4	+ ²⁾	+	+	+	+	+	--	+	--	--	--	--	
Summation current transformers	3UL22	+	+	×	--	--	--	--	+	--	--	+	--	
SIRIUS temperature monitoring relays														
	3RS10	+	+	--	+	--	--	--	--	--	--	--	--	
	3RS11	+	+	--	+	--	--	--	--	--	--	--	--	
SIRIUS thermistor motor protection	3RN1	+	+	×	+	+	+	+	+	--	--	+	--	
Safety relays														
	3TK28 10	+	+	×	--	--	--	--	--	--	--	--	--	
	3TK28 20	0	0	0	0	--	--	--	--	--	--	--	--	
	3TK28 21 ... 24, 30	+	+	×	+	--	--	--	--	--	--	--	--	
	3TK28 25 ... 28	+	+	×	0	--	--	--	--	--	--	--	--	
	3TK28 34	+	+	×	+	--	--	--	--	--	--	--	--	
	3TK28 40 ... 45	+	+	×	+	--	--	--	--	--	--	--	--	
	3TK28 50 ... 57	+	+	×	+	--	--	--	--	--	--	--	--	
Modular safety system	3RK3	+	+	×	+	--	--	--	--	--	--	--	--	
Interface converters/ isolation amplifiers	3RS17	+ ²⁾	+	×	m	--	--	--	--	--	--	--	--	
Chapter 8														
Standard position switches														
	3SE2 100/200	+	+	×	+	●	●	●	●	--	●	●	--	
	3SE3 0	+	+	+	+	●	●	●	●	--	●	●	--	
	3SE2 230	+	+		+	●	●	●	●	--	●	●	--	
	3SE5 232/234, 3SE5 242/250	+	+	×	+	●	●	●	●	--	●	●	--	
	3SE5 112/114, 3SE5 115/122	+	+	×	+	--	--	--	--	--	--	--	--	
Safety position switches														
	3SE2 243/257	+	+	×	+	●	●	●	●	--	●	●	--	
	3SE3 160/180	--	+	×	--	--	--	--	--	--	--	--	--	
	3SE2 83./84.	+	+	×	+	--	--	--	--	--	--	--	--	
	3SE5 000-0.A00	+	--	×	+	--	--	--	--	--	--	--	--	
	3SE5 1/2, 3SE5 25/3.	+	+	×	+	--	--	--	--	--	--	--	--	
	3SE5 312/322	+	+	×	+	--	--	--	--	--	--	--	--	
Magnetically operated switches	3SE6	+	+	×	--	--	--	--	--	--	--	--	--	

+ Standard version approved.

-- Not yet submitted for approval.

0 Device submitted for approval, please inquire.

×  approval not required because Ⓢ approved.

● Approved for operation in connection with AS-Interface (Actuator Sensor Interface), also approved by ABS (American Bureau of Shipping).

m For exporting products to the People's Republic of China, CCC marking is not necessary.

1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.2) cⓈ and c approvals are available in accordance with US approval.


3) Approval as "Type E" combination motor controller and as tap conductor protection device.

Standards and approvals

Devices	Type	Approvals				Marine classifications								
		Canada 1) 2)	USA 1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA		
		Ⓒ	cULus Ⓒ	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS		
Chapter 9														
Pushbuttons and indicator lights, nominal diameter 16 mm	Actuators with holders, complete units, lampholders, contact blocks and voltage reducers													
	3SB20	+	+	x	+	--	--	--	--	--	--	--		
	3SB22	+	+	x	+	--	--	--	--	--	--	--		
	3SB23	+	+	x	+	--	--	--	--	--	--	--		
	3SB24	+	+	x	+	--	--	--	--	--	--	--		
Pushbuttons and indicator lights³⁾, nominal diameter 22 mm, round type	Actuators with holders, complete units, switching elements, lampholders and transformers (screw and solder connections)													
	3SB30	+	+	x	+	•	•	•	•	--	•	•		
	3SB32	+	+	x	+	•	•	•	•	--	•	•		
	3SB323	+	+	x	+	--	--	--	--	--	--	--		
	3SB34 (screw terminals, plug-in terminals)	+	+	x	+	•	•	•	•	--	•	•		
	3SB34 (solder connection)	+	--	+	+	•	•	•	•	--	•	•		
	3SB35/3SB36	+	+	x	+	--	--	--	--	--	--	--		
	3SB38	+	+	x	+	•	•	•	•	--	•	•		
Pushbuttons and indicator lights³⁾, mounting cutout 26 x 26 mm	Actuators with holders, complete units, switching elements, lampholders and transformers (screw and solder connections)													
	3SB31	+	+	x	+	•	•	•	•	--	•	•		
	3SB33	+	+	x	+	•	•	•	•	--	•	•		
Foot switches	3SE2 9	+	+	x	+	--	--	--	--	--	--	--		
Cable-operated switches	3SE7	+	+	x	--	--	--	--	--	--	--	--		
Signaling columns	8WD4/8WD5	+	+	x	--	•	•	•	•	--	•	•		
Chapter 10														
Transformers	4AM, 4AP, 4AT, 4AU⁴⁾	--	+	--	m	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	+	-- ⁵⁾	
	4BT, 4BU	--	+	--	m	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	--	-- ⁵⁾	
	4AX, 4FK	--	--	--	m	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	+	-- ⁵⁾	
Chapter 11														
Power supplies	4AV21, 4AV23	--	+	--	m	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	+	-- ⁵⁾	
	4AV20, 4AV22, 4AV24, 4AV26	--	+	--	m	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	-- ⁵⁾	+	-- ⁵⁾	
	4AV30 ... 4AV35	--	+	--	m	--	--	--	--	--	--	+	--	
	6EP1	+ ⁶⁾	+ ⁶⁾	+ ⁶⁾	m	+ ⁶⁾	--	--	--	--	--	--	--	
Chapter 13														
SENTRON multifunction measuring devices														
PAC 3100	7KM3 1	+ ²⁾	x	+	m	--	--	--	--	--	--	--	--	
PAC 3200	7KM2 111, 7KM2 112	+ ²⁾	x	+	m	--	--	--	--	--	--	--	--	
PAC 4200	7KM4 2, 7KM4 4	+ ²⁾	x	+	m	--	--	--	--	--	--	--	--	
Expansion modules														
PAC PROFIBUS DP	7KM9 300-0AB0-0AA0	+ ²⁾	x	+	m	--	--	--	--	--	--	--	--	
PAC RS485	7KM9 300-0AM0-0AA0	+ ²⁾	x	+	m	--	--	--	--	--	--	--	--	

+ Standard version approved.

-- Not yet submitted for approval.

x  approval not required because Ⓒ approved.


• Approved for operation in connection with AS-Interface (Actuator Sensor Interface), also approved by ABS (American Bureau of Shipping).

m For exporting products to the People's Republic of China, CCC marking is not necessary.

1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.

2) cⒸ and cULus approvals are available in accordance with US approval, unless otherwise specified.

3) A test certificate has been issued for EMERGENCY-STOP devices and switching elements with screw or solder connections by the BIA (German statutory industrial accident insurance institution).

4) Transformers according to EN 61558-2-15 are not , cULus and cULus approved.


5) Acceptance on request.

6) Partly, for details see Catalog KT 10.1, "Power Supply SITOP".

Standards and approvals

Devices	Type	Approvals					Marine classifications								
		Canada (1) 2)	USA 1)		1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		CE	cULUS	®	c®US	UL	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS
Chapter 14															
Accessories for 8MC, 8MF system cubicles															
Cubicle lighting	8MF4 90., 8MF5 90., 8MF5 910	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Socket outlets	8MF4 90., 8MF5 90., 8MF5 910	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8MR cubicle air-conditioning															
Semiconductor heater units	8MR2 110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fan heaters	8MR2 122/130/131 8MR2 132/140/150	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thermostats	8MR2 170-1A/1B/1B. 8MR2 170-1C./1D/1D. 8MR2 170-2.. 8MR2 171-1../2.. 8MR2 172-1../2..	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hygrostats	8MR2 170-1C/1AF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hygrotherms	8MR2 170-3./4.	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Switching modules	8MR2 180-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chapter 15															
SENTRON VL circuit breakers up to 6300 A (ACB)	3WL1 3WL5	--	--	--	--	+	+	+	+	+	+	--	+	+	--
Chapter 16															
SENTRON VL circuit breakers up to 1600 A (MCCB)															
With TMTU	3VL1/2/3/4 3VL5 3VL9	--	--	--	--	+	+	+	+	+	+	+	+	+	+
With ETU	3VL1 ... 8	--	--	--	--	+	+	+	+	+	+	+	+	+	+
UL/CSA version	3VL1 3VL2/3/4/4X 3VL6/7/8 3VL9	+	+	+	+	x	x	x	x	x	x	x	x	x	x
3VF molded case circuit breakers up to 2500 A	3VF2	--	--	--	--	+	--	--	--	--	--	--	--	--	--

- + Standard version approved.
 -- Not yet submitted for approval.
 x  approval not required because ® approval.

- 1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.
 2) c® and c approvals are available in accordance with US approval.

Standards and approvals

Devices	Type	Approvals					Marine classifications								
		Canada 1) 2)		USA 1)		China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA	
		©	cULUS	®	c®US	UL	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS
Chapter 17															
Switch disconnectors	3KA50	--	--	--	--	--	+ ⁴⁾	--	--	--	+ ⁴⁾	--	--	--	
	3KA51	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3KA57	--	--	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	
	3KA57 30	--	+ ³⁾⁴⁾	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	
	3KA52 30/53 30, 3KA55 30/58 30	--	+ ³⁾⁴⁾	--	--	--	--	--	--	--	--	--	--	--	
3KE42	--	--	--	--	--	--	--	--	--	--	--	--	--		
Switch disconnectors with fuses up to 800 A	3KL50	--	--	--	--	--	+ ⁴⁾	--	--	--	+ ⁴⁾	--	--	--	
	3KL52	--	--	--	--	--	+ ⁴⁾	+ ⁴⁾	--	--	--	--	--	--	
	3KL55	--	--	--	--	--	--	+ ⁴⁾	--	--	--	--	--	--	
	3KL57	--	--	--	--	--	--	+ ⁴⁾	--	--	--	--	--	--	
	3KL52 30	--	--	+ ³⁾⁴⁾	--	--	+ ⁴⁾	+ ⁴⁾	--	--	--	--	--	--	
	3KL52 40	--	--	--	--	--	+ ⁴⁾	+ ⁴⁾	--	--	--	--	--	--	
	3KL53 30	--	--	+ ³⁾⁴⁾	--	--	--	--	--	--	--	--	--	--	
	3KL55 30	--	--	+ ³⁾⁴⁾	--	--	--	--	--	--	--	--	--	--	
	3KL55 40	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3KL57 30	--	--	+ ³⁾⁴⁾	--	--	--	--	--	--	--	--	--	--	
	3KL57 40	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3KL61 30/62 30-1AB02	--	--	+ ³⁾⁴⁾	--	--	--	--	--	--	--	--	--	--	
	3KM50	--	--	--	--	--	--	+ ⁴⁾	--	--	--	+ ⁴⁾	--	--	
3KM52	--	--	--	--	--	--	+ ⁴⁾	+ ⁴⁾	--	--	--	--	--		
3KM55	--	--	--	--	--	--	--	+ ⁴⁾	--	--	--	--	--		
3KM57	--	--	--	--	--	--	--	+ ⁴⁾	--	--	--	--	--		
Fuse switch disconnectors up to 630 A	3NP1	--	--	--	--	--	--	--	--	--	--	--	--	--	
Fuse switch disconnectors up to 1250 A	3NJ41 21, 3NJ41 23	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3NJ41 31, 3NJ41 33	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3NJ41 41, 3NJ41 43	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3NJ41 03	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
Fuse switch disconnectors up to 160 A	3NJ50 13	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	--		
Switch disconnectors with fuses up to 630 A	3NJ61 10, 3NJ61 20	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3NJ61 40, 3NJ61 60	--	--	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3NJ62	--	--	--	--	--	--	--	--	--	--	--	--	--	
Control switches and main control switches Basic units and flush-mounting switches	3LD20, 3LD21	+ ³⁾⁴⁾	+ ³⁾⁴⁾	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3LD25, 3LD27	+ ³⁾⁴⁾	+ ³⁾⁴⁾	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3LD22, 3LD28	+ ³⁾⁴⁾	+ ³⁾⁴⁾	--	+ ⁴⁾	--	--	--	--	--	--	--	--	--	
	3LD23, 3LD24	--	--	--	--	--	--	--	--	--	--	--	--	--	
Busbar systems	8US	+	+	--	+	--	--	--	--	--	--	--	--	--	

+ Standard version approved.
 -- Not yet submitted for approval.

- 1) For guide numbers and file numbers for the approvals, visit our website at www.siemens.com/automation/support.
 2) c® and cULUS approvals are available in accordance with US approval.
 3) Approved rated data on request.
 4) Not all versions are approved. Request required.

Appendix

Standards and approvals


Devices	Type	Approvals					Marine classifications								
		Canada 1) 2)	USA 1)	USA 1)	China	Germany	United Kingdom	France	Norway	CIS	Italy	Poland	USA		
		☉	cULUS	☉	cULUS	CCC	GL	LRS	BV	DNV	RMRS	RINA	PRS	ABS	
Chapter 19															
LV HRC fuse links, 500 V AC/ 440 V DC	3NA3 00., 3NA3 010 3NA3 012	--	--	--	--	--	--	--	--	--	--	+	--	--	
	3NA3 014, 3NA3 017 3NA3 02., 3NA3 03.	+	--	--	--	--	--	--	--	--	--	+	--	--	
	3NA3 10., 3NA3 110 3NA3 114, 3NA3 117	--	--	--	--	+	--	--	--	--	--	--	--	--	
	3NA3 12., 3NA3 13. 3NA3 14.	+	--	--	--	+	+	--	--	--	--	+	--	--	
	3NA3 214 3NA3 220, 3NA3 222 3NA3 224, 3NA3 23.	--	--	--	--	+	--	--	--	--	--	--	--	--	
	3NA3 240 3NA3 242, 3NA3 244	+	--	--	--	+	--	--	--	--	--	+	--	--	
	3NA3 250 3NA3 252, 3NA3 260 3NA3 254	+	--	--	--	+	+	--	--	--	--	+	--	--	
	3NA3 340, 3NA3 340 3NA3 35., 3NA3 360	--	--	--	--	+	--	--	--	--	--	--	--	--	
	3NA3 362, 3NA3 365 3NA3 372	--	--	--	--	+	--	--	--	--	--	+	--	--	
	3NA3 47., 3NA3 480 3NA3 6..	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3NA3 801, 3NA3 803 3NA3 802, 3NA3 804 3NA3 805, 3NA3 807	--	--	--	--	+	+	--	--	--	--	+	--	--	
	3NA3 810 3NA3 812, 3NA3 814 3NA3 817, 3NA3 82.	--	--	--	--	+	+	--	--	--	--	+	--	--	
	3NA3 830 3NA3 832 3NA3 836	+	--	--	--	+	+	--	--	--	--	+	--	--	
	LV HRC fuse links, 690 V AC	3NA3 1.. 3NA3 2.. 3NA3 3..	--	--	--	--	--	--	--	--	--	--	--	--	--
		3NA3 80., 3NA3 810 3NA3 812, 3NA3 817	--	--	--	--	--	--	--	--	--	--	--	--	
		3NA3 814 3NA3 82., 3NA3 830	--	--	--	--	--	--	--	--	--	--	--	--	
		SITOR fuses	3NE 3NC 3NC1 09, 3NC1 49 3NC2 29	--	--	+	O	--	--	--	--	--	--	--	--

+ Standard version approved.
-- Not yet submitted for approval.

1) For guide numbers and file numbers for the approvals,
visit our website at siemens.com/automation/support.

2) cUL and cULUS approvals are available in accordance with US approval.

Type overview of approved devices for potentially explosive areas (ATEX explosion protection)

Devices	Type	Certificate number	Certification based on	Type of protection/Identification 
Systems				
Digital I/O modules		Series		
IP67	3RK1 400-1DQ05-0AA3	K60	ATEX 2705	EN 60947-5-2, EN 50281-1-1
	3RK1 200-0CQ05-0AA3			
Contactors¹⁾				
Motor starter protectors		Size		
For motor protection	3RV10 11	S00	DMT 02 ATEX F 001, DMT 02 ATEX F 001 N1	EN 60947-4-1, EN 60079-14
	3RV10 21	S0		
	3RV10 31	S2		
	3RV10 41	S3		
	3RV10 42	S3		
3RB solid-state overload relays				
for standard applications	3RB20, 3RB21	S00 ... S12	PTB 06 ATEX 3001	EN 60079-1, EN 60079-7, EN 60079-14, EN 60947-4-1, EN 60947-5-1, EN 60947-8, EN 61508, EN 61241-14
for high-feature applications	3RB22, 3RB29		PTB 05 ATEX 3022	
3RU1 thermal overload relays				
for standard applications	3RU11 1	S00	DMT 98 ATEX G 001, DMT 98 ATEX G 001 N1	IEC 60079-14, EN 60079-14
	3RU11 2	S0		
	3RU11 3	S2		
	3RU11 4	S3		
Starting				
Soft starters		Size		
for standard applications	3RW40	S0 ... S12	BVS 05 ATEX F 002	EN 60079-14, EN 60947-4-2, IEC 61508
ET200S motor starters				
Standard motor starters	3RK13 01	S00	DMT 02 ATEX F 001, DMT 02 ATEX F 001 N1	EN 60947-4-1, EN 60079-14
Monitoring and control¹⁾				
SIMOCODE pro motor management and control devices		Size		
For motors with constant speeds	3UF7	S00 ... S12	BVS 06 ATEX F 001	EN 60079-1, EN 60079-7, EN 60079-14, EN 60947-4-1, EN 60947-5-1, EN 60947-8, EN 61508, EN 61241-14

¹⁾ Information for the implementation of current monitoring motor protection devices.
Definition of the locked-rotor time t_E : if the rotor of an explosion-protected induction motor of protection type "Increased Safety" EEx e stalls (locks) at operating temperature during runtime, the motor must be switched off, at the very latest, when either the rotor or the stator winding have reached their maximum temperature. The time that elapses until the rotor or stator winding has reached maximum temperature is called the locked-rotor time t_E or $t_{E, max}$ time. The demands made on overload protective devices with regard to t_E time: For releases and relays with inverse-time delayed operation, tripping characteristics must be available at the operating site. The characteristic curves should show the tripping time for 3-pole loading, assuming a cold state and a room temperature of 20 °C, depending on at least a 3- to 8-fold setting current. The protective devices must comply with the specified tripping times with a permissible deviation of ± 20 %.

The releases and relays for machines with cage rotors must be selected such that the tripping times for 3-pole loading do not exceed the locked-rotor time t_E specified on the type plate.
For information on the tripping characteristics of our motor starter protectors and overload relays, visit our web site at:
www.siemens.de/industrial-controls/manuals

Standards and approvals

Devices	Type	Certificate number	Certification based on	Type of protection/ Identification	
Monitoring and control¹⁾ (continued)					
Thermistor motor protection relays		Width (mm)			
For PTC sensors (PTCs type A)	3RN10	22,5; 45	PTB 01 ATEX 3218	EN 60079-14, EN 60947-8, EN 60947-5-1 EN 61241-14	Ex II (2) G
	3RN10 11-.B, 3RN10 11-.G, 3RN10 12-.B, 3RN10 12-.G, 3RN10 13-...0	22,5			Ex II (2) GD
Sensing					
Position switches²⁾		Width (mm)			
	3SE5 1.2-0....-1DA0		BVS 08 ATEX E 028X	EN 61241-0 EN 61241-1	Ex II 2D ExtD A21 IP6X T105°
Commanding and signaling					
Actuators		Version			
Actuators	3SB30 .. 3SB35 ..	Plastic or metal actuator	ATEX 2690c	Simple electrical apparatus according to EN 60079-11, EN 60947-5-1	Application only in circuits of type of protection i (intrinsic safety) according to EN 60079-11
Contact blocks	3SB34 ...-0.	Spring-type terminals or screw terminals			
Components for actuators					
Lampholders	3SB34 ...-1A	Spring-type terminals or screw terminals	ATEX 2689c	Simple electrical apparatus according to EN 60079-11, EN 60947-5-1	Application only in circuits of type of protection i (intrinsic safety) according to EN 60079-11 Application up to a voltage of 26.4 V (LEDs)
LED	3SB39 01-1.A	Rated voltage 24 V AC/DC, BA 9s base			

¹⁾ Information for the implementation of current monitoring motor protection devices.

Definition of the locked-rotor time t_E : if the rotor of an explosion-protected induction motor of protection type "Increased Safety" EEx e stalls (locks) at operating temperature during runtime, the motor must be switched off, at the very latest, when either the rotor or the stator winding have reached their maximum temperature. The time that elapses until the rotor or stator winding has reached maximum temperature is called the locked-rotor time t_E or t_E time. The demands made on overload protective devices with regard to t_E time: For releases and relays with inverse-time delayed operation, tripping characteristics must be available at the operating site. The characteristic curves should show the tripping time for 3-pole loading, assuming a cold state and a room temperature of 20 °C, depending on at least a 3- to 8-fold setting current. The protective devices must comply with the specified tripping times with a permissible deviation of ±20 %.

The releases and relays for machines with cage rotors must be selected such that the tripping times for 3-pole loading do not exceed the locked-rotor time t_E specified on the type plate.

For information on the tripping characteristics of our motor starter protectors and overload relays, visit our web site at:

www.siemens.de/industrial-controls/manuals

²⁾ More approvals for position switches:
- ATEX 2849 (simple electrical apparatus).

More information can be found in the Internet at:

www.siemens.com/industrial-controls/atex

Test certificates can be found at

www.siemens.com/automation/support

More information

For more information about standards and approvals go to www.siemens.com/automation/support and select "Product Support".

If you have any questions concerning UL/CSA approvals, contact Technical Assistance, Tel.: +49(0) 911/895-5900.

Quality management

The quality management system of our A&D division complies with the international standard EN ISO 9001.

The products and systems described in this catalog are sold under application of a quality management system certified by DQS and TÜV Management Service GmbH in according to the EN ISO 9001. The certificates are recognized in all IQ Net countries.

DQS Registered Certificate Nos.:

- Siemens AG
Automation and Drives
- Industrial Automation Systems
Reg. No.: 001323 QM
 - Sensors and Communication
Industrial Communication
Reg. No.: 000656 QM.

TÜV (German Technical Inspectorate) Registered Certificate No.:

- Siemens AG
Automation and Drives
- Low-Voltage Controls
Reg. No.: 12 100 16950 TMS.

BVQI Registered Certificate No.:

- Siemens AG
Automation and Drives
- Electrical Installation Technology
Reg. No.: 117779

Certificates

Information on the certificates available (CE, UL, CSA, FM, classification societies) for low-voltage control products can be found in the Internet at:

www.siemens.com/industrial-controls/support

In the Entry List you can use the certificate type (general product approval, explosion protection, test certificates, shipbuilding,...) as a filter criterion.

The screenshot shows the Siemens support website interface. The main content area is titled 'Low-Voltage Controls and Distribution'. Below this title, there are tabs for 'Product list' and 'Entry list'. A 'Filter settings' section is visible, with the following fields:

- Entry type: Certificates
- Certificate Type: all
- Certificate: all
- Approval office: all
- Country: all

Below the filter settings is a search bar labeled 'Search item(s)'. The main content area displays a table of certificates with the following columns: 'Title' and 'Date'.

Title	Date
Certificates Declaration of Conformity, EC-Declaration of Conformity, Manufacturer EC-Declaration of Conformity, 2005 for products: 3RH2 more>	2005-11-20 ID: 39037908
Certificates Declaration of Conformity, EC-Declaration of Conformity, Manufacturer 2001 for products: 3RT23; 3RH2; 3RA23; 3RA24; 3RH29 more>	2005-11-20 ID: 5976993
Certificates Declaration of Conformity, EC-Declaration of Conformity, Manufacturer EC-Declaration of conformity, 2002 for products: 3RU2 more>	2005-11-20 ID: 3976990
Certificates General Product Approval, CSA, CSA CQC 1110584 for products: 3RV1011; 3RV1411; 3RV1811; 3RV101 more>	2005-11-05 ID: 638831

Siemens contacts

Partner at Industry Automation and Drive Technologies



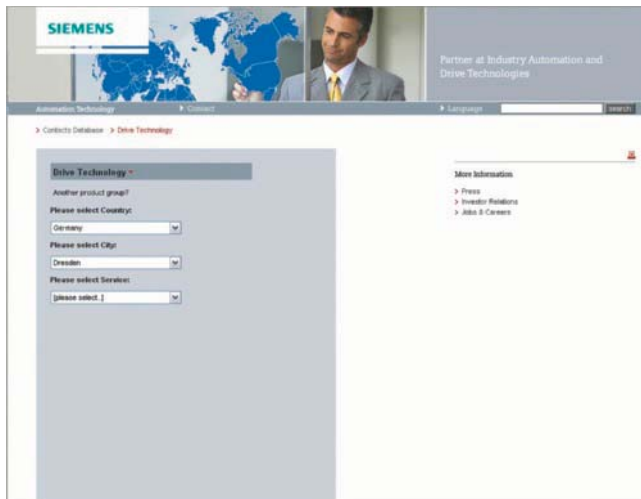
At Siemens Industry Automation and Drive Technologies, more than 85,000 people are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries - worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts... on the entire Industry Automation and Drive Technologies range.

Your personal contact can be found in our Contacts Database at: www.automation.siemens.com/mcms/aspa-db/en

You start by selecting a

- Product group,
- Country,
- City,
- Service.



Solution partners - Automation, Power Distribution and PLM

Using the "Siemens Solution Partner" name, selected system integrators act as solution providers, qualified to a uniform global standard, for the Siemens range of products and services in the fields of automation, power distribution and product lifecycle management (PLM).

In the Siemens Solution Partner Program, our strengths merge with the expertise of our Solution Partners. Our product and system know-how works together with the comprehensive application and industry know-how of our partners to create solutions which are always the perfect answer to every requirement.

The number of Solution Partners has increased dynamically to more than 850 certified partners who are involved in implementing future-proof and tailor-made solutions in more than 45 countries.

The Solution Partner Finder is an Internet database in which all our Solution Partners are listed with their performance profiles.

Search criteria include technology, industry, country as well as company and zip code. From here it is a small step to making first contacts.

You can call up the Solution Partner Finder as follows:

- CA 01 on DVD:
On the opening page via "Contact & Partners; Siemens Solution Partner Automation, Power Distribution and PLM"
- CA 01 online:
Direct to the Solution Partner Finder:
<http://www.siemens.com/automation/partnerfinder>

Further information on the Siemens Solution Partner Program is available in the Internet at:

<http://www.siemens.com/automation/solutionpartner>

External partners

External partners

Our partner companies – Your partners• **Franz Binder GmbH & Co.**

Postfach 1152
74148 Neckarsulm
Katalog Steckverbinder
Tel.: +49 (71 32) 32 5-0
Fax: +49 (71 32) 32 5-1 90
E-mail: info@binder-connector.de

• **Dyna Systems GmbH**

Grünteweg 14
88175 Scheidegg
Tel.: +49 (83 81) 9 19-2 00
Fax: +49 (83 81) 9 19-2 90
E-mail: info@dynasystems.de

• **EPHY-Mess GmbH**

Johannes-Gutenberg-Str. 2-6
65719 Hofheim-Wallau
Tel.: +49 (61 22) 92 28-0
Fax: +49 (61 22) 1 52 48
E-mail: info@ephy-mess.de

• **FESTO AG & Co**

Teckstr. 52
73734 Esslingen
Tel.: +49 (7 11) 3 47-41 84
Fax: +49 (7 11) 3 47-41 92
E-mail: info@festo.de

• **Harting Deutschland GmbH & Co. KG**

Simeons carrè 1
32427 Minden
Tel.: +49 (5 71) 88 96-1 78
Fax: +49 (5 71) 88 96-1 77
E-mail: solution-partner@harting.com

• **KnorrTec**

Kapellenbergstraße 34
93175 Beratzhausen
Tel.: +49 (9 94 93) 9 51 96 00
Fax: +49 (9 94 93) 9 51 96 79
E-mail: solution-partner@knorrtec.de

• **KUPEK GmbH**

Beschaffung und Logistik
Cortendorfer Straße 94
96450 Coburg
Tel.: +49 (95 61) 23 46-0
Fax: +49 (95 61) 23 46-20
E-mail: info@kupek.de

• **Lumberg GmbH & Co.**

Postfach 1360
58569 Schalksmühle
Tel.: +49 (23 55) 83-01
Fax: +49 (23 55) 83-2 63
E-mail: info@lumberg.de

• **mat – Maschinen- und Anlagentechnik**

Dr. Becker GmbH
Rudolf-Diesel-Straße 22
22941 Bargteheide
Tel.: +49 (45 32) 20 21-01
Fax: +49 (45 32) 20 21-21
E-mail: info@m-a-t.de
Internet: www.m-a-t.de

• **microSYST Systemelectronic GmbH**

Zur Centralwerkstätte 10
92637 Weiden
Tel.: +49 (9 61) 3 91 66-0
Fax: +49 (9 61) 3 91 66-10
E-mail: info@microsynt.de

• **Murrplastik Systemtechnik GmbH**

Dieselstraße 10
71570 Oppenweiler
Tel.: +49 (71 91) 4 82-0
Fax: +49 (71 91) 4 82-2 80
E-mail: info@murrplastik.de

• **Murrelektronik GmbH**

Falkenstraße 3
71570 Oppenweiler
Tel.: +49 (71 91) 47-0
Fax: +49 (71 91) 47-1 30
E-mail: info@murrelektronik.com

• **WAGO Kontakttechnik GmbH & Co. KG**

Hansastraße 27
32423 Minden
Tel.: +49 (5 71) 8 87-0
Fax: +49 (5 71) 8 87-1 69
E-mail: info@wago.com

• **Weidmüller GmbH & Co. KG**

Ohmstraße 9
32758 Detmold
Tel.: +49 (52 31) 14 28-0
Fax: +49 (52 31) 14 28-1 16
E-mail: solution-partner@weidmueller.com

• **WITTWER**

Industrielle Elektronik
Hembacher Str. 4, Postfach 1147
90588 Schwarzenbruck-Lindenburg
Tel.: +49 (91 83) 90 105-0
Fax: +49 (91 83) 90 105-55
E-mail: info@wittwer.com

Siemens Industry Automation in the WWW



Automatisierungstechnik von A bis Z - aus einer Hand

Für die Automatisierung bietet Ihnen Siemens als einziger Hersteller weltweit ein umfassendes Portfolio für alle Anforderungen, in allen Branchen, erfindungsreich, perfekt, schneller als irgendein Produkt, Systeme und Lösungen – abgesichert durch ein komplettes Angebot an Training, Service und Support.

Automatisierungstechnik

Automatisierungstechnik
 Automatisierung und Leistungssysteme
 Bedien- und Bedienungssysteme SIMATIC HMI
 Industrielle Kommunikation
 Industrielle PC
 Manufacturing Execution System
 Menschmaschine-Schnittstelle
 FLM Software
 Sensortechnologie

Totally Integrated Automation

Automatisierungstechnik von Siemens trägt entscheidend zu einer kontinuierlichen Optimierung Ihrer unternehmerischen Prozesse bei. Kernwissen: Angebot der Totally Integrated Automation, das einseitige durchgängige Produkt- und Systemansatz für die Automatisierung in der Fertigungs- und Prozessindustrie. Damit helfen wir Ihnen die optimale Basis für Lösungen, die perfekt auf Ihre individuellen Anforderungen zugeschnitten sind.

Alle im Automatisierungstechnik

Vor dem Kauf & erste Info
 Katalog und Online Bestellsystem
 Technische Info
 Support
 Training
 Handel & Partner

Detailed knowledge of the applicable product range and the available service assignments is essential for the planning and configuration of automation systems. It is obvious that this information must always be as up to date as possible.

For this reason Siemens Industry Automation has set up a comprehensive information quotation on the World Wide Web that allows all requisite information to be accessed easily and conveniently.

At the following address

www.siemens.com/automation

you can find everything you need to know about products, systems and service offerings.

Product selection with the Offline Mall



SIEMENS

Interaktiv Katalog
 Home | Products & Solutions | News Center | E-Commerce | Support

Catalog CA 01 - the Interactive Catalog of Industry Automation and Drive Technologies

Standard drives of large drives, industrial automation systems or motion control, process instrumentation or low-voltage test technique and installation technique. The world of industry and trade is multifaceted as well as our range of products. Our innovative products, systems and solutions are designed for your standards.

The catalog CA 01 combines the preferences of offline and online media in one application. Increasing performance as well as the variety of information and up-to-dateness of the Internet. CA 01 power users are walking between two worlds: Choosing products, composing orders, checking availability of products with CA 01 catalog and arranging the order tracking and tracing with our Online Ordering System.

The CA 01 opens up the widest specific variety of information concerning the Online Ordering System: actual service information, further education with online training, documentation, certificates and a lot more.

Because of the ascending range of information the CA 01 comprehends one DVD:

- On this DVD you will find the real catalog with information about more than 180.000 products. Additionally you will find miscellaneous selection applications (project planning tools).

Insert the DVD into the drive of your PC for installation. Follow up the steps of the guided dialog.

The CA 01 is released once per year. Registered customers receive content updates over the Online Ordering System.

Detailed information together with user-friendly interactive functions:

The Offline Mall CA 01 with more than 80 000 products provides a comprehensive overview of the offering from Siemens Industry Automation and Drive Technologies.

You can find everything you need here for solving automation, switching, installation and drive technology tasks. All the information is integrated in one user interface that is intuitive to use and makes the job easier.

After selection is complete, you can order per fax or online at the press of a button.

Further information on the Offline Mall CA 01 is available in the Internet at:

www.siemens.com/automation/ca01

or on DVD.

Easy shopping with the Industry Mall



SIEMENS

Industry Mall

Intuitive to our virtual customers and online ordering system. We provide complete data and pricing information for over 180.000 products and components.

New to the Industry Mall?

Press the Add Mail to the new Industry Mall. Your guide to a smooth transition (DVD). This information will make it easier for you to make the change to the new Industry Mall. You can also track the Industry Mall. This guide explains the most important functions of the Industry Mall (DVD).

Configurations

List of all Configurations in the Industry Mall.

Business Expanding

Send the Industry Mall online to your client. You can also send the Version 6 and SP2 of the "Business Expanding" also available in the Version 2 of the "Mobile Partner" newsletter. > Info...

Industry Mall

Find information, select and order online. Welcome to the online and ordering system for the Siemens automation and drive solutions. Find out everything you need to know about our range of products and all more around the clock. From intelligent tools for straight-forward product and system configuration to software downloads and documentation.

To ensure that you can make the most of all assets of our Industry Mall, we offer you a personalized help. Once you have registered, our system provides you with a wide range of options for designing your business processes effectively.

- Personalized new offers.

International Automations News:

- New customer offers more compact design, more performance and optimal communication
- New test case modules for I/O station
- Integrated CAD/CAM/CAE object for manual engineering
- New PIA Line Guide Portal 1.0 available
- More News > Subscribe to our newsletter

The Industry Mall is the virtual department store of Siemens AG in the Internet. Here you can access a huge product range that is presented informatively and clearly in electronic catalogs.

Data exchange via EDIFACT enables the entire transaction from selection through ordering to tracking the order online in the Internet.

Comprehensive functions are available to assist you with this.

Powerful search functions make finding the desired products easier and their availability can be checked at the same time. Customer-specific discounting and compilation of tenders are possible online, as is checking the status of your order (Tracking & Tracing).

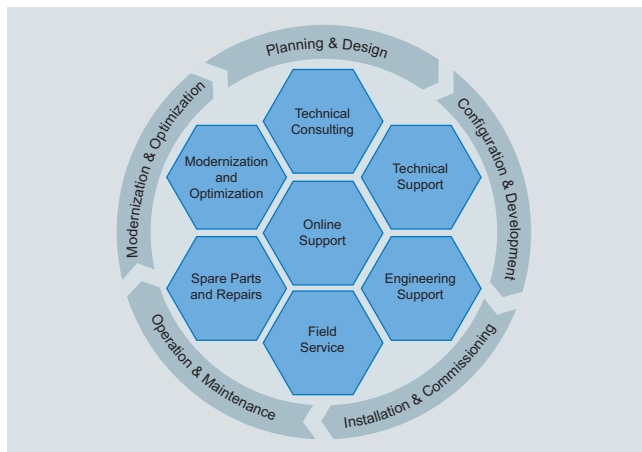
You can find the Industry Mall in the Internet at:

www.siemens.com/industrymall

Appendix

Service & Support

Services covering the entire life cycle



Our Service & Support accompanies you worldwide in all concerns related to the automation and drive technology of Siemens. In more than 100 countries directly on site and covering all phases of the life cycle of your machines and plants. Round the clock.

An experienced team of specialists with their combined know-how is ready to assist you. Regular training courses and a close contact of our employees among each other – also across continents – assure a reliable service for multifaceted scopes.

Online support



The comprehensive information system available round the clock via Internet ranging from Product Support and Service & Support services to Support Tools in the Shop.

www.siemens.com/automation/service&support

Technical Consulting



Support in the planning and designing of your project from detailed actual-state analysis, target definition and consulting on product and system questions right to the creation of the automation solution.²⁾

Technical assistance



Expert technical assistance¹⁾ for industrial controls.

Tel.: +49 (0)911 8 95-59 00
Fax: +49 (0)911 8 95-59 07

E-mail: technical-assistance@siemens.com

¹⁾ Please contact:
Technical Assistance for product selection · old/new conversions · competitive conversion measures · special versions · special requirements.
Your regional contact for sales assistance (price, discounts, delivery times).
Technical Support for start-up support and after-sales service.

Technical Support



Competent consulting in technical questions covering a wide range of customer-oriented services for all our products and systems.

Tel.: +49 (0)180 50 50 222
Fax: +49 (0)180 50 50 223
(0.14 €/minute from a German landline, mobile phone charges may differ)

www.siemens.com/automation/support-request

Engineering Support



Support in configuring and developing with customer-oriented services from actual configuration to implementation of the automation project.²⁾

Field Service



With Field Service, we offer services for startup and maintenance essential for ensuring system availability.

In Germany Tel.:
0180 50 50 444²⁾
(0.14 €/min. from a German landline, mobile phone charges may differ)

Spare Parts and Repairs



In the operating phase of a machine or automation system, we offer comprehensive repair and spare parts services ensuring the highest degree of plant availability.

In Germany Tel.:
0180 50 50 446²⁾
(0.14 €/min. from a German landline, mobile phone charges may differ)

Optimization and Upgrading



After startup or during the operating phase, additional potential for increasing the productivity or for reducing costs often arises. For this purpose, we offer you high-quality services in optimization and upgrading²⁾

²⁾ Country-specific telephone numbers can be found at our Internet page www.siemens.com/automation/service&support

Overview

Software types

Software requiring a license is categorized into types. The following software types have been defined:

- Engineering software
- Runtime software

Engineering software

This includes all software products for creating (engineering) user software, e.g. for configuring, programming, parameterizing, testing, commissioning or servicing.

Data generated with engineering software and executable programs can be duplicated for your own use or for use by third-parties free-of-charge.

Runtime software

This includes all software products required for plant/machine operation, e.g. operating system, basic system, system expansions, drivers, etc.

The duplication of the runtime software and executable programs created with the runtime software for your own use or for use by third-parties is subject to a charge.

You can find information about license fees according to use in the ordering data (e.g. in the catalog). Examples of categories of use include per CPU, per installation, per channel, per instance, per axis, per control loop, per variable, etc.

Information about extended rights of use for parameterization/configuration tools supplied as integral components of the scope of delivery can be found in the readme file supplied with the relevant product(s).

License types

Siemens Industry Automation & Drives Technologies offer various types of software license:

- Floating license
- Single license
- Rental license
- Trial license

Floating license

The software may be installed for internal use on any number of devices by the licensee. Only the concurrent user is licensed. The concurrent user is the person using the program. Use begins when the software is started.

A license is required for each concurrent user.

Single license

Unlike the floating license, a single license permits only one installation of the software.

The type of use licensed is specified in the ordering data and in the Certificate of License (CoL). Types of use include for example per device, per axis, per channel, etc.

One single license is required for each type of use defined.

Rental license

A rental license supports the "sporadic use" of engineering software. Once the license key has been installed, the software can be used for a specific number of hours (the operating hours do not have to be consecutive).

One license is required for each installation of the software.

Trial license

A trial license supports "short-term use" of the software in a non-productive context, e.g. for testing and evaluation purposes. It can be transferred to another license.

Factory license

With the Factory License the user has the right to install and use the software at one permanent establishment only. The permanent establishment is defined by one address only. The number of hardware devices on which the software may be installed results from the order data or the Certificate of License (CoL).

Certificate of license

The Certificate of License (CoL) is the licensee's proof that the use of the software has been licensed by Siemens. A CoL is required for every type of use and must be kept in a safe place.

Downgrading

The licensee is permitted to use the software or an earlier version/release of the software, provided that the licensee owns such a version/release and its use is technically feasible.

Delivery versions

Software is constantly being updated.

The following delivery versions

- PowerPack
- Upgrade

can be used to access updates.

Existing bug fixes are supplied with the ServicePack version.

PowerPack

PowerPacks can be used to upgrade to more powerful software. The licensee receives a new license agreement and CoL (Certificate of License) with the PowerPack. This CoL, together with the CoL for the original product, proves that the new software is licensed.

A separate PowerPack must be purchased for each original license of the software to be replaced.

Upgrade

An upgrade permits the use of a new version of the software on the condition that a license for a previous version of the product is already held.

The licensee receives a new license agreement and CoL with the upgrade. This CoL, together with the CoL for the previous product, proves that the new version is licensed.

A separate upgrade must be purchased for each original license of the software to be upgraded.

ServicePack

ServicePacks are used to debug existing products.

ServicePacks may be duplicated for use as prescribed according to the number of existing original licenses.

License key

Siemens Industry Automation & Drives Technologies supply software products with and without license keys.

The license key serves as an electronic license stamp and is also the "switch" for activating the software (floating license, rental license, etc.).

The complete installation of software products requiring license keys includes the program to be licensed (the software) and the license key (which represents the license).



Details of the license conditions can be found in the publication "Comprehensive Terms and Conditions of Sale and Delivery of Siemens AG" or in the Internet at:
<http://www.siemens.com/automation/mall>
 (Industry Mall Online Help System)

A&D/Software licenses/De 02.12.09

Subject index

	Page		Page		Page
Numerics					
24 V supply modules for K45F LS (light sensor)		Adapters		Counter modules	2/57
For ASIsafe	2/20	For position switches	8/49	AS-Interface	
3NJ6 in-line design		Adapters for screw fixing		DP/AS-i LINK Advanced	2/24
For S8	14/8	For 3NJ4/3NJ5	17/114	DP/AS-Interface Link 20E	2/27
3RA6 compact feeders	6/2, 6/28 ... 6/51	Adapters with busbar terminal		DP-AS-i F-Link	2/29
For IO-Link	2/73	For 3NJ4/3NJ5	17/114	EMERGENCY-STOP mushroom pushbuttons	9/64, 9/94
3RA64 direct-on-line starters		Additional load module	3/110, 3/123, 3/127	Enclosures for pushbuttons and indicator lights	9/93 ... 9/95
For IO-Link	2/73	Add-on modules		Extension plug	2/64
3RA65 reversing starters		For AS-i		F adapters	9/64
For IO-Link	2/73	- For 3RA6 compact feeders	6/45	F90 module	2/54
3RE Encapsulated Starters	6/154 ... 6/155	Addressing cable, with banana plug to M12 socket		Flat module	2/54
3RE encapsulated starters	6/3	For AS-Interface	2/41, 2/65	Ground-fault detection modules	2/58
3UF18 current transformers for overload protection	7/19	Addressing cable, with M12 plug to addressing plug		I/O modules	2/36 ... 2/54
3WL/3VL function block library		For AS-Interface	2/41, 2/70	IE/AS-i LINK PN IO	2/33
For SIMATIC PCS 7	18/11	Addressing cable, with M12 plug to M12 socket		K20	2/36
45 mm standard mounting rail	5/27	For AS-Interface	2/41, 2/65, 2/70	K45	2/36
4th contact (N conductor)		Addressing cables, with banana plug, to M12		K60	2/36
For 3LD	17/22, 17/24, 17/25	For AS-Interface	2/46	K60R in degree of protection IP68/IP69K	2/39
8HP molded-plastic distribution systems	14/27	Addressing units		Masters	2/21 ... 2/23
8MC, 8MF cubicle systems	14/12	For AS-Interface	2/65	Overvoltage protection module	2/58
8MR, 8ME Cubicle Air-Conditioning	14/16	Air circuit breakers/non-automatic air circuit breakers	15/1 ... 15/54	Power supply units	2/61
8PS busbar trunking systems	14/11	Air conditioners	14/17	Repeater	2/63
A					
Accessories		ALPHA 160 - DIN Wall-Mounted Distribution Boards	14/25	Routers	2/24 ... 2/35
For AS-Interface	2/63 ... 2/69	ALPHA 400 - DIN Wall-Mounted Distribution Boards	14/25	S22.5	2/52
For PAC3200 power monitoring device	13/7	ALPHA 400 - ZS meter cabinets	14/25	S45	2/52
Accessories and Spare Parts		ALPHA 630 DIN floor-mounted distribution boards	14/25, 14/26	Shaped cables	2/62
For contactors and contactor relays		ALPHA 8HP molded-plastic distribution system	14/25	Signaling columns	9/107, 9/110
3/97 ... 3/132		ALPHA 8HP molded-plastic distribution systems	14/27	Slaves	2/36 ... 2/60, 9/95
- Additional load module	3/110, 3/123, 3/127	ALPHA distribution boards	14/25, 14/26, 14/27	Specification	2/12
- Arc chutes	3/119, 3/122, 3/128 ... 3/131	ALPHA FIX terminal blocks	14/29	Transmission technology	2/9
- Auxiliary switch blocks	3/102 ... 3/104, 3/104 ... 3/106, 3/121, 3/122, 3/126, 3/128 ... 3/131	Ammeter selector switches	19/140	User modules	2/47
- Auxiliary terminals	3/111	Ammeters		AS-Interface compact distributors	2/69
- Box terminal	3/113	For 3NJ62	17/63, 17/73, 17/75, 17/77	For AS-Interface	2/45
- Connection modules	3/111	Analog ammeters	19/142	AS-Interface M12 feeders	2/41, 2/46, 2/64, 2/68, 2/69
- Contacts	3/128 ... 3/131	Analog I/O modules		AS-Interface M12 feeders, 4-fold	
- Coupling links	3/111, 3/125	For AS-Interface	2/48 ... 2/49	For AS-Interface	2/46
- Covers	3/113, 3/121, 3/131	Analog voltmeters	19/142	AS-Interface sealing caps	
- EMC suppression modules	3/110	Analizers		For AS-Interface	2/45
- Insulation stop cor contactors	3/114	For AS-Interface	2/66	For IO-Link	2/76
- LED module for indicating contactor operation	3/111	Approvals	20/8 ... 20/26	AS-Interface sealing caps M12	2/70
- Links for paralleling	3/112, 3/121, 3/124	Arc chutes		For AS-Interface	2/38, 2/40
- Locking devices	3/131	For 3KA/3KE	17/36, 17/37	For ASIsafe	2/20
- Mechanical latching blocks	3/107	For 3NP5	17/104	AS-Interface sealing caps M12, tamper-proof	2/20, 2/38, 2/70
- OFF-delay devices	3/107, 3/122, 3/126	For contactors	3/119, 3/122, 3/128 ... 3/131	AS-Interface system manuals	2/69
- ON-delay devices	3/125	Arcoing contacts		ASIsafe	2/14 ... 2/20
- Plug-in bases	3/123, 3/127	For 3KA/3KE	17/36, 17/37	ASIMON	2/16
- Pneumatic delay block	3/107	AS-i function block library for PCS 7		Basic safety monitor	2/16
- Screw adapters	3/112	For AS-Interface	2/72	Cable-operated switches	2/2
- Solder pin adapters	3/111, 3/112	ASIMON	2/16	EMERGENCY-STOP pushbuttons	2/2
- Solenoid coils	3/115, 3/116, 3/122, 3/128 ... 3/131	For ASIsafe	2/16	Expanded safety monitors	2/16
- Solid-state time-delay blocks	3/107	AS-Interface	2/9 ... 2/72	K20F	2/19
- Surge suppressor	3/108, 3/109, 3/120, 3/123, 3/125, 3/127	Accessories	2/63 ... 2/69	K45F	2/19
- Withdrawable coils	3/117, 3/118	Addressing units	2/65	K45F LS (light sensor)	2/19
Acoustic signal transformers		Analizers	2/66	Laser scanner	2/2
For acoustic signaling devices	9/77	AS-i function block library for PCS 7	2/72	Light arrays	2/2
Actuators		ASIsafe	2/14 ... 2/20	Light curtains	2/2
For position switches	8/56, 8/57, 8/63, 8/64	Cable-operated switches	9/101	Position switches	2/2
Adapter sleeve fitters for NEOZED	19/69	Communication modules	2/55	S22.5F	2/19
Adapter sleeves for DIAZED	19/74	Communication overview	2/11	Safety modules	2/19
NEOZED	19/68	Compact modules	2/37	Safety monitor	2/16
		Configuration examples	2/10	Software	2/16
		Connections for LOGO!	2/60	ASIsafe CD	
				For ASIsafe	2/18
				Assembly kit for SR60 distribution board components	19/115

	Page		Page		Page
Assembly kits for contactor assemblies	3/38, 3/47	Block I/Os		Cable terminals	
Assembly kits for flush mounting		For IO-Link	2/74	For 3RV1 molded case motor starter protectors	5/41
For 3NP	17/107	Box terminal assembly kit		Cable terminating pieces	
Assortments	19/33	For 3NJ4/3NJ5	17/115	For AS-Interface	2/43, 2/70
ATEX		Box terminal blocks		Cable-operated switches	9/3, 9/97 ... 9/101
3RV1 motor starter protectors	5/6	For overload relays	5/61	For ASIsafe	2/2
Overload relays	5/46, 5/51, 5/57	Box terminals		Capacitor contactors	3/58
SIMOCODE pro 3UF7	7/5	3NP1 version	17/82, 17/83, 17/87	Caps for	
SIRIUS 3RN1 thermistor motor protection	7/5	For 3NJ4/3NJ5	17/115	DIAZED	19/74
Autotransformers	10/2, 10/3, 10/5, 10/48 ... 10/51, 10/54, 10/58 ... 10/62, 10/83, 10/84	For contactors	3/113	Changeover switches	
For matching purposes	10/3, 10/60, 10/61	Busbar accessories		For 3KA/3KE	17/36, 17/37
Auxiliary conductor connections		For 3RV1 motor starter protectors	5/21 ... 5/23	Changeover switches with interruption	
For 3NP1	17/88, 17/90, 17/92, 17/94, 17/95	Busbar adapter systems	16/89	For 3KA/3KE	17/36
Auxiliary releases		Busbar adapters		Changeover switches without interruption	
For 3RV1 molded case motor starter protectors	5/40	3NP5	17/107	For 3KA/3KE	17/37
For 3RV1 motor starter protectors	5/17, 5/20	For 3RA1 load feeders	6/25	Circuit breaker terminals	
For circuit breakers	15/23, 15/40, 16/56, 16/58 ... 16/59, 16/100	For 3RV1 motor starter protectors	5/2, 5/21, 5/23, 5/33	Terminal size 1.5 mm ²	19/46
Auxiliary switch blocks		For 8US	17/123, 17/134, 17/139	Circuit breakers	
For contactors and contactor relays		Busbar adapters for		Air	15/1 ... 15/54
- Laterally mountable	3/104, 3/128 ... 3/131	MINIZED switch disconnectors	19/69	Auxiliary releases	15/23, 15/40, 16/56, 16/58 ... 16/59, 16/100
- Snap-on	3/102 ... 3/104, 3/122, 3/126	Busbar connection pieces		Auxiliary switches	15/23, 15/40, 16/56, 16/58 ... 16/60, 16/100
- Solid-state compatible	3/105, 3/121	For 8US	17/126, 17/130, 17/131, 17/139	Communication-capable	15/26, 15/43, 16/12 ... 16/29, 16/40 ... 16/51, 16/98
- Solid-state time-delay	3/106	Busbar covers		Connection methods	15/27 ... 15/28, 15/45 ... 15/46
Auxiliary switch mounting kit	17/116	For 3NJ62	17/78	Conversion sets	15/47
For 3NJ4/3NJ5	17/116	Busbar supports	19/113	Fixed mounting	15/7 ... 15/10, 15/15 ... 15/18, 15/50, 16/10 ... 16/54, 16/99
Auxiliary switches		For 3NJ4/3NJ5	17/114	Generator protection	16/16 ... 16/29, 16/46 ... 16/51
For 3KA/3KE	17/35, 17/37	For 8US	17/121, 17/128, 17/131	Guide frames	15/30 ... 15/33, 15/53 ... 15/54
For 3KL	17/44, 17/45	Busbar system, 5ST3 6, 10 mm ²		Interlocks	16/83 ... 16/88
For 3LD	17/21, 17/22, 17/24, 17/25	For MCBs	19/24, 19/32, 19/38	Molded-case	16/1 ... 16/100
For 3NJ62	17/63, 17/72, 17/74, 17/76	Busbar system, 5ST3 6, 16 mm ²		Motor protection	16/26 ... 16/29
For 3NP1	17/89, 17/91, 17/93, 17/94, 17/95	For MCBs	19/32	Non-automatic molded case circuit breakers	16/30 ... 16/31, 16/52 ... 16/53
For 3NP5	17/104	Busbar system, 5ST3 7, 10 mm ²		Operating mechanisms	15/23, 15/25, 15/40, 16/55, 16/61 ... 16/69, 16/100
For 3RV1 molded case motor starter protectors	5/3, 5/40	12 MW, for MCB 1 + N	19/24, 19/34	Plug-in versions	16/70 ... 16/75
For 3RV1 motor starter protectors	5/2, 5/13, 5/16 ... 5/18	12 MW, for MCBs	19/33	RCD modules	16/76
For circuit breakers	15/23, 16/56, 16/58 ... 16/60, 16/100	56 MW, for MCB 1 + N	19/34	Shunt releases	15/23, 15/40, 16/56, 16/58 ... 16/59
For circuit reakers	15/40	56 MW, for MCBs	19/33	Starter protection	16/30 ... 16/31
For cylindrical fuses	19/78	For MCB 1 + N	19/24	System protection	16/10 ... 16/25, 16/34 ... 16/51, 16/99
For Miniature Circuit Breakers (MCBs)	19/26	Busbar system, 5ST3 7, 16 mm ²		Undervoltage releases	15/23, 15/40, 16/56, 16/58 ... 16/59
For miniature circuit breakers (MCBs)	19/26	12 MW, for MCBs	19/34	With electronic release	15/7 ... 15/22, 15/34, 16/10 ... 16/29, 16/34 ... 16/51, 16/99
For MINIZED disconnectors	19/65	56 MW, for MCBs	19/34	Withdrawable bridging units	15/48
For residual current protective devices	19/54	Busbar Systems		Withdrawable grounding units	15/48
Auxiliary terminals	3/111	For 3RA1 load feeders	6/27	Withdrawable short-circuits	15/48
		For 3RV1 motor starter protectors	5/2, 5/21 ... 5/23	Withdrawable version	15/11 ... 15/14, 15/19 ... 15/22, 15/51 ... 15/52, 16/70 ... 16/75
		Busbar terminal		Circuit breakers / feeder terminals	19/46
		For 3NJ4/3NJ5	17/114	Circuit-breakers	
		Busbars		Shunt releases	16/100
		Specially for 5SJ4HG miniature circuit breakers	19/44	Clamp terminals	
		Busbars according to UL 508		For 3NP5	17/107
		18 mm ²	19/36, 19/85	Coil repeat terminals	3/37
		25 mm ²	19/36, 19/85	Combination surge arresters	19/123
		End caps	19/36, 19/85	Communication modules	
		Terminals	19/36, 19/85	For AS-Interface	2/55
		Touch protection covers	19/36, 19/85		
		Buttons	9/17, 9/75		
B		C			
Base plate for contactor assemblies	3/37, 3/47	Cable clips for cable adapters			
Bases		For AS-Interface	2/70		
For 8US	17/130	Cable connection cover			
Basic safety monitor		For 3NP1	17/89, 17/91, 17/93, 17/94, 17/95		
For ASIsafe	2/16	Cable releases for RESET	5/50, 5/60		
Basic switch version		Cable sets			
For 3KA/3KE	17/29	For ASIsafe	2/18		
Bi-metal ammeters					
For 3NJ62	17/73, 17/75, 17/77				
Bi-metal measuring instruments	17/73				
For 3NJ62	17/73, 17/75, 17/77				
Blanking covers					
For 3NJ4/3NJ5	17/113, 17/114				
For 3NJ62	17/78				
For 8US	17/129, 17/131				
Blanking plugs					
For pushbuttons and indicator lights	9/79				

Subject index

	Page		Page		Page
Communication overview		Contactors assemblies		Covers for cable lug connections	
For AS-Interface	2/11	For reversing	3/32 ... 3/39, 3/48	For 3NP5	17/107
Communication-capable circuit breakers	15/26, 15/43, 16/12 ... 16/29, 16/40 ... 16/51, 16/98	- Complete units	3/32 ... 3/36, 3/48	Covers for terminals for circular conductors	
Compact lights		- Components for customer assembly	3/37 ... 3/39	For 8US	17/122, 17/133
For 8MC, 8MF	14/14	For wye-delta starting	3/40 ... 3/47, 3/49	CP 243-2	
Compact miniature circuit breakers		- Complete units	3/40 ... 3/46, 3/49	For AS-Interface	2/21
N pole left 1P+N, 230 V AC	19/24	- Components for customer assembly	3/47	CP 343-2	
N pole right 1P+N, 230V AC	19/24	Contactors bases	5/26	For AS-Interface	2/22
Compact modules		Contactors relays	3/69 ... 3/78	C-PLUG	
For AS-Interface	2/37	Coupling relays		For AS-Interface	2/26, 2/35
Compact starters		- For switching auxiliary circuits	3/78	Cubicle air-conditioning	14/18
For AS-Interface, 400 V AC	6/3, 6/136 ... 6/139	Latched	3/72	Cubicle lighting	
Complete version		With auxiliary switch block	3/70	For 8MC, 8MF	14/14
For 3KA/3KE	17/29	Contactors		CubicleBUS modules	15/43
Completely compartmentalized		For special applications	3/50 ... 3/68	Current measuring modules	5/59
3NP5 version	17/98, 17/99, 17/100, 17/101, 17/102, 17/103	- Capacitor contactors	3/58	Current monitoring	7/48
Components		- For switching DC voltage	3/66 ... 3/68	Current transformer busbars	17/72
For IO-Link	2/73	- For switching resistive loads	3/50 ... 3/54	For 3NJ62	17/72, 17/75
Configuration examples		- With extended operating range, for railway applications	3/59 ... 3/65	Current transformers	16/91 ... 16/93, 17/72, 19/140
For AS-Interface	2/10	For switching motors 3/5 ... 3/31, 3/61 ... 3/64		For 3NJ4/3NJ5	17/117
Configuring, Visualizing and Controlling		- Vacuum contactors	3/27 ... 3/28	For 3NJ62	17/63, 17/72, 17/74, 17/76
With SENTRON	18/13	- With auxiliary switch block 3/15 ... 3/22, 3/31			
With SIMATIC	18/6 ... 18/12	- With DC solenoid system	3/29		
Connecting cables	5/59	Contacts for contactors	3/128 ... 3/131		
Connecting cables for K45F LS (light sensor)		Control devices	7/1 ... 7/83		
For ASIsafe	2/20	Control transformers	10/2, 10/3, 10/5 ... 10/19, 10/24 ... 10/41, 10/48, 10/49, 10/54 ... 10/56, 10/58, 10/59		
Connecting terminal plates		Conversion sets			
For 8US	17/132	Fixed-mounted circuit breakers to withdrawable circuit breakers	15/47	DC current	
Connecting wedges		Converter transformers	10/50, 10/51, 10/62, 10/83, 10/84	Non-automatic air circuit breakers	15/50 ... 15/54
For 8US	17/126, 17/139	Converters	4/68	Delay blocks	
Connection assembly kit		Cooling devices	14/17	Pneumatic	3/107
For 3NJ4/3NJ5	17/115	Coordinate switches	9/28, 9/29	Device holders	
Connection cables for auxiliary switches and releases		Counter modules		For 8US	17/123, 17/134
For 3RV1 molded case motor starter protectors	5/40	For AS-Interface	2/57	DIAZED	
Connection components		Coupling drivers		Adapter sleeves	19/74
For fixed-mounted circuit breakers	16/100	For door-coupling rotary operating mechanisms	17/56	Caps	19/74
Connection holders		Coupling links	3/111, 3/125	Screw adapters	19/74
For 8US	17/126, 17/139	Coupling relays		DIAZED bus-mounting bases	
Connection methods		For switching auxiliary circuits	3/78	For 8US	17/138
For circuit breakers	15/27 ... 15/28, 15/45 ... 15/46	For switching motors	3/79 ... 3/81	Digital ammeters	19/142
For fixed-mounted circuit breakers	16/77 ... 16/82	Narrow design	3/82 ... 3/87	Digital I/O modules	
Connection modules		- Relay couplers	3/82, 3/83	For AS-Interface	2/38 ... 2/47
For 3NJ62	17/78	- Relay couplers with plug-in connection	3/84, 3/85	Digital voltmeters	19/142
For 3NP1	17/90	- Semiconductor couplers	3/86, 3/87	Direct operating mechanisms	
Connection modules for contactors	3/111	With industrial housing		For 3KA/3KE	17/36, 17/37
Connection technology		- Relay couplers	3/88	Direct-on-line starters	
According to ISO 23570 and ECOFAST	6/164 ... 6/173	Coupling relays with plug-in relays		3RA11 load feeders	6/5 ... 6/12
Connectors		Plug-in relay couplers	3/89 ... 3/95	3RA61 compact feeders	6/36
Mechanical	3/39	Cover profiles		3RA64 compact feeders	6/38
Contact blocks		For 8US	17/121, 17/129, 17/131	ET 200pro	6/99 ... 6/102
For joystick switches	9/30	Cover support		M200D	6/119 ... 6/130
For magnetically operated switches	8/88	For 3NP1	17/89, 17/91, 17/93, 17/94, 17/95	MCU	6/143 ... 6/152
For position switches	8/50	Covers		Distance compensation	
For pushbuttons	9/10, 9/11, 9/60 ... 9/63, 9/88, 9/89	For 3NJ4/3NJ5	3/113, 3/121, 3/131, 15/26, 15/35, 15/41	For 3NJ4/3NJ5	17/116
Contact extension		For DIAZED	19/74	Distance protection	5/2, 5/16
For 3NJ62	17/72, 17/74, 17/76	For miniature circuit breakers (MCBs)	19/30	Distribution boards	14/25, 14/26, 14/27
		For position switches	8/51	Door-coupling rotary operating mechanisms	
		For residual current protective devices	19/63	For 3K switch disconnectors	17/52 ... 17/57
		For terminals	5/30, 5/50, 5/61	For 3RV1 motor starter protectors	5/2, 5/28, 5/29
		For terminals for residual current protective devices	19/54	Door-coupling rotary operating mechanisms IP65	
		For time counters	19/144	For 3KA/3KE	17/35, 17/36, 17/37
		IP20, for 3KL	17/43, 17/44	For 3KL	17/43, 17/44
				For 3KM	17/50, 17/51
				DP/AS-i F-Link	
				For AS-Interface	2/29
				DP/AS-i LINK Advanced	
				For AS-Interface	2/24

Subject index

	Page		Page		Page
DP/AS-Interface Link 20E		Energy Communication Field Installation System	6/158 ... 6/174	Flat copper profiles	
For AS-Interface	2/27	Equipment layouts		For 8US	17/121, 17/130, 17/131
Dual lights		For S8	14/8	Flat module	
For 8MC, 8MF	14/14	ET 200eco PN		For AS-Interface	2/54
E		For IO-Link	2/74	Floor-mounted distribution boards	14/25, 14/26
ECOFAST	6/158 ... 6/174	ET 200pro		Front connectors	
ECOFAST ES	12/18	Components	6/110 ... 6/118	For AS-Interface	2/23
E-counters		ET 200S		Front panel	
For 3/4 conductor connection	19/139	Interface modules	6/80 ... 6/98	For 3NJ62	17/73, 17/75, 17/77
For active and reactive energy	19/139	ET 200S 4SI IO-Link		Front plates	
Three-phase	19/139	For IO-Link	2/74	For 3RV1 motor starter protectors	5/2, 5/34 ... 5/36
Edges		ET 200S 4SI SIRIUS		Function expansion modules	5/58
For 8US	17/129	For IO-Link	2/74	Function modules	4/45, 4/63 ... 4/72
EFM		ET 200S Safety motor starters	6/63 ... 6/79	Converters	4/68
For 3NJ62	17/61, 17/62	ETU electronic trip units	15/7 ... 15/22, 15/34, 16/12 ... 16/29, 16/40 ... 16/51	Heating current monitoring	4/70
EFM 10		Evaluation modules	5/58	Load monitoring	4/69
For 3NP1	17/80	Expanded safety monitors		Power controllers	4/71
EFM 20		For ASIsafe	2/16	Power regulators	4/72
For 3NP1	17/80	Expansion module for power monitoring devices		Fuse bases	
EFM 25		PAC PROFIBUS DP	13/9	NEOZED	19/69
For 3NP1	17/80	PAC RS 485	13/10	Fuse carriers	
Electromechanical fuse monitoring		Expansion plug	5/27	For 3NP1	17/89, 17/91, 17/94, 17/95
For 3NP1	17/80	Explosion protection (ATEX)		For 3NP5	17/104
Electronic fuse monitoring		3RV1 motor starter protectors	5/6	Fuse covers	
For 3NJ62	17/61, 17/62	Overload relays	5/46, 5/51, 5/57	For 3KL	17/43, 17/44
For 3NP1	17/80	SIMOCODE pro 3UF7	7/5	For 3KM	17/50, 17/51
For 3NP5	17/102, 17/103	SIRIUS 3RN1 thermistor motor protection	7/5	Fuse monitor connections	
Electronic fuse monitoring with DC monitoring		Extension plug		For 3KL	17/43, 17/44
For 3NP1	17/80	For AS-Interface	2/64	For 3KM	17/50, 17/51
Electronic fuse monitors		F		Fuse monitoring	5/2, 5/13
For 3NP5	17/102, 17/103	F90		For 3NJ62	17/61, 17/62
Electronic hygrostats	14/23	For AS-Interface	2/54	For 3NP5	17/100
Electronic hygrotherms	14/24	F90 module		Fuse partitions	
Electronic releases	15/7 ... 15/22, 15/34, 15/35, 16/10 ... 16/29, 16/34 ... 16/51, 16/99	For AS-Interface	2/54	For 3KL	17/43, 17/44
Electronic thermostats	14/23	F90 module		For 3KM	17/50, 17/51
EMC filter fans	14/16	For AS-Interface	2/54	Fuse monitoring	5/2, 5/13
EMC suppression modules for contactors	3/110	Fan heaters	14/19	For 3NJ62	17/61, 17/62
EMERGENCY-STOP door-coupling rotary operating mechanisms		Fault signal contacts (FC)		For 3NP5	17/100
For 3RV1 motor starter protectors	5/29	For miniature circuit breakers (MCBs)	19/26	Fuse partitions	
EMERGENCY-STOP mushroom button		Feeder terminals	3/47, 19/46	For 3KL	17/43, 17/44
For 3RV1 motor starter protectors	5/36	For 3NP1	17/88	For 3KM	17/50, 17/51
EMERGENCY-STOP mushroom pushbuttons		Filter fan versions	14/16	Fuses	
9/6, 9/8, 9/23, 9/25, 9/36, 9/40, 9/44, 9/48, 9/58, 9/84, 9/85, 9/94		Filter fans	14/16	For 3KL	17/45
EMERGENCY-STOP pushbuttons		Fix thermostats	14/22	For 3KM	17/45
For ASIsafe	2/2	Fixed mounting		For 3NJ4/3NJ5	17/116
Enclosures		Circuit breakers	15/7 ... 15/10, 15/15 ... 15/18, 15/50	For 3NP5	17/105
For 3RV1 motor starter protectors	5/2, 5/34 ... 5/36	Fixed-mounted circuit breakers	16/10 ... 16/54, 16/99	Ground-fault detection modules	
For miniature circuit breakers (MCBs)	19/30	Connection components	16/100	For AS-Interface	2/58
For pushbuttons and indicator lights	9/83 ... 9/94	Connection methods	16/77 ... 16/82	Grounding brackets	
For residual current protective devices	19/63	Fixing clips		For 3KA/3KE	17/36, 17/37
For transformers	10/49, 10/51, 10/59, 10/83, 10/84	For 3NJ4/3NJ5	17/113	Grounding kit	
End and intermediate holders		Fixing kits		For 3NJ4/3NJ5	17/114
For 8US	17/121, 17/128	For 3NP1	17/89, 17/91, 17/93	Guide frames	
End caps		Fixing parts	19/29	For circuit breakers	15/30 ... 15/33, 15/53 ... 15/54
For 5ST3 76	19/34	Residual current protective devices	19/63	Guide rails	
For 5ST3 76 busbars	19/24	Fixing parts for miniature circuit breakers	19/29	For 3NJ62	17/78
For busbars	19/34	Fixing screws		Handle coupler for	
End cover	5/27	For 3NJ4/3NJ5	17/114	Residual current protective devices	19/26, 19/60
For 8US	17/129	FK-E coupling modules		Handle locking device for busbars	19/45
		For AS-Interface	2/65	Handle locking devices	
		Flat connectors		For miniature circuit breakers	19/29
		3NP1 version	17/82, 17/83, 17/87		
		For 3N4/3NJ5	17/111		

Subject index

	Page		Page		Page
Handle with masking plate		IO-Link	2/73 ... 2/76	LAN couplers	19/137
For door-coupling rotary operating mechanisms	17/56	3RA64 direct-on-line starters	2/73	Laser scanner	
Heat exchangers	14/13, 14/17	3RA65 reversing starters	2/73	For ASIsafe	2/2
Heating current monitoring	4/70	Block I/Os	2/74	Latched contactor relays	3/72
Heavy starting		ET 200eco PN	2/74	Latching blocks	
With 3RW40	4/17 ... 4/18	ET 200S 4SI IO-Link	2/74	Mechanical	3/107
With 3RW44		ET 200S 4SI SIRIUS	2/74	Leakage current measurement device	19/54
- In inline circuit	4/28 ... 4/30	I/O modules	2/75	LED module	
- In inside-delta circuit	4/36 ... 4/37	Industrial Controls	2/73	For indicating contactor operation	3/111
High speed closing		Masters	2/74	LEDs	
3NP5 version	17/98, 17/99, 17/100, 17/101, 17/102, 17/103	Masters in degree of protection IP67	2/74	For pushbuttons and indicator lights	9/17, 9/76
Hinge switches	8/2, 8/65 ... 8/67, 8/85, 8/86	Sealing caps	2/76	Lenses for indicator lights	9/17, 9/75
Holders for ammeters		Sensors	2/73	Level monitoring	
For 3NJ62	17/73, 17/75, 17/77	SIRIUS 3RA6 Compact Feeders	2/73	Level monitoring relays	7/54
Hybrid field bus connections	6/163	Solid-state module	2/74	Level monitoring sensors	7/55
Hygrostats	14/22	Isolating links		Level monitoring sensors	7/55
Hygrotherms	14/22	For 3NJ4/3NJ5	17/116	Lever-type rotary operating mechanisms	
		Isolating transformers	10/2, 10/3, 10/5, 10/24 ... 10/49, 10/54 ... 10/59	For 3RV1 molded case motor starter protectors	5/41
		For supply of medical premises	10/2, 10/47	Light arrays	
		Isolator modules	5/2, 5/17, 5/19	For ASIsafe	2/2
		ET200pro	6/106	Light curtains	
				For ASIsafe	2/2
I				Lightning arresters, type 1	19/122
I/O modules				Lights	
For AS-Interface	2/36 ... 2/54	J		For 8MC, 8MF	14/14
For IO-Link	2/75	Jumper plugs		Line monitoring	7/45, 7/46
IE FC RJ45 Plug 90		For AS-Interface	2/50	Link modules	
For AS-Interface	2/26, 2/35			For 3RV1 motor starter protectors	5/2, 5/32 ... 5/33
IE/AS-i LINK PN IO				Link rails	
For AS-Interface	2/33			For 3NP1	17/88
Incandescent lamps				Single-phase	19/46
For pushbuttons and indicator lights	9/17, 9/76	K		Two-phase	19/46
Indicator lights	9/2, 9/4, 9/9, 9/26, 9/27, 9/37, 9/40, 9/44, 9/49, 9/59	K20		Links for paralleling	3/47, 3/112, 3/121, 3/124
For 3RV1 motor starter protectors	5/36	For AS-Interface	2/36	Load feeders	4/47, 4/75
Industrial Controls		K20F		3RA1, fuseless	6/2, 6/4 ... 6/27
With IO-Link	2/73	For ASIsafe	2/19	Load monitoring	4/69
Infeed system	5/2, 5/24 ... 5/27	K45		Load-side terminal strip	
For 3RA1 load feeders	6/27	For AS-Interface	2/36	For 8US	17/126, 17/139
For 3RA6 compact feeders	6/46 ... 6/51	K45 mounting plates		Locking caps	19/65
Infeeds		For AS-Interface	2/71	Locking devices	15/27, 15/35, 19/29
For 8US	17/132	For ASIsafe	2/20	For 3NP1	17/89, 17/91, 17/94, 17/95
Inscription labels	5/62	K45F		Residual current protective devices	19/55
For 3LD	17/21, 17/22, 17/23, 17/24, 17/25	For ASIsafe	2/19	Locking devices for contactors	3/131
For AS-Interface	2/71	K45F LS (light sensor)		Locking mechanisms	15/27, 15/36
For enclosures	9/90	For ASIsafe	2/19	Locks for	
For miniature circuit breakers	19/29	K60		Residual current protective devices	19/55
Residual current protective devices	19/63	For AS-Interface	2/36	Locks for miniature circuit breakers	19/29
Inscription labels, blank	3/114	K60 mounting plates		LOGO!	
Insert labels		For AS-Interface	2/38, 2/40, 2/50, 2/71	Accessories	7/26
For pushbuttons and indicator lights	9/12 ... 9/15, 9/68 ... 9/69	K60R in degree of protection IP68/IP69K		AS-Interface connections for LOGO!	7/25
Insulated three-phase busbar system		For AS-Interface	2/39	CM EIB/KNX communication modules	7/24
For 3RV1 motor starter protectors	5/2, 5/21 ... 5/23	Key-operated switches		Contact	7/27
Insulation monitoring		For rotary buttons and switches	9/7, 9/9, 9/24, 9/34, 9/35, 9/43, 9/47, 9/56, 9/57	For AS-Interface	2/60
For ungrounded AC networks	7/52	Knob-operated mechanism		General data	7/20
For ungrounded DC networks	7/53	For 3LD	17/23	Modular basic versions	7/21
Insulation stop cor contactors	3/114			Modular expansion modules	7/23
Integrated signal lamps	9/3, 9/112			Modular pure versions	7/22
For 8MC, 8MF	14/14	L		Software	7/28
Interlocks	15/26, 15/36	Labeling systems	19/29	LOGO! logic modules	7/20 ... 7/28
For circuit breakers	16/83 ... 16/88	Labels	4/5	LOGO!Power	11/2, 11/11
Mechanical	3/37	Lampholders		Lyre-shaped fuse covers	
Intermediate frame	19/30	For pushbuttons and indicator lights	9/10, 9/11, 9/60 ... 9/63, 9/88, 9/89	For 3KL	17/43
Introduction to SIRIUS ES	12/2 ... 12/3	Lamps	9/17, 9/76		

	Page		Page		Page
M					
M12 addressing cables to M12		Remote-controlled mechanisms (RC)	19/26	Motorized operating mechanisms	5/2, 5/28, 5/29
For AS-Interface	2/46	UC product range	19/14, 19/15	Mountable accessories	5/17 ... 5/20
M12 cable plugs		Undervoltage releases (UR)	19/26	Mounting accessories	5/30 ... 5/33
For AS-Interface	2/68	Universal range according to UL and IEC	19/40	Releases	5/20
M12 sealing caps		With plug-in terminal	19/22	Rotary operating mechanisms	5/2, 5/28, 5/29
For AS-Interface	2/50	Miniature contactors/Power relays	3/96	Shunt releases	5/2, 5/17, 5/20
M12 Y-shaped coupler plugs		MINIZED		Signaling switches	5/2, 5/17, 5/19
For AS-Interface	2/46, 2/70	Fuse switch disconnectors	19/66	Solder pin connections	5/30, 5/31
M12-T distributors		Switch disconnectors	19/65	Starter combinations	5/2, 5/11
For AS-Interface	2/41, 2/46, 2/70	Modular Safety System ES	12/15 ... 12/17	System protection	5/2, 5/14
M200D	6/3, 6/119 ... 6/135	Molded case circuit breakers	16/1 ... 16/100	Terminals	5/30, 5/31
Magnetic releases	16/30 ... 16/31, 16/52 ... 16/53	Molded case motor starter protectors, 3RV1		Transformer protection	5/2, 5/12, 5/15
Magnetically operated switches	8/3, 8/87, 8/88	Auxiliary releases	5/40	Undervoltage releases	5/2, 5/17, 5/20
Main connections	15/28, 15/45 ... 15/46, 16/7	Auxiliary switches	5/3, 5/40	Voltage transformer circuit breakers	5/2, 5/16
Mains transformers	10/2, 10/3, 10/5 ... 10/46, 10/48, 10/49, 10/54 ... 10/59	Cable terminals	5/41	Motor starters	
Male connectors		Connection cables for auxiliary switches and releases	5/40	3RE encapsulated starters	6/3, 6/154 ... 6/155
For overvoltage protection devices	19/128	Lever-type rotary operating mechanisms	5/41	ECOFAST	6/3, 6/140 ... 6/142
Manual operation		Motor protection	5/3, 5/38	ET 200pro	6/3, 6/99 ... 6/109
For 3NJ62	17/61, 17/62	Motorized operating mechanisms	5/41	ET 200S	6/52 ... 6/79
Masters		Mountable accessories	5/40	ET 200S Failsafe	6/2, 6/63 ... 6/64
For AS-Interface	2/21 ... 2/23	Mounting accessories	5/41	For AS-Interface, 24 V DC	6/3, 6/156 ... 6/157
For IO-Link	2/74	Releases	5/40	For AS-Interface, 400 V AC	6/3, 6/136 ... 6/139
Masters in degree of protection IP67		Rotary operating mechanisms	5/3, 5/41	M200D	6/3, 6/119 ... 6/135
For IO-Link	2/74	Shunt releases	5/3, 5/40	MCU	6/3, 6/143 ... 6/153
Matching transformers	10/3, 10/50, 10/51, 10/60 ... 10/72	Starter combinations	5/3, 5/39	Motorized operating mechanisms	
With cURus approval	10/3, 10/73 ... 10/82	Terminals	5/41	For 3RV1 molded case motor starter protectors	5/41
With selectable voltages	10/3, 10/83, 10/84	Undervoltage releases	5/3, 5/40	For 3RV1 motor starter protectors	5/2, 5/28, 5/29
MCU	6/3, 6/143 ... 6/153	Molded-plastic enclosures		Mountable accessories	
Measuring selector switches	19/140	For 3RV1 motor starter protectors	5/34 ... 5/36	For 3RV1 molded case motor starter protectors	5/40
Mechanical connectors		For residual current protective devices	19/63	For 3RV1 motor starter protectors	5/17 ... 5/20
For contactor assemblies	3/39	Molded-plastic masking frames		Mounting accessories	
Mechanical coupling of operating handles		For 3NP5	17/104, 17/107	For 3RV1 molded case motor starter protectors	5/41
For 3NJ4/3NJ5	17/116	Momentary-contact foot switches, foot switches	9/3, 9/102, 9/103	For 3RV1 motor starter protectors	5/30 ... 5/33
Mechanical hygrostats	14/23	Monitoring devices	7/1 ... 7/83	Mounting components	
Mechanical interlocks		Monitoring units		For 8US	17/138
For contactor assemblies	3/37	For magnetically operated switches	8/88	Mounting hook	
Mechanical latching blocks for contactors and contactor relays	3/107	Motor management and control devices		For 3NJ4/3NJ5	17/116
Mechanical RESET	5/50, 5/60	SIMOCODE 3UF	7/6 ... 7/18	Mounting rail	
Mechanical thermostats	14/23	Motor protection	5/2, 5/7 ... 5/10, 5/38, 16/26 ... 16/29	For 8US	17/126, 17/139
MFM		For overload relays	5/4	Mounting tools	
For 3NP1	17/80	Motor starter		For 3LD	17/21, 17/22, 17/24
Miniature circuit breakers (MCBs)	19/6 ... 19/46	ET 200S	6/2	Moving-iron ammeters	
"same polarity only" 1P, 240 V AC	19/40	Motor Starter ES	12/7 ... 12/9	For 3NJ62	17/73, 17/75, 17/77
10000 A	19/9	Motor starter protectors, 3RV1	5/2, 5/5 ... 5/36	Moving-iron measuring instruments	17/73
10000 A, high current	19/13	Accessories	5/2, 5/17 ... 5/36	For 3NJ62	17/73, 17/75, 17/77
10000 A, universal current	19/14, 19/15	Auxiliary releases	5/17, 5/20	Multicounters	19/135, 19/136
15000 A	19/16, 19/17	Auxiliary switches	5/2, 5/13, 5/16 ... 5/18	Multi-function plugs	
1P, 240 V AC	19/41	Busbar accessories	5/21 ... 5/23	For 3NJ62	17/63, 17/73, 17/75, 17/77
1P, 480Y/277 V AC	19/42	Busbar adapters	5/2, 5/21, 5/23, 5/33	Multimeters	19/133
25 kA	19/19	Busbar systems	5/2, 5/21 ... 5/23	Mushroom pushbuttons and switches	9/23, 9/25, 9/32, 9/48, 9/51
2P, 240 V AC	19/41	Distance protection	5/2, 5/16		
2P, 480Y/277 V AC	19/43	Door-coupling rotary operating mechanisms	5/2, 5/28, 5/29		
3P, 240 V AC	19/42	Enclosures	5/2, 5/34 ... 5/36		
3P, 480Y/277 V AC	19/43	Explosion protection (ATEX)	5/6		
6000 A	19/6	Fuse monitoring	5/2, 5/13		
Additional components	19/26	Front plates	5/2, 5/34 ... 5/36		
Auxiliary switches (AS)	19/26	Infeed system	5/2, 5/24 ... 5/27		
Busbars	19/32, 19/36, 19/85	Insulated three-phase busbar system	5/2, 5/21 ... 5/23		
Circuit breaker terminals	19/46	Isolator modules	5/2, 5/17, 5/19		
Comfort range with plug-in terminal	19/22	Link modules	5/2, 5/32, 5/33		
Compact range 1 + N in 1 MW	19/24	Molded-plastic enclosures	5/34 ... 5/36		
Fault signal contacts (FC)	19/26	Motor protection	5/2, 5/7 ... 5/9		
High-capacity range	19/6 ... 19/20	- With overload relay function	5/2, 5/10		
High-current product range	19/13, 19/16				

N

N or PE terminals	
For 3LD	17/21, 17/22, 17/25
Name plates	
For E-STOP mushroom pushbuttons	9/18, 9/80
For joystick switches	9/30
For pushbuttons and indicator lights	9/16, 9/70 ... 9/74

Subject index

	Page		Page		Page
NEOZED		P		SITOP buffer modules	11/14
Adapter sleeve fitters	19/69	PAC PROFIBUS DP	13/9	SITOP DC UPS modules	11/15, 11/16
Adapter sleeves	19/68	PAC RS 485	13/10	SITOP expansion modules	11/14
Busbar adapters	19/69	PAC3100	13/3, 13/6	SITOP modular	11/2, 11/13
Caps	19/68	PAC3100 power monitoring devices	13/3, 13/6	SITOP redundancy modules	11/14
Covers	19/67	PAC3200	13/3, 13/7	SITOP select diagnostics modules	11/14
fuse bases	19/66 ... 19/67	PAC3200 function block library		SITOP signaling modules	11/14
Fuse links	19/65	For SIMATIC WinCC	13/7, 18/12	SITOP smart	11/2, 11/12
Retaining springs	19/69	PAC3200 power monitoring devices	13/3, 13/7	SITOP UPS50.	11/16
Screw caps	19/68	PAC4200	13/3, 13/8	SITOP, modular	11/13
NEOZED bus-mounting bases		PAC4200 power monitoring devices	13/3, 13/8	Stabilized, SITOP	11/11 ... 11/16
For 8US	17/138	Padlocks	19/29, 19/45	Three-phase	11/2, 11/7, 11/8, 11/10, 11/13
Non-automatic air circuit breakers		Parallel switches		Unfiltered	11/2, 11/9, 11/10
Air	15/1 ... 15/54	For 3KA/3KE	17/36, 17/37	Uninterruptible SITOP DC-UPS	11/2, 11/15, 11/16
Direct current	15/50 ... 15/54	Parking position		Power supply units	
Non-automatic molded case circuit breakers		For 3NJ4/3NJ5	17/109	For AS-Interface	2/61
16/30 ... 16/31,		Partitions		Power transformers	10/2, 10/3, 10/50,
16/52 ... 16/53		For 8US	17/130, 17/131	10/51, 10/62 ... 10/84	
Non-stabilized power s.		PCS 7 function block library		Enclosures	10/51, 10/83, 10/84
Single-phase	11/2	For AS-Interface	2/72	With selectable voltages	10/2, 10/3, 10/50,
Three-phase	11/2	Pillar-type variable-ratio transformers	10/2, 10/3	10/51, 10/83, 10/84	
Non-stabilized power supplies		Planning the power distribution system		Prism terminal	
Filtered	11/2, 11/4 ... 11/8	With SIMARIS	18/4 ... 18/5	For 3NJ4/3NJ5	17/115
Single-phase	11/4 ... 11/6,	Planning, configuration and visualizing		For 3NP1	17/90, 17/92
11/9, 11/11 ... 11/14		For SIRIUS	12/1 ... 12/18	PROFIBUS	15/44
Three-phase	11/7, 11/8, 11/10, 11/13	Plug-in bases	3/123, 3/127	PROFIBUS FastConnect bus connectors	
Unfiltered	11/2, 11/9, 11/10	Plug-in connections		For AS-Interface	2/26, 2/28
Normal starting		For position switches	8/49	PROFIBUS FastConnect Stripping Tool	
With 3RW40	4/14 ... 4/16	Plug-in connectors	5/26	For AS-Interface	2/26, 2/28
With 3RW44		Plug-in version		PROFIBUS FC Standard Cable GP	
- In inline circuit	4/25 ... 4/27	Circuit breakers	16/70 ... 16/75	For AS-Interface	2/26, 2/28
- In inside-delta circuit	4/34 ... 4/35	Plug-on mounts		Protection equipment	5/2 ... 5/62
		For 8MC, 8MF	14/14	Protective caps	
		Pneumatic delay blocks		For position switches	8/50
		For contactors and contactor relays	3/107	For pushbuttons	9/18, 9/78
		Position switches	8/2 ... 8/86	Protective collars	
		Accessories	8/32, 8/46, 8/49, 8/51	For pushbuttons and indicator lights	9/79
		Accessories for position switches		Protective devices with device holder	15/34
		- Empty enclosures	8/50	PTC fan heaters	14/21
		Actuators	8/56, 8/63	Pulse counters	
		Ambient temperature -40 °C	8/28, 8/42	Mechanical	19/143
		AS-Interface	8/73 ... 8/86	Solid-state	19/143
		Contact blocks	8/50	Pushbuttons and indicator lights	9/2, 9/4 ... 9/95
		Explosion protection (ATEX)	8/69 ... 8/72	Nominal diameter 16 mm	9/4 ... 9/18
		For ASIsafe	2/2	- Accessories and Spare Parts	9/17, 9/18
		Hinge switches	8/2, 8/65 ... 8/67, 8/85, 8/86	- Actuators	9/8, 9/9
		Metal enclosures	8/2, 8/34 ... 8/47	- Complete units	9/6, 9/7
		Open-type	8/2, 8/48	- Contact blocks	9/10, 9/11
		Plastic enclosures	8/2, 8/20 ... 8/33	- Indicator lights	9/7
		Spare parts	8/50, 8/51	- Indicators	9/9
		With separate actuator	8/3, 8/52 ... 8/57,	- Inscriptions	9/12 ... 9/16
		8/79, 8/80, 8/81		- Lampholders	9/10, 9/11
		With solenoid interlocking	8/3, 8/58 ... 8/64,	Nominal diameter 22 mm	9/19 ... 9/95
		8/83, 8/84		- Accessories and Spare Parts	9/75 ... 9/82
		Power controllers	4/71	- Accessories for enclosures	9/92
		Power distribution boards	14/7	- Actuators	9/31 ... 9/38,
		Power factor and active current monitoring	7/49	9/41 ... 9/44, 9/50 ... 9/58	
		Power Management System	13/2	- AS-Interface enclosures	9/93 ... 9/95
		Power regulators	4/72	- Complete units	9/22 ... 9/27, 9/39,
		Power relays/Miniature contactors	3/96	9/40, 9/45 ... 9/49	
		Power supplies	11/1 ... 11/16	- Contact blocks	9/60 ... 9/63
		Filtered	11/2, 11/4 ... 11/8	- Coordinate switches	9/28, 9/29
		LOGO!Power	11/2, 11/11	- Enclosures	9/3, 9/83 ... 9/92
		Non-stabilized	11/2, 11/4 ... 11/10	- Indicators	9/37, 9/44, 9/59
		Single-phase	11/2, 11/4 ... 11/6,	- Inscriptions	9/66 ... 9/74, 9/90 ... 9/91
		11/9, 11/11 ... 11/14		- Lampholders	9/60 ... 9/63
		SITOP	11/11 ... 11/16	- Twin pushbuttons	9/37, 9/38
		SITOP battery modules	11/15	Pushbuttons and switches	9/2, 9/4, 9/6, 9/8,
				9/19, 9/22, 9/31, 9/39,	9/41, 9/45, 9/46, 9/50

	Page		Page		Page
Push-in lugs		ET 200pro	6/99 ... 6/102	Shaped cables	
For 3RV1 motor starter protectors	5/31	M200D	6/119 ... 6/130	For AS-Interface	2/62
For AS-Interface	2/53	MCU	6/143 ... 6/152	Shunt releases	
For overload relays	5/61	Rotary operating mechanisms	5/41	For 3RV1 molded case motor starter protectors	5/3, 5/40
		For 3LD	17/21, 17/22, 17/25	For 3RV1 motor starter protectors	5/2, 5/17, 5/20
R		For 3RV1 molded case motor starter protectors	5/3, 5/41	For circuit breakers	15/23, 15/40, 16/56, 16/58 ... 16/59, 16/100
Rated current modules	15/24, 15/34	For 3RV1 motor starter protectors	5/2, 5/28, 5/29	Side modules	
Rating Plug	15/24, 15/34	Routers		For BUS	17/136
RC units for miniature circuit breakers	19/27, 19/30	For AS-Interface	2/24 ... 2/35	Signaling columns	9/3, 9/104 ... 9/111
RC units, type A	19/56			Signaling switches	
RCCBs, type A	19/59	S		For 3RV1 motor starter protectors	5/2, 5/17, 5/19
RCCBs, type A	19/48	S22.5		SIKUS 1600	14/10
RCD modules		For AS-Interface	2/52	SIKUS 1600 Power Distribution Boards	14/10
For circuit breakers	16/76	S22.5F		SIMARIS curves	18/5
Reach-around protection		For ASIsafe	2/19	SIMARIS design	18/4
For 3NP1	17/89, 17/91, 17/93, 17/94, 17/95	S45		SIMATIC PCS 7 Library PAC3200	13/7, 18/10
Reactive-power compensation		For AS-Interface	2/52	SIMATIC PCS 7 powerrate	13/2, 18/6, 18/7
For S8	14/8	Saddle terminal		SIMATIC WinCC powerrate	13/2, 18/8, 18/9
Reducers	19/65	For 3NJ4/3NJ5	17/115	SIMOCODE ES	12/10 ... 12/13
For door-coupling rotary operating mechanisms	17/56	For 3NP1	17/90, 17/92, 17/95	SIMOCODE pro 3UF7	
Relay couplers	3/82, 3/83, 3/88	Safety modules		Accessories	7/14, 7/15
Relays		For ASIsafe	2/19	Basic units	7/12
Accessories	7/63	Safety monitor		Expansion modules	7/13
Analog adjustable, for 1 sensor	7/58, 7/59	For ASIsafe	2/16	General data	7/6 ... 7/11
Digitally adjustable		Safety transformers	10/2, 10/3, 10/5 ... 10/23, 10/48, 10/49, 10/54, 10/58, 10/59	Software	7/16 ... 7/18
- For up to 3 sensors	7/62	SCHUKO socket outlets	19/131, 19/132	SIMOCODE pro function block library	
Digitally adjustable, for 1 sensor	7/60, 7/61	Screw adapters for		For SIMATIC PCS 7	12/14
Releases		DIAZED	19/74	Single-phase measuring devices	
For 3RV1 molded case motor starter protectors	5/40	Screw adapters for contactors	3/112	Analog measuring devices	19/142
For 3RV1 motor starter protectors	5/20	Screw caps for		Digital measuring devices	19/142
Remote RESET	5/50	NEOZED	19/68	Time and pulse counters	19/143
Remote-controlled mechanism		Screw holders		Time counters for front mounting	19/144
For miniature circuit breakers (MCBs)	19/26	For 8US	17/126, 17/139	Single-phase power supplies	
Residual current protective devices	19/54	Screwdrivers	5/33, 5/61, 5/62	Filtered	11/2, 11/4 ... 11/6
Repeater		Sealable covers	5/61	LOGO!Power	11/2, 11/11
For AS-Interface	2/63	For 3NP1	17/88	Non-stabilized	11/2, 11/4 ... 11/6
RESET		For AS-Interface	2/53	SITOP modular	11/2, 11/13
Cable releases	5/50, 5/60	For ASIsafe	2/18	SITOP smart	11/2, 11/12
Mechanical	5/50, 5/60	Sealing caps		Stabilized, SITOP	11/2, 11/11 ... 11/16
REMOTE	5/50	For IO-Link	2/76	Unfiltered	11/2, 11/9
Residual current monitoring		Sealing lugs		Single-phase transformers	10/2, 10/5 ... 10/53
Residual current monitoring relays	7/50	For 3NP5	17/107	Auto-	10/2, 10/5, 10/48 ... 10/51
Summation current transformers	7/51	Sealing sets		Control	10/2, 10/5 ... 10/19, 10/24 ... 10/41, 10/48, 10/49
Residual current protective devices		For AS-Interface	2/38, 2/50, 2/71	Converter	10/50, 10/51
Accessories	19/63	Selection and ordering data (paper)	17/72	Enclosures	10/49, 10/51
Additional components	19/54	Selector switches		Isolating	10/2, 10/5, 10/24 ... 10/49
Auxiliary switches (AS)	19/54	For rotary buttons and switches	9/7, 9/8, 9/24, 9/33, 9/42, 9/47, 9/52, 9/53, 9/54, 9/55	- For medical premises	10/2, 10/47
Busbars	19/62	Selector switches for		Mains	10/2, 10/5 ... 10/46, 10/48, 10/49
Leakage current measurement device	19/54	Ammeters	19/140	Matching	10/50, 10/51
Molded-plastic enclosures	19/63	Voltmeters	19/140	Pillar-type	10/2
Padlocks	19/55	Semiconductor couplers	3/86, 3/87	Power	10/2, 10/50, 10/51
RC units, type A	19/56	Semiconductor heater units		Safety	10/2, 10/5 ... 10/23, 10/48, 10/49
RCCBs, type A	19/59	With thermostat	14/20	Toroidal-core	10/2
RCCBs, type A	19/48	Without thermostat	14/20	Variable-ratio	10/2
Remote-controlled mechanism	19/54	Semiconductor-motor contactors		Voltage regulators	
SIQUENCE, type B	19/51	Three-phase, 3RF24	4/76 ... 4/77	- Magnetic type	10/2, 10/53
Retaining springs for		Sensors		- Transformer type	10/2, 10/52
NEOZED	19/69	For IO-Link	2/73	With selectable voltages	10/2, 10/5, 10/48 ... 10/51
Reversing contactor assemblies	3/32 ... 3/36, 3/48	Shaft couplings		SIQUENCE RCCBs, Type B	19/51
Reversing starters		For door-coupling rotary operating mechanisms	17/56	SIRIUS 3RA6	
3RA12 load feeders	6/13 ... 6/20			For IO-Link	2/73
3RA62 compact feeders	6/37			SIRIUS 3RA6 Compact Feeders	
3RA65 compact feeders	6/39			For IO-Link	2/73

Subject index

	Page		Page		Page
SIRIUS 3RK3 Modular Safety System		SITOR semiconductor fuses		For S8	14/8
Accessories	7/80	For 3KL	17/45	Standards and specifications	
Central modules	7/79	For 3KM	17/45	For S8	14/8
Expansion modules	7/79	For 3NP5	17/105	Starter combinations	5/2, 5/3, 5/11, 5/39
General data	7/78	LV HRC design	19/102 ... 19/111	Starter protection	16/30 ... 16/31
Interface modules	7/79	SILIZED, NEOZED and DIAZED design	19/111	Stud terminal	
Operating and monitoring modules	7/79	SIVACON motor control centers	14/7	For 3NJ4/3N5	17/111
SIRIUS 3RK3 modular safety system 7/78 ...	7/80	Slaves		Summation current transformers	7/51
SIRIUS 3RN1 Thermistor Motor Protection		For AS-Interface	2/36 ... 2/60	Supports for blanking cover	
For PTC sensors	7/64 ... 7/67	SlimLine		For 8US	17/129
SIRIUS 3RN1 thermistor motor protection		For AS-Interface	2/52	Surge arresters	
Explosion protection (ATEX)	7/5	Slimline lights	14/14	For measuring and control technology	19/129
SIRIUS 3RS17 interface converters 7/81 ...	7/83	For 8MC, 8MF	14/15	Surge arresters, type 2	19/125, 19/126
SIRIUS 3TK28 Safety Relays		Small distribution boards	14/25	Surge arresters, type 3	19/127, 19/130
Accessories	7/77	Small semiconductor heater units	14/18	Surge suppressor	3/108, 3/109, 3/120, 3/123, 3/125, 3/127
General data	7/68	Small thermostats	14/22	Switch ES Power	15/43, 18/13
With contactor relay enabling circuits	7/74, 7/75	Socket outlets	19/131, 19/132	Switchgear	14/7
With electronic enabling circuits	7/72, 7/73	For 8MC, 8MF	14/14	Switching magnets	8/88
With special functions	7/76	Soft Starter ES	12/4 ... 12/6	Switching modules	14/24
SIRIUS 3TK28 safety relays		Soft starters	4/2 ... 4/44	Switching shafts	
With relay enabling circuits	7/69 ... 7/71	For high-feature applications	4/2, 4/24 ... 4/44	For 3LD	17/22, 17/23, 17/24
SIRIUS 3UG Monitoring Relays		For high-feature applications		System covers	
for Electrical and Additional Measurements		- Inline circuit	4/25, 4/28, 4/31	For 3NP1	17/89, 17/91, 17/93, 17/94, 17/95
Accessories	7/57	- Inside-delta circuit	4/34, 4/36, 4/38	System Cubicles	14/12
Current monitoring	7/48	For standard applications	4/2, 4/8 ... 4/23	System protection	5/2, 5/4, 5/14, 16/10 ... 16/25, 16/34 ... 16/51, 16/99
Insulation monitoring	7/52, 7/53	Selection aid	4/7		
Level monitoring	7/54, 7/55	Software for power distribution	18/1 ... 18/13		
Level monitoring sensors	7/55	Solder pin adapters for contactors	3/111, 3/112		
Line monitoring	7/45, 7/46	Solder pin connections			
Power factor and active current monitoring	7/49	For 3RV1 motor starter protectors	5/30, 5/31		
Residual current monitoring	7/50, 7/51	Solenoid coils for contactors	3/115, 3/116, 3/122, 3/128 ... 3/131		
Speed monitoring	7/56	Solid-state contactors	4/45, 4/54 ... 4/62, 4/73 ... 4/77		
Summation current transformers	7/51	Single-phase, 3RF23	4/55 ... 4/60		
Voltage monitoring	7/47	Three-phase, 3RF24	4/61		
SITOP	11/2, 11/11 ... 11/16	Solid-state module			
Battery modules	11/15	For IO-Link	2/74		
Buffer modules	11/14	Solid-state overload relays	5/45, 5/51 ... 5/62		
DC UPS modules	11/15	Accessories	5/59 ... 5/62		
- UPS50.	11/16	For high-feature applications	5/45, 5/56 ... 5/59		
Expansion modules	11/14	For standard applications	5/45, 5/51 ... 5/55		
LOGO!Power	11/2, 11/11	Solid-state relays	4/45, 4/48 ... 4/53		
modular	11/2, 11/13	Single-phase, 3RF20	4/52		
Redundancy modules	11/14	Single-phase, 3RF21	4/49 ... 4/51		
Signaling modules	11/14	Three-phase, 3RF22	4/53		
SITOP PSE200U selectivity modules	11/14	Solid-state switching devices	4/2 ... 4/46		
SITOP select diagnostics modules	11/14	For resistive loads	4/45 ... 4/72		
smart	11/2, 11/12	For switching motors	4/73 ... 4/77		
Uninterruptible DC-UPS	11/2, 11/15, 11/16	Spacers			
SITOP battery modules	11/15	For 8US	17/126, 17/139		
SITOP buffer modules	11/14	Spacers for miniature circuit breakers	19/29		
SITOP DC UPS modules	11/15, 11/16	Specification			
SITOP DC-UPS uninterruptible power supplies	11/2, 11/15, 11/16	For AS-Interface	2/12		
SITOP expansion modules	11/14	Speed monitoring	7/56		
SITOP modular	11/2	SR60 busbar system	19/113 ... 19/121		
SITOP modular power supplies	11/2, 11/13	Bases	19/121		
SITOP PSE200U selectivity modules	11/14	Distribution board components	19/113 ... 19/115		
SITOP redundancy modules	11/14	End cover	19/121		
SITOP select diagnostics modules	11/14	Mounting components	19/44, 19/121		
SITOP signaling modules	11/14	Stabilized power supplies			
SITOP UPS50. Power supplies	11/16	LOGO!Power	11/2, 11/11		
SITOR cylindrical fuse bases	19/110	SITOP	11/2, 11/11 ... 11/16		
SITOR cylindrical fuse links	19/109, 19/110	Standard filter fans in EMC version	14/16		
		Standard mounting rail adapters			
		For 3RA1 load feeders	6/24		
		Standards	20/8 ... 20/26		

T

Temperature monitoring relays	
SIRIUS 3RS10, 3RS11	7/58 ... 7/63
Terminal blocks	5/27, 14/29
For 3RV1 motor starter protectors	5/31
For overload relays	5/61
Terminal brackets	5/50, 5/60
Terminal covers	17/72
For 3KA/3KE	17/35, 17/37
For 3KL	17/43, 17/44, 17/45
For 3KM	17/50, 17/51
For 3LD	17/21, 17/22, 17/23, 17/25
For 3NJ62	17/74, 17/76
For 3RV1 motor starter protectors	5/30
For miniature circuit breakers	19/29, 19/30
For overload relays	5/50, 5/61
For residual current protective devices	19/63
For time counters	19/144
Terminal modules	
For ET 200S motor starters	
- Failsafe	6/65
- High-Feature	6/60
- Power Modules	6/62
- Safety modules local and PROFIsafe	6/74 ... 6/75
- Standard	6/57 ... 6/58
Terminal sets	
For 8US	17/132, 17/133
Terminal size 2.5 mm2	19/46
Terminal strip	
For 3NJ4/3NJ5	17/116
Terminals	17/74
Busbar for SR60 distribution board components	19/114
For "Self-Protected Combination Motor Controller" according to UL 508	5/30, 5/31
For 3NJ62	17/72, 17/76
For 3RV1 molded case motor starter protectors	5/41

Subject index

	Page		Page		Page
For 3RV1 motor starter protectors	5/31	Timing relays		USB/serial adapters	
For SST3 76	19/24	3RP15, 3RP20 accessories	7/44	For ASIsafe	2/18
For 8US	17/133	7PV15 in enclosure, 17.5 mm	7/32, 7/40, 7/41	User modules	
Specially for 5SJ4HG MSB	19/44	General data	7/29 ... 7/34	For AS-Interface	2/47
Terminals for		SIRIUS 3RP15 timing relays			
Busbars	19/34	in industrial enclosure, 22.5 mm	7/29 ... 7/31, 7/34 ... 7/37		
Terminals for circular conductors		SIRIUS 3RP20, 45 mm	7/29 ... 7/31, 7/38, 7/39	V	
For 8US	17/122, 17/133	SIRIUS 3RT19 for mounting onto contactors	7/33, 7/42, 7/43	Vacuum contactors	3/27 ... 3/28
Thermal overload relays				Variable-ratio transformers	
Accessories	5/50, 5/62			Pillar-type	10/2, 10/3
For standard applications	5/45 ... 5/49	Tools for		Toroidal-core	10/2, 10/3
Thermal-magnetic releases	16/10 ... 16/13, 16/34 ... 16/39	Cage Clamp	5/33, 5/61, 5/62	Very heavy starting	
Thermistor transformer protection	10/47, 10/51, 10/84	Toroidal-core variable-ratio transformers	10/2, 10/3	With 3RW44	
Thermostats	14/22	Touch protection for free terminals	19/33	- In inline circuit	4/31 ... 4/33
Three-phase busbar system		Residual current protective devices	19/62	- In inside-delta circuit	4/38 ... 4/39
For 3RV1 motor starter protectors	5/21 ... 5/23	Transformer protection	5/2, 5/12, 5/15	Voltage monitoring	7/47
Three-phase busbar systems	5/22, 5/26	Transformers	10/1 ... 10/85	Voltage regulators	
For 3RA1 load feeders	6/27	Auto-	10/2, 10/3, 10/5, 10/48 ... 10/51, 10/54, 10/58 ... 10/62, 10/83, 10/84	Magnetic type	10/2, 10/53
Three-phase busbars		- For matching purposes	10/3, 10/60, 10/61	Transformer type	10/2, 10/3, 10/52, 10/85
For 3NP1	17/88	Control	10/2, 10/3, 10/5 ... 10/19, 10/24 ... 10/41, 10/48, 10/49, 10/54 ... 10/56, 10/58, 10/59	Voltage transformer circuit breakers	5/2, 5/16
Three-phase feeder terminals	4/10, 4/19, 5/22	Converter	10/50, 10/51, 10/62, 10/83, 10/84	Voltmeter selector switches	19/140
Three-phase measuring devices	19/133 ... 19/140	Enclosures	10/49, 10/51, 10/59, 10/83, 10/84		
E-counters	19/139	Isolating	10/2, 10/3, 10/5, 10/24 ... 10/49, 10/54 ... 10/59	W	
LAN couplers	19/137	- For supply of medical premises	10/2, 10/47	Wall enclosures	
Measuring selector switches	19/140	Mains	10/2, 10/3, 10/5 ... 10/46, 10/48, 10/49, 10/54 ... 10/59	For residual current protective devices	19/63
Multicounters	19/135, 19/136	Matching	10/3, 10/50, 10/51, 10/60 ... 10/72	Wall enclosures, gray	19/30, 19/63
Multimeters	19/133	- With cURus approval	10/3, 10/73 ... 10/82	Wall-mounted distribution boards	14/25
Three-phase power supplies		- With selectable voltages	10/3, 10/83, 10/84	Wiring	15/35
Filtered	11/2, 11/7, 11/8	Pillar-type	10/2, 10/3	Wiring modules for contactor assemblies	3/39
Non-stabilized	11/2, 11/4 ... 11/10	Power	10/2, 10/3, 10/50, 10/51, 10/62 ... 10/84	Withdrawable bridging units	15/48
SITOP smart	11/2, 11/12	Safety	10/2, 10/3, 10/5 ... 10/23, 10/48, 10/49, 10/54, 10/58, 10/59	Withdrawable coils	3/117, 3/118
Unfiltered	11/2, 11/10	Single-phase	10/2, 10/5 ... 10/53	Withdrawable grounding units	15/48
Three-phase transformers	10/3, 10/54 ... 10/85	Three-phase	10/3, 10/54 ... 10/85	Withdrawable short-circuits	15/48
Auto-	10/3, 10/54, 10/58 ... 10/62, 10/83, 10/84	Toroidal-core	10/2, 10/3	Withdrawable unit coding	
- For matching purposes	10/3, 10/60, 10/61	Variable-ratio	10/2, 10/3	For S8	14/9
Control	10/3, 10/54 ... 10/56, 10/58, 10/59	Voltage regulators		Withdrawable unit versions	
Converter	10/62, 10/83, 10/84	- Magnetic type	10/2, 10/53	For S8	14/9
Enclosures	10/59, 10/83, 10/84	- Transformer type	10/2, 10/3, 10/52, 10/85	Withdrawable version	
Isolating	10/3, 10/54 ... 10/59	With selectable voltages	10/2, 10/3, 10/5, 10/48 ... 10/51, 10/54, 10/58, 10/59, 10/83, 10/84	Circuit breakers	15/11 ... 15/14, 15/19 ... 15/22, 15/51 ... 15/52, 16/70 ... 16/75
Mains	10/3, 10/54 ... 10/59			For S8	14/9
Matching	10/3, 10/60 ... 10/72	Transmission technology			
- With cURus approval	10/3, 10/73 ... 10/82	For AS-Interface	2/9		
- With selectable voltages	10/3, 10/83, 10/84	Triple terminals			
Pillar-type	10/3	For 3NP1	17/88, 17/90		
Power	10/3, 10/62 ... 10/84	Twin thermostats	14/23		
Safety	10/3, 10/54, 10/58, 10/59	Two-hand operation consoles	9/3, 9/96		
Toroidal-core	10/3				
Variable-ratio	10/3				
Voltage regulators		U			
- Transformer type	10/3, 10/85	Undervoltage releases			
With selectable voltages	10/3, 10/54, 10/58, 10/59, 10/83, 10/84	For 3RV1 molded case motor starter protectors	5/3, 5/40		
		For 3RV1 motor starter protectors	5/2, 5/17, 5/20		
		For circuit breakers	15/23, 15/40, 16/56, 16/58 ... 16/59		
Time and pulse counters	19/143	Undervoltage releases (UR)			
Time counters		For miniature circuit breakers	19/26		
Mechanical	19/143	Unit labeling plates	4/5		
Solid-state	19/143	Universal installation section			
Time counters for front mounting	19/144	For S8	14/9		
Time-delay blocks for contactors and contactor relays					
Solid-state	3/107				

Appendix

Order No. index
including export markings

Overview

Order No.	Export markings		Page
	ECCN	AL	
3KA, 3KE, 3KL, 3KM			
3KA	N	N	17/29
3KE	N	N	17/31 ... 33
3KL	N	N	17/40 ... 41
3KM	N	N	17/49
3KX			
3KX22 1	N	N	17/31, 17/36 ... 37
3KX22 3	N	N	17/36 ... 37
3KX22 50	N	N	17/36 ... 37
3KX22 52-0	N	N	17/37
3KX22 52-1	N	N	17/36 ... 37
3KX31	N	N	17/35, 17/44, 17/51
3KX35 0	N	N	17/43 ... 44, 17/50 ... 51
3KX35 1	N	N	17/30, 17/35, 17/42 ... 43, 17/50
3KX35 2	N	N	17/42 ... 43, 17/50
3KX35 3	N	N	17/30, 17/35, 17/42 ... 44, 17/50
3KX35 52-3D	N	N	17/35, 17/43, 17/50
3KX35 52-3E	N	N	17/35, 17/44, 17/51
3KX35 53	N	N	17/35, 17/43, 17/50
3KX35 56	N	N	17/30, 17/42
3KX35 57	N	N	17/35 ... 36, 17/44, 17/51
3KX35 6	N	N	17/45
3KX36	N	N	17/45
3KY			
3KY22 0	N	N	17/36
3KY22 32	N	N	17/37
3KY22 34	N	N	17/37
3LD			
3LD20 03-0	N	N	17/6
3LD20 03-1TL	N	N	17/6
3LD20 03-1TP	N	N	17/6
3LD20 03-2	N	N	17/6
3LD20 13	N	N	17/11 ... 12
3LD20 17	N	N	17/15
3LD20 2	N	N	17/8
3LD20 3	N	N	17/16 ... 17
3LD20 4	N	N	17/13
3LD20 5	N	N	17/7, 17/9
3LD20 6	N	N	17/18
3LD21 03-0	N	N	17/6
3LD21 03-1	N	N	17/6
3LD21 03-2	N	N	17/6
3LD21 03-3	N	N	17/10
3LD21 03-4	N	N	17/10
3LD21 13-0	N	N	17/11 ... 12
3LD21 13-1	N	N	17/11 ... 12
3LD21 13-3	N	N	17/14
3LD21 13-4	N	N	17/14
3LD21 2	N	N	17/8, 17/10

Order No.	Export markings		Page
	ECCN	AL	
3LD21 3	N	N	17/16 ... 17
3LD21 4	N	N	17/13
3LD21 5	N	N	17/7, 17/9
3LD21 6	N	N	17/18 ... 19
3LD22 03-0	N	N	17/6
3LD22 03-1	N	N	17/6
3LD22 03-3	N	N	17/10
3LD22 13-0	N	N	17/11 ... 12
3LD22 13-1	N	N	17/11 ... 12
3LD22 17	N	N	17/15
3LD22 2	N	N	17/8, 17/10
3LD22 3	N	N	17/16 ... 17, 17/20
3LD22 4	N	N	17/13
3LD22 5	N	N	17/7, 17/9
3LD22 6	N	N	17/18 ... 20
3LD23 0	EAR99	N	17/6, 17/10
3LD23 1	EAR99	N	17/11 ... 12, 17/14
3LD23 3	N	N	17/16 ... 17
3LD24 05-0	N	N	17/6
3LD24 05-1	EAR99	N	17/6
3LD24 05-3	EAR99	N	17/10
3LD24 05-7	EAR99	N	17/10
3LD24 1	EAR99	N	17/11 ... 12, 17/14
3LD24 3	N	N	17/16 ... 17
3LD25 04-0	N	N	17/6
3LD25 04-1	N	N	17/6
3LD25 04-3	N	N	17/10
3LD25 14-0	N	N	17/11 ... 12
3LD25 14-1	N	N	17/11 ... 12
3LD25 17	N	N	17/15
3LD25 2	N	N	17/10
3LD25 3	N	N	17/16 ... 17
3LD25 4	N	N	17/13
3LD25 5	N	N	17/7
3LD25 6	N	N	17/18 ... 19
3LD27 04-0	N	N	17/6
3LD27 04-1	N	N	17/6
3LD27 1	N	N	17/11 ... 12
3LD27 2	N	N	17/10
3LD27 3	N	N	17/16 ... 17
3LD27 6	N	N	17/18 ... 19
3LD28	N	N	17/6, 17/11 ... 12, 17/16 ... 18
3LD92 00-2	N	N	17/21
3LD92 00-5B	N	N	17/6 ... 9, 17/21 ... 25
3LD92 00-5BF	N	N	17/21 ... 25
3LD92 00-5C	N	N	17/12 ... 13, 17/17 ... 18, 17/21 ... 25
3LD92 00-5CF	N	N	17/21 ... 25
3LD92 00-6	On req.		17/21 ... 25
3LD92 01	N	N	17/21

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3LD92 05	N	N	17/21 ... 22, 17/24 ... 25
3LD92 20	N	N	17/8 ... 9, 17/16 ... 17, 17/22
3LD92 21	N	N	17/22
3LD92 24	N	N	17/21 ... 22
3LD92 40-0	N	N	17/16 ... 17, 17/23
3LD92 40-2	EAR99	N	17/23
3LD92 41	EAR99	N	17/23
3LD92 43	EAR99	N	17/23
3LD92 45	EAR99	N	17/23
3LD92 50	N	N	17/6 ... 7, 17/13, 17/16 ... 17, 17/24
3LD92 51	N	N	17/24
3LD92 56	N	N	17/21 ... 22, 17/24
3LD92 80	N	N	17/6, 17/11 ... 12, 17/16 ... 18, 17/25
3LD92 81	N	N	17/25
3LD92 84	N	N	17/24 ... 25
3LD92 86	N	N	17/21 ... 25
3NA			
3NA	N	N	19/87 ... 92
3NC			
3NC10 00	EAR99H	N	19/110
3NC10 03	N	N	19/109
3NC10 06	N	N	19/109
3NC10 08	N	N	19/109
3NC10 1	N	N	19/109
3NC10 2	N	N	19/109
3NC10 32	N	N	19/109
3NC10 38	EAR99H	N	19/110
3NC10 38-1	N	N	19/110
3NC10 38-2	N	N	19/110
3NC10 38-3	N	N	19/110
3NC10 9	N	N	19/110
3NC14 0	N	N	19/109
3NC14 1	N	N	19/109 ... 110
3NC14 2	N	N	19/109 ... 110
3NC14 3	N	N	19/109 ... 110
3NC14 4	N	N	19/109 ... 110
3NC14 50	N	N	19/109 ... 110
3NC14 51	EAR99H	N	19/110
3NC14 51-1	N	N	19/110
3NC14 9	N	N	19/110
3NC2	N	N	17/46, 17/106, 19/102, 19/109 ... 110
3NC3	N	N	19/105 ... 107
3NC5	N	N	19/108
3NC73 2	N	N	19/108
3NC73 3	N	N	19/108
3NC8	N	N	17/46, 17/106, 19/102 ... 103
3ND			
3ND	N	N	19/93

Order No.	Export markings		Page
	ECCN	AL	
3NE			
3NE1	N	N	17/45 ... 46, 17/105, 19/102 ... 104
3NE32	N	N	17/46, 17/105, 19/106
3NE33	N	N	17/46, 17/106, 19/106
3NE34	N	N	19/106
3NE35	N	N	19/108
3NE36 2	N	N	19/106
3NE36 35-0	N	N	19/106
3NE36 35-6	N	N	19/106
3NE36 36	N	N	19/106
3NE36 37	N	N	19/106
3NE4	N	N	17/46, 17/105 ... 106, 19/105, 19/108
3NE5	N	N	19/107
3NE6	N	N	19/108
3NE7	N	N	19/107
3NE8	N	N	17/46, 17/105, 19/103, 19/105
3NE9	N	N	19/108
3NG, 3NH			
3NG	N	N	19/100
3NH	N	N	19/97 ... 99, 19/119
3NJ			
3NJ41	N	N	17/111 ... 112
3NJ49 10	N	N	17/114
3NJ49 11-1	N	N	17/115
3NJ49 11-2	N	N	17/115
3NJ49 11-3	N	N	17/114
3NJ49 11-4	N	N	17/115
3NJ49 11-5	N	N	17/115
3NJ49 11-6A	N	N	17/115
3NJ49 11-6B	N	N	17/115
3NJ49 11-6C	N	N	17/116
3NJ49 12-1A	N	N	17/113
3NJ49 12-1D	N	N	17/113
3NJ49 12-1E	N	N	17/113
3NJ49 12-1F	N	N	17/113
3NJ49 12-2	N	N	17/113
3NJ49 12-3	N	N	17/114
3NJ49 13	N	N	17/116
3NJ49 14-8A	N	N	17/116
3NJ49 14-8B	EAR99	N	17/116
3NJ49 15-1B	N	N	17/116
3NJ49 15-1C	N	N	17/116
3NJ49 15-1E	N	N	17/117
3NJ49 15-1F	N	N	17/117
3NJ49 15-2B	N	N	17/116
3NJ49 15-2C	N	N	17/116
3NJ49 15-2D	N	N	17/117
3NJ49 15-2E	N	N	17/117
3NJ49 15-2F	N	N	17/117
3NJ49 15-2G	N	N	17/117

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3NJ49 15-2H	N	N	17/117
3NJ49 15-2J	N	N	17/117
3NJ49 15-2K	N	N	17/117
3NJ49 18-0A	N	N	17/113
3NJ49 18-0DA	N	N	17/114
3NJ49 18-0DB	N	N	17/114
3NJ49 18-0DC	N	N	17/114
3NJ49 18-0E	N	N	17/114
3NJ49 18-1	N	N	17/116
3NJ50	N	N	17/111 ... 112
3NJ56	N	N	17/111
3NJ59	N	N	17/114
3NJ62 03-1	N	N	17/61
3NJ62 03-3AA	N	N	17/61
3NJ62 03-3AV	N	N	17/61
3NJ62 03-4	N	N	17/61
3NJ62 04	N	N	17/61
3NJ62 13-1	N	N	17/61
3NJ62 13-3AA	N	N	17/61
3NJ62 13-3AV	N	N	17/61
3NJ62 13-4	N	N	17/61
3NJ62 14	N	N	17/61
3NJ62 23-1	N	N	17/61
3NJ62 23-3AA	N	N	17/61
3NJ62 23-3AV	N	N	17/61
3NJ62 23-4	N	N	17/61
3NJ62 24	N	N	17/61
3NJ62 33-1	N	N	17/61
3NJ62 33-3AA	N	N	17/61
3NJ62 33-3AV	N	N	17/61
3NJ62 33-4	N	N	17/61
3NJ62 34	N	N	17/61
3NJ62 4	N	N	17/62
3NJ62 5	N	N	17/62
3NJ62 6	N	N	17/62
3NJ62 7	N	N	17/62
3NJ62 8	N	N	17/62
3NJ62 9	N	N	17/62
3NJ69 0	N	N	17/72 ... 78
3NJ69 1	N	N	17/78
3NJ69 20-2	N	N	17/72
3NJ69 20-3B	N	N	17/72, 17/74
3NJ69 20-3D	N	N	17/72
3NJ69 20-3E	N	N	17/73, 17/75
3NJ69 23-1B	N	N	17/72
3NJ69 23-1D	N	N	17/72
3NJ69 23-1E	N	N	17/72
3NJ69 23-4	N	N	17/73
3NJ69 24	N	N	17/72
3NJ69 30-2	N	N	17/74
3NJ69 30-3B	N	N	17/74

Order No.	Export markings		Page
	ECCN	AL	
3NJ69 30-3D	N	N	17/75
3NJ69 33-1B	N	N	17/74
3NJ69 33-1D	N	N	17/74
3NJ69 33-1E	N	N	17/74
3NJ69 33-4	N	N	17/75
3NJ69 34	N	N	17/74
3NJ69 40-2	N	N	17/76
3NJ69 40-3B	N	N	17/76
3NJ69 40-3E	N	N	17/77
3NJ69 43-1C	N	N	17/76
3NJ69 43-1D	N	N	17/76
3NJ69 43-1E	N	N	17/76
3NJ69 43-4	N	N	17/77
3NJ69 44	N	N	17/76
3NJ69 5	N	N	17/77
3NP			
3NP11 2	N	N	17/82, 17/84 ... 87, 17/125, 17/137
3NP11 3	N	N	17/82, 17/84 ... 87, 17/125, 17/137
3NP11 4	N	N	17/83, 17/86 ... 87, 17/137
3NP11 5	N	N	17/83, 17/86 ... 87, 17/137
3NP11 6	N	N	17/83, 17/86 ... 87, 17/137
3NP19 0	N	N	17/89, 17/91, 17/93 ... 95
3NP19 20	N	N	17/89
3NP19 23-1BD	N	N	17/88
3NP19 23-1BE	EAR99	N	17/88, 17/90
3NP19 23-1BF1	EAR99	N	17/88
3NP19 23-1BF2	EAR99	N	17/88
3NP19 23-1BF3	EAR99	N	17/88
3NP19 23-1BF4	EAR99	N	17/88
3NP19 23-1BF5	N	N	17/88
3NP19 23-1BG	N	N	17/88
3NP19 23-1C	N	N	17/89
3NP19 23-1D	N	N	17/89
3NP19 23-1E	N	N	17/89
3NP19 23-1G	N	N	17/89
3NP19 30	N	N	17/91
3NP19 33-1BA	N	N	17/90
3NP19 33-1BB	N	N	17/90
3NP19 33-1BC	N	N	17/90, 19/115
3NP19 33-1BE	EAR99	N	17/90
3NP19 33-1BG	N	N	17/90
3NP19 33-1C	N	N	17/91
3NP19 33-1D	N	N	17/91
3NP19 33-1E	N	N	17/91
3NP19 33-1G	N	N	17/91
3NP19 40	N	N	17/93 ... 95
3NP19 43-1BA	N	N	17/92
3NP19 43-1BB	EAR99	N	17/92
3NP19 43-1BG	N	N	17/92, 17/94 ... 95
3NP19 43-1C	N	N	17/93 ... 95

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3NP19 43-1D	N	N	17/93
3NP19 43-1E	N	N	17/93
3NP19 43-1G	N	N	17/93
3NP19 53-1BA	N	N	17/94
3NP19 53-1BB	EAR99	N	17/94
3NP19 53-1BG	N	N	17/94 ... 95
3NP19 53-1C	N	N	17/94
3NP19 53-1D	N	N	17/94
3NP19 53-1G	N	N	17/94
3NP19 63-1BA	N	N	17/95
3NP19 63-1BB	EAR99	N	17/95
3NP19 63-1C	N	N	17/95
3NP19 63-1D	N	N	17/95
3NP19 63-1G	N	N	17/95
3NP5	N	N	17/98 ... 103
3NW			
3NW1	N	N	19/79
3NW2	N	N	19/79
3NW3	N	N	19/80
3NW6	N	N	19/76
3NW70 13	N	N	19/78
3NW70 14	N	N	19/77
3NW70 23	N	N	19/78
3NW70 24	N	N	19/77
3NW70 33	N	N	19/78
3NW70 34	N	N	19/77
3NW70 53	N	N	19/78
3NW70 54	N	N	19/77
3NW70 63	N	N	19/78
3NW70 64	N	N	19/77
3NW71	N	N	19/77 ... 78
3NW72	N	N	19/77 ... 78
3NW73 13	N	N	19/78
3NW73 14	N	N	19/77
3NW73 23	N	N	19/78
3NW73 24	N	N	19/77
3NW73 33	N	N	19/78
3NW73 34	N	N	19/77
3NW73 53	N	N	19/78
3NW73 54	N	N	19/77
3NW73 63	N	N	19/78
3NW73 64	N	N	19/77
3NW74 30	N	N	19/118
3NW74 31	N	N	19/118
3NW74 32	N	N	19/118
3NW75	N	N	19/79
3NW79	N	N	19/78
3NW8	N	N	19/77
3NX			
3NX	N	N	19/94, 19/99 ... 100
3NY			
3NY10	N	N	17/104

Order No.	Export markings		Page
	ECCN	AL	
3NY11	N	N	17/104, 17/107
3NY12	N	N	17/107
3NY13	N	N	17/104
3NY14	N	N	17/104
3NY15	N	N	17/104
3NY19 03	N	N	17/107
3NY19 07	N	N	17/107
3NY19 10	N	N	17/104
3NY19 11	N	N	17/104
3NY19 15	N	N	17/104
3NY19 4	N	N	17/107
3NY3	N	N	17/104
3NY4	N	N	17/104
3RA			
3RA11	N	N	6/5 ... 12
3RA12	N	N	6/13 ... 20
3RA13	N	N	3/33 ... 36
3RA14 1	EAR99	N	3/42
3RA14 23-8XC21-1A	EAR99	N	3/43
3RA14 23-8XC21-1B	N	N	3/43
3RA14 25-8XC21-1A	EAR99	N	3/43
3RA14 25-8XC21-1B	N	N	3/43
3RA14 3	N	N	3/44 ... 45
3RA14 4	N	N	3/46
3RA19 0	N	N	6/24
3RA19 11	N	N	5/32 ... 33, 6/23, 6/25
3RA19 12	N	N	3/39
3RA19 13	N	N	3/38 ... 39, 3/47, 6/23, 6/26
3RA19 21	N	N	4/77, 5/32, 6/23
3RA19 22	N	N	3/39, 5/33, 6/24 ... 25
3RA19 23	N	N	3/37 ... 39, 3/47, 6/23 ... 24, 6/26
3RA19 24	N	N	3/37, 6/24
3RA19 31	N	N	4/10, 4/20, 5/32, 6/23
3RA19 32	N	N	3/39, 3/47, 6/24
3RA19 33	N	N	3/38 ... 39, 3/47, 6/23 ... 24, 6/26
3RA19 41	N	N	4/10, 4/20, 5/32, 6/23
3RA19 42	N	N	3/39, 3/47, 6/24
3RA19 43	N	N	3/38 ... 39, 3/47, 6/23 ... 24
3RA19 52	N	N	3/37, 3/47
3RA19 53	N	N	3/38 ... 39, 3/47
3RA19 54	N	N	3/37
3RA19 62	N	N	3/37, 3/47
3RA19 63	N	N	3/38, 3/47
3RA19 72	N	N	3/37, 3/47
3RA19 73	N	N	3/38, 3/47
3RA29 0	On req.		4/11, 4/21
3RA29 1	N	N	4/10
3RA29 2	N	N	4/10, 4/20
3RA61	EAR99	N	6/36
3RA62	EAR99	N	6/37

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RA64	EAR99	N	6/38
3RA65	N	N	6/39
3RA68 1	N	N	6/48
3RA68 2	EAR99	N	6/49
3RA68 3	EAR99	N	6/48
3RA68 6	EAR99	N	6/50
3RA68 7	N	N	6/50
3RA68 9	N	N	6/50 ... 51
3RA69 1	N	N	6/41
3RA69 2	N	N	6/41
3RA69 31	N	N	6/42
3RA69 32	N	N	6/42
3RA69 33	N	N	6/42
3RA69 35	EAR99	N	6/42
3RA69 36	N	N	6/42
3RA69 4	N	N	6/41
3RA69 5	N	N	6/41
3RA69 7	EAR99	N	6/45
3RA69 9	N	N	6/44
3RB			
3RB1	N	N	5/31, 5/61, 6/25, 7/15
3RB20 16-1	EAR99	N	5/53
3RB20 16-2N	EAR99	N	5/54
3RB20 16-2P	EAR99	N	5/54
3RB20 16-2RB	N	N	5/54
3RB20 16-2RD	EAR99	N	5/54
3RB20 16-2S	EAR99	N	5/54
3RB20 2	EAR99	N	5/53 ... 54
3RB20 36-1	EAR99	N	5/53
3RB20 36-2QB	EAR99	N	5/54
3RB20 36-2QD	N	N	5/54
3RB20 36-2QW	EAR99	N	5/54
3RB20 36-2QX	EAR99	N	5/54
3RB20 36-2U	EAR99	N	5/54
3RB20 46-1	EAR99	N	5/53
3RB20 46-2E	EAR99	N	5/54
3RB20 46-2UB	EAR99	N	5/54
3RB20 46-2UD	N	N	5/54
3RB20 5	EAR99	N	5/53 ... 54
3RB20 6	EAR99	N	5/53 ... 54
3RB21 1	EAR99	N	5/55
3RB21 23-4N	EAR99	N	5/55
3RB21 23-4PB	EAR99	N	5/55
3RB21 23-4PD	N	N	5/55
3RB21 23-4Q	EAR99	N	5/55
3RB21 23-4R	EAR99	N	5/55
3RB21 23-4SB	N	N	5/55
3RB21 23-4SD	EAR99	N	5/55
3RB21 33-4QB	EAR99	N	5/55
3RB21 33-4QD	N	N	5/55
3RB21 33-4QW	EAR99	N	5/55

Order No.	Export markings		Page
	ECCN	AL	
3RB21 33-4QX	N	N	5/55
3RB21 33-4UB	EAR99	N	5/55
3RB21 33-4UD	EAR99	N	5/55
3RB21 33-4UW	EAR99	N	5/55
3RB21 33-4UX	N	N	5/55
3RB21 43-4EB	EAR99	N	5/55
3RB21 43-4ED	N	N	5/55
3RB21 43-4EW	EAR99	N	5/55
3RB21 43-4EX	EAR99	N	5/55
3RB21 43-4U	EAR99	N	5/55
3RB21 5	EAR99	N	5/55
3RB21 6	EAR99	N	5/55
3RB22	N	N	5/58
3RB23	N	N	5/58
3RB29 0	N	N	5/59
3RB29 1	N	N	5/60
3RB29 2	N	N	5/60
3RB29 5	N	N	5/59
3RB29 6	N	N	5/59
3RB29 8	N	N	5/58 ... 59, 5/61
3RE			
3RE10	N	N	6/155
3RE13	N	N	6/155
3RE19	N	N	6/155
3RF20 2	EAR99	N	4/52
3RF			
3RF20 30-1A	EAR99	N	4/52
3RF20 30-1B	N	N	4/52
3RF20 50-1	EAR99	N	4/52
3RF20 50-4	N	N	4/52
3RF20 7	EAR99	N	4/52
3RF20 9	EAR99	N	4/52
3RF21	EAR99	N	4/49 ... 51
3RF22	EAR99	N	4/53
3RF23 10-1AA02	EAR99	N	4/55
3RF23 10-1AA04	EAR99	N	4/55
3RF23 10-1AA04-0	N	N	4/55
3RF23 10-1AA06	EAR99	N	4/55
3RF23 10-1AA1	EAR99	N	4/55
3RF23 10-1AA2	EAR99	N	4/55
3RF23 10-1AA4	EAR99	N	4/55
3RF23 10-1B	EAR99	N	4/56
3RF23 10-2	EAR99	N	4/58
3RF23 10-3	EAR99	N	4/59
3RF23 20-1AA02	EAR99	N	4/55
3RF23 20-1AA02-0	N	N	4/55
3RF23 20-1AA04	EAR99	N	4/55
3RF23 20-1AA06	EAR99	N	4/55
3RF23 20-1AA1	EAR99	N	4/55
3RF23 20-1AA2	EAR99	N	4/55
3RF23 20-1AA4	EAR99	N	4/55
3RF23 20-1B	EAR99	N	4/56

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RF23 20-1C	EAR99	N	4/57
3RF23 20-1D	EAR99	N	4/57
3RF23 20-2	EAR99	N	4/58
3RF23 20-3	EAR99	N	4/59 ... 60
3RF23 3	EAR99	N	4/55 ... 57, 4/59
3RF23 4	EAR99	N	4/55 ... 56, 4/59
3RF23 50-1AA02	N	N	4/55
3RF23 50-1AA04	EAR99	N	4/55
3RF23 50-1AA06	EAR99	N	4/55
3RF23 50-1AA1	EAR99	N	4/55
3RF23 50-1AA2	EAR99	N	4/55
3RF23 50-1AA4	EAR99	N	4/55
3RF23 50-1B	EAR99	N	4/56
3RF23 50-3AA02	N	N	4/59
3RF23 50-3AA04	EAR99	N	4/59
3RF23 50-3AA06	EAR99	N	4/59
3RF23 50-3AA2	EAR99	N	4/59
3RF23 50-3AA4	EAR99	N	4/59
3RF23 70-1	EAR99	N	4/56
3RF23 70-3AA02	N	N	4/59
3RF23 70-3AA04	N	N	4/59
3RF23 70-3AA06	EAR99	N	4/59
3RF23 70-3AA2	EAR99	N	4/59
3RF23 70-3AA4	N	N	4/59
3RF23 70-3B	EAR99	N	4/60
3RF23 90-1BA02	N	N	4/56
3RF23 90-1BA04	N	N	4/56
3RF23 90-1BA06	EAR99	N	4/56
3RF23 90-1BA22	N	N	4/56
3RF23 90-1BA24	EAR99	N	4/56
3RF23 90-1BA26	N	N	4/56
3RF23 90-3AA0	N	N	4/59
3RF23 90-3AA22	N	N	4/59
3RF23 90-3AA24	EAR99	N	4/59
3RF23 90-3AA26	EAR99	N	4/59
3RF23 90-3AA4	N	N	4/59
3RF23 90-3BA02	N	N	4/60
3RF23 90-3BA04	N	N	4/60
3RF23 90-3BA06	EAR99	N	4/60
3RF23 90-3BA22	N	N	4/60
3RF23 90-3BA24	EAR99	N	4/60
3RF23 90-3BA26	N	N	4/60
3RF24 0	EAR99	N	4/76 ... 77
3RF24 1	EAR99	N	4/61 ... 62, 4/76 ... 77
3RF24 2	EAR99	N	4/61 ... 62
3RF24 3	EAR99	N	4/61
3RF24 40-1AB	EAR99	N	4/61
3RF24 40-1AC3	EAR99	N	4/61
3RF24 40-1AC4	N	N	4/61
3RF24 40-1AC5	EAR99	N	4/61
3RF24 50-1AB	EAR99	N	4/61

Order No.	Export markings		Page
	ECCN	AL	
3RF24 50-1AC3	EAR99	N	4/61
3RF24 50-1AC4	N	N	4/61
3RF24 50-1AC5	N	N	4/61
3RF24 50-3AB	EAR99	N	4/62
3RF24 50-3AC	N	N	4/62
3RF29 00-0E	EAR99	N	4/68
3RF29 00-0R	N	N	4/69 ... 72
3RF29 00-3	N	N	4/51, 4/60
3RF29 04	EAR99	N	4/71
3RF29 06-0FA08	EAR99	N	4/69
3RF29 06-0FA08-0	N	N	4/69
3RF29 1	EAR99	N	4/70
3RF29 20-0FA08	EAR99	N	4/69
3RF29 20-0FA08-0	N	N	4/69
3RF29 20-0G	EAR99	N	4/69
3RF29 20-0H	EAR99	N	4/72
3RF29 20-0K	EAR99	N	4/71
3RF29 3	EAR99	N	4/70
3RF29 5	EAR99	N	4/69, 4/71 ... 72
3RF29 9	EAR99	N	4/69, 4/71 ... 72
3RG			
3RG7	N	N	2/20
3RG9	EAR99	N	2/54, 2/56
3RH			
3RH11 22-1A	N	N	3/70
3RH11 22-1B	N	N	3/70
3RH11 22-1H	N	N	3/78
3RH11 22-1J	N	N	3/78
3RH11 22-1K	N	N	3/78
3RH11 22-1M	N	N	3/78
3RH11 22-1V	N	N	3/78
3RH11 22-1W	N	N	3/78
3RH11 22-2A	N	N	3/70
3RH11 22-2B	N	N	3/70
3RH11 22-2H	N	N	3/78
3RH11 22-2J	N	N	3/78
3RH11 22-2K	N	N	3/59, 3/78
3RH11 22-2M	N	N	3/78
3RH11 22-2V	N	N	3/78
3RH11 22-2W	N	N	3/78
3RH11 31-1A	N	N	3/70
3RH11 31-1B	N	N	3/70
3RH11 31-1H	N	N	3/78
3RH11 31-1J	N	N	3/78
3RH11 31-1K	N	N	3/78
3RH11 31-1M	N	N	3/78
3RH11 31-1V	N	N	3/78
3RH11 31-1W	N	N	3/78
3RH11 31-2A	N	N	3/70
3RH11 31-2B	N	N	3/70
3RH11 31-2H	N	N	3/78
3RH11 31-2J	N	N	3/78

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RH11 31-2K	N	N	3/78
3RH11 31-2M	N	N	3/78
3RH11 31-2V	N	N	3/78
3RH11 31-2W	N	N	3/78
3RH11 40-1A	N	N	3/70
3RH11 40-1B	N	N	3/70
3RH11 40-1H	N	N	3/78
3RH11 40-1J	N	N	3/78
3RH11 40-1K	N	N	3/78
3RH11 40-1M	N	N	3/78
3RH11 40-1V	N	N	3/78
3RH11 40-1W	N	N	3/78
3RH11 40-2A	N	N	3/70
3RH11 40-2B	N	N	3/70
3RH11 40-2H	N	N	3/78
3RH11 40-2J	N	N	3/78
3RH11 40-2K	N	N	3/78
3RH11 40-2M	N	N	3/78
3RH11 40-2V	N	N	3/78
3RH11 40-2W	N	N	3/78
3RH12 44-1A	N	N	3/70
3RH12 44-1B	N	N	3/70
3RH12 44-2A	N	N	3/70
3RH12 44-2B	N	N	3/70
3RH12 62-1A	N	N	3/70
3RH12 62-1B	N	N	3/70
3RH12 62-2A	N	N	3/70
3RH12 62-2B	N	N	3/70
3RH14 22-1A	N	N	3/72
3RH14 22-1B	N	N	3/72
3RH14 31-1A	N	N	3/72
3RH14 31-1B	N	N	3/72
3RH14 40-1A	N	N	3/72
3RH14 40-1B	N	N	3/72
3RH19 1	N	N	3/102, 3/104 ... 105, 6/21
3RH19 21	N	N	3/102 ... 105, 6/21
3RH19 24	N	N	3/111
3RK			
3RK10	EAR99H	N	2/8, 2/74
3RK11 00-1CE	EAR99	N	2/53
3RK11 00-1CG	EAR99	N	2/53
3RK11 00-1CQ0	N	N	2/38
3RK11 00-1CQ2	EAR99	N	2/43
3RK11 05-1AE	EAR99	N	2/18
3RK11 05-1AG	N	N	2/18
3RK11 05-1BE04-0	EAR99	N	2/18
3RK11 05-1BE04-2	EAR99	N	2/18
3RK11 05-1BE04-4	N	N	2/18
3RK11 05-1BG	N	N	2/18
3RK11 07	EAR99	N	2/49
3RK12 00-0CD	N	N	2/56

Order No.	Export markings		Page
	ECCN	AL	
3RK12 00-0CE00	N	N	2/53
3RK12 00-0CE02	N	N	2/53
3RK12 00-0CE03	EAR99	N	2/57
3RK12 00-0CG00	N	N	2/53
3RK12 00-0CG02	N	N	2/53
3RK12 00-0CG03	EAR99	N	2/57
3RK12 00-0CQ	N	N	2/38, 2/43
3RK12 00-0CT	EAR99	N	2/43
3RK12 00-0CU	EAR99	N	2/43
3RK12 00-0D	EAR99	N	2/38
3RK12 05-0BE	N	N	2/20
3RK12 05-0BG	N	N	2/20
3RK12 05-0BQ0	N	N	2/20
3RK12 05-0BQ21	EAR99	N	2/20
3RK12 05-0BQ24	N	N	2/20
3RK12 05-0BQ3	EAR99	N	2/20, 2/45
3RK12 05-0C	N	N	2/20
3RK12 07	EAR99	N	2/49
3RK13 01-0A	N	N	6/59, 6/63
3RK13 01-0BB0	EAR99	N	6/56
3RK13 01-0BB1	N	N	6/59, 6/63
3RK13 01-0BB2	N	N	6/59
3RK13 01-0CB0	EAR99	N	6/56
3RK13 01-0CB1	N	N	6/59, 6/63
3RK13 01-0CB2	N	N	6/59
3RK13 01-0D	EAR99	N	6/56
3RK13 01-0E	EAR99	N	6/56
3RK13 01-0F	EAR99	N	6/56
3RK13 01-0G	EAR99	N	6/56
3RK13 01-0H	EAR99	N	6/56
3RK13 01-0J	EAR99	N	6/56
3RK13 01-0K	EAR99	N	6/56
3RK13 01-1	EAR99	N	6/56
3RK13 03	EAR99	N	6/140
3RK13 04	N	N	6/100, 6/104, 6/106
3RK13 05	EAR99	N	6/130
3RK13 1	EAR99	N	6/124
3RK13 22-...S0	N	N	6/137
3RK13 22-...S1	EAR99	N	6/137
3RK13 23	EAR99	N	6/140
3RK13 25	EAR99	N	6/125
3RK13 3	EAR99	N	6/130
3RK13 9	EAR99	N	6/130
3RK14 00-0	EAR99	N	2/43, 2/53 ... 54, 2/56, 2/60, 7/25
3RK14 00-1B	EAR99	N	2/43
3RK14 00-1CD	EAR99	N	2/56
3RK14 00-1CE	EAR99	N	2/53
3RK14 00-1CG	EAR99	N	2/53
3RK14 00-1CQ	EAR99	N	2/38
3RK14 00-1CR	N	N	2/40
3RK14 00-1CT	EAR99	N	2/45

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RK14 00-1D	EAR99	N	2/38
3RK14 00-1M	EAR99	N	2/38, 6/157
3RK14 00-1N	EAR99	N	6/157
3RK14 02	EAR99	N	2/53
3RK14 05-0BE	N	N	2/20
3RK14 05-0BG	N	N	2/20
3RK14 05-0BQ	EAR99	N	2/20
3RK14 05-1BE	N	N	2/20
3RK14 05-1BG	N	N	2/20
3RK14 05-1BQ	EAR99	N	2/20
3RK14 08	N	N	2/38, 2/58
3RK17	N	N	6/138
3RK18	5D992	N	2/18
3RK19 01-0	N	N	2/38, 2/40, 2/50, 2/71, 6/157
3RK19 01-1A	N	N	2/20, 2/50
3RK19 01-1G	N	N	2/59
3RK19 01-1KA00	EAR99	N	2/20, 2/38, 2/40, 2/43, 2/45, 2/50, 2/70, 2/76, 6/135, 6/157
3RK19 01-1KA01	N	N	2/20, 2/38, 2/70, 6/157
3RK19 01-1M	N	N	2/43, 2/64 ... 65, 2/70, 6/133
3RK19 01-1NN	N	N	2/45, 2/69
3RK19 01-1NP	EAR99	N	2/20
3RK19 01-1NR	N	N	2/41, 2/46, 2/64, 2/68 ... 69, 6/133
3RK19 01-1P	N	N	2/43, 2/45, 2/70, 2/76
3RK19 01-1T	N	N	2/41, 2/46, 2/70
3RK19 01-2	N	N	2/20, 2/43, 2/71
3RK19 01-3	N	N	2/41, 2/46, 2/65, 2/70
3RK19 01-5	N	N	2/18
3RK19 02-0A	N	N	2/38, 2/50, 2/71, 6/109, 6/135, 6/138, 6/157, 6/165
3RK19 02-0CA	EAR99	N	6/138
3RK19 02-0CB	EAR99	N	6/138
3RK19 02-0CC	EAR99	N	6/108, 6/132, 6/138
3RK19 02-0CD	EAR99	N	6/138
3RK19 02-0CE	EAR99	N	6/108, 6/132, 6/138
3RK19 02-0CG	N	N	6/138
3RK19 02-0CH	N	N	6/138
3RK19 02-0CJ	EAR99	N	6/109, 6/138, 6/165
3RK19 02-0CK	EAR99	N	6/138, 6/165
3RK19 02-0CM	N	N	6/138
3RK19 02-0CN	N	N	6/138
3RK19 02-0CP	N	N	6/138
3RK19 02-0CQ	N	N	6/138
3RK19 02-0CR	N	N	6/138
3RK19 02-0CS	N	N	6/138
3RK19 02-0CT	EAR99	N	6/109, 6/135, 6/138, 6/165
3RK19 02-0CW	N	N	6/109, 6/135
3RK19 02-1B	EAR99	N	6/134
3RK19 02-1D	EAR99	N	6/134
3RK19 02-1GB3	EAR99	N	6/134

Order No.	Export markings		Page
	ECCN	AL	
3RK19 02-1GB5	On req.		6/134
3RK19 02-1GC	EAR99	N	6/134
3RK19 02-1N	On req.		6/134
3RK19 02-2D	EAR99	N	6/134
3RK19 02-2HB3	EAR99	N	6/134
3RK19 02-2HB5	On req.		6/134
3RK19 02-2HC	EAR99	N	6/134
3RK19 02-2N	On req.		6/134
3RK19 02-3B	EAR99	N	6/134
3RK19 02-3D	EAR99	N	6/134
3RK19 02-3GB3	EAR99	N	6/134
3RK19 02-3GB5	On req.		6/134
3RK19 02-3GC	EAR99	N	6/134
3RK19 02-3NB3	EAR99	N	6/134
3RK19 02-3NB5	On req.		6/134
3RK19 02-3NC	EAR99	N	6/134
3RK19 03-0AA	N	N	6/62, 6/75
3RK19 03-0AB0	EAR99	N	6/57
3RK19 03-0AB1	N	N	6/57
3RK19 03-0AC0	N	N	6/57
3RK19 03-0AC1	EAR99	N	6/57
3RK19 03-0AE	N	N	6/78
3RK19 03-0AF	N	N	6/78
3RK19 03-0AG00	N	N	6/78
3RK19 03-0AG01	EAR99	N	6/78
3RK19 03-0AH	N	N	6/78
3RK19 03-0AJ	N	N	6/78
3RK19 03-0AK	EAR99	N	6/60
3RK19 03-0AL	EAR99	N	6/60
3RK19 03-0B	EAR99	N	6/61
3RK19 03-0CA	N	N	3/110, 6/77
3RK19 03-0CB	EAR99	N	6/78
3RK19 03-0CC	N	N	6/78
3RK19 03-0CD	N	N	6/77
3RK19 03-0CE	EAR99	N	6/78
3RK19 03-0CF	EAR99	N	6/78
3RK19 03-0CG	N	N	6/77
3RK19 03-0CH	EAR99	N	6/77, 12/9
3RK19 03-1AA	EAR99	N	6/75
3RK19 03-1AB	EAR99	N	6/75
3RK19 03-1AC0	EAR99	N	6/75
3RK19 03-1AC1	N	N	6/75
3RK19 03-1AD	N	N	6/75
3RK19 03-1BA	EAR99	N	6/71
3RK19 03-1BB	EAR99	N	6/71
3RK19 03-1BC	N	N	6/71
3RK19 03-1BD	N	N	6/71
3RK19 03-1BE	N	N	6/71
3RK19 03-1C	EAR99	N	6/79
3RK19 03-2	N	N	6/77 ... 78
3RK19 03-3AA	EAR99	N	6/75

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RK19 03-3AB	N	N	6/75
3RK19 03-3AC	EAR99	N	6/65
3RK19 03-3AD	EAR99	N	6/65
3RK19 03-3AE	EAR99	N	6/75
3RK19 03-3B	EAR99	N	6/71
3RK19 03-3C	N	N	6/71
3RK19 03-3D	EAR99	N	6/71
3RK19 04-2	N	N	2/65, 6/45, 6/135
3RK19 04-3	EAR99	N	2/68
3RK19 11-0	N	N	6/108 ... 109, 6/132, 6/164 ... 166, 12/9
3RK19 11-1	N	N	6/163 ... 164
3RK19 11-2AG	EAR99	N	6/165, 6/168
3RK19 11-2AH	EAR99	N	6/165, 6/168
3RK19 11-2AM	N	N	6/165
3RK19 11-2B	N	N	6/108, 6/132, 6/164 ... 166
3RK19 11-3	N	N	6/132, 6/134, 6/165
3RK19 11-4	N	N	6/173
3RK19 11-5	N	N	6/165
3RK19 2	N	N	6/77, 6/108 ... 109, 6/135, 12/9
3RK21 00-1C	N	N	2/45
3RK21 00-1E	EAR99	N	2/43
3RK22 00-0	EAR99	N	2/38, 2/43, 2/45, 2/53
3RK22 00-1	N	N	2/38
3RK22 07	EAR99	N	2/49
3RK24 00-0	N	N	2/43
3RK24 00-1B	EAR99	N	2/43, 2/45
3RK24 00-1C	EAR99	N	2/45, 2/53
3RK24 00-1D	N	N	2/38
3RK24 00-1FD	N	N	2/56
3RK24 00-1FE	EAR99	N	2/53
3RK24 00-1FG	EAR99	N	2/53
3RK24 00-1FQ	EAR99	N	2/38
3RK24 00-1H	EAR99	N	2/38
3RK27	N	N	2/69
3RK31	EAR99	N	2/32, 7/79
3RK32 1	N	N	7/79
3RK32 2	N	N	7/79
3RK32 3	N	N	7/79
3RK32 4	EAR99	N	7/79
3RK32 5	EAR99	N	7/79
3RK33 1	N	N	7/79
3RK33 2	EAR99	N	7/79
3RK35	N	N	7/79
3RK36	N	N	7/79
3RK39	N	N	7/80
3RK43 20-3AQ	N	N	6/151
3RK43 20-3AR	EAR99	N	6/149
3RK43 20-3BQ	N	N	6/151
3RK43 20-3BR	EAR99	N	6/149
3RK43 20-3CQ	N	N	6/151

Order No.	Export markings		Page
	ECCN	AL	
3RK43 20-3CR	EAR99	N	6/149
3RK43 20-3DQ	N	N	6/151
3RK43 20-3DR	EAR99	N	6/149
3RK43 20-3EQ	N	N	6/151
3RK43 20-3ER	EAR99	N	6/149
3RK43 20-3FQ	N	N	6/151
3RK43 20-3FR	EAR99	N	6/149
3RK43 20-3GQ	N	N	6/151
3RK43 20-3GR	EAR99	N	6/149
3RK43 20-3HQ	N	N	6/151
3RK43 20-3HR	EAR99	N	6/149
3RK43 20-3JQ	N	N	6/151
3RK43 20-3JR	EAR99	N	6/149
3RK43 20-3KQ	N	N	6/151
3RK43 20-3KR	EAR99	N	6/149
3RK43 20-3LQ	N	N	6/151
3RK43 20-3LR	EAR99	N	6/149
3RK43 20-3MQ	N	N	6/151
3RK43 20-3MR	EAR99	N	6/149
3RK43 20-3NQ	N	N	6/151
3RK43 20-3NR	EAR99	N	6/149
3RK43 20-3PQ	N	N	6/151
3RK43 20-3PR	EAR99	N	6/149
3RK43 20-5	N	N	6/152
3RK43 4	N	N	6/148
3RK43 5	N	N	6/147
3RK5	N	N	2/76
3RN			
3RN10 00-1AB	EAR99	N	7/65
3RN10 00-1AG	N	N	7/65
3RN10 00-1AM	EAR99	N	7/65
3RN10 00-2AB	EAR99	N	7/66
3RN10 00-2AG	N	N	7/66
3RN10 00-2AM	EAR99	N	7/66
3RN10 10-1B	N	N	7/65
3RN10 10-1CB	N	N	7/65
3RN10 10-1CG	N	N	7/65
3RN10 10-1CM	EAR99	N	7/65
3RN10 10-1CW	EAR99	N	7/65
3RN10 10-1G	N	N	7/65
3RN10 10-2B	N	N	7/66
3RN10 10-2CB	N	N	7/66
3RN10 10-2CG	N	N	7/66
3RN10 10-2CM	EAR99	N	7/66
3RN10 10-2CW	EAR99	N	7/66
3RN10 10-2G	N	N	7/66
3RN10 11-1B	N	N	7/65
3RN10 11-1C	EAR99	N	7/65
3RN10 11-1G	N	N	7/65
3RN10 11-2B	N	N	7/66
3RN10 11-2C	EAR99	N	7/66

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RN10 11-2G	N	N	7/66
3RN10 12-1B	N	N	7/65
3RN10 12-1CB	N	N	7/65
3RN10 12-1CK	EAR99	N	7/65
3RN10 12-1G	N	N	7/65
3RN10 12-2B	N	N	7/66
3RN10 12-2CB	N	N	7/66
3RN10 12-2CK	EAR99	N	7/66
3RN10 12-2G	N	N	7/66
3RN10 13	EAR99	N	7/65 ... 66
3RN10 2	EAR99	N	7/65 ... 66
3RN10 6	EAR99	N	7/65 ... 66
3RP			
3RP15 05-1AA	N	N	7/36
3RP15 05-1AP	EAR99	N	7/36
3RP15 05-1AQ	EAR99	N	7/36
3RP15 05-1AW	EAR99	N	7/36
3RP15 05-1B	EAR99	N	7/36
3RP15 05-1R	EAR99	N	7/36
3RP15 05-2	EAR99	N	7/36
3RP15 11	EAR99	N	7/36
3RP15 12-1AP	EAR99	N	7/36
3RP15 12-1AQ	N	N	7/36
3RP15 12-2AP	EAR99	N	7/36
3RP15 12-2AQ	N	N	7/36
3RP15 13-1AP	EAR99	N	7/36
3RP15 13-1AQ	N	N	7/36
3RP15 13-2AP	EAR99	N	7/36
3RP15 13-2AQ	N	N	7/36
3RP15 25-1A	EAR99	N	7/36
3RP15 25-1BP	EAR99	N	7/36
3RP15 25-1BQ	EAR99	N	7/36
3RP15 25-1BR	N	N	7/36
3RP15 25-1BW	EAR99	N	7/36
3RP15 25-2	EAR99	N	7/36
3RP15 27	N	N	7/36
3RP15 31-1AP	EAR99	N	7/37
3RP15 31-1AQ	N	N	7/37
3RP15 31-2AP	EAR99	N	7/37
3RP15 31-2AQ	N	N	7/37
3RP15 32	N	N	7/37
3RP15 33	N	N	7/37
3RP15 4	N	N	7/37
3RP15 55-1AP	EAR99	N	7/37
3RP15 55-1AQ	N	N	7/37
3RP15 55-1AR	N	N	7/37
3RP15 55-2AP	EAR99	N	7/37
3RP15 55-2AQ	N	N	7/37
3RP15 55-2AR	N	N	7/37
3RP15 60-1SP	EAR99	N	7/37
3RP15 60-1SQ	N	N	7/37

Order No.	Export markings		Page
	ECCN	AL	
3RP15 60-2	EAR99	N	7/37
3RP15 74-1NM	N	N	7/37
3RP15 74-1NP	EAR99	N	7/37
3RP15 74-1NQ	EAR99	N	7/37
3RP15 74-2NM	N	N	7/37
3RP15 74-2NP	EAR99	N	7/37
3RP15 76-1NM	N	N	7/37
3RP15 76-1NP	EAR99	N	7/37
3RP15 76-1NQ	EAR99	N	7/37
3RP15 76-2NM	N	N	7/37
3RP15 76-2NP	EAR99	N	7/37
3RP15 76-2NQ	EAR99	N	7/37
3RP19	N	N	2/18, 2/53, 4/11, 5/61, 7/15, 7/44, 7/57, 7/63, 7/67, 7/77, 7/80
3RP2	EAR99	N	7/39
3RS			
3RS10	N	N	7/58 ... 62
3RS11 00-1CD	N	N	7/58
3RS11 00-1CK2	N	N	7/58
3RS11 00-1CK3	EAR99	N	7/58
3RS11 00-2	N	N	7/59
3RS11 01	N	N	7/58
3RS11 20-1DD	N	N	7/59
3RS11 20-1DW2	N	N	7/59
3RS11 20-1DW3	EAR99	N	7/59
3RS11 20-2	N	N	7/59
3RS11 21	N	N	7/59
3RS11 4	N	N	7/60 ... 61
3RS17	N	N	7/82 ... 83
3RS18	N	N	3/88
3RS2	N	N	7/60 ... 61
3RT			
3RT10 15-1A	N	N	3/15
3RT10 15-1B	N	N	3/19
3RT10 15-1H	N	N	3/79
3RT10 15-1J	N	N	3/79
3RT10 15-1K	N	N	3/79
3RT10 15-1M	N	N	3/80
3RT10 15-1V	N	N	3/80
3RT10 15-1W	N	N	3/80
3RT10 15-2A	N	N	3/15
3RT10 15-2B	N	N	3/19
3RT10 15-2H	N	N	3/79
3RT10 15-2J	N	N	3/79
3RT10 15-2K	N	N	3/79
3RT10 15-2M	N	N	3/80
3RT10 15-2V	N	N	3/80
3RT10 15-2W	N	N	3/80
3RT10 16-1A	N	N	3/15
3RT10 16-1B	N	N	3/19
3RT10 16-1H	N	N	3/79

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RT10 16-1J	N	N	3/79
3RT10 16-1K	N	N	3/79
3RT10 16-1M	N	N	3/80
3RT10 16-1V	N	N	3/80
3RT10 16-1W	N	N	3/80
3RT10 16-2A	N	N	3/15
3RT10 16-2B	N	N	3/19
3RT10 16-2H	N	N	3/79
3RT10 16-2J	N	N	3/79
3RT10 16-2K	N	N	3/79
3RT10 16-2M	N	N	3/80
3RT10 16-2V	N	N	3/80
3RT10 16-2W	N	N	3/80
3RT10 17-1A	N	N	3/15
3RT10 17-1B	N	N	3/19
3RT10 17-1H	N	N	3/79
3RT10 17-1J	N	N	3/79
3RT10 17-1K	N	N	3/79
3RT10 17-1M	N	N	3/80
3RT10 17-1V	N	N	3/80
3RT10 17-1W	N	N	3/80
3RT10 17-2A	N	N	3/15
3RT10 17-2B	N	N	3/19
3RT10 17-2H	N	N	3/79
3RT10 17-2J	N	N	3/79
3RT10 17-2K	N	N	3/62, 3/79
3RT10 17-2M	N	N	3/80
3RT10 17-2V	N	N	3/80
3RT10 17-2W	N	N	3/80
3RT10 23-1A	N	N	3/16
3RT10 23-1B	N	N	3/20
3RT10 23-3A	N	N	3/16
3RT10 23-3B	N	N	3/20
3RT10 24-1A	N	N	3/16
3RT10 24-1B	N	N	3/20
3RT10 24-1K	N	N	3/81
3RT10 24-3A	N	N	3/16
3RT10 24-3B	N	N	3/20
3RT10 24-3K	N	N	3/81
3RT10 25-1A	N	N	3/16
3RT10 25-1B	N	N	3/20
3RT10 25-1K	N	N	3/81
3RT10 25-1X	EAR99	N	3/63
3RT10 25-3A	N	N	3/16
3RT10 25-3B	N	N	3/20
3RT10 25-3K	N	N	3/62, 3/81
3RT10 25-3X	EAR99	N	3/63
3RT10 26-1A	N	N	3/16
3RT10 26-1B	N	N	3/20
3RT10 26-1K	N	N	3/81
3RT10 26-1X	EAR99	N	3/63

Order No.	Export markings		Page
	ECCN	AL	
3RT10 26-3A	N	N	3/16
3RT10 26-3B	N	N	3/20
3RT10 26-3K	N	N	3/62, 3/81
3RT10 26-3X	EAR99	N	3/63
3RT10 34-1A	N	N	3/17
3RT10 34-1B	N	N	3/21
3RT10 34-1X	EAR99	N	3/63
3RT10 34-3A	N	N	3/17
3RT10 34-3B	N	N	3/21
3RT10 34-3K	N	N	3/62
3RT10 34-3X	EAR99	N	3/63
3RT10 35-1A	N	N	3/17
3RT10 35-1B	N	N	3/21
3RT10 35-1X	EAR99	N	3/63
3RT10 35-3A	N	N	3/17
3RT10 35-3B	N	N	3/21
3RT10 35-3K	N	N	3/62
3RT10 35-3X	EAR99	N	3/63
3RT10 36-1A	N	N	3/17
3RT10 36-1B	N	N	3/21
3RT10 36-1X	EAR99	N	3/63
3RT10 36-3A	N	N	3/17
3RT10 36-3B	N	N	3/21
3RT10 36-3K	N	N	3/62
3RT10 36-3X	EAR99	N	3/63
3RT10 44-1A	N	N	3/18
3RT10 44-1B	N	N	3/22
3RT10 44-1X	EAR99	N	3/63
3RT10 44-3A	N	N	3/18
3RT10 44-3B	N	N	3/22
3RT10 44-3K	N	N	3/62
3RT10 44-3X	EAR99	N	3/63
3RT10 45-1A	N	N	3/18
3RT10 45-1B	N	N	3/22
3RT10 45-1X	EAR99	N	3/63
3RT10 45-3A	N	N	3/18
3RT10 45-3B	N	N	3/22
3RT10 45-3K	N	N	3/62
3RT10 45-3X	EAR99	N	3/63
3RT10 46-1A	N	N	3/18
3RT10 46-1B	N	N	3/22
3RT10 46-1X	EAR99	N	3/63
3RT10 46-3A	N	N	3/18
3RT10 46-3B	N	N	3/22
3RT10 46-3K	N	N	3/62
3RT10 46-3X	EAR99	N	3/63
3RT10 54-1A	N	N	3/23
3RT10 54-1N	EAR99	N	3/24
3RT10 54-1P	EAR99	N	3/25
3RT10 54-1Q	EAR99	N	3/25
3RT10 54-3A	N	N	3/23

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RT10 54-3N	EAR99	N	3/24
3RT10 55-2A	N	N	3/23
3RT10 55-2N	EAR99	N	3/24
3RT10 55-6A	N	N	3/23
3RT10 55-6N	EAR99	N	3/24
3RT10 55-6P	EAR99	N	3/25
3RT10 55-6Q	EAR99	N	3/25
3RT10 56-2A	N	N	3/23
3RT10 56-2N	EAR99	N	3/24
3RT10 56-6A	N	N	3/23
3RT10 56-6N	EAR99	N	3/24
3RT10 56-6P	EAR99	N	3/25
3RT10 56-6Q	EAR99	N	3/25
3RT10 64-2A	N	N	3/23
3RT10 64-2N	EAR99	N	3/24
3RT10 64-6A	N	N	3/23
3RT10 64-6N	EAR99	N	3/24
3RT10 64-6P	EAR99	N	3/25
3RT10 64-6Q	EAR99	N	3/25
3RT10 65-2A	N	N	3/23
3RT10 65-2N	EAR99	N	3/24
3RT10 65-6A	N	N	3/23
3RT10 65-6N	EAR99	N	3/24
3RT10 65-6P	EAR99	N	3/25
3RT10 65-6Q	EAR99	N	3/25
3RT10 66-2A	N	N	3/23
3RT10 66-2N	EAR99	N	3/24
3RT10 66-6A	N	N	3/23
3RT10 66-6N	EAR99	N	3/24
3RT10 66-6P	EAR99	N	3/25
3RT10 66-6Q	EAR99	N	3/25
3RT10 75-2A	N	N	3/23
3RT10 75-2N	EAR99	N	3/24
3RT10 75-6A	N	N	3/23
3RT10 75-6N	EAR99	N	3/24
3RT10 75-6P	EAR99	N	3/25
3RT10 75-6Q	EAR99	N	3/25
3RT10 76-2A	N	N	3/23
3RT10 76-2N	EAR99	N	3/24
3RT10 76-6A	N	N	3/23
3RT10 76-6N	EAR99	N	3/24
3RT10 76-6P	EAR99	N	3/25
3RT10 76-6Q	EAR99	N	3/25
3RT12 64-6A	N	N	3/27
3RT12 64-6NF	N	N	3/27
3RT12 64-6NP	EAR99	N	3/27
3RT12 65-6A	N	N	3/27
3RT12 65-6NF	N	N	3/27
3RT12 65-6NP	EAR99	N	3/27
3RT12 66-6A	N	N	3/27
3RT12 66-6NF	N	N	3/27

Order No.	Export markings		Page
	ECCN	AL	
3RT12 66-6NP	EAR99	N	3/27
3RT12 75-6A	N	N	3/27
3RT12 75-6N	EAR99	N	3/27
3RT12 76-6A	N	N	3/27
3RT12 76-6N	EAR99	N	3/27
3RT13 16-1A	N	N	3/52
3RT13 16-1B	N	N	3/53
3RT13 16-2A	N	N	3/52
3RT13 16-2B	N	N	3/53
3RT13 17-1A	N	N	3/52
3RT13 17-1B	N	N	3/53
3RT13 17-2A	N	N	3/52
3RT13 17-2B	N	N	3/53
3RT13 25-1A	N	N	3/52
3RT13 25-1B	N	N	3/53
3RT13 26-1A	N	N	3/52
3RT13 26-1B	N	N	3/53
3RT13 36-1A	N	N	3/52
3RT13 36-1B	N	N	3/53
3RT13 44-1A	N	N	3/52
3RT13 44-1B	N	N	3/53
3RT13 46-1A	N	N	3/52
3RT13 46-1B	N	N	3/53
3RT14 46-1A	N	N	3/50
3RT14 46-1B	N	N	3/50
3RT14 56-6A	N	N	3/51
3RT14 56-6N	EAR99	N	3/51
3RT14 56-6P	EAR99	N	3/51
3RT14 56-6Q	EAR99	N	3/51
3RT14 66-6A	N	N	3/51
3RT14 66-6N	EAR99	N	3/51
3RT14 66-6P	EAR99	N	3/51
3RT14 66-6Q	EAR99	N	3/51
3RT14 76-6A	N	N	3/51
3RT14 76-6N	EAR99	N	3/51
3RT14 76-6P	EAR99	N	3/51
3RT14 76-6Q	EAR99	N	3/51
3RT15 16-1A	N	N	3/57
3RT15 16-1B	N	N	3/57
3RT15 16-2A	N	N	3/57
3RT15 16-2B	N	N	3/57
3RT15 17-1A	N	N	3/57
3RT15 17-1B	N	N	3/57
3RT15 17-2A	N	N	3/57
3RT15 17-2B	N	N	3/57
3RT15 26-1A	N	N	3/57
3RT15 26-1B	N	N	3/57
3RT15 35-1A	N	N	3/57
3RT15 35-1B	N	N	3/57
3RT16	N	N	3/58
3RT19 00-1SB1	N	N	3/114, 4/5

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RT19 00-1SB2	N	N	3/114, 4/5, 5/62, 6/114, 6/116, 7/44, 7/57, 7/63, 7/67, 7/77
3RT19 00-1SB5	N	N	2/71
3RT19 00-1SB6	N	N	3/114, 4/5, 5/62, 7/57, 7/63, 7/67, 7/77
3RT19 00-1SD	N	N	3/114, 4/5, 5/62, 7/57, 7/63, 7/67, 7/77
3RT19 00-4	N	N	3/111, 6/23
3RT19 16-1	N	N	3/108 ... 110, 6/22
3RT19 16-2BE	EAR99	N	3/107
3RT19 16-2BK	N	N	3/107
3RT19 16-2BL	N	N	3/107
3RT19 16-2C	EAR99	N	3/107, 7/43
3RT19 16-2D	EAR99	N	3/107, 7/43
3RT19 16-2E	EAR99	N	3/106, 7/42
3RT19 16-2F	EAR99	N	3/106, 7/42
3RT19 16-2G	EAR99	N	3/106, 7/42
3RT19 16-2L	EAR99	N	3/106, 7/42
3RT19 16-4B	N	N	3/47, 3/112, 3/124
3RT19 16-4J	N	N	3/114
3RT19 16-4K	N	N	3/111 ... 112
3RT19 16-4M	N	N	3/113
3RT19 16-4R	N	N	3/111, 6/23
3RT19 22	N	N	3/39
3RT19 24	N	N	3/115
3RT19 26-1	N	N	3/108 ... 109, 3/111, 6/22
3RT19 26-2C	EAR99	N	3/107, 7/43
3RT19 26-2D	EAR99	N	3/107, 7/43
3RT19 26-2E	EAR99	N	3/106, 7/42
3RT19 26-2F	EAR99	N	3/106, 7/42
3RT19 26-2G	EAR99	N	3/106, 7/42
3RT19 26-2P	N	N	3/107
3RT19 26-3	N	N	3/107
3RT19 26-4B	N	N	3/47, 3/112
3RT19 26-4C	N	N	3/47
3RT19 26-4M	N	N	3/113
3RT19 26-4P	N	N	3/112
3RT19 26-4R	N	N	3/111, 6/23
3RT19 34-5	N	N	3/115 ... 116
3RT19 34-6	N	N	3/119
3RT19 35-5	N	N	3/115
3RT19 35-6	N	N	3/119
3RT19 36-1	N	N	3/109, 6/22
3RT19 36-4B	N	N	3/47, 3/112
3RT19 36-4E	N	N	3/113, 4/10, 4/19, 5/30, 5/50, 5/61
3RT19 36-6	N	N	3/119
3RT19 36-7	N	N	3/119
3RT19 44-5AB	N	N	3/116
3RT19 44-5AC	N	N	3/116
3RT19 44-5AD	N	N	3/116
3RT19 44-5AF	N	N	3/116

Order No.	Export markings		Page
	ECCN	AL	
3RT19 44-5AG	N	N	3/116
3RT19 44-5AH	N	N	3/116
3RT19 44-5AK	N	N	3/116
3RT19 44-5AL	N	N	3/116
3RT19 44-5AN2	N	N	3/116
3RT19 44-5AN61	N	N	3/116
3RT19 44-5AN62	EAR99	N	3/116
3RT19 44-5AP	N	N	3/116
3RT19 44-5AR	N	N	3/116
3RT19 44-5AV	N	N	3/116
3RT19 44-5B	N	N	3/116
3RT19 44-6	N	N	3/119
3RT19 45-5	N	N	3/116
3RT19 45-6	N	N	3/119
3RT19 46-4B	N	N	3/47, 3/112
3RT19 46-4E	N	N	3/113, 4/10, 4/19, 5/30, 5/50, 5/61
3RT19 46-4F	N	N	3/111, 4/10, 4/19, 5/31
3RT19 46-4G	N	N	5/31
3RT19 46-6	N	N	3/119
3RT19 46-7	N	N	3/119
3RT19 54-6	N	N	3/119
3RT19 54-7	N	N	3/119
3RT19 55-4	N	N	3/113, 4/19, 4/40, 5/61, 7/15
3RT19 55-5A	N	N	3/117
3RT19 55-5NB	EAR99	N	3/118
3RT19 55-5NF31	EAR99	N	3/118
3RT19 55-5NF32	N	N	3/118
3RT19 55-5NP	EAR99	N	3/118
3RT19 55-5P	EAR99	N	3/118
3RT19 55-5Q	EAR99	N	3/118
3RT19 55-6	N	N	3/119
3RT19 55-7	N	N	3/119
3RT19 56-1	N	N	3/109
3RT19 56-4B	N	N	3/47, 3/112
3RT19 56-4E	N	N	3/113, 4/19, 4/41, 5/61, 7/15
3RT19 56-4G	N	N	3/113, 4/19, 4/40, 5/61, 7/15
3RT19 56-6	N	N	3/119
3RT19 56-7	N	N	3/119
3RT19 64-6A	N	N	3/119
3RT19 64-6V	N	N	3/119
3RT19 64-7	N	N	3/119
3RT19 65-5AB	EAR99	N	3/117
3RT19 65-5AD31	EAR99	N	3/117
3RT19 65-5AD32	N	N	3/117
3RT19 65-5AF	N	N	3/117
3RT19 65-5AM	N	N	3/117
3RT19 65-5AP	N	N	3/117
3RT19 65-5AR	N	N	3/117
3RT19 65-5AS	N	N	3/117

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RT19 65-5AT	N	N	3/117
3RT19 65-5AU	N	N	3/117
3RT19 65-5AV	N	N	3/117
3RT19 65-5NB	EAR99	N	3/118
3RT19 65-5NF31	EAR99	N	3/118
3RT19 65-5NF32	N	N	3/118
3RT19 65-5NP	EAR99	N	3/118
3RT19 65-5P	EAR99	N	3/118
3RT19 65-5Q	EAR99	N	3/118
3RT19 65-6A	N	N	3/119
3RT19 65-6V	N	N	3/119
3RT19 65-7	N	N	3/119
3RT19 66-1	N	N	3/110
3RT19 66-4B	N	N	3/47, 3/112
3RT19 66-4E	N	N	3/113, 4/19, 4/41, 5/61, 7/15
3RT19 66-4G	N	N	3/113, 4/19, 4/40, 5/61, 7/15
3RT19 66-5AB	EAR99	N	3/117
3RT19 66-5AD	EAR99	N	3/117
3RT19 66-5AF	N	N	3/117
3RT19 66-5AM	N	N	3/117
3RT19 66-5AP	N	N	3/117
3RT19 66-5AR	N	N	3/117
3RT19 66-5AS	N	N	3/117
3RT19 66-5AT	N	N	3/117
3RT19 66-5AU	N	N	3/117
3RT19 66-5AV	N	N	3/117
3RT19 66-5N	EAR99	N	3/118
3RT19 66-6A	N	N	3/119
3RT19 66-6D	N	N	3/119
3RT19 66-6V	N	N	3/119
3RT19 66-7	N	N	3/119
3RT19 75-5AB	EAR99	N	3/117
3RT19 75-5AD31	EAR99	N	3/117
3RT19 75-5AD32	N	N	3/117
3RT19 75-5AF	N	N	3/117
3RT19 75-5AM	N	N	3/117
3RT19 75-5AP	N	N	3/117
3RT19 75-5AR	N	N	3/117
3RT19 75-5AS	N	N	3/117
3RT19 75-5AT	N	N	3/117
3RT19 75-5AU	N	N	3/117
3RT19 75-5AV	N	N	3/117
3RT19 75-5N	EAR99	N	3/118
3RT19 75-5P	EAR99	N	3/118
3RT19 75-5Q	EAR99	N	3/118
3RT19 75-6A	N	N	3/119
3RT19 75-6V	N	N	3/119
3RT19 75-7	N	N	3/119
3RT19 76-6A	N	N	3/119
3RT19 76-6D	N	N	3/119

Order No.	Export markings		Page
	ECCN	AL	
3RT19 76-6V	N	N	3/119
3RT19 76-7	N	N	3/119
3RU			
3RU11	N	N	5/47 ... 49
3RU19 00-1	N	N	4/20, 5/50, 5/60
3RU19 00-2	N	N	4/20, 5/50
3RU19 1	N	N	5/50
3RU19 2	N	N	5/50
3RU19 3	N	N	5/50
3RU19 4	N	N	5/50
3RV			
3RV10 1	N	N	5/7 ... 8
3RV10 2	N	N	5/7 ... 8
3RV10 3	N	N	5/9
3RV10 4	N	N	5/9
3RV10 6	N	N	5/38
3RV10 7	N	N	5/38
3RV10 8	N	N	5/38
3RV11	N	N	5/10
3RV13 2	N	N	5/11
3RV13 3	N	N	5/11
3RV13 4	N	N	5/11
3RV13 5	N	N	5/39
3RV13 6	N	N	5/39
3RV13 73-7G	N	N	5/39
3RV13 73-7J	EAR99	N	5/39
3RV13 74	EAR99	N	5/39
3RV13 8	N	N	5/39
3RV14	N	N	5/12
3RV16 11-0	N	N	5/13
3RV16 11-1	N	N	5/16
3RV17	N	N	5/14
3RV18	N	N	5/15
3RV19 01-0	N	N	5/18
3RV19 01-1	N	N	5/13, 5/16, 5/18, 6/21
3RV19 01-2	N	N	5/18
3RV19 02-1AB0	N	N	5/20
3RV19 02-1AB4	N	N	5/20
3RV19 02-1AF	N	N	5/20
3RV19 02-1AM	N	N	5/20
3RV19 02-1AP	N	N	5/20, 6/21
3RV19 02-1AS	N	N	5/20
3RV19 02-1AV	N	N	5/20
3RV19 02-1D	N	N	5/20, 6/21
3RV19 03	N	N	5/36
3RV19 08	N	N	5/30
3RV19 12	N	N	5/20
3RV19 13	N	N	5/35 ... 36
3RV19 15-1	N	N	5/22, 6/42
3RV19 15-2	N	N	5/22
3RV19 15-3	N	N	5/22
3RV19 15-5	N	N	5/22, 6/43

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3RV19 15-6	N	N	5/23, 6/43
3RV19 17-1	N	N	5/26
3RV19 17-4	N	N	5/26
3RV19 17-5	N	N	5/26 ... 27, 6/51
3RV19 17-6	N	N	5/27
3RV19 17-7	N	N	5/26 ... 27
3RV19 18	N	N	5/31
3RV19 21	N	N	5/19
3RV19 22	N	N	5/20
3RV19 23	N	N	5/35 ... 36
3RV19 25	N	N	3/47, 5/22, 6/43
3RV19 26	N	N	6/44
3RV19 27	N	N	5/26
3RV19 28	N	N	5/19, 5/31, 6/42
3RV19 33	N	N	5/35
3RV19 35-1	N	N	3/47, 5/22
3RV19 35-3	N	N	5/22
3RV19 35-5	N	N	3/47, 5/22
3RV19 35-6	N	N	5/23
3RV19 36	N	N	5/29
3RV19 38	EAR99	N	5/19
3RV19 4	N	N	5/29
3RV19 52	N	N	5/40
3RV19 55	N	N	5/41
3RV19 56	N	N	5/41
3RV19 6	N	N	5/41
3RV19 75	N	N	5/41
3RV19 76	N	N	5/41
3RV19 82	N	N	5/40
3RV19 85	N	N	5/41
3RV19 86	N	N	5/41
3RV19 9	N	N	5/40
3RV29 25	N	N	4/10, 4/19
3RV29 26	N	N	5/29
3RV29 3	N	N	5/29
3RV29 4	N	N	5/29
3RW			
3RW30 0	N	N	4/9
3RW30 1	EAR99	N	4/9
3RW30 2	EAR99	N	4/9
3RW30 3	EAR99	N	4/9
3RW30 4	EAR99	N	4/9
3RW40	EAR99	N	4/14 ... 18
3RW44	N	N	4/25 ... 39
3RW49 00-0A	EAR99	N	4/40
3RW49 00-0K	N	N	4/40, 12/6
3RW49 00-0P	N	N	4/19
3RW49 2	N	N	4/20
3RW49 3	N	N	4/21, 4/41
3RW49 4	N	N	4/20 ... 21, 4/41
3RW49 5	N	N	4/41

Order No.	Export markings		Page
	ECCN	AL	
3RW49 6	N	N	4/41
3RX			
3RX80 00-0CB	N	N	8/49, 8/56, 8/63, 8/81
3RX80 00-0CC	N	N	6/116 ... 117, 6/133, 8/49, 8/56, 8/63, 8/81
3RX80 00-0CD	N	N	2/68, 6/116 ... 117, 6/137, 8/81
3RX80 00-0CE	N	N	6/133, 6/137, 8/81
3RX80 00-0G	N	N	2/41, 2/46, 2/65, 2/70, 6/116 ... 117, 6/135
3RX80 00-1	N	N	6/133
3RX90	N	N	2/62, 6/172
3RX95	N	N	2/61
3RX98	N	N	2/46, 2/54, 2/64, 2/68 ... 69, 6/109, 6/111 ... 112, 6/116 ... 117, 6/137
3NO			
3SB10	N	N	9/27
3SB12	N	N	9/28 ... 29
3SB14	N	N	9/30, 17/35, 17/43 ... 44, 17/50 ... 51
3SB19	N	N	9/30, 9/68, 9/70 ... 72, 9/76 ... 80, 9/82, 9/90, 9/92
3SB20	N	N	9/8 ... 9
3SB22	N	N	9/6 ... 7
3SB23	N	N	9/10
3SB24 04-0	N	N	9/10
3SB24 04-3	N	N	9/10
3SB24 5	N	N	9/11
3SB29 01	N	N	9/12 ... 16
3SB29 02	N	N	9/16, 9/18
3SB29 08-0	N	N	9/10 ... 11
3SB29 08-1	N	N	9/17, 9/77
3SB29 08-2	N	N	9/17 ... 18, 9/77
3SB29 08-3	N	N	9/18
3SB29 08-8AA	N	N	9/18
3SB29 08-8AB	N	N	9/18
3SB29 08-8AD	EAR99	N	9/18
3SB29 08-8AE	N	N	9/18
3SB29 1	N	N	9/17
3SB30 00-0	N	N	4/20, 5/50, 5/60, 9/27, 9/31
3SB30 00-1	N	N	9/32, 9/36
3SB30 00-2	N	N	9/33
3SB30 00-3	EAR99	N	9/34 ... 35
3SB30 00-4A	N	N	9/34
3SB30 00-4B	N	N	9/34
3SB30 00-4D	N	N	9/35
3SB30 00-4E	N	N	9/35
3SB30 00-4F	N	N	9/35
3SB30 00-4G	N	N	9/35
3SB30 00-4H	N	N	9/34
3SB30 00-4LD0	N	N	9/34
3SB30 00-4LD1	N	N	9/34
3SB30 00-4LD2	EAR99	N	9/34

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3SB30 00-4LF	N	N	9/34
3SB30 00-4M	N	N	9/34
3SB30 00-4PD01	EAR99	N	9/35
3SB30 00-4PD05	N	N	9/35
3SB30 00-4PD1	N	N	9/35
3SB30 00-4PD2	N	N	9/35
3SB30 00-4PD3	N	N	9/35
3SB30 00-4PD4	N	N	9/35
3SB30 00-4PD5	N	N	9/35
3SB30 00-4Q	N	N	9/35
3SB30 00-4R	N	N	9/35
3SB30 00-4S	N	N	9/35
3SB30 00-5	N	N	9/34 ... 35
3SB30 00-7	N	N	9/37
3SB30 01	N	N	9/31 ... 33, 9/37
3SB31 0	N	N	9/24, 9/37 ... 38
3SB31 10-0	N	N	9/41
3SB31 10-1	N	N	9/44
3SB31 10-2	N	N	9/42
3SB31 10-3	N	N	9/43
3SB31 10-4	N	N	9/43
3SB31 10-5	EAR99	N	9/43
3SB31 11	N	N	9/41 ... 42, 9/44
3SB32 01-0	N	N	9/22
3SB32 01-1C	N	N	9/23
3SB32 01-1HA20	N	N	9/25
3SB32 01-1HA26	On req.		9/25
3SB32 01-1HP	N	N	9/25
3SB32 01-1HR20	N	N	9/25
3SB32 01-1HR26	On req.		9/25
3SB32 01-1T	N	N	9/25
3SB32 01-2	N	N	9/24
3SB32 01-4	N	N	9/24
3SB32 02	N	N	9/22, 9/24
3SB32 03-0	N	N	9/22
3SB32 03-1C	N	N	9/23
3SB32 03-1HA20	N	N	9/25
3SB32 03-1HA26	On req.		9/25
3SB32 03-1HP	N	N	9/25
3SB32 03-1HR20	N	N	9/25
3SB32 03-1HR26	On req.		9/25
3SB32 03-1T	N	N	9/25
3SB32 04	N	N	9/26
3SB32 05	N	N	9/23
3SB32 06	N	N	9/23
3SB32 07	N	N	9/23
3SB32 08	N	N	9/24
3SB32 1	N	N	9/24
3SB32 3	N	N	9/27
3SB32 4	N	N	9/22, 9/26
3SB32 5	N	N	9/22, 9/26

Order No.	Export markings		Page
	ECCN	AL	
3SB33	N	N	9/39 ... 40
3SB34 00-0	N	N	9/60, 16/60
3SB34 00-1	N	N	9/61
3SB34 00-2	N	N	9/60
3SB34 00-3	N	N	9/61
3SB34 03-0	N	N	9/62
3SB34 03-1	N	N	9/62
3SB34 11-0	N	N	9/63
3SB34 11-1	N	N	9/63
3SB34 20-0	N	N	9/88
3SB34 20-1	N	N	9/88
3SB34 23-0	N	N	9/89
3SB34 23-1	N	N	9/89
3SB34 23-2	N	N	9/89
3SB35 00-0AA1	N	N	9/50
3SB35 00-0AA2	N	N	9/50
3SB35 00-0AA3	N	N	9/50
3SB35 00-0AA4	N	N	9/50
3SB35 00-0AA5	N	N	9/50
3SB35 00-0AA61	N	N	9/50
3SB35 00-0AA61-0	On req.		9/50
3SB35 00-0AA62	N	N	9/50
3SB35 00-0AA7	N	N	9/50
3SB35 00-0AA8	N	N	9/50
3SB35 00-0AB	N	N	9/50
3SB35 00-0AC	N	N	9/50
3SB35 00-0B	N	N	9/50
3SB35 00-0D	N	N	9/50
3SB35 00-1A	N	N	9/58
3SB35 00-1B	N	N	9/58
3SB35 00-1C	N	N	9/51
3SB35 00-1D	N	N	9/51
3SB35 00-1E	N	N	9/51
3SB35 00-1F	N	N	9/58
3SB35 00-1G	N	N	9/51
3SB35 00-1H	N	N	9/58
3SB35 00-1K	N	N	9/58
3SB35 00-1L	N	N	9/58
3SB35 00-1M	N	N	9/58
3SB35 00-1QA1	EAR99	N	9/51
3SB35 00-1QA2	N	N	9/51
3SB35 00-1QA3	EAR99	N	9/51
3SB35 00-1QA4	EAR99	N	9/51
3SB35 00-1RA1	EAR99	N	9/51
3SB35 00-1RA2	N	N	9/51
3SB35 00-1T	N	N	9/58
3SB35 00-2D	N	N	9/54
3SB35 00-2E	N	N	9/54
3SB35 00-2F	N	N	9/55
3SB35 00-2G	N	N	9/55
3SB35 00-2H	N	N	9/52

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3SB35 00-2K	N	N	9/52
3SB35 00-2L	N	N	9/53
3SB35 00-2P	EAR99	N	9/52
3SB35 00-2Q	EAR99	N	9/53
3SB35 00-2S	EAR99	N	9/54
3SB35 00-2T	EAR99	N	9/55
3SB35 00-2U	EAR99	N	9/55
3SB35 00-2V	EAR99	N	9/55
3SB35 00-3A	N	N	9/56
3SB35 00-3B	N	N	9/56
3SB35 00-3D	N	N	9/57
3SB35 00-3E	N	N	9/57
3SB35 00-3G	N	N	9/57
3SB35 00-3P	EAR99	N	9/52
3SB35 00-3Q	EAR99	N	9/53
3SB35 00-3S	EAR99	N	9/54
3SB35 00-3T	EAR99	N	9/55
3SB35 00-3U	EAR99	N	9/55
3SB35 00-3V	EAR99	N	9/55
3SB35 00-4	N	N	9/56 ... 57
3SB35 00-5	N	N	9/56 ... 57
3SB35 01-0	N	N	9/50
3SB35 01-1C	N	N	9/51
3SB35 01-1D	N	N	9/51
3SB35 01-1E	N	N	9/51
3SB35 01-1G	N	N	9/51
3SB35 01-1QA0	N	N	9/51
3SB35 01-1QA3	EAR99	N	9/51
3SB35 01-1QA4	EAR99	N	9/51
3SB35 01-1QA6	EAR99	N	9/51
3SB35 01-1RA0	N	N	9/51
3SB35 01-1RA2	EAR99	N	9/51
3SB35 01-1RA3	EAR99	N	9/51
3SB35 01-1RA4	EAR99	N	9/51
3SB35 01-1RA5	N	N	9/51
3SB35 01-1RA7	N	N	9/51
3SB35 01-2D	N	N	9/54
3SB35 01-2E	N	N	9/54
3SB35 01-2F	N	N	9/55
3SB35 01-2G	N	N	9/55
3SB35 01-2H	N	N	9/52
3SB35 01-2K	N	N	9/52
3SB35 01-2L	N	N	9/53
3SB35 01-2P	EAR99	N	9/52
3SB35 01-2Q	EAR99	N	9/53
3SB35 01-2S	EAR99	N	9/54
3SB35 01-2T	EAR99	N	9/55
3SB35 01-2U	EAR99	N	9/55
3SB35 01-2V	EAR99	N	9/55
3SB35 01-3	EAR99	N	9/52 ... 55
3SB35 01-6	N	N	9/59

Order No.	Export markings		Page
	ECCN	AL	
3SB36 01-0	N	N	9/45
3SB36 01-1C	N	N	9/46
3SB36 01-1HA20	N	N	9/48
3SB36 01-1HA26	On req.		9/48
3SB36 01-1HP	N	N	9/48
3SB36 01-1HR20	N	N	9/48
3SB36 01-1HR26	On req.		9/48
3SB36 01-1T	N	N	9/48
3SB36 01-2K	N	N	9/47
3SB36 01-2P	EAR99	N	9/47
3SB36 01-4	N	N	9/47
3SB36 02-0	N	N	9/45
3SB36 02-2K	N	N	9/47
3SB36 02-2P	EAR99	N	9/47
3SB36 02-4	N	N	9/47
3SB36 03-0	N	N	9/45
3SB36 03-1C	N	N	9/46
3SB36 03-1HA20	N	N	9/48
3SB36 03-1HA26	On req.		9/48
3SB36 03-1HP	N	N	9/48
3SB36 03-1HR20	N	N	9/48
3SB36 03-1HR26	On req.		9/48
3SB36 03-1T	N	N	9/48
3SB36 04	N	N	9/49
3SB36 05	N	N	9/46
3SB36 06	N	N	9/46
3SB36 07	N	N	9/46
3SB36 08-2D	N	N	9/47
3SB36 08-2E	N	N	9/47
3SB36 08-2S	EAR99	N	9/47
3SB36 08-2T	EAR99	N	9/47
3SB36 10-2D	N	N	9/47
3SB36 10-2E	N	N	9/47
3SB36 10-2S	EAR99	N	9/47
3SB36 10-2T	EAR99	N	9/47
3SB36 11	N	N	9/48
3SB36 4	N	N	9/45 ... 46, 9/49
3SB36 5	N	N	9/45, 9/49
3SB38 01-0AA	N	N	9/86
3SB38 01-0AB	N	N	9/86
3SB38 01-0AD	N	N	9/86
3SB38 01-0AZ	On req.		9/87
3SB38 01-0D	N	N	9/84
3SB38 01-0E	N	N	9/84
3SB38 01-1	On req.		9/87
3SB38 01-2AA	N	N	9/86
3SB38 01-2AB	N	N	9/86
3SB38 01-2AD	N	N	9/86
3SB38 01-2AE	N	N	9/86
3SB38 01-2AZ	On req.		9/87
3SB38 01-2D	N	N	9/85

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3SB38 01-2EA	N	N	9/85
3SB38 01-2EB	N	N	9/85
3SB38 01-2EC	N	N	9/86
3SB38 01-2EF	N	N	9/85
3SB38 01-2EG1	N	N	9/85
3SB38 01-2EG3	N	N	9/85
3SB38 01-3	On req.		9/87
3SB38 02-0AA	N	N	9/86
3SB38 02-0AZ	On req.		9/87
3SB38 02-0D	N	N	9/84
3SB38 02-1	On req.		9/87
3SB38 02-2AA	N	N	9/86
3SB38 02-2AZ	On req.		9/87
3SB38 02-2D	N	N	9/85
3SB38 02-3	On req.		9/87
3SB38 03-0AA	N	N	9/86
3SB38 03-0AZ	On req.		9/87
3SB38 03-0D	N	N	9/84
3SB38 03-1	On req.		9/87
3SB38 03-2AA	N	N	9/86
3SB38 03-2AZ	On req.		9/87
3SB38 03-2D	N	N	9/85
3SB38 03-3	On req.		9/87
3SB38 04-0AA	N	N	9/86
3SB38 04-0AZ	On req.		9/87
3SB38 04-1	On req.		9/87
3SB38 04-2AA	N	N	9/86
3SB38 04-2AZ	On req.		9/87
3SB38 04-3	On req.		9/87
3SB38 06-0AA	N	N	9/86
3SB38 06-0AZ	On req.		9/87
3SB38 06-1	On req.		9/87
3SB38 06-2AA	N	N	9/86
3SB38 06-2AZ	On req.		9/87
3SB38 06-3	On req.		9/87
3SB38 6	N	N	9/96
3SB38 8	On req.		9/87
3SB39 01-0A	N	N	9/63, 9/81 ... 82, 9/88 ... 89, 9/92, 9/96
3SB39 01-0CB	EAR99	N	9/82
3SB39 01-0CG	N	N	9/82
3SB39 01-0CH	N	N	9/80
3SB39 01-0CK	N	N	9/92
3SB39 01-0CL	N	N	9/92
3SB39 01-0CM	N	N	9/92
3SB39 01-0CN	N	N	9/92
3SB39 01-0CP	N	N	9/92
3SB39 01-0CQ	EAR99	N	9/92
3SB39 01-0CS	N	N	9/92
3SB39 01-0CT	N	N	9/92
3SB39 01-0CU	N	N	9/92
3SB39 01-1	N	N	9/17, 9/76 ... 77

Order No.	Export markings		Page
	ECCN	AL	
3SB39 01-2	N	N	9/67
3SB39 02	N	N	9/67, 9/70 ... 71
3SB39 03	N	N	9/67, 9/71
3SB39 05	N	N	9/67, 9/72
3SB39 06	N	N	9/67, 9/90
3SB39 1	N	N	9/77
3SB39 2	N	N	9/38, 9/73, 9/78 ... 82, 9/92
3SB39 30-0C	N	N	9/75
3SB39 30-0D	N	N	9/75
3SB39 30-0EA1	N	N	9/75
3SB39 30-0EA2	N	N	9/75
3SB39 30-0EA3	EAR99	N	9/75
3SB39 30-0EA4	N	N	9/75
3SB39 30-0EA5	N	N	9/75
3SB39 30-0EA6	N	N	9/75
3SB39 30-0EA7	N	N	9/75
3SB39 30-0F	N	N	9/75
3SB39 30-0G	N	N	9/75
3SB39 30-0H	N	N	9/75
3SB39 30-6	N	N	9/75
3SB39 31	N	N	9/81, 9/92
3SB39 4	N	N	9/68, 9/73, 9/78 ... 80, 9/82
3SB39 5	N	N	9/75, 9/81
3SE			
3SE22	N	N	8/30 ... 32, 8/57, 8/68
3SE24	N	N	8/44 ... 45
3SE28	EAR99	N	8/64
3SE29	N	N	9/103
3SE3	N	N	8/47, 9/103
3SE50 00-0AA0	N	N	8/37, 8/41, 8/43, 8/71, 8/77
3SE50 00-0AA1	N	N	8/37, 8/41, 8/43, 8/71, 8/77
3SE50 00-0AA2	N	N	8/23, 8/27, 8/29, 8/37, 8/41, 8/71, 8/75, 8/77
3SE50 00-0AA3	N	N	8/23, 8/27, 8/29, 8/75
3SE50 00-0AA5	N	N	8/23, 8/27, 8/37, 8/41, 8/71
3SE50 00-0AA6	N	N	8/23, 8/27, 8/29, 8/37, 8/41, 8/43, 8/71, 8/75, 8/77
3SE50 00-0AA8	N	N	8/23, 8/27, 8/37, 8/41, 8/71
3SE50 00-0AC0	N	N	8/37, 8/40, 8/43, 8/70, 8/77
3SE50 00-0AC3	EAR99	N	8/50
3SE50 00-0AD	N	N	8/23, 8/27, 8/75
3SE50 00-0AD02	N	N	8/37, 8/40, 8/43, 8/70, 8/77
3SE50 00-0AD03	N	N	8/23, 8/27, 8/29, 8/75
3SE50 00-0AD04	N	N	8/23, 8/27, 8/75
3SE50 00-0AE	N	N	8/23, 8/27, 8/29, 8/37, 8/40, 8/43, 8/70, 8/75, 8/77
3SE50 00-0AF	N	N	8/23, 8/27, 8/29, 8/37, 8/40, 8/43, 8/70, 8/75, 8/77
3SE50 00-0AH	N	N	8/37, 8/41, 8/43, 8/71, 8/77
3SE50 00-0AK	N	N	8/23, 8/27, 8/29, 8/75
3SE50 00-0AR	N	N	8/23, 8/27, 8/37, 8/40, 8/70
3SE50 00-0AT	N	N	8/37, 8/41, 8/71, 8/77
3SE50 00-0AU	N	N	8/66 ... 67, 8/85 ... 86

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3SE50 00-0AV01	N	N	8/56, 8/63, 8/81, 8/83 ... 84
3SE50 00-0AV02	N	N	8/56, 8/63, 8/81, 8/83 ... 84
3SE50 00-0AV03	N	N	8/56, 8/63, 8/81, 8/83 ... 84
3SE50 00-0AV04	N	N	8/56, 8/63, 8/81, 8/83 ... 84
3SE50 00-0AV05	N	N	8/56, 8/63, 8/81, 8/83 ... 84
3SE50 00-0AV06	N	N	8/56, 8/63, 8/81, 8/83 ... 84
3SE50 00-0AV07	N	N	8/56, 8/63, 8/81, 8/83 ... 84
3SE50 00-0AV08-1AA2	N	N	8/56, 8/63, 8/81
3SE50 00-0AV08-1AA3	EAR99	N	8/56, 8/63, 8/81
3SE50 00-0B	N	N	8/50
3SE50 00-0C	N	N	8/50
3SE50 00-0G	N	N	8/50
3SE50 00-0K	N	N	8/50
3SE50 00-0L	N	N	8/50
3SE50 00-0M	N	N	8/50
3SE50 00-0N	N	N	8/50
3SE50 00-0P	N	N	8/50
3SE51 10	N	N	8/51
3SE51 12-0A	N	N	8/50
3SE51 12-0B	N	N	8/34 ... 36, 8/70
3SE51 12-0CA00	N	N	8/36
3SE51 12-0CA00-1AC	N	N	8/36
3SE51 12-0CA00-1AJ	EAR99	N	8/42
3SE51 12-0CA00-1C	N	N	8/36
3SE51 12-0CA00-1D	N	N	8/70
3SE51 12-0CC	N	N	8/34, 8/69
3SE51 12-0CD	N	N	8/34, 8/69
3SE51 12-0CE	N	N	8/34, 8/69
3SE51 12-0CF	N	N	8/34, 8/69
3SE51 12-0CH	N	N	8/35, 8/42, 8/69
3SE51 12-0CR	N	N	8/34, 8/69
3SE51 12-0CT	N	N	8/35, 8/69
3SE51 12-0K	N	N	8/34 ... 36, 8/42, 8/70
3SE51 12-0L	N	N	8/34 ... 36, 8/42, 8/67, 8/70, 8/72
3SE51 12-0M	N	N	8/36, 8/70
3SE51 12-0P	N	N	8/36, 8/70
3SE51 12-0Q	N	N	8/55, 8/72
3SE51 12-1	N	N	8/36, 8/55
3SE51 12-3	N	N	8/36, 8/55
3SE51 14-0B	EAR99	N	8/36
3SE51 14-0CA	N	N	8/36
3SE51 14-0CH	EAR99	N	8/35
3SE51 14-0K	EAR99	N	8/36
3SE51 14-0L	EAR99	N	8/36
3SE51 14-0Q	EAR99	N	8/55
3SE51 14-0R	EAR99	N	8/55
3SE51 14-1B	EAR99	N	8/36
3SE51 14-1CA	EAR99	N	8/36
3SE51 14-1CD	EAR99	N	8/34
3SE51 14-1CH01	N	N	8/35
3SE51 14-1CH02	EAR99	N	8/35

Order No.	Export markings		Page
	ECCN	AL	
3SE51 14-1L	N	N	8/35 ... 36
3SE51 14-1R	EAR99	N	8/55
3SE51 15	N	N	8/36, 8/55
3SE51 20	N	N	8/51
3SE51 22-0A	N	N	8/50
3SE51 22-0B	N	N	8/38 ... 40, 8/70
3SE51 22-0C	N	N	8/38 ... 40, 8/42, 8/69 ... 70
3SE51 22-0K	N	N	8/38 ... 40, 8/42, 8/70
3SE51 22-0L	N	N	8/38 ... 40, 8/42, 8/70
3SE51 22-0M	N	N	8/40, 8/70
3SE51 22-0P	N	N	8/40, 8/70
3SE51 22-0Q	N	N	8/55, 8/72
3SE51 22-1	N	N	8/40, 8/55
3SE51 22-3	N	N	8/40, 8/55
3SE52 1	EAR99	N	8/50
3SE52 30	N	N	8/51
3SE52 32-0A	N	N	8/50
3SE52 32-0B	N	N	8/20 ... 22
3SE52 32-0C	N	N	8/20, 8/22, 8/28
3SE52 32-0F	N	N	8/20, 8/22
3SE52 32-0G	N	N	8/20, 8/22
3SE52 32-0HC	N	N	8/20, 8/22
3SE52 32-0HD	N	N	8/20
3SE52 32-0HE	N	N	8/21
3SE52 32-0HF	N	N	8/21
3SE52 32-0HK21	N	N	8/21
3SE52 32-0HK21-1	On req.		8/28
3SE52 32-0HK5	N	N	8/21
3SE52 32-0HK6	N	N	8/21
3SE52 32-0HK8	N	N	8/21
3SE52 32-0HR	N	N	8/21
3SE52 32-0HU	N	N	8/66
3SE52 32-0K	N	N	8/20 ... 22, 8/28
3SE52 32-0L	N	N	8/20 ... 22, 8/28, 8/66
3SE52 32-0M	N	N	8/20, 8/22
3SE52 32-0P	EAR99	N	8/20, 8/22
3SE52 32-0Q	N	N	8/54
3SE52 32-0R	N	N	8/54
3SE52 32-1	N	N	8/20, 8/22, 8/54
3SE52 32-3	N	N	8/20, 8/22, 8/54
3SE52 34-0B	N	N	8/20, 8/22
3SE52 34-0HC	N	N	8/20, 8/22
3SE52 34-0HD	N	N	8/20
3SE52 34-0HE	N	N	8/21
3SE52 34-0HK	N	N	8/21
3SE52 34-0HR	EAR99	N	8/21
3SE52 34-0K	N	N	8/20, 8/22
3SE52 34-0L	N	N	8/20, 8/22
3SE52 34-0Q	N	N	8/54
3SE52 34-0R	N	N	8/54
3SE52 34-1B	EAR99	N	8/20, 8/22

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3SE52 34-1C	EAR99	N	8/20, 8/22
3SE52 34-1R	N	N	8/54
3SE52 40	N	N	8/51
3SE52 42-0A	N	N	8/50
3SE52 42-0B	N	N	8/24 ... 26, 8/28
3SE52 42-0C	N	N	8/24, 8/26
3SE52 42-0F	N	N	8/24, 8/26
3SE52 42-0G	N	N	8/24, 8/26
3SE52 42-0H	N	N	8/24 ... 26, 8/28
3SE52 42-0K	N	N	8/24, 8/26
3SE52 42-0L	N	N	8/24 ... 26
3SE52 42-0M	N	N	8/24, 8/26
3SE52 42-0P	N	N	8/24, 8/26
3SE52 42-0Q	N	N	8/54
3SE52 42-1	N	N	8/24, 8/26, 8/54
3SE52 42-3	N	N	8/24, 8/26, 8/54
3SE52 44	N	N	8/25
3SE52 50-0A	N	N	8/48
3SE52 50-0B	N	N	8/48
3SE52 50-0C	N	N	8/48
3SE52 50-0K	N	N	8/48
3SE52 50-0L	N	N	8/48
3SE52 50-0M	N	N	8/48
3SE52 50-0P	N	N	8/48
3SE53	N	N	8/61 ... 62
3SE6	N	N	8/88
3SE7	N	N	9/98, 9/100
3SF			
3SF1	N	N	8/74, 8/76, 8/79 ... 80, 8/83 ... 86
3SF21 2	EAR99	N	9/101
3SF21 4	N	N	9/101
3SF21 5	EAR99	N	9/101
3SF54	EAR99	N	9/64
3SF55	EAR99	N	9/95
3SF58	EAR99	N	9/94
3SF59	N	N	9/95
3SF6	N	N	6/92
3SF7	N	N	6/92
3SR			
3SR	N	N	9/76
3SX			
3SX1	N	N	4/20, 5/50, 5/60, 9/76, 9/82
3SX3	N	N	8/32 ... 33, 8/45 ... 46, 8/57, 8/64, 8/68, 8/88, 9/100
3SX5	N	N	8/63
3SX9	N	N	8/49, 8/56, 8/63
3SY			
3SY1	N	N	9/77
3SY30	N	N	8/46, 8/49
3SY31 1	N	N	8/49
3SY31 27	N	N	8/49, 8/56, 8/63
3SY31 28	EAR99	N	8/49, 8/56, 8/63

Order No.	Export markings		Page
	ECCN	AL	
3SY31 3	N	N	8/49
3TB			
3TB	N	N	3/29, 3/64
3TC			
3TC44 17-0A	N	N	3/67
3TC44 17-0B	N	N	3/67
3TC44 17-0L	N	N	3/65
3TC48 17-0A	N	N	3/67
3TC48 17-0B	N	N	3/67
3TC48 17-0L	N	N	3/65
3TC52 17-0A	N	N	3/67
3TC52 17-0B	N	N	3/67
3TC52 17-0L	N	N	3/65
3TC56 17-0A	N	N	3/67
3TC56 17-0B	N	N	3/67
3TC56 17-0L	N	N	3/65
3TC74 14-0	N	N	3/68
3TC74 14-1	N	N	3/68
3TC78 14-0	N	N	3/68
3TC78 14-1	N	N	3/68
3TD, 3TE			
3TD	N	N	3/48
3TE	N	N	3/49
3TF			
3TF20 01-0A	N	N	3/30
3TF20 01-0B	N	N	3/30
3TF20 01-3A	N	N	3/30
3TF20 01-3B	N	N	3/30
3TF20 01-6A	N	N	3/30
3TF20 01-6B	N	N	3/30
3TF20 01-7A	N	N	3/30
3TF20 01-7B	N	N	3/30
3TF20 10-0A	N	N	3/30
3TF20 10-0B	N	N	3/30
3TF20 10-3A	N	N	3/30
3TF20 10-3B	N	N	3/30
3TF20 10-6A	N	N	3/30
3TF20 10-6B	N	N	3/30
3TF20 10-7A	N	N	3/30
3TF20 10-7B	N	N	3/30
3TF22 11-0A	N	N	3/31
3TF22 11-0B	N	N	3/31
3TF22 22-0A	N	N	3/31
3TF22 22-0B	N	N	3/31
3TF28 01-0A	N	N	3/30
3TF28 01-0B	N	N	3/30
3TF28 10-0A	N	N	3/30
3TF28 10-0B	N	N	3/30
3TF29 11-0A	N	N	3/31
3TF29 11-0B	N	N	3/31
3TF29 22-0A	N	N	3/31
3TF29 22-0B	N	N	3/31

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3TF68 33-1D	N	N	3/28
3TF68 33-1Q	N	N	3/28
3TF68 33-8D	N	N	3/28
3TF68 33-8Q	N	N	3/28
3TF68 4	N	N	3/28
3TF69 33-1D	N	N	3/28
3TF69 33-1Q	N	N	3/28
3TF69 33-8D	N	N	3/28
3TF69 33-8Q	N	N	3/28
3TF69 4	N	N	3/28
3TG			
3TG10 01-0A	N	N	3/96
3TG10 01-0B	N	N	3/96
3TG10 01-1A	N	N	3/96
3TG10 01-1B	N	N	3/96
3TG10 10-0A	N	N	3/96
3TG10 10-0B	N	N	3/96
3TG10 10-1A	N	N	3/96
3TG10 10-1B	N	N	3/96
3TH			
3TH20 22-0A	N	N	3/76
3TH20 22-0B	N	N	3/76
3TH20 22-3A	N	N	3/76
3TH20 22-3B	N	N	3/76
3TH20 22-6A	N	N	3/76
3TH20 22-6B	N	N	3/76
3TH20 22-7A	N	N	3/76
3TH20 22-7B	N	N	3/76
3TH20 31-0A	N	N	3/76
3TH20 31-0B	N	N	3/76
3TH20 31-3A	N	N	3/76
3TH20 31-3B	N	N	3/76
3TH20 31-6A	N	N	3/76
3TH20 31-6B	N	N	3/76
3TH20 31-7A	N	N	3/76
3TH20 31-7B	N	N	3/76
3TH20 40-0A	N	N	3/76
3TH20 40-0B	N	N	3/76
3TH20 40-3A	N	N	3/76
3TH20 40-3B	N	N	3/76
3TH20 40-6A	N	N	3/76
3TH20 40-6B	N	N	3/76
3TH20 40-7A	N	N	3/76
3TH20 40-7B	N	N	3/76
3TH22 44-0A	N	N	3/76
3TH22 44-0B	N	N	3/76
3TH22 53-0A	N	N	3/76
3TH22 53-0B	N	N	3/76
3TH22 62-0A	N	N	3/76
3TH22 62-0B	N	N	3/76
3TH22 71-0A	N	N	3/76
3TH22 71-0B	N	N	3/76

Order No.	Export markings		Page
	ECCN	AL	
3TH22 80-0A	N	N	3/76
3TH22 80-0B	N	N	3/76
3TH27 22-0A	N	N	3/77
3TH27 22-0B	N	N	3/77
3TH27 31-0A	N	N	3/77
3TH27 31-0B	N	N	3/77
3TH27 40-0A	N	N	3/77
3TH27 40-0B	N	N	3/77
3TH42 44-0A	N	N	3/73
3TH42 44-0B	N	N	3/73
3TH42 44-0L	N	N	3/60
3TH42 53-0A	N	N	3/73
3TH42 53-0B	N	N	3/73
3TH42 53-0L	N	N	3/60
3TH42 62-0A	N	N	3/73
3TH42 62-0B	N	N	3/73
3TH42 62-0L	N	N	3/60
3TH42 71-0A	N	N	3/73
3TH42 71-0B	N	N	3/73
3TH42 80-0A	N	N	3/73
3TH42 80-0B	N	N	3/73
3TH42 93-0A	N	N	3/73
3TH42 93-0B	N	N	3/73
3TH43 10-0A	N	N	3/74
3TH43 10-0B	N	N	3/74
3TH43 46-0A	N	N	3/74
3TH43 46-0B	N	N	3/74
3TH43 55-0A	N	N	3/74
3TH43 55-0B	N	N	3/74
3TH43 64-0A	N	N	3/74
3TH43 64-0B	N	N	3/74
3TH43 73-0A	N	N	3/74
3TH43 73-0B	N	N	3/74
3TH43 82-0A	N	N	3/74
3TH43 82-0B	N	N	3/74
3TH43 91-0A	N	N	3/74
3TH43 91-0B	N	N	3/74
3TH43 94-0A	N	N	3/74
3TH43 94-0B	N	N	3/74
3TK			
3TK10	N	N	3/54
3TK11	N	N	3/54
3TK12	N	N	3/54
3TK13	N	N	3/54
3TK14	N	N	3/54
3TK15	N	N	3/54
3TK17	N	N	3/54
3TK19 1	N	N	3/131
3TK19 2	N	N	3/131
3TK19 3	N	N	3/131
3TK19 4	N	N	3/131

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3TK19 5	N	N	3/131
3TK19 6	N	N	3/131
3TK19 7	On req.		3/131
3TK20 22-0A	N	N	3/55
3TK20 22-0B	N	N	3/55
3TK20 22-3A	N	N	3/55
3TK20 22-3B	N	N	3/55
3TK20 22-6A	N	N	3/55
3TK20 22-6B	N	N	3/55
3TK20 22-7A	N	N	3/55
3TK20 22-7B	N	N	3/55
3TK20 31-0A	N	N	3/55
3TK20 31-0B	N	N	3/55
3TK20 31-3A	N	N	3/55
3TK20 31-3B	N	N	3/55
3TK20 31-6A	N	N	3/55
3TK20 31-6B	N	N	3/55
3TK20 31-7A	N	N	3/55
3TK20 31-7B	N	N	3/55
3TK20 40-0A	N	N	3/55
3TK20 40-0B	N	N	3/55
3TK20 40-3A	N	N	3/55
3TK20 40-3B	N	N	3/55
3TK20 40-6A	N	N	3/55
3TK20 40-6B	N	N	3/55
3TK20 40-7A	N	N	3/55
3TK20 40-7B	N	N	3/55
3TK28 1	N	N	7/76
3TK28 20	EAR99	N	7/71, 7/77
3TK28 21	N	N	7/71
3TK28 22	N	N	7/71
3TK28 23	N	N	7/71
3TK28 24	N	N	7/71
3TK28 25	N	N	7/71
3TK28 26-0	N	N	7/77
3TK28 26-1	N	N	7/71
3TK28 26-2	N	N	7/71
3TK28 27	N	N	7/71
3TK28 28	N	N	7/71
3TK28 3	N	N	7/71
3TK28 40	N	N	7/73
3TK28 41	N	N	7/73
3TK28 42	N	N	7/73
3TK28 45	EAR99	N	7/73
3TK28 5	N	N	7/75
3TX			
3TX2	N	N	3/130
3TX40	N	N	3/125
3TX41	N	N	3/125
3TX42	N	N	3/125, 9/80
3TX44 0	N	N	3/122, 3/126

Order No.	Export markings		Page
	ECCN	AL	
3TX44 1	N	N	3/122, 3/126
3TX44 2	N	N	3/122, 3/126
3TX44 3	N	N	3/122, 3/126
3TX44 4	N	N	3/122, 3/126
3TX44 90	N	N	3/122 ... 123, 3/126 ... 127
3TX44 91-2A	EAR99	N	3/123 ... 124, 3/127
3TX44 91-2K	N	N	3/123 ... 124
3TX47	N	N	3/126, 16/58 ... 59
3TX6	N	N	3/121, 17/107
3TX70 0	N	N	3/82 ... 83, 3/86 ... 87, 3/92, 3/94
3TX70 1	N	N	3/84 ... 85
3TX70 9	N	N	3/121
3TX74	N	N	3/120, 3/125, 7/19
3TX75	N	N	3/113, 3/120 ... 121, 7/19
3TX76 80-0D	N	N	3/121
3TX76 80-0E	N	N	3/121
3TX76 86	N	N	3/121, 7/19
3TX76 9	N	N	3/121, 7/19
3TY			
3TY24 40	N	N	3/129
3TY24 42	N	N	3/122, 3/129
3TY24 80	N	N	3/129
3TY24 82	N	N	3/129
3TY25 20	N	N	3/129
3TY25 22	N	N	3/129
3TY25 60	N	N	3/129
3TY25 62	N	N	3/129
3TY27 40	N	N	3/130
3TY27 41	N	N	3/130
3TY27 42	N	N	3/130
3TY27 8	N	N	3/130
3TY64 43-0B	On req.		3/129
3TY64 43-0L	N	N	3/122
3TY64 83-0A	On req.		3/129
3TY64 83-0B	On req.		3/129
3TY64 83-0L	N	N	3/122
3TY65 00	N	N	3/128
3TY65 01	N	N	3/128 ... 129
3TY65 02	N	N	3/128
3TY65 03-0B	On req.		3/128
3TY65 03-0L	N	N	3/122
3TY65 20	N	N	3/128
3TY65 22	N	N	3/128
3TY65 23-0A	On req.		3/129
3TY65 23-0B	On req.		3/128 ... 129
3TY65 23-0L	N	N	3/122
3TY65 40	N	N	3/128
3TY65 42	N	N	3/128
3TY65 43-0B	On req.		3/128
3TY65 43-0L	N	N	3/122
3TY65 60	N	N	3/128

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3TY65 61	N	N	3/128 ... 129
3TY65 62	N	N	3/128
3TY65 63-0B	On req.		3/128 ... 129
3TY65 63-0L	N	N	3/122
3TY65 66	On req.		3/129
3TY74	On req.		3/129
3TY75	N	N	3/121, 3/130
3TY76 80	N	N	3/130
3TY76 81	N	N	3/130
3TY76 83-0C	On req.		3/130
3TY76 83-0D	On req.		3/130
3TY76 83-0Q	N	N	3/131
3TY76 84	N	N	3/131
3TY76 90	N	N	3/130
3TY76 93-0C	On req.		3/130
3TY76 93-0D	On req.		3/130
3TY76 93-0Q	N	N	3/131
3UF			
3UF18	N	N	7/19
3UF19	EAR99	N	7/15
3UF70	N	N	7/12
3UF71 00	N	N	7/12
3UF71 01	N	N	7/12
3UF71 02	N	N	7/12
3UF71 03-1A	N	N	7/12
3UF71 03-1B	N	N	7/12
3UF71 04	N	N	7/12
3UF71 10	N	N	7/12
3UF71 11	N	N	7/12
3UF71 12	N	N	7/12
3UF71 13-1A	EAR99	N	7/12
3UF71 13-1B	EAR99	N	7/12
3UF71 14	EAR99	N	7/12
3UF71 5	N	N	7/12
3UF72 0	N	N	7/12
3UF72 1	EAR99	N	7/12
3UF73	N	N	7/13
3UF74	N	N	7/13
3UF75	N	N	7/13
3UF77	N	N	7/13
3UF79 0	N	N	7/14
3UF79 1	N	N	7/14, 16/98
3UF79 2	N	N	7/14 ... 15, 7/80
3UF79 3	N	N	4/40, 7/14, 7/80
3UF79 40	N	N	4/40, 7/14, 7/80, 12/6, 12/13, 12/17
3UF79 46	5D992	N	2/18, 2/68, 4/40, 7/14, 7/80, 12/6, 12/9, 12/13, 12/17
3UF79 5	N	N	7/14, 7/80
3UF79 7	N	N	7/15
3UF79 82-0AA00	5D992	N	7/18, 12/14
3UF79 82-0AA01	N	N	7/18, 12/14

Order No.	Export markings		Page
	ECCN	AL	
3UF79 82-0AA02	5D992	N	7/18, 12/14
3UF79 82-0AA1	5D992	N	7/18, 12/14
3UG			
3UG30	N	N	7/52 ... 53
3UG32 07-1	N	N	7/55
3UG32 07-2A	N	9I999	7/55
3UG32 07-2B	N	N	7/55
3UG32 07-3	N	9I999	7/55
3UG32 08	N	N	7/57
3UG45 0	EAR99	N	7/54
3UG45 1	N	N	7/46
3UG46 1	N	N	7/46
3UG46 2	N	N	7/48, 7/50
3UG46 3	N	N	7/47
3UG46 4	N	N	7/49
3UG46 5	EAR99	N	7/56
3UL			
3UL	N	N	7/51
3VF			
3VF2	EAR99	N	16/99
3VF92 20	N	N	16/100
3VF92 21	EAR99	N	16/100
3VF92 22	EAR99	N	16/100
3VF92 23	EAR99	N	16/100
3VF92 24-1L	N	N	16/100
3VF92 24-1N	N	N	16/100
3VL			
3VL17 0	EAR99	N	16/10 ... 11, 16/34 ... 37
3VL17 1	EAR99	N	16/10 ... 11, 16/30 ... 31, 16/34 ... 37, 16/52 ... 53
3VL17 2	EAR99	N	16/10 ... 11, 16/34 ... 37
3VL17 9	EAR99	N	16/10 ... 11, 16/34 ... 37
3VL27 05	EAR99	N	16/12 ... 13, 16/34 ... 35, 16/38 ... 39
3VL27 06	EAR99	N	16/12 ... 13, 16/20 ... 21, 16/24 ... 25, 16/28 ... 31, 16/34 ... 35, 16/38 ... 39, 16/44 ... 47
3VL27 08	EAR99	N	16/12 ... 13, 16/34 ... 35, 16/38 ... 39
3VL27 10-1C	EAR99	N	16/20, 16/24, 16/28, 16/44, 16/46
3VL27 10-1D	EAR99	N	16/12, 16/30
3VL27 10-1E	EAR99	N	16/34, 16/38, 16/52
3VL27 10-2C	EAR99	N	16/21, 16/25, 16/29, 16/45, 16/47
3VL27 10-2D	EAR99	N	16/13, 16/31
3VL27 10-2E	EAR99	N	16/35, 16/39, 16/53
3VL27 10-3C	EAR99	N	16/21, 16/25, 16/29, 16/45, 16/47
3VL27 10-3D	EAR99	N	16/13, 16/31
3VL27 10-3E	EAR99	N	16/35, 16/39, 16/53
3VL27 12	EAR99	N	16/12 ... 13, 16/34 ... 35, 16/38 ... 39

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3VL27 16	EAR99	N	16/12 ... 13, 16/20 ... 21, 16/24 ... 25, 16/28 ... 31, 16/34 ... 35, 16/38 ... 39, 16/44 ... 47, 16/52 ... 53
3VL37 20-1C	EAR99	N	16/20, 16/24, 16/28, 16/44, 16/46
3VL37 20-1D	EAR99	N	16/12
3VL37 20-1E	EAR99	N	16/34, 16/38
3VL37 20-2C	EAR99	N	16/21, 16/25, 16/29, 16/45, 16/47
3VL37 20-2D	EAR99	N	16/13
3VL37 20-2E	EAR99	N	16/35, 16/39
3VL37 20-3C	EAR99	N	16/21, 16/25, 16/29, 16/45, 16/47
3VL37 20-3D	EAR99	N	16/13
3VL37 20-3E	EAR99	N	16/35, 16/39
3VL37 25-1C	EAR99	N	16/20, 16/24, 16/28, 16/44, 16/46
3VL37 25-1D	EAR99	N	16/12, 16/30
3VL37 25-1E	EAR99	N	16/34, 16/38, 16/52
3VL37 25-2C	EAR99	N	16/21, 16/25, 16/29, 16/45, 16/47
3VL37 25-2D	EAR99	N	16/13, 16/31
3VL37 25-2E	EAR99	N	16/35, 16/39, 16/53
3VL37 25-3C	EAR99	N	16/21, 16/25, 16/29, 16/45, 16/47
3VL37 25-3D	EAR99	N	16/13, 16/31
3VL37 25-3E	EAR99	N	16/35, 16/39, 16/53
3VL47 2	EAR99	N	16/12 ... 13, 16/30 ... 31, 16/34 ... 35, 16/38 ... 39
3VL47 3	EAR99	N	16/12 ... 13, 16/20 ... 21, 16/24 ... 25, 16/28 ... 31, 16/34 ... 35, 16/38 ... 39, 16/44 ... 47
3VL47 4	EAR99	N	16/12 ... 13, 16/20 ... 21, 16/24 ... 25, 16/30 ... 31, 16/34 ... 35, 16/38 ... 39, 16/44 ... 47, 16/52 ... 53
3VL57 3	EAR99	N	16/12 ... 13, 16/30 ... 31, 16/34 ... 35, 16/38 ... 39
3VL57 4	EAR99	N	16/12 ... 13, 16/34 ... 35, 16/38 ... 39
3VL57 50-1C	EAR99	N	16/28
3VL57 50-1DC	EAR99	N	16/12
3VL57 50-1DK	N	N	16/30
3VL57 50-1E	EAR99	N	16/34, 16/38
3VL57 50-2C	EAR99	N	16/29
3VL57 50-2DC	EAR99	N	16/13
3VL57 50-2DK	N	N	16/31
3VL57 50-2E	EAR99	N	16/35, 16/39
3VL57 50-3C	EAR99	N	16/29
3VL57 50-3DC	EAR99	N	16/13
3VL57 50-3DK	N	N	16/31
3VL57 50-3E	EAR99	N	16/35, 16/39
3VL57 63-1C	EAR99	N	16/20, 16/24, 16/44, 16/46
3VL57 63-1D	EAR99	N	16/12, 16/30
3VL57 63-1E	EAR99	N	16/34, 16/38, 16/52
3VL57 63-2C	EAR99	N	16/21, 16/25, 16/45, 16/47
3VL57 63-2D	EAR99	N	16/13, 16/31

Order No.	Export markings		Page
	ECCN	AL	
3VL57 63-2E	EAR99	N	16/35, 16/39, 16/53
3VL57 63-3C	EAR99	N	16/21, 16/25, 16/45, 16/47
3VL57 63-3D	EAR99	N	16/13, 16/31
3VL57 63-3E	EAR99	N	16/35, 16/39, 16/53
3VL67 80-1	EAR99	N	16/20, 16/24, 16/30, 16/44, 16/46, 16/52
3VL67 80-2	EAR99	N	16/21, 16/25, 16/31, 16/45, 16/47, 16/53
3VL67 80-3	EAR99	N	16/21, 16/25, 16/31, 16/45, 16/47, 16/53
3VL77 10	EAR99	N	16/20 ... 21, 16/24 ... 25, 16/44 ... 47
3VL77 12	EAR99	N	16/20 ... 21, 16/24 ... 25, 16/30 ... 31, 16/44 ... 47, 16/52 ... 53
3VL87 16-1	EAR99	N	16/20, 16/24, 16/30, 16/44, 16/46, 16/52
3VL87 16-2	EAR99	N	16/21, 16/25, 16/31, 16/45, 16/47, 16/53
3VL87 16-3	EAR99	N	16/21, 16/25, 16/31, 16/45, 16/47, 16/53
3VL90 00-4	EAR99	N	16/70 ... 75
3VL90 00-8AP	EAR99	N	16/84 ... 88
3VL90 00-8AQ	EAR99	N	16/98
3VL90 00-8AU	N	N	16/98
3VL90 00-8AV	EAR99	N	16/98
3VL90 00-8L	EAR99	N	16/83 ... 88
3VL91 0	EAR99	N	16/70, 16/77
3VL91 12-5GA	EAR99H	N	16/76
3VL91 12-5GB	EAR99	N	16/76
3VL91 16	EAR99	N	16/77
3VL92 00-3	EAR99	N	16/77 ... 78
3VL92 00-4	EAR99	N	16/71, 16/78
3VL92 10	N	N	16/90
3VL92 16-4	EAR99	N	16/77 ... 78
3VL92 16-5GC3	N	N	16/76
3VL92 16-5GC4	EAR99H	N	16/76
3VL92 16-5GD	EAR99H	N	16/76
3VL92 16-8	N	N	16/90
3VL92 8	N	N	16/90
3VL93 00-3A	EAR99	N	16/61
3VL93 00-3H	EAR99	N	16/61, 16/83 ... 85
3VL93 00-3M	EAR99	N	16/64
3VL93 00-3T	EAR99	N	16/79
3VL93 00-4E	EAR99	N	16/79
3VL93 00-4P	EAR99	N	16/70 ... 71
3VL93 00-4R	EAR99	N	16/79
3VL93 00-4TA	N	N	16/79
3VL93 00-4TC	EAR99	N	16/79
3VL93 00-4TD	EAR99	N	16/79
3VL93 00-4W	EAR99	N	16/71
3VL93 00-8B	EAR99	N	16/83 ... 85, 16/94 ... 95
3VL93 00-8C	EAR99	N	16/77 ... 79
3VL93 00-8L	EAR99	N	16/83 ... 85
3VL93 00-8S	EAR99	N	16/83 ... 85

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3VL93 20	EAR99	N	16/90
3VL93 21	EAR99	N	16/83 ... 85
3VL93 25-5GE3	N	N	16/76
3VL93 25-5GE4	EAR99H	N	16/76
3VL93 25-5GF	EAR99H	N	16/76
3VL93 25-8	EAR99	N	16/90
3VL94 00-1SC	N	N	16/58
3VL94 00-1SJ	EAR99	N	16/58
3VL94 00-1SK	N	N	16/58
3VL94 00-1SM	EAR99	N	16/58
3VL94 00-1SQ	N	N	16/58
3VL94 00-1SR	N	N	16/58
3VL94 00-1ST	N	N	16/58
3VL94 00-1SV	N	N	16/58
3VL94 00-1U	N	N	16/58
3VL94 00-2AB	EAR99	N	16/58
3VL94 00-2AD	EAR99	N	16/58
3VL94 00-2AH	EAR99	N	16/60
3VL94 00-2AJ	EAR99	N	16/60
3VL94 00-3A	EAR99	N	16/62
3VL94 00-3H	EAR99	N	16/62, 16/65, 16/85
3VL94 00-3MJ	N	N	16/65
3VL94 00-3ML	EAR99	N	16/65
3VL94 00-3MN	EAR99	N	16/65
3VL94 00-3MQ	EAR99	N	16/65
3VL94 00-3MS	EAR99	N	16/65
3VL94 00-3T	EAR99	N	16/79 ... 81
3VL94 00-4	EAR99	N	16/72, 16/79
3VL94 00-8	EAR99	N	16/79, 16/85, 16/94
3VL94 40-5GG	N	N	16/76
3VL94 40-5GH	EAR99	N	16/76
3VL94 40-8	EAR99	N	16/90
3VL95 0	EAR99	N	16/63, 16/73, 16/80, 16/85 ... 86
3VL95 6	N	N	16/90
3VL96 00-3A	EAR99	N	16/63
3VL96 00-3H	EAR99	N	16/63, 16/65, 16/86 ... 87
3VL96 00-3M	EAR99	N	16/65
3VL96 00-4	EAR99	N	16/73, 16/81
3VL96 00-8	EAR99	N	16/79 ... 81, 16/86 ... 87, 16/95
3VL96 8	N	N	16/90
3VL97 0	EAR99	N	16/81, 16/84 ... 88
3VL97 1	EAR99	N	16/83 ... 88, 16/90
3VL98 00-1S	N	N	16/59
3VL98 00-1UD	N	N	16/59
3VL98 00-1UG	N	N	16/59
3VL98 00-1UH	N	N	16/59
3VL98 00-1UJ	N	N	16/59
3VL98 00-1UK	EAR99	N	16/59
3VL98 00-1UL	N	N	16/59
3VL98 00-1UM	N	N	16/59

Order No.	Export markings		Page
	ECCN	AL	
3VL98 00-1UN	N	N	16/59
3VL98 00-1UP	N	N	16/59
3VL98 00-1UQ	N	N	16/59
3VL98 00-1UR	N	N	16/59
3VL98 00-1US	N	N	16/59
3VL98 00-1UU	N	N	16/59
3VL98 00-1UV	N	N	16/59
3VL98 00-2	EAR99	N	16/59
3VL98 00-3A	EAR99	N	16/66
3VL98 00-3H	EAR99	N	16/66, 16/87 ... 88
3VL98 00-3MJ	EAR99	N	16/66
3VL98 00-3ML	EAR99	N	16/66
3VL98 00-3MN	EAR99	N	16/66
3VL98 00-3MQ	N	N	16/66
3VL98 00-3MS	EAR99	N	16/66
3VL98 00-4	EAR99	N	16/74 ... 75, 16/81 ... 82
3VL98 00-8	EAR99	N	16/81 ... 82, 16/87 ... 88, 16/96 ... 97
3VL98 1	EAR99	N	16/60, 16/90
3WL			
3WL11	N	N	15/7 ... 8, 15/11 ... 12, 15/15 ... 16, 15/19 ... 20
3WL12	N	N	15/7 ... 9, 15/11 ... 13, 15/15 ... 17, 15/19 ... 21, 15/50 ... 52
3WL13	N	N	15/9 ... 10, 15/13 ... 14, 15/17 ... 18, 15/21 ... 22
3WL91 11-0AA1	N	N	15/34
3WL91 11-0AA2	N	N	15/34
3WL91 11-0AA3	N	N	15/34
3WL91 11-0AA5	N	N	15/34
3WL91 11-0AA6	N	N	15/34
3WL91 11-0AB01	N	N	15/39
3WL91 11-0AB02	N	N	15/39
3WL91 11-0AB03	N	N	15/39
3WL91 11-0AB04	N	N	15/39
3WL91 11-0AB07	N	N	15/39
3WL91 11-0AB08	N	N	15/39
3WL91 11-0AB10	N	N	15/39
3WL91 11-0AB12	N	N	15/39
3WL91 11-0AB18	N	N	15/39
3WL91 11-0AD	N	N	15/40
3WL91 11-0AE	N	N	15/40
3WL91 11-0AF	N	N	15/40
3WL91 11-0AG	N	N	15/40
3WL91 11-0AH	N	N	15/38
3WL91 11-0AJ	N	N	15/38
3WL91 11-0AK	N	N	15/34 ... 35
3WL91 11-0AL	N	N	15/45
3WL91 11-0AM0	N	N	15/45
3WL91 11-0AM9	N	N	15/47
3WL91 11-0AN0	N	N	15/46
3WL91 11-0AN1	N	N	15/46

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
3WL91 11-0AN2	N	N	15/46
3WL91 11-0AN3	N	N	15/46
3WL91 11-0AN4	N	N	15/46
3WL91 11-0AP	N	N	15/41
3WL91 11-0AR	N	N	15/41
3WL91 11-0AS	N	N	15/41
3WL91 11-0AT	N	N	15/34 ... 35, 15/37, 15/43 ... 44, 16/98
3WL91 11-0BA0	N	N	15/42
3WL91 11-0BA10	N	N	15/42
3WL91 11-0BA14	N	N	15/37, 16/58 ... 59
3WL91 11-0BA2	N	N	15/35
3WL91 11-0BA3	N	N	15/35
3WL91 11-0BA4	N	N	15/35
3WL91 11-0BA5	N	N	15/35
3WL91 11-0BA7	N	N	15/35, 15/38
3WL91 11-0BA8	N	N	15/35 ... 36
3WL91 11-0BB1	N	N	15/36
3WL91 11-0BB2	N	N	15/36
3WL91 11-0BB3	N	N	15/36
3WL91 11-0BB4	N	N	15/36
3WL91 11-0BB5	N	N	15/42
3WL91 11-0BB6	N	N	15/43
3WL91 11-0BC	N	N	15/43, 15/47, 16/98
3WL91 11-0BD	N	N	15/48
3WL91 12	N	N	15/36
3WL92	N	N	15/30 ... 33, 15/53 ... 54
3WL93	N	N	15/34
3ZS			
3ZS12	N	N	12/18
3ZS13 10	N	N	12/8 ... 9
3ZS13 12	N	N	7/17, 12/12 ... 13
3ZS13 13	N	N	4/40, 12/5 ... 6
3ZS13 14-4	On req.		7/80, 12/17
3ZS13 14-5CC10-0YA	N	N	7/80, 12/17
3ZS13 14-5CC10-0YD	On req.		7/80, 12/17
3ZS13 14-5CC10-0YL	N	N	7/80, 12/17
3ZS13 14-5CE	N	N	7/80, 12/17
3ZS16 35-1	5D992	N	2/7, 2/72
3ZS16 35-2	N	N	2/72
3ZS23	N	N	15/43, 16/98, 18/14
3ZS27 81	5D992	N	13/7, 18/11
3ZS27 82	5D992	N	18/12
3ZS27 85	EAR99S	N	18/8
3ZS27 91-1CC10-0	5D992	N	13/7, 18/13
3ZS27 91-1CC10-6	N	N	13/7, 18/13
3ZS27 95	EAR99S	N	18/10
3ZX			
3ZX	On req.		4/10, 4/20, 4/41
4AM			
4AM2	N	N	10/20 ... 23, 10/42 ... 46
4AM3	N	N	10/6 ... 19, 10/24 ... 41

Order No.	Export markings		Page
	ECCN	AL	
4AM4	N	N	10/6 ... 19, 10/24 ... 41
4AM5	N	N	10/6 ... 19, 10/24 ... 41
4AM6	N	N	10/24 ... 41
4AP			
4AP	N	N	10/55 ... 57, 10/60 ... 61
4AT			
4AT30 1	N	N	10/47
4AT30 3	N	N	10/24 ... 36, 10/39 ... 41
4AT36 0	N	N	10/47
4AT36 1	N	N	10/24 ... 36, 10/39 ... 41, 10/47
4AT36 3	N	N	10/24 ... 36, 10/39 ... 41
4AT39 0	N	N	10/47
4AT39 1	N	N	10/24 ... 36, 10/39 ... 41, 10/47
4AT39 3	N	N	10/24 ... 36, 10/39 ... 41
4AT4	N	N	10/47
4AU, 4AV			
4AU	N	N	10/55 ... 56, 10/60 ... 61
4AV	N	N	11/5 ... 10
4BU			
4BU43 32-2A	N	N	10/63, 10/66, 10/69, 10/71
4BU43 32-2C	N	N	10/64, 10/67, 10/69, 10/71
4BU43 32-2E	N	N	10/65, 10/68, 10/70, 10/72
4BU43 32-5A	N	N	10/63, 10/66, 10/69, 10/71
4BU43 32-5C	N	N	10/64, 10/67, 10/69, 10/71
4BU43 32-5E	N	N	10/65, 10/68, 10/70, 10/72
4BU43 33-2A	N	N	10/73, 10/76, 10/79, 10/81
4BU43 33-2C	N	N	10/74, 10/77, 10/79, 10/81
4BU43 33-2E	N	N	10/75, 10/78, 10/80, 10/82
4BU43 33-5A	N	N	10/73, 10/76, 10/79, 10/81
4BU43 33-5C	N	N	10/74, 10/77, 10/79, 10/81
4BU43 33-5E	N	N	10/75, 10/78, 10/80, 10/82
4BU43 42-2A	N	N	10/63, 10/66, 10/69, 10/71
4BU43 42-2C	N	N	10/64, 10/67, 10/69, 10/71
4BU43 42-2E	N	N	10/65, 10/68, 10/70, 10/72
4BU43 42-5A	N	N	10/63, 10/66, 10/69, 10/71
4BU43 42-5C	N	N	10/64, 10/67, 10/69, 10/71
4BU43 42-5E	N	N	10/65, 10/68, 10/70, 10/72
4BU43 43-2A	N	N	10/73, 10/76, 10/79, 10/81
4BU43 43-2C	N	N	10/74, 10/77, 10/79, 10/81
4BU43 43-2E	N	N	10/75, 10/78, 10/80, 10/82
4BU43 43-5A	N	N	10/73, 10/76, 10/79, 10/81
4BU43 43-5C	N	N	10/74, 10/77, 10/79, 10/81
4BU43 43-5E	N	N	10/75, 10/78, 10/80, 10/82
4BU43 52-2A	N	N	10/63, 10/66, 10/69, 10/71
4BU43 52-2C	N	N	10/64, 10/67, 10/69, 10/71
4BU43 52-2E	N	N	10/65, 10/68, 10/70, 10/72
4BU43 52-5A	N	N	10/63, 10/66, 10/69, 10/71
4BU43 52-5C	N	N	10/64, 10/67, 10/69, 10/71
4BU43 52-5E	N	N	10/65, 10/68, 10/70, 10/72
4BU43 53-2A	N	N	10/73, 10/76, 10/79, 10/81
4BU43 53-2C	N	N	10/74, 10/77, 10/79, 10/81

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
4BU54 32-2E	N	N	10/65, 10/68, 10/70, 10/72
4BU54 32-5A	N	N	10/63, 10/66, 10/69, 10/71
4BU54 32-5C	N	N	10/64, 10/67, 10/69, 10/71
4BU54 32-5E	N	N	10/65, 10/68, 10/70, 10/72
4BU54 33-2A	N	N	10/73, 10/76, 10/79, 10/81
4BU54 33-2C	N	N	10/74, 10/77, 10/79, 10/81
4BU54 33-2E	N	N	10/75, 10/78, 10/80, 10/82
4BU54 33-5A	N	N	10/73, 10/76, 10/79, 10/81
4BU53 33-5C	N	N	10/74, 10/77, 10/79, 10/81
4BU54 33-5E	N	N	10/75, 10/78, 10/80, 10/82
4BU54 42-2A	N	N	10/63, 10/66, 10/69, 10/71
4BU54 42-2C	N	N	10/64, 10/67, 10/69, 10/71
4BU54 42-2E	N	N	10/65, 10/68, 10/70, 10/72
4BU54 42-5A	N	N	10/63, 10/66, 10/69, 10/71
4BU53 42-5C	N	N	10/64, 10/67, 10/69, 10/71
4BU54 42-5E	N	N	10/65, 10/68, 10/70, 10/72
4BU54 43-2A	N	N	10/73, 10/76, 10/79, 10/81
4BU54 43-2C	N	N	10/74, 10/77, 10/79, 10/81
4BU54 43-2E	N	N	10/75, 10/78, 10/80, 10/82
4BU54 43-5A	N	N	10/73, 10/76, 10/79, 10/81
4BU53 43-5C	N	N	10/74, 10/77, 10/79, 10/81
4BU54 43-5E	N	N	10/75, 10/78, 10/80, 10/82
4BU55 32	N	N	10/63 ... 68
4BU55 33	N	N	10/73 ... 78
4BU56 32	N	N	10/63 ... 68
4BU56 33	N	N	10/73 ... 78
4BU56 42	N	N	10/63 ... 68
4BU56 43	N	N	10/73 ... 78
4BU58 32	N	N	10/63 ... 68
4BU58 33	N	N	10/73 ... 78
4BU58 42	N	N	10/63 ... 68
4BU58 43	N	N	10/73 ... 78
4BU58 52	N	N	10/63 ... 68
4BU58 53	N	N	10/73 ... 78
4BU59 32	N	N	10/63 ... 68
4BU59 33	N	N	10/73 ... 78
4BU60 32	N	N	10/63 ... 68
4BU60 33	N	N	10/73 ... 78
4FL			
4FL1	N	N	10/52, 10/85
4FL2	N	N	10/52, 10/85
4FL3	N	N	10/52, 10/85
4FL40	N	N	10/85
4FL41	N	N	10/52
4FL42	N	N	10/85
4FL43	N	N	10/85
4FL44	N	N	10/52
4FL45 1	N	N	10/85
4FL45 2	N	N	10/85
4FL46	N	N	10/85
4FL47	N	N	10/85

Order No.	Export markings		Page
	ECCN	AL	
4FL48	N	N	10/52
4FL49	N	N	10/85
4FL50	N	N	10/85
4FL51	N	N	10/85
4FL52	N	N	10/85
4FL53	N	N	10/85
4NC			
4NC	N	N	16/92 ... 93
5SA, 5SB, 5SC			
5SA	N	N	19/71
5SB	N	N	19/71
5SC	N	N	19/71
5SD			
5SD4	N	N	19/111
5SD5	N	N	19/111
5SD6	N	N	19/72
5SD74 1	N	N	19/122, 19/128
5SD74 2	N	N	19/126, 19/128
5SD74 3	N	N	19/127 ... 128
5SD74 41	N	N	19/123
5SD74 42	N	N	19/123
5SD74 43	N	N	19/123
5SD74 44	N	N	19/123
5SD74 48	N	N	19/128
5SD74 6	N	N	19/125 ... 126, 19/128
5SD74 7	N	N	19/125
5SD74 8	N	N	19/125 ... 126, 19/128
5SD74 9	N	N	19/128
5SD75	N	N	19/130
5SD8	N	N	19/71
5SE, 5SF			
5SE	N	N	19/65, 19/111
5SF	N	N	17/138, 19/72 ... 73, 19/117 ... 118
5SG			
5SG1	N	N	19/66 ... 67
5SG5	N	N	19/66 ... 67
5SG6	N	N	17/138, 19/117
5SG71 1	N	N	19/65
5SG71 2	N	N	19/65
5SG71 3	N	N	19/65
5SG71 5	N	N	19/65
5SG71 6	N	N	19/65
5SG72	N	N	19/118
5SG76	N	N	19/66
5SH			
5SH1	N	N	19/73
5SH2	N	N	17/138, 19/74, 19/118
5SH30	N	N	19/74, 19/118
5SH31	N	N	19/74
5SH32 0	N	N	19/74
5SH32 1	N	N	19/74

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
5SH32 2	N	N	19/74
5SH32 8	N	N	19/74
5SH33	N	N	19/74 ... 75
5SH34	N	N	19/75
5SH35 0	N	N	19/84
5SH35 2	N	N	17/129 ... 130, 19/121
5SH35 30	N	N	17/129, 19/121
5SH35 31	N	N	17/130, 19/121
5SH35 32	N	N	17/129, 19/121
5SH35 33	N	N	17/129, 19/121
5SH35 34	N	N	17/129, 19/121
5SH35 35	N	N	17/132, 19/114
5SH35 36	N	N	17/129, 17/131, 19/115, 19/121
5SH35 37	N	N	17/129, 17/131, 19/115, 19/121
5SH35 38	N	N	19/114
5SH35 4	N	N	19/84, 19/113
5SH35 5	N	N	19/84
5SH37	N	N	19/74
5SH4	N	N	19/68
5SH50	N	N	19/68
5SH51	N	N	19/69
5SH52	N	N	17/138, 19/67 ... 68, 19/117
5SH53	N	N	19/83 ... 84
5SH54	N	N	19/68 ... 69
5SH55 0	N	N	19/69
5SH55 1	N	N	19/83
5SH55 25	N	N	19/119
5SH55 26	N	N	19/119
5SH55 27	N	N	19/65, 19/119
5SH55 3	N	N	19/65
5SJ, 5SK			
5SJ	N	N	19/22, 19/40 ... 43
5SK	N	N	19/46
5SM			
5SM1	N	N	19/54
5SM2	N	N	19/27 ... 28, 19/56 ... 57
5SM31	N	N	19/48
5SM33 1	N	N	19/48 ... 50
5SM33 2	EAR99H	N	19/51 ... 52
5SM33 42-4	EAR99H	N	19/51 ... 52
5SM33 42-6	N	N	19/48 ... 50
5SM33 44-4	EAR99H	N	19/51 ... 52
5SM33 44-6	N	N	19/48 ... 50
5SM33 45	N	N	19/48
5SM33 46-4	EAR99H	N	19/51 ... 52
5SM33 46-6	N	N	19/48 ... 50
5SM33 47-4	EAR99H	N	19/51 ... 52
5SM33 47-6	N	N	19/48 ... 49
5SM33 48	N	N	19/48
5SM33 5	N	N	19/49

Order No.	Export markings		Page
	ECCN	AL	
5SM34	N	N	19/48, 19/50
5SM36 1	N	N	19/48, 19/50
5SM36 2	EAR99H	N	19/51 ... 52
5SM36 42-4	EAR99H	N	19/51 ... 52
5SM36 42-6	N	N	19/48 ... 49
5SM36 44-4	EAR99H	N	19/51 ... 52
5SM36 44-6	N	N	19/48 ... 50
5SM36 44-8	N	N	19/50
5SM36 45	N	N	19/48, 19/50
5SM36 46-4	EAR99H	N	19/51 ... 52
5SM36 46-5	EAR99H	N	19/51
5SM36 46-5K	N	N	19/52
5SM36 46-6	N	N	19/48 ... 50
5SM36 46-8	N	N	19/50
5SM36 47-4	EAR99H	N	19/51 ... 52
5SM36 47-5	EAR99H	N	19/51
5SM36 47-5K	N	N	19/52
5SM36 47-6	N	N	19/48 ... 50
5SM36 48	N	N	19/48, 19/50
5SM36 5	N	N	19/49
5SM37 42	N	N	19/48
5SM37 44	N	N	19/48
5SM37 45	N	N	19/48, 19/50
5SM37 46-4	EAR99H	N	19/51
5SM37 46-5	EAR99H	N	19/51
5SM37 46-6	N	N	19/48 ... 49
5SM37 47-4	EAR99H	N	19/51
5SM37 47-5	EAR99H	N	19/51
5SM37 48	N	N	19/48
5SM38	N	N	19/50
5SP			
5SP	N	N	19/13 ... 14
5ST			
5ST1	N	N	19/46
5ST21 34	N	N	19/30, 19/63
5ST21 35	N	N	19/30, 19/63
5ST21 36	N	N	19/30, 19/63
5ST21 4	N	N	19/62
5ST21 56	N	N	19/62
5ST21 57	N	N	19/62, 19/84
5ST21 7	N	N	19/29, 19/63
5ST21 8	N	N	19/82
5ST21 9	N	N	19/82
5ST22	N	N	19/29, 19/63
5ST30	N	N	19/26, 19/44, 19/54, 19/65
5ST35	N	N	19/38
5ST36	N	N	19/24, 19/32 ... 33, 19/36, 19/44 ... 45, 19/62, 19/83, 19/85
5ST37 0	N	N	19/34, 19/36, 19/62, 19/82 ... 83, 19/85
5ST37 1	N	N	19/34, 19/36, 19/62, 19/82 ... 83, 19/85

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
5ST37 3	N	N	19/33, 19/62
5ST37 40	N	N	19/33
5ST37 41	N	N	19/33
5ST37 42	N	N	19/33
5ST37 43	N	N	19/33
5ST37 44	N	N	19/33
5ST37 45	N	N	19/33
5ST37 46	N	N	19/33
5ST37 48	N	N	19/34, 19/83
5ST37 48-0	N	N	19/36, 19/85
5ST37 50	N	N	19/34, 19/62, 19/83
5ST37 50-0	N	N	19/36, 19/85
5ST37 6	N	N	19/24, 19/34
5ST37 7	N	N	19/36, 19/62, 19/85
5ST38 00	N	N	19/29
5ST38 01	N	N	19/29, 19/45
5ST38 02	N	N	19/29, 19/45, 19/55
5ST38 03	N	N	19/29
5ST38 05	N	N	19/26, 19/60
5ST38 06	N	N	19/29
5SU			
5SU	N	N	19/52 ... 53, 19/59 ... 60
5SW			
5SW1	N	N	19/30, 19/63
5SW30	N	N	19/30, 19/54, 19/63
5SW33 00	N	N	19/54
5SW33 01	N	N	19/54
5SW33 02	N	N	19/54
5SW33 03	N	N	19/55
5SW33 1	N	N	19/55
5SW33 3	N	N	19/54
5SY			
5SY4	N	N	19/9 ... 12
5SY5	N	N	19/14 ... 15
5SY6	N	N	19/6 ... 8, 19/24
5SY7	N	N	19/16 ... 18
5SY8	N	N	19/19 ... 20
5TE, 5TG, 5TT			
5TE	N	N	19/131 ... 132
5TG	N	N	19/29
5TT	N	N	19/95
6AG			
6AG10	N	N	7/26
6AG11 31-4BD	N	N	6/87
6AG11 31-4BF	EAR99H	N	6/87
6AG11 32-4BB	EAR99H	N	6/87
6AG11 32-4BD01	N	N	6/87
6AG11 32-4BD02	EAR99H	N	6/87
6AG11 32-4BD3	EAR99H	N	6/87
6AG11 32-4BF	On req.		6/87
6AG11 32-4H	EAR99H	N	6/87
6AG11 34	EAR99H	N	6/88

Order No.	Export markings		Page
	ECCN	AL	
6AG11 38	EAR99H	N	6/86, 6/90, 6/93
6AG11 51-1A	N	N	6/81
6AG11 51-1B	EAR99H	N	6/81
6AG11 51-3	EAR99H	N	6/82
6AG11 51-7	EAR99H	N	6/84
6AG11 9	N	N	6/98
6BK			
6BK	EAR99H	N	7/24
6ED			
6ED10 50	N	N	7/26
6ED10 52	N	N	7/21 ... 22
6ED10 55-1C	N	N	7/23
6ED10 55-1F	N	N	7/23
6ED10 55-1H	N	N	7/23
6ED10 55-1MA	N	N	7/23
6ED10 55-1MB	N	N	7/23
6ED10 55-1MD	N	N	7/23
6ED10 55-1MM	EAR99H	N	7/23
6ED10 55-1N	N	N	7/23
6ED10 55-4	N	N	7/26
6ED10 56	N	N	7/26
6ED10 57-1AA00	N	N	6/77, 7/26, 12/9
6ED10 57-1AA01	EAR99T	N	7/26
6ED10 57-1C	N	N	7/26
6ED10 57-3	EAR99T	N	7/26
6ED10 57-4	N	N	7/27
6ED10 58	EAR99S	N	7/28
6EP			
6EP13	N	N	11/11 ... 13
6EP14	N	N	11/12 ... 13
6EP17	N	N	11/12
6EP19 31	N	N	11/15
6EP19 33	N	N	11/16
6EP19 35-5	N	N	11/16
6EP19 35-6MC	EAR99H	N	11/15
6EP19 35-6MD	N	N	11/15
6EP19 35-6ME	N	N	11/15
6EP19 35-6MF	N	N	11/15
6EP19 6	N	N	11/14
6ES			
6ES5	N	N	6/81 ... 85
6ES71 31-4BB	EAR99H	N	6/87
6ES71 31-4BD01-0AA	EAR99H	N	6/87
6ES71 31-4BD01-0AB	N	N	6/87
6ES71 31-4BD5	EAR99H	N	6/87
6ES71 31-4BF	EAR99H	N	6/87
6ES71 31-4C	EAR99H	N	6/87
6ES71 31-4E	EAR99H	N	6/87
6ES71 31-4F	EAR99H	N	6/87
6ES71 31-4R	EAR99H	N	6/87
6ES71 32-4BB01-0AA	EAR99H	N	6/87
6ES71 32-4BB01-0AB	N	N	6/87

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
6ES71 32-4BB31-0AA	N	N	6/87
6ES71 32-4BB31-0AB	EAR99H	N	6/87
6ES71 32-4BD0	EAR99H	N	6/87
6ES71 32-4BD3	N	N	6/87
6ES71 32-4BD5	EAR99H	N	6/87
6ES71 32-4BF	EAR99H	N	6/87
6ES71 32-4F	EAR99H	N	6/87
6ES71 32-4HB0	N	N	6/87
6ES71 32-4HB1	EAR99H	N	6/87
6ES71 32-4HB5	EAR99H	N	6/87
6ES71 34-4FB0	N	N	6/88
6ES71 34-4FB5	EAR99H	N	6/88
6ES71 34-4G	EAR99H	N	6/88
6ES71 34-4J	EAR99H	N	6/88
6ES71 34-4L	EAR99H	N	6/88
6ES71 34-4M	EAR99H	N	6/88
6ES71 34-4N	EAR99H	N	6/88
6ES71 35	EAR99H	N	6/88
6ES71 38-4A	EAR99H	N	6/86
6ES71 38-4CA0	EAR99H	N	6/86
6ES71 38-4CA5	N	N	6/86
6ES71 38-4CB	EAR99H	N	6/86
6ES71 38-4CF	EAR99H	N	6/89
6ES71 38-4DA	N	N	6/93
6ES71 38-4DB	N	N	6/92
6ES71 38-4DC	N	N	6/92
6ES71 38-4DD	N	N	6/92
6ES71 38-4DE	N	N	6/93
6ES71 38-4DF	EAR99H	N	6/93
6ES71 38-4DL	N	N	6/92
6ES71 38-4F	EAR99H	N	6/86, 6/89 ... 90
6ES71 38-4G	EAR99H	N	2/8, 2/74, 6/92
6ES71 38-4H	N	N	6/84
6ES71 4	EAR99H	N	2/74, 6/104, 6/116 ... 118
6ES71 51-1A	EAR99H	N	6/80
6ES71 51-1BA	N	N	6/80, 6/89 ... 90
6ES71 51-1BB	On req.		6/89 ... 90
6ES71 51-1CA00-0	N	N	6/80
6ES71 51-1CA00-1	EAR99H	N	6/80
6ES71 51-1CA00-3	EAR99H	N	6/80
6ES71 51-3	EAR99H	N	6/81, 6/89 ... 90
6ES71 51-7	N	N	6/83 ... 84
6ES71 51-8	EAR99H	N	6/83, 6/85
6ES71 54	EAR99H	N	6/110, 6/112, 6/114 ... 115, 6/117
6ES71 93-4BA0	N	N	6/80, 6/82 ... 88, 6/92 ... 93
6ES71 93-4BA1	N	N	6/81
6ES71 93-4BB0	N	N	6/80, 6/82 ... 88, 6/92 ... 93
6ES71 93-4BB1	N	N	6/81
6ES71 93-4BD0	N	N	6/80, 6/82 ... 88, 6/92 ... 93
6ES71 93-4BD1	N	N	6/81
6ES71 93-4BH0	N	N	6/80, 6/82 ... 88, 6/92 ... 93

Order No.	Export markings		Page
	ECCN	AL	
6ES71 93-4BH1	N	N	6/81
6ES71 93-4C	N	N	6/89 ... 91, 6/93 ... 97
6ES71 93-4D	N	N	6/80
6ES71 93-4F	N	N	6/80
6ES71 93-4G	N	N	6/88, 6/93 ... 95, 6/97
6ES71 93-4J	N	N	6/81 ... 85
6ES71 93-4L	N	N	6/79, 6/91, 6/97
6ES71 94-1	N	N	2/46, 2/70, 6/110, 6/137, 6/165, 6/168
6ES71 94-3	N	N	6/111, 6/135
6ES71 94-4AA	EAR99H	N	6/110
6ES71 94-4AC	EAR99H	N	6/110
6ES71 94-4AD	N	N	6/110
6ES71 94-4AF	EAR99H	N	6/112
6ES71 94-4AG	EAR99H	N	6/112
6ES71 94-4AJ	EAR99H	N	6/112
6ES71 94-4AN	EAR99H	N	6/115
6ES71 94-4BA	EAR99H	N	6/117
6ES71 94-4BC	N	N	6/117
6ES71 94-4BD	EAR99H	N	6/117
6ES71 94-4BE	EAR99H	N	6/117
6ES71 94-4BH	EAR99H	N	6/118
6ES71 94-4C	N	N	6/116 ... 117
6ES71 94-4DA	EAR99H	N	6/104
6ES71 94-4DC	N	N	6/117
6ES71 94-4DD	N	N	6/117
6ES71 94-4E	EAR99H	N	6/116
6ES71 94-4F	EAR99H	N	6/116
6ES71 94-4G	N	N	6/109, 6/111, 6/113 ... 114
6ES71 94-4H	N	N	6/111, 6/113 ... 114, 6/116 ... 117
6ES71 94-4M	EAR99H	N	6/114
6ES71 95	N	N	6/80
6ES73	N	N	2/23, 6/92
6ES77	N	N	6/83 ... 85
6ES78	N	N	6/84 ... 85, 6/89 ... 90
6ES79 5	N	N	6/82 ... 85, 6/114 ... 115
6ES79 72-0BA5	EAR99H	N	2/28, 6/80
6ES79 72-0BA6	N	N	2/26, 2/28
6ES79 72-0BB5	EAR99H	N	2/28, 6/80
6ES79 72-0BB6	N	N	2/26, 2/28
6ES79 91	N	N	6/112
6ES79 98-8XC01-8YE0	EAR99S	N	6/80, 6/82, 6/89 ... 90, 6/112 ... 113
6ES79 98-8XC01-8YE2	5D992	N	6/80, 6/82, 6/89 ... 90, 6/112 ... 113
6FX			
6FX2	On req.		6/93
6FX5	N	N	6/92 ... 93
6GK			
6GK12	EAR99H	N	2/63
6GK14	EAR99H	N	2/26, 2/28, 2/35
6GK15	N	N	2/28

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
6GK19 00	N	N	2/26, 2/35, 6/81, 6/113
6GK19 01-0DB	N	N	6/113, 6/115
6GK19 01-ODM	EAR99H	N	6/113, 6/115
6GK19 01-0F	EAR99H	N	6/80
6GK19 01-1	N	N	6/81, 6/84 ... 85, 6/115
6GK19 01-1BB1	N	N	6/84 ... 85, 6/113 ... 115
6GK19 01-1BB2	N	N	2/26, 2/35, 6/81, 6/115
6GK19 05-0	N	N	6/110 ... 112, 6/114, 6/118, 6/165, 6/168, 6/170
6GK19 05-6	N	N	2/26, 2/28
6GK19 07	N	N	6/113
6GK19 7	N	N	6/170
6GK5	N	N	6/82, 6/114 ... 115
6GK7	N	N	2/21, 2/23
6SL			
6SL32 3	EAR99	N	6/118
6SL32 5	On req.		6/135
6SL32 6	EAR99	N	6/118
6XV			
6XV18 2	N	N	6/111 ... 112, 6/114, 6/118
6XV18 3	N	N	2/26, 2/28, 6/110 ... 112, 6/114, 6/117 ... 118, 6/134, 6/167, 6/170
6XV18 4	N	N	6/81, 6/84 ... 85, 6/113, 6/115, 6/135
6XV18 6	N	N	6/110, 6/168
6XV18 7	N	N	6/112 ... 115, 6/135
7KM			
7KM21 11	EAR99H	N	13/7
7KM21 12-0BA00-2	EAR99H	N	13/7
7KM21 12-0BA00-3	EAR99S	N	13/7
7KM3	N	N	13/6
7KM4	EAR99H	N	13/8
7KM9	N	N	13/9 ... 10
7KT			
7KT10 0	N	N	19/142
7KT10 10	N	N	19/142
7KT10 11	N	N	19/142
7KT10 12	N	N	19/142
7KT10 2	N	N	19/142
7KT11 1	N	N	19/142
7KT11 2	N	N	19/142
7KT11 4	N	N	19/142
7KT12	N	N	19/140
7KT13	N	N	19/133, 19/135 ... 137
7KT15	N	N	19/139, 19/141
7KT55	N	N	19/144
7KT56	N	N	19/144
7KT58 0	N	N	19/143
7KT58 1	N	N	19/143
7KT58 2	N	N	19/143
7KT58 3	N	N	19/143
7KT90 0	N	91999	19/144

Order No.	Export markings		Page
	ECCN	AL	
7KT90 10	N	N	19/140
7KT90 11	N	N	19/140
7KT90 2	N	N	19/144
7LF			
7LF	N	N	19/30
7MH			
7MH44	EAR99H	N	6/95
7MH46	EAR99H	N	6/94
7MH47	N	N	6/94 ... 95
7MH49	N	N	6/94 ... 95
7PV			
7PV15 0	N	N	7/41
7PV15 1	N	N	7/41
7PV15 3	N	N	7/41
7PV15 4	N	N	7/41
7PV15 5	N	N	7/41
7PV15 7	N	N	7/41
8GB			
8GB	N	N	19/30
8GK			
8GK4	N	N	19/113, 19/115
8GK97 1	N	N	19/113
8GK97 3	N	N	19/113
8HP			
8HP27 0	N	N	17/34
8HP27 1	N	N	17/34
8HP27 3	N	N	17/34
8HP27 4	N	N	17/34
8HP27 5	N	N	17/34
8HP27 6	N	N	17/34
8JH, 8JK, 8MF			
8JH	N	N	19/84, 19/114
8JK	N	N	19/114 ... 115
8MF	N	N	14/14 ... 15
8MR			
8MR21 1	N	N	14/18, 14/20
8MR21 2	N	N	14/19
8MR21 3	N	N	14/20
8MR21 40-0	N	N	14/19
8MR21 40-1	N	N	14/19
8MR21 40-2A	N	N	14/19
8MR21 40-2B	EAR99	N	14/19
8MR21 40-3A	N	N	14/19
8MR21 40-3B	EAR99	N	14/19
8MR21 40-3C	N	N	14/21
8MR21 40-3D	N	N	14/21
8MR21 40-4A	N	N	14/19
8MR21 40-4B	EAR99	N	14/19
8MR21 40-5	N	N	14/21
8MR21 40-6	N	N	14/19
8MR21 5	N	N	14/21
8MR21 7	N	N	14/22 ... 24

Appendix

Order No. index
including export markings

Order No.	Export markings		Page
	ECCN	AL	
8MR21 8	N	N	14/24
8UB			
8UB	N	N	17/32 ... 33
8UC			
8UC6	N	N	16/67, 17/35 ... 37, 17/43 ... 45, 17/50 ... 51, 17/56
8UC70	N	N	16/67, 17/56
8UC71 1	N	N	16/67, 16/69, 16/100, 17/35, 17/43, 17/50, 17/55 ... 56
8UC71 2	N	N	16/67, 16/69, 16/100, 17/29, 17/35, 17/41, 17/43, 17/49 ... 50, 17/55 ... 56
8UC71 61	N	N	17/55
8UC71 62	On req.		16/69
8UC71 7	On req.		16/69
8UC72 1	N	N	16/67, 17/35, 17/44, 17/50, 17/55 ... 56
8UC72 2	N	N	16/67, 17/29, 17/35, 17/41, 17/44, 17/49 ... 50, 17/55 ... 56
8UC72 6	N	N	16/69, 17/55
8UC73 1	N	N	16/67, 16/69, 17/33, 17/35 ... 37, 17/44, 17/51, 17/55 ... 56
8UC73 2	N	N	16/67, 16/69, 17/29, 17/31, 17/33, 17/35 ... 37, 17/41, 17/44, 17/49, 17/51, 17/55 ... 56
8UC74	N	N	17/36 ... 37, 17/41, 17/45, 17/55 ... 56
8UC9	N	N	17/31 ... 33, 17/36 ... 37, 17/41, 17/45, 17/56 ... 57
8US			
8US10	N	N	5/23, 5/33, 6/25, 16/89, 17/123 ... 124
8US11	N	N	5/23, 17/124, 17/135
8US12	N	N	5/23, 5/33, 6/25, 6/43, 16/90, 17/107, 17/132, 17/134 ... 136, 19/119
8US19 0	N	N	17/121
8US19 21-1	N	N	17/132, 19/114
8US19 21-2AA	N	N	17/122, 17/133, 19/114
8US19 21-2AB	N	N	17/122, 17/133, 19/114
8US19 21-2AC	N	N	17/122, 17/133, 19/114
8US19 21-2AD00	N	N	17/122, 17/133, 19/114
8US19 21-2AD01	N	N	17/122, 17/133
8US19 21-2BA	N	N	17/122, 17/133, 19/114
8US19 21-2BB	N	N	17/122, 17/133, 19/114
8US19 21-2BC	N	N	17/122, 17/133, 19/114
8US19 21-2BD00	N	N	17/122, 17/133, 19/114
8US19 21-2BD01	N	N	17/122, 17/133
8US19 21-2BE	N	N	17/130, 17/139
8US19 21-2BF	N	N	17/126, 17/130, 17/139
8US19 22-1	N	N	17/122, 17/129 ... 131, 17/133, 19/121
8US19 22-2	N	N	17/121, 17/129, 17/131, 19/113
8US19 23	N	N	17/128, 19/121

Order No.	Export markings		Page
	ECCN	AL	
8US19 27	N	N	16/90, 17/135
8US19 41-2AA01	N	N	17/133
8US19 41-2AA02	N	N	17/133
8US19 41-2AA03	N	N	17/132
8US19 41-2AA04	N	N	17/133
8US19 41-2AC	N	N	17/133
8US19 41-2B	N	N	17/131, 17/133, 19/115
8US19 43	N	N	17/131
8US19 48	N	N	17/131
8US19 98-1	N	N	6/26, 17/123 ... 124, 17/126, 17/134 ... 136, 17/139, 19/119
8US19 98-2	N	N	6/26, 17/124, 17/136, 19/119
8US19 98-4	N	N	17/126, 17/139
8US19 98-7	N	N	5/33, 6/25, 17/126, 17/139
8US19 98-8	N	N	6/26, 17/126, 17/139
8WA			
8WA28 0	N	N	3/114, 5/33, 5/62, 6/44, 6/51, 7/57, 7/63, 7/67, 7/77
8WA28 4	N	N	6/88, 6/91, 6/94 ... 95, 6/97
8WA28 6	N	N	6/88, 6/91, 6/94 ... 95, 6/97
8WA28 8	N	N	3/114, 4/51, 4/60, 5/33, 5/62
8WA8	N	N	6/91, 6/97
8WC, 8WD, 8WH			
8WC	N	N	17/121, 17/130
8WD	N	N	9/107 ... 112
8WH	N	N	5/61, 7/57, 7/63, 7/67, 7/77
C71			
C71	N	N	6/94
LZS			
LZS:M	N	N	3/92
LZS:P T1702	N	N	3/92
LZS:P T1704	N	N	3/92
LZS:P T170P	N	N	3/92
LZS:P T170R	N	N	3/92
LZS:P T3	EAR99	N	3/90
LZS:P T5	EAR99	N	3/90
LZS:P T7	N	N	3/91
LZS:P TM	N	N	3/92, 3/94
LZS:R T1701	N	N	3/94
LZS:R T1704	N	N	3/94
LZS:R T170P	N	N	3/94
LZS:R T170R	N	N	3/94
LZS:R T3A4L	N	N	3/93
LZS:R T3A4R	EAR99	N	3/93
LZS:R T3A4S	EAR99	N	3/93
LZS:R T3A4T	EAR99	N	3/93
LZS:R T3B4L	N	N	3/93
LZS:R T3B4R	EAR99	N	3/93
LZS:R T3B4S	EAR99	N	3/93
LZS:R T3B4T	EAR99	N	3/93
LZS:R T3D4L	N	N	3/93

Order No.	Export markings		Page
	ECCN	AL	
LZS:R T3D4R	EAR99	N	3/93
LZS:R T3D4S	EAR99	N	3/93
LZS:R T3D4T	EAR99	N	3/93
LZS:R T4A4L	EAR99	N	3/93
LZS:R T4A4R	EAR99	N	3/93
LZS:R T4A4S	EAR99	N	3/93
LZS:R T4A4T	N	N	3/93
LZS:R T4B4L	EAR99	N	3/93
LZS:R T4B4R	EAR99	N	3/93
LZS:R T4B4S	EAR99	N	3/93
LZS:R T4B4T	N	N	3/93
LZS:R T4D4L	EAR99	N	3/93
LZS:R T4D4R	EAR99	N	3/93
LZS:R T4D4S	EAR99	N	3/93
LZS:R T4D4T	N	N	3/93
LZS:R T7	N	N	3/94
LZX			
LZX:M T321	EAR99	N	3/92
LZX:M T323	EAR99	N	3/92
LZX:M T326	EAR99	N	3/92
LZX:M T3280	EAR99	N	3/92
LZX:M T3281	N	N	3/92
LZX:M T3282	EAR99	N	3/92
LZX:P T2	N	N	3/91
LZX:P T3	EAR99	N	3/91
LZX:P T52	N	N	3/91
LZX:P T57	EAR99	N	3/91
LZX:P T58	EAR99	N	3/91
LZX:R T3140	N	N	3/94
LZX:R T3145	EAR99	N	3/94
LZX:R T3146	EAR99	N	3/94
LZX:R T3147	EAR99	N	3/94
LZX:R T3150	EAR99	N	3/94
LZX:R T3157	N	N	3/94
LZX:R T42401	N	N	3/94
LZX:R T42402	EAR99	N	3/94
LZX:R T4245	EAR99	N	3/94
LZX:R T4246	EAR99	N	3/94
LZX:R T4247	N	N	3/94
XPT			
XPT	N	N	17/78
Z23			
Z23	On req.		2/41, 2/65, 2/70

Conditions of sale and delivery Export regulations

Terms and Conditions of Sale and Delivery

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following terms. Please note! The scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside of Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following terms apply exclusively for orders placed with Siemens AG.

For customers with a seat or registered office in Germany

The “General Terms of Payment” as well as the “General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry” shall apply.

For software products, the “General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany” shall apply.

For customers with a seat or registered office outside of Germany

The “General Terms of Payment” as well as the “General Conditions for Supplies of Siemens, Automation and Drives for Customers with a Seat or registered Office outside of Germany” shall apply.

For software products, the “General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office outside of Germany” shall apply.

General

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches only apply to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the corresponding pages, - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

The prices are in € (Euro) ex works, exclusive packaging.

The sales tax (value added tax) is not included in the prices. It shall be debited separately at the respective rate according to the applicable legal regulations.

Prices are subject to change without prior notice. We will debit the prices valid at the time of delivery.

Surcharges will be added to the prices of products that contain silver, copper, aluminum, lead and/or gold if the respective basic official prices for these metals are exceeded. These surcharges will be determined based on the official price and the metal factor of the respective product.

The surcharge will be calculated on the basis of the official price on the day prior to receipt of the order or prior to the release order.

The metal factor determines the official price as of which the metal surcharges are charged and the calculation method used. The metal factor, provided it is relevant, is included with the price information of the respective products.

An exact explanation of the metal factor and the text of the Comprehensive Terms and Conditions of Sale and Delivery are available free of charge from your local Siemens business office under the following Order Nos.:

- 6ZB5310-OKR30-0BA1
(for customers based in Germany)
- 6ZB5310-OKS53-0BA1
(for customers based outside Germany)

or download them from the Internet
<http://www.siemens.com/automation/mall>
(Germany: Industry Mall Online-Help System)

Export regulations

The products listed in this catalog / price list may be subject to European / German and/or US export regulations.

Therefore, any export requiring a license is subject to approval by the competent authorities.

According to current provisions, the following export regulations must be observed with respect to the products featured in this catalog / price list:

AL	<p>Number of the <u>German Export List</u></p> <p>Products marked other than “N” require an export license.</p> <p>In the case of software products, the export designations of the relevant data medium must also be generally adhered to.</p> <p>Goods labeled with an “<u>AL</u>” <u>not equal to “N”</u> are subject to a European or German export authorization when being exported out of the EU.</p>
ECCN	<p><u>Export Control Classification Number</u></p> <p>Products marked other than “N” are subject to a reexport license to specific countries.</p> <p>In the case of software products, the export designations of the relevant data medium must also be generally adhered to.</p> <p>Goods labeled with an “<u>ECCN</u>” <u>not equal to “N”</u> are subject to a US re-export authorization.</p>

Even without a label or with an “AL: N” or “ECCN: N”, authorization may be required due to the final destination and purpose for which the goods are to be used.

The deciding factors are the AL or ECCN export authorization indicated on order confirmations, delivery notes and invoices.

Errors excepted and subject to change without prior notice.

1 IA/DT /uL_ohne MZ/En 12.05.09

Appendix

Notes



Industry Automation, Drive Technologies and Low Voltage Distribution

Further information can be obtained from our branch offices listed in the appendix or at www.siemens.com/automation/partner

Interactive Catalog on DVD	<i>Catalog</i>	Motion Control	<i>Catalog</i>
for Industry Automation, Drive Technologies and Low Voltage Distribution	CA 01	SINUMERIK & SIMODRIVE Automation Systems for Machine Tools	NC 60
Drive Systems		SINUMERIK & SINAMICS Automation Systems for Machine Tools	NC 61
<u>Variable-Speed Drives</u>		SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21
SINAMICS G110, SINAMICS G120	D 11.1	SINAMICS S110 The Basic Positioning Drive	PM 22
Standard Inverters			
SINAMICS G110D, SINAMICS G120D			
Distributed Inverters			
SINAMICS G130 Drive Converter Chassis Units	D 11		
SINAMICS G150 Drive Converter Cabinet Units			
SINAMICS GM150, SINAMICS SM150	D 12		
Medium-Voltage Converters			
SINAMICS S120 Chassis Format Units and Cabinet Modules	D 21.3		
SINAMICS S150 Converter Cabinet Units			
<u>Three-phase Induction Motors</u>	D 84.1		
• H-compact			
• H-compact PLUS			
Asynchronous Motors Standardline	D 86.1		
Synchronous Motors with Permanent-Magnet Technology, HT-direct	D 86.2		
DC Motors	DA 12		
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1		
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2		
<i>PDF: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units</i>	<i>DA 22</i>		
SIMOVERT PM Modular Converter Systems	DA 45		
SIEMOSYN Motors	DA 48		
MICROMASTER 420/430/440 Inverters	DA 51.2		
MICROMASTER 411/COMBIMASTER 411	DA 51.3		
SIMOVERT MASTERDRIVES Vector Control	DA 65.10		
SIMOVERT MASTERDRIVES Motion Control	DA 65.11		
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3		
SIMODRIVE 611 universal and POSMO	DA 65.4		
SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21		
SINAMICS S110	PM 22		
The Basic Positioning Drive			
<u>Low-Voltage Three-Phase-Motors</u>			
IEC Squirrel-Cage Motors	D 81.1		
MOTOX Geared Motors	D 87.1		
<u>Automation Systems for Machine Tools SIMODRIVE</u>	NC 60		
• Motors			
• Converter Systems SIMODRIVE 611/POSMO			
<u>Automation Systems for Machine Tools SINAMICS</u>	NC 61		
• Motors			
• Drive System SINAMICS S120			
<u>Drive and Control Components for Hoisting Equipment</u>	HE 1		
<u>Mechanical Driving Machines</u>			
Flender Standard Couplings	MD 10.1		
Electrical Installation Technology			
<i>PDF: ALPHA Distribution Boards and Terminal Blocks</i>	<i>ETA 1</i>		
<i>PDF: ALPHA 8HP Molded-Plastic Distribution System</i>	<i>ETA 3</i>		
<i>PDF: BETA Low-Voltage Circuit Protection</i>	<i>ET B1</i>		
<i>PDF: DELTA Switches and Socket Outlets</i>	<i>ET D1</i>		
<i>PDF: GAMMA Building Management Systems</i>	<i>ET G1</i>		
		Low-Voltage	
		Controls and Distribution – SIRIUS, SENTRON, SIVACON	LV 1
		Controls and Distribution – Technical Information SIRIUS, SENTRON, SIVACON	LV 1 T
		SICUBE System Cubicles and Cubicle Air-Conditioning	LV 50
		SIDAC Reactors and Filters	LV 60
		SIVACON 8PS Busbar Trunking Systems	LV 70
		Power Supply and System Cabling	
		Power supply SITOP	KT 10.1
		System cabling SIMATIC TOP connect	KT 10.2
		Process Instrumentation and Analytics	
		Field Instruments for Process Automation	FI 01
		<i>PDF: Indicators for panel mounting</i>	<i>MP 12</i>
		SIREC Recorders and Accessories	MP 20
		SIPART, Controllers and Software	MP 31
		<i>PDF: Products for Weighing Technology</i>	<i>WT 10</i>
		<i>PDF: Process Analytical Instruments</i>	<i>PA 01</i>
		<i>PDF: Process Analytics, Components for the System Integration</i>	<i>PA 11</i>
		Safety Integrated	
		Safety Technology for Factory Automation	SI 10
		SIMATIC HMI	
		Human Machine Interface Systems	ST 80
		SIMATIC Industrial Automation Systems	
		Products for Totally Integrated Automation and Micro Automation	ST 70
		SIMATIC PCS 7 Process Control System	ST PCS 7
		Add-ons for the SIMATIC PCS 7 Process Control System	ST PCS 7.1
		Migration solutions with the SIMATIC PCS 7 Process Control System	ST PCS 7.2
		pc-based Automation	ST PC
		SIMATIC NET	
		Industrial Communication	IK PI
		SIMATIC Sensors	
		Sensor Technology for Factory Automation	FS 10
		System Solutions	
		Applications and Products for Industry are part of the interactive catalog CA 01	
		TELEPERM M Process Control System	
		<i>PDF: AS 488/TM automation systems</i>	<i>PLT 112</i>

Get more information

Control Components and Systems Engineering:
www.siemens.com/industrial-controls

Siemens AG
Industry Sector
Control Components and
Systems Engineering
Postfach 2355
90713 FÜRTH
GERMANY

www.siemens.com/automation

Subject to change without prior notice
Order No. E86060-K1002-A101-A9-7600
X.8203.50.22 / Dispo 68201
KG 0110 10. KR D 1520 En
Printed in Germany
© Siemens AG 2010

The information provided in this price list contains characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.
Token fee: 15.00 €

SIEMENS

Catalog LV 1 · 2010

SIRIUS · SENTRON · SIVACON