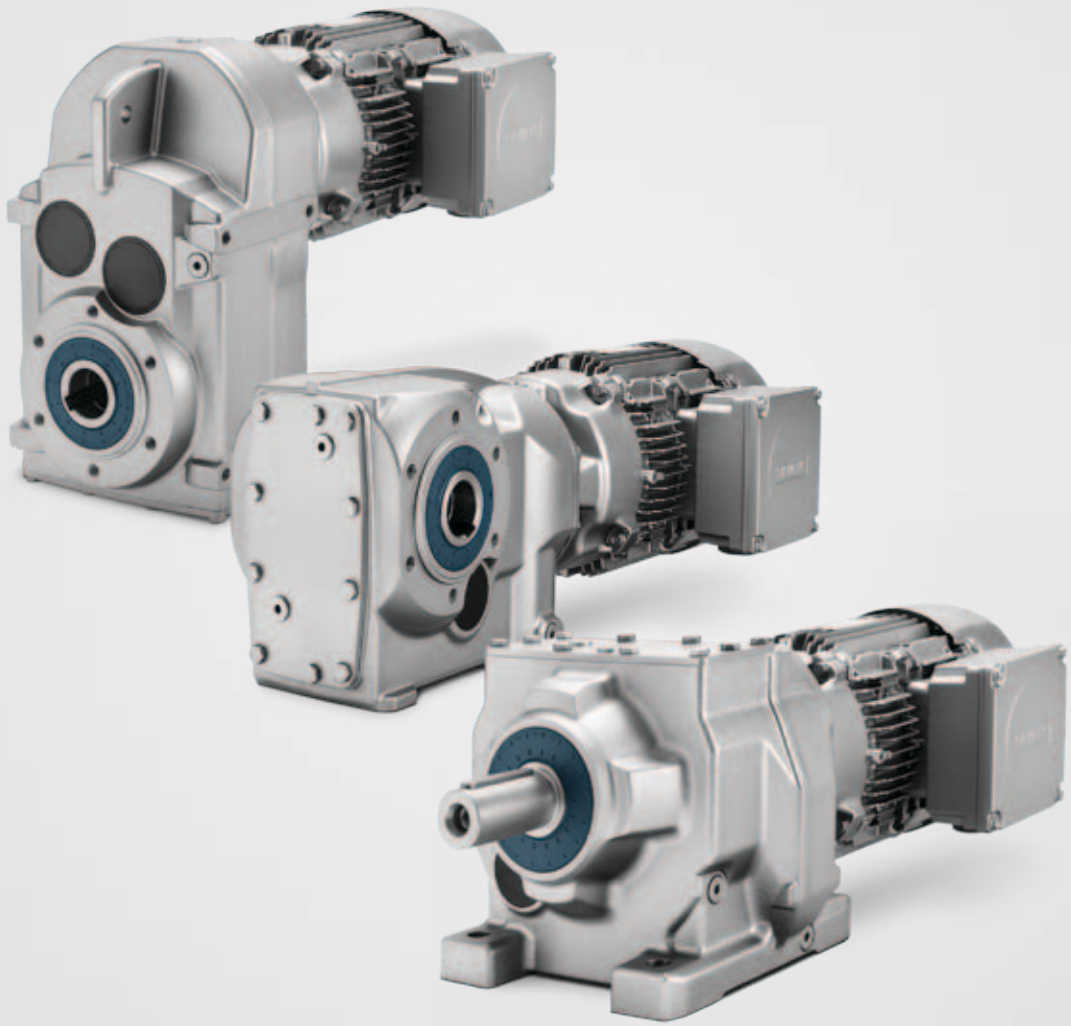
SIMOGEAR Geared Motors

Catalog MD 50.1 · 2012



SIMOGEAR

Answers for industry.

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Related catalogs

MOTOX D 87.1
MOTOX Geared Motors

E86060-K5287-A111-A4-7600

Low-Voltage Motors D 81.1
SIMOTICS Low-Voltage Motors

E86060-K5581-A111-A4-7600

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Industrial Communication IK PI
SIMATIC NET

E86060-K6710-A101-B7-7600

AC NEMA & IEC Motors D 81.2
Further details available on the Internet at: U.S./Canada

Only PDF
http://www.sea.siemens.com/motors

SIMOGEAR Konfigurator SIMOGEAR
SIMOGEAR Configurator
Information / Configuration
(CD)

E86060-D5750-A100-A1-7400

Additional documentation

You will find all information material, such as brochures, catalogs, manuals and operating instructions for standard drive systems up-to-date on the Internet at the address:

http://www.siemens.com/gearedmotors

You can order the listed documentation or download it in common file formats (PDF, ZIP).

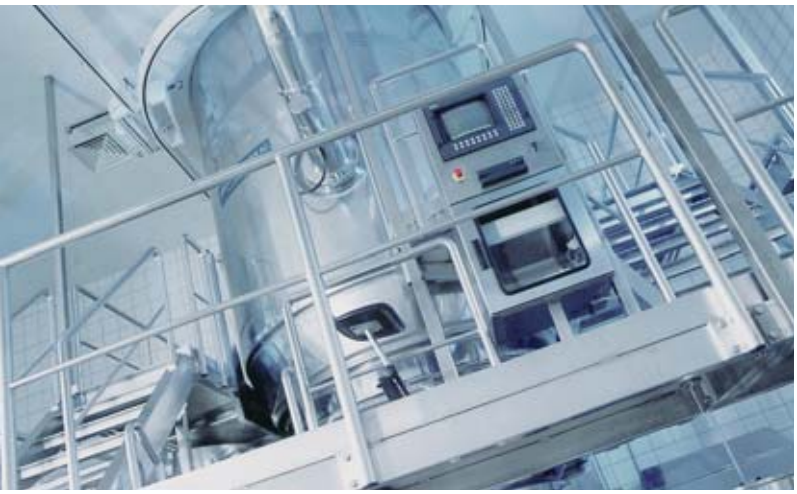
SIMOGEAR
Geared Motors

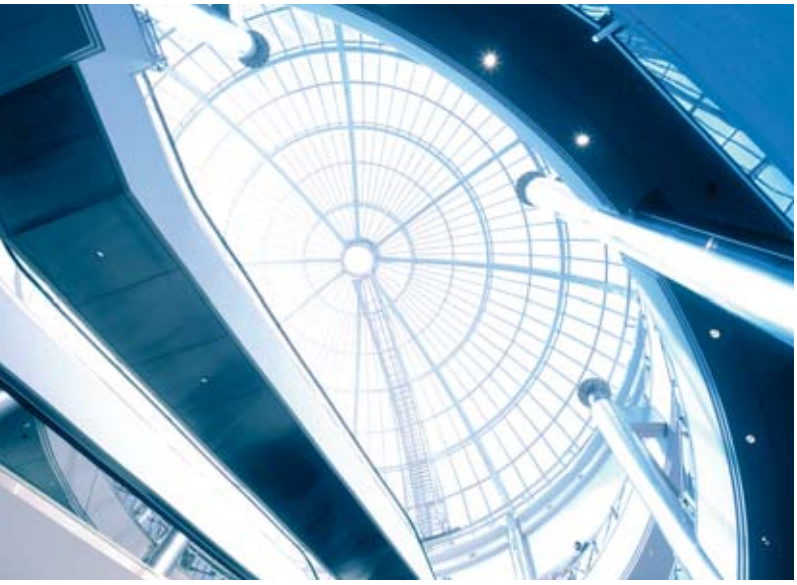
Catalog MD 50.1 · 2012

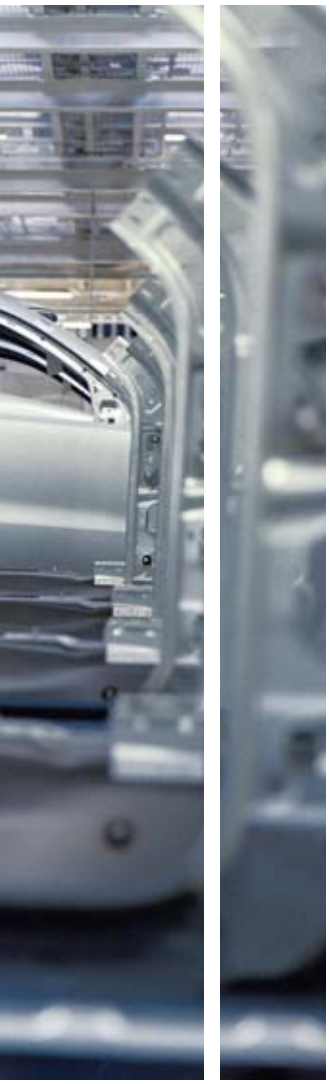
The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with DIN EN ISO 9001 (Certified Registration No. DE-409908 QM08). The certificate is recognized by all IQNet countries.

The products contained in this catalog can also be found in the electronic catalog SIMOGEAR Configurator 1.0.
Order No.:
E86060-D5750-A100-A1-7400 (CD-ROM)

Please contact your local Siemens branch







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.

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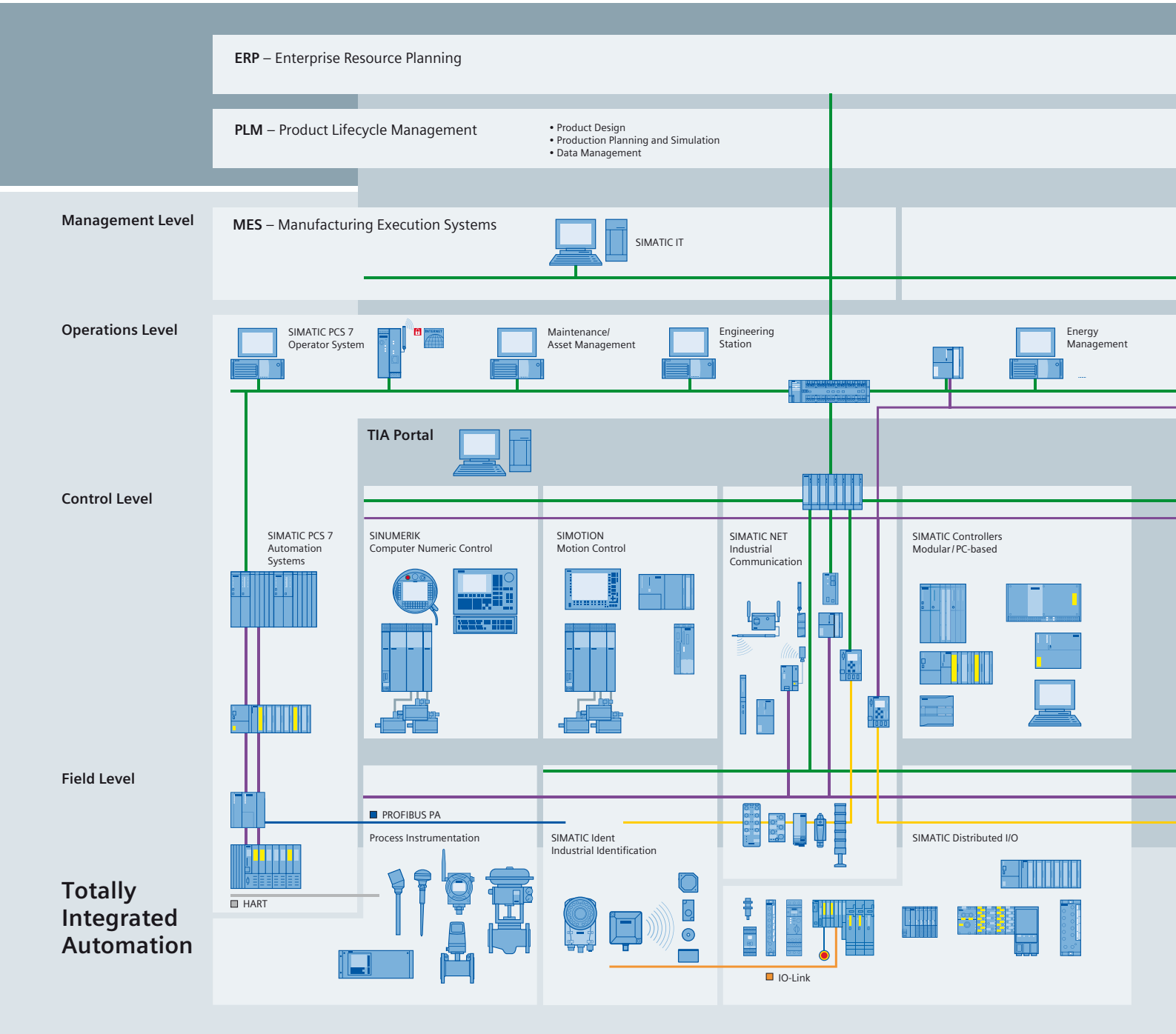
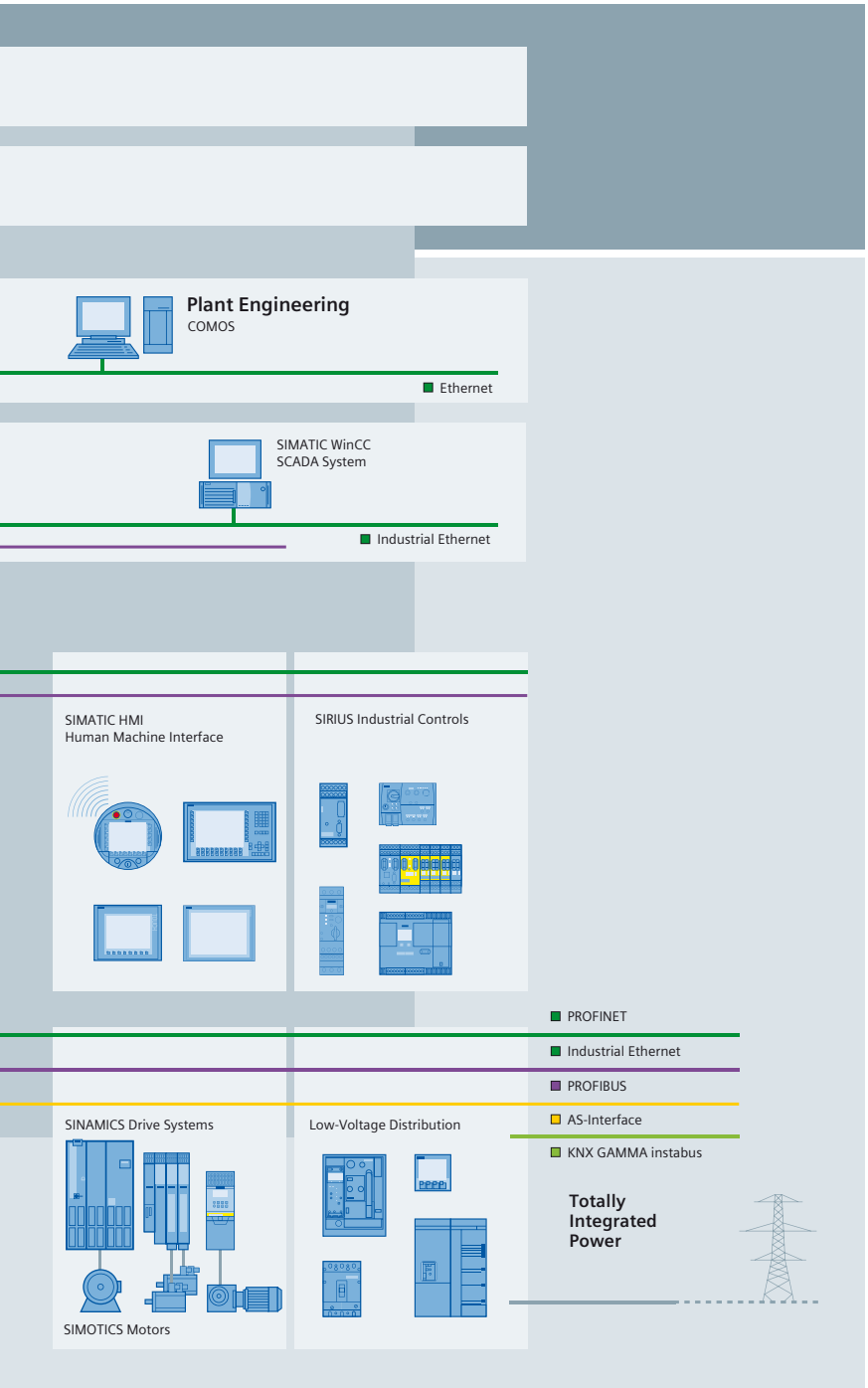
Check out the opportunities our automation and drive solutions provide. And discover how you can sustainably enhance your competitive edge with us.



Setting standards in productivity and competitiveness.

Totally Integrated Automation.



TIA is characterized by its unique continuity.

It provides maximum transparency at all levels with reduced interfacing requirements – covering the field level, production control level, up to the corporate management level. With TIA you also profit throughout the complete life cycle of your plant – starting with the initial planning steps through operation up to modernization, where we offer a high measure of investment security resulting from continuity in the further development of our products and from reducing the number of interfaces to a minimum.

The unique continuity is already a defined characteristic at the development stage of our products and systems.

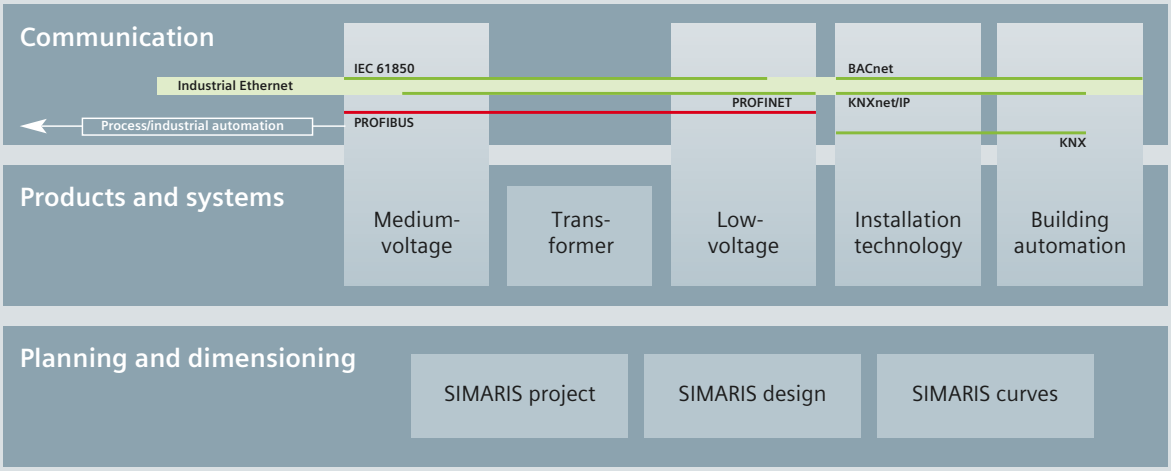
The result: maximum interoperability – covering the controller, HMI, drives, up to the process control system. This reduces the complexity of the automation solution in your plant. You will experience this, for example, in the engineering phase of the automation solution in the form of reduced time requirements and cost, or during operation using the continuous diagnostics facilities of Totally Integrated Automation for increasing the availability of your plant.

IA/DT TIA En 17.07.12

Thanks to Totally Integrated Automation, Siemens provides an integrated basis for the implementation of customized automation solutions – in all industries from inbound to outbound.

Integrated power distribution from one source.

Totally Integrated Power.



Electrical power distribution requires integrated solutions. Our answer: Totally Integrated Power (TIP). This includes tools and support for planning and configuration and a complete, optimally harmonized product and system portfolio for integrated power distribution from medium-voltage switchgear right to socket outlets.

The power distribution products and systems can be interfaced to building or industrial automation systems (as part of Total Building Solutions or Totally Integrated Automation) via communication capable circuit breakers and modules, allowing the full potential for optimization that an integrated solution offers to be exploited throughout the product cycle – from planning right through to installation and operation.

Thanks to a comprehensive energy management system, power flows can be made transparent and the energy consumption of individual loads can be calculated and allocated. Building operators can thus identify power-intensive loads and implement effective optimization measures. With its products and systems, Totally Integrated Power forms the basis for this functionality and guarantees greater cost-efficiency in industrial applications, infrastructure and buildings.

IA/DT TIP En 31.03.11

Notes

Introduction

1

Overview

SIMOGEAR geared motors are the new generation of geared motors from Siemens.

SIMOGEAR geared motors are available as helical, parallel shaft and bevel geared motors.

State-of-the-art production technology and improved testing methods ensure the highest degree of quality and reliability.

Geared motors

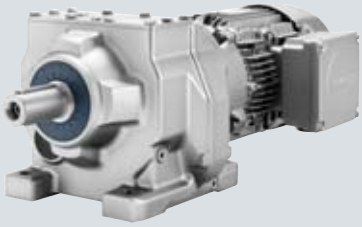
Gearbox type	Gearbox designation	Number of sizes	Maximum output torque T_{2N} Nm	Transmission ratio	Maximum motor power[1] P_1 kW
Helical geared motors					
	Z19 … Z89 (2-stage)	8	100 … 1 680	3.4 … 60	15
	D19 … D89 (3-stage)	8	100 … 1 680	39 … 330	15

Fig. 1-1 Helical gearboxes D/Z

Parallel shaft geared motors					
	FZ29 … FZ89 (2-stage)	6	150 … 1 850	3.5 … 65	15
	FD29 … FD89 (3-stage)	6	150 … 1 850	46 … 357	15

Fig. 1-2 Parallel shaft gearboxes FD/FZ

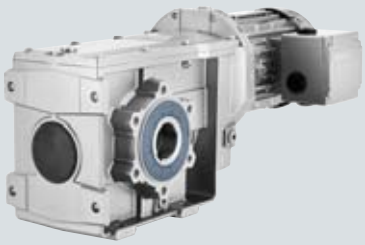
Bevel geared motors					
	B29 … B49 (2-stage)	3	110 … 450	3.5 … 59	7.5

Fig. 1-3 Bevel gearbox B

	K39 … K89 (3-stage)	5	220 … 1 600	5.1 … 224	15

Fig. 1-4 Bevel gearbox K

[1] With 4-pole motor for a 50 Hz line frequency

Overview (continued)

SIMOGEAR geared motors are classified according to fixed torque steps. Within a torque class, for the various gearbox types, almost the same output torques are achieved.

Torque classes

Helical geared motors Z and D (2/3-stage)								
Size	19	29	39	49	59	69	79	89
Maximum output torque [Nm]	100	140	200	320	450	600	840	1 680

Parallel shaft geared motors FZ and FD (2/3-stage)							
Size	29	39		49	69	79	89
Maximum output torque [Nm]	150	290		480	600	1 000	1 850

Bevel geared motors B (2-stage)							
Size	29	39		49			
Maximum output torque [Nm]	110	250		450			

Bevel geared motors K (3-stage)							
Size		39		49	69	79	89
Maximum output torque [Nm]		220		420	600	820	1 600

Benefits

High efficiency for a fast return on investment

When developing SIMOGEAR geared motors, significant emphasis was placed on achieving the highest possible energy efficiency.

Using the plug-on pinion principle in the first SIMOGEAR gearbox stage, higher transmission ratios are achieved when compared to gearboxes with slip-on pinion.

This means that frequently instead of 3-stage gearboxes with an efficiency of approx. 94 %, 2-stage helical and parallel shaft gearboxes with a high efficiency of ≥ 96 % can be used.

2-stage SIMOGEAR bevel geared motors B have an efficiency of ≥ 96 %. With a range of transmission ratios from i_{tot} = 3.5 up to 60, they have been specifically designed to address the requirements in conveyor technology.

Together with the new Siemens 1LE1 motors for efficiency class IE2 (High Efficiency), SIMOGEAR geared motors allow a high amount of energy to be saved and reduce the stress on our environment.

Extremely compact and low weight for easy handling in the machine or system in the smallest space

An integrated end shield instead of an adapter plate and end shield reduces the weight and space required in your machine or system.
In addition, interfaces and sealing joints are reduced as a result of the integrated end shield.

With the SIMOGEAR bevel gearboxes, the length was able to be significantly reduced through an optimized bearing design.

SIMOGEAR helical gearboxes Z/D19 to Z/D39 (200 Nm), parallel shaft gearboxes F29 (150 Nm) and bevel gearboxes B29 to B49 (450 Nm) have an aluminum gearbox housing.

Harmoniously coordinated modular system to provide the optimum solution for your particular drive task

The fine size graduations of SIMOGEAR gearboxes provide you the optimum drive for every application regarding gearbox type, rated output torque and transmission ratio.

When developing SIMOGEAR geared motors, significant emphasis was placed on achieving well-balanced gearbox properties.

With SIMOGEAR geared motors you can depend on harmonized and coordinated properties regarding:

- Maximum output torque
- Permissible radial force
- Output shaft diameter
- Bearing service life
- Housing stiffness
- Gearing reliability (fatigue endurable)
- Shaft strength (fatigue endurable)

Fine ratio stages to always obtain the output speed required

With their wide range of transmission ratios, from very low up to very high, SIMOGEAR geared motors provide the necessary flexibility for your drive application.

As a result of the wide range of transmission ratios, 4-pole induction motors can be mainly used – the most cost-effective solution.

Further, the geared motors are quieter as a result of the lower circumferential velocity of the first gearbox stage.

Benefits (continued)

Intelligent sealing concept for a high degree of maintenance friendliness

An optimally coordinated sealing concept is available for the SIMOGEAR gearbox output shaft to address the various application areas and ambient conditions.

Further, gearbox sizes 19 and 29 are lubricated for life.

All SIMOGEAR geared motors with venting have as standard a pressure breather valve.

The MODULOG modular principle for the highest degree of flexibility

The motors used for the SIMOGEAR geared motors have a modular design using our well-proven MODULOG modular principle.

The core of the modular system is a basic motor dimensioned for international line supply conditions with power ratings extending from 0.09 up to 15 kW (4/2/6-pole).

At the non-drive end, you have an individually configurable mounting shaft system, e.g. for brakes, backstop, rotary pulse encoder, external fan and canopy.

This guarantees high availability as well as short delivery times.

Integration

SIMOGEAR geared motors are part of Siemens Drivetrain.

Siemens Drivetrain stands for standardized, tailored and modular components, systems and services.

Drivetrain encompasses the world's most extensive portfolio – from geared motors through motor starters and inverters, identification systems and switchgear up to the automation.

The complete portfolio is exhaustively tested – also in the field – for maximum availability. The components are harmonized and coordinated with one another with standard interfaces and power bus systems.

Siemens Drivetrain therefore allows you to reduce your installation and commissioning costs, and at the same time increase flexibility and system availability.

Energy-efficient motors, motor starters, soft-starters and inverters as well as the Power Management system based on SIMATIC PCS 7, SIMATIC WinCC and multi-function measuring devices ensure a high energy saving potential.

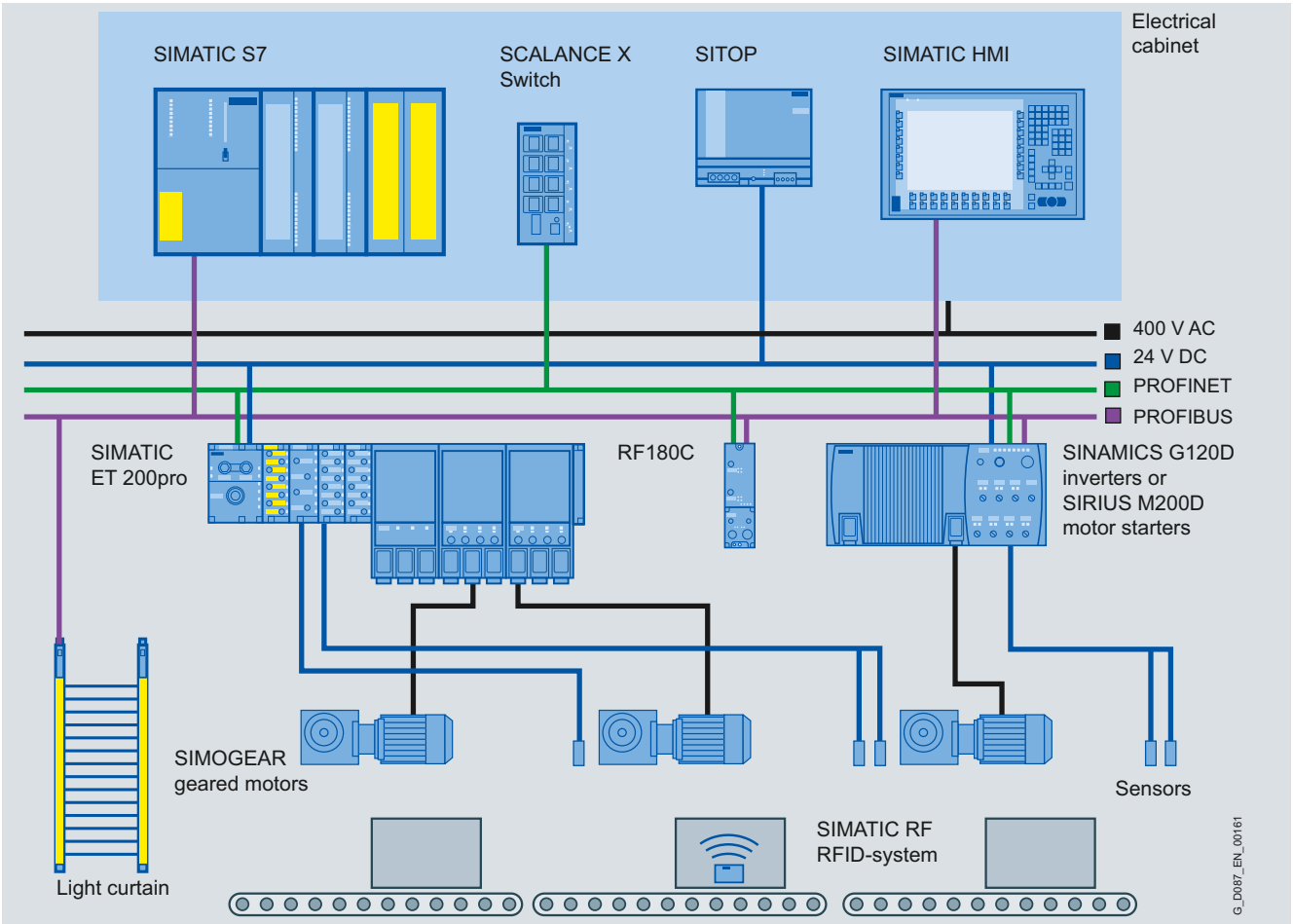


Fig. 1-5 Example of the Siemens Drivetrain for sophisticated conveyor applications

Configuring

SIMOGEAR Configurator (CD-ROM)

The selection tables list an optimized selection of geared motor combinations regarding size, service factor and number of poles. The SIMOGEAR Configurator contains all of the technically possible combinations and provides you with various wizards to select the optimum drive.

The SIMOGEAR Configurator makes it easy to select the optimum SIMOGEAR geared motor, and in addition to the technical data, also supplies the correct order number and the prices of the geared motors.

Data sheets, dimension sheets to scale and 3D models in the usual formats can be generated for the various products.

Note:

Utilize the new functionality of our SIMOGEAR Configurator electronic catalog.

For the selected mounting position, the 3D dimension drawings show the exact position of the oil valves.

The ARCHIMEDES engineering tool integrated in the SIMOGEAR Configurator supports you when selecting and dimensioning geared motors for your particular application.

The SIMOGEAR Configurator can be accessed in the Internet at:

www.siemens.com/gearedmotors

You can order a version of the SIMOGEAR Configurator that you can install on your PC from your local Siemens office or in the Internet.

Selection and ordering data

Description	Order No.
SIMOGEAR Configurator (CD-ROM) Version 1.0 German/English	**E86060-D5750-A100-A1-7400**

Fig. 1-6 SIMOGEAR Configurator

1

Order number code

Overview

The order number comprises a combination of digits and letters. To obtain a better overview, the order number is split up into three, hyphenated blocks.

Example:

2KJ3105-1EM22-2AS1-Z+D01+M55

The first block (data positions 1 to 7) designates the gearbox type; the second (data positions 8 to 12) designates the output shaft and the motor type; and additional design characteristics are coded in the third block (data positions 13 to 16).

Ordering data

- Complete order No., with a **-Z** suffix, and order code(s) or plain text
- If a quotation is available, please specify the quotation number in addition to the order No.
- When ordering a complete geared motor as replacement unit, the serial number of the original geared motor must be specified.

Table 1-1 Structure of the order No.

Position of the order No.		1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	-	Z
SIMOGEAR geared motors																					
1st to 5th position: Digit, letter, Letter, digit, digit	Helical gearbox Z, 2-stage	**2**	**K**	**J**	**3**	**1**															
	Helical gearbox D, 3-stage	**2**	**K**	**J**	**3**	**2**															
	Parallel shaft gearbox FZ, 2-stage	**2**	**K**	**J**	**3**	**3**															
	Parallel shaft gearbox FD, 3-stage	**2**	**K**	**J**	**3**	**4**															
	Bevel gearbox B, 2-stage	**2**	**K**	**J**	**3**	**5**															
	Bevel gearbox K, 3-stage	**2**	**K**	**J**	**3**	**5**															
6th to 7th position: Digit, digit	Gearbox size																				
8th position: Digit	Output shaft																				
9th to 10th position: Letter, letter	Motor size																				
11th position: Digit	Induction motor LA												**1**								
	Induction motor LE General Purpose (aluminum)												**2**								
12th position: Digit	Motor with improved efficiency (Standard Efficiency IE1)													**1**							
	Motor with high efficiency (High Efficiency IE2)													**2**							
13th position: Digit	Frequency, voltage																				
14th position: Letter	Foot-mounted design																**A**				
	Foot/flange-mounted design																**B**				
	Torque arm																**D**				
	Flange-mounted design																**F**				
	Housing flange																**H**				
15th to 16th position: Letter, digit	Transmission ratio																				
Special designs																					
Coded	Order code required																			**-**	**Z**
Non-coded	Plain text required																				

Overview (continued)

Ordering example

A helical geared motor is required:

- Gearbox type, size Z59
- Motor 1.5 kW, 4-pole with 50 Hz line frequency
- Output speed 49, transmission ratio i_{tot} = 28.89
- Solid shaft V35 x 70
- Mounting position M1
- Terminal box position 1A

This results in the following order No. with order codes

Position of the order No.		1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	-	Z	+	Order codes		
Selection criteria	Requirements																								
Gearbox type	Helical gearbox Z, 2-stage	**2**	**K**	**J**	**3**	**1**	.	.	-	■	.	.	■	■	-	■	■	■	■	-	■	+	.	+	.
Gearbox size	Size 59	**2**	**K**	**J**	**3**	**1**	**0**	**5**																	
Output shaft	Solid shaft V35 x 70	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**															
Motor size	Size 90; 1.5 kW; 4-pole	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**													
Motor type	Induction motor LE General Purpose	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**	**2**												
Motor efficiency	High Efficiency IE2	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**	**2**	**2**											
Line voltage, frequency	230/400 … 460 V, 50/60 Hz	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**	**2**	**2**	-	**2**									
Mounting type	Foot-mounted design	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**	**2**	**2**	-	**2**	**A**								
Transmission ratio	i_{tot} = 28.89	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**	**2**	**2**	-	**2**	**A**	**S**	**1**						
Mounting position	M1	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**	**2**	**2**	-	**2**	**A**	**S**	**1**	-	**Z**	+	**D01**		
Terminal box position	1A	**2**	**K**	**J**	**3**	**1**	**0**	**5**	-	**1**	**E**	**M**	**2**	**2**	-	**2**	**A**	**S**	**1**	-	**Z**	+	**D01**	+	**M55**

Type designations

1

Overview

Type designation of the gearbox

Gearbox type	
Helical gearbox	-
Parallel shaft gearbox	F
Bevel gearbox, 2-stage	B
Bevel gearbox, 3-stage	K

Stage	
2-stage	Z
3-stage	D

Type	
Shaft	
Solid shaft	-
Hollow shaft	A

Mounting	
Foot-mounted design	-
Foot/flange-mounted design	B
Flange-mounted design (A type)	F
Housing flange (C type)	Z
Torque arm	D

Connection	
Feather key	-
Shrink disk	S
Splined shaft	T

Type designation of the motors

Motor type	
Three-phase motors, integrated, mounted	LA, LE

Special features	
High efficiency	E
Forced ventilation	F
High inertia fan	I
Canopy	W
Handwheel	D
Backstop	X

Brake	
Spring-operated, single-disk brake, DC energized	L
Size = rated braking torque	16
Adjusted braking torque	../10
Standard version	N
Enclosed version	G
Manual brake release	H
Manual brake release with locking mechanism	HA
Microswitch	M

Encoder	
Incremental encoder	IN
Resolver	IR
Absolute encoder	IA
Prepared for encoder mounting	IV

Example:

F	D	A	D	S	89	-	LE	80M	4	EF	-	L8/4NH	-	IN
⬇	⬇	⬇	⬇	⬇	⬇		⬇	⬇	⬇	⬇		⬇		⬇
(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)		(11)		(12)

(1) Gearbox type
(2) Stage
(3) Shaft
(4) Mounting
(5) Connection
(6) Gearbox size
(7) Motor type
(8) Motor size
(9) Number of poles
(10) Special features
(11) Brake
(12) Encoder

Overview

Helical geared motors

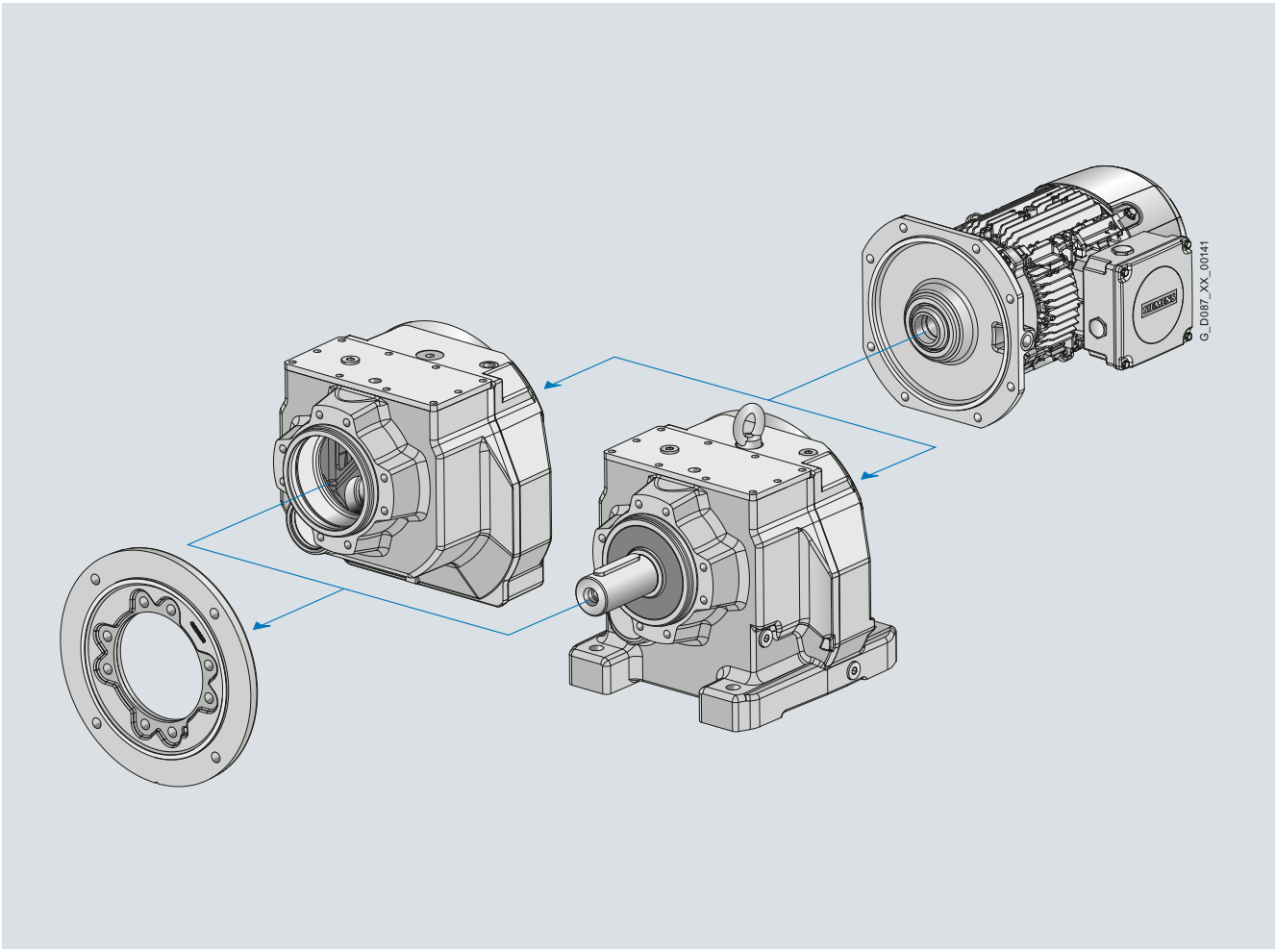


Fig. 1-7 Modular system, helical geared motors

SIMOGEAR helical geared motors are available in the following versions for mounting in any position:

- 2 or 3 stages
- Foot-mounted design
- Flange-mounted design
- Design with integrated housing flange
- Combined foot/flange-mounted design

Overview (continued)

Parallel shaft geared motors

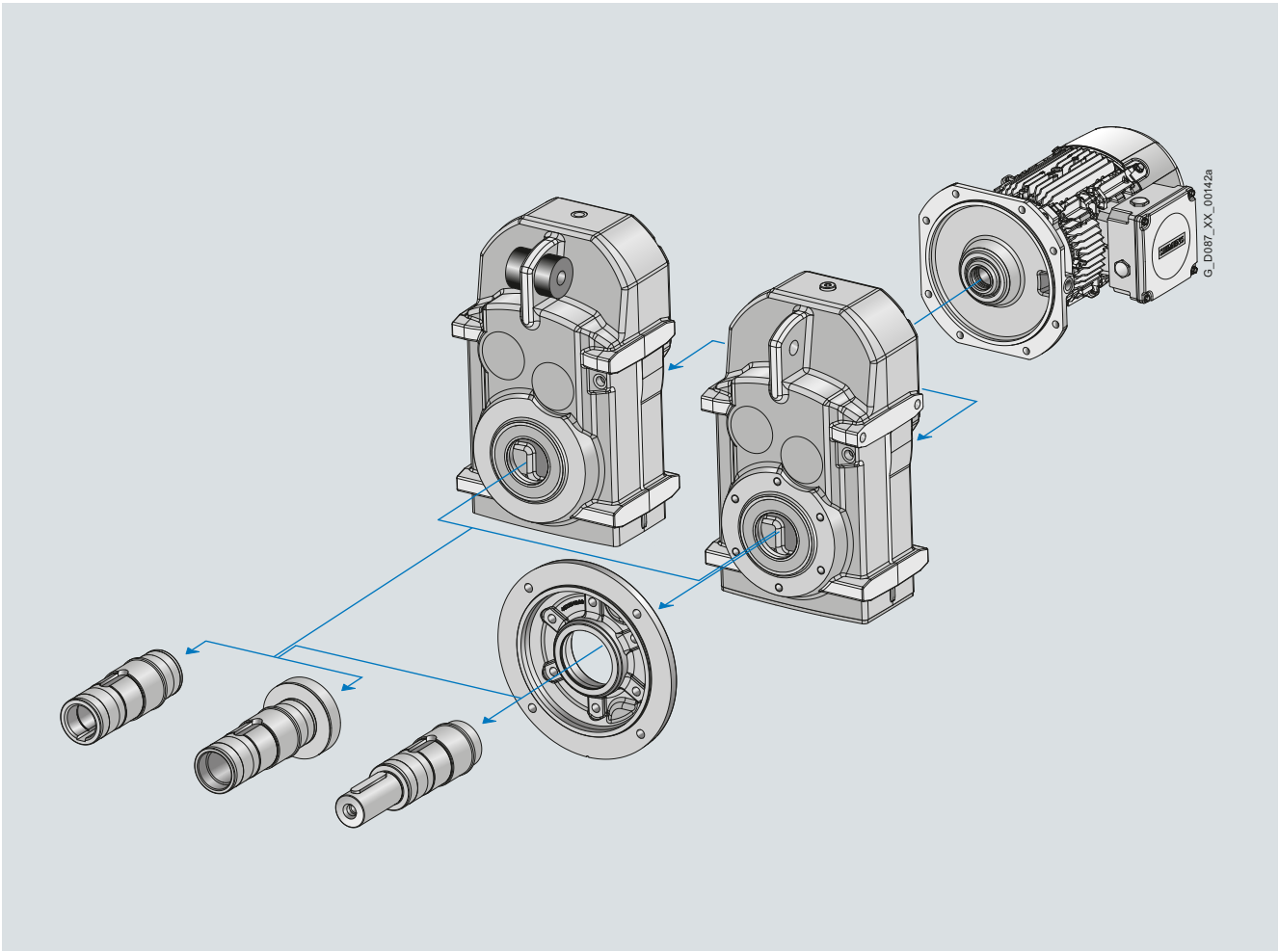


Fig. 1-8 Modular system, parallel shaft geared motors

SIMOGEAR parallel shaft geared motors are available in the following versions for mounting in any position:

- 2 or 3 stages
- Shaft-mounted design with torque arm
- Flange-mounted design
- Design with integrated housing flange
- Foot-mounted design
- Hollow-shaft design with feather key, splined shaft or shrink disk
- Solid shaft design with feather key

Overview (continued)

Bevel geared motors

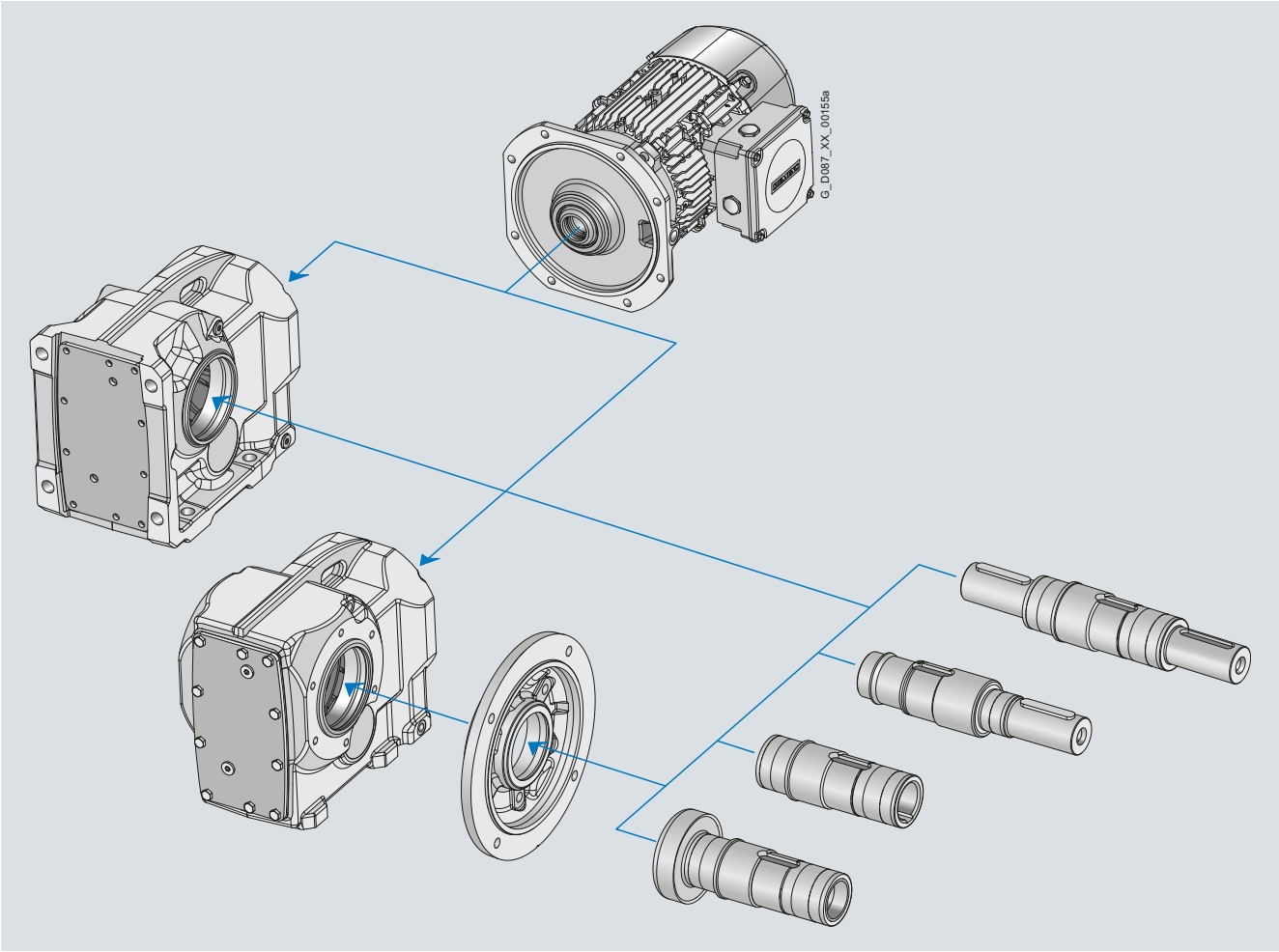


Fig. 1-9 Modular system, bevel geared motors

SIMOGEAR bevel geared motors are available in the following versions for mounting in any position:

- 2 or 3 stages
- Shaft-mounted design with torque arm
- Flange-mounted design
- Design with integrated housing flange
- Foot-mounted design
- Hollow-shaft design with feather key, splined shaft or shrink disk
- Solid shaft design with feather key (at one end or both ends)

For 2-stage bevel gearboxes B, the torque arm is supplied loose to enable it to be mounted as required on site. The position of the torque arm can be freely selected.

1

Notes on selection tables

Structure of the tables for geared motors up to 15 kW

In the selection tables you will find the most frequently used versions and combinations of geared motors sorted according to the motor power. Additional combinations can be selected with our SIMOGEAR Configurator.

The power ratings and torques specified in the catalog refer to mounting position M1 and comparable types of construction, where the input stage does not run completely immersed in oil. Further, standard equipment and standard lubrication of the geared motors as well as normal ambient conditions are assumed.

The specified output speeds are guide values.
You can calculate the rated drive speed based on the rated motor speed and the transmission ratio. Please note that the actual output speed will depend on the motor load and the line supply conditions.

Table 1-2 Structure, power table

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg		Number of poles
0.37	**Type designation FD.49-LA71MH4**							
	13	270	105	8 640	1.8	29	**2KJ3403 - ■ CE11 - ■ ■ G1**	
⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) Rated motor power at 50 Hz
(2) Geared motor output speed
(3) Geared motor output torque
(4) Transmission ratio
(5) Permissible radial force at the center of shaft extension (l/2)
(6) Service factor
(7) Drive weight without any oil
(8) Order No.
(9) Order code for pole number

Structure of the tables for transmission ratios and torques

In the selection tables for transmission ratios and torques, the gearboxes are sorted according to gearbox type and transmission ratio.

Table 1-3 Structure, torque table

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	120	132	160	Order No.
Type designation D.59														
76.38	19	450	7 600	0.55	611/8	✓	✓	✓	✓	✓	✓	✓		**2KJ3205 - ■■■■■ - E1**
⬇ (1)	⬇ (2)	⬇ (3)	⬇ (4)	⬇ (5)	⬇ (6)	⬇ (7)								⬇ (8)

(1) Transmission ratio

(2) Geared motor output speed at a motor speed of 1 450 rpm

(3) Maximum gearbox output torque for service factor $f_B = 1$

(4) Permissible radial force at the center of shaft extension (l/2)

(5) Moment of inertia of the gearbox reduced to the input shaft

(6) Ratio, number of teeth

(7) Possible motor sizes

(8) Order No.

Notes on selection tables

1

Structure of the motor power tables

Motors with High Efficiency IE2

Table 1-4 Left-hand side

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	4-pole
100L	LE100LK4E	3.00	1 455	19.7	6.20	0.82	85.50	85.50	6.90	**F**	**M**	**2**	**2**	**–**
⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(8)	(9)	(10)	(10)	(11)	(12)	(13)

(1) Motor size
(2) Motor designation
(3) Rated motor power
(4) Rated speed
(5) Rated motor torque
(6) Rated current
(7) Power factor
(8) Efficiency
(9) Relative starting current
(10) Order No. of the motor size
(11) Order No. of the motor type
(12) Order No. of the motor series
(13) Order code for pole number

For different voltages, the starting, average acceleration and breakdown torque change according to a square law from their rated value.

Table 1-5 Right-hand side

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	4-pole
100L	LE100LK4E	2.00	3.10	2.20	72	60	7 000	110.0	24.00	**F**	**M**	**2**	**2**	**–**
⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(11)	(12)	(13)	(14)

(1) Motor size
(2) Motor designation
(3) Relative starting torque
(4) Relative breakdown torque
(5) Relative average acceleration torque
(6) Measuring surface sound pressure level
(7) Sound power level
(8) No-load number of starting operations
(9) Moment of inertia
(10) Weight (without end shield at DE)
(11) Order No. of the motor size
(12) Order No. of the motor type
(13) Order No. of the motor series
(14) Order code for pole number

Structure of the motor power tables (continued)

NEMA Energy Efficient motors MG1

Table 1-6 Left-hand side

Size	Motor	P_{rated}		n_{rated}	T_{rated}	EISA CC no.	I_{rated}	cos φ	η 4/4 load	η 3/4 load
		kW	hp	rpm	Nm	CC032A	A	-	%	%
132S	LE132SF4E	5.50	7.50	1 770	29.7	✓	9.90	0.78	89.50	89.50
⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
(1)	(2)	(3)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(9)

(1) Motor size
(2) Motor designation
(3) Rated motor power
(4) Rated speed
(5) Rated motor torque
(6) Energy Independence and Security Act
(7) Rated current
(8) Power factor
(9) Efficiency

For different voltages, the starting, average acceleration and breakdown torque change according to a square law from their rated value.

Table 1-7 Right-hand side

Size	Motor	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No. Data position				Order code Number of poles	Order code Specification	
		dB (A)	dB (A)	1/h	10^{-4} kgm^2	kg	9.	10.	11.	12.	4-pole	NEMA	UL-R/CSA
132S	LE132SF4E	80	68	3 000	270.0	35.00	**H**	**G**	**2**	**2**	**–**	**N65**	**N38**
⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(8)	(9)	(10)	(11)	(12)	

(1) Motor size
(2) Motor designation
(3) Measuring surface sound pressure level
(4) Sound power level
(5) No-load number of starting operations
(6) Moment of inertia
(7) Weight (without end shield at DE)
(8) Order No. of the motor size
(9) Order No. of the motor type
(10) Order No. of the motor series
(11) Order code for pole number
(12) Order code for special specifications

1

Notes on dimension drawings

Shaft heights

DIN 747 shaft heights for machines

Shaft height	Tolerance
mm	mm
≤ 250	-0.5
> 250	-1

Note:

For foot-mounted gearboxes, the mounted motor can extend below the mounting surface of the gearbox.

Shaft extensions

DIN 748-1 cylindrical shaft extensions

Diameter tolerance

Diameter	Tolerance
mm	mm
≤ 50	ISO k6
> 50	ISO m6

Centering holes according to DIN 332, form DR

Diameter	Thread size
mm	
> 16 … 21	M6
> 21 … 24	M8
> 24 … 30	M10
> 30 … 38	M12
> 38 … 50	M16
> 50 … 85	M20
> 85 … 130	M24
> 130	M30

Hollow shafts

Diameter tolerance Ø: ISO H7 measured using a mandrel gauge

Feather key: acc. to DIN 6885 (high form)

Hollow shafts with shrink disk

Diameter tolerance Ø: ISO H7 with mandrel gauge, measured in the area of the shrink disk seat. Hub seat, output side equipped with journal bearing sleeve.

Minimum requirements for the material of the customers shaft:

- Elastic limit Re ≥ 360 N/mm²
- Module of elasticity, approx. 206 kN/mm²

Flange

Centering edge tolerance:

Outer flange diameter	Tolerance
mm	mm
≤ 230	ISO j6
> 230	ISO h6

Vent valves

The gearboxes are shown with screw plugs.
If venting is required, then depending on the type of construction, an activated vent valve is installed.
The contour dimension can slightly change as a result.

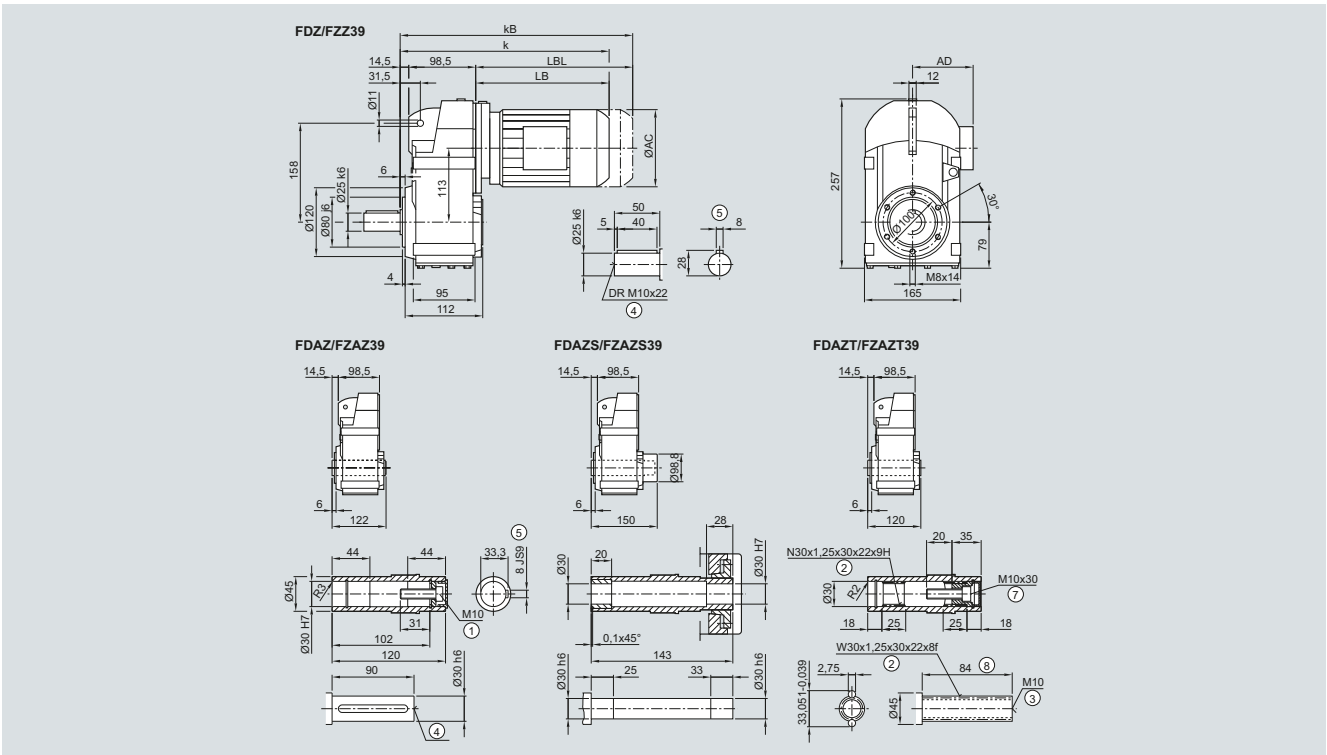


Fig. 1-10 Example, dimension drawing

Overview

Overview, specifications

Country/economic area	Marking Examples	Legal/normative requirements
Europe/EU 	CE IE2	**Low Voltage Directive (LVD) 2006/95/EC** **Eco-design Directive 2009/125/EC** EU Regulation (EC) No. 640/2009 to implement the eco-design directive
USA 	**MG1-12** **CC032 A**	**NEMA MG1-12** National standard **UL 1004** Standard of the Underwriters Laboratories Inc. (testing and certification body) **EISA** Energy Independence Security Act
Canada 		**CSA-C22.2 No. 100** Standard of the Canadian Standards Association **EER** Energy Efficiency Regulations
China 		**CCC** China Compulsory Certification **CEL – China Energy Label** Based on the national standard GB 18613-2006 **ECL** Energy Conservation Law of PRC

The geared motors comply with all of the applicable IEC/EN standards.

1

Geared motors for use worldwide

Motors for the North American market

Motors with frame sizes 63 to 160 are available in designs which meet the NEMA electrical standard and CSA and UL-R.

Order code:	
Design in accordance with NEMA electrically	**N65**
Design in accordance with UL-R and CSA	**N38**

NEMA – National Electrical Manufacturing Association

Data on the rating plate:

- Rated voltage range
- Design letter
- Code letter
- CONT
- NEMA MG1-12

UL-R – Underwriters Laboratories Inc. listing

The motors are listed for up to 600 V by Underwriters Laboratories Inc. ("Recognition Mark" = R/C).

Motor voltages up to 600 V are certified according to UL.

"UL Recognition Mark" is included on the rating plate of the motor.

In addition, the motor is designed to meet the NEMA MG1-12 electrical standard and includes the following data on the rating plate:

- Rated voltage
- Nominal efficiency
- Design letter
- Code letter
- CONT
- NEMA MG1-12

Externally or internally mounted components such as:

- Motor protection
- Heating element
- Forced ventilation
- Brake
- Encoder
- Plug connection

are UL-R/C, CSA, or C-US listed or used by manufacturers in accordance with regulations.

UL-R/C cable glands must be used for the cable entry.

CSA – Canadian Standard Association

The motors are approved for up to 690 V in accordance with the "Canadian Standard Association" (CSA). Externally or internally mounted components which are used are listed by CSA or are used by manufacturers in accordance with regulations. The CSA mark and the rated voltage are stamped on the rating plate.

When energy-saving motors are ordered, they also have the "CSA-E mark" on the rating plate.

Low-voltage motors for the Chinese market

CCC-certified motors, sizes 63 to 90 are available for export to China.

The "China Energy Label" required for import into China is available for motors with frame sizes from 80 to 160.

The motors are marked according to the requirements with CCC, CEL or both specifications.

Order code:	
Design for the Chinese market	**N67**

CCC – China Compulsory Certification

"Small power motors" which are exported to China must be certified up to a rated power of:

2-pole: ≤ 2.2 kW

4-pole: ≤ 1.1 kW

6-pole: ≤ 0.75 kW

8-pole: ≤ 0.55 kW

LA motors requiring certification are certified by CQC (China Quality Certification Center).
When ordered, the "CCC (Safety Mark)" logo is stamped on the rating plate and packaging.

Note:

Chinese customs checks the need for certification of imported products using the commodity code.

The following do not need to be certified:

- Motors imported to China which have already been installed in a machine
- Repair parts

CEL – China Energy Label

China introduced mandatory energy efficiency labeling for electric motors in June 2008.

From September 1, 2008, and until the transition phase expires, the affected electric motors may only be imported into China and sold in the country with a valid "China Energy Label".

The motor must be labeled with the "China Energy Label" sticker, which states the efficiency class.

In addition to the Energy Label (dimensions, 80 x 54 mm) the efficiency must also be stamped on the rating plate.

2, 4 and 6-pole motors with a line frequency of 50 Hz and a rated voltage of up to 690 V must be appropriately marked.

Efficiency classes 2 and 3 apply to motors with a rated power from 0.55 up to 315 kW and efficiency class 1 applies to motors with a rated power from 3 up to 315 kW.

Efficiency classes acc. to IEC 60034-30:2008

Various energy efficiency standards exist worldwide for induction motors. To promote international harmonization, the international standard IEC 60034-30:2008 (Rotating electrical machines – Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code)) was drawn up. This classifies low-voltage induction motors according to new efficiency classes (valid since October 2008). The efficiencies of IEC 60034-30:2008 are based on losses determined in accordance with the IEC 60034-2-1:2007 standard. This has been valid since November 2007 and has been replacing the standard IEC 60034-2:1996 since November 2010. The supplementary losses are now measured and no longer added as a percentage.

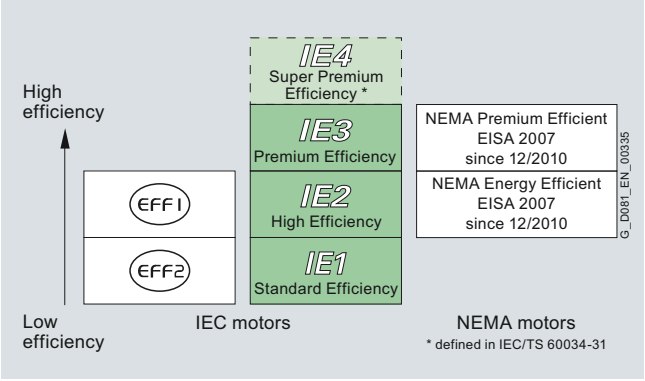


Fig. 1-11 IE efficiency classes in accordance with the power rating

IE efficiency classes

- IE1 = Standard Efficiency
- IE2 = High Efficiency
- IE3 = Premium Efficiency
- IE4 = Super Premium Efficiency

Measuring method according to IEC 60034-2-1:2007 for determining the efficiency

With the measuring method, the supplementary losses are no longer applied as a percentage (0.5 %), but instead they are determined with measurements according to IEC 60034-2-1: 2007. The nominal efficiencies are therefore reduced from EFF1 to IE2 and from EFF2 to IE1, even though there have been no technical or physical changes to the motors.

Previously: P_{LL} = 0.5 % of P was added

Now: P_{LL} = individual measurement

P_{LL} = load-dependent supplementary losses

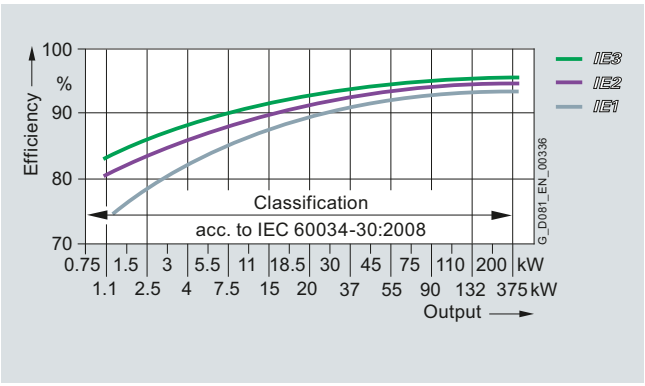


Fig. 1-12 IE1-IE3 efficiencies 4-pole at 50 Hz

The following table shows examples of the efficiency values according to the new and old methods for calculating losses.

Power	Number of poles	EFF measuring method (incl. percentage losses) EN/IEC 60034-2:1996 50 Hz	Loss calculation method acc. to IEC 60034-2:2007 50 Hz	Loss calculation method acc. to IEC 60034-2:2007 60 Hz
5.5 kW	4-pole	89.2 %	87.7 %	89.5 %
45 kW	4-pole	93.9 %	93.1 %	93.6 %
110 kW	4-pole	not defined	94.5 %	95.0 %

Background information

Comprehensive laws have been introduced in the European Union with the objective of reducing energy consumption and therefore CO_2 emissions.

EU Directive 640/2009 concerns the energy consumption or efficiency of induction motors in the industrial environment. This directive is now in force in every country of the European economic area.

For further details on internationally applicable standards and legal requirements, visit:

www.siemens.com/international-efficiency

Efficiency classes according to IEC 60034-30:2008 (continued)

Exceptions in the EU directive

- Motors that are designed to be operated totally submerged in a liquid
- Motors fully integrated into a product (e.g. a gearbox, pump, fan or compressor) whose energy efficiency cannot be measured independently of the product
- Motors that are specially designed for operation under the following conditions:
  - At altitudes greater than 1 000 meters above sea level;
  - At ambient temperatures above 40 °C;
  - At maximum operating temperatures above 400 °C;
  - At ambient temperatures below -15 °C (any motor)
  - With cooling liquid temperatures at the product intake of below 5 °C or above 25 °C;
  - In hazardous areas in the context of Directive 94/9/EC of the European Parliament and Council;
- Brake motors

The following motors are not involved:

- 8-pole motors
- Pole-changing motors
- Synchronous motors
- Motors for intermittent duty S2 to S9
- Single-phase motors
- Motors specially developed for inverter operation in accordance with IEC 60034-25

Note:

The geared motors described in this catalog fall under EU Directive 640/2009 and are in compliance with it.

The changes will come into effect on this date:

From June 16, 2011:
Compliance with the legally required minimum efficiency class IE2 for induction motors in S1 duty in accordance with the EU directive

From January 1, 2015:
Compliance with the legally required minimum efficiency class IE3 for power ratings from 7.5 to 375 kW or, as an alternative, IE2 motor in combination with an inverter

From January 1, 2017:
Compliance with the legally required minimum efficiency class IE3 for power ratings from 0.75 to 375 kW or, as an alternative, IE2 motor in combination with an inverter

Motors for the North American market

The Energy Policy Act (EPAct) was superseded in December 2010 by the Energy Independence Security Act (EISA).

Since December 2010, EISA has extended the minimum legal efficiency class requirements and the following motors must fulfill the NEMA Premium Efficient Level:

- 1 to 200 hp
- 2, 4 and 6-pole
- 230 V, 460 V

In addition, the following motors, for example, must fulfill the NEMA Energy Efficient Level:

- 201 to 500 hp
- 2, 4, 6 and 8-pole
- All voltages < 600 V except 230 V and 460 V
- Footless motors (IM B5 and other flange types)
- NEMA design C (increased starting torque)
- Geared motors

Motor noise in line operation

The noise level is measured according to ISO 1680 in a low-reflection room and is specified as A-weighted measuring surface sound pressure level L_{pfA} in dB (A). This value is the spatial average value of the sound pressure levels measured at the measuring surface. The measuring surface is a cube 1 m away from the surface of the motor. The sound power level is also specified as L_{WA} in dB (A).

The values specified in the motor selection tables apply to the motor without gearbox at 50 Hz
"Selection and ordering data" see Page 6/7.

The tolerance is +3 dB. At 60 Hz, the values are approximately 4 dB (A) higher. Noise values for inverter operation on request.

Geared motor noise

SIMOGEAR geared motors have noise levels below the permissible noise levels defined for gearboxes in VDI Guideline 2159 and for motors in IEC 60034-9.

When used in conjunction with the gearboxes, the motor noise values L_{pfA} or L_{WA} increase on average by 3 dB (A).

The circumferential velocity of the motor pinion has a significant influence on the additional gearbox noise. This is the reason that higher speeds or low transmission ratios result in higher noise. Here, SIMOGEAR geared motors provide a decisive advantage, as the motor plug-on pinion allows transmission ratios of up to 12 in the input stage.

Table 1-8 Variable noise behavior

Code	Description	Unit
L_{pfA}	A-weighted measuring surface sound pressure level	dB (A)
L_{WA}	Sound power level	dB (A)

1

Direction of rotation

Overview

All geared motors are connected as standard so that the motor rotates in the clockwise direction.

It is necessary to specify the desired direction of rotation of the output shaft when ordering a geared motor with backstop.

Definition of the direction of rotation

Direction of rotation	Clockwise	Counterclockwise
Abbreviation	CW (clockwise)	CCW (counter clockwise)
Description	Clockwise direction of rotation (when viewing the output shaft)	Counter clockwise direction of rotation (when viewing the output shaft)
Order code	**K18**	**K19**

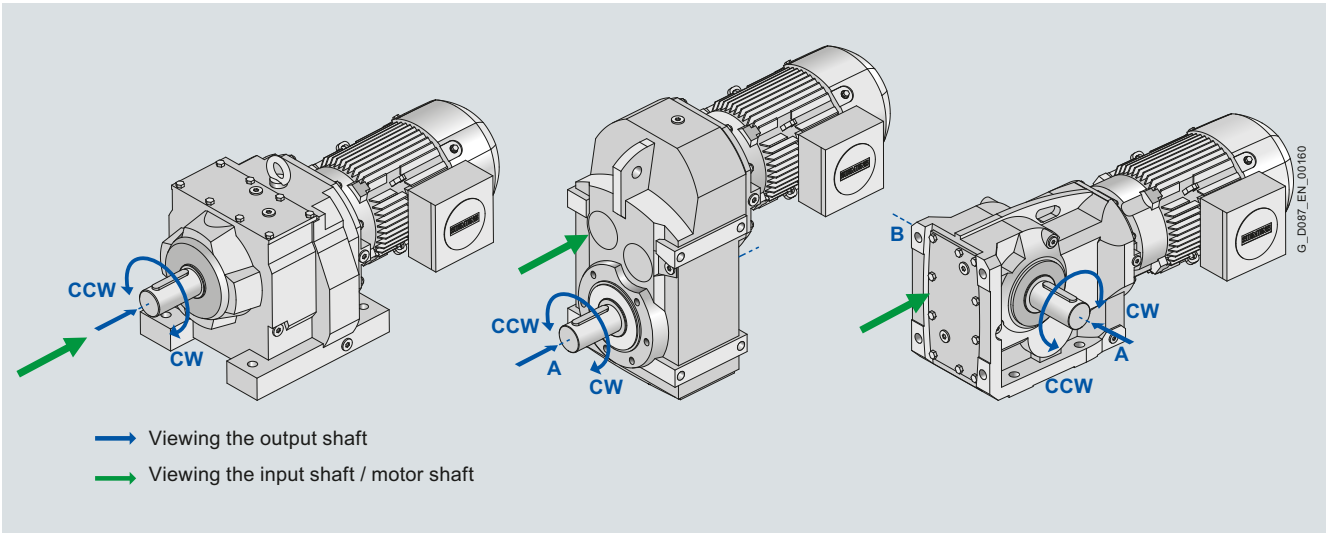


Fig. 1-13 Definition of the direction of rotation

Direction of rotation, input to output

Table 1-9 Direction of rotation of geared motors when viewing the output shaft

Gearbox type	Size	Gearbox stages	Output side	Direction of rotation	
				Input shaft	Output shaft
Z	19 … 89	2	–	CW	CW
D	19 … 89	3	–	CW	CCW
FZ	29 … 89	2	–	CW	CW
FD	29 … 89	3	–	CW	CCW
B	29 … 49	2	A	CW	CW
			B	CW	CCW
K	39 … 89	3	A	CW	CCW
			B	CW	CCW

Note:

For bevel gearboxes K and B, the direction of rotation must be specified when viewing the DE or NDE.

Configuring guide

Determining the drive data

Configuring sequence

Overview

General configuring notes are provided for the standard versions in this catalog.

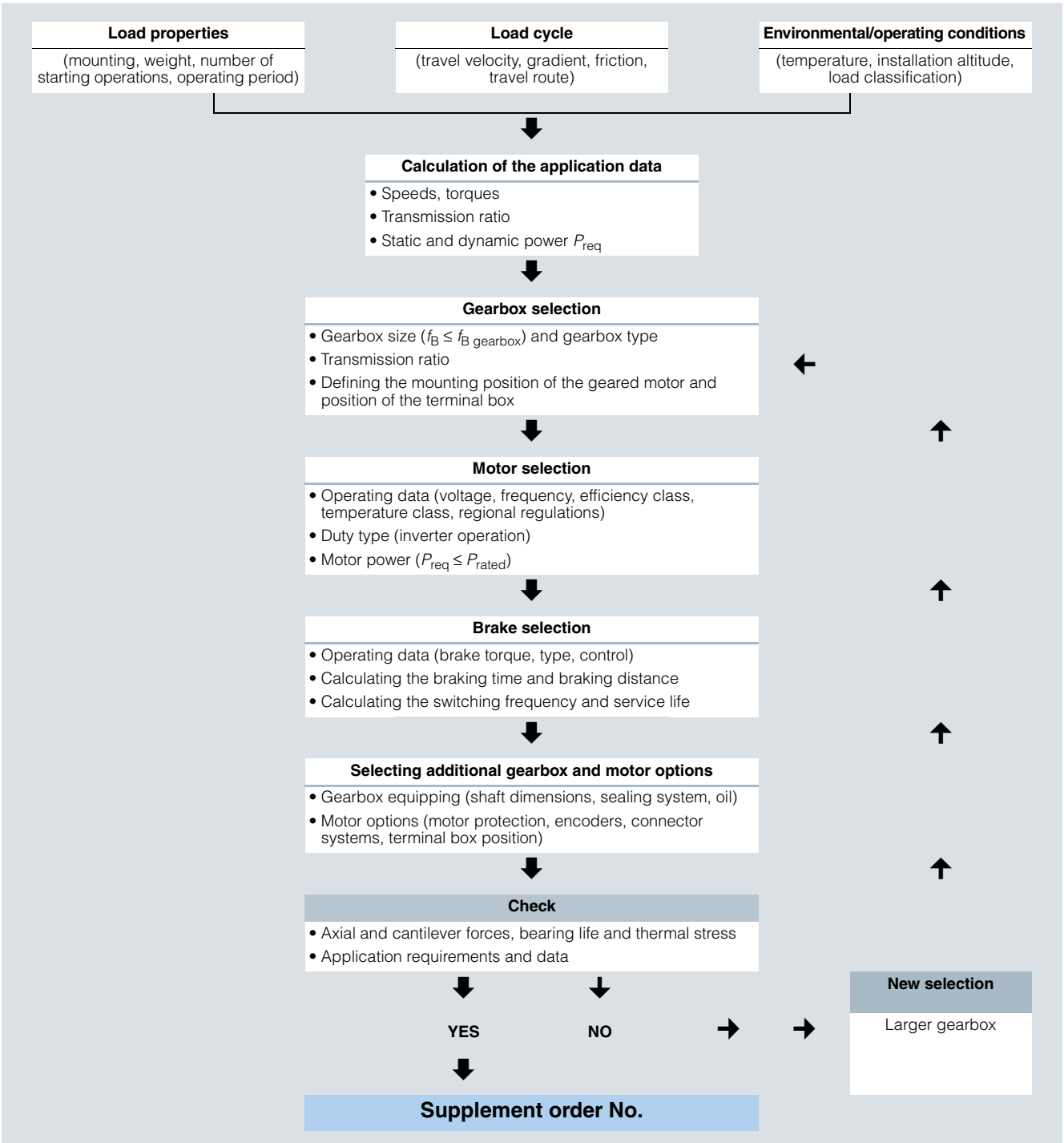
SIMOGEAR geared motors permit individual solutions to be created for a wide range of drive applications. In order to select the correct drive, initially specific data for the application must be known or determined.

For drives operating under special conditions, e.g. frequent reversing, short-time or intermittent duty, abnormal temperatures, reversal braking, extreme cantilever forces at the gearbox output shaft, etc. please contact your Siemens contact person with all of your technical questions.

You will find additional information on our website at

http://www.siemens.com/gearedmotors

The flow diagram schematically shows how to select and dimension a geared motor using a traction drive as example. However, the specific requirements and boundary conditions associated with the application in question always need to be taken into account.



General information

Basic version/load data

Gearbox type: ☐ Helical gearbox ☐ Parallel shaft gearbox ☐ Bevel gearbox

Power rating: _____ kW

Output speed: _____ rpm **Output torque** _____ Nm

Service factor: _____

Starting operations/hour: _____ s/h

Line voltage: _____ V

Line frequency: ☐ 50 Hz ☐ 60 Hz ☐ For inverter operation ☐ Maximum frequency _____ Hz

Operating period/day: ☐ 8-16 hours ☐ > 16 hours

Environmental conditions

Installation altitude: _____ m ☐ Outdoor operation ☐ Increased environmental stress

Air humidity: _____ % ☐ Normal environmental stress ☐ Aggressive environmental stress

Temperature: from _____ to _____ °C

Brief description of the system: (e.g. sector, conveyor system, …)

Gearbox

Mounting and mounting position

Mounting position: ☐ M1 ☐ M2 ☐ M3 ☐ M4 ☐ M5 ☐ M6

Terminal box position: _____

Mounting type: ☐ Foot-mounted design ☐ Flange-mounted design ☐ Housing flange ☐ Shaft-mounted design

Shafts

Design: ☐ Solid shaft with feather key ☐ Hollow shaft with feather key ☐ Hollow shaft with shrink disk

Shaft dimensions: (d x l) _____ x _____ mm

Other options: (e.g. axial/radial force)

Motor

Electrical design

Motor protection: ☐ PTC thermistor ☐ Winding thermostat ☐ Temperature sensor KTY 84-130 ☐ 1x resistance thermometer PT100

Mechanical design

Degree of protection: ☐ IP55 ☐ IP65 ☐ IP56

Cooling & ventilation: ☐ Self ventilation ☐ Forced ventilation

Motor plugs: ☐ HAN 10E ☐ HAN K4/4 ☐ Others _____

Mounted components

Brake: ☐ Brake Voltage: _____ V

☐ Manual release

Encoder: ☐ Incremental encoder ☐ Absolute encoder ☐ Resolver ☐ Prepared for encoder mounting

Other options:

General options

Surface treatment

Surface protection: ☐ C1 ☐ C2 ☐ C3 ☐ C4 ☐ C5

☐ unpainted ☐ C2 primed ☐ C4 primed ☐ RAL color: _____

Other options:

Gearbox efficiency

The efficiency of the gearbox is determined by the gear teeth, rolling-contact bearing friction, and the shaft seals, among other things.

SIMOGEAR geared motors have a very high efficiency. Generally, efficiencies of 96 % (2-stage) and 94 % (3-stage) can be assumed. These gearbox types can be operated with energy-efficient motors to create an excellent solution.

Efficiency optimization

As result of the wide range of transmission ratios, in many cases, instead of a 3-stage gearbox, a 2-stage SIMOGEAR gearbox can be used.

This means that the efficiency is improved by approximately 2 % when compared to conventional drives.

Further, the efficiency can be improved by optimizing the mounting position and the input speed.

Splashing losses

For certain gearbox types of construction, the first stage can be completely immersed in the gearbox oil. In the case of large gearboxes with a high input speed, particularly with vertical types of construction, this may lead to increased splashing losses, which cannot be neglected.

If you wish to use gearboxes such as these, then please contact Siemens. If at all possible, you should choose horizontal types of construction in order to keep splashing losses to a minimum.

Service factor

Determining the required service factor

The operating conditions are crucial in determining the service factor and for selecting the geared motor. These are taken into account with service factor f_{Btot}.

In standard operation, i.e. with a uniform load of the driven machine, small masses to be accelerated, and a low number of starting operations, a service factor of $f_{Btot} = 1$ can be selected.

For different operating conditions, the service sector can be taken from the tables.
When the motor power and the gearbox output speed are known, a gearbox type is selected with a service factor that meets the following condition:

$$f_{Btot} \leq f_B$$

The gearbox size or rated gearbox torque and the resulting service factor are not standardized and depend on the manufacturer.

Determining the load classification

The service factor of the driven machine f_{Btot} is determined from the load classification, number of starting operations, and operating period per day.

The operating conditions can vary greatly. To determine the service factor, empirical values can be derived from the configuration of other similar applications. The driven machines can be assigned to three load groups according to their load classification.

These groups are evaluated according to the mass acceleration factor m_{AF}.

Table 2-1 Load groups of driven machines

Load classification	Mass acceleration factor	Driven machine
I Almost shock-free	≤ 0.3	Electric generators, belt conveyors, apron conveyors, screw conveyors, lightweight elevators, electric hoists, machine tool feed drives, turbo blowers, centrifugal compressors, mixers and agitators when mixing materials with uniform density
II Moderate shock loads	≤ 3	Machine tool main drives, heavy elevators, slewing gear, cranes, shaft ventilators, mixers and agitators when mixing materials with non-uniform densities, reciprocating pumps with multiple cylinders, metering pumps
III Heavy shock loads	≤ 10	Punching presses, shears, rubber kneaders, machinery used in rolling mills and the iron and steel industry, mechanical shovels, large centrifuges, large metering pumps, rotary drilling rigs, briquetting presses, pug mills

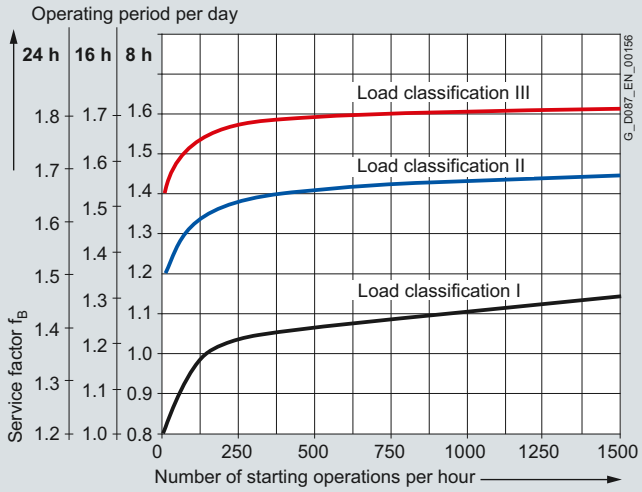


Fig. 2-1 Service factor f_B

Note:

When selecting and dimensioning drives with the following special application conditions, please contact Siemens:

- Frequent reversing
- Short time and intermittent operation
- Abnormal temperatures
- Reversal braking
- Extreme and/or circulating radial forces at the gearbox output shaft
- Fluctuating loads

Service sector (continued)

Mass acceleration factor

The mass acceleration factor m_{AF} is calculated as follows:

$$m_{AF} = \frac{J_x}{(J_{mot} + J_B + J_z)}$$

All external moments of inertia are moments of inertia of the driven machine and the gearbox, which are to be reduced to the motor speed. In most cases the relatively insignificant moment of inertia of the gearbox can be ignored.

The calculation is made using the following formula:

$$J_x = J_2 \cdot \left(\frac{n_2}{n_1}\right)^2 = \frac{J_2}{i_{tot}}$$

Table 2-2 Variables for the service factor

Code	Description	Unit
i_{tot}	Transmission ratio	–
J_2	Moment of inertia referred to the output speed of the gearbox	kgm²
J_B	Moment of inertia of the brake	kgm²
J_{mot}	Moment of inertia of the motor	kgm²
J_x	Moment of inertia of the load referred to the motor shaft	kgm²
J_z	Additional moment of inertia of a high inertia fan	kgm²
m_{AF}	Mass acceleration factor	–
n_1	Input speed of the gearbox	rpm
n_2	Output speed of the gearbox	rpm

Required torque

Once the load situation (drive data) and the service factor have been clarified, then the required output torque can be determined.

$$T_{2req} = \frac{9500 \cdot P_1}{n_2} \cdot f_{Btot}$$

Table 2-3 Variables for the required torque

Code	Description	Unit
f_{Btot}	Service factor of the driven machine	–
n_2	Output speed of the gearbox	rpm
P_1	Actual steady-state power of the motor	kW
T_{2req}	Required input torque of the driven machine	Nm

Input speed

For an identical power and output speed, in the selection tables 4-pole geared motors have priority over 6-pole motors.

As result of the very wide range of transmission ratios of SIMOGEAR gearboxes, it is hardly necessary to use motors with other pole numbers. In addition to the good availability worldwide, 4-pole motors generally offer the optimum solution regarding price, length, noise and service life.

Further, from the modular system, motors with other pole numbers can be mounted. As a consequence, the following special combinations can be implemented:

- Extremely high output speeds (2-pole motors)
- Extremely low output speeds (6-pole motors)
- Lower noise solutions (6-pole motors)

For inverter operation, the gearboxes are driven at variable speeds.
When configuring the system, we recommend that the maximum input speed in continuous duty is maintained, wherever possible, at 1 500 rpm.

At higher motor speeds above 1 500 rpm you will generally experience higher than average noise levels and a lower than average bearing service life. This depends to a large extent on the transmission ratio and gearbox size in question. Furthermore, higher speeds additionally influence the thermal properties of the gearbox and service intervals.

Shaft load and bearing service life

Available radial force

The radial forces either come from the driven machine (mixer, hoisting gear) or they are caused by the transmission elements.

The available radial force F_{Ravail} at the output shaft is obtained as follows:

- The required geared motor output torque T_2
- Average diameter of the mounted transmission element d_0
- Transmission element type, e.g. sprocket wheel

The transmission element type determines the additional factor C (see table).

$$F_{Ravail} = 2000 \cdot \frac{T_2}{d_0} \cdot C$$

Additional factor C for the transmission element type

Transmission element	Explanation	Additional factor *C*
Gear wheel	> 17 teeth	1.00
	≤ 17 teeth	1.15
Sprocket wheel	≥ 20 teeth	1.00
	14 ... 19 teeth	1.25
	≤ 13 teeth	1.40
Toothed belts	Preloading force	1.50
V-belts	Preloading force	2.00
Flat belts	Preloading force	2.50
Agitator/mixer	Rotating radial force	2.50

Permissible radial force

The permissible radial force F_{R2} is determined by the required bearing service life, among other things.

The nominal service life L_{h10} is determined in accordance with ISO 281. Normally, calculating the nominal bearing service life is completely adequate.

The bearing service life can be calculated for special operating conditions and in special cases on request, based on the modified service life L_{na}.

The selection tables specify the permissible radial force F_{R2} for the output shafts of foot-mounted gearboxes with solid shaft. These table values refer to the force application point at the center of the shaft extension and are minimum values, which apply under the most unfavorable conditions (force application angle, mounting position, direction of rotation).

If the values in the table are not sufficient, or if other gearbox designs are being used, please contact Siemens.

Note:

Bevel gearboxes B and K in type of construction M1 with foot mounting on the face side:
Maximum of 50 % of the radial force F_{R2} specified in the tables is permissible.

Helical geared motors ZB and DB in foot/flange-mounting designs:
When transmitting torque through the flange surface, a maximum of 50 % of the radial force F_{R2} specified in the tables is permissible.

Permissible axial force

If no radial force is present, then as permissible axial force F_{ax} (tension or compression), max. 50 % of the permissible radial force can be applied.

Table 2-4 Variables for the available radial force, permissible radial and axial force

Code	Description	Unit
C	Additional factor to calculate the radial force	–
d_0	Average diameter of the mounted transmission element	mm
F_{ax}	Permissible axial force for foot-mounted gearbox with solid shaft	N
F_{Ravail}	Available radial force from the mounted transmission element	N
F_{R2}	Permissible radial force at the center of shaft extension (l/2)	N
T_2	Geared motor output torque	Nm
L_{h10}	Nominal service life	h
L_{na}	Modified service life	h

Shaft load and bearing service life (continued)

Higher permissible radial and axial force

The permissible radial force load can be increased, taking the force application angle α and the direction of rotation into account. Installing reinforced bearings also means that higher loads are permitted on the output shaft.

If higher radial or axial forces or combined loads comprising radial and axial forces occur, then please contact Siemens.

Table 2-5 Variables for defining the force application

Code	Description	Unit
α	Force application angle	°
F_{ax}	Permissible axial force	N
F_x	Permissible radial force from out of center force application point	N
x	Distance from the shaft shoulder up to the point where force is applied	mm

Definition of the point of application of the radial and axial forces

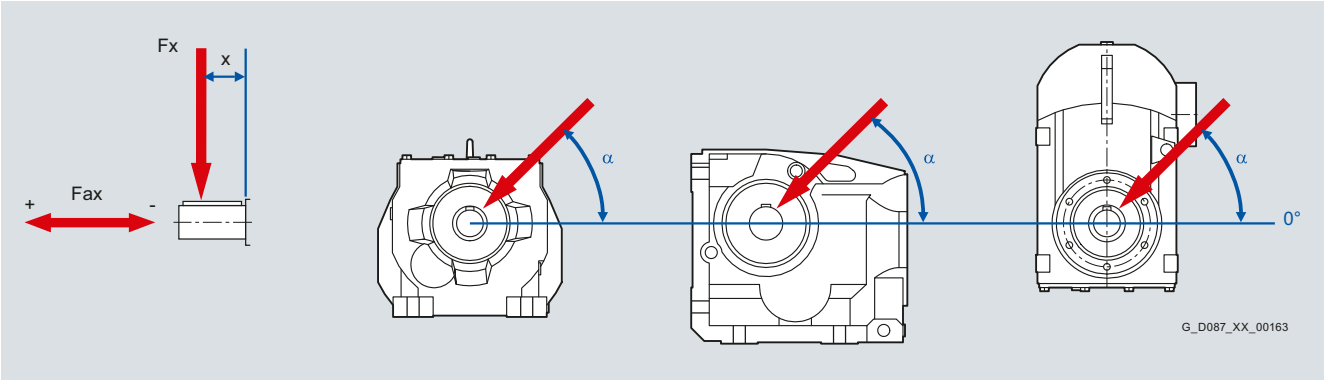


Fig. 2-2 Diagram showing force application point

Shaft load and bearing service life (continued)

Radial force conversion for out of center force application point

If the force is not applied at the center of the shaft extension, the permissible radial force must be calculated using the following formula.

The lower value of F_{xperm1} (bearing service life) and F_{xperm2} (strength) is the permissible radial force. The calculation is applicable without axial force.

Permissible radial force according to the bearing service life

$$F_{xperm1} = F_{R2} \cdot \frac{y}{(z + x)}$$

Permissible radial force according to the strength

$$F_{xperm2} = \frac{a}{(b + x)}$$

Table 2-6 Gearbox constants for calculating the radial force

Gearbox size	Constants					
	y	z	a	b	d	l
	mm	mm	kNmm	mm	mm	mm
Helical gearboxes Z and D						
19	91	71	52.8	12	20	40
29	104	79	137	12	25	50
39	116	91	109	0	25	50
49	138	108	260	15	30	60
59	143.5	108.5	414	19	35	70
69	169	134	385	0	35	70
79	172.5	132.5	536	0	40	80
89	212.5	162.5	929	0	50	100
Parallel shaft gearboxes F						
29	108.5	83.5	159	0	25	50
39	123.5	98.5	146	0	25	50
49	154.5	124.5	239	0	30	60
69	175	140	378	0	35	70
79	193.5	153.5	544	0	40	80
89	228.5	178.5	884	0	50	100
Bevel gearbox B						
29	117	97	83	0	20	40
39	143.5	113.5	209	0	30	60
49	175	140	392	0	35	70
Bevel gearbox K						
39	123.5	98.5	152	0	25	50
49	154.5	124.5	235	0	30	60
69	175	140	378	0	35	70
79	193.5	153.5	556	0	40	80
89	228.5	178.5	916	0	50	100

Determining the duty type

The power ratings for continuous duty with constant load (duty type S1) are listed in the power tables. The motor power ratings listed in the catalog can be converted to the lower duty cycle using the corresponding k_{DC} factors for S1, S2, and S3 duty types.

$$P_{DC} = P_{rated} \cdot k_{DC}$$

For increased power, you should note that the breakdown torque ratio must not fall below 1.6.

This same regulation applies when differentiating between the following groups of duty types.

Table 2-7 Variables for the duty type

Code	Description	Unit
P_{DC}	Power for the new duty cycle	kW
P_{rated}	Rated motor power	kW
k_{DC}	Factor for increased power	–

Table 2-8 Duty types according to EN 60034-1 (IEC 60034-1)

Duty type	Description	Information required		Factor for increased power k_{DC}
S1	Continuous duty with 100 % *DC*	–		
S2	Constant load for a brief time, e.g. S2 – 30 min	Load duration	60 min	1.10
			30 min	1.20
			10 min	1.40
S3	Intermittent periodic duty, where starting has no significant influence (cyclic operation), e.g. S3 – 40 %	Cyclic duration factor *DCF* in % (based on 10 min)	60 %	1.10
			40 %	1.15
			25 %	1.30
			15 %	1.40
S4 … S10	Intermittent periodic duty with the influence of starting	Cyclic duration factor *DCF* in % (referred to 10 min), switch-on operations per hour, load torque and moment of inertia The duty type and motor power can be determined if the number of starting operations per hour, starting time, load duration, type of braking, braking time, idle time, cycle time, standstill time, and required power are specified.	On request	

Determining the duty type (continued)

Duty types

S1

Continuous duty with constant load

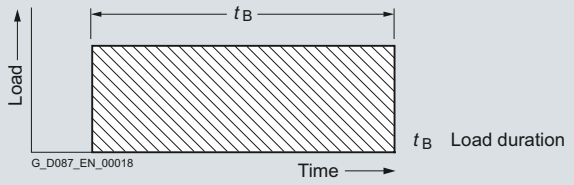


Fig. 2-3 Duty type S1

Where starting and electrical braking do not affect the stator winding temperature rise:

S2

Short-time duty

Recommendation: Operating times 10, 30, 60 and 90 minutes

After each period of duty the motor remains at zero current until the winding has cooled down to the coolant temperature.

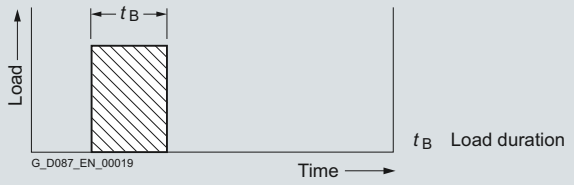
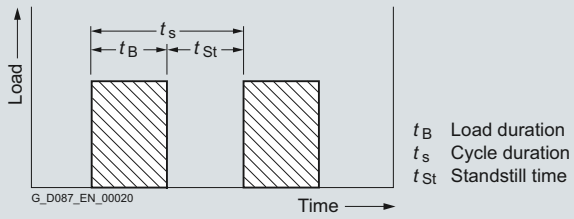


Fig. 2-4 Duty type S2

S3

Intermittent duty

Where starting does not affect the temperature. Unless any agreement is made to the contrary, the cycle duration is 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the cyclic duration factor.



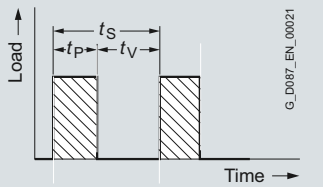
Cyclic duration factor based on 10 min $= \frac{t_B}{t_B + t_{St}} \cdot 100\%$

Fig. 2-5 Duty type S3

S6

Continuous duty with intermittent load

The cycle duration, if nothing else has been agreed, is 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the load duration factor.



t_S Cycle duration
t_P Operating time with constant load
t_V Idle time

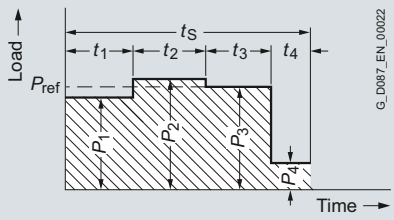
Cyclic duration factor $= \frac{t_P}{t_S}$

Fig. 2-6 Duty type S6

S10

Duty with discrete constant loads

In this case, a maximum of four discrete loads are available, where each load results in the thermal steady state. For this duty type, a load of the same value as the one used for the S1 duty type should be selected.



P_i Constant load within one load cycle
P_{ref} Reference load
t_S Cycle duration

Fig. 2-7 Duty type S10

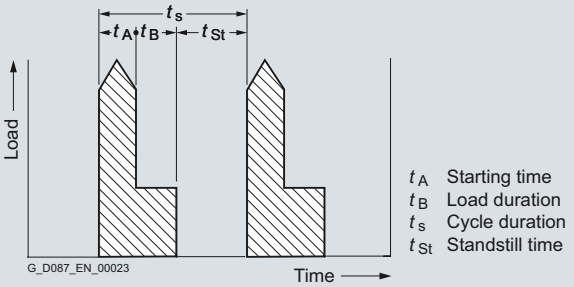
Determining the duty type (continued)

Duty types (continued)

Starting and braking influence the temperature rise of the stator winding and the rotor cage:

S4

Intermittent duty where starting influences the temperature



Cyclic duration factor based on 10 min $= \frac{t_A + t_B}{t_A + t_B + t_{St}} \cdot 100\%$

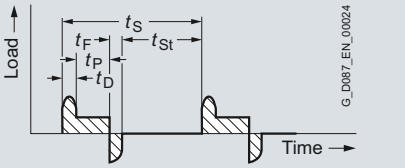
Fig. 2-8 Duty type S4

S5

Intermittent duty where starting and braking influences the temperature

For the **S4** and **S5 duty types**, this code should be followed by the cyclic duration factor, the moment of inertia of the motor (J_{mot}), and the moment of inertia of the load (J_x), both referred to the motor shaft.

The cycle duration, if nothing else has been agreed, is 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the cyclic duration factor.



t_S Cycle duration
t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking
t_{St} Standstill time with windings at zero current

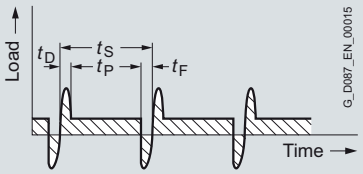
Cyclic duration factor $= \frac{t_D + t_P + t_F}{t_S}$

Fig. 2-9 Duty type S5

S7

Continuous duty with starting and braking

For S7 and S8 duty types, the moment of inertia of the load (J_x) referred to the motor shaft must be known.



t_S Cycle duration
t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking

Cyclic duration factor = 1

Fig. 2-10 Duty type S7

Determining the duty type (continued)

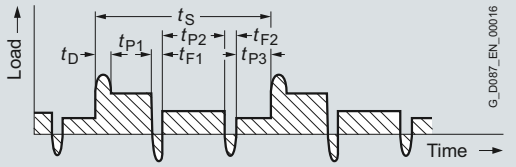
Duty types (continued)

Starting and braking influence the temperature rise of the stator winding and the rotor cage:

S8

Continuous duty with non-periodic load and speed changes (inverter operation)

Most of the intermittent operating conditions occurring in practice are a combination of the above mentioned duty types. All of the operating conditions must be known in order to precisely determine a suitable motor.



t_S Cycle duration
t_D Starting time
t_P Operating time with constant load (P1, P2, P3)
t_F Time with electrical braking (F1, F2)

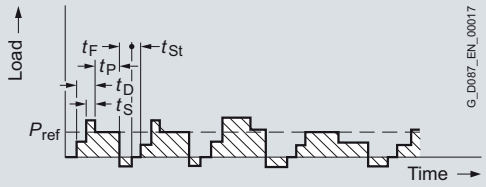
$$\text{Cyclic duration factor} = \frac{t_D + t_{P1}}{t_S} \cdot \frac{t_{F1} + t_{P2}}{t_S} \cdot \frac{t_{F2} + t_{P3}}{t_S}$$

Fig. 2-11 Duty type S8

S9

Continuous duty with non-periodic load and speed changes (inverter operation)

Most of the intermittent operating conditions occurring in practice are a combination of the above mentioned duty types. All of the operating conditions must be known in order to precisely determine a suitable motor.



t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking
t_{St} Standstill time with windings at zero current
t_S Time with overload

Fig. 2-12 Duty type S9

Cyclic duration factor

The cyclic duration factor *DCF* is the ratio of the load duration and cycle duration. The cycle duration is the sum of the on times (operational periods) and the no-voltage periods.

$$DCF = \frac{t_1 + t_2 + t_3}{t_s} \cdot 100$$

Table 2-9 Variables for the cyclic duration factor

Code	Description	Unit
DCF	Cyclic duration factor	%
t_1	Application time of the brake	ms
t_2	Disconnection time	ms
t_3	Slipping time	ms
t_s	Cycle duration	ms

Number of starting operations

A higher number of starting operations means that the motor winding will be subject to a thermal load. The permissible no-load switching frequency Z_0 for brake motors is specified in the no-load switching frequency table on Page 8/31. The permissible switching frequency Z_{perm} has to be determined for different operating cases.

This value is influenced by the corresponding load torque, the additional moment of inertia, the power requirement, and the cyclic duration factor. These can be evaluated using the factors k_M, k_{FI}, and k_P.

$$Z_{perm} = Z_0 \cdot k_M \cdot k_{FI} \cdot k_P$$

For 60 Hz operation, the calculated permissible switching frequency Z_{perm} must be reduced by 25 %. See the technical data for brakes in Chapter 8 for the permissible switching frequency for operation with function rectifiers.

Table 2-10 Variables for the number of starting operations

Code	Description	Unit
DCF	Cyclic duration factor	%
J_{mot}	Moment of inertia of the motor	kgm^2
J_z	Additional moment of inertia of a high inertia fan	kgm^2
k_{FI}	Factor for taking into account the additional moment of inertia	–
k_M	Factor for taking into account the load torque while accelerating	–
k_P	Factor for taking into account the required power and duty cycle	–
P_1	Actual steady-state power of the motor	kW
P_{rated}	Rated motor power	kW
T_A	Acceleration torque of the motor	Nm
T_{rated}	Rated motor torque	Nm
Z_0	No-load switching frequency	1/h
Z_{perm}	Permissible switching frequency	1/h

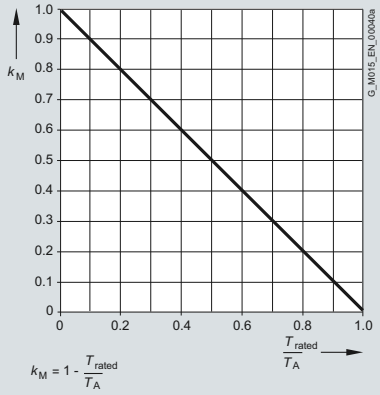


Fig. 2-13 Torque when accelerating

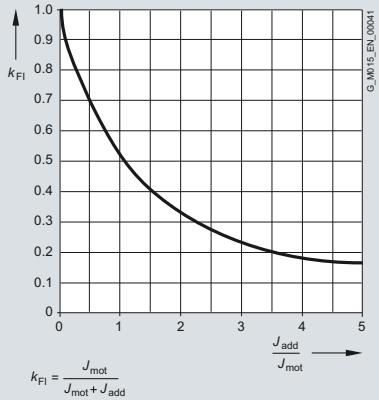


Fig. 2-14 Additional moment of inertia

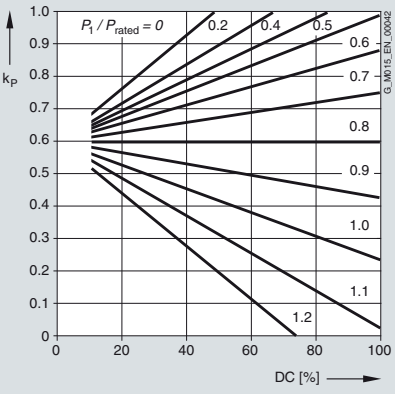


Fig. 2-15 Power requirement and duty cycle

Additional moments of inertia

The motor moment of inertia with standard fan is specified in the motor selection lists. The higher moment of inertia should be used for metal or high-inertia fans. This is also valid for mounted brakes, backstops and encoder systems.

Line feeder cables

Line feeder cables must be adequately dimensioned. The number of required parallel (if applicable) feeder cables is determined by the maximum connectable conductor cross-section, the type of cable, the cable installation, the ambient temperature and the permissible current. In Germany, DIN VDE 0298 must be applied when dimensioning cables.

Undervoltage

For an undervoltage condition as a result of weak line supplies, catalog values such as motor power, torque and speed are not reached. This is especially important when considering motor starting.

Motor protection

A distinction is made between current-dependent and temperature-dependent protective devices for motors.

Current-dependent protective devices

Fuses are only used to protect line cables in the event of a short-circuit. They are not suitable for protecting the motor against overload. The motors are usually protected by thermally-delayed overload protective devices (circuit breakers for motor protection or overload relays).

This protection is current-dependent and is particularly effective in the case of a locked rotor. For normal operation with short starting operations, starting currents that are not excessive and for low numbers of starting operations, motor circuit breakers provide adequate protection. Motor circuit breakers are not suitable for heavy duty starting or high numbers of starting operations. Differences in the thermal time constants for the protective devices and the motor result in unnecessary early tripping when the circuit breaker is set to the rated current.

Temperature-dependent protective devices

Temperature-dependent protective devices are integrated in the motor winding and can be implemented as **temperature sensors** and **temperature switches**.

The number of temperature-dependent protective devices depends on the number of windings and their function.

The alarm is normally set to 10 K below the switch-off temperature. The rated response temperatures of the protective devices depend on the thermal class of the motors.

In order to achieve full thermal protection it is necessary to combine a thermally-delayed overcurrent release and a PTC thermistor.

Coolant temperature and installation altitude

The rated power specified in the selection tables in Chapter 6 is valid for a coolant temperature of +40 °C and an installation altitude of 1 000 m above sea level.

Please contact Siemens for higher coolant temperatures.

The table with correction factors provides a rough idea of the derating required if conditions are different.

This results in a permissible motor power of:

$$P_{perm} = P_{rated} \cdot k_{HT}$$

Table 2-11 Variables for coolant temperature and installation altitude

Code	Description	Unit
P_{perm}	Permissible motor power	kW
P_{rated}	Rated motor power	kW
k_{HT}	Factor for abnormal coolant temperature and installation altitude	–

Table 2-12 Factor k_{HT} for different installation altitude and coolant temperature

Installation altitude	**Coolant temperature**					
SA	**CT**					
m	< +30 °C	+30 … +40 °C	+45 °C	+50 °C	+55 °C	+60 °C
1 000	1.07	1.00	0.96	0.92	0.87	0.82
1 500	1.04	0.97	0.93	0.89	0.84	0.79
2 000	1.00	0.94	0.90	0.86	0.82	0.77
2 500	0.96	0.90	0.86	0.83	0.78	0.74
3 000	0.92	0.86	0.82	0.79	0.75	0.70
3 500	0.88	0.82	0.79	0.75	0.71	0.67
4 000	0.82	0.77	0.74	0.71	0.67	0.63

Degrees of protection

The motors are supplied in IP55 to standard IEC 60034-5. They can be installed in dusty or humid environments. The motors are suitable for operation in tropical climates. Guide value below 60 % relative air humidity for a coolant temperature of +40 °C.

Other requirements on request.

Table 2-13 Description of the degrees of protection

First digit	Brief description	Second digit	Brief description
4	The motor is protected against solid objects greater than 1 mm.	**4**	The motor is protected against water splashed from all sides.
5	The motor is protected against dust.	**5**	The motor is protected against strong jets of water.
6	The machine is dust-tight.	**6**	The motor is protected against "heavy seas" or powerful jets of water.
		7	The motor is protected against immersion.
		8	The motor is protected against long periods of immersion under pressure.

The first digit of the degree of protection indicates the degree to which an enclosure provides protection against contact and the ingress of foreign bodies.

The second digit indicates the protection that an enclosure offers regarding the ingress of water.

Increased corrosion protection as well as additional protective measures for the winding (protection against moisture and acid, corrosion protection in the motor) can support the selected degree of protection.

The degree of protection only refers to the motor. When selecting higher degrees of protection, the equipping on the gearbox side should be taken into account (seals, vents).

Cooling and ventilation

When the geared motor is mounted and the air intake is restricted, you must ensure that a minimum clearance is maintained between the fan cover and the wall and that the cooling air is not immediately drawn in again.

Further, it must be guaranteed that the cooling air flow to the gearbox is not obstructed. As a consequence, the gearbox operating temperature can be further reduced.

Forced ventilation

The use of an external fan is recommended to increase motor utilization at low speeds and to limit noise generation at speeds significantly higher than the synchronous speed. Both are mainly used in conjunction with inverter operation.

Typical areas of application for forced ventilation:

- High number of starting operations
- Inverter drives with a control range > 1:20
- Inverter drives with rated torque at low speeds
- Noise reduction

Brakes

The brakes can be used as working brakes or holding brakes. A holding brake is suitable for holding masses and loads at a fixed position. A working brake is also capable of decelerating masses and loads.

The brakes are designed as fail-safe spring-operated brakes. When the brake is mounted, it increases the length of the motor. The dimensions are shown in the dimension drawings.

The spring-operated disk brakes are suitable for a standard ambient temperature range of -20 to +40 °C.

Brake control

Definition of switching times (VDI 2241)

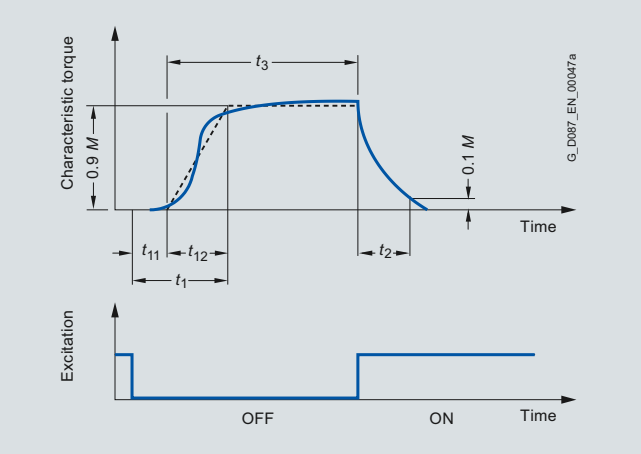


Fig. 2-16 Brake switching times

Switching times:

- t_1 Application time of the brake
- t_2 Disconnection time
- t_3 Slipping time
- t_{11} Response time
- t_{12} Rise time

Brake control (continued)

Fast brake application

Disconnection on the AC side

If the brake is disconnected from the line supply, the brake is applied.

With AC brake voltages, the brake application time is extended as a result of the inductance of the solenoid (disconnection on the AC side). This results in a considerable delay before the brake is mechanically applied. In order to achieve short brake application times, the circuit must also be disconnected on the DC side.

Rectifier for disconnection on the DC side

Electromagnetically released spring-operated disk brakes can be disconnected on the AC side and the DC side.

Disconnection on the DC side means that the inductance and thus the magnetic field in the brake solenoid are reduced very quickly.

For disconnection on the DC side, a wire jumper can be removed from rectifier and replaced by the contacts of an external switch.

This enables significantly shorter application times to be achieved than those achieved for disconnection on the AC side.

Function rectifiers for fast brake application

If function rectifiers are used for fast brake application, then there is no need for an external switch and therefore less wiring is required.

Disconnection on the DC side using current sensing

One option of disconnecting on the DC side is to sense the motor current. If the motor current falls below the rectifier's sensor current when disconnected from the three-phase line supply, the brake solenoid is disconnected from the DC voltage electronically without any contacts.

Used in conjunction with disconnection on the DC side by means of current sensing, rectifiers are generally suitable for being connected in parallel with the motor connection, even in applications involving moving loads or large moments of inertia.

Brakes controlled in this way are completely wired to the motor terminal board.

Inverter operation is not permissible.

Disconnection on the DC side using voltage sensing

Another option of disconnecting on the DC side is by sensing the rectifier supply voltage.

An integrated switching transistor switches off the load if the input voltage falls below a specified switching threshold. Used in conjunction with disconnection on the DC side using voltage sensing, rectifiers are generally suitable for operation with separate AC-side brake control using an additional switching contact.

Connection in parallel with the motor connection is also possible, but it is not recommended, as the rectifier disconnection response will be impaired by the influence of the motor winding. In addition, many applications involve driving loads or large moments of inertia. This can cause the no-load voltage generated when the motor coasts down to considerably delay brake application if the switching threshold for voltage sensing is not fallen below.

If connection in parallel with the motor connection is nevertheless desired or required, disconnection on the DC side using current sensing is recommended.

Fast brake release

Function rectifier for fast brake release

Rectifier with overexcitation (high-speed excitation)

Rectifiers with overexcitation operate for approximately 300 to 400 ms with bridge rectification, i.e. when being released, the brakes are supplied with twice the rated solenoid voltage. After this time the rectifiers automatically switch from bridge to half-wave rectification and the brakes are operated with the rated solenoid voltage. This results in shorter release times and higher brake switching frequencies. The friction lining wear is also reduced, the permissible friction energy until the air gap is re-adjusted increases, and starting losses are reduced.

Rectifiers with overexcitation are generally suitable for being connected in parallel to the motor connection or for a separate circuit in the case of inverter operation (note connection information for disconnection on the DC side).

Service life of the brake lining

The service life of the brake lining L_{rated} until the air gap has to be readjusted depends on various factors. The main influencing factors include the masses to be braked, the motor speed, the switching frequency, and, therefore, the temperature at the friction surfaces.

This means it is not possible to specify a value for the friction energy until re-adjustment that is valid for all operating conditions.
However, a wear calculation can be made according to the friction energy, so that the service life can be defined in normal operation.

Braking torques as a function of the speed and permissible speed limits

The braking torque available decreases with increasing motor speed.

The maximum permissible speeds from which emergency stops can be made are listed in the table on Page 8/28. These speeds should be considered as guide values and must be checked for the specific operating conditions.

The maximum permissible friction energy depends on the switching frequency and is shown for individual brakes in the diagram “Permissible operating energy” on Page 8/28.
Increased wear can be expected when the brakes are used for emergency stops.

Determining the braking torque

The braking torque must be selected in accordance with the particular drive application.

The following criteria are decisive when it comes to making this selection:

- Static safety
- Required braking time
- Permissible brake delay
- Possible braking distance
- Brake wear

The braking torque is determined using the safety factor k, which can be selected in the range 1.0 up to 2.5. As a general rule of thumb, the factor for horizontal motion is approx. 1.0 to 1.5 and for vertical motion approx. 2.0 to 2.5.

However, the precise braking torque depends to a large extent on the particular operating conditions.

The rated braking torque is referred to a speed of n = 100 rpm and decreases with increasing motor speed. When calculating the braking torque, this is taken account using correction factor f_{br}.

This means that the rated braking torque is applicable for most braking operations for inverter operation.

For line operation, braking is directly from the motor speed. In addition, for vertical conveyors, the increased speed when moving downwards must be taken into account.

$$T_{br} > T_x \cdot k \cdot f_{br}$$

Table 2-14 Dynamic braking torque

Brake type	Correction factor f_{br} for the braking torque		
	100 rpm	1 500 rpm	3 000 rpm
L4	1	0.87	0.80
L8	1	0.85	0.78
L16	1	0.83	0.76
L32	1	0.81	0.74
L60	1	0.80	0.73
L80	1	0.79	0.72
L150	1	0.77	0.7
L260	1	0.75	0.68

Values for speeds > 3 000 rpm available on request.

Brake switching time

The total time it takes the motor to come to a standstill comprises the following times:

- Application time of the brake t_1
- Braking time t_{br}

The first is the time it takes the brake to reach 90 % of its braking torque. This time may be circuit- and control-dependent.

The braking time is determined as follows:

$$t_{br} = \frac{(J_{mot} + J_z + J_x \cdot \eta) \cdot n_{br}}{9.55 \cdot (T_{br} \pm T_x \cdot \eta)}$$

If T_x supports the braking operation, T_x is positive, otherwise it is negative.

Table 2-15 Variables for the braking torque, brake switching time

Code	Description	Unit
η	Efficiency	%
f_{br}	Braking torque correction factor	–
J_{mot}	Moment of inertia of the motor	kgm^2
J_x	Moment of inertia of the load referred to the motor shaft	kgm^2
J_z	Additional moment of inertia of a high inertia fan	kgm^2
k	Factor for taking into account operating conditions	–
n_{br}	Braking speed	rpm
t_{br}	Braking time	s
T_{br}	Rated braking torque	Nm
T_x	Load torque	Nm
L_{rated}	Service life of the brake lining	h

Braking distance and positioning accuracy

Braking distance s_{br} is the distance traveled by the driven machine during braking time t_{br} and application time t_1.

The formula below applies to horizontal motion and upward vertical motion.

With linear motion, a positioning accuracy of around ± 15 % can be assumed. However, this can be heavily influenced by the condition of the brake.

$$s_{br} = v \cdot 100 \cdot t_1 + 0.5 \cdot t_{br}$$

Braking energy per braking operation

The braking energy W per braking operation comprises the energy of the moments of inertia to be braked and the energy which must be applied in order to brake against a load torque.

T_x is positive if the load torque is working against the braking torque (horizontal motion, upward vertical motion).

T_x is negative if it supports the braking operation (downward vertical motion).

The permissible operating energy Q_{perm} must be checked against the relevant switching frequency using the diagram "Permissible operating energy" on Page 8/28. This is of particular importance for emergency-stop circuits.

$$W = \frac{T_{br}}{T_{br} \pm T_x \cdot \eta} \cdot \frac{(J_{mot} + J_z + J_x \cdot \eta) \cdot n_{br}^2}{182.5}$$

$$W < Q_{perm}$$

Brake service life

The brake lining is subject to wear as a result of friction. As a consequence, the air gap increases and the brake application time lengthens. The air gap can be readjusted. The friction lining should be replaced after a certain number of readjustments.

Service life of the brake lining until readjustment

$$L_{rated} = \frac{W_V}{W \cdot Z}$$

Service life of the brake lining until replacement

$$L_{ratedmax} = \frac{W_{tot}}{W \cdot Z}$$

Table 2-16 Variables for the braking distance, energy and brake service life

Code	Description	Unit
J_{mot}	Moment of inertia of the motor	kgm²
J_z	Additional moment of inertia of a high inertia fan	kgm²
J_x	Moment of inertia of the load referred to the motor shaft	kgm²
k	Factor for taking into account operating conditions	–
L_{rated}	Service life of the brake lining until readjustment	h
$L_{ratedmax}$	Service life of the brake lining until replacement	h
n_{br}	Braking speed	rpm
η	Efficiency	%
Q_{perm}	Permissible operating energy	J
s_{br}	Braking distance	m
t_1	Application time of the brake	ms
t_{br}	Braking time	s
T_{br}	Rated braking torque	Nm
T_x	Load torque	Nm
v	Travel velocity	m/s
W	Friction energy per braking operation	J
W_{tot}	Friction energy until the brake lining is replaced	MJ
W_V	Friction energy until the brake is readjusted	MJ
Z	Switching frequency	1/h

Incremental encoder

Incremental encoders are used to determine the position of rotor shafts and are used to approach a precisely defined angular position. This is achieved by photoelectrically scanning the graduation on an indexing disk. With incremental measuring methods, the graduation consists of a regular grid structure. The position information is obtained by counting the individual increments (measuring steps) from a set zero point. Since an absolute reference is required to determine positions, the indexing disks are provided with an additional track that has a reference mark. The absolute position determined by the reference mark is assigned exactly one measuring step. The reference mark must, therefore, be scanned before an absolute reference can be established or the last selected reference point found.

The incremental signals are transmitted as square-wave pulse train sequences U_{a1} (A) and U_{a2} (B), phase-shifted through 90° elec. The reference mark signal consists of a reference pulse U_{a0} (N), which is gated with the incremental signals. The integrated electronics also generate inverse signals $\overline{U_{a1}}$ ($\overline{A}$), $\overline{U_{a2}}$ ($\overline{B}$) and $\overline{U_{a0}}$ ($\overline{N}$) for interference-proof transmission. The illustrated sequence of output signals – with U_{a2} lagging behind U_{a1} – applies for clockwise rotation of the motor.

The fault-detection signal $\overline{U_{aS}}$ indicates fault conditions such as breakage of the supply cables or failure of the light source, etc. It can be used to shut down machines in automated production environments.

The distance between two successive edges of the incremental signals U_{a1} and U_{a2} using 1-fold, 2-fold, or 4-fold evaluation is one measuring step.

The maximum permissible speed or travel velocity must never be exceeded, not even for a short time.

Incremental encoders are used for applications which require a precisely defined position to be approached or restored. With incremental encoders, a reference point approach is required each time the line supply is switched off since the position in the control is usually not stored and movements of the machine are not detected during power off.

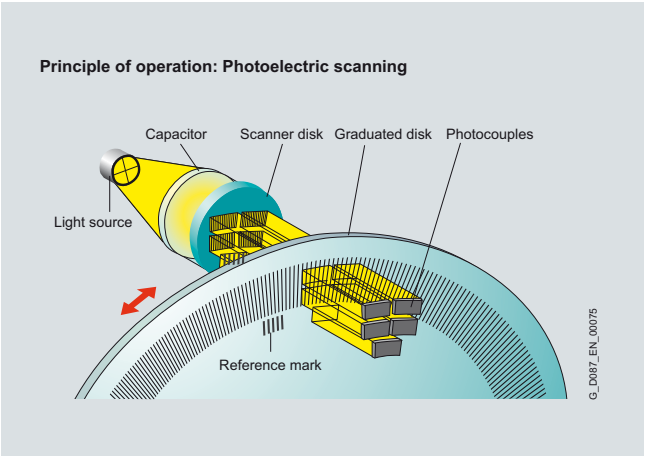


Fig. 2-17 Principle of operation, photoelectric scanning

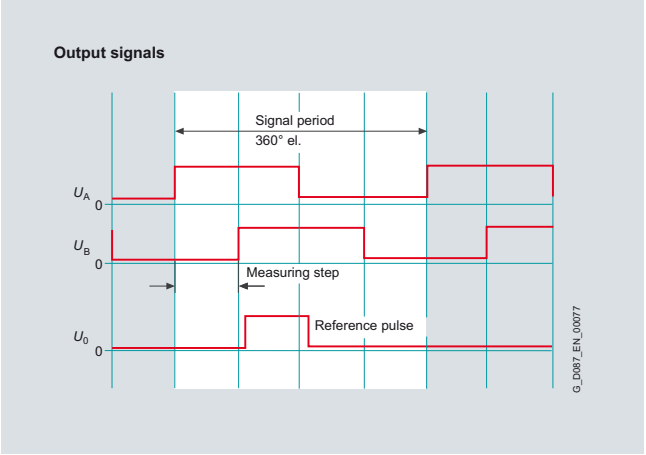


Fig. 2-18 Output signals

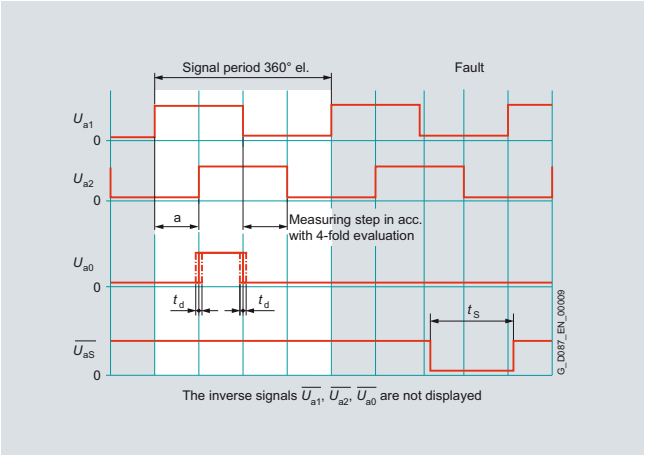


Fig. 2-19 Inverse output signals

Resolver

Resolvers are rotary measuring systems where the angle of rotation is inductively sensed without contact. They operate with analog measured value acquisition, i.e. a measuring signal value can be continuously assigned to each value of the measured variable.

The method of operation mainly corresponds to that of a rotary transformer consisting of rotor and stator. If an AC voltage is applied to the stator winding, the magnetic flux created in the rotor winding induces an amplitude-modulated voltage of the same frequency.
The amplitude change with time is modulated by the angle-dependent change of the rotor. The envelope curve shows the respective angle. At the zero crossing of these envelope ends, the modulated voltage makes a phase step of 180° el.

In practice, resolvers with several stator windings are generally used. The voltage at the secondary winding continuously changes with the spatial angle in the phase position with regard to the voltage at one of the primary windings. A phase discriminator delivers a signal that is proportional to the angle of rotation.

Resolvers are used for applications which do not require such accurate position sensing as is possible with incremental encoders due to their higher resolution. They are used under harsh conditions regarding vibration, shock loads, and/or temperature.

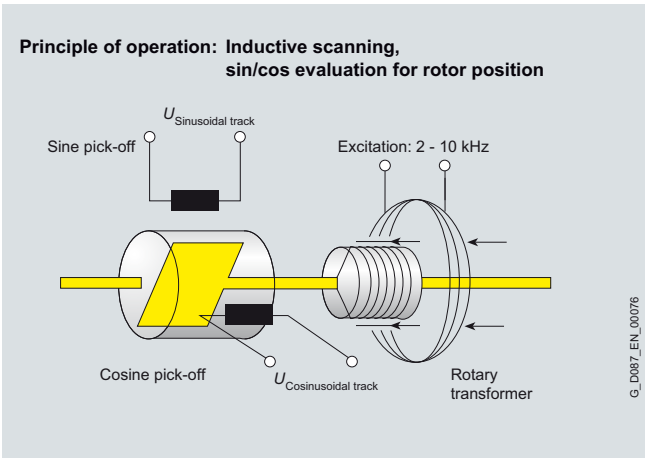


Fig. 2-20 Principle of operation, inductive scanning

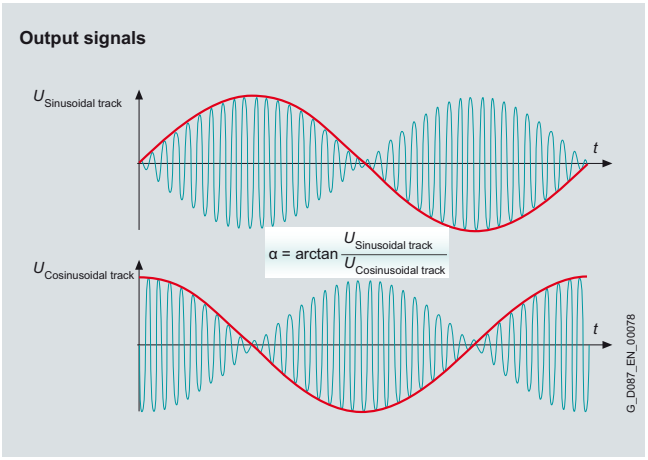


Fig. 2-21 Output signals

Absolute encoder

Absolute encoders are used to determine the position of rotor shafts and to approach a precisely defined angular position.

With the absolute measuring method, the position value is available from the encoder immediately after switch-on and can be called at any time by the subsequent electronics. There is no need to move the axes to find the reference position. The absolute position information is read from the graduation on the indexing disk, which consists of several parallel indexing tracks. The track with the finest scale division is interpolated for the position value and is used to generate an optional incremental signal at the same time. The indexing disks are photoelectrically scanned.

With singleturn rotary encoders the absolute position information is repeated at each revolution. Multiturn rotary encoders can also differentiate between revolutions.

Absolute encoders are used with applications which require a precisely defined position to be approached/relocated.

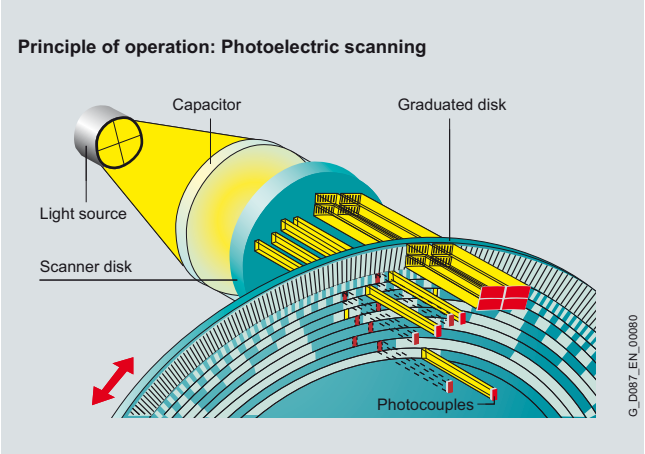


Fig. 2-22 Principle of operation, photoelectric scanning

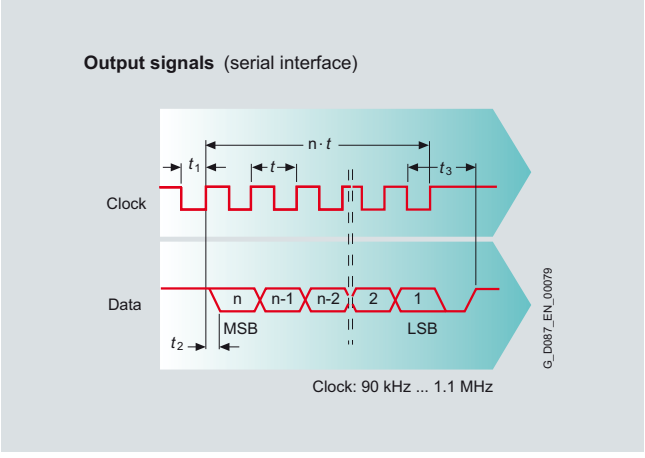


Fig. 2-23 Output signals

Selecting motors for inverter operation

For selecting electric drives connected to an inverter, the torque-speed characteristics of the motors and the driven machine are important.

For inverter operation, it is particularly important to pay attention to the torque limit characteristic. The torque of the driven machine must be lower in continuous duty than the motor torque limit. The motor dimensioning depends to a large extent on the required speed control range. In general, a range from 25 to 50 Hz is preferable.

The cooling effect of the shaft-mounted fan drops with decreasing speed, which in turn also reduces the continuous output torque. An external fan can be used to avoid the torque having to be reduced.

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated geared motors. Above the corner frequency, the continuous output torque decreases (field weakening).

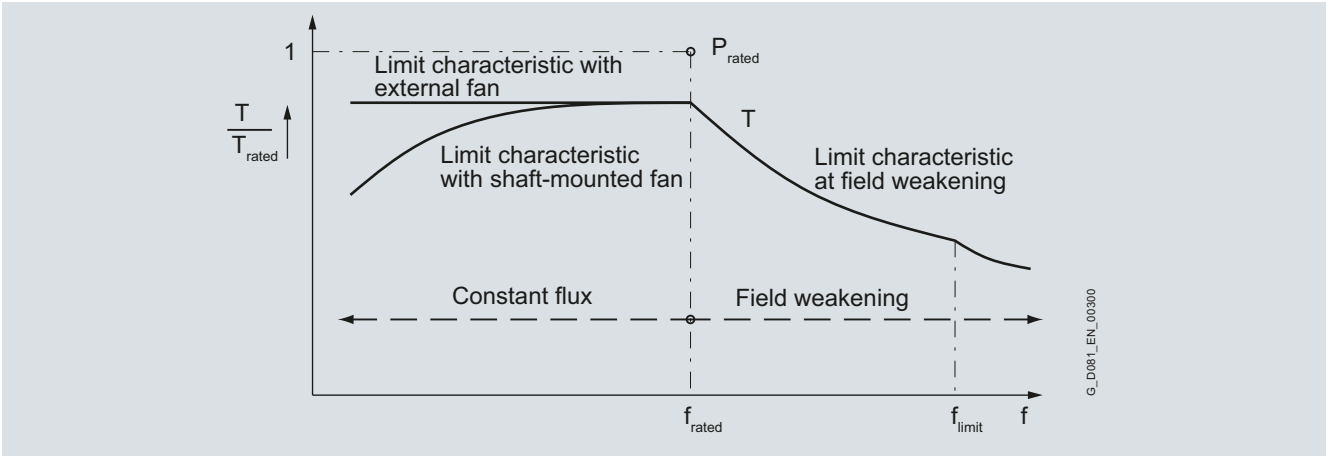


Fig. 2-24 Torque-frequency diagram

Table 2-17 Variables for the torque-frequency diagram

Code	Description	Unit
f	Frequency	Hz
f_{limit}	Limit frequency	Hz
f_{rated}	Rated motor frequency	Hz
P_{rated}	Rated motor power	kW
T	Torque	Nm
T_{rated}	Rated motor torque	Nm

Bearing currents

Additional bearing currents can flow when motors are operated from inverters. They are mainly caused by the steep voltage rises which occur during switching.
Without output filters, significant voltage variations can occur at the winding terminals. This phenomenon mainly occurs for larger machines.

EMC-compliant installation of the drive system is a basic prerequisite for preventing premature bearing damage as a result of bearing currents.

Important measures for reducing bearing currents are:

- Using cables with a symmetrical cable cross-section
- Using grounding cables with low impedance over a wide frequency range (0 Hz up to approximately 70 MHz), e.g. braided copper straps, HF finely-stranded conductors
- Separate HF equipotential-bonding cable between motor housing and driven machine
- Separate HF equipotential-bonding cable between motor housing and inverter PE busbar
- 360° HF contact of the cable shield at the motor housing and the inverter PE busbar. This can be achieved using EMC glands at the motor and EMC shield clips at the inverter, for example.
- Use of motor reactors
- Common-mode filters at the inverter output
- Insulated motor bearing at the non-drive end (NDE).

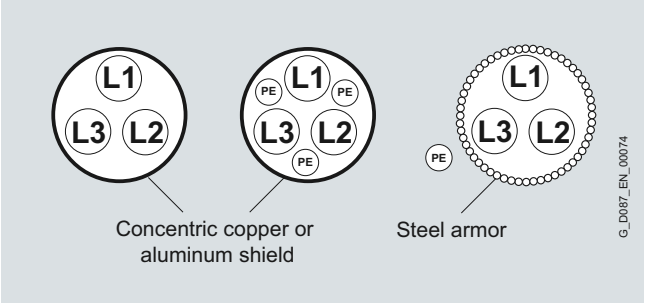


Fig. 2-25 Motors connected to an inverter

Mechanical load, grease service life

High speeds that exceed the rated speed and the resulting increased vibration alter the mechanical smooth running operation and the bearings are subject to increased mechanical stress. This reduces the grease service life and the bearing service life.

More detailed information on request.

Permissible voltage stress

More stress is placed on the insulation of the motor winding with inverter operation than with line operation.
The voltage stress also depends on the type of inverter used. The inverter subjects the motor winding to stress specially as voltage pulses are quickly switched.

The maximum voltage is influenced by the rise time of the pulses, the cable length and the type of cable used between motor and inverter.

Output filters at the inverter can reduce the maximum motor voltage to uncritical values. When using output filters, the control type, pulse frequency, output frequency, and limit torque that can be realized need to be observed, among other factors.

With inverters without output filters, impermissible voltage peaks can occur even with a relatively short motor cable. Regenerative operation, in particular, can stress the motor insulation. This stress occurs predominantly during vertical motion and is dependent on the line voltage, inverter type, cable length, and cable type.

The curves show the permissible voltage stress for the motors that can be selected.

Limit curves of the pulse voltage U_{pk}, measured between the motor terminals of two phases as a function of the rise time:

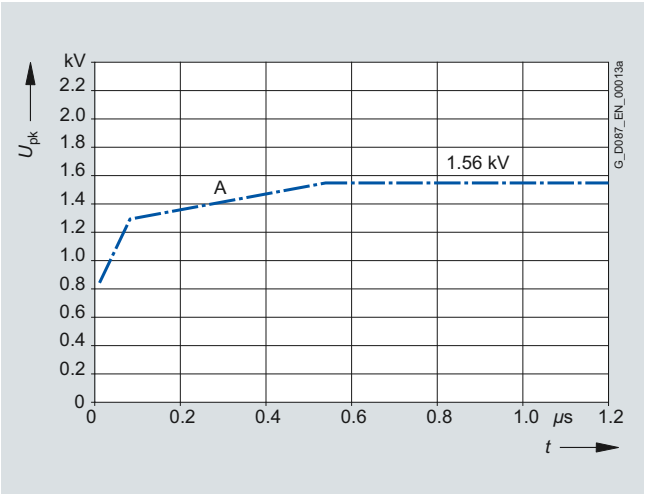
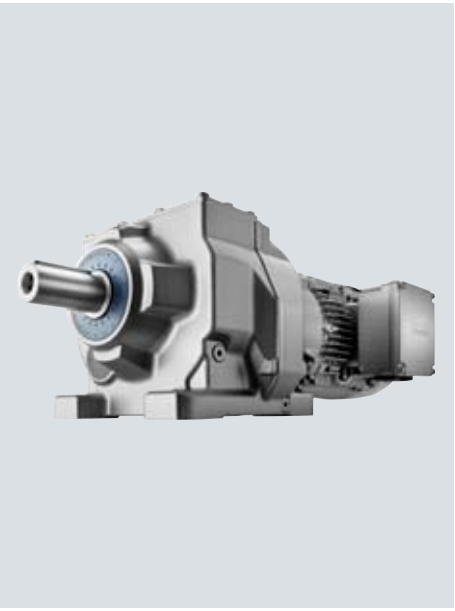


Fig. 2-26 Limit curves of the pulse voltage

A Standard insulation

Helical geared motors

3



Orientation

SIMOGEAR helical geared motor D/Z

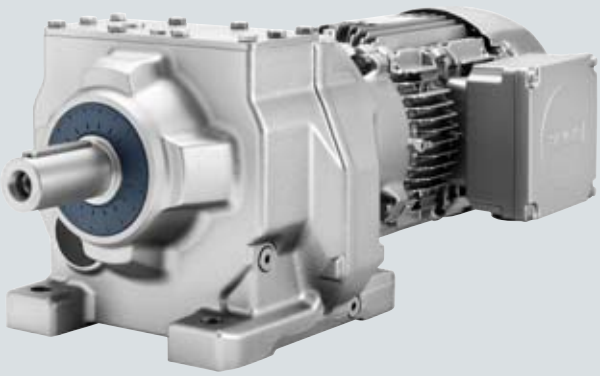


Fig. 3-1 Helical geared motor D/Z

SIMOGEAR helical geared motors are available in the following versions for mounting in any position:

- 2 or 3 stages
- Foot-mounted design
- Flange-mounted design
- Design with integrated housing flange
- Combined foot/flange-mounted design

Selection and ordering data

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.09	**D.69-LA63MF6**							
	2.6	330	328.49	11 400	1.8	26	**2KJ3206 - ■ BD11 - ■ ■ S1**	**P01**
	2.9	295	292.08	11 400	2	26	**2KJ3206 - ■ BD11 - ■ ■ R1**	**P01**
	D.59-LA63MF6							
	2.8	310	307.02	7 890	1.4	21	**2KJ3205 - ■ BD11 - ■ ■ S1**	**P01**
	3.1	275	272.99	7 950	1.6	21	**2KJ3205 - ■ BD11 - ■ ■ R1**	**P01**
	3.5	240	239.7	8 000	1.9	21	**2KJ3205 - ■ BD11 - ■ ■ Q1**	**P01**
	3.9	220	217.91	8 030	2	21	**2KJ3205 - ■ BD11 - ■ ■ P1**	**P01**
	D.49-LA63MF6							
	3	280	280.89	5 980	1.1	19	**2KJ3204 - ■ BD11 - ■ ■ S1**	**P01**
	3.4	250	249.76	6 040	1.3	19	**2KJ3204 - ■ BD11 - ■ ■ R1**	**P01**
	3.9	220	219.3	6 100	1.4	19	**2KJ3204 - ■ BD11 - ■ ■ Q1**	**P01**
	4.3	200	199.36	6 150	1.6	19	**2KJ3204 - ■ BD11 - ■ ■ P1**	**P01**
	D.49-LA63MD4							
	4.8	179	280.89	6 190	1.8	18	**2KJ3204 - ■ BB11 - ■ ■ S1**	
	5.4	159	249.76	6 230	2	18	**2KJ3204 - ■ BB11 - ■ ■ R1**	
	D.39-LA63MF6							
	3.6	235	235.29	3 490	0.84	9	**2KJ3203 - ■ BD11 - ■ ■ R1**	**P01**
	4.1	210	208.69	4 120	0.95	9	**2KJ3203 - ■ BD11 - ■ ■ Q1**	**P01**
	4.7	183	181.07	4 790	1.1	9	**2KJ3203 - ■ BD11 - ■ ■ P1**	**P01**
	5.2	166	164.61	5 220	1.2	9	**2KJ3203 - ■ BD11 - ■ ■ N1**	**P01**
	D.39-LA63MD4							
	5.7	150	235.29	5 620	1.3	8	**2KJ3203 - ■ BB11 - ■ ■ R1**	
	6.5	133	208.69	5 800	1.5	8	**2KJ3203 - ■ BB11 - ■ ■ Q1**	
	7.5	115	181.07	5 800	1.7	8	**2KJ3203 - ■ BB11 - ■ ■ P1**	
	8.2	105	164.61	5 800	1.9	8	**2KJ3203 - ■ BB11 - ■ ■ N1**	
	D.29-LA63MF6							
	5.1	170	167.63	2 910	0.83	7	**2KJ3202 - ■ BD11 - ■ ■ N1**	**P01**
	5.6	154	152.39	3 340	0.91	7	**2KJ3202 - ■ BD11 - ■ ■ M1**	**P01**
	D.29-LA63MD4							
	6.2	139	217.89	3 740	1	7	**2KJ3202 - ■ BB11 - ■ ■ Q1**	
	7	123	192.93	4 060	1.1	7	**2KJ3202 - ■ BB11 - ■ ■ P1**	
	8.1	107	167.63	4 060	1.3	7	**2KJ3202 - ■ BB11 - ■ ■ N1**	
	8.9	97	152.39	4 060	1.4	7	**2KJ3202 - ■ BB11 - ■ ■ M1**	
	10	83	129.68	4 060	1.7	7	**2KJ3202 - ■ BB11 - ■ ■ L1**	
	11	75	117.89	4 060	1.9	7	**2KJ3202 - ■ BB11 - ■ ■ K1**	
	13	65	102.79	4 060	2.1	7	**2KJ3202 - ■ BB11 - ■ ■ J1**	
	15	59	92.01	4 060	2.4	7	**2KJ3202 - ■ BB11 - ■ ■ H1**	
	17	52	81.71	4 060	2.7	7	**2KJ3202 - ■ BB11 - ■ ■ G1**	
	18	48	75.42	4 060	2.9	7	**2KJ3202 - ■ BB11 - ■ ■ F1**	
	21	42	65.52	4 060	3.4	7	**2KJ3202 - ■ BB11 - ■ ■ E1**	
	24	36	56.93	4 060	3.9	7	**2KJ3202 - ■ BB11 - ■ ■ D1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.09	**D.29-LA63MD4**							
	26	33	51.4	4 060	4.3	7	**2KJ3202 - ■ BB11 - ■ ■ C1**	
	28	31	48.37	4 060	4.5	7	**2KJ3202 - ■ BB11 - ■ ■ B1**	
	Z.29-LA63MD4							
	33	26	41.4	4 060	5.3	6	**2KJ3102 - ■ BB11 - ■ ■ A2**	
	37	23	36.72	4 060	6	6	**2KJ3102 - ■ BB11 - ■ ■ X1**	
	42	20	31.86	4 060	6.9	6	**2KJ3102 - ■ BB11 - ■ ■ W1**	
	47	18	28.96	4 060	7.6	6	**2KJ3102 - ■ BB11 - ■ ■ V1**	
	54	16	24.84	4 060	8.9	6	**2KJ3102 - ■ BB11 - ■ ■ U1**	
	60	14	22.58	4 060	9.7	6	**2KJ3102 - ■ BB11 - ■ ■ T1**	
	68	13	19.8	3 900	11	6	**2KJ3102 - ■ BB11 - ■ ■ S1**	
	76	11	17.67	3 760	12	6	**2KJ3102 - ■ BB11 - ■ ■ R1**	
	86	10	15.75	3 620	14	6	**2KJ3102 - ■ BB11 - ■ ■ Q1**	
	93	9.3	14.54	3 530	13	6	**2KJ3102 - ■ BB11 - ■ ■ P1**	
	D.19-LA63MD4							
	9.5	91	142.23	1 840	1.1	6	**2KJ3201 - ■ BB11 - ■ ■ N1**	
	10	82	129.3	2 020	1.2	6	**2KJ3201 - ■ BB11 - ■ ■ M1**	
	12	70	110.02	2 270	1.4	6	**2KJ3201 - ■ BB11 - ■ ■ L1**	
	13	64	100.02	2 310	1.6	6	**2KJ3201 - ■ BB11 - ■ ■ K1**	
	15	56	87.21	2 350	1.8	6	**2KJ3201 - ■ BB11 - ■ ■ J1**	
	17	50	78.07	2 380	2	6	**2KJ3201 - ■ BB11 - ■ ■ H1**	
	19	44	69.32	2 410	2.3	6	**2KJ3201 - ■ BB11 - ■ ■ G1**	
	21	41	63.99	2 430	2.5	6	**2KJ3201 - ■ BB11 - ■ ■ F1**	
	24	35	55.59	2 460	2.8	6	**2KJ3201 - ■ BB11 - ■ ■ E1**	
	28	31	48.3	2 480	3.3	6	**2KJ3201 - ■ BB11 - ■ ■ D1**	
	31	28	43.61	2 490	3.6	6	**2KJ3201 - ■ BB11 - ■ ■ C1**	
	33	26	41.04	2 500	3.8	6	**2KJ3201 - ■ BB11 - ■ ■ B1**	
	Z.19-LA63MD4							
	39	22	34.97	2 520	4.5	6	**2KJ3101 - ■ BB11 - ■ ■ W1**	
	44	20	30.97	2 530	5.1	6	**2KJ3101 - ■ BB11 - ■ ■ V1**	
	50	17	26.91	2 550	5.8	6	**2KJ3101 - ■ BB11 - ■ ■ U1**	
	55	16	24.46	2 550	6.4	6	**2KJ3101 - ■ BB11 - ■ ■ T1**	
	65	13	20.82	2 570	7.5	6	**2KJ3101 - ■ BB11 - ■ ■ S1**	
	71	12	18.92	2 560	8.3	6	**2KJ3101 - ■ BB11 - ■ ■ R1**	
	82	10	16.5	2 460	9.4	6	**2KJ3101 - ■ BB11 - ■ ■ Q1**	
	91	9.4	14.77	2 370	10	6	**2KJ3101 - ■ BB11 - ■ ■ P1**	
	103	8.4	13.12	2 280	11	6	**2KJ3101 - ■ BB11 - ■ ■ N1**	
	111	7.7	12.11	2 220	11	6	**2KJ3101 - ■ BB11 - ■ ■ M1**	
	128	6.7	10.52	2 130	12	6	**2KJ3101 - ■ BB11 - ■ ■ L1**	
	148	5.8	9.14	2 030	13	6	**2KJ3101 - ■ BB11 - ■ ■ K1**	
	164	5.3	8.25	1 970	14	6	**2KJ3101 - ■ BB11 - ■ ■ J1**	
	174	4.9	7.76	1 930	15	6	**2KJ3101 - ■ BB11 - ■ ■ H1**	
	216	4	6.25	1 780	14	6	**2KJ3101 - ■ BB11 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.09	**Z.19-LA63MD4**							
	249	3.5	5.43	1 700	15	6	**2KJ3101 - ■ BB11 - ■ ■ E1**	
0.12	**D.69-LA63MG6**							
	2.6	440	328.49	11 200	1.4	26	**2KJ3206 - ■ BE11 - ■ ■ S1**	**P01**
	2.9	390	292.08	11 300	1.5	26	**2KJ3206 - ■ BE11 - ■ ■ R1**	**P01**
	3.3	345	256.46	11 400	1.7	26	**2KJ3206 - ■ BE11 - ■ ■ Q1**	**P01**
	3.6	310	233.14	11 400	1.9	26	**2KJ3206 - ■ BE11 - ■ ■ P1**	**P01**
	D.59-LA63MG6							
	2.8	410	307.02	7 730	1.1	21	**2KJ3205 - ■ BE11 - ■ ■ S1**	**P01**
	3.1	365	272.99	7 800	1.2	21	**2KJ3205 - ■ BE11 - ■ ■ R1**	**P01**
	3.5	320	239.7	7 870	1.4	21	**2KJ3205 - ■ BE11 - ■ ■ Q1**	**P01**
	3.9	290	217.91	7 920	1.5	21	**2KJ3205 - ■ BE11 - ■ ■ P1**	**P01**
	D.59-LA63ME4							
	4.4	260	307.02	7 970	1.7	21	**2KJ3205 - ■ BC11 - ■ ■ S1**	
	4.9	230	272.99	8 020	1.9	21	**2KJ3205 - ■ BC11 - ■ ■ R1**	
	D.49-LA63MG6							
	3	375	280.89	4 390	0.84	19	**2KJ3204 - ■ BE11 - ■ ■ S1**	**P01**
	3.4	335	249.76	5 400	0.95	19	**2KJ3204 - ■ BE11 - ■ ■ R1**	**P01**
	3.9	295	219.3	5 950	1.1	19	**2KJ3204 - ■ BE11 - ■ ■ Q1**	**P01**
	4.3	265	199.36	6 010	1.2	19	**2KJ3204 - ■ BE11 - ■ ■ P1**	**P01**
	D.49-LA63ME4							
	4.8	235	280.89	6 070	1.3	18	**2KJ3204 - ■ BC11 - ■ ■ S1**	
	5.4	210	249.76	6 120	1.5	18	**2KJ3204 - ■ BC11 - ■ ■ R1**	
	6.2	186	219.3	6 170	1.7	18	**2KJ3204 - ■ BC11 - ■ ■ Q1**	
	6.8	169	199.36	6 210	1.9	18	**2KJ3204 - ■ BC11 - ■ ■ P1**	
	D.39-LA63MG6							
	4.7	240	181.07	3 360	0.82	9	**2KJ3203 - ■ BE11 - ■ ■ P1**	**P01**
	5.2	220	164.61	3 870	0.9	9	**2KJ3203 - ■ BE11 - ■ ■ N1**	**P01**
	D.39-LA63ME4							
	5.7	200	235.29	4 370	1	8	**2KJ3203 - ■ BC11 - ■ ■ R1**	
	6.5	177	208.69	4 940	1.1	8	**2KJ3203 - ■ BC11 - ■ ■ Q1**	
	7.5	154	181.07	5 510	1.3	8	**2KJ3203 - ■ BC11 - ■ ■ P1**	
	8.2	140	164.61	5 800	1.4	8	**2KJ3203 - ■ BC11 - ■ ■ N1**	
	9.6	120	141.17	5 800	1.7	8	**2KJ3203 - ■ BC11 - ■ ■ M1**	
	11	109	128.34	5 800	1.8	8	**2KJ3203 - ■ BC11 - ■ ■ L1**	
	12	96	112.53	5 800	2.1	8	**2KJ3203 - ■ BC11 - ■ ■ K1**	
	D.29-LA63ME4							
	7	164	192.93	3 070	0.85	7	**2KJ3202 - ■ BC11 - ■ ■ P1**	
	8.1	142	167.63	3 650	0.98	7	**2KJ3202 - ■ BC11 - ■ ■ N1**	
	8.9	129	152.39	4 000	1.1	7	**2KJ3202 - ■ BC11 - ■ ■ M1**	
	10	110	129.68	4 060	1.3	7	**2KJ3202 - ■ BC11 - ■ ■ L1**	
	11	100	117.89	4 060	1.4	7	**2KJ3202 - ■ BC11 - ■ ■ K1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.12	**D.29-LA63ME4**							
	13	87	102.79	4 060	1.6	7	**2KJ3202 - ■ BC11 - ■ ■ J1**	
	15	78	92.01	4 060	1.8	7	**2KJ3202 - ■ BC11 - ■ ■ H1**	
	17	69	81.71	4 060	2	7	**2KJ3202 - ■ BC11 - ■ ■ G1**	
	18	64	75.42	4 060	2.2	7	**2KJ3202 - ■ BC11 - ■ ■ F1**	
	21	56	65.52	4 060	2.5	7	**2KJ3202 - ■ BC11 - ■ ■ E1**	
	24	48	56.93	4 060	2.9	7	**2KJ3202 - ■ BC11 - ■ ■ D1**	
	26	44	51.4	4 060	3.2	7	**2KJ3202 - ■ BC11 - ■ ■ C1**	
	28	41	48.37	4 060	3.4	7	**2KJ3202 - ■ BC11 - ■ ■ B1**	
	Z.29-LA63ME4							
	33	35	41.4	4 060	4	6	**2KJ3102 - ■ BC11 - ■ ■ A2**	
	37	31	36.72	4 060	4.5	6	**2KJ3102 - ■ BC11 - ■ ■ X1**	
	42	27	31.86	4 060	5.2	6	**2KJ3102 - ■ BC11 - ■ ■ W1**	
	47	25	28.96	4 060	5.7	6	**2KJ3102 - ■ BC11 - ■ ■ V1**	
	54	21	24.84	4 060	6.6	6	**2KJ3102 - ■ BC11 - ■ ■ U1**	
	60	19	22.58	4 040	7.3	6	**2KJ3102 - ■ BC11 - ■ ■ T1**	
	68	17	19.8	3 870	8.3	6	**2KJ3102 - ■ BC11 - ■ ■ S1**	
	76	15	17.67	3 740	9.3	6	**2KJ3102 - ■ BC11 - ■ ■ R1**	
	86	13	15.75	3 600	10	6	**2KJ3102 - ■ BC11 - ■ ■ Q1**	
	93	12	14.54	3 510	9.7	6	**2KJ3102 - ■ BC11 - ■ ■ P1**	
	106	11	12.73	3 360	13	6	**2KJ3102 - ■ BC11 - ■ ■ N1**	
	121	9.5	11.16	3 220	15	6	**2KJ3102 - ■ BC11 - ■ ■ M1**	
	195	5.9	6.92	2 750	13	6	**2KJ3102 - ■ BC11 - ■ ■ G1**	
	D.19-LA63ME4							
	9.5	121	142.23	1 220	0.83	6	**2KJ3201 - ■ BC11 - ■ ■ N1**	
	10	110	129.3	1 450	0.91	6	**2KJ3201 - ■ BC11 - ■ ■ M1**	
	12	93	110.02	1 800	1.1	6	**2KJ3201 - ■ BC11 - ■ ■ L1**	
	13	85	100.02	1 960	1.2	6	**2KJ3201 - ■ BC11 - ■ ■ K1**	
	15	74	87.21	2 180	1.4	6	**2KJ3201 - ■ BC11 - ■ ■ J1**	
	17	66	78.07	2 300	1.5	6	**2KJ3201 - ■ BC11 - ■ ■ H1**	
	19	59	69.32	2 340	1.7	6	**2KJ3201 - ■ BC11 - ■ ■ G1**	
	21	54	63.99	2 360	1.8	6	**2KJ3201 - ■ BC11 - ■ ■ F1**	
	24	47	55.59	2 400	2.1	6	**2KJ3201 - ■ BC11 - ■ ■ E1**	
	28	41	48.3	2 430	2.4	6	**2KJ3201 - ■ BC11 - ■ ■ D1**	
	31	37	43.61	2 450	2.7	6	**2KJ3201 - ■ BC11 - ■ ■ C1**	
	33	35	41.04	2 460	2.9	6	**2KJ3201 - ■ BC11 - ■ ■ B1**	
	Z.19-LA63ME4							
	39	30	34.97	2 480	3.4	6	**2KJ3101 - ■ BC11 - ■ ■ W1**	
	44	26	30.97	2 500	3.8	6	**2KJ3101 - ■ BC11 - ■ ■ V1**	
	50	23	26.91	2 520	4.4	6	**2KJ3101 - ■ BC11 - ■ ■ U1**	
	55	21	24.46	2 530	4.8	6	**2KJ3101 - ■ BC11 - ■ ■ T1**	
	65	18	20.82	2 540	5.7	6	**2KJ3101 - ■ BC11 - ■ ■ S1**	
	71	16	18.92	2 530	6.2	6	**2KJ3101 - ■ BC11 - ■ ■ R1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.12	**Z.19-LA63ME4**							
	82	14	16.5	2 430	7.1	6	**2KJ3101 - ■ BC11 - ■ ■ Q1**	
	91	12	14.77	2 350	7.6	6	**2KJ3101 - ■ BC11 - ■ ■ P1**	
	103	11	13.12	2 260	8.2	6	**2KJ3101 - ■ BC11 - ■ ■ N1**	
	111	10	12.11	2 210	8.6	6	**2KJ3101 - ■ BC11 - ■ ■ M1**	
	128	8.9	10.52	2 110	9.3	6	**2KJ3101 - ■ BC11 - ■ ■ L1**	
	148	7.8	9.14	2 020	10	6	**2KJ3101 - ■ BC11 - ■ ■ K1**	
	164	7	8.25	1 950	11	6	**2KJ3101 - ■ BC11 - ■ ■ J1**	
	174	6.6	7.76	1 920	11	6	**2KJ3101 - ■ BC11 - ■ ■ H1**	
	199	5.7	6.77	1 830	12	6	**2KJ3101 - ■ BC11 - ■ ■ G1**	
	216	5.3	6.25	1 770	11	6	**2KJ3101 - ■ BC11 - ■ ■ F1**	
	249	4.6	5.43	1 690	12	6	**2KJ3101 - ■ BC11 - ■ ■ E1**	
	287	4	4.71	1 620	12	6	**2KJ3101 - ■ BC11 - ■ ■ D1**	
	317	3.6	4.26	1 570	13	6	**2KJ3101 - ■ BC11 - ■ ■ C1**	
	337	3.4	4.01	1 540	14	6	**2KJ3101 - ■ BC11 - ■ ■ B1**	
	387	3	3.49	1 470	14	6	**2KJ3101 - ■ BC11 - ■ ■ A1**	
0.18	**D.79-LA71MG6**							
	2.6	665	330.23	13 600	1.3	37	**2KJ3207 - ■ CD11 - ■ ■ S1**	**P01**
	2.8	605	300.21	13 700	1.4	37	**2KJ3207 - ■ CD11 - ■ ■ R1**	**P01**
	3.3	515	255.33	13 800	1.6	37	**2KJ3207 - ■ CD11 - ■ ■ Q1**	**P01**
	3.7	465	232.12	13 900	1.8	37	**2KJ3207 - ■ CD11 - ■ ■ P1**	**P01**
	D.69-LA71MG6							
	2.6	660	328.49	10 800	0.9	27	**2KJ3206 - ■ CD11 - ■ ■ S1**	**P01**
	2.9	590	292.08	11 000	1	27	**2KJ3206 - ■ CD11 - ■ ■ R1**	**P01**
	3.3	515	256.46	11 100	1.2	27	**2KJ3206 - ■ CD11 - ■ ■ Q1**	**P01**
	3.6	470	233.14	11 200	1.3	27	**2KJ3206 - ■ CD11 - ■ ■ P1**	**P01**
	D.69-LA63MF4							
	4.1	415	328.49	11 200	1.4	26	**2KJ3206 - ■ BD11 - ■ ■ S1**	
	4.6	370	292.08	11 300	1.6	26	**2KJ3206 - ■ BD11 - ■ ■ R1**	
	5.3	325	256.46	11 400	1.8	26	**2KJ3206 - ■ BD11 - ■ ■ Q1**	
	5.8	295	233.14	11 400	2	26	**2KJ3206 - ■ BD11 - ■ ■ P1**	
	D.59-LA71MG6							
	3.1	550	272.99	6 310	0.82	22	**2KJ3205 - ■ CD11 - ■ ■ R1**	**P01**
	3.5	485	239.7	7 470	0.93	22	**2KJ3205 - ■ CD11 - ■ ■ Q1**	**P01**
	3.9	440	217.91	7 680	1	22	**2KJ3205 - ■ CD11 - ■ ■ P1**	**P01**
	D.59-LA63MF4							
	4.4	390	307.02	7 760	1.2	21	**2KJ3205 - ■ BD11 - ■ ■ S1**	
	4.9	345	272.99	7 830	1.3	21	**2KJ3205 - ■ BD11 - ■ ■ R1**	
	5.6	305	239.7	7 900	1.5	21	**2KJ3205 - ■ BD11 - ■ ■ Q1**	
	6.2	275	217.91	7 950	1.6	21	**2KJ3205 - ■ BD11 - ■ ■ P1**	
	7.2	235	186.43	8 010	1.9	21	**2KJ3205 - ■ BD11 - ■ ■ N1**	
	8	215	169.48	8 040	2.1	21	**2KJ3205 - ■ BD11 - ■ ■ M1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.18	**D.49-LA63MF4**							
	4.8	355	280.89	4 890	0.89	19	**2KJ3204 - ■ BD11 - ■ ■ S1**	
	5.4	315	249.76	5 910	1	19	**2KJ3204 - ■ BD11 - ■ ■ R1**	
	6.2	275	219.3	5 990	1.1	19	**2KJ3204 - ■ BD11 - ■ ■ Q1**	
	6.8	250	199.36	6 040	1.3	19	**2KJ3204 - ■ BD11 - ■ ■ P1**	
	7.9	215	170.57	6 110	1.5	19	**2KJ3204 - ■ BD11 - ■ ■ N1**	
	8.7	197	155.06	6 150	1.6	19	**2KJ3204 - ■ BD11 - ■ ■ M1**	
	9.8	175	137.06	6 200	1.8	19	**2KJ3204 - ■ BD11 - ■ ■ L1**	
	11	159	124.6	6 230	2	19	**2KJ3204 - ■ BD11 - ■ ■ K1**	
	D.39-LA63MF4							
	7.5	230	181.07	3 610	0.87	9	**2KJ3203 - ■ BD11 - ■ ■ P1**	
	8.2	210	164.61	4 120	0.95	9	**2KJ3203 - ■ BD11 - ■ ■ N1**	
	9.6	180	141.17	4 870	1.1	9	**2KJ3203 - ■ BD11 - ■ ■ M1**	
	11	163	128.34	5 290	1.2	9	**2KJ3203 - ■ BD11 - ■ ■ L1**	
	12	143	112.53	5 790	1.4	9	**2KJ3203 - ■ BD11 - ■ ■ K1**	
	13	128	100.44	5 800	1.6	9	**2KJ3203 - ■ BD11 - ■ ■ J1**	
	15	114	89.51	5 800	1.8	9	**2KJ3203 - ■ BD11 - ■ ■ H1**	
	16	105	82.63	5 800	1.9	9	**2KJ3203 - ■ BD11 - ■ ■ G1**	
	19	92	72.34	5 800	2.2	9	**2KJ3203 - ■ BD11 - ■ ■ F1**	
	D.29-LA63MF4							
	10	165	129.68	3 040	0.85	7	**2KJ3202 - ■ BD11 - ■ ■ L1**	
	11	150	117.89	3 440	0.93	7	**2KJ3202 - ■ BD11 - ■ ■ K1**	
	13	131	102.79	3 950	1.1	7	**2KJ3202 - ■ BD11 - ■ ■ J1**	
	15	117	92.01	4 060	1.2	7	**2KJ3202 - ■ BD11 - ■ ■ H1**	
	17	104	81.71	4 060	1.3	7	**2KJ3202 - ■ BD11 - ■ ■ G1**	
	18	96	75.42	4 060	1.5	7	**2KJ3202 - ■ BD11 - ■ ■ F1**	
	21	83	65.52	4 060	1.7	7	**2KJ3202 - ■ BD11 - ■ ■ E1**	
	24	72	56.93	4 060	1.9	7	**2KJ3202 - ■ BD11 - ■ ■ D1**	
	26	65	51.4	4 060	2.1	7	**2KJ3202 - ■ BD11 - ■ ■ C1**	
	28	62	48.37	4 060	2.3	7	**2KJ3202 - ■ BD11 - ■ ■ B1**	
	Z.29-LA63MF4							
	33	53	41.4	4 060	2.7	7	**2KJ3102 - ■ BD11 - ■ ■ A2**	
	37	47	36.72	4 060	3	7	**2KJ3102 - ■ BD11 - ■ ■ X1**	
	42	41	31.86	4 060	3.5	7	**2KJ3102 - ■ BD11 - ■ ■ W1**	
	47	37	28.96	4 060	3.8	7	**2KJ3102 - ■ BD11 - ■ ■ V1**	
	54	32	24.84	4 060	4.4	7	**2KJ3102 - ■ BD11 - ■ ■ U1**	
	60	29	22.58	3 980	4.9	7	**2KJ3102 - ■ BD11 - ■ ■ T1**	
	68	25	19.8	3 830	5.6	7	**2KJ3102 - ■ BD11 - ■ ■ S1**	
	76	22	17.67	3 700	6.2	7	**2KJ3102 - ■ BD11 - ■ ■ R1**	
	86	20	15.75	3 560	7	7	**2KJ3102 - ■ BD11 - ■ ■ Q1**	
	93	18	14.54	3 480	6.5	7	**2KJ3102 - ■ BD11 - ■ ■ P1**	
	106	16	12.73	3 330	8.6	7	**2KJ3102 - ■ BD11 - ■ ■ N1**	
	121	14	11.16	3 200	9.9	7	**2KJ3102 - ■ BD11 - ■ ■ M1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.18	**Z.29-LA63MF4**							
	133	13	10.12	3 100	11	7	**2KJ3102 - ■ BD11 - ■ ■ L1**	
	142	12	9.53	3 040	12	7	**2KJ3102 - ■ BD11 - ■ ■ K1**	
	161	11	8.4	2 920	13	7	**2KJ3102 - ■ BD11 - ■ ■ J1**	
	185	9.3	7.29	2 790	14	7	**2KJ3102 - ■ BD11 - ■ ■ H1**	
	195	8.8	6.92	2 730	8.5	7	**2KJ3102 - ■ BD11 - ■ ■ G1**	
	223	7.7	6.06	2 620	13	7	**2KJ3102 - ■ BD11 - ■ ■ F1**	
	254	6.8	5.31	2 510	14	7	**2KJ3102 - ■ BD11 - ■ ■ E1**	
	280	6.1	4.82	2 430	14	7	**2KJ3102 - ■ BD11 - ■ ■ D1**	
	297	5.8	4.54	2 390	14	7	**2KJ3102 - ■ BD11 - ■ ■ C1**	
	338	5.1	4	2 290	15	7	**2KJ3102 - ■ BD11 - ■ ■ B1**	
	Z.29-LA63ME2							
	160	11	17.67	2 930	13	6	**2KJ3102 - ■ BC11 - ■ ■ R1**	**P00**
	179	9.6	15.75	2 820	15	6	**2KJ3102 - ■ BC11 - ■ ■ Q1**	**P00**
	194	8.9	14.54	2 750	14	6	**2KJ3102 - ■ BC11 - ■ ■ P1**	**P00**
	D.19-LA63MF4							
	15	111	87.21	1 430	0.9	6	**2KJ3201 - ■ BD11 - ■ ■ J1**	
	17	99	78.07	1 670	1	6	**2KJ3201 - ■ BD11 - ■ ■ H1**	
	19	88	69.32	1 900	1.1	6	**2KJ3201 - ■ BD11 - ■ ■ G1**	
	21	82	63.99	2 020	1.2	6	**2KJ3201 - ■ BD11 - ■ ■ F1**	
	24	71	55.59	2 250	1.4	6	**2KJ3201 - ■ BD11 - ■ ■ E1**	
	28	62	48.3	2 320	1.6	6	**2KJ3201 - ■ BD11 - ■ ■ D1**	
	31	56	43.61	2 350	1.8	6	**2KJ3201 - ■ BD11 - ■ ■ C1**	
	33	52	41.04	2 370	1.9	6	**2KJ3201 - ■ BD11 - ■ ■ B1**	
	Z.19-LA63MF4							
	39	44	34.97	2 410	2.2	6	**2KJ3101 - ■ BD11 - ■ ■ W1**	
	44	39	30.97	2 440	2.5	6	**2KJ3101 - ■ BD11 - ■ ■ V1**	
	50	34	26.91	2 460	2.9	6	**2KJ3101 - ■ BD11 - ■ ■ U1**	
	55	31	24.46	2 480	3.2	6	**2KJ3101 - ■ BD11 - ■ ■ T1**	
	65	26	20.82	2 500	3.8	6	**2KJ3101 - ■ BD11 - ■ ■ S1**	
	71	24	18.92	2 480	4.2	6	**2KJ3101 - ■ BD11 - ■ ■ R1**	
	82	21	16.5	2 380	4.7	6	**2KJ3101 - ■ BD11 - ■ ■ Q1**	
	91	19	14.77	2 300	5.1	6	**2KJ3101 - ■ BD11 - ■ ■ P1**	
	103	17	13.12	2 220	5.4	6	**2KJ3101 - ■ BD11 - ■ ■ N1**	
	111	15	12.11	2 170	5.7	6	**2KJ3101 - ■ BD11 - ■ ■ M1**	
	128	13	10.52	2 080	6.2	6	**2KJ3101 - ■ BD11 - ■ ■ L1**	
	148	12	9.14	1 990	6.7	6	**2KJ3101 - ■ BD11 - ■ ■ K1**	
	164	10	8.25	1 930	7	6	**2KJ3101 - ■ BD11 - ■ ■ J1**	
	174	9.9	7.76	1 890	7.4	6	**2KJ3101 - ■ BD11 - ■ ■ H1**	
	199	8.6	6.77	1 810	7.9	6	**2KJ3101 - ■ BD11 - ■ ■ G1**	
	216	8	6.25	1 740	7	6	**2KJ3101 - ■ BD11 - ■ ■ F1**	
	249	6.9	5.43	1 670	7.7	6	**2KJ3101 - ■ BD11 - ■ ■ E1**	
	287	6	4.71	1 600	8.2	6	**2KJ3101 - ■ BD11 - ■ ■ D1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.18	**Z.19-LA63MF4**							
	317	5.4	4.26	1 550	8.7	6	**2KJ3101 - ■ BD11 - ■ ■ C1**	
	337	5.1	4.01	1 520	9	6	**2KJ3101 - ■ BD11 - ■ ■ B1**	
	387	4.4	3.49	1 460	9.7	6	**2KJ3101 - ■ BD11 - ■ ■ A1**	
	Z.19-LA63ME2							
	171	10	16.5	1 900	9.8	6	**2KJ3101 - ■ BC11 - ■ ■ Q1**	**P00**
	191	9	14.77	1 840	11	6	**2KJ3101 - ■ BC11 - ■ ■ P1**	**P00**
	215	8	13.12	1 770	11	6	**2KJ3101 - ■ BC11 - ■ ■ N1**	**P00**
	233	7.4	12.11	1 730	12	6	**2KJ3101 - ■ BC11 - ■ ■ M1**	**P00**
	268	6.4	10.52	1 650	13	6	**2KJ3101 - ■ BC11 - ■ ■ L1**	**P00**
	309	5.6	9.14	1 580	14	6	**2KJ3101 - ■ BC11 - ■ ■ K1**	**P00**
	342	5	8.25	1 530	15	6	**2KJ3101 - ■ BC11 - ■ ■ J1**	**P00**
	363	4.7	7.76	1 500	15	6	**2KJ3101 - ■ BC11 - ■ ■ H1**	**P00**
	451	3.8	6.25	1 390	15	6	**2KJ3101 - ■ BC11 - ■ ■ F1**	**P00**
0.25	**D.79-LA71MH6**							
	2.6	915	330.23	12 800	0.92	38	**2KJ3207 - ■ CE11 - ■ ■ S1**	**P01**
	2.9	830	300.21	13 400	1	38	**2KJ3207 - ■ CE11 - ■ ■ R1**	**P01**
	3.4	705	255.33	13 600	1.2	38	**2KJ3207 - ■ CE11 - ■ ■ Q1**	**P01**
	3.7	640	232.12	13 600	1.3	38	**2KJ3207 - ■ CE11 - ■ ■ P1**	**P01**
	D.79-LA71MG4							
	4.1	580	330.23	13 700	1.4	37	**2KJ3207 - ■ CD11 - ■ ■ S1**	
	4.5	530	300.21	13 800	1.6	37	**2KJ3207 - ■ CD11 - ■ ■ R1**	
	5.3	450	255.33	13 900	1.9	37	**2KJ3207 - ■ CD11 - ■ ■ Q1**	
	5.8	410	232.12	13 900	2	37	**2KJ3207 - ■ CD11 - ■ ■ P1**	
	D.69-LA71MH6							
	3.4	710	256.46	10 700	0.84	28	**2KJ3206 - ■ CE11 - ■ ■ Q1**	**P01**
	3.7	645	233.14	10 900	0.93	28	**2KJ3206 - ■ CE11 - ■ ■ P1**	**P01**
	D.69-LA71MG4							
	4.1	580	328.49	11 000	1	27	**2KJ3206 - ■ CD11 - ■ ■ S1**	
	4.6	515	292.08	11 100	1.2	27	**2KJ3206 - ■ CD11 - ■ ■ R1**	
	5.3	450	256.46	11 200	1.3	27	**2KJ3206 - ■ CD11 - ■ ■ Q1**	
	5.8	410	233.14	11 300	1.5	27	**2KJ3206 - ■ CD11 - ■ ■ P1**	
	6.8	350	199.47	11 300	1.7	27	**2KJ3206 - ■ CD11 - ■ ■ N1**	
	7.4	320	181.33	11 400	1.9	27	**2KJ3206 - ■ CD11 - ■ ■ M1**	
	8.4	280	160.29	11 500	2.1	27	**2KJ3206 - ■ CD11 - ■ ■ L1**	
	D.59-LA71MG4							
	4.4	540	307.02	6 490	0.83	22	**2KJ3205 - ■ CD11 - ■ ■ S1**	
	4.9	480	272.99	7 560	0.93	22	**2KJ3205 - ■ CD11 - ■ ■ R1**	
	5.6	420	239.7	7 710	1.1	22	**2KJ3205 - ■ CD11 - ■ ■ Q1**	
	6.2	385	217.91	7 770	1.2	22	**2KJ3205 - ■ CD11 - ■ ■ P1**	
	7.2	330	186.43	7 860	1.4	22	**2KJ3205 - ■ CD11 - ■ ■ N1**	
	8	300	169.48	7 910	1.5	22	**2KJ3205 - ■ CD11 - ■ ■ M1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.25	**D.59-LA71MG4**							
	9	265	149.81	7 960	1.7	22	**2KJ3205 - ■ CD11 - ■ ■ L1**	
	9.9	240	136.19	8 000	1.9	22	**2KJ3205 - ■ CD11 - ■ ■ K1**	
	11	210	119.3	8 050	2.1	22	**2KJ3205 - ■ CD11 - ■ ■ J1**	
	D.49-LA71MG4							
	6.2	385	219.3	4 130	0.83	20	**2KJ3204 - ■ CD11 - ■ ■ Q1**	
	6.8	350	199.36	5 020	0.91	20	**2KJ3204 - ■ CD11 - ■ ■ P1**	
	7.9	300	170.57	5 940	1.1	20	**2KJ3204 - ■ CD11 - ■ ■ N1**	
	8.7	270	155.06	6 000	1.2	20	**2KJ3204 - ■ CD11 - ■ ■ M1**	
	9.8	240	137.06	6 060	1.3	20	**2KJ3204 - ■ CD11 - ■ ■ L1**	
	11	220	124.6	6 100	1.5	20	**2KJ3204 - ■ CD11 - ■ ■ K1**	
	12	193	109.14	6 160	1.7	20	**2KJ3204 - ■ CD11 - ■ ■ J1**	
	13	178	100.75	6 190	1.8	20	**2KJ3204 - ■ CD11 - ■ ■ H1**	
	15	158	89.2	6 230	2	20	**2KJ3204 - ■ CD11 - ■ ■ G1**	
	D.39-LA71MG4							
	9.6	250	141.17	3 110	0.8	10	**2KJ3203 - ■ CD11 - ■ ■ M1**	
	11	225	128.34	3 740	0.88	10	**2KJ3203 - ■ CD11 - ■ ■ L1**	
	12	199	112.53	4 390	1	10	**2KJ3203 - ■ CD11 - ■ ■ K1**	
	13	178	100.44	4 920	1.1	10	**2KJ3203 - ■ CD11 - ■ ■ J1**	
	15	158	89.51	5 410	1.3	10	**2KJ3203 - ■ CD11 - ■ ■ H1**	
	16	146	82.63	5 720	1.4	10	**2KJ3203 - ■ CD11 - ■ ■ G1**	
	19	128	72.34	5 800	1.6	10	**2KJ3203 - ■ CD11 - ■ ■ F1**	
	21	112	63.43	5 800	1.8	10	**2KJ3203 - ■ CD11 - ■ ■ E1**	
	Z.39-LA71MG4							
	24	99	55.95	5 800	2	9	**2KJ3103 - ■ CD11 - ■ ■ A2**	
	27	88	49.75	5 800	2.3	9	**2KJ3103 - ■ CD11 - ■ ■ X1**	
	D.29-LA71MG4							
	15	163	92.01	3 100	0.86	8	**2KJ3202 - ■ CD11 - ■ ■ H1**	
	17	145	81.71	3 570	0.97	8	**2KJ3202 - ■ CD11 - ■ ■ G1**	
	18	133	75.42	3 890	1	8	**2KJ3202 - ■ CD11 - ■ ■ F1**	
	21	116	65.52	4 060	1.2	8	**2KJ3202 - ■ CD11 - ■ ■ E1**	
	24	101	56.93	4 060	1.4	8	**2KJ3202 - ■ CD11 - ■ ■ D1**	
	26	91	51.4	4 060	1.5	8	**2KJ3202 - ■ CD11 - ■ ■ C1**	
	28	86	48.37	4 060	1.6	8	**2KJ3202 - ■ CD11 - ■ ■ B1**	
	Z.29-LA71MG4							
	33	73	41.4	4 060	1.9	8	**2KJ3102 - ■ CD11 - ■ ■ A2**	
	37	65	36.72	4 060	2.2	8	**2KJ3102 - ■ CD11 - ■ ■ X1**	
	42	56	31.86	4 060	2.5	8	**2KJ3102 - ■ CD11 - ■ ■ W1**	
	47	51	28.96	4 060	2.7	8	**2KJ3102 - ■ CD11 - ■ ■ V1**	
	54	44	24.84	4 030	3.2	8	**2KJ3102 - ■ CD11 - ■ ■ U1**	
	60	40	22.58	3 920	3.5	8	**2KJ3102 - ■ CD11 - ■ ■ T1**	
	68	35	19.8	3 770	4	8	**2KJ3102 - ■ CD11 - ■ ■ S1**	
	76	31	17.67	3 650	4.5	8	**2KJ3102 - ■ CD11 - ■ ■ R1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.25	**Z.29-LA71MG4**							
	86	28	15.75	3 520	5	8	**2KJ3102 - ■ CD11 - ■ ■ Q1**	
	93	26	14.54	3 430	4.7	8	**2KJ3102 - ■ CD11 - ■ ■ P1**	
	106	22	12.73	3 300	6.2	8	**2KJ3102 - ■ CD11 - ■ ■ N1**	
	121	20	11.16	3 160	7.1	8	**2KJ3102 - ■ CD11 - ■ ■ M1**	
	133	18	10.12	3 070	7.8	8	**2KJ3102 - ■ CD11 - ■ ■ L1**	
	142	17	9.53	3 010	8.3	8	**2KJ3102 - ■ CD11 - ■ ■ K1**	
	161	15	8.4	2 900	9.3	8	**2KJ3102 - ■ CD11 - ■ ■ J1**	
	185	13	7.29	2 770	10	8	**2KJ3102 - ■ CD11 - ■ ■ H1**	
	195	12	6.92	2 710	6.1	8	**2KJ3102 - ■ CD11 - ■ ■ G1**	
	223	11	6.06	2 600	9.3	8	**2KJ3102 - ■ CD11 - ■ ■ F1**	
	254	9.4	5.31	2 490	9.7	8	**2KJ3102 - ■ CD11 - ■ ■ E1**	
	280	8.5	4.82	2 420	10	8	**2KJ3102 - ■ CD11 - ■ ■ D1**	
	297	8	4.54	2 370	10	8	**2KJ3102 - ■ CD11 - ■ ■ C1**	
	338	7.1	4	2 280	11	8	**2KJ3102 - ■ CD11 - ■ ■ B1**	
	389	6.1	3.47	2 180	11	8	**2KJ3102 - ■ CD11 - ■ ■ A1**	
	Z.29-LA63MF2							
	160	15	17.67	2 900	9.4	7	**2KJ3102 - ■ BD11 - ■ ■ R1**	**P00**
	180	13	15.75	2 800	10	7	**2KJ3102 - ■ BD11 - ■ ■ Q1**	**P00**
	195	12	14.54	2 730	9.8	7	**2KJ3102 - ■ BD11 - ■ ■ P1**	**P00**
	222	11	12.73	2 610	13	7	**2KJ3102 - ■ BD11 - ■ ■ N1**	**P00**
	254	9.4	11.16	2 510	15	7	**2KJ3102 - ■ BD11 - ■ ■ M1**	**P00**
	409	5.8	6.92	2 140	13	7	**2KJ3102 - ■ BD11 - ■ ■ G1**	**P00**
	D.19-LA71MG4							
	19	123	69.32	1 180	0.82	7	**2KJ3201 - ■ CD11 - ■ ■ G1**	
	21	113	63.99	1 390	0.88	7	**2KJ3201 - ■ CD11 - ■ ■ F1**	
	24	98	55.59	1 690	1	7	**2KJ3201 - ■ CD11 - ■ ■ E1**	
	28	85	48.3	1 960	1.2	7	**2KJ3201 - ■ CD11 - ■ ■ D1**	
	31	77	43.61	2 120	1.3	7	**2KJ3201 - ■ CD11 - ■ ■ C1**	
	33	73	41.04	2 210	1.4	7	**2KJ3201 - ■ CD11 - ■ ■ B1**	
	Z.19-LA71MG4							
	39	62	34.97	2 320	1.6	7	**2KJ3101 - ■ CD11 - ■ ■ W1**	
	44	55	30.97	2 360	1.8	7	**2KJ3101 - ■ CD11 - ■ ■ V1**	
	50	48	26.91	2 390	2.1	7	**2KJ3101 - ■ CD11 - ■ ■ U1**	
	55	43	24.46	2 420	2.3	7	**2KJ3101 - ■ CD11 - ■ ■ T1**	
	65	37	20.82	2 450	2.7	7	**2KJ3101 - ■ CD11 - ■ ■ S1**	
	71	34	18.92	2 410	3	7	**2KJ3101 - ■ CD11 - ■ ■ R1**	
	82	29	16.5	2 320	3.4	7	**2KJ3101 - ■ CD11 - ■ ■ Q1**	
	91	26	14.77	2 250	3.6	7	**2KJ3101 - ■ CD11 - ■ ■ P1**	
	103	23	13.12	2 180	3.9	7	**2KJ3101 - ■ CD11 - ■ ■ N1**	
	111	21	12.11	2 130	4.1	7	**2KJ3101 - ■ CD11 - ■ ■ M1**	
	128	19	10.52	2 040	4.5	7	**2KJ3101 - ■ CD11 - ■ ■ L1**	
	148	16	9.14	1 960	4.8	7	**2KJ3101 - ■ CD11 - ■ ■ K1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.25	**Z.19-LA71MG4**							
	164	15	8.25	1 900	5.1	7	**2KJ3101 - ■ CD11 - ■ ■ J1**	
	174	14	7.76	1 870	5.3	7	**2KJ3101 - ■ CD11 - ■ ■ H1**	
	199	12	6.77	1 790	5.7	7	**2KJ3101 - ■ CD11 - ■ ■ G1**	
	216	11	6.25	1 710	5.1	7	**2KJ3101 - ■ CD11 - ■ ■ F1**	
	249	9.6	5.43	1 640	5.5	7	**2KJ3101 - ■ CD11 - ■ ■ E1**	
	287	8.3	4.71	1 570	5.9	7	**2KJ3101 - ■ CD11 - ■ ■ D1**	
	317	7.5	4.26	1 530	6.2	7	**2KJ3101 - ■ CD11 - ■ ■ C1**	
	337	7.1	4.01	1 500	6.5	7	**2KJ3101 - ■ CD11 - ■ ■ B1**	
	387	6.2	3.49	1 440	7	7	**2KJ3101 - ■ CD11 - ■ ■ A1**	
	Z.19-LA63MF2							
	150	16	18.92	1 950	6.3	6	**2KJ3101 - ■ BD11 - ■ ■ R1**	**P00**
	172	14	16.5	1 870	7.1	6	**2KJ3101 - ■ BD11 - ■ ■ Q1**	**P00**
	192	12	14.77	1 820	7.6	6	**2KJ3101 - ■ BD11 - ■ ■ P1**	**P00**
	216	11	13.12	1 750	8.2	6	**2KJ3101 - ■ BD11 - ■ ■ N1**	**P00**
	234	10	12.11	1 710	8.6	6	**2KJ3101 - ■ BD11 - ■ ■ M1**	**P00**
	269	8.9	10.52	1 630	9.4	6	**2KJ3101 - ■ BD11 - ■ ■ L1**	**P00**
	310	7.7	9.14	1 560	10	6	**2KJ3101 - ■ BD11 - ■ ■ K1**	**P00**
	343	7	8.25	1 520	11	6	**2KJ3101 - ■ BD11 - ■ ■ J1**	**P00**
	365	6.5	7.76	1 490	11	6	**2KJ3101 - ■ BD11 - ■ ■ H1**	**P00**
	418	5.7	6.77	1 420	12	6	**2KJ3101 - ■ BD11 - ■ ■ G1**	**P00**
	453	5.3	6.25	1 370	11	6	**2KJ3101 - ■ BD11 - ■ ■ F1**	**P00**
	521	4.6	5.43	1 310	12	6	**2KJ3101 - ■ BD11 - ■ ■ E1**	**P00**
	601	4	4.71	1 250	12	6	**2KJ3101 - ■ BD11 - ■ ■ D1**	**P00**
	664	3.6	4.26	1 220	13	6	**2KJ3101 - ■ BD11 - ■ ■ C1**	**P00**
	706	3.4	4.01	1 190	14	6	**2KJ3101 - ■ BD11 - ■ ■ B1**	**P00**
	811	2.9	3.49	1 140	15	6	**2KJ3101 - ■ BD11 - ■ ■ A1**	**P00**
0.37	**D.79-LE80MD6E**							
	3.6	990	255.33	11 600	0.85	43	**2KJ3207 - ■ DC22 - ■ ■ Q1**	**P01**
	3.9	900	232.12	13 000	0.93	43	**2KJ3207 - ■ DC22 - ■ ■ P1**	**P01**
	D.79-LA71MH4							
	4.1	850	330.23	13 400	0.99	38	**2KJ3207 - ■ CE11 - ■ ■ S1**	
	4.6	770	300.21	13 500	1.1	38	**2KJ3207 - ■ CE11 - ■ ■ R1**	
	5.4	655	255.33	13 600	1.3	38	**2KJ3207 - ■ CE11 - ■ ■ Q1**	
	5.9	595	232.12	13 700	1.4	38	**2KJ3207 - ■ CE11 - ■ ■ P1**	
	6.6	530	207.1	13 800	1.6	38	**2KJ3207 - ■ CE11 - ■ ■ N1**	
	7.4	475	185.7	13 900	1.8	38	**2KJ3207 - ■ CE11 - ■ ■ M1**	
	8.2	430	167.39	13 900	1.9	38	**2KJ3207 - ■ CE11 - ■ ■ L1**	
	8.9	395	154.51	14 000	2.1	38	**2KJ3207 - ■ CE11 - ■ ■ K1**	
	D.69-LA71MH4							
	4.7	750	292.08	10 600	0.8	28	**2KJ3206 - ■ CE11 - ■ ■ R1**	
	5.3	660	256.46	10 800	0.91	28	**2KJ3206 - ■ CE11 - ■ ■ Q1**	
	5.9	600	233.14	11 000	1	28	**2KJ3206 - ■ CE11 - ■ ■ P1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**D.69-LA71MH4**							
	6.9	510	199.47	11 100	1.2	28	**2KJ3206 - ■ CE11 - ■ ■ N1**	
	7.6	465	181.33	11 200	1.3	28	**2KJ3206 - ■ CE11 - ■ ■ M1**	
	8.5	410	160.29	11 300	1.5	28	**2KJ3206 - ■ CE11 - ■ ■ L1**	
	9.4	375	145.71	11 300	1.6	28	**2KJ3206 - ■ CE11 - ■ ■ K1**	
	11	325	127.63	11 400	1.8	28	**2KJ3206 - ■ CE11 - ■ ■ J1**	
	12	300	117.82	11 400	2	28	**2KJ3206 - ■ CE11 - ■ ■ H1**	
	13	265	104.31	11 500	2.2	28	**2KJ3206 - ■ CE11 - ■ ■ G1**	
	D.59-LA71MH4							
	6.3	560	217.91	6 130	0.8	24	**2KJ3205 - ■ CE11 - ■ ■ P1**	
	7.3	480	186.43	7 560	0.94	24	**2KJ3205 - ■ CE11 - ■ ■ N1**	
	8.1	435	169.48	7 690	1	24	**2KJ3205 - ■ CE11 - ■ ■ M1**	
	9.1	385	149.81	7 770	1.2	24	**2KJ3205 - ■ CE11 - ■ ■ L1**	
	10	350	136.19	7 820	1.3	24	**2KJ3205 - ■ CE11 - ■ ■ K1**	
	11	305	119.3	7 900	1.5	24	**2KJ3205 - ■ CE11 - ■ ■ J1**	
	12	280	110.12	7 940	1.6	24	**2KJ3205 - ■ CE11 - ■ ■ H1**	
	14	250	97.5	7 990	1.8	24	**2KJ3205 - ■ CE11 - ■ ■ G1**	
	17	205	81.15	8 060	2.2	24	**2KJ3205 - ■ CE11 - ■ ■ F1**	
	18	197	76.38	8 070	2.3	24	**2KJ3205 - ■ CE11 - ■ ■ E1**	
	D.49-LA71MH4							
	8.8	400	155.06	3 750	0.8	22	**2KJ3204 - ■ CE11 - ■ ■ M1**	
	10	350	137.06	5 020	0.91	22	**2KJ3204 - ■ CE11 - ■ ■ L1**	
	11	320	124.6	5 780	1	22	**2KJ3204 - ■ CE11 - ■ ■ K1**	
	13	280	109.14	5 980	1.1	22	**2KJ3204 - ■ CE11 - ■ ■ J1**	
	14	260	100.75	6 020	1.2	22	**2KJ3204 - ■ CE11 - ■ ■ H1**	
	15	230	89.2	6 080	1.4	22	**2KJ3204 - ■ CE11 - ■ ■ G1**	
	18	191	74.24	6 160	1.7	22	**2KJ3204 - ■ CE11 - ■ ■ F1**	
	20	180	69.88	6 190	1.8	22	**2KJ3204 - ■ CE11 - ■ ■ E1**	
	22	161	62.61	6 220	2	22	**2KJ3204 - ■ CE11 - ■ ■ D1**	
	Z.49-LA71MH4							
	26	134	52.14	6 280	2.4	21	**2KJ3104 - ■ CE11 - ■ ■ B2**	
	D.39-LA71MH4							
	15	230	89.51	3 610	0.87	11	**2KJ3203 - ■ CE11 - ■ ■ H1**	
	17	210	82.63	4 120	0.94	11	**2KJ3203 - ■ CE11 - ■ ■ G1**	
	19	187	72.34	4 690	1.1	11	**2KJ3203 - ■ CE11 - ■ ■ F1**	
	22	164	63.43	5 270	1.2	11	**2KJ3203 - ■ CE11 - ■ ■ E1**	
	Z.39-LA71MH4							
	24	144	55.95	5 770	1.4	11	**2KJ3103 - ■ CE11 - ■ ■ A2**	
	28	128	49.75	5 800	1.6	11	**2KJ3103 - ■ CE11 - ■ ■ X1**	
	31	113	43.68	5 800	1.8	11	**2KJ3103 - ■ CE11 - ■ ■ W1**	
	35	102	39.71	5 800	2	11	**2KJ3103 - ■ CE11 - ■ ■ V1**	
	40	88	33.97	5 800	2.3	11	**2KJ3103 - ■ CE11 - ■ ■ U1**	
	44	80	30.88	5 800	2.5	11	**2KJ3103 - ■ CE11 - ■ ■ T1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**Z.39-LA71MH4**							
	50	70	27.3	5 800	2.8	11	**2KJ3103 - ■ CE11 - ■ ■ S1**	
	D.29-LA71MH4							
	21	169	65.52	2 940	0.83	10	**2KJ3202 - ■ CE11 - ■ ■ E1**	
	24	147	56.93	3 520	0.95	10	**2KJ3202 - ■ CE11 - ■ ■ D1**	
	27	133	51.4	3 890	1.1	10	**2KJ3202 - ■ CE11 - ■ ■ C1**	
	28	125	48.37	4 060	1.1	10	**2KJ3202 - ■ CE11 - ■ ■ B1**	
	Z.29-LA71MH4							
	33	107	41.4	4 060	1.3	9	**2KJ3102 - ■ CE11 - ■ ■ A2**	
	37	95	36.72	4 060	1.5	9	**2KJ3102 - ■ CE11 - ■ ■ X1**	
	43	82	31.86	4 060	1.7	9	**2KJ3102 - ■ CE11 - ■ ■ W1**	
	47	75	28.96	4 060	1.9	9	**2KJ3102 - ■ CE11 - ■ ■ V1**	
	55	64	24.84	3 900	2.2	9	**2KJ3102 - ■ CE11 - ■ ■ U1**	
	61	58	22.58	3 800	2.4	9	**2KJ3102 - ■ CE11 - ■ ■ T1**	
	69	51	19.8	3 660	2.7	9	**2KJ3102 - ■ CE11 - ■ ■ S1**	
	78	46	17.67	3 540	3.1	9	**2KJ3102 - ■ CE11 - ■ ■ R1**	
	87	41	15.75	3 430	3.4	9	**2KJ3102 - ■ CE11 - ■ ■ Q1**	
	94	38	14.54	3 350	3.2	9	**2KJ3102 - ■ CE11 - ■ ■ P1**	
	108	33	12.73	3 220	4.3	9	**2KJ3102 - ■ CE11 - ■ ■ N1**	
	123	29	11.16	3 100	4.9	9	**2KJ3102 - ■ CE11 - ■ ■ M1**	
	135	26	10.12	3 010	5.4	9	**2KJ3102 - ■ CE11 - ■ ■ L1**	
	144	25	9.53	2 950	5.7	9	**2KJ3102 - ■ CE11 - ■ ■ K1**	
	163	22	8.4	2 840	6.4	9	**2KJ3102 - ■ CE11 - ■ ■ J1**	
	188	19	7.29	2 720	6.9	9	**2KJ3102 - ■ CE11 - ■ ■ H1**	
	198	18	6.92	2 660	4.2	9	**2KJ3102 - ■ CE11 - ■ ■ G1**	
	226	16	6.06	2 550	6.4	9	**2KJ3102 - ■ CE11 - ■ ■ F1**	
	258	14	5.31	2 450	6.6	9	**2KJ3102 - ■ CE11 - ■ ■ E1**	
	284	12	4.82	2 380	6.9	9	**2KJ3102 - ■ CE11 - ■ ■ D1**	
	302	12	4.54	2 330	7.2	9	**2KJ3102 - ■ CE11 - ■ ■ C1**	
	342	10	4	2 250	7.4	9	**2KJ3102 - ■ CE11 - ■ ■ B1**	
	395	8.9	3.47	2 150	7.8	9	**2KJ3102 - ■ CE11 - ■ ■ A1**	
	Z.29-LA71MG2							
	155	23	17.67	2 890	6.1	8	**2KJ3102 - ■ CD11 - ■ ■ R1**	**P00**
	174	20	15.75	2 790	6.9	8	**2KJ3102 - ■ CD11 - ■ ■ Q1**	**P00**
	188	19	14.54	2 720	6.4	8	**2KJ3102 - ■ CD11 - ■ ■ P1**	**P00**
	215	16	12.73	2 610	8.5	8	**2KJ3102 - ■ CD11 - ■ ■ N1**	**P00**
	246	14	11.16	2 510	9.7	8	**2KJ3102 - ■ CD11 - ■ ■ M1**	**P00**
	271	13	10.12	2 430	11	8	**2KJ3102 - ■ CD11 - ■ ■ L1**	**P00**
	288	12	9.53	2 390	11	8	**2KJ3102 - ■ CD11 - ■ ■ K1**	**P00**
	326	11	8.4	2 290	13	8	**2KJ3102 - ■ CD11 - ■ ■ J1**	**P00**
	376	9.4	7.29	2 190	14	8	**2KJ3102 - ■ CD11 - ■ ■ H1**	**P00**
	396	8.9	6.92	2 140	8.4	8	**2KJ3102 - ■ CD11 - ■ ■ G1**	**P00**
	452	7.8	6.06	2 060	13	8	**2KJ3102 - ■ CD11 - ■ ■ F1**	**P00**

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**Z.29-LA71MG2**							
	516	6.8	5.31	1 970	13	8	**2KJ3102 - ■ CD11 - ■ ■ E1**	**P00**
	568	6.2	4.82	1 910	14	8	**2KJ3102 - ■ CD11 - ■ ■ D1**	**P00**
	604	5.9	4.54	1 870	14	8	**2KJ3102 - ■ CD11 - ■ ■ C1**	**P00**
	685	5.2	4	1 800	15	8	**2KJ3102 - ■ CD11 - ■ ■ B1**	**P00**
	D.19-LA71MH4							
	28	125	48.3	1 140	0.8	9	**2KJ3201 - ■ CE11 - ■ ■ D1**	
	31	112	43.61	1 410	0.89	9	**2KJ3201 - ■ CE11 - ■ ■ C1**	
	33	106	41.04	1 530	0.94	9	**2KJ3201 - ■ CE11 - ■ ■ B1**	
	Z.19-LA71MH4							
	39	90	34.97	1 860	1.1	8	**2KJ3101 - ■ CE11 - ■ ■ W1**	
	44	80	30.97	2 060	1.3	8	**2KJ3101 - ■ CE11 - ■ ■ V1**	
	51	69	26.91	2 290	1.4	8	**2KJ3101 - ■ CE11 - ■ ■ U1**	
	56	63	24.46	2 320	1.6	8	**2KJ3101 - ■ CE11 - ■ ■ T1**	
	66	54	20.82	2 340	1.9	8	**2KJ3101 - ■ CE11 - ■ ■ S1**	
	72	49	18.92	2 290	2	8	**2KJ3101 - ■ CE11 - ■ ■ R1**	
	83	43	16.5	2 210	2.3	8	**2KJ3101 - ■ CE11 - ■ ■ Q1**	
	93	38	14.77	2 160	2.5	8	**2KJ3101 - ■ CE11 - ■ ■ P1**	
	104	34	13.12	2 090	2.7	8	**2KJ3101 - ■ CE11 - ■ ■ N1**	
	113	31	12.11	2 050	2.8	8	**2KJ3101 - ■ CE11 - ■ ■ M1**	
	130	27	10.52	1 970	3.1	8	**2KJ3101 - ■ CE11 - ■ ■ L1**	
	150	24	9.14	1 900	3.3	8	**2KJ3101 - ■ CE11 - ■ ■ K1**	
	166	21	8.25	1 850	3.5	8	**2KJ3101 - ■ CE11 - ■ ■ J1**	
	177	20	7.76	1 810	3.6	8	**2KJ3101 - ■ CE11 - ■ ■ H1**	
	202	18	6.77	1 740	3.9	8	**2KJ3101 - ■ CE11 - ■ ■ G1**	
	219	16	6.25	1 650	3.5	8	**2KJ3101 - ■ CE11 - ■ ■ F1**	
	252	14	5.43	1 590	3.8	8	**2KJ3101 - ■ CE11 - ■ ■ E1**	
	291	12	4.71	1 530	4	8	**2KJ3101 - ■ CE11 - ■ ■ D1**	
	322	11	4.26	1 480	4.3	8	**2KJ3101 - ■ CE11 - ■ ■ C1**	
	342	10	4.01	1 460	4.4	8	**2KJ3101 - ■ CE11 - ■ ■ B1**	
	393	9	3.49	1 400	4.8	8	**2KJ3101 - ■ CE11 - ■ ■ A1**	
	Z.19-LA71MG2							
	166	21	16.5	1 850	4.7	7	**2KJ3101 - ■ CD11 - ■ ■ Q1**	**P00**
	186	19	14.77	1 790	5	7	**2KJ3101 - ■ CD11 - ■ ■ P1**	**P00**
	209	17	13.12	1 730	5.4	7	**2KJ3101 - ■ CD11 - ■ ■ N1**	**P00**
	226	16	12.11	1 690	5.6	7	**2KJ3101 - ■ CD11 - ■ ■ M1**	**P00**
	260	14	10.52	1 620	6.1	7	**2KJ3101 - ■ CD11 - ■ ■ L1**	**P00**
	300	12	9.14	1 550	6.6	7	**2KJ3101 - ■ CD11 - ■ ■ K1**	**P00**
	332	11	8.25	1 500	7	7	**2KJ3101 - ■ CD11 - ■ ■ J1**	**P00**
	353	10	7.76	1 480	7.3	7	**2KJ3101 - ■ CD11 - ■ ■ H1**	**P00**
	405	8.7	6.77	1 420	7.8	7	**2KJ3101 - ■ CD11 - ■ ■ G1**	**P00**
	438	8.1	6.25	1 360	6.9	7	**2KJ3101 - ■ CD11 - ■ ■ F1**	**P00**
	505	7	5.43	1 300	7.6	7	**2KJ3101 - ■ CD11 - ■ ■ E1**	**P00**

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**Z.19-LA71MG2**							
	582	6.1	4.71	1 250	8.1	7	**2KJ3101 - ■ CD11 - ■ ■ D1**	**P00**
	643	5.5	4.26	1 210	8.6	7	**2KJ3101 - ■ CD11 - ■ ■ C1**	**P00**
	683	5.2	4.01	1 190	8.9	7	**2KJ3101 - ■ CD11 - ■ ■ B1**	**P00**
	785	4.5	3.49	1 140	9.6	7	**2KJ3101 - ■ CD11 - ■ ■ A1**	**P00**
0.55	**D.89-LE80MH6E**							
	2.9	1 820	311.6	18 500	0.92	66	**2KJ3208 - ■ DE22 - ■ ■ S1**	**P01**
	3.2	1 660	283.28	18 500	1	66	**2KJ3208 - ■ DE22 - ■ ■ R1**	**P01**
	3.5	1 490	254.09	18 500	1.1	66	**2KJ3208 - ■ DE22 - ■ ■ Q1**	**P01**
	3.9	1 340	228.45	18 500	1.3	66	**2KJ3208 - ■ DE22 - ■ ■ P1**	**P01**
	4.3	1 210	206.62	18 500	1.4	66	**2KJ3208 - ■ DE22 - ■ ■ N1**	**P01**
	D.89-LE80MD4E							
	4.6	1 130	311.6	18 500	1.5	66	**2KJ3208 - ■ DC22 - ■ ■ S1**	
	5.1	1 030	283.28	18 500	1.6	66	**2KJ3208 - ■ DC22 - ■ ■ R1**	
	5.7	925	254.09	18 500	1.8	66	**2KJ3208 - ■ DC22 - ■ ■ Q1**	
	6.3	830	228.45	18 500	2	66	**2KJ3208 - ■ DC22 - ■ ■ P1**	
	D.79-LE80MD4E							
	5.6	930	255.33	12 600	0.9	43	**2KJ3207 - ■ DC22 - ■ ■ Q1**	
	6.2	845	232.12	13 400	0.99	43	**2KJ3207 - ■ DC22 - ■ ■ P1**	
	7	755	207.1	13 500	1.1	43	**2KJ3207 - ■ DC22 - ■ ■ N1**	
	7.8	675	185.7	13 600	1.2	43	**2KJ3207 - ■ DC22 - ■ ■ M1**	
	8.6	610	167.39	13 700	1.4	43	**2KJ3207 - ■ DC22 - ■ ■ L1**	
	9.3	560	154.51	13 700	1.5	43	**2KJ3207 - ■ DC22 - ■ ■ K1**	
	10	510	141.04	13 800	1.6	43	**2KJ3207 - ■ DC22 - ■ ■ J1**	
	12	425	117.03	13 900	2	43	**2KJ3207 - ■ DC22 - ■ ■ H1**	
	13	400	110.14	13 900	2.1	43	**2KJ3207 - ■ DC22 - ■ ■ G1**	
	14	375	104.03	14 000	2.2	43	**2KJ3207 - ■ DC22 - ■ ■ F1**	
	D.69-LE80MD4E							
	7.2	725	199.47	10 700	0.82	31	**2KJ3206 - ■ DC22 - ■ ■ N1**	
	7.9	660	181.33	10 800	0.91	31	**2KJ3206 - ■ DC22 - ■ ■ M1**	
	9	585	160.29	11 000	1	31	**2KJ3206 - ■ DC22 - ■ ■ L1**	
	9.9	530	145.71	11 100	1.1	31	**2KJ3206 - ■ DC22 - ■ ■ K1**	
	11	465	127.63	11 200	1.3	31	**2KJ3206 - ■ DC22 - ■ ■ J1**	
	12	430	117.82	11 200	1.4	31	**2KJ3206 - ■ DC22 - ■ ■ H1**	
	14	380	104.31	11 300	1.6	31	**2KJ3206 - ■ DC22 - ■ ■ G1**	
	17	315	86.82	11 400	1.9	31	**2KJ3206 - ■ DC22 - ■ ■ F1**	
	18	295	81.71	11 400	2	31	**2KJ3206 - ■ DC22 - ■ ■ E1**	
	20	265	73.22	11 500	2.2	31	**2KJ3206 - ■ DC22 - ■ ■ D1**	
	D.59-LE80MD4E							
	9.6	545	149.81	6 400	0.82	26	**2KJ3205 - ■ DC22 - ■ ■ L1**	
	11	495	136.19	7 300	0.91	26	**2KJ3205 - ■ DC22 - ■ ■ K1**	
	12	435	119.3	7 690	1	26	**2KJ3205 - ■ DC22 - ■ ■ J1**	
	13	400	110.12	7 740	1.1	26	**2KJ3205 - ■ DC22 - ■ ■ H1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.55	**D.59-LE80MD4E**							
	15	355	97.5	7 820	1.3	26	**2KJ3205 - ■ DC22 - ■ ■ G1**	
	18	295	81.15	7 910	1.5	26	**2KJ3205 - ■ DC22 - ■ ■ F1**	
	19	275	76.38	7 950	1.6	26	**2KJ3205 - ■ DC22 - ■ ■ E1**	
	21	250	68.43	7 990	1.8	26	**2KJ3205 - ■ DC22 - ■ ■ D1**	
	29	182	49.94	8 100	2.5	26	**2KJ3205 - ■ DC22 - ■ ■ B1**	
	Z.59-LE80MD4E							
	25	205	56.99	8 060	2.2	26	**2KJ3105 - ■ DC22 - ■ ■ A2**	
	D.49-LE80MD4E							
	13	395	109.14	3 880	0.8	24	**2KJ3204 - ■ DC22 - ■ ■ J1**	
	14	365	100.75	4 640	0.87	24	**2KJ3204 - ■ DC22 - ■ ■ H1**	
	16	325	89.2	5 660	0.98	24	**2KJ3204 - ■ DC22 - ■ ■ G1**	
	19	270	74.24	6 000	1.2	24	**2KJ3204 - ■ DC22 - ■ ■ F1**	
	21	255	69.88	6 030	1.3	24	**2KJ3204 - ■ DC22 - ■ ■ E1**	
	23	225	62.61	6 090	1.4	24	**2KJ3204 - ■ DC22 - ■ ■ D1**	
	Z.49-LE80MD4E							
	28	190	52.14	6 170	1.7	24	**2KJ3104 - ■ DC22 - ■ ■ B2**	
	30	173	47.4	6 200	1.9	24	**2KJ3104 - ■ DC22 - ■ ■ A2**	
	36	147	40.31	6 250	2.2	24	**2KJ3104 - ■ DC22 - ■ ■ X1**	
	39	134	36.65	6 280	2.4	24	**2KJ3104 - ■ DC22 - ■ ■ W1**	
	44	119	32.7	6 310	2.7	24	**2KJ3104 - ■ DC22 - ■ ■ V1**	
	D.39-LE80MD4E							
	23	230	63.43	3 610	0.86	14	**2KJ3203 - ■ DC22 - ■ ■ E1**	
	25	210	57.54	4 120	0.95	14	**2KJ3203 - ■ DC22 - ■ ■ D1**	
	Z.39-LE80MD4E							
	29	181	49.75	4 840	1.1	14	**2KJ3103 - ■ DC22 - ■ ■ X1**	
	33	159	43.68	5 140	1.3	14	**2KJ3103 - ■ DC22 - ■ ■ W1**	
	36	145	39.71	5 200	1.4	14	**2KJ3103 - ■ DC22 - ■ ■ V1**	
	42	124	33.97	5 280	1.6	14	**2KJ3103 - ■ DC22 - ■ ■ U1**	
	47	113	30.88	5 300	1.8	14	**2KJ3103 - ■ DC22 - ■ ■ T1**	
	53	100	27.3	5 290	2	14	**2KJ3103 - ■ DC22 - ■ ■ S1**	
	58	90	24.82	5 300	2.2	14	**2KJ3103 - ■ DC22 - ■ ■ R1**	
	66	79	21.74	5 250	2.5	14	**2KJ3103 - ■ DC22 - ■ ■ Q1**	
	72	73	20.07	5 180	2.7	14	**2KJ3103 - ■ DC22 - ■ ■ P1**	
	81	65	17.77	5 000	3.1	14	**2KJ3103 - ■ DC22 - ■ ■ N1**	
	D.29-LE80MD4E							
	34	154	42.17	3 340	0.91	13	**2KJ3202 - ■ DC22 - ■ ■ A1**	
	Z.29-LE80MD4E							
	39	134	36.72	3 860	1	13	**2KJ3102 - ■ DC22 - ■ ■ X1**	
	45	116	31.86	3 900	1.2	13	**2KJ3102 - ■ DC22 - ■ ■ W1**	
	50	106	28.96	3 810	1.3	13	**2KJ3102 - ■ DC22 - ■ ■ V1**	
	58	91	24.84	3 670	1.5	13	**2KJ3102 - ■ DC22 - ■ ■ U1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.55	**Z.29-LE80MD4E**							
	64	82	22.58	3 590	1.7	13	**2KJ3102 - ■ DC22 - ■ ■ T1**	
	73	72	19.8	3 480	1.9	13	**2KJ3102 - ■ DC22 - ■ ■ S1**	
	81	64	17.67	3 380	2.2	13	**2KJ3102 - ■ DC22 - ■ ■ R1**	
	91	57	15.75	3 280	2.4	13	**2KJ3102 - ■ DC22 - ■ ■ Q1**	
	99	53	14.54	3 200	2.3	13	**2KJ3102 - ■ DC22 - ■ ■ P1**	
	113	46	12.73	3 090	3	13	**2KJ3102 - ■ DC22 - ■ ■ N1**	
	129	41	11.16	2 980	3.4	13	**2KJ3102 - ■ DC22 - ■ ■ M1**	
	142	37	10.12	2 900	3.8	13	**2KJ3102 - ■ DC22 - ■ ■ L1**	
	151	35	9.53	2 850	4	13	**2KJ3102 - ■ DC22 - ■ ■ K1**	
	208	25	6.92	2 560	3	13	**2KJ3102 - ■ DC22 - ■ ■ G1**	
	238	22	6.06	2 460	4.5	13	**2KJ3102 - ■ DC22 - ■ ■ F1**	
	271	19	5.31	2 370	4.7	13	**2KJ3102 - ■ DC22 - ■ ■ E1**	
	299	18	4.82	2 300	4.9	13	**2KJ3102 - ■ DC22 - ■ ■ D1**	
	317	17	4.54	2 260	5.1	13	**2KJ3102 - ■ DC22 - ■ ■ C1**	
	360	15	4	2 170	5.2	13	**2KJ3102 - ■ DC22 - ■ ■ B1**	
	415	13	3.47	2 080	5.5	13	**2KJ3102 - ■ DC22 - ■ ■ A1**	
	Z.19-LE80MD4E							
	46	113	30.97	1 390	0.89	12	**2KJ3101 - ■ DC22 - ■ ■ V1**	
	54	98	26.91	1 690	1	12	**2KJ3101 - ■ DC22 - ■ ■ U1**	
	59	89	24.46	1 880	1.1	12	**2KJ3101 - ■ DC22 - ■ ■ T1**	
	69	76	20.82	2 140	1.3	12	**2KJ3101 - ■ DC22 - ■ ■ S1**	
	76	69	18.92	2 110	1.4	12	**2KJ3101 - ■ DC22 - ■ ■ R1**	
	87	60	16.5	2 050	1.6	12	**2KJ3101 - ■ DC22 - ■ ■ Q1**	
	97	54	14.77	2 010	1.8	12	**2KJ3101 - ■ DC22 - ■ ■ P1**	
	110	48	13.12	1 950	1.9	12	**2KJ3101 - ■ DC22 - ■ ■ N1**	
	119	44	12.11	1 920	2	12	**2KJ3101 - ■ DC22 - ■ ■ M1**	
	137	38	10.52	1 860	2.2	12	**2KJ3101 - ■ DC22 - ■ ■ L1**	
	158	33	9.14	1 800	2.3	12	**2KJ3101 - ■ DC22 - ■ ■ K1**	
	175	30	8.25	1 750	2.5	12	**2KJ3101 - ■ DC22 - ■ ■ J1**	
	186	28	7.76	1 730	2.6	12	**2KJ3101 - ■ DC22 - ■ ■ H1**	
	213	25	6.77	1 660	2.8	12	**2KJ3101 - ■ DC22 - ■ ■ G1**	
	230	23	6.25	1 540	2.5	12	**2KJ3101 - ■ DC22 - ■ ■ F1**	
	265	20	5.43	1 490	2.7	12	**2KJ3101 - ■ DC22 - ■ ■ E1**	
	306	17	4.71	1 450	2.9	12	**2KJ3101 - ■ DC22 - ■ ■ D1**	
	338	16	4.26	1 400	3	12	**2KJ3101 - ■ DC22 - ■ ■ C1**	
	359	15	4.01	1 380	3.1	12	**2KJ3101 - ■ DC22 - ■ ■ B1**	
	413	13	3.49	1 330	3.4	12	**2KJ3101 - ■ DC22 - ■ ■ A1**	
	Z.19-LA71MH2							
	170	31	16.5	1 760	3.2	8	**2KJ3101 - ■ CE11 - ■ ■ Q1**	**P00**
	190	28	14.77	1 710	3.4	8	**2KJ3101 - ■ CE11 - ■ ■ P1**	**P00**
	213	25	13.12	1 660	3.7	8	**2KJ3101 - ■ CE11 - ■ ■ N1**	**P00**
	231	23	12.11	1 620	3.9	8	**2KJ3101 - ■ CE11 - ■ ■ M1**	**P00**

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.55	**Z.19-LA71MH2**							
	266	20	10.52	1 560	4.2	8	**2KJ3101 - ■ CE11 - ■ ■ L1**	**P00**
	306	17	9.14	1 510	4.5	8	**2KJ3101 - ■ CE11 - ■ ■ K1**	**P00**
	339	16	8.25	1 460	4.8	8	**2KJ3101 - ■ CE11 - ■ ■ J1**	**P00**
	361	15	7.76	1 430	5	8	**2KJ3101 - ■ CE11 - ■ ■ H1**	**P00**
	414	13	6.77	1 380	5.4	8	**2KJ3101 - ■ CE11 - ■ ■ G1**	**P00**
	448	12	6.25	1 300	4.8	8	**2KJ3101 - ■ CE11 - ■ ■ F1**	**P00**
	516	10	5.43	1 260	5.2	8	**2KJ3101 - ■ CE11 - ■ ■ E1**	**P00**
	594	8.8	4.71	1 210	5.5	8	**2KJ3101 - ■ CE11 - ■ ■ D1**	**P00**
	657	8	4.26	1 170	5.9	8	**2KJ3101 - ■ CE11 - ■ ■ C1**	**P00**
	698	7.5	4.01	1 150	6.1	8	**2KJ3101 - ■ CE11 - ■ ■ B1**	**P00**
0.75	**D.89-LE90SH6E**							
	3.6	1 960	254.09	18 500	0.85	69	**2KJ3208 - ■ EC22 - ■ ■ Q1**	**P01**
	4	1 760	228.45	18 500	0.95	69	**2KJ3208 - ■ EC22 - ■ ■ P1**	**P01**
	D.89-LE80MH4E							
	4.6	1 550	311.6	18 500	1.1	66	**2KJ3208 - ■ DE22 - ■ ■ S1**	
	5.1	1 400	283.28	18 500	1.2	66	**2KJ3208 - ■ DE22 - ■ ■ R1**	
	5.7	1 260	254.09	18 500	1.3	66	**2KJ3208 - ■ DE22 - ■ ■ Q1**	
	6.3	1 130	228.45	18 500	1.5	66	**2KJ3208 - ■ DE22 - ■ ■ P1**	
	7	1 020	206.62	18 500	1.6	66	**2KJ3208 - ■ DE22 - ■ ■ N1**	
	7.5	945	190.73	18 500	1.8	66	**2KJ3208 - ■ DE22 - ■ ■ M1**	
	8.2	865	174.71	18 500	1.9	66	**2KJ3208 - ■ DE22 - ■ ■ L1**	
	D.79-LE80MH4E							
	7	1 030	207.1	11 000	0.82	43	**2KJ3207 - ■ DE22 - ■ ■ N1**	
	7.8	920	185.7	12 700	0.91	43	**2KJ3207 - ■ DE22 - ■ ■ M1**	
	8.6	830	167.39	13 400	1	43	**2KJ3207 - ■ DE22 - ■ ■ L1**	
	9.3	765	154.51	13 500	1.1	43	**2KJ3207 - ■ DE22 - ■ ■ K1**	
	10	700	141.04	13 600	1.2	43	**2KJ3207 - ■ DE22 - ■ ■ J1**	
	12	580	117.03	13 700	1.4	43	**2KJ3207 - ■ DE22 - ■ ■ H1**	
	13	545	110.14	13 800	1.5	43	**2KJ3207 - ■ DE22 - ■ ■ G1**	
	14	515	104.03	13 800	1.6	43	**2KJ3207 - ■ DE22 - ■ ■ F1**	
	16	440	88.52	13 900	1.9	43	**2KJ3207 - ■ DE22 - ■ ■ E1**	
	19	375	75.83	14 000	2.2	43	**2KJ3207 - ■ DE22 - ■ ■ D1**	
	D.69-LE80MH4E							
	9.9	725	145.71	10 700	0.83	31	**2KJ3206 - ■ DE22 - ■ ■ K1**	
	11	635	127.63	10 900	0.95	31	**2KJ3206 - ■ DE22 - ■ ■ J1**	
	12	585	117.82	11 000	1	31	**2KJ3206 - ■ DE22 - ■ ■ H1**	
	14	515	104.31	11 100	1.2	31	**2KJ3206 - ■ DE22 - ■ ■ G1**	
	17	430	86.82	11 200	1.4	31	**2KJ3206 - ■ DE22 - ■ ■ F1**	
	18	405	81.71	11 300	1.5	31	**2KJ3206 - ■ DE22 - ■ ■ E1**	
	20	360	73.22	11 300	1.6	31	**2KJ3206 - ■ DE22 - ■ ■ D1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**Z.69-LE80MH4E**							
	24	300	60.97	11 400	2	31	**2KJ3106 - ■ DE22 - ■ ■ A2**	
	26	275	55.43	11 500	2.2	31	**2KJ3106 - ■ DE22 - ■ ■ X1**	
	D.59-LE80MH4E							
	13	545	110.12	6 400	0.82	27	**2KJ3205 - ■ DE22 - ■ ■ H1**	
	15	485	97.5	7 470	0.93	27	**2KJ3205 - ■ DE22 - ■ ■ G1**	
	18	400	81.15	7 740	1.1	27	**2KJ3205 - ■ DE22 - ■ ■ F1**	
	19	380	76.38	7 780	1.2	27	**2KJ3205 - ■ DE22 - ■ ■ E1**	
	21	340	68.43	7 840	1.3	27	**2KJ3205 - ■ DE22 - ■ ■ D1**	
	29	245	49.94	7 990	1.8	27	**2KJ3205 - ■ DE22 - ■ ■ B1**	
	Z.59-LE80MH4E							
	25	280	56.99	7 940	1.6	27	**2KJ3105 - ■ DE22 - ■ ■ A2**	
	33	215	44.06	8 040	2.1	27	**2KJ3105 - ■ DE22 - ■ ■ W1**	
	36	199	40.06	8 050	2.3	27	**2KJ3105 - ■ DE22 - ■ ■ V1**	
	40	178	35.74	7 810	2.5	27	**2KJ3105 - ■ DE22 - ■ ■ U1**	
	45	159	32.05	7 580	2.8	27	**2KJ3105 - ■ DE22 - ■ ■ T1**	
	D.49-LE80MH4E							
	19	365	74.24	4 640	0.87	25	**2KJ3204 - ■ DE22 - ■ ■ F1**	
	21	345	69.88	5 150	0.92	25	**2KJ3204 - ■ DE22 - ■ ■ E1**	
	23	310	62.61	5 920	1	25	**2KJ3204 - ■ DE22 - ■ ■ D1**	
	Z.49-LE80MH4E							
	28	255	52.14	6 030	1.2	24	**2KJ3104 - ■ DE22 - ■ ■ B2**	
	30	235	47.4	6 070	1.4	24	**2KJ3104 - ■ DE22 - ■ ■ A2**	
	36	200	40.31	6 150	1.6	24	**2KJ3104 - ■ DE22 - ■ ■ X1**	
	39	182	36.65	6 180	1.8	24	**2KJ3104 - ■ DE22 - ■ ■ W1**	
	44	163	32.7	6 180	2	24	**2KJ3104 - ■ DE22 - ■ ■ V1**	
	49	146	29.32	6 000	2.2	24	**2KJ3104 - ■ DE22 - ■ ■ U1**	
	54	131	26.43	5 830	2.4	24	**2KJ3104 - ■ DE22 - ■ ■ T1**	
	59	121	24.39	5 710	2.6	24	**2KJ3104 - ■ DE22 - ■ ■ S1**	
	65	111	22.27	5 560	2.9	24	**2KJ3104 - ■ DE22 - ■ ■ R1**	
	Z.39-LE80MH4E							
	29	245	49.75	3 240	0.81	15	**2KJ3103 - ■ DE22 - ■ ■ X1**	
	33	215	43.68	3 740	0.92	15	**2KJ3103 - ■ DE22 - ■ ■ W1**	
	36	198	39.71	3 880	1	15	**2KJ3103 - ■ DE22 - ■ ■ V1**	
	42	169	33.97	4 160	1.2	15	**2KJ3103 - ■ DE22 - ■ ■ U1**	
	47	154	30.88	4 270	1.3	15	**2KJ3103 - ■ DE22 - ■ ■ T1**	
	53	136	27.3	4 390	1.5	15	**2KJ3103 - ■ DE22 - ■ ■ S1**	
	58	123	24.82	4 470	1.6	15	**2KJ3103 - ■ DE22 - ■ ■ R1**	
	66	108	21.74	4 520	1.8	15	**2KJ3103 - ■ DE22 - ■ ■ Q1**	
	72	100	20.07	4 530	2	15	**2KJ3103 - ■ DE22 - ■ ■ P1**	
	81	88	17.77	4 550	2.3	15	**2KJ3103 - ■ DE22 - ■ ■ N1**	
	97	74	14.79	4 500	2.6	15	**2KJ3103 - ■ DE22 - ■ ■ M1**	
	103	69	13.92	4 500	2.7	15	**2KJ3103 - ■ DE22 - ■ ■ L1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

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Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**Z.39-LE80MH4E**							
	115	62	12.47	4 420	2.9	15	**2KJ3103 - ■ DE22 - ■ ■ K1**	
	136	53	10.62	4 220	3.2	15	**2KJ3103 - ■ DE22 - ■ ■ J1**	
	158	45	9.1	4 030	3.5	15	**2KJ3103 - ■ DE22 - ■ ■ H1**	
	184	39	7.84	3 860	3.8	15	**2KJ3103 - ■ DE22 - ■ ■ G1**	
	223	32	6.46	3 640	4.5	15	**2KJ3103 - ■ DE22 - ■ ■ F1**	
	Z.29-LE80MH4E							
	45	158	31.86	2 880	0.88	13	**2KJ3102 - ■ DE22 - ■ ■ W1**	
	50	144	28.96	3 030	0.97	13	**2KJ3102 - ■ DE22 - ■ ■ V1**	
	58	124	24.84	3 220	1.1	13	**2KJ3102 - ■ DE22 - ■ ■ U1**	
	64	112	22.58	3 340	1.2	13	**2KJ3102 - ■ DE22 - ■ ■ T1**	
	73	98	19.8	3 330	1.4	13	**2KJ3102 - ■ DE22 - ■ ■ S1**	
	81	88	17.67	3 240	1.6	13	**2KJ3102 - ■ DE22 - ■ ■ R1**	
	91	78	15.75	3 160	1.8	13	**2KJ3102 - ■ DE22 - ■ ■ Q1**	
	99	72	14.54	3 100	1.7	13	**2KJ3102 - ■ DE22 - ■ ■ P1**	
	113	63	12.73	3 000	2.2	13	**2KJ3102 - ■ DE22 - ■ ■ N1**	
	129	56	11.16	2 890	2.5	13	**2KJ3102 - ■ DE22 - ■ ■ M1**	
	142	50	10.12	2 820	2.8	13	**2KJ3102 - ■ DE22 - ■ ■ L1**	
	151	47	9.53	2 780	3	13	**2KJ3102 - ■ DE22 - ■ ■ K1**	
	171	42	8.4	2 680	3.3	13	**2KJ3102 - ■ DE22 - ■ ■ J1**	
	198	36	7.29	2 580	3.6	13	**2KJ3102 - ■ DE22 - ■ ■ H1**	
	208	34	6.92	2 500	2.2	13	**2KJ3102 - ■ DE22 - ■ ■ G1**	
	238	30	6.06	2 410	3.3	13	**2KJ3102 - ■ DE22 - ■ ■ F1**	
	271	26	5.31	2 320	3.4	13	**2KJ3102 - ■ DE22 - ■ ■ E1**	
	299	24	4.82	2 260	3.6	13	**2KJ3102 - ■ DE22 - ■ ■ D1**	
	317	23	4.54	2 210	3.7	13	**2KJ3102 - ■ DE22 - ■ ■ C1**	
	360	20	4	2 140	3.8	13	**2KJ3102 - ■ DE22 - ■ ■ B1**	
	415	17	3.47	2 050	4.1	13	**2KJ3102 - ■ DE22 - ■ ■ A1**	
	Z.29-LE80MA2E							
	159	45	17.67	2 740	3.1	12	**2KJ3102 - ■ DB22 - ■ ■ R1**	**P00**
	178	40	15.75	2 650	3.5	12	**2KJ3102 - ■ DB22 - ■ ■ Q1**	**P00**
	193	37	14.54	2 600	3.2	12	**2KJ3102 - ■ DB22 - ■ ■ P1**	**P00**
	220	32	12.73	2 500	4.3	12	**2KJ3102 - ■ DB22 - ■ ■ N1**	**P00**
	405	18	6.92	2 060	4.2	12	**2KJ3102 - ■ DB22 - ■ ■ G1**	**P00**
	Z.19-LE80MH4E							
	59	122	24.46	1 200	0.82	12	**2KJ3101 - ■ DE22 - ■ ■ T1**	
	69	104	20.82	1 570	0.97	12	**2KJ3101 - ■ DE22 - ■ ■ S1**	
	76	94	18.92	1 770	1.1	12	**2KJ3101 - ■ DE22 - ■ ■ R1**	
	87	82	16.5	1 900	1.2	12	**2KJ3101 - ■ DE22 - ■ ■ Q1**	
	97	74	14.77	1 870	1.3	12	**2KJ3101 - ■ DE22 - ■ ■ P1**	
	110	65	13.12	1 840	1.4	12	**2KJ3101 - ■ DE22 - ■ ■ N1**	
	119	60	12.11	1 810	1.5	12	**2KJ3101 - ■ DE22 - ■ ■ M1**	
	137	52	10.52	1 760	1.6	12	**2KJ3101 - ■ DE22 - ■ ■ L1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**Z.19-LE80MH4E**							
	158	46	9.14	1 710	1.7	12	**2KJ3101 - ■ DE22 - ■ ■ K1**	
	175	41	8.25	1 680	1.8	12	**2KJ3101 - ■ DE22 - ■ ■ J1**	
	186	39	7.76	1 650	1.9	12	**2KJ3101 - ■ DE22 - ■ ■ H1**	
	213	34	6.77	1 600	2	12	**2KJ3101 - ■ DE22 - ■ ■ G1**	
	230	31	6.25	1 460	1.8	12	**2KJ3101 - ■ DE22 - ■ ■ F1**	
	265	27	5.43	1 420	2	12	**2KJ3101 - ■ DE22 - ■ ■ E1**	
	306	23	4.71	1 380	2.1	12	**2KJ3101 - ■ DE22 - ■ ■ D1**	
	338	21	4.26	1 350	2.2	12	**2KJ3101 - ■ DE22 - ■ ■ C1**	
	359	20	4.01	1 330	2.3	12	**2KJ3101 - ■ DE22 - ■ ■ B1**	
	413	17	3.49	1 290	2.5	12	**2KJ3101 - ■ DE22 - ■ ■ A1**	
	Z.19-LE80MA2E							
	170	42	16.5	1 690	2.3	11	**2KJ3101 - ■ DB22 - ■ ■ Q1**	**P00**
	190	38	14.77	1 640	2.5	11	**2KJ3101 - ■ DB22 - ■ ■ P1**	**P00**
	214	34	13.12	1 590	2.7	11	**2KJ3101 - ■ DB22 - ■ ■ N1**	**P00**
	232	31	12.11	1 570	2.8	11	**2KJ3101 - ■ DB22 - ■ ■ M1**	**P00**
	267	27	10.52	1 510	3.1	11	**2KJ3101 - ■ DB22 - ■ ■ L1**	**P00**
	307	23	9.14	1 460	3.3	11	**2KJ3101 - ■ DB22 - ■ ■ K1**	**P00**
	340	21	8.25	1 420	3.5	11	**2KJ3101 - ■ DB22 - ■ ■ J1**	**P00**
	361	20	7.76	1 400	3.7	11	**2KJ3101 - ■ DB22 - ■ ■ H1**	**P00**
	414	17	6.77	1 350	3.9	11	**2KJ3101 - ■ DB22 - ■ ■ G1**	**P00**
	449	16	6.25	1 260	3.5	11	**2KJ3101 - ■ DB22 - ■ ■ F1**	**P00**
	517	14	5.43	1 220	3.8	11	**2KJ3101 - ■ DB22 - ■ ■ E1**	**P00**
	596	12	4.71	1 170	4.1	11	**2KJ3101 - ■ DB22 - ■ ■ D1**	**P00**
	658	11	4.26	1 140	4.3	11	**2KJ3101 - ■ DB22 - ■ ■ C1**	**P00**
	700	10	4.01	1 130	4.5	11	**2KJ3101 - ■ DB22 - ■ ■ B1**	**P00**
	804	8.9	3.49	1 080	4.8	11	**2KJ3101 - ■ DB22 - ■ ■ A1**	**P00**
1.1	**D.89-LE90SG4E**							
	5	2 080	283.28	18 000	0.8	68	**2KJ3208 - ■ EK22 - ■ ■ R1**	
	5.6	1 870	254.09	18 500	0.9	68	**2KJ3208 - ■ EK22 - ■ ■ Q1**	
	6.2	1 680	228.45	18 500	1	68	**2KJ3208 - ■ EK22 - ■ ■ P1**	
	6.9	1 520	206.62	18 500	1.1	68	**2KJ3208 - ■ EK22 - ■ ■ N1**	
	7.5	1 400	190.73	18 500	1.2	68	**2KJ3208 - ■ EK22 - ■ ■ M1**	
	8.2	1 280	174.71	18 500	1.3	68	**2KJ3208 - ■ EK22 - ■ ■ L1**	
	9.7	1 080	146.59	18 500	1.6	68	**2KJ3208 - ■ EK22 - ■ ■ K1**	
	10	1 010	137.97	18 500	1.7	68	**2KJ3208 - ■ EK22 - ■ ■ J1**	
	11	930	126.58	18 500	1.8	68	**2KJ3208 - ■ EK22 - ■ ■ H1**	
	13	815	110.57	18 500	2.1	68	**2KJ3208 - ■ EK22 - ■ ■ G1**	
	D.79-LE90SG4E							
	10	1 040	141.04	10 900	0.81	45	**2KJ3207 - ■ EK22 - ■ ■ J1**	
	12	860	117.03	13 400	0.97	45	**2KJ3207 - ■ EK22 - ■ ■ H1**	
	13	810	110.14	13 400	1	45	**2KJ3207 - ■ EK22 - ■ ■ G1**	
	14	765	104.03	13 500	1.1	45	**2KJ3207 - ■ EK22 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**D.79-LE90SG4E**							
	16	650	88.52	13 600	1.3	45	**2KJ3207 - ■ EK22 - ■ ■ E1**	
	19	555	75.83	13 700	1.5	45	**2KJ3207 - ■ EK22 - ■ ■ D1**	
	21	490	66.67	13 800	1.7	45	**2KJ3207 - ■ EK22 - ■ ■ C1**	
	Z.79-LE90SG4E							
	26	400	54.47	13 900	2.1	44	**2KJ3107 - ■ EK22 - ■ ■ A2**	
	29	365	49.52	14 000	2.3	44	**2KJ3107 - ■ EK22 - ■ ■ X1**	
	D.69-LE90SG4E							
	16	640	86.82	10 900	0.94	33	**2KJ3206 - ■ EK22 - ■ ■ F1**	
	17	600	81.71	11 000	1	33	**2KJ3206 - ■ EK22 - ■ ■ E1**	
	19	540	73.22	11 100	1.1	33	**2KJ3206 - ■ EK22 - ■ ■ D1**	
	Z.69-LE90SG4E							
	23	445	60.97	11 200	1.3	33	**2KJ3106 - ■ EK22 - ■ ■ A2**	
	26	405	55.43	11 300	1.5	33	**2KJ3106 - ■ EK22 - ■ ■ X1**	
	30	345	47.14	11 400	1.7	33	**2KJ3106 - ■ EK22 - ■ ■ W1**	
	33	315	42.86	11 400	1.9	33	**2KJ3106 - ■ EK22 - ■ ■ V1**	
	37	280	38.24	11 500	2.1	33	**2KJ3106 - ■ EK22 - ■ ■ U1**	
	42	250	34.29	11 500	2.4	33	**2KJ3106 - ■ EK22 - ■ ■ T1**	
	46	225	30.9	11 500	2.6	33	**2KJ3106 - ■ EK22 - ■ ■ S1**	
	D.59-LE90SG4E							
	19	560	76.38	6 130	0.8	29	**2KJ3205 - ■ EK22 - ■ ■ E1**	
	21	500	68.43	7 210	0.89	29	**2KJ3205 - ■ EK22 - ■ ■ D1**	
	29	365	49.94	7 800	1.2	29	**2KJ3205 - ■ EK22 - ■ ■ B1**	
	Z.59-LE90SG4E							
	25	420	56.99	7 710	1.1	28	**2KJ3105 - ■ EK22 - ■ ■ A2**	
	32	325	44.06	7 860	1.4	28	**2KJ3105 - ■ EK22 - ■ ■ W1**	
	36	295	40.06	7 700	1.5	28	**2KJ3105 - ■ EK22 - ■ ■ V1**	
	40	260	35.74	7 510	1.7	28	**2KJ3105 - ■ EK22 - ■ ■ U1**	
	44	235	32.05	7 300	1.9	28	**2KJ3105 - ■ EK22 - ■ ■ T1**	
	49	210	28.89	7 120	2.1	28	**2KJ3105 - ■ EK22 - ■ ■ S1**	
	53	197	26.66	6 970	2.3	28	**2KJ3105 - ■ EK22 - ■ ■ R1**	
	59	179	24.34	6 800	2.5	28	**2KJ3105 - ■ EK22 - ■ ■ Q1**	
	71	149	20.2	6 470	3	28	**2KJ3105 - ■ EK22 - ■ ■ P1**	
	75	140	19.01	6 360	3.2	28	**2KJ3105 - ■ EK22 - ■ ■ N1**	
	Z.49-LE90SG4E							
	27	380	52.14	5 630	0.83	26	**2KJ3104 - ■ EK22 - ■ ■ B2**	
	30	345	47.4	5 850	0.92	26	**2KJ3104 - ■ EK22 - ■ ■ A2**	
	35	295	40.31	5 950	1.1	26	**2KJ3104 - ■ EK22 - ■ ■ X1**	
	39	270	36.65	6 000	1.2	26	**2KJ3104 - ■ EK22 - ■ ■ W1**	
	44	240	32.7	5 900	1.3	26	**2KJ3104 - ■ EK22 - ■ ■ V1**	
	49	215	29.32	5 750	1.5	26	**2KJ3104 - ■ EK22 - ■ ■ U1**	
	54	195	26.43	5 600	1.6	26	**2KJ3104 - ■ EK22 - ■ ■ T1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**Z.49-LE90SG4E**							
	58	180	24.39	5 500	1.8	26	**2KJ3104 - ■ EK22 - ■ ■ S1**	
	64	164	22.27	5 370	1.9	26	**2KJ3104 - ■ EK22 - ■ ■ R1**	
	77	136	18.48	5 120	2.3	26	**2KJ3104 - ■ EK22 - ■ ■ Q1**	
	82	128	17.39	5 040	2.5	26	**2KJ3104 - ■ EK22 - ■ ■ P1**	
	87	121	16.42	4 960	2.6	26	**2KJ3104 - ■ EK22 - ■ ■ N1**	
	102	103	13.98	4 750	3.1	26	**2KJ3104 - ■ EK22 - ■ ■ M1**	
	119	88	11.97	4 550	3.6	26	**2KJ3104 - ■ EK22 - ■ ■ L1**	
	Z.39-LE90SG4E							
	42	250	33.97	2 160	0.8	17	**2KJ3103 - ■ EK22 - ■ ■ U1**	
	46	225	30.88	2 530	0.88	17	**2KJ3103 - ■ EK22 - ■ ■ T1**	
	52	200	27.3	2 820	0.99	17	**2KJ3103 - ■ EK22 - ■ ■ S1**	
	57	183	24.82	3 000	1.1	17	**2KJ3103 - ■ EK22 - ■ ■ R1**	
	66	160	21.74	3 250	1.2	17	**2KJ3103 - ■ EK22 - ■ ■ Q1**	
	71	148	20.07	3 360	1.4	17	**2KJ3103 - ■ EK22 - ■ ■ P1**	
	80	131	17.77	3 500	1.5	17	**2KJ3103 - ■ EK22 - ■ ■ N1**	
	96	109	14.79	3 650	1.8	17	**2KJ3103 - ■ EK22 - ■ ■ M1**	
	102	103	13.92	3 670	1.8	17	**2KJ3103 - ■ EK22 - ■ ■ L1**	
	114	92	12.47	3 720	2	17	**2KJ3103 - ■ EK22 - ■ ■ K1**	
	134	78	10.62	3 760	2.2	17	**2KJ3103 - ■ EK22 - ■ ■ J1**	
	157	67	9.1	3 740	2.4	17	**2KJ3103 - ■ EK22 - ■ ■ H1**	
	182	58	7.84	3 710	2.6	17	**2KJ3103 - ■ EK22 - ■ ■ G1**	
	221	48	6.46	3 330	3.1	17	**2KJ3103 - ■ EK22 - ■ ■ F1**	
	234	45	6.08	3 330	3.3	17	**2KJ3103 - ■ EK22 - ■ ■ E1**	
	261	40	5.45	3 310	3.5	17	**2KJ3103 - ■ EK22 - ■ ■ D1**	
	307	34	4.64	3 240	3.8	17	**2KJ3103 - ■ EK22 - ■ ■ C1**	
	358	29	3.98	3 100	4.1	17	**2KJ3103 - ■ EK22 - ■ ■ B1**	
	415	25	3.43	2 960	4.4	17	**2KJ3103 - ■ EK22 - ■ ■ A1**	
	Z.39-LE80ME2E							
	160	66	17.77	3 740	3	15	**2KJ3103 - ■ DM22 - ■ ■ N1**	**P00**
	192	55	14.79	3 690	3.5	15	**2KJ3103 - ■ DM22 - ■ ■ M1**	**P00**
	204	52	13.92	3 650	3.7	15	**2KJ3103 - ■ DM22 - ■ ■ L1**	**P00**
	227	46	12.47	3 540	3.9	15	**2KJ3103 - ■ DM22 - ■ ■ K1**	**P00**
	267	39	10.62	3 380	4.3	15	**2KJ3103 - ■ DM22 - ■ ■ J1**	**P00**
	312	34	9.1	3 230	4.7	15	**2KJ3103 - ■ DM22 - ■ ■ H1**	**P00**
	362	29	7.84	3 090	5.1	15	**2KJ3103 - ■ DM22 - ■ ■ G1**	**P00**
	Z.29-LE90SG4E							
	63	166	22.58	1 930	0.84	15	**2KJ3102 - ■ EK22 - ■ ■ T1**	
	72	146	19.8	2 190	0.96	15	**2KJ3102 - ■ EK22 - ■ ■ S1**	
	81	130	17.67	2 380	1.1	15	**2KJ3102 - ■ EK22 - ■ ■ R1**	
	90	116	15.75	2 540	1.2	15	**2KJ3102 - ■ EK22 - ■ ■ Q1**	
	98	107	14.54	2 630	1.1	15	**2KJ3102 - ■ EK22 - ■ ■ P1**	
	112	94	12.73	2 730	1.5	15	**2KJ3102 - ■ EK22 - ■ ■ N1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

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Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**Z.29-LE90SG4E**							
	128	82	11.16	2 750	1.7	15	**2KJ3102 - ■ EK22 - ■ ■ M1**	
	141	75	10.12	2 690	1.9	15	**2KJ3102 - ■ EK22 - ■ ■ L1**	
	150	70	9.53	2 660	2	15	**2KJ3102 - ■ EK22 - ■ ■ K1**	
	170	62	8.4	2 580	2.2	15	**2KJ3102 - ■ EK22 - ■ ■ J1**	
	195	54	7.29	2 490	2.4	15	**2KJ3102 - ■ EK22 - ■ ■ H1**	
	206	51	6.92	2 390	1.5	15	**2KJ3102 - ■ EK22 - ■ ■ G1**	
	235	45	6.06	2 310	2.2	15	**2KJ3102 - ■ EK22 - ■ ■ F1**	
	268	39	5.31	2 240	2.3	15	**2KJ3102 - ■ EK22 - ■ ■ E1**	
	296	36	4.82	2 180	2.4	15	**2KJ3102 - ■ EK22 - ■ ■ D1**	
	314	34	4.54	2 150	2.5	15	**2KJ3102 - ■ EK22 - ■ ■ C1**	
	356	30	4	2 080	2.6	15	**2KJ3102 - ■ EK22 - ■ ■ B1**	
	411	26	3.47	2 000	2.7	15	**2KJ3102 - ■ EK22 - ■ ■ A1**	
	Z.29-LE80ME2E							
	160	66	17.67	2 610	2.1	13	**2KJ3102 - ■ DM22 - ■ ■ R1**	**P00**
	180	58	15.75	2 540	2.4	13	**2KJ3102 - ■ DM22 - ■ ■ Q1**	**P00**
	195	54	14.54	2 490	2.2	13	**2KJ3102 - ■ DM22 - ■ ■ P1**	**P00**
	223	47	12.73	2 410	3	13	**2KJ3102 - ■ DM22 - ■ ■ N1**	**P00**
	254	41	11.16	2 330	3.4	13	**2KJ3102 - ■ DM22 - ■ ■ M1**	**P00**
	280	38	10.12	2 260	3.7	13	**2KJ3102 - ■ DM22 - ■ ■ L1**	**P00**
	297	35	9.53	2 230	4	13	**2KJ3102 - ■ DM22 - ■ ■ K1**	**P00**
	338	31	8.4	2 150	4.4	13	**2KJ3102 - ■ DM22 - ■ ■ J1**	**P00**
	389	27	7.29	2 070	4.8	13	**2KJ3102 - ■ DM22 - ■ ■ H1**	**P00**
	410	26	6.92	2 000	2.9	13	**2KJ3102 - ■ DM22 - ■ ■ G1**	**P00**
	468	22	6.06	1 930	4.5	13	**2KJ3102 - ■ DM22 - ■ ■ F1**	**P00**
	534	20	5.31	1 860	4.6	13	**2KJ3102 - ■ DM22 - ■ ■ E1**	**P00**
	588	18	4.82	1 810	4.8	13	**2KJ3102 - ■ DM22 - ■ ■ D1**	**P00**
	624	17	4.54	1 780	5	13	**2KJ3102 - ■ DM22 - ■ ■ C1**	**P00**
	709	15	4	1 710	5.1	13	**2KJ3102 - ■ DM22 - ■ ■ B1**	**P00**
	817	13	3.47	1 640	5.4	13	**2KJ3102 - ■ DM22 - ■ ■ A1**	**P00**
	Z.19-LE80ME2E							
	150	70	18.92	1 580	1.4	12	**2KJ3101 - ■ DM22 - ■ ■ R1**	**P00**
	172	61	16.5	1 550	1.6	12	**2KJ3101 - ■ DM22 - ■ ■ Q1**	**P00**
	192	55	14.77	1 520	1.7	12	**2KJ3101 - ■ DM22 - ■ ■ P1**	**P00**
	216	49	13.12	1 480	1.9	12	**2KJ3101 - ■ DM22 - ■ ■ N1**	**P00**
	234	45	12.11	1 460	2	12	**2KJ3101 - ■ DM22 - ■ ■ M1**	**P00**
	269	39	10.52	1 420	2.1	12	**2KJ3101 - ■ DM22 - ■ ■ L1**	**P00**
	344	31	8.25	1 350	2.4	12	**2KJ3101 - ■ DM22 - ■ ■ J1**	**P00**
	365	29	7.76	1 330	2.5	12	**2KJ3101 - ■ DM22 - ■ ■ H1**	**P00**
	419	25	6.77	1 290	2.7	12	**2KJ3101 - ■ DM22 - ■ ■ G1**	**P00**
	454	23	6.25	1 180	2.4	12	**2KJ3101 - ■ DM22 - ■ ■ F1**	**P00**
	522	20	5.43	1 150	2.6	12	**2KJ3101 - ■ DM22 - ■ ■ E1**	**P00**
	602	18	4.71	1 110	2.8	12	**2KJ3101 - ■ DM22 - ■ ■ D1**	**P00**

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**Z.19-LE80ME2E**							
	665	16	4.26	1 080	3	12	**2KJ3101 - ■ DM22 - ■ ■ C1**	**P00**
	707	15	4.01	1 070	3.1	12	**2KJ3101 - ■ DM22 - ■ ■ B1**	**P00**
	812	13	3.49	1 040	3.3	12	**2KJ3101 - ■ DM22 - ■ ■ A1**	**P00**
1.5	**D.89-LE90LH4E**							
	6.9	2 060	206.62	18 100	0.81	71	**2KJ3208 - ■ EM22 - ■ ■ N1**	
	7.5	1 900	190.73	18 500	0.88	71	**2KJ3208 - ■ EM22 - ■ ■ M1**	
	8.2	1 740	174.71	18 500	0.96	71	**2KJ3208 - ■ EM22 - ■ ■ L1**	
	9.8	1 460	146.59	18 500	1.1	71	**2KJ3208 - ■ EM22 - ■ ■ K1**	
	10	1 370	137.97	18 500	1.2	71	**2KJ3208 - ■ EM22 - ■ ■ J1**	
	11	1 260	126.58	18 500	1.3	71	**2KJ3208 - ■ EM22 - ■ ■ H1**	
	13	1 100	110.57	18 500	1.5	71	**2KJ3208 - ■ EM22 - ■ ■ G1**	
	14	985	98.99	18 500	1.7	71	**2KJ3208 - ■ EM22 - ■ ■ F1**	
	17	860	86.56	18 500	1.9	71	**2KJ3208 - ■ EM22 - ■ ■ E1**	
	19	740	74.3	18 500	2.3	71	**2KJ3208 - ■ EM22 - ■ ■ D1**	
	D.79-LE90LH4E							
	14	1 030	104.03	11 000	0.81	48	**2KJ3207 - ■ EM22 - ■ ■ F1**	
	16	880	88.52	13 300	0.95	48	**2KJ3207 - ■ EM22 - ■ ■ E1**	
	19	755	75.83	13 500	1.1	48	**2KJ3207 - ■ EM22 - ■ ■ D1**	
	22	665	66.67	13 600	1.3	48	**2KJ3207 - ■ EM22 - ■ ■ C1**	
	Z.79-LE90LH4E							
	26	540	54.47	13 800	1.5	47	**2KJ3107 - ■ EM22 - ■ ■ A2**	
	29	490	49.52	13 800	1.7	47	**2KJ3107 - ■ EM22 - ■ ■ X1**	
	32	440	44.42	13 900	1.9	47	**2KJ3107 - ■ EM22 - ■ ■ W1**	
	36	395	39.94	14 000	2.1	47	**2KJ3107 - ■ EM22 - ■ ■ V1**	
	40	360	36.12	14 000	2.3	47	**2KJ3107 - ■ EM22 - ■ ■ U1**	
	43	330	33.34	14 000	2.5	47	**2KJ3107 - ■ EM22 - ■ ■ T1**	
	47	305	30.54	14 100	2.8	47	**2KJ3107 - ■ EM22 - ■ ■ S1**	
	D.69-LE90LH4E							
	20	730	73.22	10 700	0.82	36	**2KJ3206 - ■ EM22 - ■ ■ D1**	
	Z.69-LE90LH4E							
	24	605	60.97	11 000	0.99	36	**2KJ3106 - ■ EM22 - ■ ■ A2**	
	26	550	55.43	11 000	1.1	36	**2KJ3106 - ■ EM22 - ■ ■ X1**	
	30	470	47.14	11 200	1.3	36	**2KJ3106 - ■ EM22 - ■ ■ W1**	
	33	425	42.86	11 200	1.4	36	**2KJ3106 - ■ EM22 - ■ ■ V1**	
	38	380	38.24	11 300	1.6	36	**2KJ3106 - ■ EM22 - ■ ■ U1**	
	42	340	34.29	11 400	1.8	36	**2KJ3106 - ■ EM22 - ■ ■ T1**	
	46	305	30.9	11 400	1.9	36	**2KJ3106 - ■ EM22 - ■ ■ S1**	
	50	285	28.53	11 400	2.1	36	**2KJ3106 - ■ EM22 - ■ ■ R1**	
	55	260	26.04	11 500	2.3	36	**2KJ3106 - ■ EM22 - ■ ■ Q1**	
	66	215	21.61	11 600	2.8	36	**2KJ3106 - ■ EM22 - ■ ■ P1**	
	71	200	20.34	11 600	3	36	**2KJ3106 - ■ EM22 - ■ ■ N1**	
	75	192	19.21	11 600	3.1	36	**2KJ3106 - ■ EM22 - ■ ■ M1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**D.59-LE90LH4E**							
	29	495	49.94	7 300	0.9	32	**2KJ3205 - ■ EM22 - ■ ■ B1**	
	Z.59-LE90LH4E							
	33	440	44.06	7 400	1	31	**2KJ3105 - ■ EM22 - ■ ■ W1**	
	36	400	40.06	7 270	1.1	31	**2KJ3105 - ■ EM22 - ■ ■ V1**	
	40	355	35.74	7 120	1.3	31	**2KJ3105 - ■ EM22 - ■ ■ U1**	
	45	320	32.05	6 950	1.4	31	**2KJ3105 - ■ EM22 - ■ ■ T1**	
	50	285	28.89	6 810	1.6	31	**2KJ3105 - ■ EM22 - ■ ■ S1**	
	54	265	26.66	6 680	1.7	31	**2KJ3105 - ■ EM22 - ■ ■ R1**	
	59	240	24.34	6 550	1.9	31	**2KJ3105 - ■ EM22 - ■ ■ Q1**	
	71	200	20.2	6 250	2.2	31	**2KJ3105 - ■ EM22 - ■ ■ P1**	
	75	190	19.01	6 150	2.4	31	**2KJ3105 - ■ EM22 - ■ ■ N1**	
	80	179	17.95	6 060	2.5	31	**2KJ3105 - ■ EM22 - ■ ■ M1**	
	94	152	15.27	5 810	3	31	**2KJ3105 - ■ EM22 - ■ ■ L1**	
	110	131	13.09	5 580	3.4	31	**2KJ3105 - ■ EM22 - ■ ■ K1**	
	Z.49-LE90LH4E							
	36	400	40.31	5 300	0.8	29	**2KJ3104 - ■ EM22 - ■ ■ X1**	
	39	365	36.65	5 650	0.87	29	**2KJ3104 - ■ EM22 - ■ ■ W1**	
	44	325	32.7	5 540	0.98	29	**2KJ3104 - ■ EM22 - ■ ■ V1**	
	49	290	29.32	5 090	1.1	29	**2KJ3104 - ■ EM22 - ■ ■ U1**	
	54	260	26.43	5 330	1.2	29	**2KJ3104 - ■ EM22 - ■ ■ T1**	
	59	240	24.39	5 240	1.3	29	**2KJ3104 - ■ EM22 - ■ ■ S1**	
	64	220	22.27	5 140	1.4	29	**2KJ3104 - ■ EM22 - ■ ■ R1**	
	78	184	18.48	4 920	1.7	29	**2KJ3104 - ■ EM22 - ■ ■ Q1**	
	83	174	17.39	4 840	1.8	29	**2KJ3104 - ■ EM22 - ■ ■ P1**	
	87	164	16.42	4 780	2	29	**2KJ3104 - ■ EM22 - ■ ■ N1**	
	103	140	13.98	4 590	2.3	29	**2KJ3104 - ■ EM22 - ■ ■ M1**	
	120	119	11.97	4 410	2.7	29	**2KJ3104 - ■ EM22 - ■ ■ L1**	
	136	105	10.53	4 260	3	29	**2KJ3104 - ■ EM22 - ■ ■ K1**	
	162	89	8.88	4 070	3.6	29	**2KJ3104 - ■ EM22 - ■ ■ J1**	
	185	77	7.74	3 920	4.1	29	**2KJ3104 - ■ EM22 - ■ ■ H1**	
	188	76	7.64	3 880	3.9	29	**2KJ3104 - ■ EM22 - ■ ■ G1**	
	199	72	7.21	3 810	4	29	**2KJ3104 - ■ EM22 - ■ ■ F1**	
	234	61	6.14	3 640	4.3	29	**2KJ3104 - ■ EM22 - ■ ■ E1**	
	273	52	5.26	3 490	4.7	29	**2KJ3104 - ■ EM22 - ■ ■ D1**	
	311	46	4.62	3 360	4.9	29	**2KJ3104 - ■ EM22 - ■ ■ C1**	
	368	39	3.9	3 190	5.3	29	**2KJ3104 - ■ EM22 - ■ ■ B1**	
	Z.49-LE90SG2E							
	156	92	18.48	4 110	3.5	26	**2KJ3104 - ■ EK22 - ■ ■ Q1**	**P00**
	166	86	17.39	4 040	3.7	26	**2KJ3104 - ■ EK22 - ■ ■ P1**	**P00**
	176	82	16.42	3 970	3.9	26	**2KJ3104 - ■ EK22 - ■ ■ N1**	**P00**

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**Z.39-LE90LH4E**							
	58	245	24.82	1 430	0.81	20	**2KJ3103 - ■ EM22 - ■ ■ R1**	
	66	215	21.74	1 860	0.92	20	**2KJ3103 - ■ EM22 - ■ ■ Q1**	
	71	200	20.07	2 040	1	20	**2KJ3103 - ■ EM22 - ■ ■ P1**	
	81	177	17.77	2 340	1.1	20	**2KJ3103 - ■ EM22 - ■ ■ N1**	
	97	148	14.79	2 660	1.3	20	**2KJ3103 - ■ EM22 - ■ ■ M1**	
	103	139	13.92	2 760	1.4	20	**2KJ3103 - ■ EM22 - ■ ■ L1**	
	115	124	12.47	2 910	1.4	20	**2KJ3103 - ■ EM22 - ■ ■ K1**	
	135	106	10.62	3 040	1.6	20	**2KJ3103 - ■ EM22 - ■ ■ J1**	
	158	91	9.1	3 130	1.7	20	**2KJ3103 - ■ EM22 - ■ ■ H1**	
	183	78	7.84	3 190	1.9	20	**2KJ3103 - ■ EM22 - ■ ■ G1**	
	222	64	6.46	2 820	2.3	20	**2KJ3103 - ■ EM22 - ■ ■ F1**	
	236	61	6.08	2 820	2.4	20	**2KJ3103 - ■ EM22 - ■ ■ E1**	
	263	54	5.45	2 860	2.6	20	**2KJ3103 - ■ EM22 - ■ ■ D1**	
	309	46	4.64	2 880	2.8	20	**2KJ3103 - ■ EM22 - ■ ■ C1**	
	361	40	3.98	2 850	3	20	**2KJ3103 - ■ EM22 - ■ ■ B1**	
	418	34	3.43	2 840	3.3	20	**2KJ3103 - ■ EM22 - ■ ■ A1**	
	Z.39-LE90SG2E							
	162	88	17.77	3 160	2.3	17	**2KJ3103 - ■ EK22 - ■ ■ N1**	**P00**
	195	73	14.79	3 210	2.6	17	**2KJ3103 - ■ EK22 - ■ ■ M1**	**P00**
	207	69	13.92	3 210	2.7	17	**2KJ3103 - ■ EK22 - ■ ■ L1**	**P00**
	231	62	12.47	3 210	2.9	17	**2KJ3103 - ■ EK22 - ■ ■ K1**	**P00**
	272	53	10.62	3 180	3.2	17	**2KJ3103 - ■ EK22 - ■ ■ J1**	**P00**
	317	45	9.1	3 150	3.5	17	**2KJ3103 - ■ EK22 - ■ ■ H1**	**P00**
	368	39	7.84	3 020	3.8	17	**2KJ3103 - ■ EK22 - ■ ■ G1**	**P00**
	447	32	6.46	2 820	4.6	17	**2KJ3103 - ■ EK22 - ■ ■ F1**	**P00**
	475	30	6.08	2 800	4.9	17	**2KJ3103 - ■ EK22 - ■ ■ E1**	**P00**
	529	27	5.45	2 710	5.2	17	**2KJ3103 - ■ EK22 - ■ ■ D1**	**P00**
	622	23	4.64	2 580	5.6	17	**2KJ3103 - ■ EK22 - ■ ■ C1**	**P00**
	725	20	3.98	2 460	6.1	17	**2KJ3103 - ■ EK22 - ■ ■ R1**	**P00**
	Z.29-LE90LH4E							
	91	157	15.75	1 440	0.89	18	**2KJ3102 - ■ EM22 - ■ ■ Q1**	
	99	145	14.54	1 610	0.83	18	**2KJ3102 - ■ EM22 - ■ ■ P1**	
	113	127	12.73	1 850	1.1	18	**2KJ3102 - ■ EM22 - ■ ■ N1**	
	129	111	11.16	2 050	1.3	18	**2KJ3102 - ■ EM22 - ■ ■ M1**	
	142	101	10.12	2 150	1.4	18	**2KJ3102 - ■ EM22 - ■ ■ L1**	
	151	95	9.53	2 220	1.5	18	**2KJ3102 - ■ EM22 - ■ ■ K1**	
	171	84	8.4	2 310	1.6	18	**2KJ3102 - ■ EM22 - ■ ■ J1**	
	197	73	7.29	2 370	1.8	18	**2KJ3102 - ■ EM22 - ■ ■ H1**	
	207	69	6.92	2 110	1.1	18	**2KJ3102 - ■ EM22 - ■ ■ G1**	
	237	60	6.06	2 200	1.7	18	**2KJ3102 - ■ EM22 - ■ ■ F1**	
	270	53	5.31	2 140	1.7	18	**2KJ3102 - ■ EM22 - ■ ■ E1**	
	298	48	4.82	2 090	1.8	18	**2KJ3102 - ■ EM22 - ■ ■ D1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**Z.29-LE90LH4E**							
	316	45	4.54	2 060	1.9	18	**2KJ3102 - ■ EM22 - ■ ■ C1**	
	359	40	4	2 000	1.9	18	**2KJ3102 - ■ EM22 - ■ ■ B1**	
	414	35	3.47	1 930	2	18	**2KJ3102 - ■ EM22 - ■ ■ A1**	
	Z.29-LE90SG2E							
	163	88	17.67	2 280	1.6	15	**2KJ3102 - ■ EK22 - ■ ■ R1**	**P00**
	183	78	15.75	2 370	1.8	15	**2KJ3102 - ■ EK22 - ■ ■ Q1**	**P00**
	198	72	14.54	2 370	1.7	15	**2KJ3102 - ■ EK22 - ■ ■ P1**	**P00**
	227	63	12.73	2 300	2.2	15	**2KJ3102 - ■ EK22 - ■ ■ N1**	**P00**
	259	55	11.16	2 230	2.5	15	**2KJ3102 - ■ EK22 - ■ ■ M1**	**P00**
	285	50	10.12	2 180	2.8	15	**2KJ3102 - ■ EK22 - ■ ■ L1**	**P00**
	303	47	9.53	2 150	3	15	**2KJ3102 - ■ EK22 - ■ ■ K1**	**P00**
	343	42	8.4	2 080	3.3	15	**2KJ3102 - ■ EK22 - ■ ■ J1**	**P00**
	396	36	7.29	2 000	3.6	15	**2KJ3102 - ■ EK22 - ■ ■ H1**	**P00**
	417	34	6.92	1 930	2.2	15	**2KJ3102 - ■ EK22 - ■ ■ G1**	**P00**
	476	30	6.06	1 860	3.3	15	**2KJ3102 - ■ EK22 - ■ ■ F1**	**P00**
	543	26	5.31	1 800	3.5	15	**2KJ3102 - ■ EK22 - ■ ■ E1**	**P00**
	599	24	4.82	1 750	3.6	15	**2KJ3102 - ■ EK22 - ■ ■ D1**	**P00**
	635	22	4.54	1 730	3.7	15	**2KJ3102 - ■ EK22 - ■ ■ C1**	**P00**
	721	20	4	1 670	3.8	15	**2KJ3102 - ■ EK22 - ■ ■ B1**	**P00**
	831	17	3.47	1 600	4.1	15	**2KJ3102 - ■ EK22 - ■ ■ A1**	**P00**
2.2	**D.89-LE100LE4E**							
	11	1 820	126.58	18 500	0.92	78	**2KJ3208 - ■ FL22 - ■ ■ H1**	
	11	1 990	137.97	18 500	0.84	78	**2KJ3208 - ■ FL22 - ■ ■ J1**	
	13	1 590	110.57	18 500	1.1	78	**2KJ3208 - ■ FL22 - ■ ■ G1**	
	15	1 420	98.99	18 500	1.2	78	**2KJ3208 - ■ FL22 - ■ ■ F1**	
	17	1 250	86.56	18 500	1.3	78	**2KJ3208 - ■ FL22 - ■ ■ E1**	
	20	1 070	74.3	18 500	1.6	78	**2KJ3208 - ■ FL22 - ■ ■ D1**	
	22	945	65.67	18 500	1.8	78	**2KJ3208 - ■ FL22 - ■ ■ C1**	
	Z.89-LE100LE4E							
	25	825	57.36	18 500	2	76	**2KJ3108 - ■ FL22 - ■ ■ A2**	
	28	745	51.78	18 500	2.2	76	**2KJ3108 - ■ FL22 - ■ ■ X1**	
	31	675	46.97	18 500	2.5	76	**2KJ3108 - ■ FL22 - ■ ■ W1**	
	D.79-LE100LE4E							
	22	960	66.67	12 100	0.87	55	**2KJ3207 - ■ FL22 - ■ ■ C1**	
	26	810	56.25	13 400	1	55	**2KJ3207 - ■ FL22 - ■ ■ B1**	
	30	705	49.02	13 600	1.2	55	**2KJ3207 - ■ FL22 - ■ ■ A1**	
	Z.79-LE100LE4E							
	33	640	44.42	13 600	1.3	54	**2KJ3107 - ■ FL22 - ■ ■ W1**	
	36	575	39.94	13 700	1.5	54	**2KJ3107 - ■ FL22 - ■ ■ V1**	
	40	520	36.12	13 800	1.6	54	**2KJ3107 - ■ FL22 - ■ ■ U1**	
	44	480	33.34	13 800	1.7	54	**2KJ3107 - ■ FL22 - ■ ■ T1**	
	48	440	30.54	13 900	1.9	54	**2KJ3107 - ■ FL22 - ■ ■ S1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**Z.79-LE100LE4E**							
	57	370	25.62	14 000	2.3	54	**2KJ3107 - ■ FL22 - ■ ■ R1**	
	60	345	24.12	14 000	2.4	54	**2KJ3107 - ■ FL22 - ■ ■ Q1**	
	66	320	22.13	14 100	2.6	54	**2KJ3107 - ■ FL22 - ■ ■ P1**	
	75	275	19.33	13 600	3	54	**2KJ3107 - ■ FL22 - ■ ■ N1**	
	D.69-LE100LE4E							
	32	660	46.01	10 800	0.9	45	**2KJ3206 - ■ FL22 - ■ ■ A1**	
	Z.69-LE100LE4E							
	38	550	38.24	11 000	1.1	45	**2KJ3106 - ■ FL22 - ■ ■ U1**	
	42	495	34.29	11 100	1.2	45	**2KJ3106 - ■ FL22 - ■ ■ T1**	
	47	445	30.9	11 200	1.3	45	**2KJ3106 - ■ FL22 - ■ ■ S1**	
	51	410	28.53	11 300	1.5	45	**2KJ3106 - ■ FL22 - ■ ■ R1**	
	56	375	26.04	11 300	1.6	45	**2KJ3106 - ■ FL22 - ■ ■ Q1**	
	67	310	21.61	11 400	1.9	45	**2KJ3106 - ■ FL22 - ■ ■ P1**	
	72	290	20.34	11 400	2	45	**2KJ3106 - ■ FL22 - ■ ■ N1**	
	76	275	19.21	11 500	2.2	45	**2KJ3106 - ■ FL22 - ■ ■ M1**	
	89	235	16.34	11 000	2.5	45	**2KJ3106 - ■ FL22 - ■ ■ L1**	
	104	200	14	10 500	3	45	**2KJ3106 - ■ FL22 - ■ ■ K1**	
	118	178	12.31	10 100	3.4	45	**2KJ3106 - ■ FL22 - ■ ■ J1**	
	171	123	8.5	9 090	3.6	45	**2KJ3106 - ■ FL22 - ■ ■ F1**	
	201	104	7.23	8 650	4.3	45	**2KJ3106 - ■ FL22 - ■ ■ E1**	
	Z.59-LE100LE4E							
	41	515	35.74	6 450	0.87	40	**2KJ3105 - ■ FL22 - ■ ■ U1**	
	45	460	32.05	6 010	0.97	40	**2KJ3105 - ■ FL22 - ■ ■ T1**	
	50	415	28.89	6 260	1.1	40	**2KJ3105 - ■ FL22 - ■ ■ S1**	
	55	385	26.66	6 170	1.2	40	**2KJ3105 - ■ FL22 - ■ ■ R1**	
	60	350	24.34	6 080	1.3	40	**2KJ3105 - ■ FL22 - ■ ■ Q1**	
	72	290	20.2	5 860	1.5	40	**2KJ3105 - ■ FL22 - ■ ■ P1**	
	77	275	19.01	5 780	1.6	40	**2KJ3105 - ■ FL22 - ■ ■ N1**	
	81	255	17.95	5 730	1.7	40	**2KJ3105 - ■ FL22 - ■ ■ M1**	
	95	220	15.27	5 520	2	40	**2KJ3105 - ■ FL22 - ■ ■ L1**	
	111	189	13.09	5 320	2.4	40	**2KJ3105 - ■ FL22 - ■ ■ K1**	
	126	166	11.51	5 150	2.7	40	**2KJ3105 - ■ FL22 - ■ ■ J1**	
	150	140	9.71	4 940	3.2	40	**2KJ3105 - ■ FL22 - ■ ■ H1**	
	172	122	8.46	4 760	3.7	40	**2KJ3105 - ■ FL22 - ■ ■ G1**	
	180	117	8.07	4 670	3.5	40	**2KJ3105 - ■ FL22 - ■ ■ F1**	
	212	99	6.86	4 480	4.1	40	**2KJ3105 - ■ FL22 - ■ ■ E1**	
	Z.59-LE90LH2E							
	152	138	19.01	4 920	3.3	31	**2KJ3105 - ■ EM22 - ■ ■ N1**	**P00**
	161	130	17.95	4 850	3.4	31	**2KJ3105 - ■ EM22 - ■ ■ M1**	**P00**
	189	111	15.27	4 640	4.1	31	**2KJ3105 - ■ EM22 - ■ ■ L1**	**P00**

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**Z.49-LE100LE4E**							
	55	380	26.43	4 830	0.84	38	**2KJ3104 - ■ FL22 - ■ ■ T1**	
	60	350	24.39	4 780	0.91	38	**2KJ3104 - ■ FL22 - ■ ■ S1**	
	65	320	22.27	4 710	1	38	**2KJ3104 - ■ FL22 - ■ ■ R1**	
	79	265	18.48	4 570	1.2	38	**2KJ3104 - ■ FL22 - ■ ■ Q1**	
	84	250	17.39	4 070	1.3	38	**2KJ3104 - ■ FL22 - ■ ■ P1**	
	89	235	16.42	4 250	1.3	38	**2KJ3104 - ■ FL22 - ■ ■ N1**	
	104	200	13.98	4 330	1.6	38	**2KJ3104 - ■ FL22 - ■ ■ M1**	
	122	173	11.97	4 180	1.9	38	**2KJ3104 - ■ FL22 - ■ ■ L1**	
	138	152	10.53	4 060	2.1	38	**2KJ3104 - ■ FL22 - ■ ■ K1**	
	164	128	8.88	3 890	2.5	38	**2KJ3104 - ■ FL22 - ■ ■ J1**	
	188	112	7.74	3 760	2.9	38	**2KJ3104 - ■ FL22 - ■ ■ H1**	
	190	110	7.64	3 710	2.7	38	**2KJ3104 - ■ FL22 - ■ ■ G1**	
	202	104	7.21	3 660	2.8	38	**2KJ3104 - ■ FL22 - ■ ■ F1**	
	237	89	6.14	3 510	3	38	**2KJ3104 - ■ FL22 - ■ ■ E1**	
	277	76	5.26	3 370	3.2	38	**2KJ3104 - ■ FL22 - ■ ■ D1**	
	315	67	4.62	3 250	3.4	38	**2KJ3104 - ■ FL22 - ■ ■ C1**	
	373	56	3.9	3 100	3.6	38	**2KJ3104 - ■ FL22 - ■ ■ B1**	
	428	49	3.4	2 980	3.9	38	**2KJ3104 - ■ FL22 - ■ ■ A1**	
	Z.49-LE90LH2E							
	156	134	18.48	3 940	2.4	29	**2KJ3104 - ■ EM22 - ■ ■ Q1**	**P00**
	166	126	17.39	3 880	2.5	29	**2KJ3104 - ■ EM22 - ■ ■ P1**	**P00**
	176	119	16.42	3 830	2.7	29	**2KJ3104 - ■ EM22 - ■ ■ N1**	**P00**
	207	102	13.98	3 670	3.1	29	**2KJ3104 - ■ EM22 - ■ ■ M1**	**P00**
	241	87	11.97	3 520	3.7	29	**2KJ3104 - ■ EM22 - ■ ■ L1**	**P00**
	274	77	10.53	3 400	4.2	29	**2KJ3104 - ■ EM22 - ■ ■ K1**	**P00**
	325	65	8.88	3 240	5	29	**2KJ3104 - ■ EM22 - ■ ■ J1**	**P00**
	378	56	7.64	3 090	5.3	29	**2KJ3104 - ■ EM22 - ■ ■ G1**	**P00**
	Z.39-LE100LE4E							
	98	210	14.79	1 080	0.9	25	**2KJ3103 - ■ FL22 - ■ ■ M1**	
	105	200	13.92	1 200	0.94	25	**2KJ3103 - ■ FL22 - ■ ■ L1**	
	117	180	12.47	1 480	1	25	**2KJ3103 - ■ FL22 - ■ ■ K1**	
	137	153	10.62	1 840	1.1	25	**2KJ3103 - ■ FL22 - ■ ■ J1**	
	225	93	6.46	1 890	1.6	25	**2KJ3103 - ■ FL22 - ■ ■ F1**	
	239	88	6.08	1 950	1.7	25	**2KJ3103 - ■ FL22 - ■ ■ E1**	
	267	79	5.45	2 060	1.8	25	**2KJ3103 - ■ FL22 - ■ ■ D1**	
	314	67	4.64	2 200	1.9	25	**2KJ3103 - ■ FL22 - ■ ■ C1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**Z.39-LE90LH2E**							
	163	129	17.77	2 130	1.5	20	**2KJ3103 - ■ EM22 - ■ ■ N1**	**P00**
	195	108	14.79	2 330	1.8	20	**2KJ3103 - ■ EM22 - ■ ■ M1**	**P00**
	208	101	13.92	2 410	1.9	20	**2KJ3103 - ■ EM22 - ■ ■ L1**	**P00**
	232	91	12.47	2 480	2	20	**2KJ3103 - ■ EM22 - ■ ■ K1**	**P00**
	272	77	10.62	2 580	2.2	20	**2KJ3103 - ■ EM22 - ■ ■ J1**	**P00**
	318	66	9.1	2 630	2.4	20	**2KJ3103 - ■ EM22 - ■ ■ H1**	**P00**
	369	57	7.84	2 650	2.6	20	**2KJ3103 - ■ EM22 - ■ ■ G1**	**P00**
	447	47	6.46	2 350	3.1	20	**2KJ3103 - ■ EM22 - ■ ■ F1**	**P00**
	475	44	6.08	2 360	3.3	20	**2KJ3103 - ■ EM22 - ■ ■ E1**	**P00**
	530	40	5.45	2 350	3.5	20	**2KJ3103 - ■ EM22 - ■ ■ D1**	**P00**
	623	34	4.64	2 350	3.9	20	**2KJ3103 - ■ EM22 - ■ ■ C1**	**P00**
	726	29	3.98	2 340	4.2	20	**2KJ3103 - ■ EM22 - ■ ■ B1**	**P00**
	843	25	3.43	2 310	4.5	20	**2KJ3103 - ■ EM22 - ■ ■ A1**	**P00**
	Z.29-LE100LE4E							
	130	161	11.16	700	0.87	23	**2KJ3102 - ■ FL22 - ■ ■ M1**	
	144	146	10.12	940	0.96	23	**2KJ3102 - ■ FL22 - ■ ■ L1**	
	153	138	9.53	1 050	1	23	**2KJ3102 - ■ FL22 - ■ ■ K1**	
	173	121	8.4	1 310	1.1	23	**2KJ3102 - ■ FL22 - ■ ■ J1**	
	200	105	7.29	1 530	1.2	23	**2KJ3102 - ■ FL22 - ■ ■ H1**	
	240	88	6.06	1 320	1.1	23	**2KJ3102 - ■ FL22 - ■ ■ F1**	
	274	77	5.31	1 490	1.2	23	**2KJ3102 - ■ FL22 - ■ ■ E1**	
	302	70	4.82	1 580	1.2	23	**2KJ3102 - ■ FL22 - ■ ■ D1**	
	320	66	4.54	1 630	1.3	23	**2KJ3102 - ■ FL22 - ■ ■ C1**	
	364	58	4	1 730	1.3	23	**2KJ3102 - ■ FL22 - ■ ■ B1**	
	419	50	3.47	1 810	1.4	23	**2KJ3102 - ■ FL22 - ■ ■ A1**	
	Z.29-LE90LH2E							
	164	128	17.67	1 210	1.1	18	**2KJ3102 - ■ EM22 - ■ ■ R1**	**P00**
	183	115	15.75	1 380	1.2	18	**2KJ3102 - ■ EM22 - ■ ■ Q1**	**P00**
	199	106	14.54	1 510	1.1	18	**2KJ3102 - ■ EM22 - ■ ■ P1**	**P00**
	227	92	12.73	1 690	1.5	18	**2KJ3102 - ■ EM22 - ■ ■ N1**	**P00**
	259	81	11.16	1 800	1.7	18	**2KJ3102 - ■ EM22 - ■ ■ M1**	**P00**
	286	74	10.12	1 860	1.9	18	**2KJ3102 - ■ EM22 - ■ ■ L1**	**P00**
	303	69	9.53	1 920	2	18	**2KJ3102 - ■ EM22 - ■ ■ K1**	**P00**
	344	61	8.4	1 970	2.3	18	**2KJ3102 - ■ EM22 - ■ ■ J1**	**P00**
	396	53	7.29	1 900	2.5	18	**2KJ3102 - ■ EM22 - ■ ■ H1**	**P00**
	418	50	6.92	1 820	1.5	18	**2KJ3102 - ■ EM22 - ■ ■ G1**	**P00**
	477	44	6.06	1 770	2.3	18	**2KJ3102 - ■ EM22 - ■ ■ F1**	**P00**
	544	39	5.31	1 710	2.4	18	**2KJ3102 - ■ EM22 - ■ ■ E1**	**P00**
	600	35	4.82	1 680	2.5	18	**2KJ3102 - ■ EM22 - ■ ■ D1**	**P00**
	637	33	4.54	1 650	2.5	18	**2KJ3102 - ■ EM22 - ■ ■ C1**	**P00**
	722	29	4	1 600	2.6	18	**2KJ3102 - ■ EM22 - ■ ■ B1**	**P00**
	833	25	3.47	1 550	2.8	18	**2KJ3102 - ■ EM22 - ■ ■ A1**	**P00**

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**D.89-LE100LK4E**							
	15	1 940	98.99	18 500	0.86	82	**2KJ3208 - ■ FM22 - ■ ■ F1**	
	17	1 700	86.56	18 500	0.99	82	**2KJ3208 - ■ FM22 - ■ ■ E1**	
	20	1 460	74.3	18 500	1.1	82	**2KJ3208 - ■ FM22 - ■ ■ D1**	
	22	1 290	65.67	18 500	1.3	82	**2KJ3208 - ■ FM22 - ■ ■ C1**	
	Z.89-LE100LK4E							
	25	1 120	57.36	18 500	1.5	80	**2KJ3108 - ■ FM22 - ■ ■ A2**	
	28	1 020	51.78	18 500	1.6	80	**2KJ3108 - ■ FM22 - ■ ■ X1**	
	31	925	46.97	18 500	1.8	80	**2KJ3108 - ■ FM22 - ■ ■ W1**	
	34	850	43.36	18 500	2	80	**2KJ3108 - ■ FM22 - ■ ■ V1**	
	37	775	39.41	18 500	2.2	80	**2KJ3108 - ■ FM22 - ■ ■ U1**	
	44	655	33.38	18 500	2.6	80	**2KJ3108 - ■ FM22 - ■ ■ T1**	
	46	615	31.41	18 500	2.7	80	**2KJ3108 - ■ FM22 - ■ ■ S1**	
	D.79-LE100LK4E							
	30	965	49.02	10 700	0.87	59	**2KJ3207 - ■ FM22 - ■ ■ A1**	
	Z.79-LE100LK4E							
	33	875	44.42	11 200	0.96	58	**2KJ3107 - ■ FM22 - ■ ■ W1**	
	36	785	39.94	11 700	1.1	58	**2KJ3107 - ■ FM22 - ■ ■ V1**	
	40	710	36.12	12 100	1.2	58	**2KJ3107 - ■ FM22 - ■ ■ U1**	
	44	655	33.34	12 300	1.3	58	**2KJ3107 - ■ FM22 - ■ ■ T1**	
	48	600	30.54	12 500	1.4	58	**2KJ3107 - ■ FM22 - ■ ■ S1**	
	57	500	25.62	12 800	1.7	58	**2KJ3107 - ■ FM22 - ■ ■ R1**	
	60	475	24.12	12 800	1.8	58	**2KJ3107 - ■ FM22 - ■ ■ Q1**	
	66	435	22.13	12 800	1.9	58	**2KJ3107 - ■ FM22 - ■ ■ P1**	
	75	380	19.33	12 800	2.2	58	**2KJ3107 - ■ FM22 - ■ ■ N1**	
	84	340	17.31	12 700	2.5	58	**2KJ3107 - ■ FM22 - ■ ■ M1**	
	96	295	15.13	12 400	2.8	58	**2KJ3107 - ■ FM22 - ■ ■ L1**	
	112	255	12.99	11 900	3.3	58	**2KJ3107 - ■ FM22 - ■ ■ K1**	
	127	225	11.48	11 500	3.7	58	**2KJ3107 - ■ FM22 - ■ ■ J1**	
	Z.69-LE100LK4E							
	38	750	38.24	9 110	0.8	49	**2KJ3106 - ■ FM22 - ■ ■ U1**	
	42	675	34.29	9 760	0.89	49	**2KJ3106 - ■ FM22 - ■ ■ T1**	
	47	605	30.9	10 300	0.99	49	**2KJ3106 - ■ FM22 - ■ ■ S1**	
	51	560	28.53	10 600	1.1	49	**2KJ3106 - ■ FM22 - ■ ■ R1**	
	56	510	26.04	11 000	1.2	49	**2KJ3106 - ■ FM22 - ■ ■ Q1**	
	67	425	21.61	11 200	1.4	49	**2KJ3106 - ■ FM22 - ■ ■ P1**	
	72	400	20.34	11 300	1.5	49	**2KJ3106 - ■ FM22 - ■ ■ N1**	
	76	375	19.21	11 200	1.6	49	**2KJ3106 - ■ FM22 - ■ ■ M1**	
	89	320	16.34	10 700	1.9	49	**2KJ3106 - ■ FM22 - ■ ■ L1**	
	104	275	14	10 300	2.2	49	**2KJ3106 - ■ FM22 - ■ ■ K1**	
	118	240	12.31	9 970	2.5	49	**2KJ3106 - ■ FM22 - ■ ■ J1**	
	140	205	10.39	9 490	2.9	49	**2KJ3106 - ■ FM22 - ■ ■ H1**	
	161	178	9.05	9 120	3.3	49	**2KJ3106 - ■ FM22 - ■ ■ G1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**Z.69-LE100LK4E**							
	171	167	8.5	8 940	2.7	49	**2KJ3106 - ■ FM22 - ■ ■ F1**	
	201	142	7.23	8 530	3.1	49	**2KJ3106 - ■ FM22 - ■ ■ E1**	
	235	122	6.2	8 140	3.6	49	**2KJ3106 - ■ FM22 - ■ ■ D1**	
	267	107	5.45	7 830	4	49	**2KJ3106 - ■ FM22 - ■ ■ C1**	
	316	91	4.6	7 430	4.9	49	**2KJ3106 - ■ FM22 - ■ ■ B1**	
	Z.59-LE100LK4E							
	55	525	26.66	5 620	0.86	44	**2KJ3105 - ■ FM22 - ■ ■ R1**	
	60	475	24.34	5 590	0.94	44	**2KJ3105 - ■ FM22 - ■ ■ Q1**	
	72	395	20.2	5 140	1.1	44	**2KJ3105 - ■ FM22 - ■ ■ P1**	
	77	370	19.01	5 350	1.2	44	**2KJ3105 - ■ FM22 - ■ ■ N1**	
	81	350	17.95	5 360	1.3	44	**2KJ3105 - ■ FM22 - ■ ■ M1**	
	95	300	15.27	5 200	1.5	44	**2KJ3105 - ■ FM22 - ■ ■ L1**	
	111	255	13.09	5 060	1.7	44	**2KJ3105 - ■ FM22 - ■ ■ K1**	
	126	225	11.51	4 920	2	44	**2KJ3105 - ■ FM22 - ■ ■ J1**	
	150	191	9.71	4 730	2.4	44	**2KJ3105 - ■ FM22 - ■ ■ H1**	
	172	167	8.46	4 580	2.7	44	**2KJ3105 - ■ FM22 - ■ ■ G1**	
	180	159	8.07	4 500	2.6	44	**2KJ3105 - ■ FM22 - ■ ■ F1**	
	212	135	6.86	4 330	3	44	**2KJ3105 - ■ FM22 - ■ ■ E1**	
	247	116	5.88	4 160	3.5	44	**2KJ3105 - ■ FM22 - ■ ■ D1**	
	281	102	5.17	4 020	4	44	**2KJ3105 - ■ FM22 - ■ ■ C1**	
	334	86	4.36	3 840	4.7	44	**2KJ3105 - ■ FM22 - ■ ■ B1**	
	383	75	3.8	3 700	5.4	44	**2KJ3105 - ■ FM22 - ■ ■ A1**	
	Z.49-LE100LK4E							
	79	360	18.48	4 200	0.88	42	**2KJ3104 - ■ FM22 - ■ ■ Q1**	
	84	340	17.39	4 160	0.93	42	**2KJ3104 - ■ FM22 - ■ ■ P1**	
	89	320	16.42	4 140	0.99	42	**2KJ3104 - ■ FM22 - ■ ■ N1**	
	104	275	13.98	4 030	1.2	42	**2KJ3104 - ■ FM22 - ■ ■ M1**	
	122	235	11.97	3 930	1.4	42	**2KJ3104 - ■ FM22 - ■ ■ L1**	
	138	205	10.53	3 610	1.5	42	**2KJ3104 - ■ FM22 - ■ ■ K1**	
	164	175	8.88	3 710	1.8	42	**2KJ3104 - ■ FM22 - ■ ■ J1**	
	188	152	7.74	3 600	2.1	42	**2KJ3104 - ■ FM22 - ■ ■ H1**	
	190	150	7.64	3 230	2	42	**2KJ3104 - ■ FM22 - ■ ■ G1**	
	202	142	7.21	3 330	2	42	**2KJ3104 - ■ FM22 - ■ ■ F1**	
	237	121	6.14	3 370	2.2	42	**2KJ3104 - ■ FM22 - ■ ■ E1**	
	277	104	5.26	3 250	2.4	42	**2KJ3104 - ■ FM22 - ■ ■ D1**	
	315	91	4.62	3 150	2.5	42	**2KJ3104 - ■ FM22 - ■ ■ C1**	
	373	77	3.9	3 010	2.7	42	**2KJ3104 - ■ FM22 - ■ ■ B1**	
	428	67	3.4	2 900	2.9	42	**2KJ3104 - ■ FM22 - ■ ■ A1**	
	Z.39-LE100LK4E							
	137	205	10.62	545	0.81	29	**2KJ3103 - ■ FM22 - ■ ■ J1**	
	225	127	6.46	825	1.1	29	**2KJ3103 - ■ FM22 - ■ ■ F1**	
	239	120	6.08	950	1.2	29	**2KJ3103 - ■ FM22 - ■ ■ E1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**Z.39-LE100LK4E**							
	267	107	5.45	1 180	1.3	29	**2KJ3103 - ■ FM22 - ■ ■ D1**	
	314	91	4.64	1 450	1.4	29	**2KJ3103 - ■ FM22 - ■ ■ C1**	
	Z.29-LE100LK4E							
	173	165	8.4	150	0.83	27	**2KJ3102 - ■ FM22 - ■ ■ J1**	
	200	144	7.29	495	0.91	27	**2KJ3102 - ■ FM22 - ■ ■ H1**	
	240	119	6.06	360	0.84	27	**2KJ3102 - ■ FM22 - ■ ■ F1**	
	274	105	5.31	620	0.87	27	**2KJ3102 - ■ FM22 - ■ ■ E1**	
	302	95	4.82	805	0.91	27	**2KJ3102 - ■ FM22 - ■ ■ D1**	
	320	89	4.54	915	0.94	27	**2KJ3102 - ■ FM22 - ■ ■ C1**	
	364	79	4	1 070	0.96	27	**2KJ3102 - ■ FM22 - ■ ■ B1**	
	419	68	3.47	1 250	1	27	**2KJ3102 - ■ FM22 - ■ ■ A1**	
4	**D.89-LE112ME4E**							
	20	1 940	74.3	18 500	0.86	82	**2KJ3208 - ■ GH22 - ■ ■ D1**	
	22	1 710	65.67	18 500	0.98	82	**2KJ3208 - ■ GH22 - ■ ■ C1**	
	Z.89-LE112ME4E							
	25	1 500	57.36	18 500	1.1	81	**2KJ3108 - ■ GH22 - ■ ■ A2**	
	28	1 350	51.78	18 500	1.2	81	**2KJ3108 - ■ GH22 - ■ ■ X1**	
	31	1 220	46.97	18 500	1.4	81	**2KJ3108 - ■ GH22 - ■ ■ W1**	
	34	1 130	43.36	18 500	1.5	81	**2KJ3108 - ■ GH22 - ■ ■ V1**	
	37	1 030	39.41	18 500	1.6	81	**2KJ3108 - ■ GH22 - ■ ■ U1**	
	44	870	33.38	18 500	1.9	81	**2KJ3108 - ■ GH22 - ■ ■ T1**	
	46	820	31.41	18 500	2	81	**2KJ3108 - ■ GH22 - ■ ■ S1**	
	50	755	29.01	18 500	2.2	81	**2KJ3108 - ■ GH22 - ■ ■ R1**	
	57	675	25.81	18 500	2.5	81	**2KJ3108 - ■ GH22 - ■ ■ Q1**	
	64	600	22.92	18 500	2.8	81	**2KJ3108 - ■ GH22 - ■ ■ P1**	
	71	535	20.52	18 500	3.1	81	**2KJ3108 - ■ GH22 - ■ ■ N1**	
	Z.79-LE112ME4E							
	37	1 040	39.94	13 100	0.8	59	**2KJ3107 - ■ GH22 - ■ ■ V1**	
	40	945	36.12	13 200	0.89	59	**2KJ3107 - ■ GH22 - ■ ■ U1**	
	44	870	33.34	13 300	0.96	59	**2KJ3107 - ■ GH22 - ■ ■ T1**	
	48	795	30.54	13 400	1.1	59	**2KJ3107 - ■ GH22 - ■ ■ S1**	
	57	670	25.62	10 200	1.3	59	**2KJ3107 - ■ GH22 - ■ ■ R1**	
	61	630	24.12	10 400	1.3	59	**2KJ3107 - ■ GH22 - ■ ■ Q1**	
	66	575	22.13	10 700	1.5	59	**2KJ3107 - ■ GH22 - ■ ■ P1**	
	76	505	19.33	10 900	1.7	59	**2KJ3107 - ■ GH22 - ■ ■ N1**	
	84	450	17.31	11 000	1.9	59	**2KJ3107 - ■ GH22 - ■ ■ M1**	
	96	395	15.13	11 100	2.1	59	**2KJ3107 - ■ GH22 - ■ ■ L1**	
	112	340	12.99	11 000	2.5	59	**2KJ3107 - ■ GH22 - ■ ■ K1**	
	127	300	11.48	11 000	2.8	59	**2KJ3107 - ■ GH22 - ■ ■ J1**	
	150	255	9.76	10 700	3.2	59	**2KJ3107 - ■ GH22 - ■ ■ H1**	
	174	215	8.37	10 300	3.6	59	**2KJ3107 - ■ GH22 - ■ ■ G1**	
	178	210	8.19	10 000	3.9	59	**2KJ3107 - ■ GH22 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
4	**Z.79-LE112ME4E**							
	204	187	7.16	9 780	4.1	59	**2KJ3107 - ■ GH22 - ■ ■ E1**	
	237	161	6.15	9 350	4.5	59	**2KJ3107 - ■ GH22 - ■ ■ D1**	
	269	142	5.43	9 020	4.8	59	**2KJ3107 - ■ GH22 - ■ ■ C1**	
	Z.69-LE112ME4E							
	51	745	28.53	10 600	0.8	50	**2KJ3106 - ■ GH22 - ■ ■ R1**	
	56	680	26.04	7 580	0.88	50	**2KJ3106 - ■ GH22 - ■ ■ Q1**	
	68	565	21.61	8 620	1.1	50	**2KJ3106 - ■ GH22 - ■ ■ P1**	
	72	530	20.34	8 930	1.1	50	**2KJ3106 - ■ GH22 - ■ ■ N1**	
	76	500	19.21	9 160	1.2	50	**2KJ3106 - ■ GH22 - ■ ■ M1**	
	89	425	16.34	9 670	1.4	50	**2KJ3106 - ■ GH22 - ■ ■ L1**	
	104	365	14	9 960	1.6	50	**2KJ3106 - ■ GH22 - ■ ■ K1**	
	119	320	12.31	9 700	1.9	50	**2KJ3106 - ■ GH22 - ■ ■ J1**	
	141	270	10.39	9 270	2.2	50	**2KJ3106 - ■ GH22 - ■ ■ H1**	
	161	235	9.05	8 930	2.5	50	**2KJ3106 - ■ GH22 - ■ ■ G1**	
	172	220	8.5	8 750	2	50	**2KJ3106 - ■ GH22 - ■ ■ F1**	
	202	189	7.23	8 360	2.4	50	**2KJ3106 - ■ GH22 - ■ ■ E1**	
	235	162	6.2	8 000	2.7	50	**2KJ3106 - ■ GH22 - ■ ■ D1**	
	268	143	5.45	7 700	3	50	**2KJ3106 - ■ GH22 - ■ ■ C1**	
	317	120	4.6	7 330	3.7	50	**2KJ3106 - ■ GH22 - ■ ■ B1**	
	364	105	4.01	7 030	4.2	50	**2KJ3106 - ■ GH22 - ■ ■ A1**	
	Z.59-LE112ME4E							
	72	525	20.2	4 930	0.85	45	**2KJ3105 - ■ GH22 - ■ ■ P1**	
	77	495	19.01	4 910	0.9	45	**2KJ3105 - ■ GH22 - ■ ■ N1**	
	81	470	17.95	4 880	0.96	45	**2KJ3105 - ■ GH22 - ■ ■ M1**	
	96	400	15.27	3 960	1.1	45	**2KJ3105 - ■ GH22 - ■ ■ L1**	
	112	340	13.09	4 470	1.3	45	**2KJ3105 - ■ GH22 - ■ ■ K1**	
	127	300	11.51	4 620	1.5	45	**2KJ3105 - ■ GH22 - ■ ■ J1**	
	150	250	9.71	4 500	1.8	45	**2KJ3105 - ■ GH22 - ■ ■ H1**	
	173	220	8.46	4 370	2	45	**2KJ3105 - ■ GH22 - ■ ■ G1**	
	181	210	8.07	4 280	1.9	45	**2KJ3105 - ■ GH22 - ■ ■ F1**	
	213	179	6.86	4 140	2.3	45	**2KJ3105 - ■ GH22 - ■ ■ E1**	
	248	154	5.88	4 000	2.7	45	**2KJ3105 - ■ GH22 - ■ ■ D1**	
	282	135	5.17	3 880	3	45	**2KJ3105 - ■ GH22 - ■ ■ C1**	
	335	114	4.36	3 720	3.6	45	**2KJ3105 - ■ GH22 - ■ ■ B1**	
	384	99	3.8	3 600	4.1	45	**2KJ3105 - ■ GH22 - ■ ■ A1**	
	Z.49-LE112ME4E							
	104	365	13.98	3 670	0.87	43	**2KJ3104 - ■ GH22 - ■ ■ M1**	
	122	310	11.97	3 630	1	43	**2KJ3104 - ■ GH22 - ■ ■ L1**	
	139	275	10.53	3 560	1.2	43	**2KJ3104 - ■ GH22 - ■ ■ K1**	
	164	230	8.88	3 490	1.4	43	**2KJ3104 - ■ GH22 - ■ ■ J1**	
	189	200	7.74	3 410	1.6	43	**2KJ3104 - ■ GH22 - ■ ■ H1**	
	191	200	7.64	3 320	1.5	43	**2KJ3104 - ■ GH22 - ■ ■ G1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

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Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
4	**Z.49-LE112ME4E**							
	202	189	7.21	3 290	1.5	43	**2KJ3104 - ■ GH22 - ■ ■ F1**	
	238	161	6.14	3 190	1.6	43	**2KJ3104 - ■ GH22 - ■ ■ E1**	
	278	138	5.26	3 100	1.8	43	**2KJ3104 - ■ GH22 - ■ ■ D1**	
	316	121	4.62	3 010	1.9	43	**2KJ3104 - ■ GH22 - ■ ■ C1**	
	374	102	3.9	2 900	2	43	**2KJ3104 - ■ GH22 - ■ ■ B1**	
	429	89	3.4	2 810	2.1	43	**2KJ3104 - ■ GH22 - ■ ■ A1**	
	Z.39-LE112ME4E							
	226	169	6.46	0	0.86	33	**2KJ3103 - ■ GH22 - ■ ■ F1**	
	240	159	6.08	0	0.92	33	**2KJ3103 - ■ GH22 - ■ ■ E1**	
	268	143	5.45	56	0.98	33	**2KJ3103 - ■ GH22 - ■ ■ D1**	
	315	121	4.64	505	1.1	33	**2KJ3103 - ■ GH22 - ■ ■ C1**	
5.5	**D.89-LE132SF4E**							
	26	2 000	55.84	18 500	0.84	96	**2KJ3208 - ■ HG22 - ■ ■ B1**	
	31	1 710	47.87	18 500	0.98	96	**2KJ3208 - ■ HG22 - ■ ■ A1**	
	Z.89-LE132SF4E							
	37	1 410	39.41	18 500	1.2	95	**2KJ3108 - ■ HG22 - ■ ■ U1**	
	44	1 190	33.38	18 500	1.4	95	**2KJ3108 - ■ HG22 - ■ ■ T1**	
	47	1 120	31.41	18 500	1.5	95	**2KJ3108 - ■ HG22 - ■ ■ S1**	
	50	1 040	29.01	18 500	1.6	95	**2KJ3108 - ■ HG22 - ■ ■ R1**	
	57	925	25.81	18 500	1.8	95	**2KJ3108 - ■ HG22 - ■ ■ Q1**	
	64	820	22.92	18 500	2	95	**2KJ3108 - ■ HG22 - ■ ■ P1**	
	71	735	20.52	18 500	2.3	95	**2KJ3108 - ■ HG22 - ■ ■ N1**	
	84	625	17.54	18 500	2.7	95	**2KJ3108 - ■ HG22 - ■ ■ M1**	
	94	560	15.66	18 400	3	95	**2KJ3108 - ■ HG22 - ■ ■ L1**	
	106	495	13.84	17 800	3.4	95	**2KJ3108 - ■ HG22 - ■ ■ K1**	
	121	435	12.15	17 200	3.7	95	**2KJ3108 - ■ HG22 - ■ ■ J1**	
	213	245	6.89	14 600	4.3	95	**2KJ3108 - ■ HG22 - ■ ■ E1**	
	Z.79-LE132SF4E							
	57	915	25.62	13 300	0.91	73	**2KJ3107 - ■ HG22 - ■ ■ R1**	
	61	865	24.12	13 300	0.97	73	**2KJ3107 - ■ HG22 - ■ ■ Q1**	
	66	790	22.13	13 400	1.1	73	**2KJ3107 - ■ HG22 - ■ ■ P1**	
	76	690	19.33	13 600	1.2	73	**2KJ3107 - ■ HG22 - ■ ■ N1**	
	85	620	17.31	8 480	1.4	73	**2KJ3107 - ■ HG22 - ■ ■ M1**	
	97	540	15.13	8 910	1.5	73	**2KJ3107 - ■ HG22 - ■ ■ L1**	
	113	465	12.99	9 190	1.8	73	**2KJ3107 - ■ HG22 - ■ ■ K1**	
	128	410	11.48	9 370	2	73	**2KJ3107 - ■ HG22 - ■ ■ J1**	
	150	350	9.76	9 450	2.3	73	**2KJ3107 - ■ HG22 - ■ ■ H1**	
	175	300	8.37	9 470	2.6	73	**2KJ3107 - ■ HG22 - ■ ■ G1**	
	179	290	8.19	8 530	2.8	73	**2KJ3107 - ■ HG22 - ■ ■ F1**	
	205	255	7.16	8 570	3	73	**2KJ3107 - ■ HG22 - ■ ■ E1**	
	238	220	6.15	8 550	3.3	73	**2KJ3107 - ■ HG22 - ■ ■ D1**	
	270	195	5.43	8 510	3.5	73	**2KJ3107 - ■ HG22 - ■ ■ C1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
5.5	**Z.79-LE132SF4E**							
	317	166	4.62	8 410	4.7	73	**2KJ3107 - ■ HG22 - ■ ■ B1**	
	Z.69-LE132SF4E							
	72	725	20.34	10 700	0.82	63	**2KJ3106 - ■ HG22 - ■ ■ N1**	
	76	685	19.21	10 800	0.87	63	**2KJ3106 - ■ HG22 - ■ ■ M1**	
	90	585	16.34	11 000	1	63	**2KJ3106 - ■ HG22 - ■ ■ L1**	
	105	500	14	7 210	1.2	63	**2KJ3106 - ■ HG22 - ■ ■ K1**	
	119	440	12.31	7 700	1.4	63	**2KJ3106 - ■ HG22 - ■ ■ J1**	
	141	370	10.39	8 200	1.6	63	**2KJ3106 - ■ HG22 - ■ ■ H1**	
	162	320	9.05	8 510	1.8	63	**2KJ3106 - ■ HG22 - ■ ■ G1**	
	172	305	8.5	7 090	1.5	63	**2KJ3106 - ■ HG22 - ■ ■ F1**	
	203	255	7.23	7 560	1.7	63	**2KJ3106 - ■ HG22 - ■ ■ E1**	
	236	220	6.2	7 730	2	63	**2KJ3106 - ■ HG22 - ■ ■ D1**	
	269	195	5.45	7 520	2.2	63	**2KJ3106 - ■ HG22 - ■ ■ C1**	
	318	165	4.6	7 170	2.7	63	**2KJ3106 - ■ HG22 - ■ ■ B1**	
	365	144	4.01	6 890	3.1	63	**2KJ3106 - ■ HG22 - ■ ■ A1**	
	Z.59-LE132SF4E							
	96	545	15.27	4 220	0.82	58	**2KJ3105 - ■ HG22 - ■ ■ L1**	
	112	465	13.09	4 220	0.96	58	**2KJ3105 - ■ HG22 - ■ ■ K1**	
	127	410	11.51	4 180	1.1	58	**2KJ3105 - ■ HG22 - ■ ■ J1**	
	151	345	9.71	3 370	1.3	58	**2KJ3105 - ■ HG22 - ■ ■ H1**	
	173	300	8.46	3 750	1.5	58	**2KJ3105 - ■ HG22 - ■ ■ G1**	
	182	285	8.07	2 750	1.4	58	**2KJ3105 - ■ HG22 - ■ ■ F1**	
	214	245	6.86	3 150	1.7	58	**2KJ3105 - ■ HG22 - ■ ■ E1**	
	249	210	5.88	3 490	1.9	58	**2KJ3105 - ■ HG22 - ■ ■ D1**	
	283	185	5.17	3 670	2.2	58	**2KJ3105 - ■ HG22 - ■ ■ C1**	
	336	156	4.36	3 540	2.6	58	**2KJ3105 - ■ HG22 - ■ ■ B1**	
	386	136	3.8	3 440	3	58	**2KJ3105 - ■ HG22 - ■ ■ A1**	
	Z.49-LE132SF4E							
	139	375	10.53	3 160	0.85	56	**2KJ3104 - ■ HG22 - ■ ■ K1**	
	165	315	8.88	3 150	1	56	**2KJ3104 - ■ HG22 - ■ ■ J1**	
	189	275	7.74	3 110	1.2	56	**2KJ3104 - ■ HG22 - ■ ■ H1**	
	192	270	7.64	3 010	1.1	56	**2KJ3104 - ■ HG22 - ■ ■ G1**	
	203	255	7.21	3 000	1.1	56	**2KJ3104 - ■ HG22 - ■ ■ F1**	
	239	220	6.14	2 930	1.2	56	**2KJ3104 - ■ HG22 - ■ ■ E1**	
	279	189	5.26	2 870	1.3	56	**2KJ3104 - ■ HG22 - ■ ■ D1**	
	317	166	4.62	2 820	1.4	56	**2KJ3104 - ■ HG22 - ■ ■ C1**	
	376	140	3.9	2 730	1.5	56	**2KJ3104 - ■ HG22 - ■ ■ B1**	
	431	122	3.4	2 660	1.6	56	**2KJ3104 - ■ HG22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
7.5	**Z.89-LE132MF4E**							
	37	1 920	39.41	18 500	0.87	102	**2KJ3108 - ■ HJ22 - ■ ■ U1**	
	44	1 630	33.38	18 500	1	102	**2KJ3108 - ■ HJ22 - ■ ■ T1**	
	47	1 530	31.41	18 500	1.1	102	**2KJ3108 - ■ HJ22 - ■ ■ S1**	
	50	1 410	29.01	18 500	1.2	102	**2KJ3108 - ■ HJ22 - ■ ■ R1**	
	57	1 260	25.81	18 500	1.3	102	**2KJ3108 - ■ HJ22 - ■ ■ Q1**	
	64	1 120	22.92	18 500	1.5	102	**2KJ3108 - ■ HJ22 - ■ ■ P1**	
	71	1 000	20.52	18 500	1.7	102	**2KJ3108 - ■ HJ22 - ■ ■ N1**	
	84	855	17.54	18 400	2	102	**2KJ3108 - ■ HJ22 - ■ ■ M1**	
	94	765	15.66	17 800	2.2	102	**2KJ3108 - ■ HJ22 - ■ ■ L1**	
	106	675	13.84	17 300	2.5	102	**2KJ3108 - ■ HJ22 - ■ ■ K1**	
	121	590	12.15	16 700	2.7	102	**2KJ3108 - ■ HJ22 - ■ ■ J1**	
	138	515	10.58	16 100	3.1	102	**2KJ3108 - ■ HJ22 - ■ ■ H1**	
	162	440	9.04	15 400	3.5	102	**2KJ3108 - ■ HJ22 - ■ ■ G1**	
	189	375	7.74	14 800	4	102	**2KJ3108 - ■ HJ22 - ■ ■ F1**	
	213	335	6.89	14 400	3.1	102	**2KJ3108 - ■ HJ22 - ■ ■ E1**	
	242	295	6.05	13 800	3.6	102	**2KJ3108 - ■ HJ22 - ■ ■ D1**	
	279	255	5.26	13 200	4.1	102	**2KJ3108 - ■ HJ22 - ■ ■ C1**	
	326	220	4.5	12 600	4.8	102	**2KJ3108 - ■ HJ22 - ■ ■ B1**	
	Z.79-LE132MF4E							
	76	945	19.33	13 200	0.89	80	**2KJ3107 - ■ HJ22 - ■ ■ N1**	
	85	845	17.31	13 400	0.99	80	**2KJ3107 - ■ HJ22 - ■ ■ M1**	
	97	740	15.13	13 500	1.1	80	**2KJ3107 - ■ HJ22 - ■ ■ L1**	
	113	635	12.99	13 600	1.3	80	**2KJ3107 - ■ HJ22 - ■ ■ K1**	
	128	560	11.48	13 700	1.5	80	**2KJ3107 - ■ HJ22 - ■ ■ J1**	
	150	475	9.76	13 900	1.7	80	**2KJ3107 - ■ HJ22 - ■ ■ H1**	
	175	405	8.37	7 890	1.9	80	**2KJ3107 - ■ HJ22 - ■ ■ G1**	
	179	400	8.19	6 500	2.1	80	**2KJ3107 - ■ HJ22 - ■ ■ F1**	
	205	350	7.16	6 810	2.2	80	**2KJ3107 - ■ HJ22 - ■ ■ E1**	
	238	300	6.15	7 080	2.4	80	**2KJ3107 - ■ HJ22 - ■ ■ D1**	
	270	265	5.43	7 220	2.6	80	**2KJ3107 - ■ HJ22 - ■ ■ C1**	
	317	225	4.62	7 320	3.4	80	**2KJ3107 - ■ HJ22 - ■ ■ B1**	
	370	194	3.96	7 310	4.2	80	**2KJ3107 - ■ HJ22 - ■ ■ A1**	
	Z.69-LE132MF4E							
	105	680	14	10 800	0.88	70	**2KJ3106 - ■ HJ22 - ■ ■ K1**	
	119	600	12.31	11 000	1	70	**2KJ3106 - ■ HJ22 - ■ ■ J1**	
	141	505	10.39	11 100	1.2	70	**2KJ3106 - ■ HJ22 - ■ ■ H1**	
	162	440	9.05	6 080	1.3	70	**2KJ3106 - ■ HJ22 - ■ ■ G1**	
	172	415	8.5	11 200	1.1	70	**2KJ3106 - ■ HJ22 - ■ ■ F1**	
	203	350	7.23	11 300	1.3	70	**2KJ3106 - ■ HJ22 - ■ ■ E1**	
	236	300	6.2	5 750	1.5	70	**2KJ3106 - ■ HJ22 - ■ ■ D1**	
	269	265	5.45	6 060	1.6	70	**2KJ3106 - ■ HJ22 - ■ ■ C1**	
	318	225	4.6	6 360	2	70	**2KJ3106 - ■ HJ22 - ■ ■ B1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
7.5	**Z.69-LE132MF4E**							
	365	196	4.01	6 540	2.3	70	**2KJ3106 - ■ HJ22 - ■ ■ A1**	
	Z.59-LE132MF4E							
	127	560	11.51	3 590	0.8	65	**2KJ3105 - ■ HJ22 - ■ ■ J1**	
	151	475	9.71	3 600	0.95	65	**2KJ3105 - ■ HJ22 - ■ ■ H1**	
	173	410	8.46	3 610	1.1	65	**2KJ3105 - ■ HJ22 - ■ ■ G1**	
	182	395	8.07	3 500	1	65	**2KJ3105 - ■ HJ22 - ■ ■ F1**	
	214	335	6.86	3 480	1.2	65	**2KJ3105 - ■ HJ22 - ■ ■ E1**	
	249	285	5.88	3 440	1.4	65	**2KJ3105 - ■ HJ22 - ■ ■ D1**	
	283	250	5.17	2 280	1.6	65	**2KJ3105 - ■ HJ22 - ■ ■ C1**	
	336	210	4.36	2 720	1.9	65	**2KJ3105 - ■ HJ22 - ■ ■ B1**	
	386	186	3.8	2 920	2.2	65	**2KJ3105 - ■ HJ22 - ■ ■ A1**	
9.2	**Z.89-LE132ZMM4E**							
	44	2 000	33.38	18 500	0.84	109	**2KJ3108 - ■ HV22 - ■ ■ T1**	
	47	1 880	31.41	18 500	0.89	109	**2KJ3108 - ■ HV22 - ■ ■ S1**	
	50	1 740	29.01	18 500	0.97	109	**2KJ3108 - ■ HV22 - ■ ■ R1**	
	57	1 540	25.81	18 500	1.1	109	**2KJ3108 - ■ HV22 - ■ ■ Q1**	
	64	1 370	22.92	18 500	1.2	109	**2KJ3108 - ■ HV22 - ■ ■ P1**	
	71	1 230	20.52	18 400	1.4	109	**2KJ3108 - ■ HV22 - ■ ■ N1**	
	84	1 050	17.54	17 800	1.6	109	**2KJ3108 - ■ HV22 - ■ ■ M1**	
	94	935	15.66	17 400	1.8	109	**2KJ3108 - ■ HV22 - ■ ■ L1**	
	106	830	13.84	16 800	2	109	**2KJ3108 - ■ HV22 - ■ ■ K1**	
	121	725	12.15	16 300	2.2	109	**2KJ3108 - ■ HV22 - ■ ■ J1**	
	138	635	10.58	15 800	2.5	109	**2KJ3108 - ■ HV22 - ■ ■ H1**	
	162	540	9.04	15 100	2.9	109	**2KJ3108 - ■ HV22 - ■ ■ G1**	
	189	460	7.74	14 500	3.3	109	**2KJ3108 - ■ HV22 - ■ ■ F1**	
	213	410	6.89	14 200	2.5	109	**2KJ3108 - ■ HV22 - ■ ■ E1**	
	242	360	6.05	13 600	2.9	109	**2KJ3108 - ■ HV22 - ■ ■ D1**	
	279	315	5.26	13 100	3.4	109	**2KJ3108 - ■ HV22 - ■ ■ C1**	
	326	270	4.5	12 500	3.9	109	**2KJ3108 - ■ HV22 - ■ ■ B1**	
	381	230	3.85	11 900	4.6	109	**2KJ3108 - ■ HV22 - ■ ■ A1**	
	Z.79-LE132ZMM4E							
	85	1 030	17.31	13 100	0.81	87	**2KJ3107 - ■ HV22 - ■ ■ M1**	
	97	905	15.13	13 300	0.93	87	**2KJ3107 - ■ HV22 - ■ ■ L1**	
	113	775	12.99	13 500	1.1	87	**2KJ3107 - ■ HV22 - ■ ■ K1**	
	128	685	11.48	13 600	1.2	87	**2KJ3107 - ■ HV22 - ■ ■ J1**	
	150	585	9.76	13 700	1.4	87	**2KJ3107 - ■ HV22 - ■ ■ H1**	
	175	500	8.37	6 460	1.6	87	**2KJ3107 - ■ HV22 - ■ ■ G1**	
	179	490	8.19	4 840	1.7	87	**2KJ3107 - ■ HV22 - ■ ■ F1**	
	205	425	7.16	5 430	1.8	87	**2KJ3107 - ■ HV22 - ■ ■ E1**	
	238	365	6.15	5 880	2	87	**2KJ3107 - ■ HV22 - ■ ■ D1**	
	270	325	5.43	6 110	2.1	87	**2KJ3107 - ■ HV22 - ■ ■ C1**	
	317	275	4.62	6 390	2.8	87	**2KJ3107 - ■ HV22 - ■ ■ B1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
9.2	**Z.79-LE132ZMM4E**							
	370	235	3.96	6 560	3.4	87	**2KJ3107 - ■ HV22 - ■ ■ A1**	
	Z.69-LE132ZMM4E							
	119	735	12.31	10 700	0.81	77	**2KJ3106 - ■ HV22 - ■ ■ J1**	
	141	620	10.39	10 900	0.96	77	**2KJ3106 - ■ HV22 - ■ ■ H1**	
	162	540	9.05	11 100	1.1	77	**2KJ3106 - ■ HV22 - ■ ■ G1**	
	172	510	8.5	11 100	0.87	77	**2KJ3106 - ■ HV22 - ■ ■ F1**	
	203	430	7.23	11 200	1	77	**2KJ3106 - ■ HV22 - ■ ■ E1**	
	236	370	6.2	11 300	1.2	77	**2KJ3106 - ■ HV22 - ■ ■ D1**	
	269	325	5.45	11 400	1.3	77	**2KJ3106 - ■ HV22 - ■ ■ C1**	
	318	275	4.6	11 500	1.6	77	**2KJ3106 - ■ HV22 - ■ ■ B1**	
	365	240	4.01	5 450	1.9	77	**2KJ3106 - ■ HV22 - ■ ■ A1**	
11	**Z.89-LE160MF4E**							
	51	2 070	29.01	15 600	0.81	123	**2KJ3108 - ■ JP22 - ■ ■ R1**	
	57	1 840	25.81	16 900	0.91	123	**2KJ3108 - ■ JP22 - ■ ■ Q1**	
	64	1 630	22.92	18 000	1	123	**2KJ3108 - ■ JP22 - ■ ■ P1**	
	72	1 460	20.52	17 700	1.1	123	**2KJ3108 - ■ JP22 - ■ ■ N1**	
	84	1 250	17.54	17 200	1.3	123	**2KJ3108 - ■ JP22 - ■ ■ M1**	
	94	1 110	15.66	16 800	1.5	123	**2KJ3108 - ■ JP22 - ■ ■ L1**	
	106	985	13.84	16 400	1.7	123	**2KJ3108 - ■ JP22 - ■ ■ K1**	
	121	865	12.15	15 900	1.9	123	**2KJ3108 - ■ JP22 - ■ ■ J1**	
	139	755	10.58	15 400	2.1	123	**2KJ3108 - ■ JP22 - ■ ■ H1**	
	163	645	9.04	14 800	2.4	123	**2KJ3108 - ■ JP22 - ■ ■ G1**	
	190	550	7.74	14 200	2.8	123	**2KJ3108 - ■ JP22 - ■ ■ F1**	
	213	490	6.89	13 900	2.1	123	**2KJ3108 - ■ JP22 - ■ ■ E1**	
	243	430	6.05	13 400	2.5	123	**2KJ3108 - ■ JP22 - ■ ■ D1**	
	279	375	5.26	12 900	2.8	123	**2KJ3108 - ■ JP22 - ■ ■ C1**	
	327	320	4.5	12 400	3.3	123	**2KJ3108 - ■ JP22 - ■ ■ B1**	
	382	275	3.85	11 800	3.9	123	**2KJ3108 - ■ JP22 - ■ ■ A1**	
	Z.79-LE160MF4E							
	113	925	12.99	13 300	0.9	100	**2KJ3107 - ■ JP22 - ■ ■ K1**	
	128	820	11.48	13 400	1	100	**2KJ3107 - ■ JP22 - ■ ■ J1**	
	151	695	9.76	13 600	1.2	100	**2KJ3107 - ■ JP22 - ■ ■ H1**	
	176	595	8.37	5 010	1.3	100	**2KJ3107 - ■ JP22 - ■ ■ G1**	
	179	585	8.19	13 700	1.4	100	**2KJ3107 - ■ JP22 - ■ ■ F1**	
	205	510	7.16	13 800	1.5	100	**2KJ3107 - ■ JP22 - ■ ■ E1**	
	239	435	6.15	4 570	1.6	100	**2KJ3107 - ■ JP22 - ■ ■ D1**	
	271	385	5.43	4 980	1.8	100	**2KJ3107 - ■ JP22 - ■ ■ C1**	
	318	330	4.62	5 360	2.3	100	**2KJ3107 - ■ JP22 - ■ ■ B1**	
	371	280	3.96	5 710	2.8	100	**2KJ3107 - ■ JP22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
15	**Z.89-LE160LD4E**							
	72	1 990	20.52	12 100	0.84	135	**2KJ3108 - ■ JU22 - ■ ■ N1**	
	84	1 700	17.54	13 800	0.99	135	**2KJ3108 - ■ JU22 - ■ ■ M1**	
	94	1 520	15.66	14 700	1.1	135	**2KJ3108 - ■ JU22 - ■ ■ L1**	
	107	1 340	13.84	15 300	1.2	135	**2KJ3108 - ■ JU22 - ■ ■ K1**	
	121	1 180	12.15	15 000	1.4	135	**2KJ3108 - ■ JU22 - ■ ■ J1**	
	139	1 020	10.58	14 600	1.5	135	**2KJ3108 - ■ JU22 - ■ ■ H1**	
	163	875	9.04	14 100	1.8	135	**2KJ3108 - ■ JU22 - ■ ■ G1**	
	191	750	7.74	13 600	2	135	**2KJ3108 - ■ JU22 - ■ ■ F1**	
	214	665	6.89	13 400	1.6	135	**2KJ3108 - ■ JU22 - ■ ■ E1**	
	244	585	6.05	13 000	1.8	135	**2KJ3108 - ■ JU22 - ■ ■ D1**	
	280	510	5.26	12 500	2.1	135	**2KJ3108 - ■ JU22 - ■ ■ C1**	
	328	435	4.5	12 000	2.4	135	**2KJ3108 - ■ JU22 - ■ ■ B1**	
	383	370	3.85	11 500	2.8	135	**2KJ3108 - ■ JU22 - ■ ■ A1**	
	Z.79-LE160LD4E							
	151	945	9.76	13 200	0.86	112	**2KJ3107 - ■ JU22 - ■ ■ H1**	
	176	810	8.37	13 400	0.97	112	**2KJ3107 - ■ JU22 - ■ ■ G1**	
	180	795	8.19	13 300	1	112	**2KJ3107 - ■ JU22 - ■ ■ F1**	
	206	695	7.16	13 600	1.1	112	**2KJ3107 - ■ JU22 - ■ ■ E1**	
	240	595	6.15	13 700	1.2	112	**2KJ3107 - ■ JU22 - ■ ■ D1**	
	272	525	5.43	13 800	1.3	112	**2KJ3107 - ■ JU22 - ■ ■ C1**	
	319	445	4.62	13 900	1.7	112	**2KJ3107 - ■ JU22 - ■ ■ B1**	
	372	385	3.96	3 760	2.1	112	**2KJ3107 - ■ JU22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, B, F or H**	➞ Page 7/28

Size 19 will be available from the 3rd quarter 2012

Transmission ratios and torques

Selection and ordering data

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.19														
184.86	7.8	100	1 650	0.02	50468/273	✓	✓							**2KJ3201 - ■■■■■ - Q1**
163.69	8.9	100	1 650	0.03	74481/455	✓	✓							**2KJ3201 - ■■■■■ - P1**
142.23	10	100	1 650	0.04	64713/455	✓	✓							**2KJ3201 - ■■■■■ - N1**
129.3	11	100	1 650	0.04	11766/91	✓	✓							**2KJ3201 - ■■■■■ - M1**
110.02	13	100	1 650	0.06	50061/455	✓	✓							**2KJ3201 - ■■■■■ - L1**
100.02	14	100	1 650	0.07	9102/91	✓	✓							**2KJ3201 - ■■■■■ - K1**
87.21	17	100	1 650	0.08	1221/14	✓	✓							**2KJ3201 - ■■■■■ - J1**
78.07	19	100	1 650	0.11	7104/91	✓	✓							**2KJ3201 - ■■■■■ - H1**
69.32	21	100	1 650	0.13	12617/182	✓	✓							**2KJ3201 - ■■■■■ - G1**
63.99	23	100	1 650	0.16	75702/1183	✓	✓							**2KJ3201 - ■■■■■ - F1**
55.59	26	100	1 650	0.17	35409/637	✓	✓							**2KJ3201 - ■■■■■ - E1**
48.3	30	100	1 650	0.18	21978/455	✓	✓							**2KJ3201 - ■■■■■ - D1**
43.61	33	100	1 650	0.22	1221/28	✓	✓							**2KJ3201 - ■■■■■ - C1**
41.04	35	100	1 650	0.26	4884/119	✓	✓							**2KJ3201 - ■■■■■ - B1**
35.78	41	100	1 650	0.29	3256/91	✓	✓							**2KJ3201 - ■■■■■ - A1**
Z.19														
34.97	41	100	1 650	0.02	1364/39	✓	✓							**2KJ3101 - ■■■■■ - W1**
30.97	47	100	1 650	0.03	2013/65	✓	✓	✓						**2KJ3101 - ■■■■■ - V1**
26.91	54	100	1 650	0.04	1749/65	✓	✓	✓						**2KJ3101 - ■■■■■ - U1**
24.46	59	100	1 650	0.05	318/13	✓	✓	✓						**2KJ3101 - ■■■■■ - T1**
20.82	70	100	1 650	0.07	1353/65	✓	✓	✓						**2KJ3101 - ■■■■■ - S1**
18.92	77	100	1 790	0.08	246/13	✓	✓	✓						**2KJ3101 - ■■■■■ - R1**
16.5	88	99	1 900	0.09	33/2	✓	✓	✓						**2KJ3101 - ■■■■■ - Q1**
14.77	98	95	1 870	0.12	192/13	✓	✓	✓						**2KJ3101 - ■■■■■ - P1**
13.12	111	91	1 830	0.15	341/26	✓	✓	✓						**2KJ3101 - ■■■■■ - N1**
12.11	120	88	1 810	0.18	2046/169	✓	✓	✓						**2KJ3101 - ■■■■■ - M1**
10.52	138	83	1 760	0.2	957/91	✓	✓	✓						**2KJ3101 - ■■■■■ - L1**
9.14	159	78	1 710	0.21	594/65	✓	✓	✓						**2KJ3101 - ■■■■■ - K1**
8.25	176	74	1 670	0.27	33/4	✓	✓	✓						**2KJ3101 - ■■■■■ - J1**
7.76	187	73	1 650	0.31	132/17	✓	✓	✓						**2KJ3101 - ■■■■■ - H1**
6.77	214	68	1 600	0.36	88/13	✓	✓	✓						**2KJ3101 - ■■■■■ - G1**
6.25	232	56	1 460	0.19	1705/273	✓	✓	✓						**2KJ3101 - ■■■■■ - F1**
5.43	267	53	1 420	0.21	1595/294	✓	✓	✓						**2KJ3101 - ■■■■■ - E1**
4.71	308	49	1 380	0.22	33/7	✓	✓	✓						**2KJ3101 - ■■■■■ - D1**
4.26	340	47	1 350	0.29	715/168	✓	✓	✓						**2KJ3101 - ■■■■■ - C1**
4.01	362	46	1 330	0.34	1430/357	✓	✓	✓						**2KJ3101 - ■■■■■ - B1**
3.49	415	43	1 290	0.39	220/63	✓	✓	✓						**2KJ3101 - ■■■■■ - A1**

Size 19 will be available from the 3rd quarter 2012

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.29														
217.89	6.7	140	3 710	0.02	7626/35	✓	✓							**2KJ3202 - ■■■■■ - Q1**
192.93	7.5	140	3 710	0.03	67527/350	✓	✓	✓	✓					**2KJ3202 - ■■■■■ - P1**
167.63	8.7	140	3 710	0.04	58671/350	✓	✓	✓	✓					**2KJ3202 - ■■■■■ - N1**
152.39	9.5	140	3 710	0.05	58671/385	✓	✓	✓	✓					**2KJ3202 - ■■■■■ - M1**
129.68	11	140	3 710	0.06	45387/350	✓	✓	✓	✓					**2KJ3202 - ■■■■■ - L1**
117.89	12	140	3 710	0.08	45387/385	✓	✓	✓	✓					**2KJ3202 - ■■■■■ - K1**
102.79	14	140	3 710	0.09	14391/140	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - J1**
92.01	16	140	3 710	0.12	35424/385	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - H1**
81.71	18	140	3 710	0.14	11439/140	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - G1**
75.42	19	140	3 710	0.18	34317/455	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - F1**
65.52	22	140	3 710	0.21	32103/490	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - E1**
56.93	25	140	3 710	0.19	9963/175	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - D1**
51.4	28	140	3 710	0.28	14391/280	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - C1**
48.37	30	140	3 710	0.29	28782/595	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - B1**
42.17	34	140	3 710	0.37	1476/35	✓	✓	✓	✓	✓				**2KJ3202 - ■■■■■ - A1**
Z.29														
41.4	35	140	3 710	0.04	207/5	✓	✓							**2KJ3102 - ■■■■■ - A2**
36.72	39	140	3 690	0.05	918/25	✓	✓	✓	✓					**2KJ3102 - ■■■■■ - X1**
31.86	46	140	3 350	0.06	1593/50	✓	✓	✓	✓					**2KJ3102 - ■■■■■ - W1**
28.96	50	140	3 120	0.07	1593/55	✓	✓	✓	✓					**2KJ3102 - ■■■■■ - V1**
24.84	58	140	2 780	0.09	621/25	✓	✓	✓	✓					**2KJ3102 - ■■■■■ - U1**
22.58	64	140	2 580	0.11	1242/55	✓	✓	✓	✓					**2KJ3102 - ■■■■■ - T1**
19.8	73	140	2 310	0.13	99/5	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - S1**
17.67	82	140	2 090	0.16	972/55	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - R1**
15.75	92	140	1 870	0.19	63/4	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - Q1**
14.54	100	120	2 250	0.23	189/13	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - P1**
12.73	114	140	1 480	0.28	891/70	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - N1**
11.16	130	140	1 260	0.27	279/25	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - M1**
10.12	143	140	1 100	0.38	81/8	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - L1**
9.53	152	140	1 010	0.44	162/17	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - K1**
8.4	173	138	870	0.5	42/5	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - J1**
7.29	199	130	870	0.67	729/100	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - H1**
6.92	210	75	1 910	0.3	90/13	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - G1**
6.06	239	100	955	0.36	297/49	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - F1**
5.31	273	91	1 060	0.37	186/35	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - E1**
4.82	301	86	1 090	0.5	135/28	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - D1**
4.54	319	84	1 070	0.58	540/119	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - C1**
4	363	76	1 170	0.68	4/1	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - B1**
3.47	418	70	1 240	0.91	243/70	✓	✓	✓	✓	✓				**2KJ3102 - ■■■■■ - A1**

Transmission ratios and torques

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.39														
235.29	6.2	200	4 370	0.03	179998/765	✓	✓							**2KJ3203 - ■■■■■ - R1**
208.69	6.9	200	4 370	0.05	15652/75	✓	✓	✓	✓					**2KJ3203 - ■■■■■ - Q1**
181.07	8	200	4 370	0.05	230867/1275	✓	✓	✓	✓					**2KJ3203 - ■■■■■ - P1**
164.61	8.8	200	4 370	0.07	461734/2805	✓	✓	✓	✓					**2KJ3203 - ■■■■■ - N1**
141.17	10	200	4 370	0.08	179998/1275	✓	✓	✓	✓					**2KJ3203 - ■■■■■ - M1**
128.34	11	200	4 370	0.1	359996/2805	✓	✓	✓	✓					**2KJ3203 - ■■■■■ - L1**
112.53	13	200	4 370	0.12	86086/765	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - K1**
100.44	14	200	4 370	0.15	93912/935	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - J1**
89.51	16	200	4 370	0.17	27391/306	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - H1**
82.63	18	200	4 370	0.21	4214/51	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - G1**
72.34	20	200	4 370	0.25	6149/85	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - F1**
63.43	23	200	4 370	0.23	242606/3825	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - E1**
57.54	25	200	4 370	0.33	3913/68	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - D1**
54.16	27	200	4 370	0.39	15652/289	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - C1**
47.74	30	200	4 370	0.43	109564/2295	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - B1**
41.43	35	200	3 940	0.58	35217/850	✓	✓	✓	✓	✓	✓			**2KJ3203 - ■■■■■ - A1**
Z.39														
55.95	26	200	4 370	0.06	7553/135	✓	✓							**2KJ3103 - ■■■■■ - A2**
49.75	29	200	4 370	0.07	3731/75	✓	✓	✓	✓					**2KJ3103 - ■■■■■ - X1**
43.68	33	200	4 100	0.08	1092/25	✓	✓	✓	✓					**2KJ3103 - ■■■■■ - W1**
39.71	37	200	3 810	0.1	2184/55	✓	✓	✓	✓					**2KJ3103 - ■■■■■ - V1**
33.97	43	200	3 360	0.12	2548/75	✓	✓	✓	✓					**2KJ3103 - ■■■■■ - U1**
30.88	47	200	3 100	0.14	5096/165	✓	✓	✓	✓					**2KJ3103 - ■■■■■ - T1**
27.3	53	200	2 780	0.17	273/10	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - S1**
24.82	58	200	2 530	0.22	273/11	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - R1**
21.74	67	200	2 210	0.25	3913/180	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - Q1**
20.07	72	200	2 020	0.31	301/15	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - P1**
17.77	82	200	1 740	0.36	533/30	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - N1**
14.79	98	193	1 510	0.47	1183/80	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - M1**
13.92	104	189	1 490	0.55	1183/85	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - L1**
12.47	116	180	1 490	0.6	3367/270	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - K1**
10.62	137	169	1 450	0.78	637/60	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - J1**
9.1	159	158	1 440	0.89	91/10			✓	✓	✓	✓			**2KJ3103 - ■■■■■ - H1**
7.84	185	148	1 430	1.11	2821/360			✓	✓	✓	✓			**2KJ3103 - ■■■■■ - G1**
6.46	224	146	235	0.57	2379/368	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - F1**
6.08	238	147	110	0.66	2379/391	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - E1**
5.45	266	140	160	0.74	2257/414	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - D1**
4.64	313	130	475	0.97	427/92	✓	✓	✓	✓	✓	✓			**2KJ3103 - ■■■■■ - C1**
3.98	364	121	805	1.15	183/46			✓	✓	✓	✓			**2KJ3103 - ■■■■■ - B1**
3.43	423	112	1 060	1.47	1891/552			✓	✓	✓	✓			**2KJ3103 - ■■■■■ - A1**

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.49														
280.89	5.2	320	5 780	0.06	60673/216	✓	✓							2KJ3204 - ■■■■■ - S1
249.76	5.8	320	5 780	0.07	29971/120	✓	✓	✓	✓					2KJ3204 - ■■■■■ - R1
219.3	6.6	320	5 780	0.08	2193/10	✓	✓	✓	✓					2KJ3204 - ■■■■■ - Q1
199.36	7.3	320	5 780	0.1	2193/11	✓	✓	✓	✓					2KJ3204 - ■■■■■ - P1
170.57	8.5	320	5 780	0.12	5117/30	✓	✓	✓	✓					2KJ3204 - ■■■■■ - N1
155.06	9.4	320	5 780	0.14	5117/33	✓	✓	✓	✓					2KJ3204 - ■■■■■ - M1
137.06	11	320	5 780	0.17	2193/16	✓	✓	✓	✓	✓	✓			2KJ3204 - ■■■■■ - L1
124.6	12	320	5 780	0.22	10965/88	✓	✓	✓	✓	✓	✓			2KJ3204 - ■■■■■ - K1
109.14	13	320	5 780	0.25	31433/288	✓	✓	✓	✓	✓	✓			2KJ3204 - ■■■■■ - J1
100.75	14	320	5 780	0.31	31433/312	✓	✓	✓	✓	✓	✓			2KJ3204 - ■■■■■ - H1
89.2	16	320	5 780	0.37	29971/336	✓	✓	✓	✓	✓	✓	✓		2KJ3204 - ■■■■■ - G1
74.24	20	320	5 780	0.5	9503/128	✓	✓	✓	✓	✓	✓	✓		2KJ3204 - ■■■■■ - F1
69.88	21	320	5 780	0.58	559/8	✓	✓	✓	✓	✓	✓	✓		2KJ3204 - ■■■■■ - E1
62.61	23	320	5 780	0.65	27047/432	✓	✓	✓	✓	✓	✓	✓		2KJ3204 - ■■■■■ - D1
53.3	27	320	5 780	0.85	5117/96	✓	✓	✓	✓	✓	✓	✓		2KJ3204 - ■■■■■ - C1
45.69	32	320	5 780	1.12	731/16			✓	✓	✓	✓	✓		2KJ3204 - ■■■■■ - B1
39.34	37	320	5 570	1.43	22661/576			✓	✓	✓	✓	✓		2KJ3204 - ■■■■■ - A1
Z.49														
52.14	28	320	5 900	0.17	4171/80	✓	✓	✓	✓					2KJ3104 - ■■■■■ - B2
47.4	31	320	5 780	0.21	4171/88	✓	✓	✓	✓					2KJ3104 - ■■■■■ - A2
40.31	36	320	5 680	0.25	645/16	✓	✓	✓	✓					2KJ3104 - ■■■■■ - X1
36.65	40	320	5 250	0.31	3225/88	✓	✓	✓	✓					2KJ3104 - ■■■■■ - W1
32.7	44	320	5 540	0.36	3139/96	✓	✓	✓	✓	✓	✓			2KJ3104 - ■■■■■ - V1
29.32	49	320	5 300	0.43	645/22	✓	✓	✓	✓	✓	✓			2KJ3104 - ■■■■■ - U1
26.43	55	320	5 070	0.5	2537/96	✓	✓	✓	✓	✓	✓			2KJ3104 - ■■■■■ - T1
24.39	59	320	4 910	0.59	2537/104	✓	✓	✓	✓	✓	✓			2KJ3104 - ■■■■■ - S1
22.27	65	320	4 720	0.71	1247/56	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - R1
18.48	78	320	4 360	0.9	2365/128	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - Q1
17.39	83	320	4 250	1.03	2365/136	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - P1
16.42	88	320	4 140	1.17	2365/144	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - N1
13.98	104	320	3 860	1.3	559/40	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - M1
11.97	121	320	3 600	1.76	2107/176			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - L1
10.53	138	320	3 400	2.1	2021/192			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - K1
8.88	163	320	3 140	2.7	817/92			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - J1
7.74	187	320	3 100	3.6	387/50			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - H1
7.64	190	295	3 000	1.18	649/85	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - G1
7.21	201	290	2 990	1.34	649/90	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - F1
6.14	236	265	2 940	1.67	767/125	✓	✓	✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - E1
5.26	276	245	2 880	2.1	2891/550			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - D1
4.62	314	225	2 820	2.6	2773/600			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - C1
3.9	372	205	2 740	3.3	2242/575			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - B1
3.4	426	191	2 670	4.4	2124/625			✓	✓	✓	✓	✓		2KJ3104 - ■■■■■ - A1

Transmission ratios and torques

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.59														
307.02	4.7	450	7 660	0.06	66317/216	✓	✓							2KJ3205 - ■■■■■ - S1
272.99	5.3	450	7 660	0.07	32759/120	✓	✓	✓	✓					2KJ3205 - ■■■■■ - R1
239.7	6	450	7 660	0.08	2397/10	✓	✓	✓	✓					2KJ3205 - ■■■■■ - Q1
217.91	6.7	450	7 660	0.1	2397/11	✓	✓	✓	✓					2KJ3205 - ■■■■■ - P1
186.43	7.8	450	7 660	0.12	5593/30	✓	✓	✓	✓					2KJ3205 - ■■■■■ - N1
169.48	8.6	450	7 660	0.14	5593/33	✓	✓	✓	✓					2KJ3205 - ■■■■■ - M1
149.81	9.7	450	7 660	0.17	2397/16	✓	✓	✓	✓	✓	✓			2KJ3205 - ■■■■■ - L1
136.19	11	450	7 660	0.22	11985/88	✓	✓	✓	✓	✓	✓			2KJ3205 - ■■■■■ - K1
119.3	12	450	7 660	0.26	34357/288	✓	✓	✓	✓	✓	✓			2KJ3205 - ■■■■■ - J1
110.12	13	450	7 660	0.31	34357/312	✓	✓	✓	✓	✓	✓			2KJ3205 - ■■■■■ - H1
97.5	15	450	7 660	0.37	32759/336	✓	✓	✓	✓	✓	✓	✓		2KJ3205 - ■■■■■ - G1
81.15	18	450	7 660	0.5	10387/128	✓	✓	✓	✓	✓	✓	✓		2KJ3205 - ■■■■■ - F1
76.38	19	450	7 660	0.59	611/8	✓	✓	✓	✓	✓	✓	✓		2KJ3205 - ■■■■■ - E1
68.43	21	450	7 660	0.65	29563/432	✓	✓	✓	✓	✓	✓	✓		2KJ3205 - ■■■■■ - D1
58.26	25	450	7 660	0.85	5593/96	✓	✓	✓	✓	✓	✓	✓		2KJ3205 - ■■■■■ - C1
49.94	29	450	7 660	1.12	799/16			✓	✓	✓	✓	✓		2KJ3205 - ■■■■■ - B1
43	34	450	7 250	1.44	24769/576			✓	✓	✓	✓	✓		2KJ3205 - ■■■■■ - A1
Z.59														
56.99	25	450	7 660	0.18	4559/80	✓	✓	✓	✓					2KJ3105 - ■■■■■ - A2
51.81	28	450	7 660	0.21	4559/88	✓	✓							2KJ3105 - ■■■■■ - X1
44.06	33	450	7 330	0.26	705/16	✓	✓	✓	✓					2KJ3105 - ■■■■■ - W1
40.06	36	450	7 040	0.32	3525/88	✓	✓	✓	✓					2KJ3105 - ■■■■■ - V1
35.74	41	450	6 710	0.37	3431/96	✓	✓	✓	✓	✓	✓			2KJ3105 - ■■■■■ - U1
32.05	45	450	6 210	0.44	705/22	✓	✓	✓	✓	✓	✓			2KJ3105 - ■■■■■ - T1
28.89	50	450	5 720	0.52	2773/96	✓	✓	✓	✓	✓	✓			2KJ3105 - ■■■■■ - S1
26.66	54	450	5 360	0.62	2773/104	✓	✓	✓	✓	✓	✓			2KJ3105 - ■■■■■ - R1
24.34	60	450	4 960	0.73	1363/56	✓	✓	✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - Q1
20.2	72	450	5 240	0.94	2585/128	✓	✓	✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - P1
19.01	76	450	5 100	1.08	2585/136	✓	✓	✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - N1
17.95	81	450	4 970	1.23	2585/144	✓	✓	✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - M1
15.27	95	450	4 620	1.51	611/40	✓	✓	✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - L1
13.09	111	450	4 300	1.85	2303/176			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - K1
11.51	126	450	4 040	2.3	2209/192			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - J1
9.71	149	450	3 720	2.9	893/92			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - H1
8.46	171	450	3 600	3.9	423/50			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - G1
8.07	180	410	3 510	1.45	121/15	✓	✓	✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - F1
6.86	211	410	3 480	1.82	858/125	✓	✓	✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - E1
5.88	247	410	3 440	2.3	147/25			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - D1
5.17	280	410	2 190	2.8	517/100			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - C1
4.36	333	405	2 630	3.7	2508/575			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - B1
3.8	382	405	2 900	4.9	2376/625			✓	✓	✓	✓	✓		2KJ3105 - ■■■■■ - A1

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.69														
328.49	4.4	600	11 000	0.06	62084/189	✓	✓							**2KJ3206 - ■■■■■ - S1**
292.08	5	600	11 000	0.07	30668/105	✓	✓	✓	✓					**2KJ3206 - ■■■■■ - R1**
256.46	5.7	600	11 000	0.08	8976/35	✓	✓	✓	✓					**2KJ3206 - ■■■■■ - Q1**
233.14	6.2	600	11 000	0.1	1632/7	✓	✓	✓	✓					**2KJ3206 - ■■■■■ - P1**
199.47	7.3	600	11 000	0.12	2992/15	✓	✓	✓	✓					**2KJ3206 - ■■■■■ - N1**
181.33	8	600	11 000	0.14	544/3	✓	✓	✓	✓					**2KJ3206 - ■■■■■ - M1**
160.29	9	600	11 000	0.17	1122/7	✓	✓	✓	✓	✓	✓			**2KJ3206 - ■■■■■ - L1**
145.71	10	600	11 000	0.22	1020/7	✓	✓	✓	✓	✓	✓			**2KJ3206 - ■■■■■ - K1**
127.63	11	600	11 000	0.26	8041/63	✓	✓	✓	✓	✓	✓			**2KJ3206 - ■■■■■ - J1**
117.82	12	600	11 000	0.31	32164/273	✓	✓	✓	✓	✓	✓			**2KJ3206 - ■■■■■ - H1**
104.31	14	600	11 000	0.37	15334/147	✓	✓	✓	✓	✓	✓	✓		**2KJ3206 - ■■■■■ - G1**
86.82	17	600	11 000	0.5	2431/28	✓	✓	✓	✓	✓	✓	✓		**2KJ3206 - ■■■■■ - F1**
81.71	18	600	11 000	0.59	572/7	✓	✓	✓	✓	✓	✓	✓		**2KJ3206 - ■■■■■ - E1**
73.22	20	600	11 000	0.66	13838/189	✓	✓	✓	✓	✓	✓	✓		**2KJ3206 - ■■■■■ - D1**
62.33	23	600	11 000	0.86	187/3	✓	✓	✓	✓	✓	✓	✓		**2KJ3206 - ■■■■■ - C1**
53.43	27	600	11 000	1.14	374/7			✓	✓	✓	✓	✓		**2KJ3206 - ■■■■■ - B1**
46.01	32	600	11 000	1.46	5797/126			✓	✓	✓	✓	✓		**2KJ3206 - ■■■■■ - A1**
Z.69														
60.97	24	600	11 000	0.18	2134/35	✓	✓	✓	✓					**2KJ3106 - ■■■■■ - A2**
55.43	26	600	11 000	0.22	388/7	✓	✓	✓	✓					**2KJ3106 - ■■■■■ - X1**
47.14	31	600	11 000	0.28	330/7	✓	✓	✓	✓					**2KJ3106 - ■■■■■ - W1**
42.86	34	600	11 000	0.34	300/7	✓	✓	✓	✓					**2KJ3106 - ■■■■■ - V1**
38.24	38	600	11 000	0.39	803/21	✓	✓	✓	✓	✓	✓			**2KJ3106 - ■■■■■ - U1**
34.29	42	600	11 000	0.47	240/7	✓	✓	✓	✓	✓	✓			**2KJ3106 - ■■■■■ - T1**
30.9	47	600	10 500	0.56	649/21	✓	✓	✓	✓	✓	✓			**2KJ3106 - ■■■■■ - S1**
28.53	51	600	9 910	0.66	2596/91	✓	✓	✓	✓	✓	✓			**2KJ3106 - ■■■■■ - R1**
26.04	56	600	9 250	0.77	1276/49	✓	✓	✓	✓	✓	✓			**2KJ3106 - ■■■■■ - Q1**
21.61	67	600	7 960	1.01	605/28	✓	✓	✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - P1**
20.34	71	600	7 550	1.16	2420/119	✓	✓	✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - N1**
19.21	75	600	7 180	1.32	1210/63	✓	✓	✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - M1**
16.34	89	600	11 000	1.64	572/35	✓	✓	✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - L1**
14	104	600	11 000	2	14/1			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - K1**
12.31	118	600	11 000	2.5	517/42			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - J1**
10.39	140	600	11 000	3.2	1672/161			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - H1**
9.05	160	591	11 000	4.3	1584/175			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - G1**
8.5	171	446	11 200	1.67	1760/207	✓	✓	✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - F1**
7.23	201	447	11 200	2.1	832/115	✓	✓	✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - E1**
6.2	234	445	11 300	2.7	1568/253			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - D1**
5.45	266	429	11 400	3.4	376/69			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - C1**
4.6	315	446	11 500	4.4	2432/529			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - B1**
4.01	362	445	5 420	5.8	2304/575			✓	✓	✓	✓	✓		**2KJ3106 - ■■■■■ - A1**

Transmission ratios and torques

Selection and ordering data (continued)

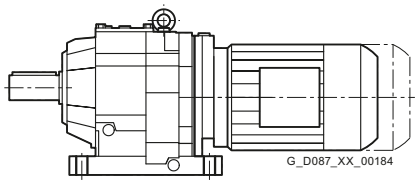
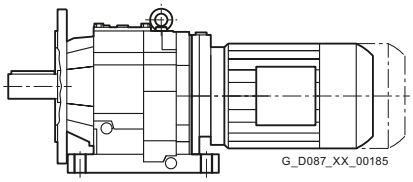
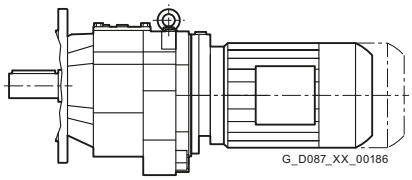
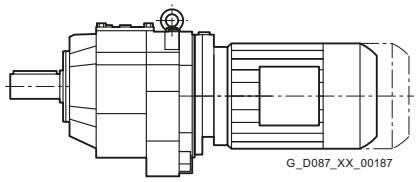
i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.79														
330.23	4.4	840	13 400	0.17	369861/1120		✓	✓	✓					**2KJ3207 - ■■■■■ - S1**
300.21	4.8	840	13 400	0.2	369861/1232		✓	✓	✓					**2KJ3207 - ■■■■■ - R1**
255.33	5.7	840	13 400	0.25	57195/224		✓	✓	✓					**2KJ3207 - ■■■■■ - Q1**
232.12	6.2	840	13 400	0.3	285975/1232		✓	✓	✓					**2KJ3207 - ■■■■■ - P1**
207.1	7	840	13 400	0.35	92783/448		✓	✓	✓	✓	✓			**2KJ3207 - ■■■■■ - N1**
185.7	7.8	840	13 400	0.42	57195/308		✓	✓	✓	✓	✓			**2KJ3207 - ■■■■■ - M1**
167.39	8.7	840	13 400	0.49	74989/448		✓	✓	✓	✓	✓			**2KJ3207 - ■■■■■ - L1**
154.51	9.4	840	13 400	0.58	224967/1456		✓	✓	✓	✓	✓			**2KJ3207 - ■■■■■ - K1**
141.04	10	840	13 400	0.69	110577/784		✓	✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - J1**
117.03	12	840	13 400	0.87	209715/1792		✓	✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - H1**
110.14	13	840	13 400	1	209715/1904		✓	✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - G1**
104.03	14	840	13 400	1.14	69905/672		✓	✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - F1**
88.52	16	840	13 400	1.39	49569/560		✓	✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - E1**
75.83	19	840	13 400	1.69	26691/352			✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - D1**
66.67	22	840	13 400	2.1	59737/896			✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - C1**
56.25	26	840	13 400	2.6	72447/1288			✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - B1**
49.02	30	840	12 600	3.5	34317/700			✓	✓	✓	✓	✓	✓	**2KJ3207 - ■■■■■ - A1**
Z.79														
54.47	27	840	13 400	0.43	3813/70		✓	✓	✓					**2KJ3107 - ■■■■■ - A2**
49.52	29	840	12 700	0.53	3813/77		✓	✓	✓					**2KJ3107 - ■■■■■ - X1**
44.42	33	840	11 800	0.73	533/12		✓	✓	✓	✓	✓			**2KJ3107 - ■■■■■ - W1**
39.94	36	840	10 900	0.83	3075/77		✓	✓	✓	✓	✓			**2KJ3107 - ■■■■■ - V1**
36.12	40	840	10 200	0.92	1517/42		✓	✓	✓	✓	✓			**2KJ3107 - ■■■■■ - U1**
33.34	43	840	13 400	1.08	3034/91		✓	✓	✓	✓	✓			**2KJ3107 - ■■■■■ - T1**
30.54	47	840	13 400	1.41	2993/98		✓	✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - S1**
25.62	57	840	13 400	1.52	205/8		✓	✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - R1**
24.12	60	840	13 400	1.73	410/17		✓	✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - Q1**
22.13	66	840	13 400	1.9	1394/63		✓	✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - P1**
19.33	75	840	13 400	2.7	1353/70		✓	✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - N1**
17.31	84	840	13 400	3.3	2665/154			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - M1**
15.13	96	840	13 400	3.9	1271/84			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - L1**
12.99	112	840	13 400	4.3	2091/161			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - K1**
11.48	126	840	13 400	5.5	287/25			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - J1**
9.76	149	815	13 400	7	205/21					✓	✓	✓	✓	**2KJ3107 - ■■■■■ - H1**
8.37	173	790	13 400	9.3	410/49					✓	✓	✓	✓	**2KJ3107 - ■■■■■ - G1**
8.19	177	830	13 200	4	3965/484			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - F1**
7.16	203	775	13 600	4.8	1891/264			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - E1**
6.15	236	720	13 700	5.4	3111/506			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - D1**
5.43	267	685	13 800	6.9	2989/550			✓	✓	✓	✓	✓	✓	**2KJ3107 - ■■■■■ - C1**
4.62	314	775	13 900	9.1	305/66					✓	✓	✓	✓	**2KJ3107 - ■■■■■ - B1**
3.96	366	805	3 710	12	305/77					✓	✓	✓	✓	**2KJ3107 - ■■■■■ - A1**

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
D.89														
311.6	4.7	1 680	18 500	0.41	132432/425			✓	✓					**2KJ3208 - ■■■■■ - S1**
283.28	5.1	1 680	18 500	0.5	264864/935			✓	✓					**2KJ3208 - ■■■■■ - R1**
254.09	5.7	1 680	18 500	0.7	64792/255			✓	✓	✓	✓			**2KJ3208 - ■■■■■ - Q1**
228.45	6.3	1 680	18 500	0.79	42720/187			✓	✓	✓	✓			**2KJ3208 - ■■■■■ - P1**
206.62	7	1 680	18 500	0.87	52688/255			✓	✓	✓	✓			**2KJ3208 - ■■■■■ - N1**
190.73	7.6	1 680	18 500	1.03	210752/1105			✓	✓	✓	✓			**2KJ3208 - ■■■■■ - M1**
174.71	8.3	1 680	18 500	1.35	103952/595			✓	✓	✓	✓	✓		**2KJ3208 - ■■■■■ - L1**
146.59	9.9	1 680	18 500	1.43	2492/17			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - K1**
137.97	11	1 680	18 500	1.63	39872/289			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - J1**
126.58	11	1 680	18 500	1.78	5696/45			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - H1**
110.57	13	1 680	18 500	2.5	46992/425			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - G1**
98.99	15	1 680	18 500	3.1	18512/187			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - F1**
86.56	17	1 680	18 500	3.7	22072/255			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - E1**
74.3	20	1 680	18 500	4	8544/115			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - D1**
65.67	22	1 680	18 500	5	139552/2125			✓	✓	✓	✓	✓	✓	**2KJ3208 - ■■■■■ - C1**
55.84	26	1 680	18 500	6.4	2848/51					✓	✓	✓	✓	**2KJ3208 - ■■■■■ - B1**
47.87	30	1 680	18 500	8.5	5696/119					✓	✓	✓	✓	**2KJ3208 - ■■■■■ - A1**
Z.89														
57.36	25	1 680	18 500	1.34	2581/45			✓	✓	✓	✓			**2KJ3108 - ■■■■■ - A2**
51.78	28	1 680	18 500	1.46	2848/55			✓	✓	✓	✓			**2KJ3108 - ■■■■■ - X1**
46.97	31	1 680	18 500	1.71	1691/36			✓	✓	✓	✓			**2KJ3108 - ■■■■■ - W1**
43.36	33	1 680	18 500	2	1691/39			✓	✓	✓	✓			**2KJ3108 - ■■■■■ - V1**
39.41	37	1 680	18 500	2.3	2759/70			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - U1**
33.38	43	1 680	18 500	2.8	267/8			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - T1**
31.41	46	1 680	18 500	2.8	534/17			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - S1**
29.01	50	1 680	18 500	4.3	3916/135			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - R1**
25.81	56	1 680	18 500	5.3	2581/100			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - Q1**
22.92	63	1 680	17 500	6.4	1513/66			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - P1**
20.52	71	1 680	16 100	6.4	7387/360			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - N1**
17.54	83	1 680	14 200	7.5	6052/345			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - M1**
15.66	93	1 680	12 900	9.5	1958/125			✓	✓	✓	✓	✓	✓	**2KJ3108 - ■■■■■ - L1**
13.84	105	1 680	11 600	11	623/45					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - K1**
12.15	119	1 630	10 800	15	3827/315					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - J1**
10.58	137	1 590	10 600	18	3649/345					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - H1**
9.04	160	1 560	11 900	24	2848/315					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - G1**
7.74	187	1 530	12 700	29	178/23					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - F1**
6.89	210	1 050	10 100	12	62/9					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - E1**
6.05	240	1 060	10 900	17	2666/441					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - D1**
5.26	276	1 060	11 600	21	2542/483					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - C1**
4.5	322	1 060	11 500	27	1984/441					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - B1**
3.85	377	1 060	11 100	34	620/161					✓	✓	✓	✓	**2KJ3108 - ■■■■■ - A1**

Dimensions

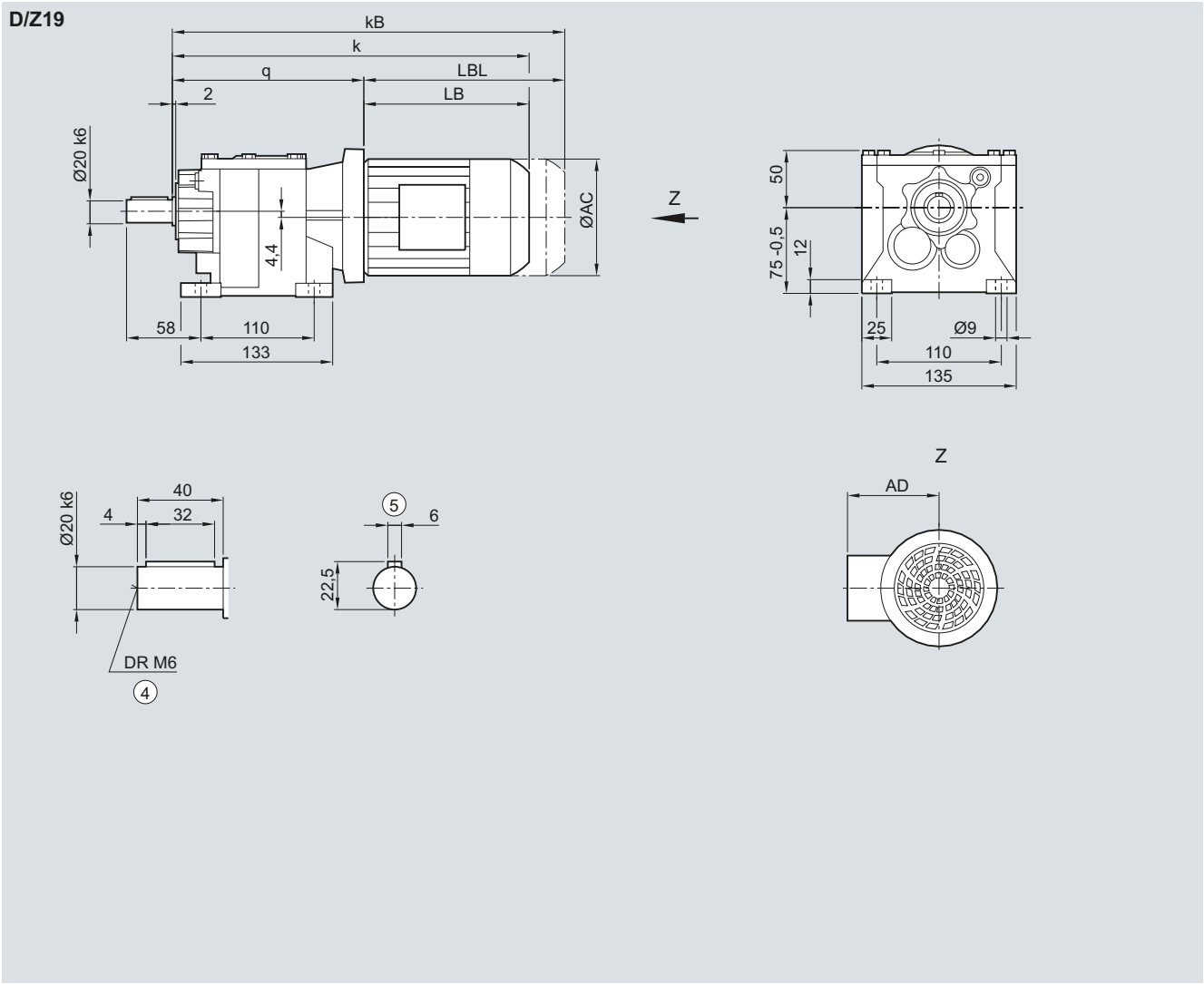
Dimension drawing overview

Representation	Gearbox type	Dimension drawing on page
 G_D087_XX_00184	D/Z19	3/54
	D/Z29	3/57
	D/Z39	3/61
	D/Z49	3/65
	D/Z59	3/68
	D/Z69	3/71
	D/Z79	3/74
	D/Z89	3/77
 G_D087_XX_00185	DB/ZB29	3/58
	DB/ZB39	3/62
	DB/ZB49	3/65
	DB/ZB59	3/68
	DB/ZB69	3/71
	DB/ZB79	3/74
	DB/ZB89	3/77
 G_D087_XX_00186	DF/ZF19	3/55
	DF/ZF29	3/59
	DF/ZF39	3/63
	DF/ZF49	3/66
	DF/ZF59	3/69
	DF/ZF69	3/72
	DF/ZF79	3/75
	DF/ZF89	3/78
 G_D087_XX_00187	DZ/ZZ19	3/56
	DZ/ZZ29	3/60
	DZ/ZZ39	3/64
	DZ/ZZ49	3/67
	DZ/ZZ59	3/70
	DZ/ZZ69	3/73
	DZ/ZZ79	3/76
	DZ/ZZ89	3/79

Dimensions

D/Z19 gearbox in a foot-mounted design

DZ030



Motor	LA63M	LA71M	LE80M
q	159.5	167.5	168
AC	117.8	138.8	156.3
AD	124.0 (136.0)	134.0 (146.0)	149.2
k	320	352	407.5
kB	364.5	407	467.5
LB	160.5	184.5	239.5
LBL	205	239.5	299.5

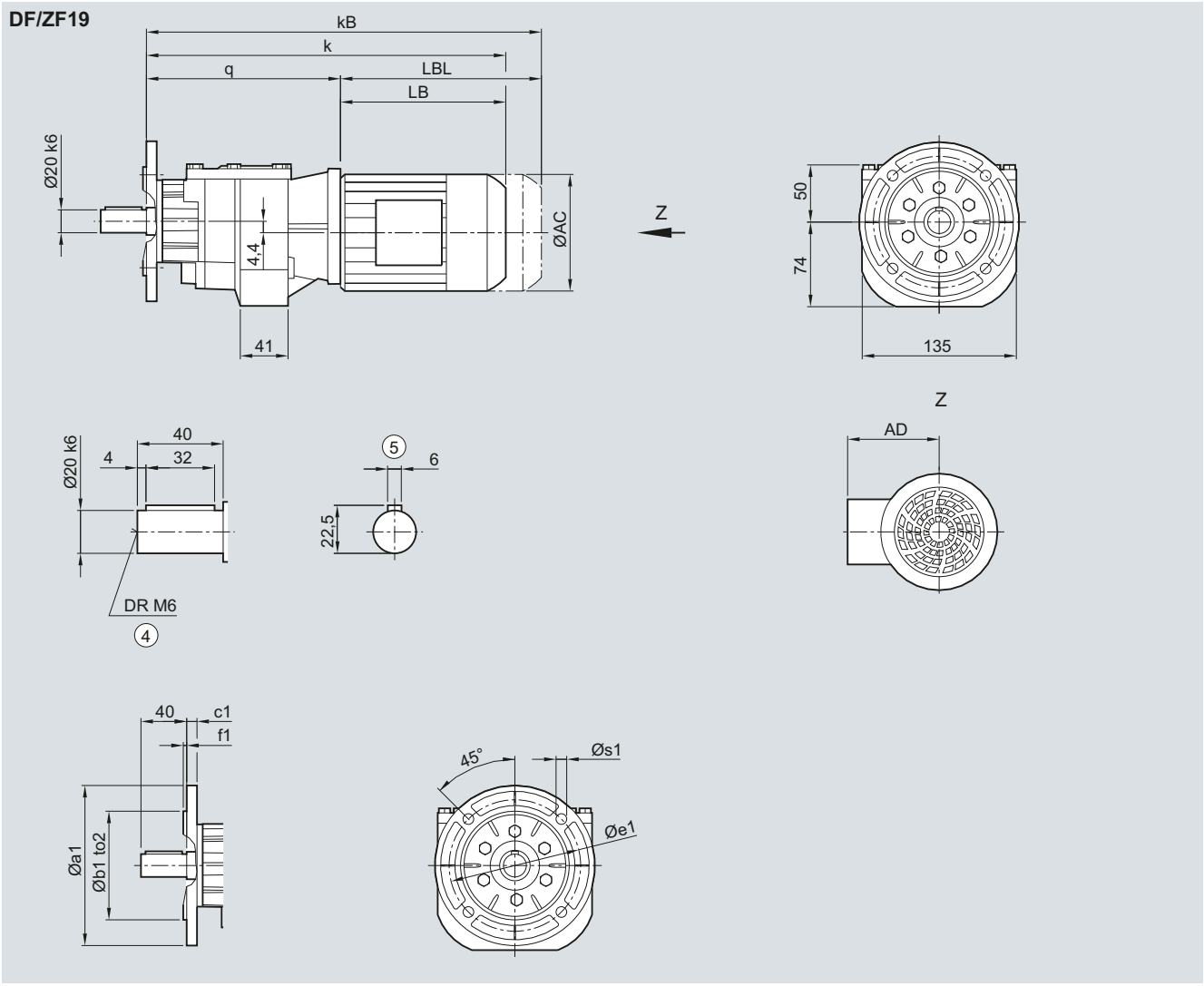
④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DF/ZF19 gearbox in a flange-mounted design

DZF030



Dimensions	a1	b1	to2	c1	e1	f1	s1
	120	80	j6	8	100	3.0	6.6
	140	95	j6	9	115	3.0	9.0
	160	110	j6	9	130	3.5	9.0

Motor	LA63M	LA71M	LE80M
q	168.5	176.5	177
AC	117.8	138.8	156.3
AD	124.0 (136.0)	134.0 (146.0)	149.2
k	329	361	416.5
kB	373.5	416	476.5
LB	160.5	184.5	239.5
LBL	205	239.5	299.5

④ DIN 332

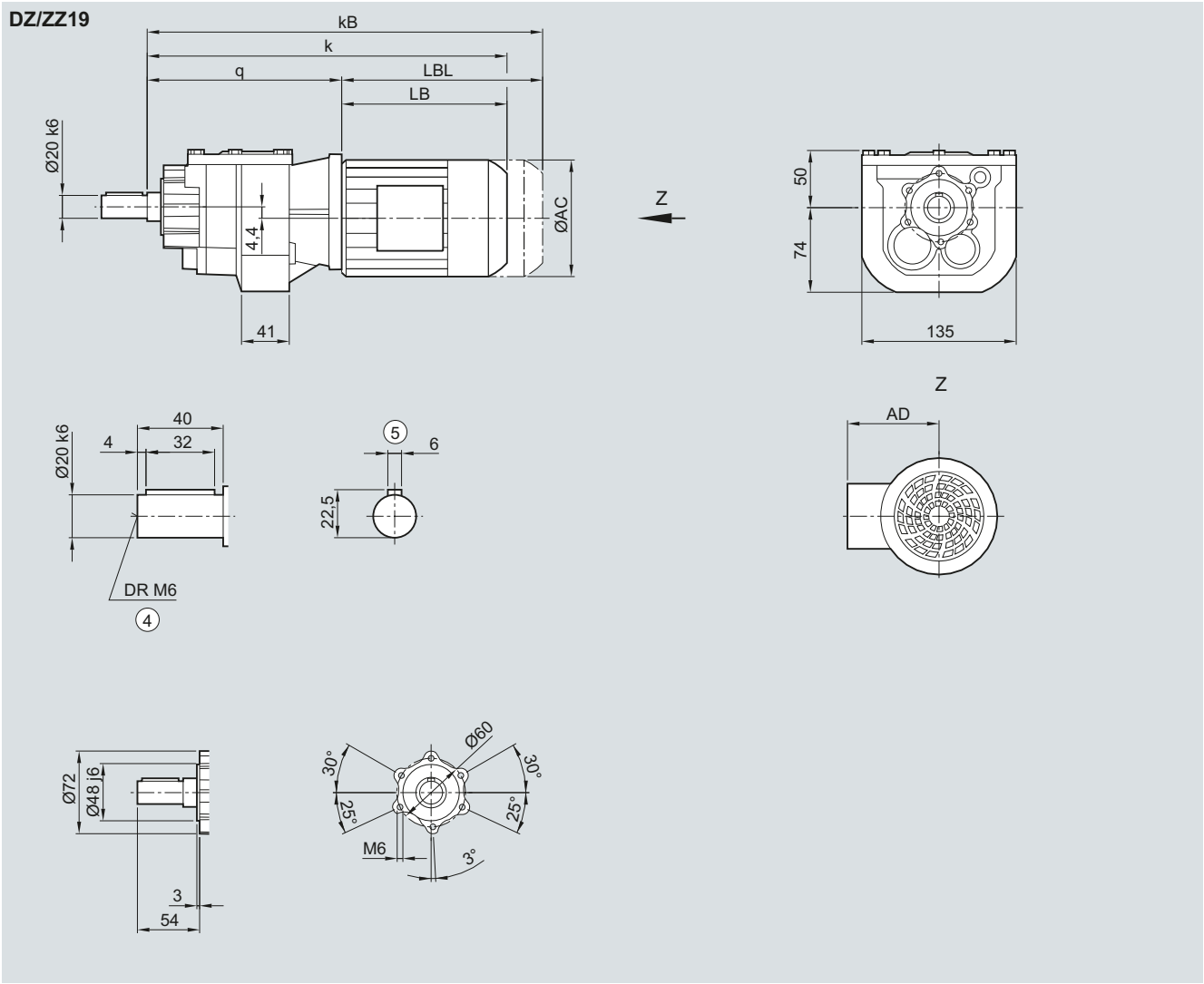
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DZ/ZZ19 gearbox in a housing flange design

DZZ030



Motor	LA63M	LA71M	LE80M
q	168.5	176.5	177
AC	117.8	138.8	156.3
AD	124.0 (136.0)	134.0 (146.0)	149.2
k	329	361	416.5
kB	373.5	416	476.5
LB	160.5	184.5	239.5
LBL	205	239.5	299.5

④ DIN 332

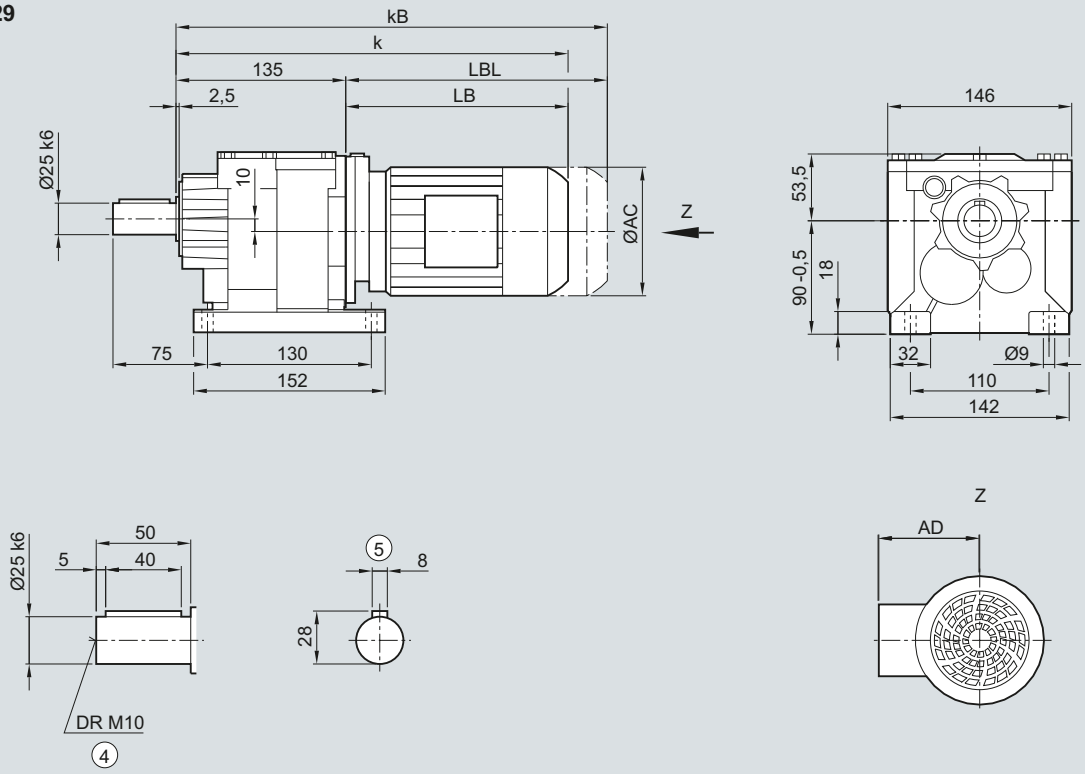
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

D/Z29 gearbox in a foot-mounted design

DZ030

D/Z29



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	329.0	361.0	424.5	486.5	543.0
kB	373.5	416.0	484.5	556.5	621.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

④ DIN 332

⑤ Feather key/keyway DIN 6885

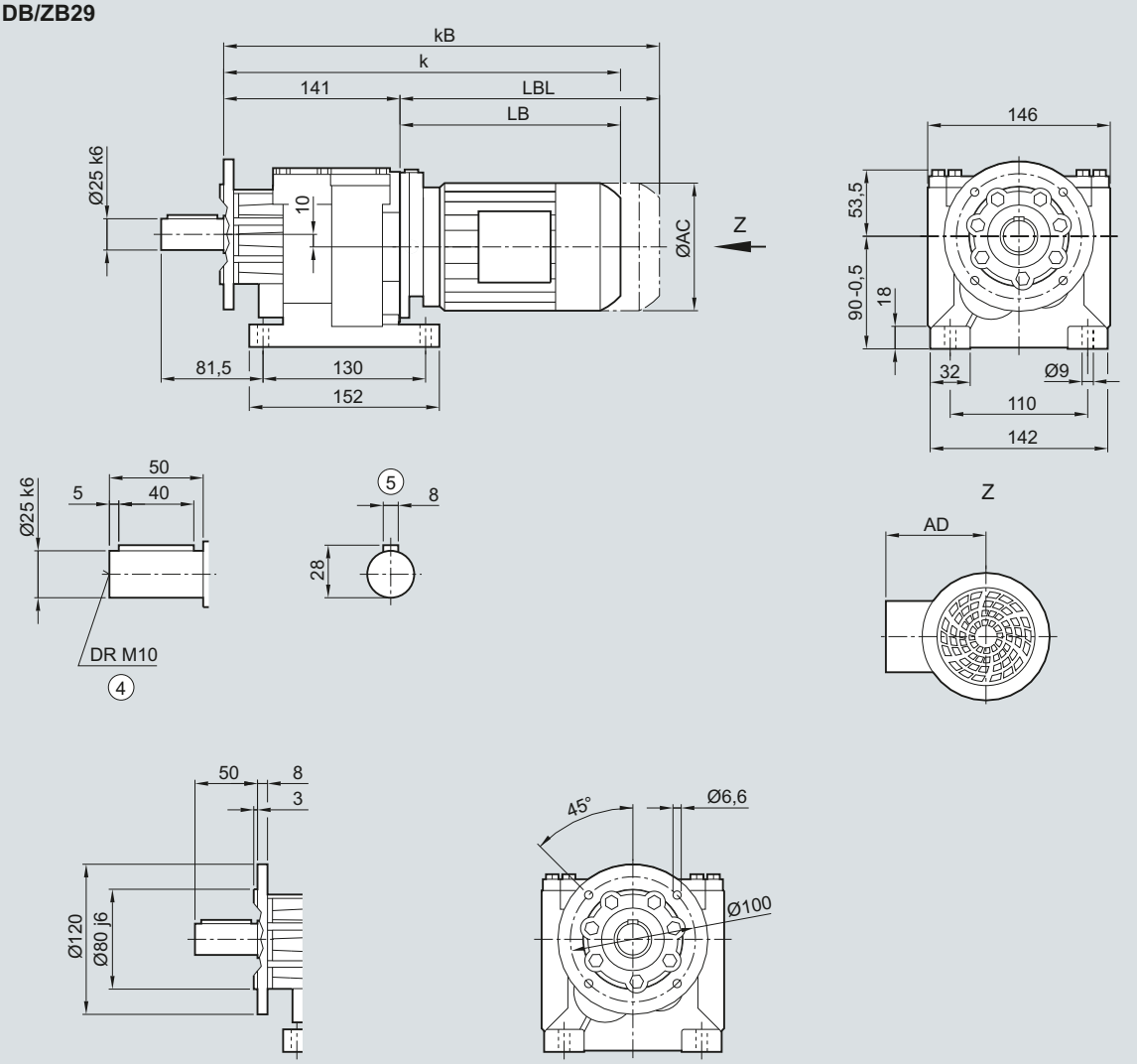
() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DB/ZB29 gearbox in a foot/flange-mounted design

DZB030

DB/ZB29



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	335.0	367.0	430.5	492.5	549.0
kB	379.5	422.0	490.5	562.5	627.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

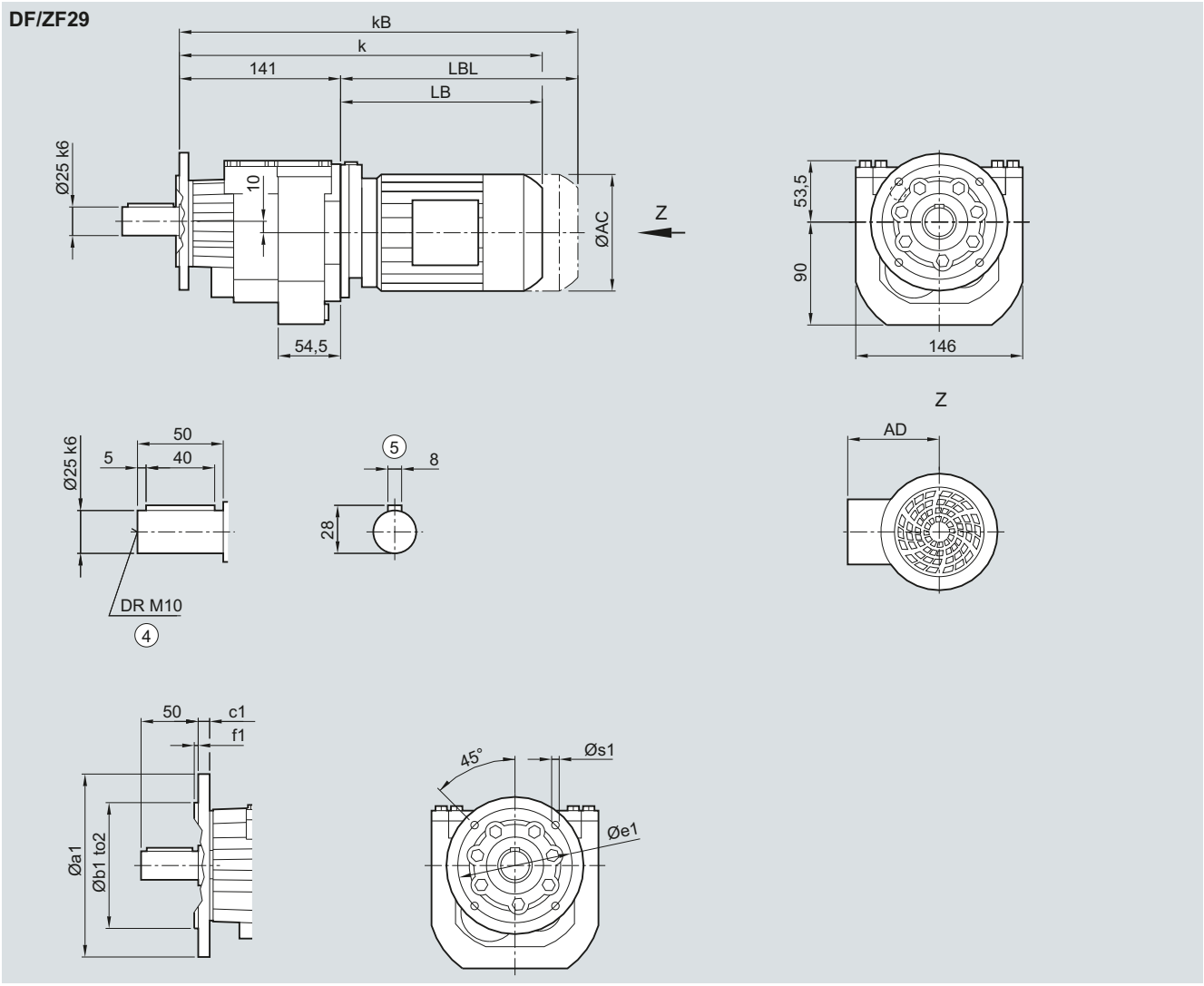
④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DF/ZF29 gearbox in a flange-mounted design

DZF030



Dimensions	a1	b1	to2	c1	e1	f1	s1
	120	80	j6	8	100	3.0	6.6
	140	95	j6	9	115	3.0	9.0
	160	110	j6	9	130	3.5	9.0

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	335.0	367.0	430.5	492.5	549.0
kB	379.5	422.0	490.5	562.5	627.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

④ DIN 332

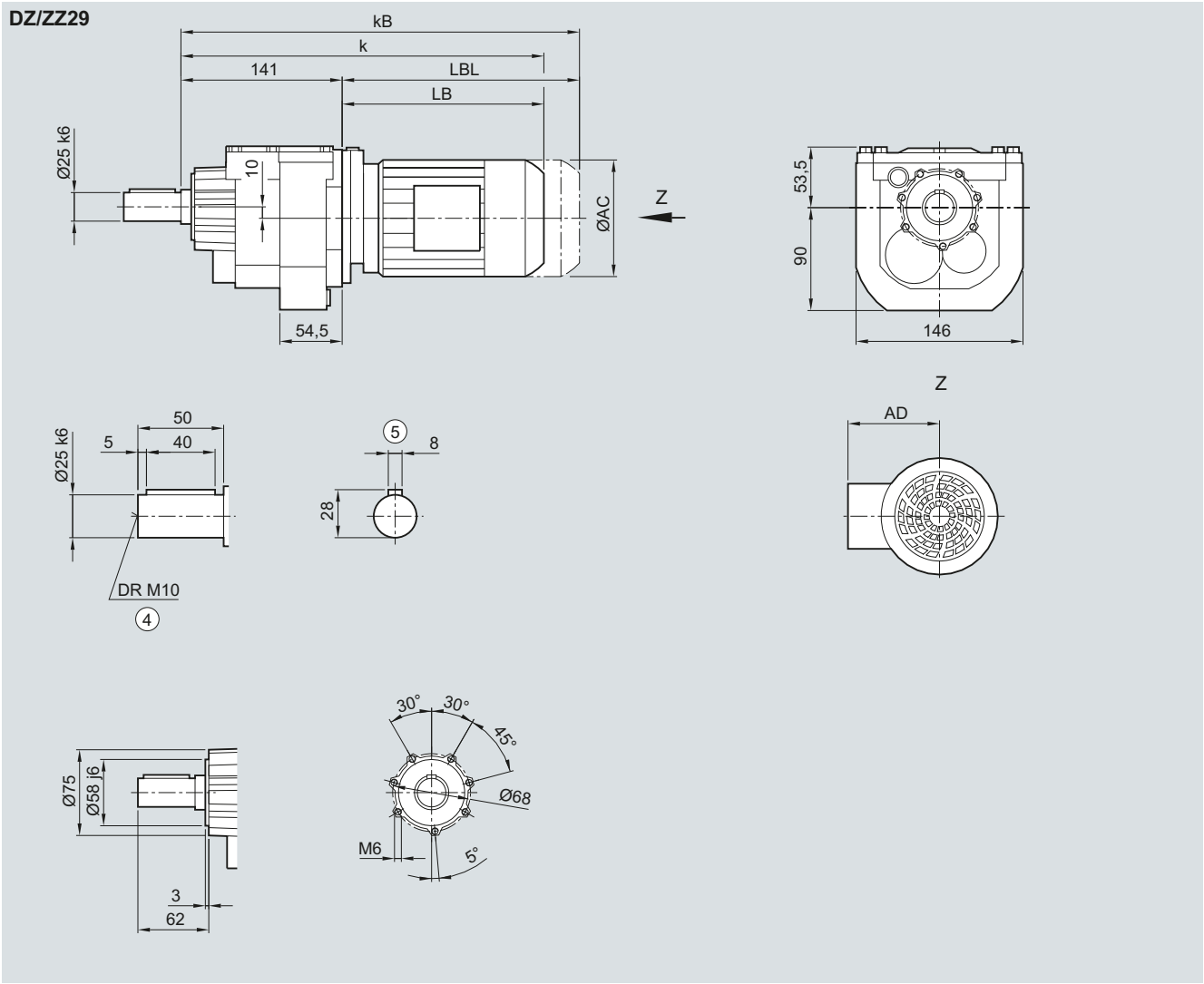
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DZ/ZZ29 gearbox in a housing flange design

DZZ030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	335.0	367.0	430.5	492.5	549.0
kB	379.5	422.0	490.5	562.5	627.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

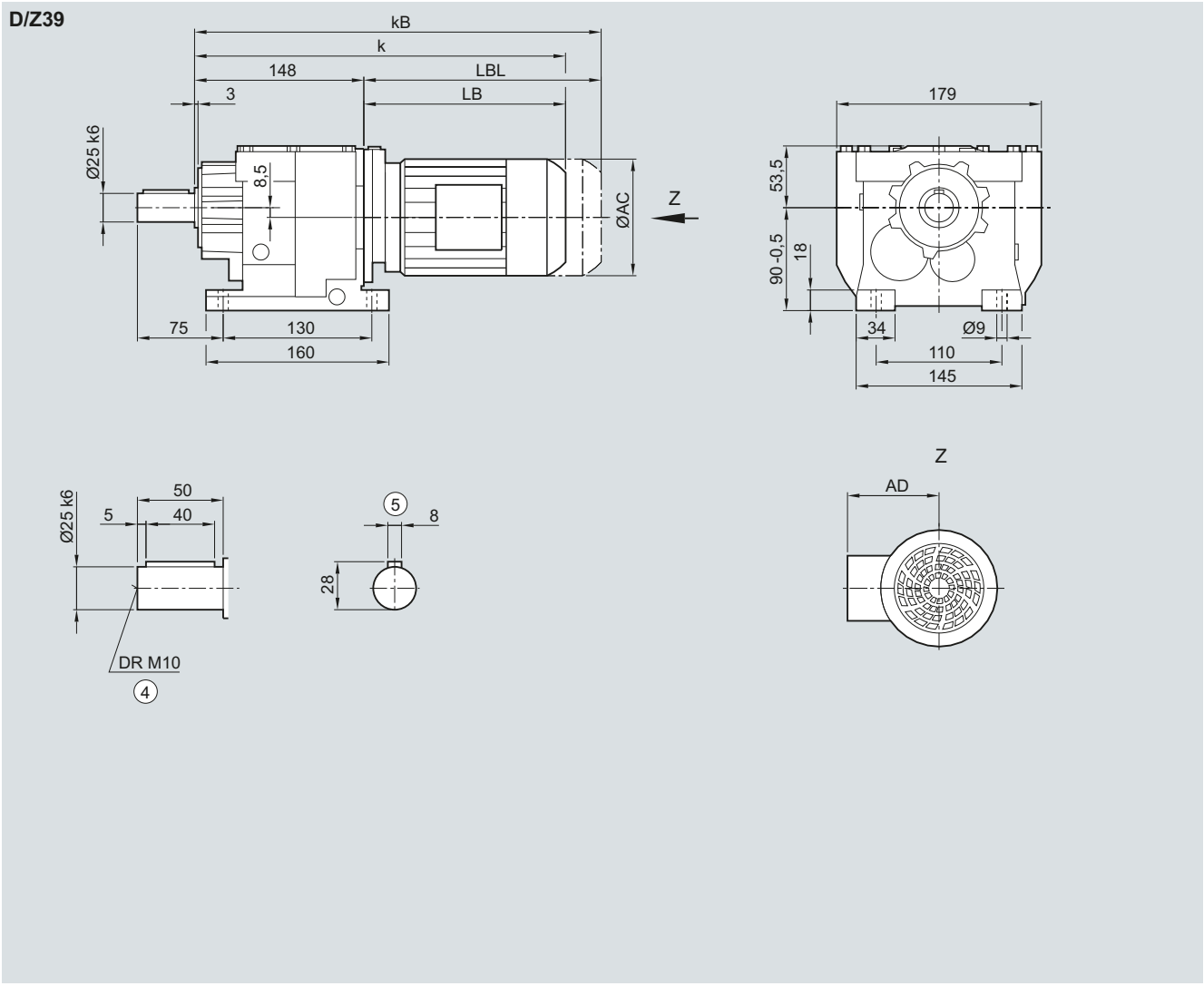
④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

D/Z39 gearbox in a foot-mounted design

DZ030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	342.0	374.0	437.5	499.5	556.0	566.0
kB	386.5	429.0	497.5	569.5	634.5	639.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

④ DIN 332

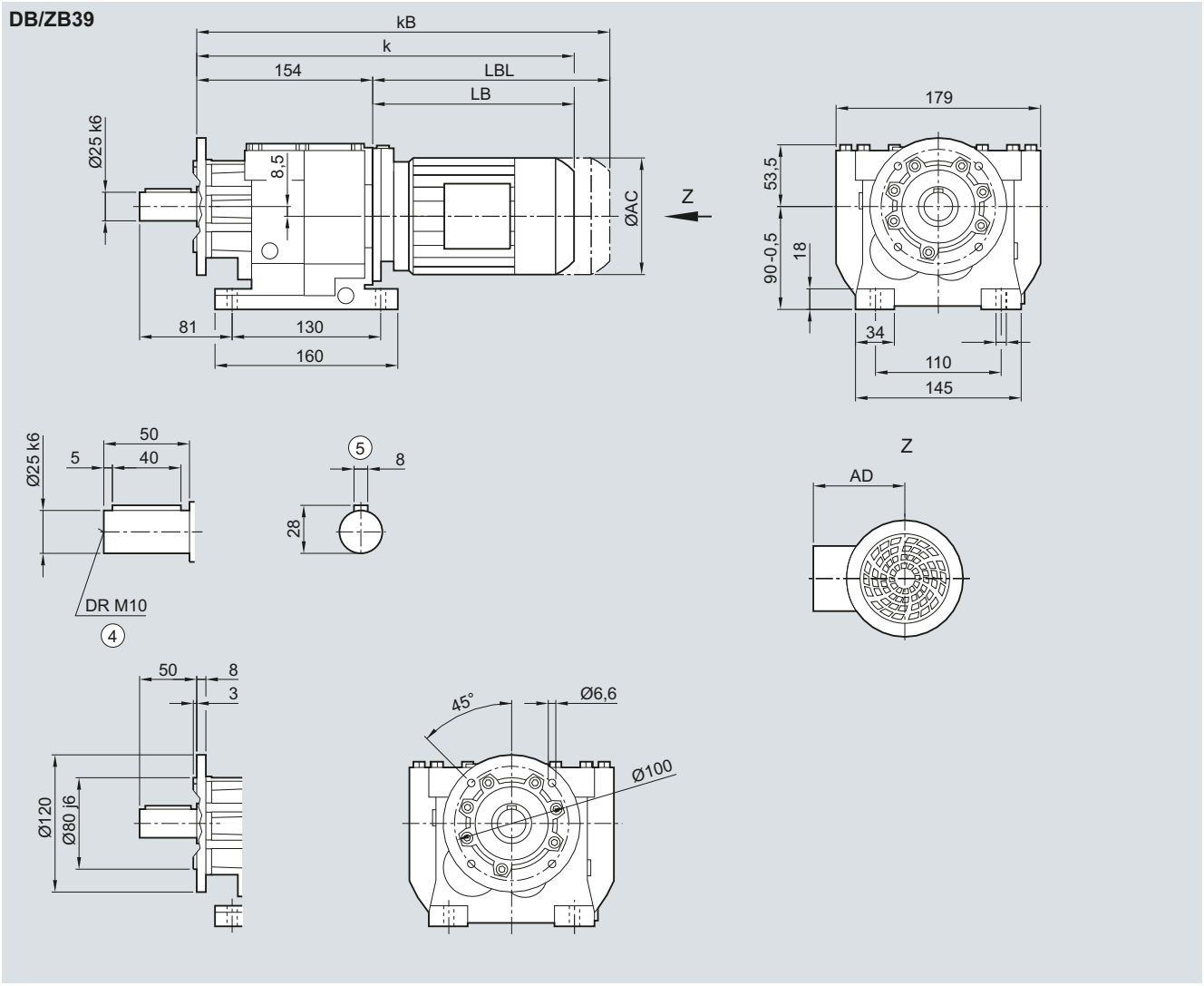
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DB/ZB39 gearbox in a foot/flange-mounted design

DZB030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	348.0	380.0	443.5	505.5	562.0	572.0
kB	392.5	435.0	503.5	575.5	640.5	645.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

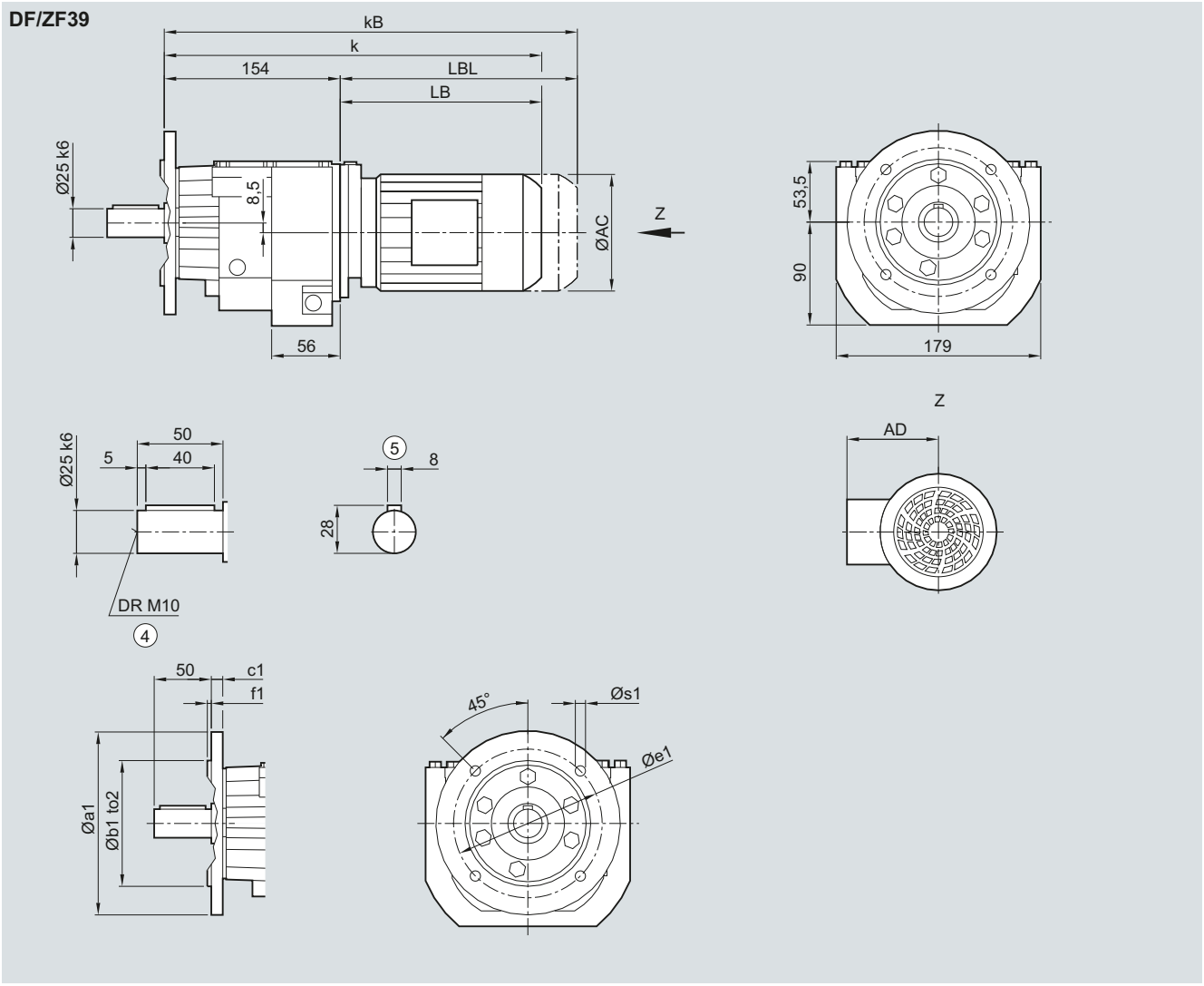
④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DF/ZF39 gearbox in a flange-mounted design

DZF030



Dimensions	a1	b1	to2	c1	e1	f1	s1
	120	80	j6	8	100	3.0	6.6
	160	110	j6	10	130	3.5	9.0
	200	130	j6	12	165	3.5	11.0

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	348.0	380.0	443.5	505.5	562.0	572.0
kB	392.5	435.0	503.5	575.5	640.5	645.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

④ DIN 332

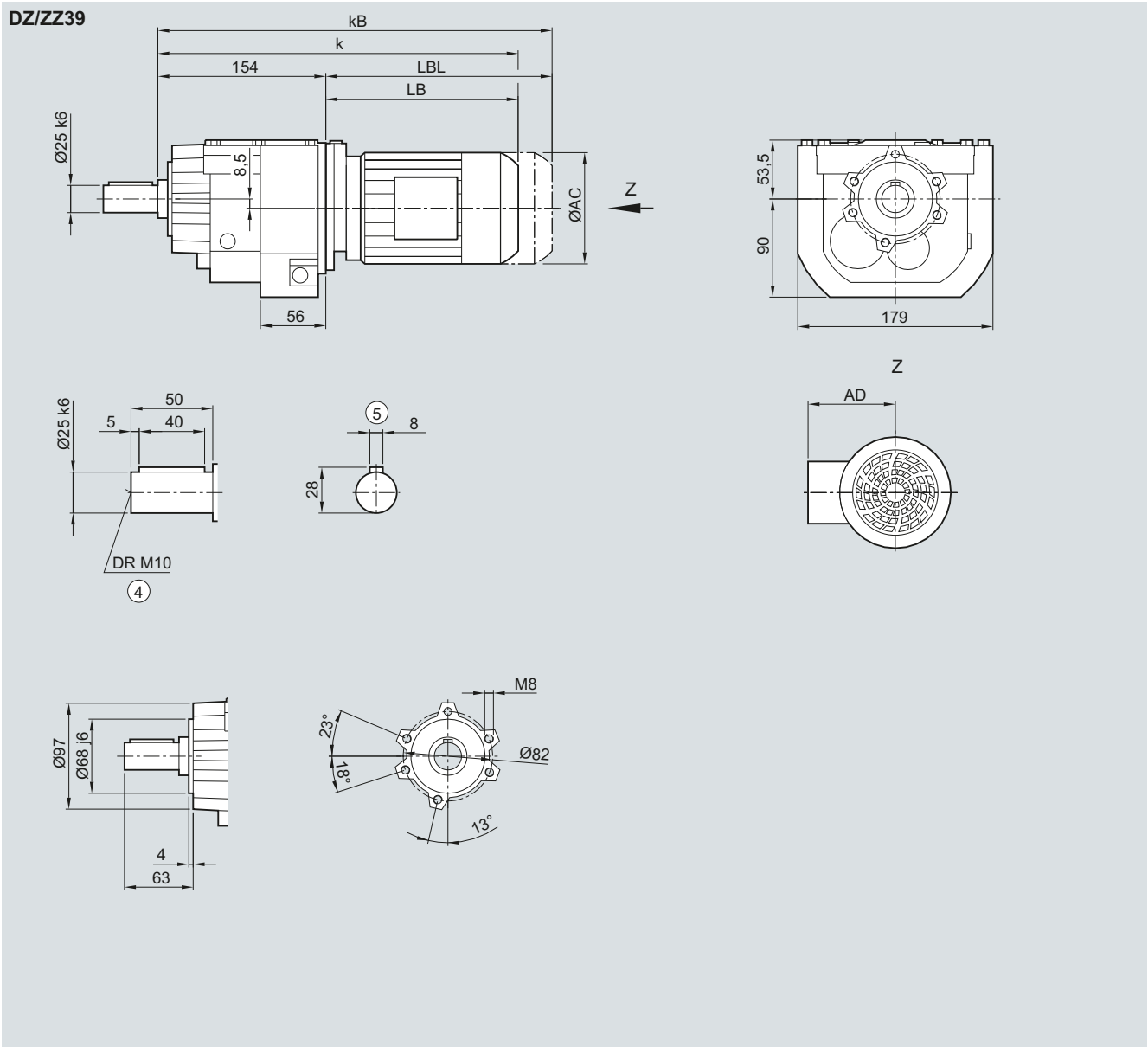
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DZ/ZZ39 gearbox in a housing flange design

DZZ030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	348.0	380.0	443.5	505.5	562.0	572.0
kB	392.5	435.0	503.5	575.5	640.5	645.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

④ DIN 332

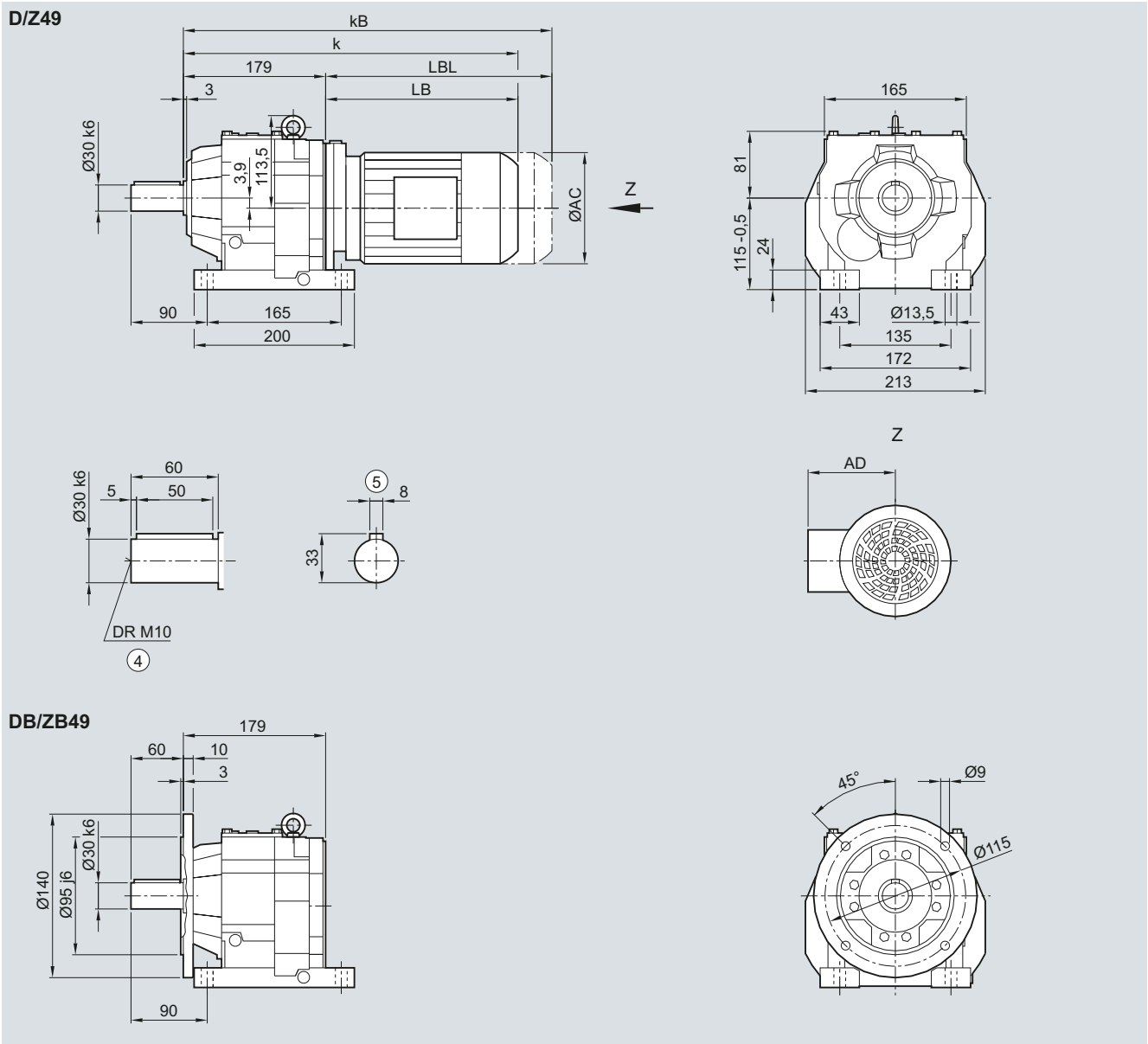
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

D/Z49 and DB/ZB49 gearboxes in a foot and foot/flange-mounted design

DZ030, DZB030

D/Z49



DB/ZB49

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	363.5	395.5	459.0	521.0	577.5	587.5	640.5	690.5
kB	408.0	450.5	519.0	591.0	656.0	660.5	745.0	795.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.2	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

④ DIN 332

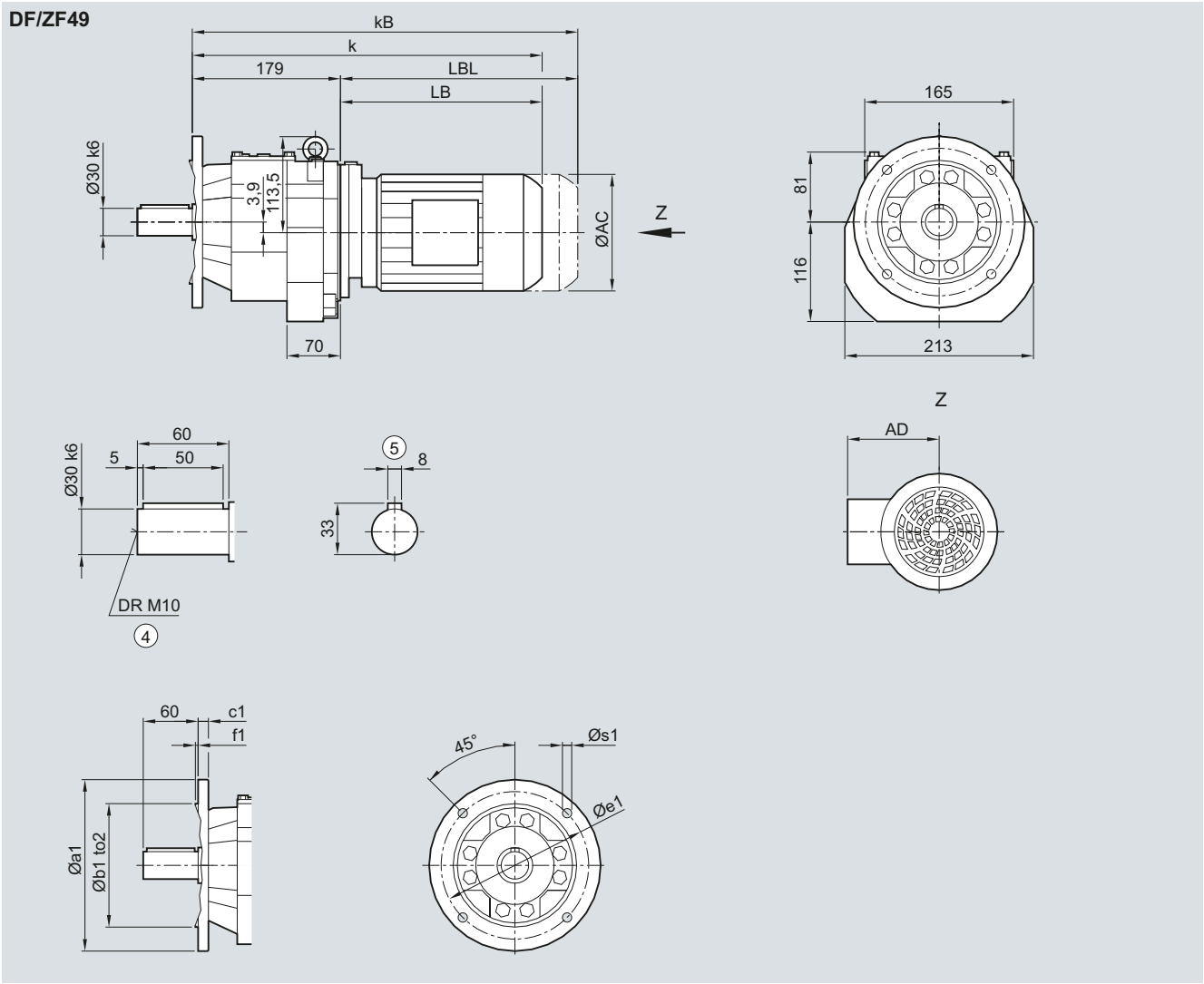
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DF/ZF49 gearbox in a flange-mounted design

DZF030



Dimensions	a1	b1	to2	c1	e1	f1	s1
	140	95	j6	10	115	3.0	9.0
	160	110	j6	10	130	3.5	9.0
	200	130	j6	12	165	3.5	11.0

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	363.5	395.5	459.0	521.0	577.5	587.5	640.5	690.5
kB	408.0	450.5	519.0	591.0	656.0	660.5	745.0	795.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

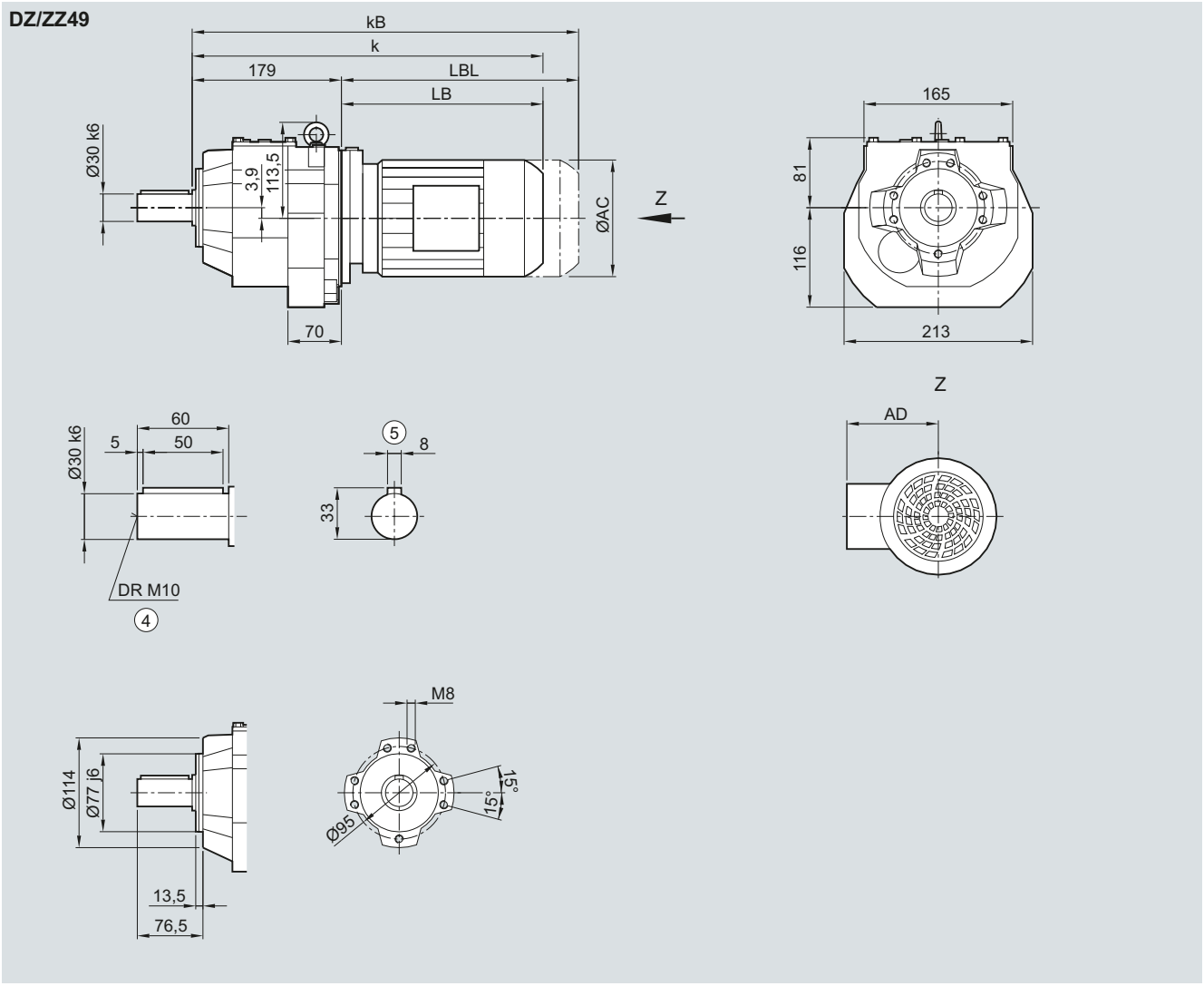
④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DZ/ZZ49 gearbox in a housing flange design

DZZ030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	363.5	395.5	459.0	521.0	577.5	587.5	640.5	690.5
kB	408.0	450.5	519.0	591.0	656.0	660.5	745.0	795.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

④ DIN 332

⑤ Feather key/keyway DIN 6885

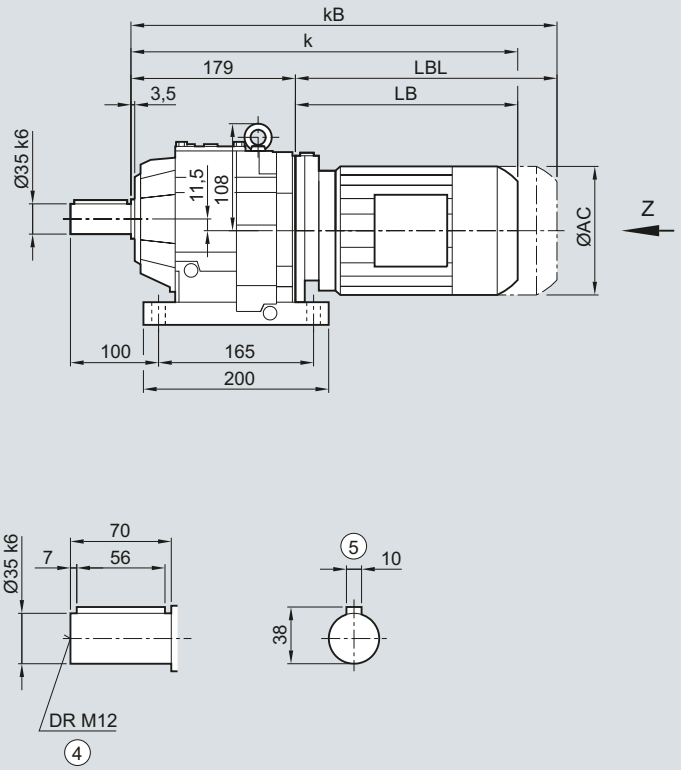
() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

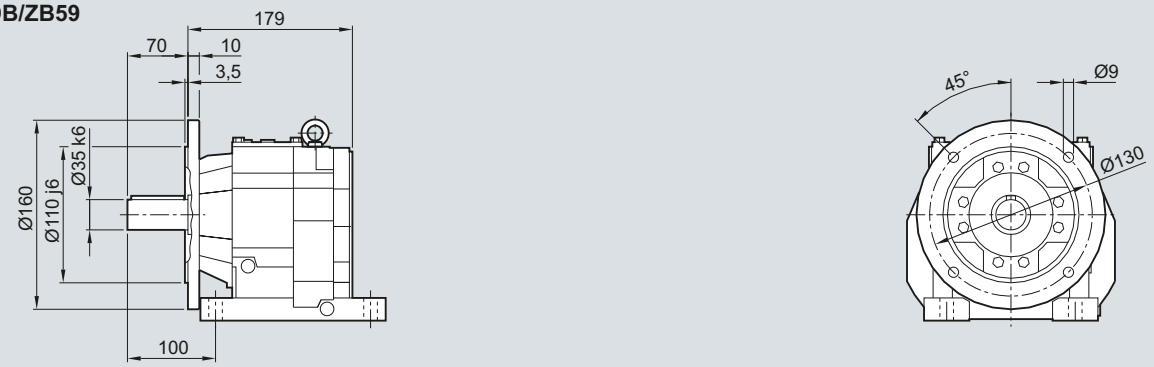
D/Z59 and DB/ZB59 gearboxes in a foot and foot/flange-mounted design

DZ030, DZB030

D/Z59



DB/ZB59



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	363.5	395.5	459.0	521.0	577.5	587.5	640.5	690.5
kB	408.0	450.5	519.0	591.0	656.0	660.5	745.0	795.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

④ DIN 332

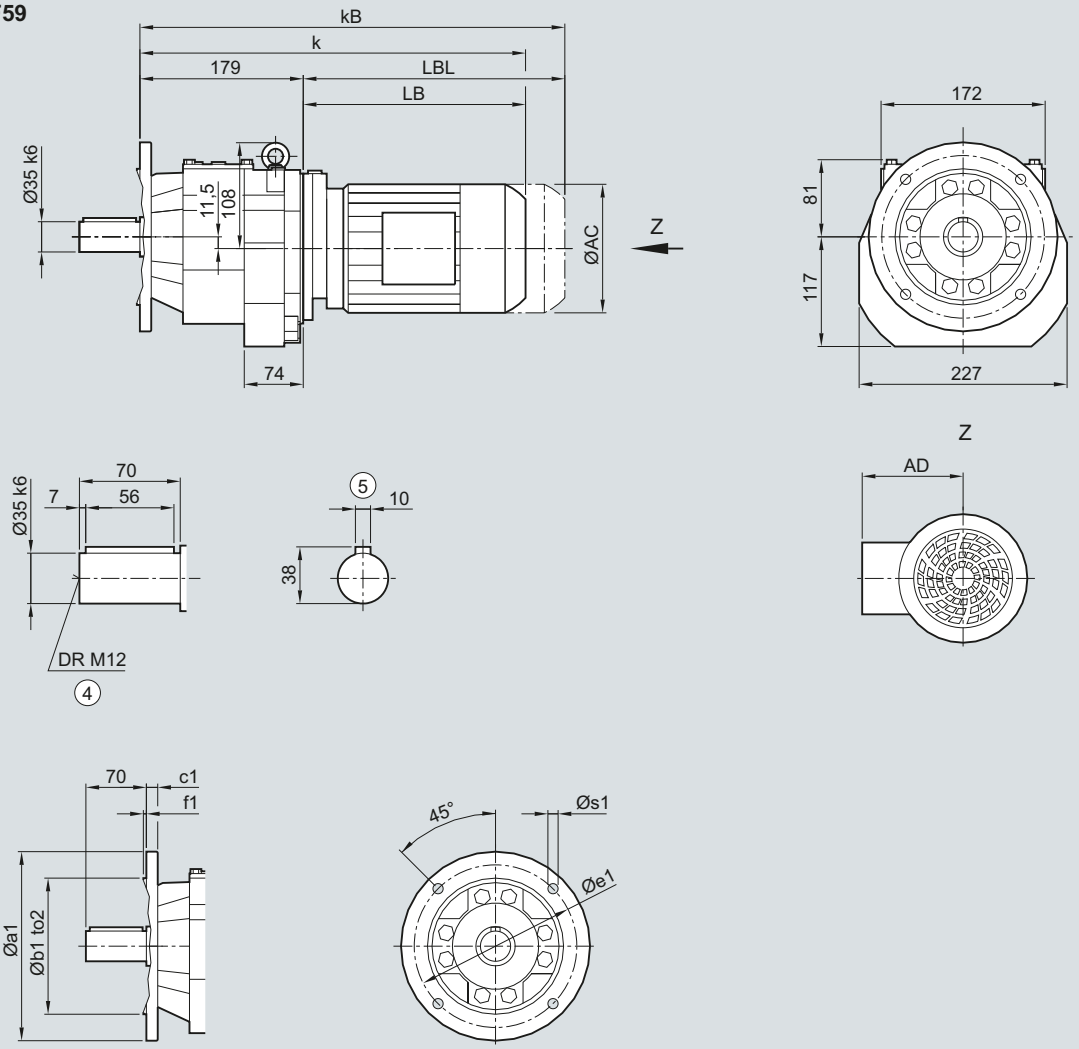
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DF/ZF59 gearbox in a flange-mounted design

DZF030

DF/ZF59



Dimensions	a1	b1	to2	c1	e1	f1	s1
	160	110	j6	10	130	3.5	9.0
	200	130	j6	12	165	3.5	11.0
	250	180	j6	15	215	4.0	9.0

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	363.5	395.5	459.0	521.0	577.5	587.5	640.5	690.5
kB	408.0	450.5	519.0	591.0	656.0	660.5	745.0	795.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

④ DIN 332

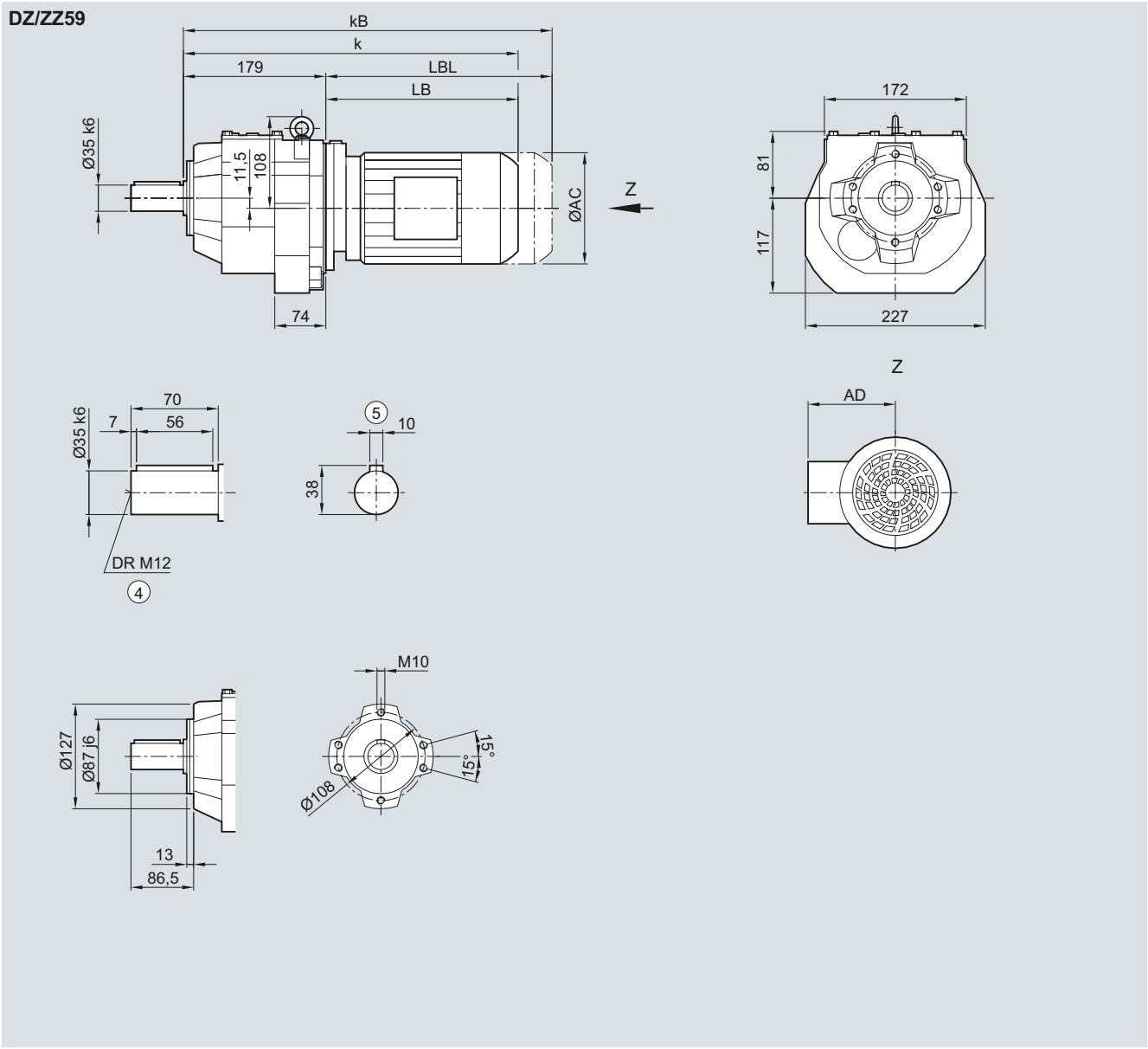
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DZ/ZZ59 gearbox in a housing flange design

DZZ030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	363.5	395.5	459.0	521.0	577.5	587.5	640.5	690.5
kB	408.0	450.5	519.0	591.0	656.0	660.5	745.0	795.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

④ DIN 332

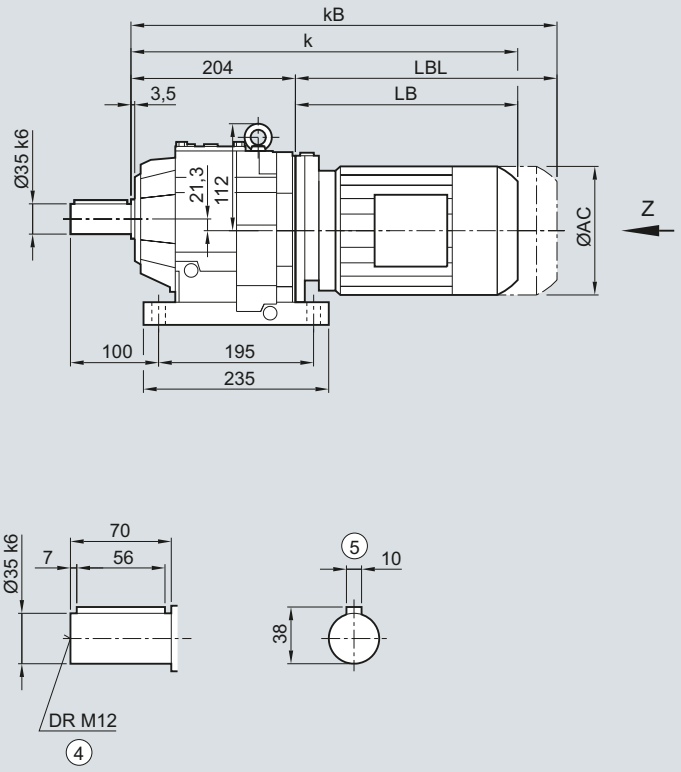
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

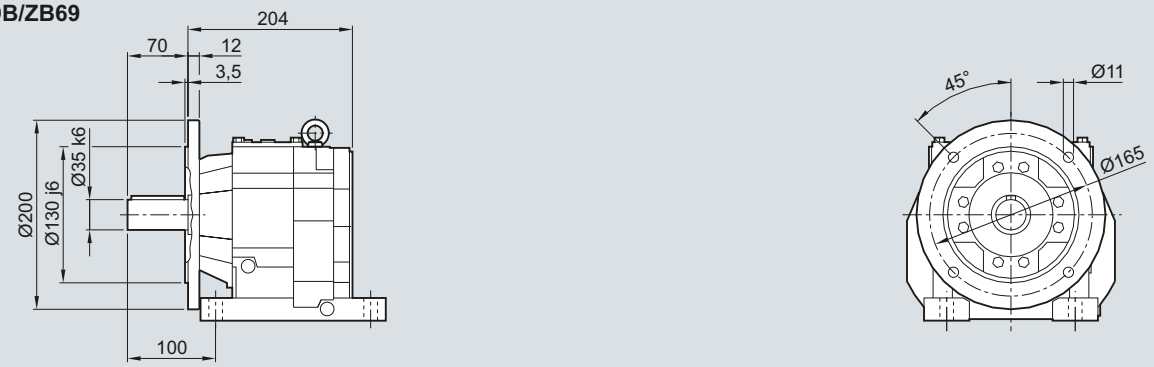
D/Z69 and DB/ZB69 gearboxes in a foot and foot/flange-mounted design

DZ030, DZB030

D/Z69



DB/ZB69



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	388.5	420.5	484.0	546.0	602.5	612.5	665.5	715.5
kB	433.0	475.5	544.0	616.0	681.0	685.5	770.0	820.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

④ DIN 332

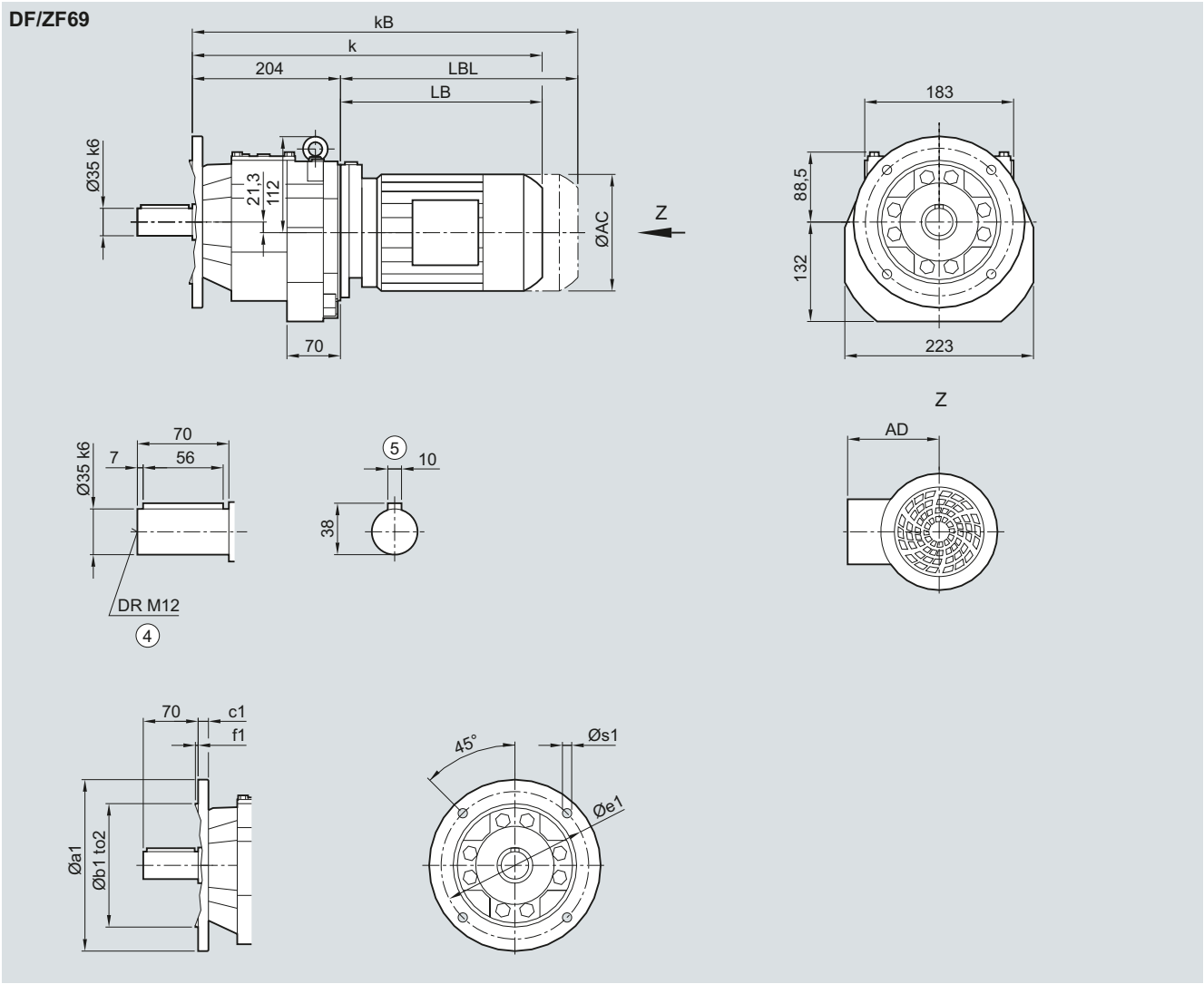
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DF/ZF69 gearbox in a flange-mounted design

DZF030



Dimensions	a1	b1	to2	c1	e1	f1	s1
	200	130	j6	12	165	3.5	11.0
	250	180	j6	15	215	4.0	13.5

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	388.5	420.5	484.0	546.0	602.5	612.5	665.5	715.5
kB	433.0	475.5	544.0	616.0	681.0	685.5	770.0	820.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

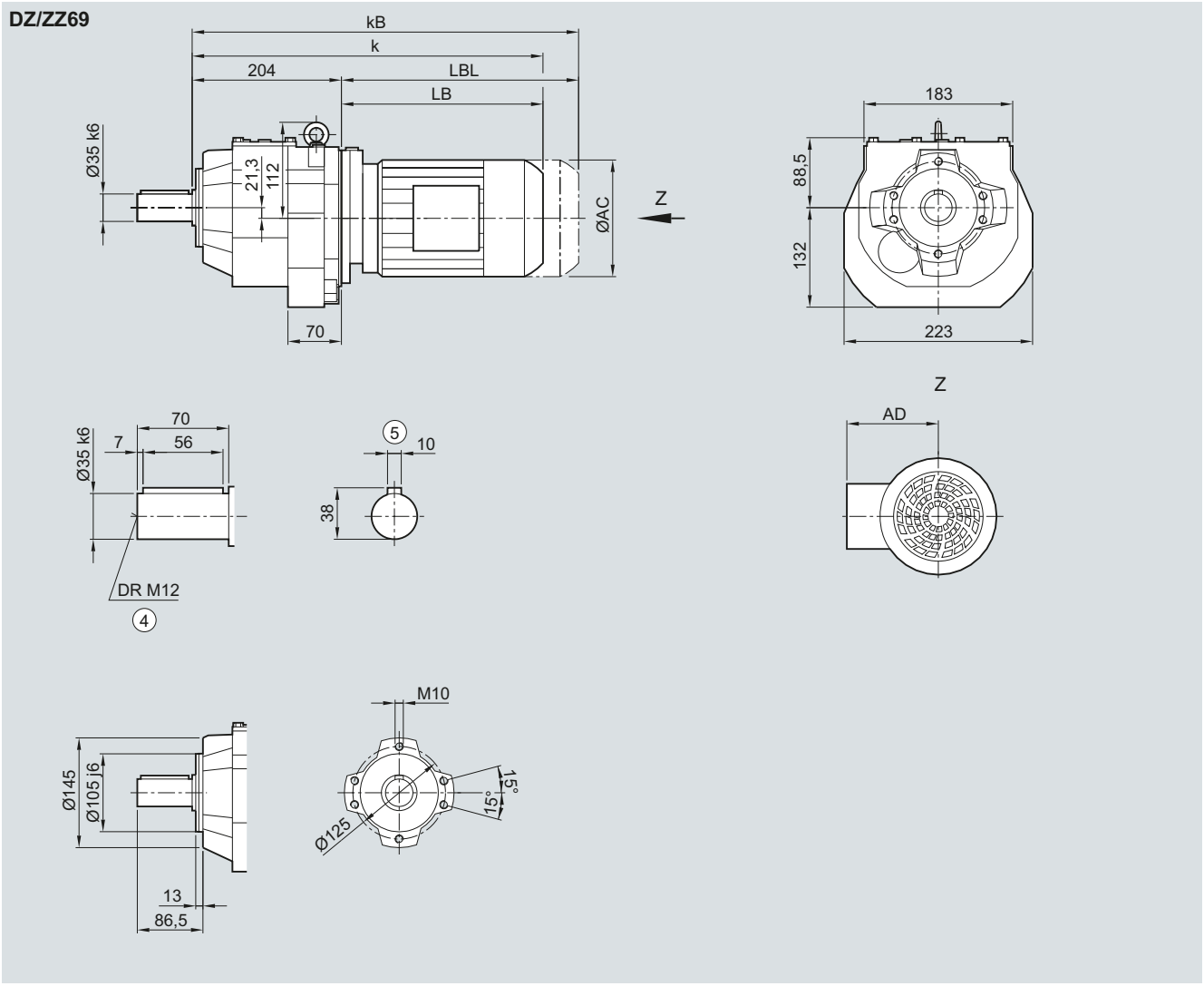
④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DZ/ZZ69 gearbox in a housing flange design

DZZ030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	388.5	420.5	484.0	546.0	602.5	612.5	665.5	715.5
kB	433.0	475.5	544.0	616.0	681.0	685.5	770.0	820.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

④ DIN 332

⑤ Feather key/keyway DIN 6885

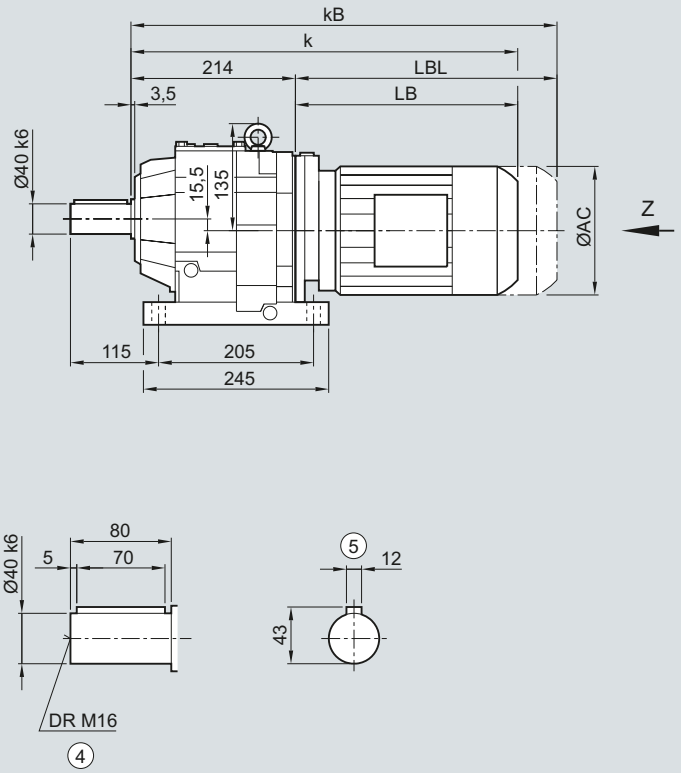
() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

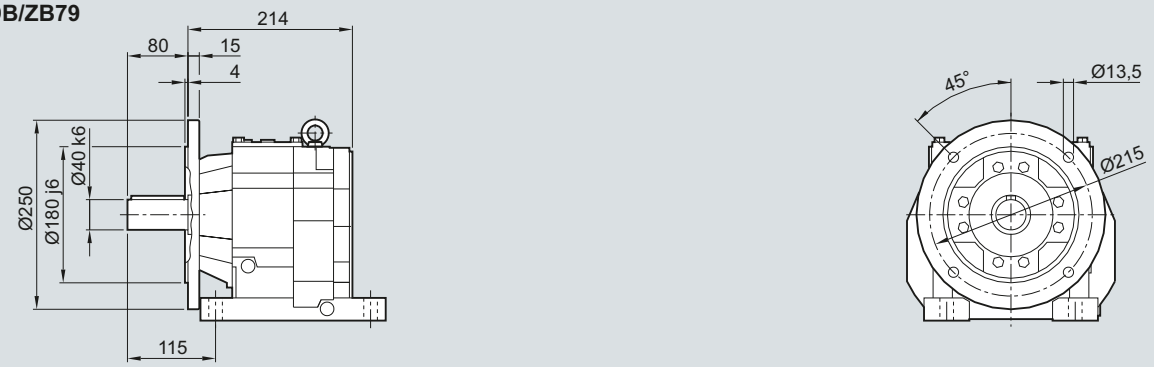
D/Z79 and DB/ZB79 gearboxes in a foot and foot/flange-mounted design

DZ030, DZB030

D/Z79



DB/ZB79



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	428.5	488.0	550.0	606.5	616.5	669.5	719.5	751.5
kB	483.5	548.0	620.0	685.0	689.5	774.0	824.0	867.5
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

④ DIN 332

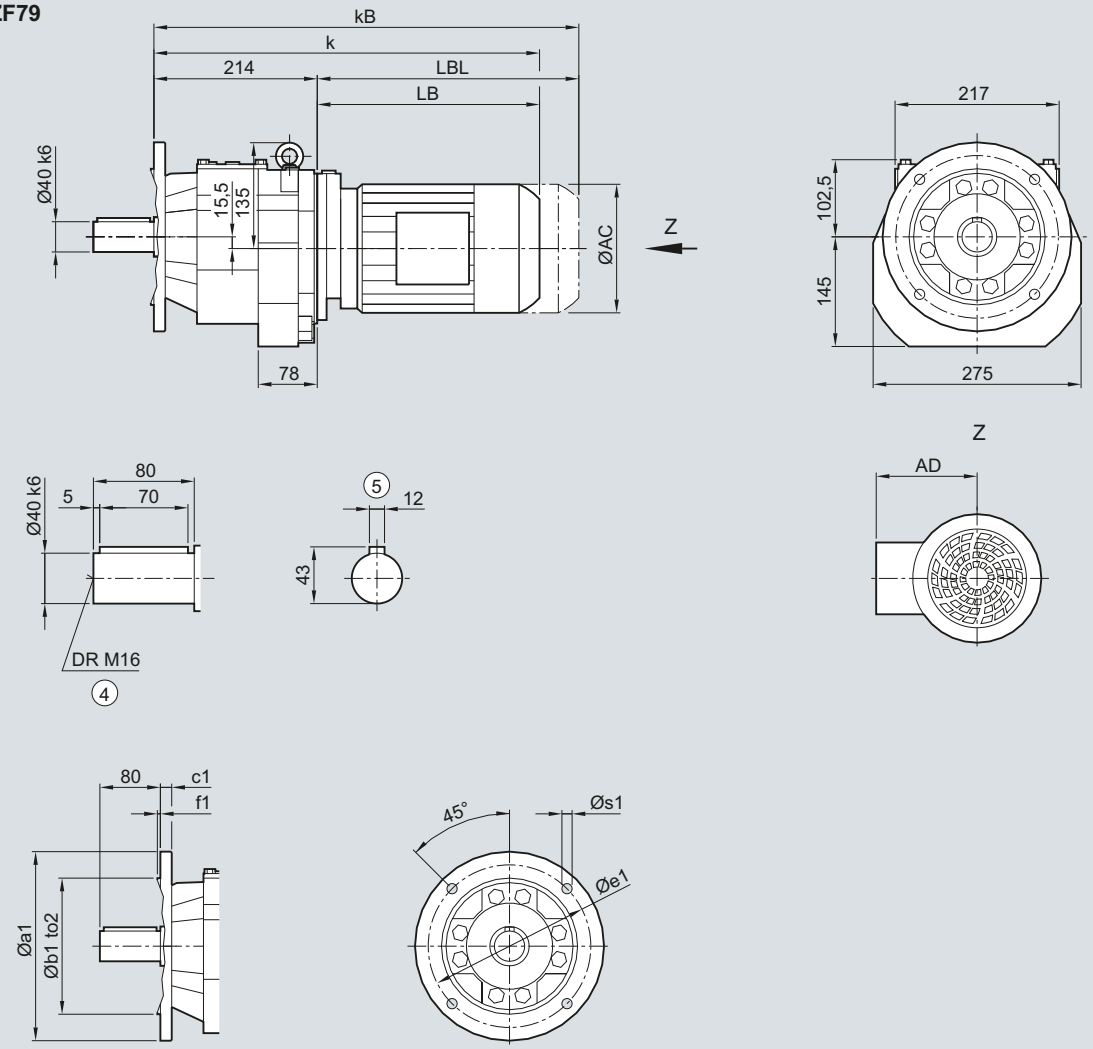
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DF/ZF79 gearbox in a flange-mounted design

DZF030

DF/ZF79



Dimensions	a1	b1	to2	c1	e1	f1	s1
	250	180	j6	15	215	4.0	13.5
	300	230	j6	16	265	4.0	13.5

Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	428.5	488.0	550.0	606.5	616.5	669.5	719.5	751.5
kB	483.5	548.0	620.0	685.0	689.5	774.0	824.0	867.5
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

④ DIN 332

⑤ Feather key/keyway DIN 6885

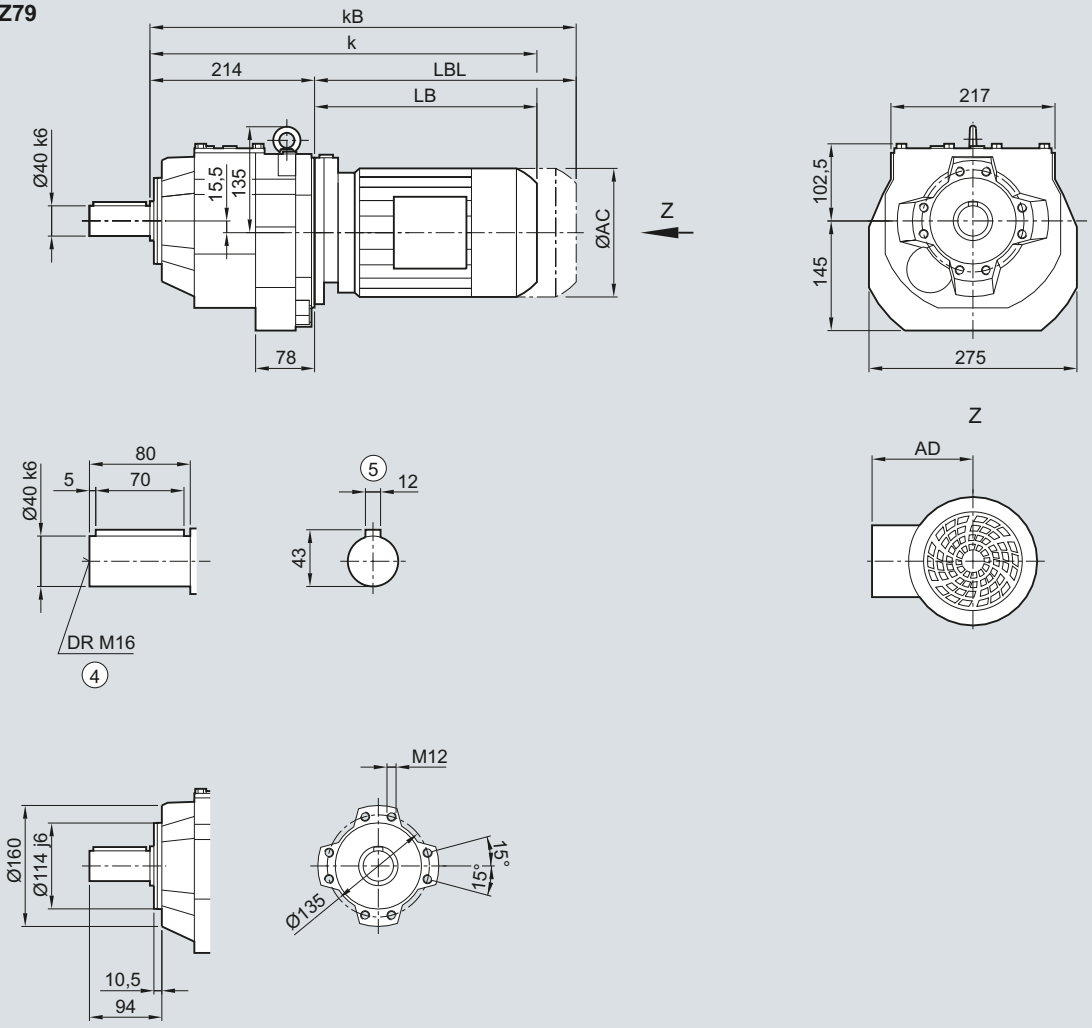
() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DZ/ZZ79 gearbox in a housing flange design

DZZ030

DZ/ZZ79



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	428.5	488.0	550.0	606.5	616.5	669.5	719.5	751.5
kB	483.5	548.0	620.0	685.0	689.5	774.0	824.0	867.5
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

④ DIN 332

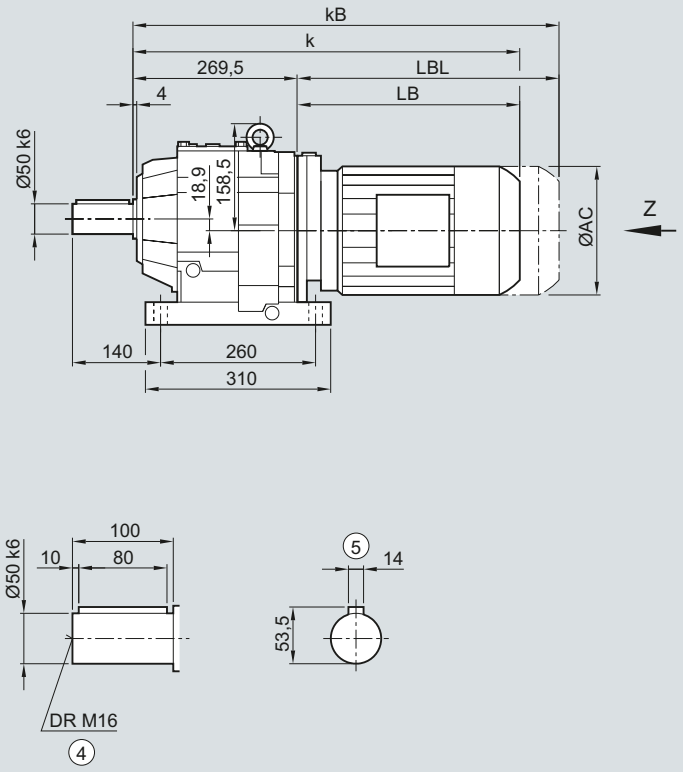
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

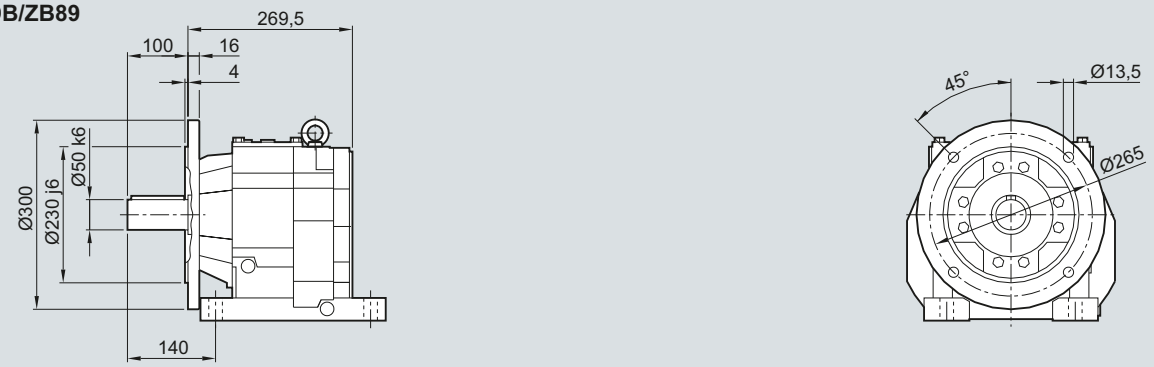
D/Z89 and DB/ZB89 gearboxes in a foot and foot/flange-mounted design

DZ030, DZB030

D/Z89



DB/ZB89



Motor	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	530.5	592.5	645.0	655.0	708.0	758.0	790.0
kB	590.5	662.5	723.5	728.0	812.5	862.5	906.0
LB	261.0	323.0	375.5	385.5	438.5	488.5	520.5
LBL	321.0	393.0	454.0	458.5	543.0	593.0	636.5

④ DIN 332

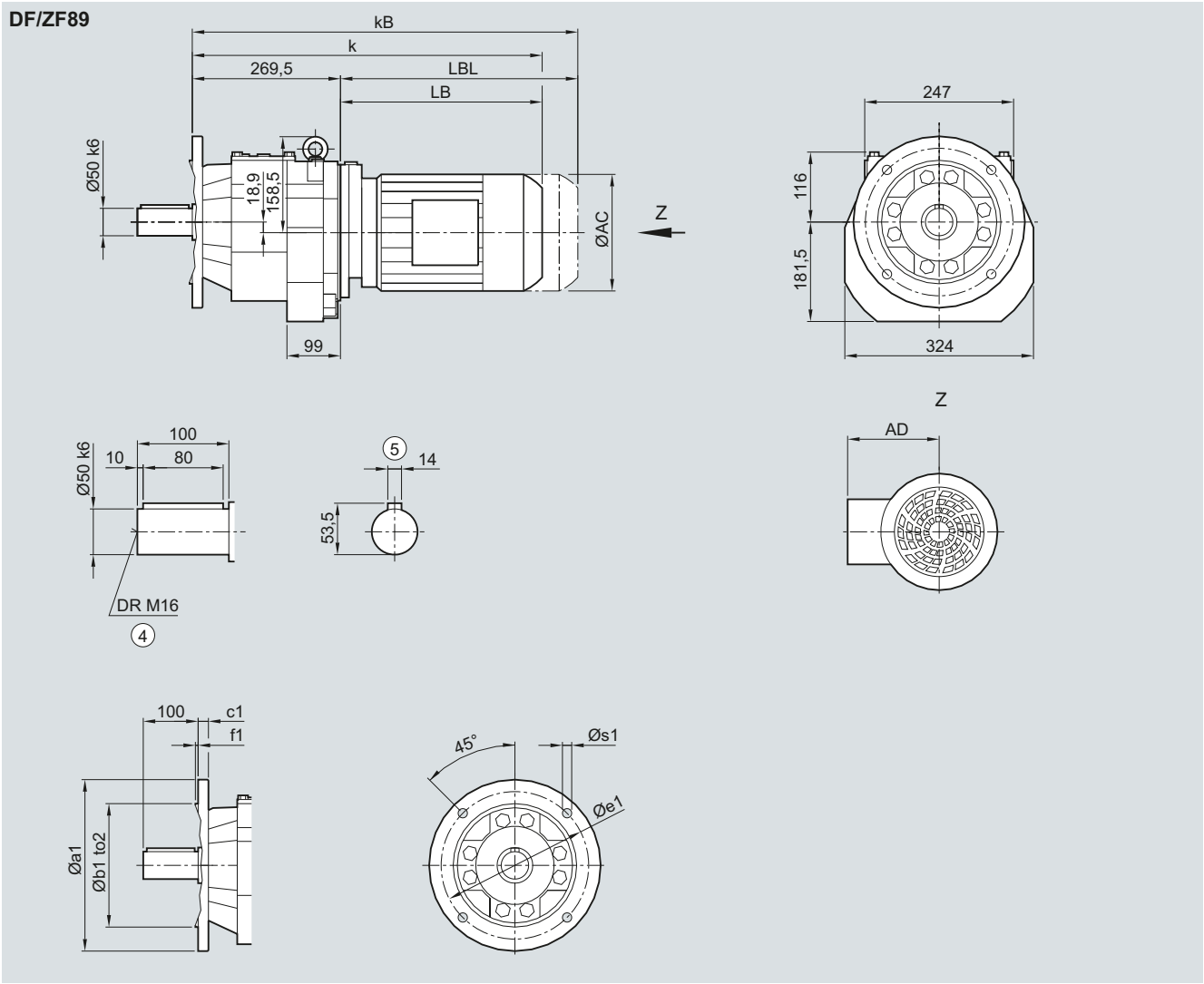
⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

DF/ZF89 gearbox in a flange-mounted design

DZF030



Dimensions	a1	b1	to2	c1	e1	f1	s1
	300	230	j6	16	265	4.0	13.5
	350	250	j6	18	300	5.0	17.5

Motor	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	530.5	592.5	645.0	655.0	708.0	758.0	790.0
kB	590.5	662.5	723.5	728.0	812.5	862.5	906.0
LB	261.0	323.0	375.5	385.5	438.5	488.5	520.5
LBL	321.0	393.0	454.0	458.5	543.0	593.0	636.5

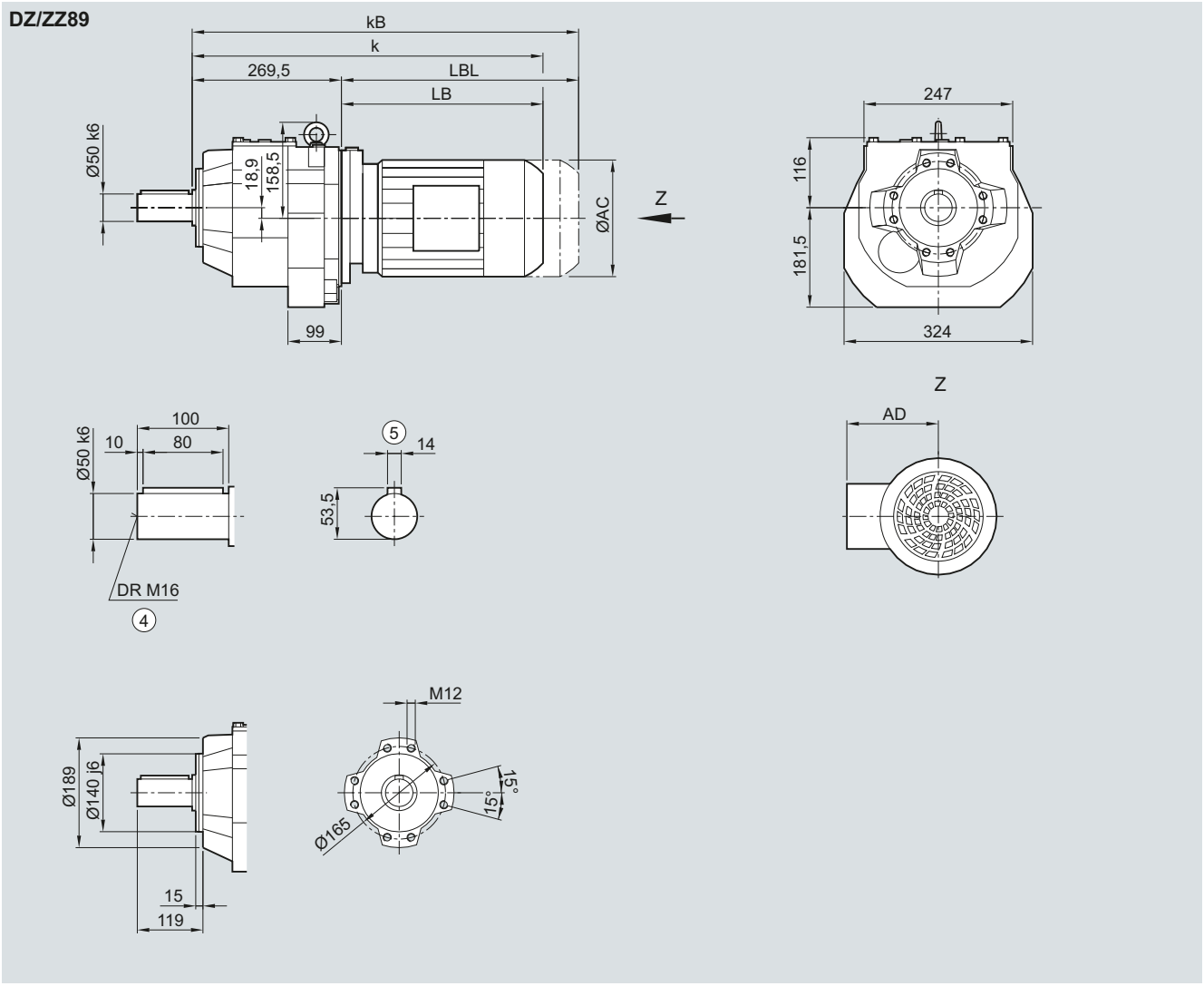
④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

DZ/ZZ89 gearbox in a housing flange design

DZZ030



Motor	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	530.5	592.5	645.0	655.0	708.0	758.0	790.0
kB	590.5	662.5	723.5	728.0	812.5	862.5	906.0
LB	261.0	323.0	375.5	385.5	438.5	488.5	520.5
LBL	321.0	393.0	454.0	458.5	543.0	593.0	636.5

④ DIN 332

⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Notes

Parallel shaft geared motors

4

Orientation

SIMOGEAR parallel shaft geared motor F

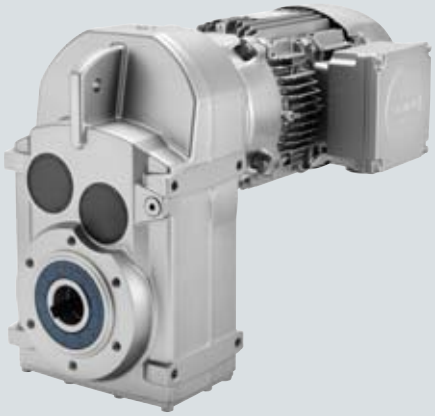


Fig. 4-1 Parallel shaft geared motor F

SIMOGEAR parallel shaft geared motors are available in the following versions for mounting in any position:

- 2 or 3 stages
- Shaft-mounted design with torque arm
- Flange-mounted design
- Design with integrated housing flange
- Foot-mounted design
- Hollow-shaft design with feather key, splined shaft or shrink disk
- Solid shaft design with feather key

Selection and ordering data

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.09	**FD.69-LA63MF6**							
	2.4	350	348.4	11 400	1.7	29	**2KJ3404 - ■ BD11 - ■ ■ S1**	**P01**
	2.7	310	309.78	11 500	1.9	29	**2KJ3404 - ■ BD11 - ■ ■ R1**	**P01**
	FD.49-LA63MF6							
	2.6	335	330.98	8 460	1.4	24	**2KJ3403 - ■ BD11 - ■ ■ S1**	**P01**
	2.9	295	294.29	8 570	1.6	24	**2KJ3403 - ■ BD11 - ■ ■ R1**	**P01**
	3.3	260	258.4	8 670	1.8	24	**2KJ3403 - ■ BD11 - ■ ■ Q1**	**P01**
	3.6	235	234.91	8 750	2	24	**2KJ3403 - ■ BD11 - ■ ■ P1**	**P01**
	FD.39-LA63MF6							
	3.1	275	274.26	5 870	1	15	**2KJ3402 - ■ BD11 - ■ ■ R1**	**P01**
	3.5	245	243.26	5 980	1.2	15	**2KJ3402 - ■ BD11 - ■ ■ Q1**	**P01**
	4	210	211.06	6 110	1.4	15	**2KJ3402 - ■ BD11 - ■ ■ P1**	**P01**
	4.4	194	191.87	6 170	1.5	15	**2KJ3402 - ■ BD11 - ■ ■ N1**	**P01**
	FD.39-LA63MD4							
	4.9	175	274.26	6 240	1.7	15	**2KJ3402 - ■ BB11 - ■ ■ R1**	
	5.5	155	243.26	6 320	1.9	15	**2KJ3402 - ■ BB11 - ■ ■ Q1**	
	FD.29-LA63MF6							
	4.8	180	177.71	5 220	0.83	8	**2KJ3401 - ■ BD11 - ■ ■ L1**	**P01**
	FD.29-LA63MD4							
	5.1	168	264.39	5 220	0.89	8	**2KJ3401 - ■ BB11 - ■ ■ P1**	
	5.9	146	229.72	5 220	1	8	**2KJ3401 - ■ BB11 - ■ ■ N1**	
	6.5	133	208.83	5 220	1.1	8	**2KJ3401 - ■ BB11 - ■ ■ M1**	
	7.6	113	177.71	5 220	1.3	8	**2KJ3401 - ■ BB11 - ■ ■ L1**	
	8.4	103	161.55	5 220	1.5	8	**2KJ3401 - ■ BB11 - ■ ■ K1**	
	9.6	90	140.86	5 220	1.7	8	**2KJ3401 - ■ BB11 - ■ ■ J1**	
	11	80	126.09	5 220	1.9	8	**2KJ3401 - ■ BB11 - ■ ■ H1**	
	12	71	111.97	5 220	2.1	8	**2KJ3401 - ■ BB11 - ■ ■ G1**	
	13	66	103.36	5 220	2.3	8	**2KJ3401 - ■ BB11 - ■ ■ F1**	
	15	57	89.78	5 220	2.6	8	**2KJ3401 - ■ BB11 - ■ ■ E1**	
	17	50	78.02	5 220	3	8	**2KJ3401 - ■ BB11 - ■ ■ D1**	
	19	45	70.43	5 220	3.3	8	**2KJ3401 - ■ BB11 - ■ ■ C1**	
	20	42	66.29	5 220	3.6	8	**2KJ3401 - ■ BB11 - ■ ■ B1**	
	23	37	57.79	5 220	4.1	8	**2KJ3401 - ■ BB11 - ■ ■ A1**	
	FZ.29-LA63MD4							
	24	36	56.73	5 220	4.2	8	**2KJ3301 - ■ BB11 - ■ ■ C2**	
	27	32	50.32	5 220	4.7	8	**2KJ3301 - ■ BB11 - ■ ■ B2**	
	31	28	43.66	5 220	5.4	8	**2KJ3301 - ■ BB11 - ■ ■ A2**	
	34	25	39.69	5 220	5.9	8	**2KJ3301 - ■ BB11 - ■ ■ X1**	
	40	22	34.04	5 220	6.9	8	**2KJ3301 - ■ BB11 - ■ ■ W1**	
	44	20	30.95	5 220	7.6	8	**2KJ3301 - ■ BB11 - ■ ■ V1**	
	50	17	27.13	5 220	8.7	8	**2KJ3301 - ■ BB11 - ■ ■ U1**	
	56	15	24.22	5 110	9.7	8	**2KJ3301 - ■ BB11 - ■ ■ T1**	
	63	14	21.58	4 920	11	8	**2KJ3301 - ■ BB11 - ■ ■ S1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.09	**FZ.29-LA63MD4**							
	68	13	19.92	4 800	12	8	**2KJ3301 - ■ BB11 - ■ ■ R1**	
	77	11	17.44	4 600	14	8	**2KJ3301 - ■ BB11 - ■ ■ Q1**	
	88	9.7	15.29	4 410	15	8	**2KJ3301 - ■ BB11 - ■ ■ P1**	
	97	8.8	13.88	4 270	17	8	**2KJ3301 - ■ BB11 - ■ ■ N1**	
	103	8.3	13.06	4 190	18	8	**2KJ3301 - ■ BB11 - ■ ■ M1**	
	117	7.3	11.51	4 020	20	8	**2KJ3301 - ■ BB11 - ■ ■ L1**	
	135	6.4	9.99	3 840	21	8	**2KJ3301 - ■ BB11 - ■ ■ K1**	
	139	6.2	9.69	3 790	23	8	**2KJ3301 - ■ BB11 - ■ ■ J1**	
	156	5.5	8.63	3 660	24	8	**2KJ3301 - ■ BB11 - ■ ■ H1**	
	169	5.1	7.97	3 560	24	8	**2KJ3301 - ■ BB11 - ■ ■ G1**	
0.12	**FD.69-LA63MG6**							
	2.4	470	348.4	11 100	1.3	29	**2KJ3404 - ■ BE11 - ■ ■ S1**	**P01**
	2.7	415	309.78	11 200	1.4	29	**2KJ3404 - ■ BE11 - ■ ■ R1**	**P01**
	3.1	365	272	11 400	1.6	29	**2KJ3404 - ■ BE11 - ■ ■ Q1**	**P01**
	3.4	330	247.27	11 400	1.8	29	**2KJ3404 - ■ BE11 - ■ ■ P1**	**P01**
	FD.69-LA63ME4							
	3.9	295	348.4	11 500	2	28	**2KJ3404 - ■ BC11 - ■ ■ S1**	
	FD.49-LA63MG6							
	2.6	445	330.98	8 140	1.1	24	**2KJ3403 - ■ BE11 - ■ ■ S1**	**P01**
	2.9	395	294.29	8 280	1.2	24	**2KJ3403 - ■ BE11 - ■ ■ R1**	**P01**
	3.3	345	258.4	8 430	1.4	24	**2KJ3403 - ■ BE11 - ■ ■ Q1**	**P01**
	3.6	315	234.91	8 510	1.5	24	**2KJ3403 - ■ BE11 - ■ ■ P1**	**P01**
	FD.49-LA63ME4							
	4.1	280	330.98	8 610	1.7	23	**2KJ3403 - ■ BC11 - ■ ■ S1**	
	4.6	250	294.29	8 700	1.9	23	**2KJ3403 - ■ BC11 - ■ ■ R1**	
	FD.39-LA63MG6							
	3.5	325	243.26	5 690	0.88	15	**2KJ3402 - ■ BE11 - ■ ■ Q1**	**P01**
	4	285	211.06	5 830	1	15	**2KJ3402 - ■ BE11 - ■ ■ P1**	**P01**
	4.4	255	191.87	5 950	1.1	15	**2KJ3402 - ■ BE11 - ■ ■ N1**	**P01**
	FD.39-LA63ME4							
	4.9	230	274.26	6 040	1.2	15	**2KJ3402 - ■ BC11 - ■ ■ R1**	
	5.5	205	243.26	6 130	1.4	15	**2KJ3402 - ■ BC11 - ■ ■ Q1**	
	6.4	179	211.06	6 230	1.6	15	**2KJ3402 - ■ BC11 - ■ ■ P1**	
	7	163	191.87	6 290	1.8	15	**2KJ3402 - ■ BC11 - ■ ■ N1**	
	8.2	140	164.56	6 370	2.1	15	**2KJ3402 - ■ BC11 - ■ ■ M1**	
	FD.29-LA63ME4							
	6.5	177	208.83	5 220	0.85	8	**2KJ3401 - ■ BC11 - ■ ■ M1**	
	7.6	151	177.71	5 220	0.99	8	**2KJ3401 - ■ BC11 - ■ ■ L1**	
	8.4	137	161.55	5 220	1.1	8	**2KJ3401 - ■ BC11 - ■ ■ K1**	
	9.6	120	140.86	5 220	1.3	8	**2KJ3401 - ■ BC11 - ■ ■ J1**	
	11	107	126.09	5 220	1.4	8	**2KJ3401 - ■ BC11 - ■ ■ H1**	
	12	95	111.97	5 220	1.6	8	**2KJ3401 - ■ BC11 - ■ ■ G1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.12	**FD.29-LA63ME4**							
	13	88	103.36	5 220	1.7	8	**2KJ3401 - ■ BC11 - ■ ■ F1**	
	15	76	89.78	5 220	2	8	**2KJ3401 - ■ BC11 - ■ ■ E1**	
	17	66	78.02	5 220	2.3	8	**2KJ3401 - ■ BC11 - ■ ■ D1**	
	19	60	70.43	5 220	2.5	8	**2KJ3401 - ■ BC11 - ■ ■ C1**	
	20	56	66.29	5 220	2.7	8	**2KJ3401 - ■ BC11 - ■ ■ B1**	
	23	49	57.79	5 220	3.1	8	**2KJ3401 - ■ BC11 - ■ ■ A1**	
	FZ.29-LA63ME4							
	24	48	56.73	5 220	3.1	8	**2KJ3301 - ■ BC11 - ■ ■ C2**	
	27	43	50.32	5 220	3.5	8	**2KJ3301 - ■ BC11 - ■ ■ B2**	
	31	37	43.66	5 220	4	8	**2KJ3301 - ■ BC11 - ■ ■ A2**	
	34	34	39.69	5 220	4.5	8	**2KJ3301 - ■ BC11 - ■ ■ X1**	
	40	29	34.04	5 220	5.2	8	**2KJ3301 - ■ BC11 - ■ ■ W1**	
	44	26	30.95	5 220	5.7	8	**2KJ3301 - ■ BC11 - ■ ■ V1**	
	50	23	27.13	5 220	6.5	8	**2KJ3301 - ■ BC11 - ■ ■ U1**	
	56	21	24.22	5 060	7.3	8	**2KJ3301 - ■ BC11 - ■ ■ T1**	
	63	18	21.58	4 890	8.2	8	**2KJ3301 - ■ BC11 - ■ ■ S1**	
	68	17	19.92	4 760	8.9	8	**2KJ3301 - ■ BC11 - ■ ■ R1**	
	77	15	17.44	4 570	10	8	**2KJ3301 - ■ BC11 - ■ ■ Q1**	
	88	13	15.29	4 380	12	8	**2KJ3301 - ■ BC11 - ■ ■ P1**	
	97	12	13.88	4 250	13	8	**2KJ3301 - ■ BC11 - ■ ■ N1**	
	103	11	13.06	4 170	14	8	**2KJ3301 - ■ BC11 - ■ ■ M1**	
	117	9.8	11.51	4 000	15	8	**2KJ3301 - ■ BC11 - ■ ■ L1**	
	135	8.5	9.99	3 820	16	8	**2KJ3301 - ■ BC11 - ■ ■ K1**	
	139	8.2	9.69	3 780	17	8	**2KJ3301 - ■ BC11 - ■ ■ J1**	
	156	7.3	8.63	3 640	18	8	**2KJ3301 - ■ BC11 - ■ ■ H1**	
	169	6.8	7.97	3 550	18	8	**2KJ3301 - ■ BC11 - ■ ■ G1**	
	193	5.9	6.98	3 400	21	8	**2KJ3301 - ■ BC11 - ■ ■ F1**	
	221	5.2	6.12	3 260	22	8	**2KJ3301 - ■ BC11 - ■ ■ E1**	
	243	4.7	5.55	3 160	23	8	**2KJ3301 - ■ BC11 - ■ ■ D1**	
	259	4.4	5.22	3 090	24	8	**2KJ3301 - ■ BC11 - ■ ■ C1**	
	293	3.9	4.6	2 970	25	8	**2KJ3301 - ■ BC11 - ■ ■ B1**	
0.18	**FD.79-LA71MG6**							
	2.4	720	357	12 500	1.4	37	**2KJ3405 - ■ CD11 - ■ ■ S1**	**P01**
	2.6	655	324.62	12 500	1.5	37	**2KJ3405 - ■ CD11 - ■ ■ R1**	**P01**
	3.1	555	276.09	12 500	1.8	37	**2KJ3405 - ■ CD11 - ■ ■ Q1**	**P01**
	3.4	505	250.99	12 500	2	37	**2KJ3405 - ■ CD11 - ■ ■ P1**	**P01**
	FD.69-LA71MG6							
	2.4	705	348.4	10 600	0.85	30	**2KJ3404 - ■ CD11 - ■ ■ S1**	**P01**
	2.7	625	309.78	10 800	0.96	30	**2KJ3404 - ■ CD11 - ■ ■ R1**	**P01**
	3.1	550	272	10 900	1.1	30	**2KJ3404 - ■ CD11 - ■ ■ Q1**	**P01**
	3.4	500	247.27	11 000	1.2	30	**2KJ3404 - ■ CD11 - ■ ■ P1**	**P01**

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.18	**FD.69-LA63MF4**							
	3.9	440	348.4	11 200	1.4	29	**2KJ3404 - ■ BD11 - ■ ■ S1**	
	4.4	390	309.78	11 300	1.5	29	**2KJ3404 - ■ BD11 - ■ ■ R1**	
	5	345	272	11 400	1.7	29	**2KJ3404 - ■ BD11 - ■ ■ Q1**	
	5.5	315	247.27	11 500	1.9	29	**2KJ3404 - ■ BD11 - ■ ■ P1**	
	FD.49-LA71MG6							
	2.9	595	294.29	7 200	0.81	25	**2KJ3403 - ■ CD11 - ■ ■ R1**	**P01**
	3.3	520	258.4	7 700	0.92	25	**2KJ3403 - ■ CD11 - ■ ■ Q1**	**P01**
	3.6	475	234.91	7 990	1	25	**2KJ3403 - ■ CD11 - ■ ■ P1**	**P01**
	FD.49-LA63MF4							
	4.1	420	330.98	8 210	1.1	24	**2KJ3403 - ■ BD11 - ■ ■ S1**	
	4.6	375	294.29	8 340	1.3	24	**2KJ3403 - ■ BD11 - ■ ■ R1**	
	5.2	325	258.4	8 480	1.5	24	**2KJ3403 - ■ BD11 - ■ ■ Q1**	
	5.7	295	234.91	8 570	1.6	24	**2KJ3403 - ■ BD11 - ■ ■ P1**	
	6.7	255	200.98	8 690	1.9	24	**2KJ3403 - ■ BD11 - ■ ■ N1**	
	7.4	230	182.71	8 760	2.1	24	**2KJ3403 - ■ BD11 - ■ ■ M1**	
	FD.39-LA63MF4							
	4.9	345	274.26	5 610	0.83	15	**2KJ3402 - ■ BD11 - ■ ■ R1**	
	5.5	310	243.26	5 740	0.94	15	**2KJ3402 - ■ BD11 - ■ ■ Q1**	
	6.4	265	211.06	5 910	1.1	15	**2KJ3402 - ■ BD11 - ■ ■ P1**	
	7	240	191.87	6 000	1.2	15	**2KJ3402 - ■ BD11 - ■ ■ N1**	
	8.2	210	164.56	6 110	1.4	15	**2KJ3402 - ■ BD11 - ■ ■ M1**	
	9	190	149.6	6 190	1.5	15	**2KJ3402 - ■ BD11 - ■ ■ L1**	
	10	167	131.17	6 270	1.7	15	**2KJ3402 - ■ BD11 - ■ ■ K1**	
	12	149	117.08	6 340	1.9	15	**2KJ3402 - ■ BD11 - ■ ■ J1**	
	13	133	104.34	6 400	2.2	15	**2KJ3402 - ■ BD11 - ■ ■ H1**	
	FD.29-LA63MF4							
	9.6	179	140.86	5 220	0.84	8	**2KJ3401 - ■ BD11 - ■ ■ J1**	
	11	161	126.09	5 220	0.93	8	**2KJ3401 - ■ BD11 - ■ ■ H1**	
	12	143	111.97	5 220	1.1	8	**2KJ3401 - ■ BD11 - ■ ■ G1**	
	13	132	103.36	5 220	1.1	8	**2KJ3401 - ■ BD11 - ■ ■ F1**	
	15	114	89.78	5 220	1.3	8	**2KJ3401 - ■ BD11 - ■ ■ E1**	
	17	99	78.02	5 220	1.5	8	**2KJ3401 - ■ BD11 - ■ ■ D1**	
	19	90	70.43	5 220	1.7	8	**2KJ3401 - ■ BD11 - ■ ■ C1**	
	20	84	66.29	5 220	1.8	8	**2KJ3401 - ■ BD11 - ■ ■ B1**	
	23	74	57.79	5 220	2	8	**2KJ3401 - ■ BD11 - ■ ■ A1**	
	FZ.29-LA63MF4							
	24	72	56.73	5 220	2.1	8	**2KJ3301 - ■ BD11 - ■ ■ C2**	
	27	64	50.32	5 220	2.3	8	**2KJ3301 - ■ BD11 - ■ ■ B2**	
	31	56	43.66	5 220	2.7	8	**2KJ3301 - ■ BD11 - ■ ■ A2**	
	34	50	39.69	5 220	3	8	**2KJ3301 - ■ BD11 - ■ ■ X1**	
	40	43	34.04	5 220	3.5	8	**2KJ3301 - ■ BD11 - ■ ■ W1**	
	44	39	30.95	5 220	3.8	8	**2KJ3301 - ■ BD11 - ■ ■ V1**	
	50	34	27.13	5 150	4.3	8	**2KJ3301 - ■ BD11 - ■ ■ U1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.18	**FZ.29-LA63MF4**							
	56	31	24.22	4 980	4.9	8	**2KJ3301 - ■ BD11 - ■ ■ T1**	
	63	28	21.58	4 800	5.5	8	**2KJ3301 - ■ BD11 - ■ ■ S1**	
	68	25	19.92	4 700	5.9	8	**2KJ3301 - ■ BD11 - ■ ■ R1**	
	77	22	17.44	4 510	6.8	8	**2KJ3301 - ■ BD11 - ■ ■ Q1**	
	88	20	15.29	4 320	7.7	8	**2KJ3301 - ■ BD11 - ■ ■ P1**	
	97	18	13.88	4 200	8.5	8	**2KJ3301 - ■ BD11 - ■ ■ N1**	
	103	17	13.06	4 120	9	8	**2KJ3301 - ■ BD11 - ■ ■ M1**	
	117	15	11.51	3 960	9.8	8	**2KJ3301 - ■ BD11 - ■ ■ L1**	
	135	13	9.99	3 790	11	8	**2KJ3301 - ■ BD11 - ■ ■ K1**	
	139	12	9.69	3 740	12	8	**2KJ3301 - ■ BD11 - ■ ■ J1**	
	156	11	8.63	3 600	12	8	**2KJ3301 - ■ BD11 - ■ ■ H1**	
	169	10	7.97	3 510	12	8	**2KJ3301 - ■ BD11 - ■ ■ G1**	
	193	8.9	6.98	3 370	14	8	**2KJ3301 - ■ BD11 - ■ ■ F1**	
	221	7.8	6.12	3 230	15	8	**2KJ3301 - ■ BD11 - ■ ■ E1**	
	243	7.1	5.55	3 130	15	8	**2KJ3301 - ■ BD11 - ■ ■ D1**	
	259	6.6	5.22	3 070	16	8	**2KJ3301 - ■ BD11 - ■ ■ C1**	
	293	5.9	4.6	2 950	17	8	**2KJ3301 - ■ BD11 - ■ ■ B1**	
	338	5.1	4	2 820	18	8	**2KJ3301 - ■ BD11 - ■ ■ A1**	
	FZ.29-LA63ME2							
	162	11	17.44	3 580	14	8	**2KJ3301 - ■ BC11 - ■ ■ Q1**	**P00**
	184	9.3	15.29	3 430	16	8	**2KJ3301 - ■ BC11 - ■ ■ P1**	**P00**
	203	8.5	13.88	3 330	18	8	**2KJ3301 - ■ BC11 - ■ ■ N1**	**P00**
	216	8	13.06	3 260	19	8	**2KJ3301 - ■ BC11 - ■ ■ M1**	**P00**
	245	7	11.51	3 140	20	8	**2KJ3301 - ■ BC11 - ■ ■ L1**	**P00**
	282	6.1	9.99	3 000	22	8	**2KJ3301 - ■ BC11 - ■ ■ K1**	**P00**
	291	5.9	9.69	2 960	24	8	**2KJ3301 - ■ BC11 - ■ ■ J1**	**P00**
	327	5.3	8.63	2 850	25	8	**2KJ3301 - ■ BC11 - ■ ■ H1**	**P00**
	354	4.9	7.97	2 780	25	8	**2KJ3301 - ■ BC11 - ■ ■ G1**	**P00**
0.25	**FD.79-LA71MH6**							
	2.4	990	357	12 500	1	38	**2KJ3405 - ■ CE11 - ■ ■ S1**	**P01**
	2.6	900	324.62	12 500	1.1	38	**2KJ3405 - ■ CE11 - ■ ■ R1**	**P01**
	3.1	765	276.09	12 500	1.3	38	**2KJ3405 - ■ CE11 - ■ ■ Q1**	**P01**
	3.4	695	250.99	12 500	1.4	38	**2KJ3405 - ■ CE11 - ■ ■ P1**	**P01**
	FD.79-LA71MG4							
	3.8	630	357	12 500	1.6	37	**2KJ3405 - ■ CD11 - ■ ■ S1**	
	4.2	570	324.62	12 500	1.7	37	**2KJ3405 - ■ CD11 - ■ ■ R1**	
	4.9	485	276.09	12 500	2	37	**2KJ3405 - ■ CD11 - ■ ■ Q1**	
	FD.69-LA71MH6							
	3.5	685	247.27	10 600	0.87	31	**2KJ3404 - ■ CE11 - ■ ■ P1**	**P01**
	FD.69-LA71MG4							
	3.9	615	348.4	10 800	0.97	30	**2KJ3404 - ■ CD11 - ■ ■ S1**	
	4.4	545	309.78	10 900	1.1	30	**2KJ3404 - ■ CD11 - ■ ■ R1**	
	5	480	272	11 100	1.2	30	**2KJ3404 - ■ CD11 - ■ ■ Q1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Geared motors up to 15 kW

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.25	**FD.69-LA71MG4**							
	5.5	435	247.27	11 200	1.4	30	**2KJ3404 - ■ CD11 - ■ ■ P1**	
	6.4	370	211.56	11 400	1.6	30	**2KJ3404 - ■ CD11 - ■ ■ N1**	
	7	340	192.32	11 400	1.8	30	**2KJ3404 - ■ CD11 - ■ ■ M1**	
	7.9	300	170	11 500	2	30	**2KJ3404 - ■ CD11 - ■ ■ L1**	
	FD.49-LA71MG4							
	4.1	585	330.98	7 270	0.82	25	**2KJ3403 - ■ CD11 - ■ ■ S1**	
	4.6	520	294.29	7 700	0.92	25	**2KJ3403 - ■ CD11 - ■ ■ R1**	
	5.2	455	258.4	8 110	1.1	25	**2KJ3403 - ■ CD11 - ■ ■ Q1**	
	5.7	415	234.91	8 220	1.2	25	**2KJ3403 - ■ CD11 - ■ ■ P1**	
	6.7	355	200.98	8 400	1.4	25	**2KJ3403 - ■ CD11 - ■ ■ N1**	
	7.4	320	182.71	8 500	1.5	25	**2KJ3403 - ■ CD11 - ■ ■ M1**	
	8.4	285	161.5	8 600	1.7	25	**2KJ3403 - ■ CD11 - ■ ■ L1**	
	9.2	260	146.82	8 670	1.8	25	**2KJ3403 - ■ CD11 - ■ ■ K1**	
	10	225	128.6	8 770	2.1	25	**2KJ3403 - ■ CD11 - ■ ■ J1**	
	FD.39-LA71MG4							
	7	335	191.87	5 650	0.85	16	**2KJ3402 - ■ CD11 - ■ ■ N1**	
	8.2	290	164.56	5 820	1	16	**2KJ3402 - ■ CD11 - ■ ■ M1**	
	9	265	149.6	5 910	1.1	16	**2KJ3402 - ■ CD11 - ■ ■ L1**	
	10	230	131.17	6 040	1.3	16	**2KJ3402 - ■ CD11 - ■ ■ K1**	
	12	205	117.08	6 130	1.4	16	**2KJ3402 - ■ CD11 - ■ ■ J1**	
	13	185	104.34	6 210	1.6	16	**2KJ3402 - ■ CD11 - ■ ■ H1**	
	14	170	96.31	6 260	1.7	16	**2KJ3402 - ■ CD11 - ■ ■ G1**	
	16	149	84.32	6 340	1.9	16	**2KJ3402 - ■ CD11 - ■ ■ F1**	
	18	131	73.93	6 410	2.2	16	**2KJ3402 - ■ CD11 - ■ ■ E1**	
	FZ.39-LA71MG4							
	23	103	57.99	6 510	2.2	16	**2KJ3302 - ■ CD11 - ■ ■ A2**	
	FD.29-LA71MG4							
	13	183	103.36	5 220	0.82	9	**2KJ3401 - ■ CD11 - ■ ■ F1**	
	15	159	89.78	5 220	0.94	9	**2KJ3401 - ■ CD11 - ■ ■ E1**	
	17	138	78.02	5 220	1.1	9	**2KJ3401 - ■ CD11 - ■ ■ D1**	
	19	125	70.43	5 220	1.2	9	**2KJ3401 - ■ CD11 - ■ ■ C1**	
	20	117	66.29	5 220	1.3	9	**2KJ3401 - ■ CD11 - ■ ■ B1**	
	23	102	57.79	5 220	1.5	9	**2KJ3401 - ■ CD11 - ■ ■ A1**	
	FZ.29-LA71MG4							
	24	100	56.73	5 220	1.5	9	**2KJ3301 - ■ CD11 - ■ ■ C2**	
	27	89	50.32	5 220	1.7	9	**2KJ3301 - ■ CD11 - ■ ■ B2**	
	31	77	43.66	5 220	1.9	9	**2KJ3301 - ■ CD11 - ■ ■ A2**	
	34	70	39.69	5 220	2.1	9	**2KJ3301 - ■ CD11 - ■ ■ X1**	
	40	60	34.04	5 220	2.5	9	**2KJ3301 - ■ CD11 - ■ ■ W1**	
	44	55	30.95	5 220	2.7	9	**2KJ3301 - ■ CD11 - ■ ■ V1**	
	50	48	27.13	5 040	3.1	9	**2KJ3301 - ■ CD11 - ■ ■ U1**	
	56	43	24.22	4 880	3.5	9	**2KJ3301 - ■ CD11 - ■ ■ T1**	
	63	38	21.58	4 720	3.9	9	**2KJ3301 - ■ CD11 - ■ ■ S1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.25	**FZ.29-LA71MG4**							
	68	35	19.92	4 610	4.3	9	**2KJ3301 - ■ CD11 - ■ ■ R1**	
	77	31	17.44	4 430	4.9	9	**2KJ3301 - ■ CD11 - ■ ■ Q1**	
	88	27	15.29	4 270	5.5	9	**2KJ3301 - ■ CD11 - ■ ■ P1**	
	97	24	13.88	4 150	6.1	9	**2KJ3301 - ■ CD11 - ■ ■ N1**	
	103	23	13.06	4 070	6.5	9	**2KJ3301 - ■ CD11 - ■ ■ M1**	
	117	20	11.51	3 920	7	9	**2KJ3301 - ■ CD11 - ■ ■ L1**	
	135	18	9.99	3 740	7.7	9	**2KJ3301 - ■ CD11 - ■ ■ K1**	
	139	17	9.69	3 690	8.3	9	**2KJ3301 - ■ CD11 - ■ ■ J1**	
	156	15	8.63	3 560	8.5	9	**2KJ3301 - ■ CD11 - ■ ■ H1**	
	169	14	7.97	3 480	8.5	9	**2KJ3301 - ■ CD11 - ■ ■ G1**	
	193	12	6.98	3 340	10	9	**2KJ3301 - ■ CD11 - ■ ■ F1**	
	221	11	6.12	3 200	10	9	**2KJ3301 - ■ CD11 - ■ ■ E1**	
	243	9.8	5.55	3 110	11	9	**2KJ3301 - ■ CD11 - ■ ■ D1**	
	259	9.2	5.22	3 050	12	9	**2KJ3301 - ■ CD11 - ■ ■ C1**	
	293	8.1	4.6	2 930	12	9	**2KJ3301 - ■ CD11 - ■ ■ B1**	
	338	7.1	4	2 800	13	9	**2KJ3301 - ■ CD11 - ■ ■ A1**	
	FZ.29-LA63MF2							
	162	15	17.44	3 540	10	8	**2KJ3301 - ■ BD11 - ■ ■ Q1**	**P00**
	185	13	15.29	3 400	12	8	**2KJ3301 - ■ BD11 - ■ ■ P1**	**P00**
	204	12	13.88	3 290	13	8	**2KJ3301 - ■ BD11 - ■ ■ N1**	**P00**
	217	11	13.06	3 240	14	8	**2KJ3301 - ■ BD11 - ■ ■ M1**	**P00**
	246	9.7	11.51	3 110	15	8	**2KJ3301 - ■ BD11 - ■ ■ L1**	**P00**
0.37	**FD.89-LE80MD6E**							
	2.7	1 300	335.3	14 900	1.4	74	**2KJ3406 - ■ DC22 - ■ ■ S1**	**P01**
	3	1 180	304.82	14 900	1.6	74	**2KJ3406 - ■ DC22 - ■ ■ R1**	**P01**
	3.3	1 060	273.41	14 900	1.7	74	**2KJ3406 - ■ DC22 - ■ ■ Q1**	**P01**
	3.7	955	245.82	14 900	1.9	74	**2KJ3406 - ■ DC22 - ■ ■ P1**	**P01**
	FD.79-LE80MD6E							
	3.3	1 070	276.09	12 500	0.93	42	**2KJ3405 - ■ DC22 - ■ ■ Q1**	**P01**
	3.6	975	250.99	12 500	1	42	**2KJ3405 - ■ DC22 - ■ ■ P1**	**P01**
	FD.79-LA71MH4							
	3.8	920	357	12 500	1.1	38	**2KJ3405 - ■ CE11 - ■ ■ S1**	
	4.2	835	324.62	12 500	1.2	38	**2KJ3405 - ■ CE11 - ■ ■ R1**	
	5	710	276.09	12 500	1.4	38	**2KJ3405 - ■ CE11 - ■ ■ Q1**	
	5.5	645	250.99	12 500	1.5	38	**2KJ3405 - ■ CE11 - ■ ■ P1**	
	6.1	575	223.94	12 500	1.7	38	**2KJ3405 - ■ CE11 - ■ ■ N1**	
	6.8	515	200.8	12 500	1.9	38	**2KJ3405 - ■ CE11 - ■ ■ M1**	
	7.6	465	180.99	12 500	2.1	38	**2KJ3405 - ■ CE11 - ■ ■ L1**	
	FD.69-LA71MH4							
	5	700	272	10 600	0.86	31	**2KJ3404 - ■ CE11 - ■ ■ Q1**	
	5.5	635	247.27	10 700	0.94	31	**2KJ3404 - ■ CE11 - ■ ■ P1**	
	6.5	545	211.56	10 900	1.1	31	**2KJ3404 - ■ CE11 - ■ ■ N1**	
	7.1	495	192.32	11 100	1.2	31	**2KJ3404 - ■ CE11 - ■ ■ M1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**FD.69-LA71MH4**							
	8.1	435	170	11 200	1.4	31	**2KJ3404 - ■ CE11 - ■ ■ L1**	
	8.9	395	154.55	11 300	1.5	31	**2KJ3404 - ■ CE11 - ■ ■ K1**	
	10	345	135.37	11 400	1.7	31	**2KJ3404 - ■ CE11 - ■ ■ J1**	
	11	320	124.96	11 500	1.9	31	**2KJ3404 - ■ CE11 - ■ ■ H1**	
	12	285	110.63	11 600	2.1	31	**2KJ3404 - ■ CE11 - ■ ■ G1**	
	FD.49-LA71MH4							
	6.8	515	200.98	7 720	0.93	27	**2KJ3403 - ■ CE11 - ■ ■ N1**	
	7.5	470	182.71	8 020	1	27	**2KJ3403 - ■ CE11 - ■ ■ M1**	
	8.5	415	161.5	8 220	1.2	27	**2KJ3403 - ■ CE11 - ■ ■ L1**	
	9.3	375	146.82	8 340	1.3	27	**2KJ3403 - ■ CE11 - ■ ■ K1**	
	11	330	128.6	8 470	1.4	27	**2KJ3403 - ■ CE11 - ■ ■ J1**	
	12	305	118.71	8 540	1.6	27	**2KJ3403 - ■ CE11 - ■ ■ H1**	
	13	270	105.1	8 640	1.8	27	**2KJ3403 - ■ CE11 - ■ ■ G1**	
	16	225	87.48	8 770	2.1	27	**2KJ3403 - ■ CE11 - ■ ■ F1**	
	17	210	82.33	8 820	2.3	27	**2KJ3403 - ■ CE11 - ■ ■ E1**	
	FD.39-LA71MH4							
	10	335	131.17	5 650	0.86	17	**2KJ3402 - ■ CE11 - ■ ■ K1**	
	12	300	117.08	5 780	0.96	17	**2KJ3402 - ■ CE11 - ■ ■ J1**	
	13	265	104.34	5 910	1.1	17	**2KJ3402 - ■ CE11 - ■ ■ H1**	
	14	245	96.31	5 980	1.2	17	**2KJ3402 - ■ CE11 - ■ ■ G1**	
	16	215	84.32	6 100	1.3	17	**2KJ3402 - ■ CE11 - ■ ■ F1**	
	19	191	73.93	6 180	1.5	17	**2KJ3402 - ■ CE11 - ■ ■ E1**	
	20	173	67.07	6 250	1.7	17	**2KJ3402 - ■ CE11 - ■ ■ D1**	
	22	163	63.13	6 290	1.8	17	**2KJ3402 - ■ CE11 - ■ ■ C1**	
	25	144	55.65	6 360	2	17	**2KJ3402 - ■ CE11 - ■ ■ B1**	
	28	125	48.29	6 430	2.3	17	**2KJ3402 - ■ CE11 - ■ ■ A1**	
	FZ.39-LA71MH4							
	21	168	65.21	6 270	1.7	17	**2KJ3302 - ■ CE11 - ■ ■ B2**	
	24	150	57.99	6 340	1.5	17	**2KJ3302 - ■ CE11 - ■ ■ A2**	
	27	131	50.91	6 410	1.8	17	**2KJ3302 - ■ CE11 - ■ ■ X1**	
	30	119	46.29	6 450	2.1	17	**2KJ3302 - ■ CE11 - ■ ■ W1**	
	FD.29-LA71MH4							
	19	182	70.43	5 220	0.83	11	**2KJ3401 - ■ CE11 - ■ ■ C1**	
	21	171	66.29	5 220	0.88	11	**2KJ3401 - ■ CE11 - ■ ■ B1**	
	24	149	57.79	5 220	1	11	**2KJ3401 - ■ CE11 - ■ ■ A1**	
	FZ.29-LA71MH4							
	24	146	56.73	5 220	1	11	**2KJ3301 - ■ CE11 - ■ ■ C2**	
	27	130	50.32	5 220	1.2	11	**2KJ3301 - ■ CE11 - ■ ■ B2**	
	31	113	43.66	5 220	1.3	11	**2KJ3301 - ■ CE11 - ■ ■ A2**	
	35	102	39.69	5 220	1.5	11	**2KJ3301 - ■ CE11 - ■ ■ X1**	
	40	88	34.04	5 100	1.7	11	**2KJ3301 - ■ CE11 - ■ ■ W1**	
	44	80	30.95	4 990	1.9	11	**2KJ3301 - ■ CE11 - ■ ■ V1**	
	50	70	27.13	4 830	2.1	11	**2KJ3301 - ■ CE11 - ■ ■ U1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**FZ.29-LA71MH4**							
	57	62	24.22	4 690	2.4	11	**2KJ3301 - ■ CE11 - ■ ■ T1**	
	63	56	21.58	4 550	2.7	11	**2KJ3301 - ■ CE11 - ■ ■ S1**	
	69	51	19.92	4 460	2.9	11	**2KJ3301 - ■ CE11 - ■ ■ R1**	
	79	45	17.44	4 290	3.3	11	**2KJ3301 - ■ CE11 - ■ ■ Q1**	
	90	39	15.29	4 140	3.8	11	**2KJ3301 - ■ CE11 - ■ ■ P1**	
	99	36	13.88	4 030	4.2	11	**2KJ3301 - ■ CE11 - ■ ■ N1**	
	105	34	13.06	3 960	4.5	11	**2KJ3301 - ■ CE11 - ■ ■ M1**	
	119	30	11.51	3 810	4.8	11	**2KJ3301 - ■ CE11 - ■ ■ L1**	
	137	26	9.99	3 660	5.3	11	**2KJ3301 - ■ CE11 - ■ ■ K1**	
	141	25	9.69	3 590	5.7	11	**2KJ3301 - ■ CE11 - ■ ■ J1**	
	159	22	8.63	3 480	5.8	11	**2KJ3301 - ■ CE11 - ■ ■ H1**	
	172	21	7.97	3 390	5.8	11	**2KJ3301 - ■ CE11 - ■ ■ G1**	
	196	18	6.98	3 260	6.8	11	**2KJ3301 - ■ CE11 - ■ ■ F1**	
	224	16	6.12	3 140	7.2	11	**2KJ3301 - ■ CE11 - ■ ■ E1**	
	247	14	5.55	3 050	7.5	11	**2KJ3301 - ■ CE11 - ■ ■ D1**	
	262	14	5.22	2 990	7.9	11	**2KJ3301 - ■ CE11 - ■ ■ C1**	
	298	12	4.6	2 880	8.2	11	**2KJ3301 - ■ CE11 - ■ ■ B1**	
	342	10	4	2 760	8.8	11	**2KJ3301 - ■ CE11 - ■ ■ A1**	
	FZ.29-LA71MG2							
	157	22	17.44	3 520	6.7	9	**2KJ3301 - ■ CD11 - ■ ■ Q1**	**P00**
	179	20	15.29	3 380	7.6	9	**2KJ3301 - ■ CD11 - ■ ■ P1**	**P00**
	197	18	13.88	3 280	8.4	9	**2KJ3301 - ■ CD11 - ■ ■ N1**	**P00**
	210	17	13.06	3 220	8.9	9	**2KJ3301 - ■ CD11 - ■ ■ M1**	**P00**
	238	15	11.51	3 100	9.6	9	**2KJ3301 - ■ CD11 - ■ ■ L1**	**P00**
	274	13	9.99	2 970	11	9	**2KJ3301 - ■ CD11 - ■ ■ K1**	**P00**
	283	12	9.69	2 930	11	9	**2KJ3301 - ■ CD11 - ■ ■ J1**	**P00**
	317	11	8.63	2 820	12	9	**2KJ3301 - ■ CD11 - ■ ■ H1**	**P00**
	344	10	7.97	2 750	12	9	**2KJ3301 - ■ CD11 - ■ ■ G1**	**P00**
	393	9	6.98	2 640	14	9	**2KJ3301 - ■ CD11 - ■ ■ F1**	**P00**
	448	7.9	6.12	2 530	14	9	**2KJ3301 - ■ CD11 - ■ ■ E1**	**P00**
	494	7.2	5.55	2 460	15	9	**2KJ3301 - ■ CD11 - ■ ■ D1**	**P00**
0.55	**FD.89-LE80MH6E**							
	2.7	1 960	335.3	14 900	0.94	75	**2KJ3406 - ■ DE22 - ■ ■ S1**	**P01**
	2.9	1 780	304.82	14 900	1	75	**2KJ3406 - ■ DE22 - ■ ■ R1**	**P01**
	3.3	1 600	273.41	14 900	1.2	75	**2KJ3406 - ■ DE22 - ■ ■ Q1**	**P01**
	3.6	1 440	245.82	14 900	1.3	75	**2KJ3406 - ■ DE22 - ■ ■ P1**	**P01**
	4	1 300	222.33	14 900	1.4	75	**2KJ3406 - ■ DE22 - ■ ■ N1**	**P01**
	FD.89-LE80MD4E							
	4.3	1 220	335.3	14 900	1.5	74	**2KJ3406 - ■ DC22 - ■ ■ S1**	
	4.7	1 110	304.82	14 900	1.7	74	**2KJ3406 - ■ DC22 - ■ ■ R1**	
	5.3	995	273.41	14 900	1.9	74	**2KJ3406 - ■ DC22 - ■ ■ Q1**	
	5.9	895	245.82	14 900	2.1	74	**2KJ3406 - ■ DC22 - ■ ■ P1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Geared motors up to 15 kW

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.55	**FD.79-LE80MD4E**							
	4.4	1 180	324.62	12 500	0.84	42	**2KJ3405 - ■ DC22 - ■ ■ R1**	
	5.2	1 000	276.09	12 500	0.99	42	**2KJ3405 - ■ DC22 - ■ ■ Q1**	
	5.7	915	250.99	12 500	1.1	42	**2KJ3405 - ■ DC22 - ■ ■ P1**	
	6.4	815	223.94	12 500	1.2	42	**2KJ3405 - ■ DC22 - ■ ■ N1**	
	7.2	730	200.8	12 500	1.4	42	**2KJ3405 - ■ DC22 - ■ ■ M1**	
	8	660	180.99	12 500	1.5	42	**2KJ3405 - ■ DC22 - ■ ■ L1**	
	8.6	605	167.07	12 500	1.6	42	**2KJ3405 - ■ DC22 - ■ ■ K1**	
	9.4	555	152.51	12 500	1.8	42	**2KJ3405 - ■ DC22 - ■ ■ J1**	
	11	460	126.54	12 500	2.2	42	**2KJ3405 - ■ DC22 - ■ ■ H1**	
	FD.69-LE80MD4E							
	7.5	700	192.32	10 600	0.86	34	**2KJ3404 - ■ DC22 - ■ ■ M1**	
	8.5	620	170	10 800	0.97	34	**2KJ3404 - ■ DC22 - ■ ■ L1**	
	9.3	560	154.55	10 900	1.1	34	**2KJ3404 - ■ DC22 - ■ ■ K1**	
	11	490	135.37	11 100	1.2	34	**2KJ3404 - ■ DC22 - ■ ■ J1**	
	12	455	124.96	11 200	1.3	34	**2KJ3404 - ■ DC22 - ■ ■ H1**	
	13	400	110.63	11 300	1.5	34	**2KJ3404 - ■ DC22 - ■ ■ G1**	
	16	335	92.08	11 400	1.8	34	**2KJ3404 - ■ DC22 - ■ ■ F1**	
	17	315	86.67	11 500	1.9	34	**2KJ3404 - ■ DC22 - ■ ■ E1**	
	19	280	77.65	11 600	2.1	34	**2KJ3404 - ■ DC22 - ■ ■ D1**	
	FD.49-LE80MD4E							
	8.9	585	161.5	7 270	0.81	29	**2KJ3403 - ■ DC22 - ■ ■ L1**	
	9.8	535	146.82	7 600	0.9	29	**2KJ3403 - ■ DC22 - ■ ■ K1**	
	11	465	128.6	8 060	1	29	**2KJ3403 - ■ DC22 - ■ ■ J1**	
	12	430	118.71	8 180	1.1	29	**2KJ3403 - ■ DC22 - ■ ■ H1**	
	14	380	105.1	8 330	1.3	29	**2KJ3403 - ■ DC22 - ■ ■ G1**	
	16	315	87.48	8 510	1.5	29	**2KJ3403 - ■ DC22 - ■ ■ F1**	
	17	300	82.33	8 440	1.6	29	**2KJ3403 - ■ DC22 - ■ ■ E1**	
	20	265	73.77	8 300	1.8	29	**2KJ3403 - ■ DC22 - ■ ■ D1**	
	23	225	62.81	8 040	2.1	29	**2KJ3403 - ■ DC22 - ■ ■ C1**	
	27	196	53.83	7 750	2.4	29	**2KJ3403 - ■ DC22 - ■ ■ B1**	
	FZ.49-LE80MD4E							
	23	220	61.43	8 000	2.1	28	**2KJ3303 - ■ DC22 - ■ ■ X1**	
	26	200	55.85	7 830	2.4	28	**2KJ3303 - ■ DC22 - ■ ■ W1**	
	FD.39-LE80MD4E							
	15	350	96.31	5 590	0.83	21	**2KJ3402 - ■ DC22 - ■ ■ G1**	
	17	305	84.32	5 760	0.94	21	**2KJ3402 - ■ DC22 - ■ ■ F1**	
	19	270	73.93	5 890	1.1	21	**2KJ3402 - ■ DC22 - ■ ■ E1**	
	21	245	67.07	5 980	1.2	21	**2KJ3402 - ■ DC22 - ■ ■ D1**	
	23	230	63.13	6 040	1.3	21	**2KJ3402 - ■ DC22 - ■ ■ C1**	
	26	200	55.65	6 150	1.4	21	**2KJ3402 - ■ DC22 - ■ ■ B1**	
	30	176	48.29	6 240	1.6	21	**2KJ3402 - ■ DC22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.55	**FZ.39-LE80MD4E**							
	25	210	57.99	6 110	1.1	21	**2KJ3302 - ■ DC22 - ■ ■ A2**	
	28	186	50.91	6 200	1.3	21	**2KJ3302 - ■ DC22 - ■ ■ X1**	
	31	169	46.29	6 270	1.5	21	**2KJ3302 - ■ DC22 - ■ ■ W1**	
	36	144	39.6	6 360	2	21	**2KJ3302 - ■ DC22 - ■ ■ V1**	
	40	131	36	6 410	1.9	21	**2KJ3302 - ■ DC22 - ■ ■ U1**	
	45	116	31.82	6 220	2.5	21	**2KJ3302 - ■ DC22 - ■ ■ T1**	
	50	106	28.93	6 080	2.6	21	**2KJ3302 - ■ DC22 - ■ ■ S1**	
	57	92	25.34	5 880	2.9	21	**2KJ3302 - ■ DC22 - ■ ■ R1**	
	62	85	23.39	5 760	3	21	**2KJ3302 - ■ DC22 - ■ ■ Q1**	
	FZ.29-LE80MD4E							
	29	184	50.32	5 010	0.82	14	**2KJ3301 - ■ DC22 - ■ ■ B2**	
	33	159	43.66	4 910	0.94	14	**2KJ3301 - ■ DC22 - ■ ■ A2**	
	36	145	39.69	4 830	1	14	**2KJ3301 - ■ DC22 - ■ ■ X1**	
	42	124	34.04	4 710	1.2	14	**2KJ3301 - ■ DC22 - ■ ■ W1**	
	47	113	30.95	4 620	1.3	14	**2KJ3301 - ■ DC22 - ■ ■ V1**	
	53	99	27.13	4 500	1.5	14	**2KJ3301 - ■ DC22 - ■ ■ U1**	
	59	88	24.22	4 390	1.7	14	**2KJ3301 - ■ DC22 - ■ ■ T1**	
	67	79	21.58	4 270	1.9	14	**2KJ3301 - ■ DC22 - ■ ■ S1**	
	72	73	19.92	4 190	2.1	14	**2KJ3301 - ■ DC22 - ■ ■ R1**	
	83	64	17.44	4 060	2.4	14	**2KJ3301 - ■ DC22 - ■ ■ Q1**	
	94	56	15.29	3 930	2.7	14	**2KJ3301 - ■ DC22 - ■ ■ P1**	
	104	51	13.88	3 830	3	14	**2KJ3301 - ■ DC22 - ■ ■ N1**	
	110	48	13.06	3 770	3.1	14	**2KJ3301 - ■ DC22 - ■ ■ M1**	
	125	42	11.51	3 650	3.4	14	**2KJ3301 - ■ DC22 - ■ ■ L1**	
	144	36	9.99	3 510	3.7	14	**2KJ3301 - ■ DC22 - ■ ■ K1**	
	149	35	9.69	3 430	4	14	**2KJ3301 - ■ DC22 - ■ ■ J1**	
	167	32	8.63	3 320	4.1	14	**2KJ3301 - ■ DC22 - ■ ■ H1**	
	181	29	7.97	3 250	4.1	14	**2KJ3301 - ■ DC22 - ■ ■ G1**	
0.75	**FD.89-LE90SH6E**							
	3.4	2 110	273.41	14 900	0.87	78	**2KJ3406 - ■ EC22 - ■ ■ Q1**	**P01**
	3.8	1 900	245.82	14 900	0.97	78	**2KJ3406 - ■ EC22 - ■ ■ P1**	**P01**
	FD.89-LE80MH4E							
	4.3	1 660	335.3	14 900	1.1	75	**2KJ3406 - ■ DE22 - ■ ■ S1**	
	4.7	1 510	304.82	14 900	1.2	75	**2KJ3406 - ■ DE22 - ■ ■ R1**	
	5.3	1 360	273.41	14 900	1.4	75	**2KJ3406 - ■ DE22 - ■ ■ Q1**	
	5.9	1 220	245.82	14 900	1.5	75	**2KJ3406 - ■ DE22 - ■ ■ P1**	
	6.5	1 100	222.33	14 900	1.7	75	**2KJ3406 - ■ DE22 - ■ ■ N1**	
	7	1 020	205.23	14 900	1.8	75	**2KJ3406 - ■ DE22 - ■ ■ M1**	
	7.7	935	188	14 900	2	75	**2KJ3406 - ■ DE22 - ■ ■ L1**	
	FD.79-LE80MH4E							
	5.7	1 240	250.99	12 500	0.8	43	**2KJ3405 - ■ DE22 - ■ ■ P1**	
	6.4	1 110	223.94	12 500	0.9	43	**2KJ3405 - ■ DE22 - ■ ■ N1**	
	7.2	995	200.8	12 500	1	43	**2KJ3405 - ■ DE22 - ■ ■ M1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**FD.79-LE80MH4E**							
	8	900	180.99	12 500	1.1	43	**2KJ3405 - ■ DE22 - ■ ■ L1**	
	8.6	830	167.07	12 500	1.2	43	**2KJ3405 - ■ DE22 - ■ ■ K1**	
	9.4	755	152.51	12 500	1.3	43	**2KJ3405 - ■ DE22 - ■ ■ J1**	
	11	625	126.54	12 500	1.6	43	**2KJ3405 - ■ DE22 - ■ ■ H1**	
	12	590	119.1	12 500	1.7	43	**2KJ3405 - ■ DE22 - ■ ■ G1**	
	13	555	112.48	12 500	1.8	43	**2KJ3405 - ■ DE22 - ■ ■ F1**	
	15	475	95.71	12 500	2.1	43	**2KJ3405 - ■ DE22 - ■ ■ E1**	
	FD.69-LE80MH4E							
	11	670	135.37	10 600	0.89	34	**2KJ3404 - ■ DE22 - ■ ■ J1**	
	12	620	124.96	10 800	0.97	34	**2KJ3404 - ■ DE22 - ■ ■ H1**	
	13	550	110.63	10 900	1.1	34	**2KJ3404 - ■ DE22 - ■ ■ G1**	
	16	455	92.08	11 200	1.3	34	**2KJ3404 - ■ DE22 - ■ ■ F1**	
	17	430	86.67	11 200	1.4	34	**2KJ3404 - ■ DE22 - ■ ■ E1**	
	19	385	77.65	11 300	1.6	34	**2KJ3404 - ■ DE22 - ■ ■ D1**	
	22	325	66.11	11 400	1.8	34	**2KJ3404 - ■ DE22 - ■ ■ C1**	
	25	280	56.67	11 000	2.1	34	**2KJ3404 - ■ DE22 - ■ ■ B1**	
	30	240	48.8	10 600	2.5	34	**2KJ3404 - ■ DE22 - ■ ■ A1**	
	FZ.69-LE80MH4E							
	22	320	64.67	11 400	1.9	34	**2KJ3304 - ■ DE22 - ■ ■ X1**	
	24	290	58.79	11 100	2.1	34	**2KJ3304 - ■ DE22 - ■ ■ W1**	
	29	245	50	10 700	2.4	34	**2KJ3304 - ■ DE22 - ■ ■ V1**	
	FD.49-LE80MH4E							
	12	590	118.71	7 240	0.81	30	**2KJ3403 - ■ DE22 - ■ ■ H1**	
	14	520	105.1	7 700	0.92	30	**2KJ3403 - ■ DE22 - ■ ■ G1**	
	16	435	87.48	7 770	1.1	30	**2KJ3403 - ■ DE22 - ■ ■ F1**	
	17	410	82.33	7 720	1.2	30	**2KJ3403 - ■ DE22 - ■ ■ E1**	
	20	365	73.77	7 640	1.3	30	**2KJ3403 - ■ DE22 - ■ ■ D1**	
	23	310	62.81	7 480	1.5	30	**2KJ3403 - ■ DE22 - ■ ■ C1**	
	27	265	53.83	7 300	1.8	30	**2KJ3403 - ■ DE22 - ■ ■ B1**	
	31	230	46.36	7 090	2.1	30	**2KJ3403 - ■ DE22 - ■ ■ A1**	
	FZ.49-LE80MH4E							
	23	305	61.43	7 440	1.6	29	**2KJ3303 - ■ DE22 - ■ ■ X1**	
	26	275	55.85	7 340	1.7	29	**2KJ3303 - ■ DE22 - ■ ■ W1**	
	30	235	47.5	7 120	2	29	**2KJ3303 - ■ DE22 - ■ ■ V1**	
	33	215	43.18	6 980	2.2	29	**2KJ3303 - ■ DE22 - ■ ■ U1**	
	37	192	38.53	6 820	2.5	29	**2KJ3303 - ■ DE22 - ■ ■ T1**	
	FD.39-LE80MH4E							
	21	330	67.07	5 670	0.87	22	**2KJ3402 - ■ DE22 - ■ ■ D1**	
	23	310	63.13	5 740	0.92	22	**2KJ3402 - ■ DE22 - ■ ■ C1**	
	26	275	55.65	5 870	1	22	**2KJ3402 - ■ DE22 - ■ ■ B1**	
	30	240	48.29	6 000	1.2	22	**2KJ3402 - ■ DE22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**FZ.39-LE80MH4E**							
	25	285	57.99	5 830	0.8	21	**2KJ3302 - ■ DE22 - ■ ■ A2**	
	28	250	50.91	5 970	0.95	21	**2KJ3302 - ■ DE22 - ■ ■ X1**	
	31	230	46.29	6 040	1.1	21	**2KJ3302 - ■ DE22 - ■ ■ W1**	
	36	197	39.6	6 160	1.5	21	**2KJ3302 - ■ DE22 - ■ ■ V1**	
	40	179	36	6 050	1.4	21	**2KJ3302 - ■ DE22 - ■ ■ U1**	
	45	158	31.82	5 910	1.8	21	**2KJ3302 - ■ DE22 - ■ ■ T1**	
	50	144	28.93	5 790	1.9	21	**2KJ3302 - ■ DE22 - ■ ■ S1**	
	57	126	25.34	5 630	2.1	21	**2KJ3302 - ■ DE22 - ■ ■ R1**	
	62	116	23.39	5 530	2.2	21	**2KJ3302 - ■ DE22 - ■ ■ Q1**	
	70	103	20.71	5 370	2.4	21	**2KJ3302 - ■ DE22 - ■ ■ P1**	
	84	86	17.24	5 140	2.7	21	**2KJ3302 - ■ DE22 - ■ ■ N1**	
	89	81	16.22	5 060	2.9	21	**2KJ3302 - ■ DE22 - ■ ■ M1**	
	99	72	14.54	4 920	3	21	**2KJ3302 - ■ DE22 - ■ ■ L1**	
	116	62	12.38	4 710	3.4	21	**2KJ3302 - ■ DE22 - ■ ■ K1**	
	136	53	10.61	4 520	3.8	21	**2KJ3302 - ■ DE22 - ■ ■ J1**	
	178	40	8.1	4 160	4.1	21	**2KJ3302 - ■ DE22 - ■ ■ G1**	
	214	34	6.74	3 940	4.5	21	**2KJ3302 - ■ DE22 - ■ ■ F1**	
	FZ.29-LE80MH4E							
	42	169	34.04	4 330	0.89	15	**2KJ3301 - ■ DE22 - ■ ■ W1**	
	47	154	30.95	4 280	0.97	15	**2KJ3301 - ■ DE22 - ■ ■ V1**	
	53	135	27.13	4 200	1.1	15	**2KJ3301 - ■ DE22 - ■ ■ U1**	
	59	120	24.22	4 120	1.2	15	**2KJ3301 - ■ DE22 - ■ ■ T1**	
	67	107	21.58	4 040	1.4	15	**2KJ3301 - ■ DE22 - ■ ■ S1**	
	72	99	19.92	3 980	1.5	15	**2KJ3301 - ■ DE22 - ■ ■ R1**	
	83	87	17.44	3 870	1.7	15	**2KJ3301 - ■ DE22 - ■ ■ Q1**	
	94	76	15.29	3 760	2	15	**2KJ3301 - ■ DE22 - ■ ■ P1**	
	104	69	13.88	3 680	2.2	15	**2KJ3301 - ■ DE22 - ■ ■ N1**	
	110	65	13.06	3 630	2.3	15	**2KJ3301 - ■ DE22 - ■ ■ M1**	
	125	57	11.51	3 520	2.5	15	**2KJ3301 - ■ DE22 - ■ ■ L1**	
	144	50	9.99	3 400	2.7	15	**2KJ3301 - ■ DE22 - ■ ■ K1**	
	149	48	9.69	3 310	3	15	**2KJ3301 - ■ DE22 - ■ ■ J1**	
	167	43	8.63	3 210	3	15	**2KJ3301 - ■ DE22 - ■ ■ H1**	
	181	40	7.97	3 150	3	15	**2KJ3301 - ■ DE22 - ■ ■ G1**	
	206	35	6.98	3 040	3.5	15	**2KJ3301 - ■ DE22 - ■ ■ F1**	
	235	30	6.12	2 940	3.7	15	**2KJ3301 - ■ DE22 - ■ ■ E1**	
	259	28	5.55	2 860	3.9	15	**2KJ3301 - ■ DE22 - ■ ■ D1**	
	276	26	5.22	2 820	4.1	15	**2KJ3301 - ■ DE22 - ■ ■ C1**	
	313	23	4.6	2 720	4.2	15	**2KJ3301 - ■ DE22 - ■ ■ B1**	
	360	20	4	2 610	4.6	15	**2KJ3301 - ■ DE22 - ■ ■ A1**	
	FZ.29-LE80MA2E							
	161	44	17.44	3 310	3.4	13	**2KJ3301 - ■ DB22 - ■ ■ Q1**	**P00**
	183	39	15.29	3 190	3.8	13	**2KJ3301 - ■ DB22 - ■ ■ P1**	**P00**
	202	35	13.88	3 110	4.2	13	**2KJ3301 - ■ DB22 - ■ ■ N1**	**P00**

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**FZ.29-LE80MA2E**							
	215	33	13.06	3 060	4.5	13	**2KJ3301 - ■ DB22 - ■ ■ M1**	**P00**
1.1	**FD.89-LE90SG4E**							
	4.7	2 240	304.82	14 900	0.82	77	**2KJ3406 - ■ EK22 - ■ ■ R1**	
	5.2	2 010	273.41	14 900	0.92	77	**2KJ3406 - ■ EK22 - ■ ■ Q1**	
	5.8	1 810	245.82	14 900	1	77	**2KJ3406 - ■ EK22 - ■ ■ P1**	
	6.4	1 630	222.33	14 900	1.1	77	**2KJ3406 - ■ EK22 - ■ ■ N1**	
	6.9	1 510	205.23	14 900	1.2	77	**2KJ3406 - ■ EK22 - ■ ■ M1**	
	7.6	1 380	188	14 900	1.3	77	**2KJ3406 - ■ EK22 - ■ ■ L1**	
	9	1 160	157.74	14 900	1.6	77	**2KJ3406 - ■ EK22 - ■ ■ K1**	
	9.6	1 090	148.46	14 900	1.7	77	**2KJ3406 - ■ EK22 - ■ ■ J1**	
	10	1 000	136.21	14 900	1.8	77	**2KJ3406 - ■ EK22 - ■ ■ H1**	
	12	875	118.98	14 900	2.1	77	**2KJ3406 - ■ EK22 - ■ ■ G1**	
	FD.79-LE90SG4E							
	8.5	1 230	167.07	12 500	0.81	45	**2KJ3405 - ■ EK22 - ■ ■ K1**	
	9.3	1 120	152.51	12 500	0.89	45	**2KJ3405 - ■ EK22 - ■ ■ J1**	
	11	930	126.54	12 500	1.1	45	**2KJ3405 - ■ EK22 - ■ ■ H1**	
	12	875	119.1	12 500	1.1	45	**2KJ3405 - ■ EK22 - ■ ■ G1**	
	13	825	112.48	12 500	1.2	45	**2KJ3405 - ■ EK22 - ■ ■ F1**	
	15	705	95.71	12 500	1.4	45	**2KJ3405 - ■ EK22 - ■ ■ E1**	
	17	600	81.99	12 500	1.7	45	**2KJ3405 - ■ EK22 - ■ ■ D1**	
	20	530	72.09	12 500	1.9	45	**2KJ3405 - ■ EK22 - ■ ■ C1**	
	23	445	60.82	12 500	2.2	45	**2KJ3405 - ■ EK22 - ■ ■ B1**	
	FZ.79-LE90SG4E							
	27	395	53.55	12 500	2.5	44	**2KJ3305 - ■ EK22 - ■ ■ X1**	
	FD.69-LE90SG4E							
	15	675	92.08	10 600	0.88	36	**2KJ3404 - ■ EK22 - ■ ■ F1**	
	16	635	86.67	10 700	0.94	36	**2KJ3404 - ■ EK22 - ■ ■ E1**	
	18	570	77.65	10 700	1	36	**2KJ3404 - ■ EK22 - ■ ■ D1**	
	22	485	66.11	10 500	1.2	36	**2KJ3404 - ■ EK22 - ■ ■ C1**	
	25	415	56.67	10 200	1.4	36	**2KJ3404 - ■ EK22 - ■ ■ B1**	
	29	360	48.8	9 990	1.7	36	**2KJ3404 - ■ EK22 - ■ ■ A1**	
	FZ.69-LE90SG4E							
	22	475	64.67	10 400	1.3	36	**2KJ3304 - ■ EK22 - ■ ■ X1**	
	24	430	58.79	10 300	1.4	36	**2KJ3304 - ■ EK22 - ■ ■ W1**	
	28	365	50	10 000	1.6	36	**2KJ3304 - ■ EK22 - ■ ■ V1**	
	31	335	45.45	9 860	1.8	36	**2KJ3304 - ■ EK22 - ■ ■ U1**	
	35	295	40.56	9 660	2	36	**2KJ3304 - ■ EK22 - ■ ■ T1**	
	39	265	36.36	9 440	2.2	36	**2KJ3304 - ■ EK22 - ■ ■ S1**	
	43	240	32.78	9 220	2.5	36	**2KJ3304 - ■ EK22 - ■ ■ R1**	
	47	220	30.26	9 060	2.7	36	**2KJ3304 - ■ EK22 - ■ ■ Q1**	
	52	200	27.62	8 870	2.9	36	**2KJ3304 - ■ EK22 - ■ ■ P1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**FD.49-LE90SG4E**							
	19	540	73.77	6 540	0.88	32	**2KJ3403 - ■ EK22 - ■ ■ D1**	
	23	460	62.81	6 530	1	32	**2KJ3403 - ■ EK22 - ■ ■ C1**	
	26	395	53.83	6 480	1.2	32	**2KJ3403 - ■ EK22 - ■ ■ B1**	
	31	340	46.36	6 400	1.4	32	**2KJ3403 - ■ EK22 - ■ ■ A1**	
	FZ.49-LE90SG4E							
	23	450	61.43	6 530	1.1	31	**2KJ3303 - ■ EK22 - ■ ■ X1**	
	26	410	55.85	6 490	1.2	31	**2KJ3303 - ■ EK22 - ■ ■ W1**	
	30	350	47.5	6 400	1.4	31	**2KJ3303 - ■ EK22 - ■ ■ V1**	
	33	315	43.18	6 360	1.5	31	**2KJ3303 - ■ EK22 - ■ ■ U1**	
	37	280	38.53	6 270	1.7	31	**2KJ3303 - ■ EK22 - ■ ■ T1**	
	41	255	34.55	6 150	1.9	31	**2KJ3303 - ■ EK22 - ■ ■ S1**	
	46	230	31.14	6 050	2.1	31	**2KJ3303 - ■ EK22 - ■ ■ R1**	
	50	210	28.74	5 980	2.3	31	**2KJ3303 - ■ EK22 - ■ ■ Q1**	
	54	193	26.24	5 870	2.5	31	**2KJ3303 - ■ EK22 - ■ ■ P1**	
	65	160	21.77	5 650	3	31	**2KJ3303 - ■ EK22 - ■ ■ N1**	
	FD.39-LE90SG4E							
	30	355	48.29	5 530	0.81	24	**2KJ3402 - ■ EK22 - ■ ■ A1**	
	FZ.39-LE90SG4E							
	36	290	39.6	5 490	0.99	23	**2KJ3302 - ■ EK22 - ■ ■ V1**	
	40	265	36	5 430	0.96	23	**2KJ3302 - ■ EK22 - ■ ■ U1**	
	45	235	31.82	5 360	1.2	23	**2KJ3302 - ■ EK22 - ■ ■ T1**	
	49	210	28.93	5 320	1.3	23	**2KJ3302 - ■ EK22 - ■ ■ S1**	
	56	187	25.34	5 200	1.4	23	**2KJ3302 - ■ EK22 - ■ ■ R1**	
	61	172	23.39	5 140	1.5	23	**2KJ3302 - ■ EK22 - ■ ■ Q1**	
	69	153	20.71	5 020	1.6	23	**2KJ3302 - ■ EK22 - ■ ■ P1**	
	83	127	17.24	4 850	1.8	23	**2KJ3302 - ■ EK22 - ■ ■ N1**	
	88	120	16.22	4 790	1.9	23	**2KJ3302 - ■ EK22 - ■ ■ M1**	
	98	107	14.54	4 680	2.1	23	**2KJ3302 - ■ EK22 - ■ ■ L1**	
	115	91	12.38	4 510	2.3	23	**2KJ3302 - ■ EK22 - ■ ■ K1**	
	134	78	10.61	4 350	2.5	23	**2KJ3302 - ■ EK22 - ■ ■ J1**	
	156	67	9.13	4 190	2.8	23	**2KJ3302 - ■ EK22 - ■ ■ H1**	
	176	60	8.1	4 010	2.8	23	**2KJ3302 - ■ EK22 - ■ ■ G1**	
	211	50	6.74	3 820	3.1	23	**2KJ3302 - ■ EK22 - ■ ■ F1**	
	224	47	6.35	3 760	3.2	23	**2KJ3302 - ■ EK22 - ■ ■ E1**	
	250	42	5.69	3 650	3.3	23	**2KJ3302 - ■ EK22 - ■ ■ D1**	
	294	36	4.84	3 490	3.6	23	**2KJ3302 - ■ EK22 - ■ ■ C1**	
	343	31	4.15	3 350	3.9	23	**2KJ3302 - ■ EK22 - ■ ■ B1**	
	399	26	3.57	3 210	4.1	23	**2KJ3302 - ■ EK22 - ■ ■ A1**	
	FZ.39-LE80ME2E							
	164	64	17.24	4 130	3.7	21	**2KJ3302 - ■ DM22 - ■ ■ N1**	**P00**
	175	60	16.22	4 070	3.8	21	**2KJ3302 - ■ DM22 - ■ ■ M1**	**P00**
	195	54	14.54	3 950	4.1	21	**2KJ3302 - ■ DM22 - ■ ■ L1**	**P00**
	229	46	12.38	3 780	4.6	21	**2KJ3302 - ■ DM22 - ■ ■ K1**	**P00**

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**FZ.29-LE90SG4E**							
	59	179	24.22	3 650	0.84	17	**2KJ3301 - ■ EK22 - ■ ■ T1**	
	66	159	21.58	3 620	0.94	17	**2KJ3301 - ■ EK22 - ■ ■ S1**	
	72	147	19.92	3 590	1	17	**2KJ3301 - ■ EK22 - ■ ■ R1**	
	82	129	17.44	3 530	1.2	17	**2KJ3301 - ■ EK22 - ■ ■ Q1**	
	93	113	15.29	3 470	1.3	17	**2KJ3301 - ■ EK22 - ■ ■ P1**	
	103	102	13.88	3 420	1.5	17	**2KJ3301 - ■ EK22 - ■ ■ N1**	
	109	96	13.06	3 380	1.6	17	**2KJ3301 - ■ EK22 - ■ ■ M1**	
	124	85	11.51	3 300	1.7	17	**2KJ3301 - ■ EK22 - ■ ■ L1**	
	143	74	9.99	3 210	1.8	17	**2KJ3301 - ■ EK22 - ■ ■ K1**	
	147	71	9.69	3 100	2	17	**2KJ3301 - ■ EK22 - ■ ■ J1**	
	165	64	8.63	3 020	2	17	**2KJ3301 - ■ EK22 - ■ ■ H1**	
	179	59	7.97	2 970	2	17	**2KJ3301 - ■ EK22 - ■ ■ G1**	
	204	52	6.98	2 890	2.4	17	**2KJ3301 - ■ EK22 - ■ ■ F1**	
	233	45	6.12	2 810	2.5	17	**2KJ3301 - ■ EK22 - ■ ■ E1**	
	257	41	5.55	2 750	2.6	17	**2KJ3301 - ■ EK22 - ■ ■ D1**	
	273	38	5.22	2 710	2.8	17	**2KJ3301 - ■ EK22 - ■ ■ C1**	
	310	34	4.6	2 620	2.9	17	**2KJ3301 - ■ EK22 - ■ ■ B1**	
	356	30	4	2 530	3.1	17	**2KJ3301 - ■ EK22 - ■ ■ A1**	
	FZ.29-LE80ME2E							
	163	65	17.44	3 120	2.3	15	**2KJ3301 - ■ DM22 - ■ ■ Q1**	**P00**
	185	57	15.29	3 030	2.6	15	**2KJ3301 - ■ DM22 - ■ ■ P1**	**P00**
	204	51	13.88	2 970	2.9	15	**2KJ3301 - ■ DM22 - ■ ■ N1**	**P00**
	217	48	13.06	2 930	3.1	15	**2KJ3301 - ■ DM22 - ■ ■ M1**	**P00**
	246	43	11.51	2 830	3.4	15	**2KJ3301 - ■ DM22 - ■ ■ L1**	**P00**
	284	37	9.99	2 730	3.7	15	**2KJ3301 - ■ DM22 - ■ ■ K1**	**P00**
	293	36	9.69	2 660	4	15	**2KJ3301 - ■ DM22 - ■ ■ J1**	**P00**
	329	32	8.63	2 590	4.1	15	**2KJ3301 - ■ DM22 - ■ ■ H1**	**P00**
	356	30	7.97	2 530	4.1	15	**2KJ3301 - ■ DM22 - ■ ■ G1**	**P00**
	406	26	6.98	2 440	4.8	15	**2KJ3301 - ■ DM22 - ■ ■ F1**	**P00**
	463	23	6.12	2 360	5	15	**2KJ3301 - ■ DM22 - ■ ■ E1**	**P00**
	511	21	5.55	2 290	5.3	15	**2KJ3301 - ■ DM22 - ■ ■ D1**	**P00**
	543	19	5.22	2 260	5.5	15	**2KJ3301 - ■ DM22 - ■ ■ C1**	**P00**
	616	17	4.6	2 180	5.7	15	**2KJ3301 - ■ DM22 - ■ ■ B1**	**P00**
	709	15	4	2 090	6.1	15	**2KJ3301 - ■ DM22 - ■ ■ A1**	**P00**
1.5	**FD.89-LE90LH4E**							
	6.5	2 210	222.33	14 900	0.83	80	**2KJ3406 - ■ EM22 - ■ ■ N1**	
	7	2 040	205.23	14 900	0.9	80	**2KJ3406 - ■ EM22 - ■ ■ M1**	
	7.6	1 870	188	14 900	0.99	80	**2KJ3406 - ■ EM22 - ■ ■ L1**	
	9.1	1 570	157.74	14 900	1.2	80	**2KJ3406 - ■ EM22 - ■ ■ K1**	
	9.7	1 480	148.46	14 900	1.2	80	**2KJ3406 - ■ EM22 - ■ ■ J1**	
	11	1 360	136.21	14 900	1.4	80	**2KJ3406 - ■ EM22 - ■ ■ H1**	
	12	1 180	118.98	14 900	1.6	80	**2KJ3406 - ■ EM22 - ■ ■ G1**	
	13	1 060	106.52	14 900	1.7	80	**2KJ3406 - ■ EM22 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**FD.89-LE90LH4E**							
	15	930	93.14	14 900	2	80	**2KJ3406 - ■ EM22 - ■ ■ E1**	
	18	795	79.95	14 900	2.3	80	**2KJ3406 - ■ EM22 - ■ ■ D1**	
	FD.79-LE90LH4E							
	12	1 180	119.1	12 500	0.84	48	**2KJ3405 - ■ EM22 - ■ ■ G1**	
	13	1 120	112.48	12 500	0.89	48	**2KJ3405 - ■ EM22 - ■ ■ F1**	
	15	955	95.71	12 500	1	48	**2KJ3405 - ■ EM22 - ■ ■ E1**	
	18	815	81.99	12 500	1.2	48	**2KJ3405 - ■ EM22 - ■ ■ D1**	
	20	720	72.09	12 500	1.4	48	**2KJ3405 - ■ EM22 - ■ ■ C1**	
	24	605	60.82	12 500	1.6	48	**2KJ3405 - ■ EM22 - ■ ■ B1**	
	27	525	53.01	12 500	1.9	48	**2KJ3405 - ■ EM22 - ■ ■ A1**	
	FZ.79-LE90LH4E							
	27	535	53.55	12 500	1.9	47	**2KJ3305 - ■ EM22 - ■ ■ X1**	
	30	475	48.03	12 500	2.1	47	**2KJ3305 - ■ EM22 - ■ ■ W1**	
	33	430	43.18	12 500	2.3	47	**2KJ3305 - ■ EM22 - ■ ■ V1**	
	37	390	39.06	12 500	2.6	47	**2KJ3305 - ■ EM22 - ■ ■ U1**	
	FD.69-LE90LH4E							
	22	660	66.11	9 410	0.91	39	**2KJ3404 - ■ EM22 - ■ ■ C1**	
	25	565	56.67	9 320	1.1	39	**2KJ3404 - ■ EM22 - ■ ■ B1**	
	29	485	48.8	9 190	1.2	39	**2KJ3404 - ■ EM22 - ■ ■ A1**	
	FZ.69-LE90LH4E							
	22	645	64.67	9 410	0.93	39	**2KJ3304 - ■ EM22 - ■ ■ X1**	
	24	585	58.79	9 360	1	39	**2KJ3304 - ■ EM22 - ■ ■ W1**	
	29	495	50	9 230	1.2	39	**2KJ3304 - ■ EM22 - ■ ■ V1**	
	32	450	45.45	9 130	1.3	39	**2KJ3304 - ■ EM22 - ■ ■ U1**	
	35	405	40.56	8 960	1.5	39	**2KJ3304 - ■ EM22 - ■ ■ T1**	
	39	360	36.36	8 830	1.7	39	**2KJ3304 - ■ EM22 - ■ ■ S1**	
	44	325	32.78	8 670	1.8	39	**2KJ3304 - ■ EM22 - ■ ■ R1**	
	47	300	30.26	8 540	2	39	**2KJ3304 - ■ EM22 - ■ ■ Q1**	
	52	275	27.62	8 380	2.2	39	**2KJ3304 - ■ EM22 - ■ ■ P1**	
	63	225	22.92	8 080	2.6	39	**2KJ3304 - ■ EM22 - ■ ■ N1**	
	67	215	21.57	7 960	2.8	39	**2KJ3304 - ■ EM22 - ■ ■ M1**	
	70	200	20.37	7 870	3	39	**2KJ3304 - ■ EM22 - ■ ■ L1**	
	FD.49-LE90LH4E							
	27	535	53.83	5 540	0.89	35	**2KJ3403 - ■ EM22 - ■ ■ B1**	
	31	460	46.36	5 590	1	35	**2KJ3403 - ■ EM22 - ■ ■ A1**	
	FZ.49-LE90LH4E							
	26	555	55.85	5 520	0.86	34	**2KJ3303 - ■ EM22 - ■ ■ W1**	
	30	470	47.5	5 600	1	34	**2KJ3303 - ■ EM22 - ■ ■ V1**	
	33	430	43.18	5 590	1.1	34	**2KJ3303 - ■ EM22 - ■ ■ U1**	
	37	385	38.53	5 570	1.2	34	**2KJ3303 - ■ EM22 - ■ ■ T1**	
	42	345	34.55	5 540	1.4	34	**2KJ3303 - ■ EM22 - ■ ■ S1**	
	46	310	31.14	5 510	1.5	34	**2KJ3303 - ■ EM22 - ■ ■ R1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Geared motors up to 15 kW

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**FZ.49-LE90LH4E**							
	50	285	28.74	5 470	1.7	34	**2KJ3303 - ■ EM22 - ■ ■ Q1**	
	55	260	26.24	5 410	1.8	34	**2KJ3303 - ■ EM22 - ■ ■ P1**	
	66	215	21.77	5 280	2.2	34	**2KJ3303 - ■ EM22 - ■ ■ N1**	
	70	205	20.49	5 210	2.3	34	**2KJ3303 - ■ EM22 - ■ ■ M1**	
	74	193	19.35	5 170	2.5	34	**2KJ3303 - ■ EM22 - ■ ■ L1**	
	87	164	16.47	5 020	2.9	34	**2KJ3303 - ■ EM22 - ■ ■ K1**	
	102	141	14.11	4 860	3.4	34	**2KJ3303 - ■ EM22 - ■ ■ J1**	
	FZ.39-LE90LH4E							
	45	315	31.82	4 750	0.9	26	**2KJ3302 - ■ EM22 - ■ ■ T1**	
	50	285	28.93	4 750	0.95	26	**2KJ3302 - ■ EM22 - ■ ■ S1**	
	57	250	25.34	4 710	1	26	**2KJ3302 - ■ EM22 - ■ ■ R1**	
	61	230	23.39	4 690	1.1	26	**2KJ3302 - ■ EM22 - ■ ■ Q1**	
	69	205	20.71	4 620	1.2	26	**2KJ3302 - ■ EM22 - ■ ■ P1**	
	83	172	17.24	4 500	1.4	26	**2KJ3302 - ■ EM22 - ■ ■ N1**	
	88	162	16.22	4 460	1.4	26	**2KJ3302 - ■ EM22 - ■ ■ M1**	
	99	145	14.54	4 380	1.5	26	**2KJ3302 - ■ EM22 - ■ ■ L1**	
	116	124	12.38	4 250	1.7	26	**2KJ3302 - ■ EM22 - ■ ■ K1**	
	135	106	10.61	4 130	1.9	26	**2KJ3302 - ■ EM22 - ■ ■ J1**	
	157	91	9.13	4 000	2.1	26	**2KJ3302 - ■ EM22 - ■ ■ H1**	
	177	81	8.1	3 820	2.1	26	**2KJ3302 - ■ EM22 - ■ ■ G1**	
	213	67	6.74	3 670	2.3	26	**2KJ3302 - ■ EM22 - ■ ■ F1**	
	226	63	6.35	3 620	2.4	26	**2KJ3302 - ■ EM22 - ■ ■ E1**	
	252	57	5.69	3 520	2.5	26	**2KJ3302 - ■ EM22 - ■ ■ D1**	
	296	48	4.84	3 390	2.6	26	**2KJ3302 - ■ EM22 - ■ ■ C1**	
	346	41	4.15	3 250	2.8	26	**2KJ3302 - ■ EM22 - ■ ■ B1**	
	402	36	3.57	3 120	3	26	**2KJ3302 - ■ EM22 - ■ ■ A1**	
	FZ.39-LE90SG2E							
	167	86	17.24	3 940	2.7	23	**2KJ3302 - ■ EK22 - ■ ■ N1**	**P00**
	178	80	16.22	3 890	2.9	23	**2KJ3302 - ■ EK22 - ■ ■ M1**	**P00**
	198	72	14.54	3 790	3	23	**2KJ3302 - ■ EK22 - ■ ■ L1**	**P00**
	233	62	12.38	3 640	3.4	23	**2KJ3302 - ■ EK22 - ■ ■ K1**	**P00**
	272	53	10.61	3 500	3.8	23	**2KJ3302 - ■ EK22 - ■ ■ J1**	**P00**
	316	45	9.13	3 370	4.2	23	**2KJ3302 - ■ EK22 - ■ ■ H1**	**P00**
	356	40	8.1	3 230	4.2	23	**2KJ3302 - ■ EK22 - ■ ■ G1**	**P00**
	428	34	6.74	3 070	4.5	23	**2KJ3302 - ■ EK22 - ■ ■ F1**	**P00**
	454	32	6.35	3 020	4.7	23	**2KJ3302 - ■ EK22 - ■ ■ E1**	**P00**
	507	28	5.69	2 930	5	23	**2KJ3302 - ■ EK22 - ■ ■ D1**	**P00**
	596	24	4.84	2 800	5.3	23	**2KJ3302 - ■ EK22 - ■ ■ C1**	**P00**
	695	21	4.15	2 670	5.7	23	**2KJ3302 - ■ EK22 - ■ ■ B1**	**P00**
	808	18	3.57	2 560	6.1	23	**2KJ3302 - ■ EK22 - ■ ■ A1**	**P00**
	FZ.29-LE90LH4E							
	82	174	17.44	3 150	0.86	20	**2KJ3301 - ■ EM22 - ■ ■ Q1**	
	94	153	15.29	3 130	0.98	20	**2KJ3301 - ■ EM22 - ■ ■ P1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**FZ.29-LE90LH4E**							
	103	139	13.88	3 100	1.1	20	**2KJ3301 - ■ EM22 - ■ ■ N1**	
	110	130	13.06	3 090	1.2	20	**2KJ3301 - ■ EM22 - ■ ■ M1**	
	125	115	11.51	3 040	1.2	20	**2KJ3301 - ■ EM22 - ■ ■ L1**	
	144	100	9.99	2 980	1.4	20	**2KJ3301 - ■ EM22 - ■ ■ K1**	
	148	97	9.69	2 840	1.5	20	**2KJ3301 - ■ EM22 - ■ ■ J1**	
	166	86	8.63	2 800	1.5	20	**2KJ3301 - ■ EM22 - ■ ■ H1**	
	180	80	7.97	2 760	1.5	20	**2KJ3301 - ■ EM22 - ■ ■ G1**	
	206	70	6.98	2 710	1.8	20	**2KJ3301 - ■ EM22 - ■ ■ F1**	
	234	61	6.12	2 650	1.9	20	**2KJ3301 - ■ EM22 - ■ ■ E1**	
	259	55	5.55	2 600	1.9	20	**2KJ3301 - ■ EM22 - ■ ■ D1**	
	275	52	5.22	2 570	2	20	**2KJ3301 - ■ EM22 - ■ ■ C1**	
	312	46	4.6	2 500	2.1	20	**2KJ3301 - ■ EM22 - ■ ■ B1**	
	359	40	4	2 420	2.3	20	**2KJ3301 - ■ EM22 - ■ ■ A1**	
	FZ.29-LE90SG2E							
	165	87	17.44	2 920	1.7	17	**2KJ3301 - ■ EK22 - ■ ■ Q1**	**P00**
	189	76	15.29	2 850	2	17	**2KJ3301 - ■ EK22 - ■ ■ P1**	**P00**
	208	69	13.88	2 800	2.2	17	**2KJ3301 - ■ EK22 - ■ ■ N1**	**P00**
	221	65	13.06	2 770	2.3	17	**2KJ3301 - ■ EK22 - ■ ■ M1**	**P00**
	251	57	11.51	2 690	2.5	17	**2KJ3301 - ■ EK22 - ■ ■ L1**	**P00**
	289	50	9.99	2 610	2.7	17	**2KJ3301 - ■ EK22 - ■ ■ K1**	**P00**
	298	48	9.69	2 530	3	17	**2KJ3301 - ■ EK22 - ■ ■ J1**	**P00**
	334	43	8.63	2 460	3	17	**2KJ3301 - ■ EK22 - ■ ■ H1**	**P00**
	362	40	7.97	2 410	3	17	**2KJ3301 - ■ EK22 - ■ ■ G1**	**P00**
	413	35	6.98	2 340	3.5	17	**2KJ3301 - ■ EK22 - ■ ■ F1**	**P00**
	471	30	6.12	2 270	3.8	17	**2KJ3301 - ■ EK22 - ■ ■ E1**	**P00**
	520	28	5.55	2 210	3.9	17	**2KJ3301 - ■ EK22 - ■ ■ D1**	**P00**
	553	26	5.22	2 180	4.1	17	**2KJ3301 - ■ EK22 - ■ ■ C1**	**P00**
	627	23	4.6	2 110	4.2	17	**2KJ3301 - ■ EK22 - ■ ■ B1**	**P00**
	721	20	4	2 030	4.6	17	**2KJ3301 - ■ EK22 - ■ ■ A1**	**P00**
2.2	**FD.89-LE100LE4E**							
	9.2	2 270	157.74	14 900	0.81	86	**2KJ3406 - ■ FL22 - ■ ■ K1**	
	9.8	2 140	148.46	14 900	0.86	86	**2KJ3406 - ■ FL22 - ■ ■ J1**	
	11	1 960	136.21	14 900	0.94	86	**2KJ3406 - ■ FL22 - ■ ■ H1**	
	12	1 710	118.98	14 900	1.1	86	**2KJ3406 - ■ FL22 - ■ ■ G1**	
	14	1 530	106.52	14 900	1.2	86	**2KJ3406 - ■ FL22 - ■ ■ F1**	
	16	1 340	93.14	14 900	1.4	86	**2KJ3406 - ■ FL22 - ■ ■ E1**	
	18	1 150	79.95	14 900	1.6	86	**2KJ3406 - ■ FL22 - ■ ■ D1**	
	21	1 020	70.67	14 900	1.8	86	**2KJ3406 - ■ FL22 - ■ ■ C1**	
	24	865	60.09	14 900	2.1	86	**2KJ3406 - ■ FL22 - ■ ■ B1**	
	28	740	51.51	14 900	2.5	86	**2KJ3406 - ■ FL22 - ■ ■ A1**	
	FZ.89-LE100LE4E							
	24	890	61.72	14 900	2.1	85	**2KJ3306 - ■ FL22 - ■ ■ B2**	
	26	805	55.72	14 900	2.3	85	**2KJ3306 - ■ FL22 - ■ ■ A2**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Geared motors up to 15 kW

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**FZ.89-LE100LE4E**							
	29	730	50.54	14 900	2.5	85	**2KJ3306 - ■ FL22 - ■ ■ X1**	
	FD.79-LE100LE4E							
	18	1 180	81.99	12 500	0.84	55	**2KJ3405 - ■ FL22 - ■ ■ D1**	
	20	1 040	72.09	12 500	0.96	55	**2KJ3405 - ■ FL22 - ■ ■ C1**	
	24	875	60.82	12 500	1.1	55	**2KJ3405 - ■ FL22 - ■ ■ B1**	
	27	765	53.01	12 500	1.3	55	**2KJ3405 - ■ FL22 - ■ ■ A1**	
	FZ.79-LE100LE4E							
	30	690	48.03	12 500	1.4	54	**2KJ3305 - ■ FL22 - ■ ■ W1**	
	34	620	43.18	12 500	1.6	54	**2KJ3305 - ■ FL22 - ■ ■ V1**	
	37	560	39.06	12 500	1.8	54	**2KJ3305 - ■ FL22 - ■ ■ U1**	
	40	520	36.05	12 500	1.9	54	**2KJ3305 - ■ FL22 - ■ ■ T1**	
	44	475	33.02	12 500	2.1	54	**2KJ3305 - ■ FL22 - ■ ■ S1**	
	53	400	27.71	12 500	2.5	54	**2KJ3305 - ■ FL22 - ■ ■ R1**	
	56	375	26.08	12 500	2.7	54	**2KJ3305 - ■ FL22 - ■ ■ Q1**	
	61	345	23.93	12 500	2.9	54	**2KJ3305 - ■ FL22 - ■ ■ P1**	
	89	235	16.36	12 500	3.4	54	**2KJ3305 - ■ FL22 - ■ ■ L1**	
	104	200	14.04	12 500	3.4	54	**2KJ3305 - ■ FL22 - ■ ■ K1**	
	117	179	12.41	12 500	3.4	54	**2KJ3305 - ■ FL22 - ■ ■ J1**	
	138	152	10.56	12 500	3.4	54	**2KJ3305 - ■ FL22 - ■ ■ H1**	
	161	131	9.05	12 500	3.4	54	**2KJ3305 - ■ FL22 - ■ ■ G1**	
	FD.69-LE100LE4E							
	30	705	48.8	7 780	0.85	48	**2KJ3404 - ■ FL22 - ■ ■ A1**	
	FZ.69-LE100LE4E							
	36	585	40.56	7 790	1	47	**2KJ3304 - ■ FL22 - ■ ■ T1**	
	40	525	36.36	7 760	1.1	47	**2KJ3304 - ■ FL22 - ■ ■ S1**	
	44	470	32.78	7 720	1.3	47	**2KJ3304 - ■ FL22 - ■ ■ R1**	
	48	435	30.26	7 660	1.4	47	**2KJ3304 - ■ FL22 - ■ ■ Q1**	
	53	395	27.62	7 600	1.5	47	**2KJ3304 - ■ FL22 - ■ ■ P1**	
	63	330	22.92	7 390	1.8	47	**2KJ3304 - ■ FL22 - ■ ■ N1**	
	67	310	21.57	7 330	1.9	47	**2KJ3304 - ■ FL22 - ■ ■ M1**	
	71	290	20.37	7 280	2	47	**2KJ3304 - ■ FL22 - ■ ■ L1**	
	84	250	17.33	7 050	2.4	47	**2KJ3304 - ■ FL22 - ■ ■ K1**	
	98	210	14.85	6 860	2.8	47	**2KJ3304 - ■ FL22 - ■ ■ J1**	
	111	189	13.06	6 650	3.2	47	**2KJ3304 - ■ FL22 - ■ ■ H1**	
	132	159	11.01	6 400	3.8	47	**2KJ3304 - ■ FL22 - ■ ■ G1**	
	163	129	8.9	6 040	3.7	47	**2KJ3304 - ■ FL22 - ■ ■ E1**	
	191	110	7.62	5 820	4.2	47	**2KJ3304 - ■ FL22 - ■ ■ D1**	
	217	97	6.7	5 630	4.5	47	**2KJ3304 - ■ FL22 - ■ ■ C1**	
	FZ.49-LE100LE4E							
	38	555	38.53	4 420	0.86	43	**2KJ3303 - ■ FL22 - ■ ■ T1**	
	42	495	34.55	4 520	0.96	43	**2KJ3303 - ■ FL22 - ■ ■ S1**	
	47	450	31.14	4 560	1.1	43	**2KJ3303 - ■ FL22 - ■ ■ R1**	
	51	415	28.74	4 590	1.2	43	**2KJ3303 - ■ FL22 - ■ ■ Q1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**FZ.49-LE100LE4E**							
	55	375	26.24	4 630	1.3	43	**2KJ3303 - ■ FL22 - ■ ■ P1**	
	67	310	21.77	4 630	1.5	43	**2KJ3303 - ■ FL22 - ■ ■ N1**	
	71	295	20.49	4 590	1.6	43	**2KJ3303 - ■ FL22 - ■ ■ M1**	
	75	275	19.35	4 600	1.7	43	**2KJ3303 - ■ FL22 - ■ ■ L1**	
	88	235	16.47	4 530	2	43	**2KJ3303 - ■ FL22 - ■ ■ K1**	
	103	200	14.11	4 450	2.4	43	**2KJ3303 - ■ FL22 - ■ ■ J1**	
	117	179	12.4	4 340	2.7	43	**2KJ3303 - ■ FL22 - ■ ■ H1**	
	139	151	10.46	4 220	3.2	43	**2KJ3303 - ■ FL22 - ■ ■ G1**	
	160	132	9.12	4 110	3.6	43	**2KJ3303 - ■ FL22 - ■ ■ F1**	
	173	121	8.4	3 980	3.7	43	**2KJ3303 - ■ FL22 - ■ ■ E1**	
	202	104	7.2	3 860	4.3	43	**2KJ3303 - ■ FL22 - ■ ■ D1**	
	FZ.49-LE90LE2E							
	175	120	16.47	4 040	4	34	**2KJ3303 - ■ EM22 - ■ ■ K1**	**P00**
	FZ.39-LE100LE4E							
	70	295	20.71	3 920	0.84	32	**2KJ3302 - ■ FL22 - ■ ■ P1**	
	84	245	17.24	3 930	0.94	32	**2KJ3302 - ■ FL22 - ■ ■ N1**	
	90	230	16.22	3 930	0.98	32	**2KJ3302 - ■ FL22 - ■ ■ M1**	
	100	210	14.54	3 870	1	32	**2KJ3302 - ■ FL22 - ■ ■ L1**	
	118	179	12.38	3 820	1.2	32	**2KJ3302 - ■ FL22 - ■ ■ K1**	
	137	153	10.61	3 750	1.3	32	**2KJ3302 - ■ FL22 - ■ ■ J1**	
	159	132	9.13	3 670	1.4	32	**2KJ3302 - ■ FL22 - ■ ■ H1**	
	180	117	8.1	3 500	1.4	32	**2KJ3302 - ■ FL22 - ■ ■ G1**	
	216	97	6.74	3 400	1.6	32	**2KJ3302 - ■ FL22 - ■ ■ F1**	
	229	92	6.35	3 360	1.6	32	**2KJ3302 - ■ FL22 - ■ ■ E1**	
	256	82	5.69	3 290	1.7	32	**2KJ3302 - ■ FL22 - ■ ■ D1**	
	301	70	4.84	3 180	1.8	32	**2KJ3302 - ■ FL22 - ■ ■ C1**	
	351	60	4.15	3 080	2	32	**2KJ3302 - ■ FL22 - ■ ■ B1**	
	408	52	3.57	2 970	2.1	32	**2KJ3302 - ■ FL22 - ■ ■ A1**	
	FZ.39-LE90LH2E							
	168	125	17.24	3 650	1.9	26	**2KJ3302 - ■ EM22 - ■ ■ N1**	**P00**
	178	118	16.22	3 610	2	26	**2KJ3302 - ■ EM22 - ■ ■ M1**	**P00**
	199	106	14.54	3 540	2.1	26	**2KJ3302 - ■ EM22 - ■ ■ L1**	**P00**
	233	90	12.38	3 430	2.3	26	**2KJ3302 - ■ EM22 - ■ ■ K1**	**P00**
	272	77	10.61	3 320	2.6	26	**2KJ3302 - ■ EM22 - ■ ■ J1**	**P00**
	317	66	9.13	3 210	2.8	26	**2KJ3302 - ■ EM22 - ■ ■ H1**	**P00**
	357	59	8.1	3 070	2.8	26	**2KJ3302 - ■ EM22 - ■ ■ G1**	**P00**
	429	49	6.74	2 940	3.1	26	**2KJ3302 - ■ EM22 - ■ ■ F1**	**P00**
	455	46	6.35	2 900	3.2	26	**2KJ3302 - ■ EM22 - ■ ■ E1**	**P00**
	508	41	5.69	2 820	3.4	26	**2KJ3302 - ■ EM22 - ■ ■ D1**	**P00**
	597	35	4.84	2 710	3.6	26	**2KJ3302 - ■ EM22 - ■ ■ C1**	**P00**
	696	30	4.15	2 600	3.9	26	**2KJ3302 - ■ EM22 - ■ ■ B1**	**P00**
	810	26	3.57	2 490	4.2	26	**2KJ3302 - ■ EM22 - ■ ■ A1**	**P00**

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**FZ.29-LE100LE4E**							
	111	189	13.06	2 580	0.8	25	**2KJ3301 - ■ FL22 - ■ ■ M1**	
	126	166	11.51	2 600	0.86	25	**2KJ3301 - ■ FL22 - ■ ■ L1**	
	146	144	9.99	2 600	0.94	25	**2KJ3301 - ■ FL22 - ■ ■ K1**	
	150	140	9.69	2 400	1	25	**2KJ3301 - ■ FL22 - ■ ■ J1**	
	169	125	8.63	2 400	1	25	**2KJ3301 - ■ FL22 - ■ ■ H1**	
	183	115	7.97	2 410	1	25	**2KJ3301 - ■ FL22 - ■ ■ G1**	
	208	101	6.98	2 390	1.2	25	**2KJ3301 - ■ FL22 - ■ ■ F1**	
	238	88	6.12	2 370	1.3	25	**2KJ3301 - ■ FL22 - ■ ■ E1**	
	262	80	5.55	2 350	1.3	25	**2KJ3301 - ■ FL22 - ■ ■ D1**	
	279	75	5.22	2 330	1.4	25	**2KJ3301 - ■ FL22 - ■ ■ C1**	
	316	66	4.6	2 290	1.5	25	**2KJ3301 - ■ FL22 - ■ ■ B1**	
	364	58	4	2 230	1.6	25	**2KJ3301 - ■ FL22 - ■ ■ A1**	
	FZ.29-LE90LH2E							
	166	127	17.44	2 580	1.2	20	**2KJ3301 - ■ EM22 - ■ ■ Q1**	**P00**
	189	111	15.29	2 560	1.3	20	**2KJ3301 - ■ EM22 - ■ ■ P1**	**P00**
	208	101	13.88	2 530	1.5	20	**2KJ3301 - ■ EM22 - ■ ■ N1**	**P00**
	221	95	13.06	2 510	1.6	20	**2KJ3301 - ■ EM22 - ■ ■ M1**	**P00**
	251	84	11.51	2 470	1.7	20	**2KJ3301 - ■ EM22 - ■ ■ L1**	**P00**
	289	73	9.99	2 410	1.9	20	**2KJ3301 - ■ EM22 - ■ ■ K1**	**P00**
	298	70	9.69	2 310	2	20	**2KJ3301 - ■ EM22 - ■ ■ J1**	**P00**
	335	63	8.63	2 270	2.1	20	**2KJ3301 - ■ EM22 - ■ ■ H1**	**P00**
	363	58	7.97	2 240	2.1	20	**2KJ3301 - ■ EM22 - ■ ■ G1**	**P00**
	414	51	6.98	2 180	2.4	20	**2KJ3301 - ■ EM22 - ■ ■ F1**	**P00**
	472	44	6.12	2 140	2.6	20	**2KJ3301 - ■ EM22 - ■ ■ E1**	**P00**
	521	40	5.55	2 090	2.7	20	**2KJ3301 - ■ EM22 - ■ ■ D1**	**P00**
	554	38	5.22	2 060	2.8	20	**2KJ3301 - ■ EM22 - ■ ■ C1**	**P00**
	628	33	4.6	2 010	2.9	20	**2KJ3301 - ■ EM22 - ■ ■ B1**	**P00**
	722	29	4	1 940	3.1	20	**2KJ3301 - ■ EM22 - ■ ■ A1**	**P00**
3	**FD.89-LE100LK4E**							
	14	2 090	106.52	14 900	0.88	90	**2KJ3406 - ■ FM22 - ■ ■ F1**	
	16	1 830	93.14	14 900	1	90	**2KJ3406 - ■ FM22 - ■ ■ E1**	
	18	1 570	79.95	14 900	1.2	90	**2KJ3406 - ■ FM22 - ■ ■ D1**	
	21	1 390	70.67	14 900	1.3	90	**2KJ3406 - ■ FM22 - ■ ■ C1**	
	24	1 180	60.09	14 900	1.6	90	**2KJ3406 - ■ FM22 - ■ ■ B1**	
	28	1 010	51.51	14 900	1.8	90	**2KJ3406 - ■ FM22 - ■ ■ A1**	
	FZ.89-LE100LK4E							
	24	1 210	61.72	14 900	1.5	89	**2KJ3306 - ■ FM22 - ■ ■ B2**	
	26	1 090	55.72	14 900	1.7	89	**2KJ3306 - ■ FM22 - ■ ■ A2**	
	29	995	50.54	14 900	1.9	89	**2KJ3306 - ■ FM22 - ■ ■ X1**	
	31	915	46.66	14 900	2	89	**2KJ3306 - ■ FM22 - ■ ■ W1**	
	34	835	42.41	14 900	2.2	89	**2KJ3306 - ■ FM22 - ■ ■ V1**	
	41	705	35.91	14 900	2.6	89	**2KJ3306 - ■ FM22 - ■ ■ U1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**FD.79-LE100LK4E**							
	24	1 190	60.82	12 500	0.84	59	**2KJ3405 - ■ FM22 - ■ ■ B1**	
	27	1 040	53.01	12 500	0.96	59	**2KJ3405 - ■ FM22 - ■ ■ A1**	
	FZ.79-LE100LK4E							
	30	945	48.03	12 500	1.1	58	**2KJ3305 - ■ FM22 - ■ ■ W1**	
	34	850	43.18	12 500	1.2	58	**2KJ3305 - ■ FM22 - ■ ■ V1**	
	37	765	39.06	12 500	1.3	58	**2KJ3305 - ■ FM22 - ■ ■ U1**	
	40	710	36.05	12 500	1.4	58	**2KJ3305 - ■ FM22 - ■ ■ T1**	
	44	650	33.02	12 500	1.5	58	**2KJ3305 - ■ FM22 - ■ ■ S1**	
	53	545	27.71	12 500	1.8	58	**2KJ3305 - ■ FM22 - ■ ■ R1**	
	56	510	26.08	12 500	1.9	58	**2KJ3305 - ■ FM22 - ■ ■ Q1**	
	61	470	23.93	12 500	2.1	58	**2KJ3305 - ■ FM22 - ■ ■ P1**	
	70	410	20.9	12 500	2.4	58	**2KJ3305 - ■ FM22 - ■ ■ N1**	
	78	365	18.71	12 500	2.5	58	**2KJ3305 - ■ FM22 - ■ ■ M1**	
	89	320	16.36	12 500	2.5	58	**2KJ3305 - ■ FM22 - ■ ■ L1**	
	104	275	14.04	12 500	2.5	58	**2KJ3305 - ■ FM22 - ■ ■ K1**	
	117	240	12.41	12 500	2.5	58	**2KJ3305 - ■ FM22 - ■ ■ J1**	
	138	205	10.56	12 500	2.5	58	**2KJ3305 - ■ FM22 - ■ ■ H1**	
	161	178	9.05	12 500	2.5	58	**2KJ3305 - ■ FM22 - ■ ■ G1**	
	FZ.69-LE100LK4E							
	40	715	36.36	6 580	0.84	51	**2KJ3304 - ■ FM22 - ■ ■ S1**	
	44	645	32.78	6 640	0.93	51	**2KJ3304 - ■ FM22 - ■ ■ R1**	
	48	595	30.26	6 670	1	51	**2KJ3304 - ■ FM22 - ■ ■ Q1**	
	53	540	27.62	6 700	1.1	51	**2KJ3304 - ■ FM22 - ■ ■ P1**	
	63	450	22.92	6 650	1.3	51	**2KJ3304 - ■ FM22 - ■ ■ N1**	
	67	425	21.57	6 620	1.4	51	**2KJ3304 - ■ FM22 - ■ ■ M1**	
	71	400	20.37	6 600	1.5	51	**2KJ3304 - ■ FM22 - ■ ■ L1**	
	84	340	17.33	6 490	1.8	51	**2KJ3304 - ■ FM22 - ■ ■ K1**	
	98	290	14.85	6 370	2.1	51	**2KJ3304 - ■ FM22 - ■ ■ J1**	
	111	255	13.06	6 240	2.3	51	**2KJ3304 - ■ FM22 - ■ ■ H1**	
	132	215	11.01	6 060	2.8	51	**2KJ3304 - ■ FM22 - ■ ■ G1**	
	152	189	9.6	5 890	3.2	51	**2KJ3304 - ■ FM22 - ■ ■ F1**	
	163	175	8.9	5 740	2.7	51	**2KJ3304 - ■ FM22 - ■ ■ E1**	
	191	150	7.62	5 560	3.1	51	**2KJ3304 - ■ FM22 - ■ ■ D1**	
	217	132	6.7	5 400	3.3	51	**2KJ3304 - ■ FM22 - ■ ■ C1**	
	257	111	5.66	5 190	3.7	51	**2KJ3304 - ■ FM22 - ■ ■ B1**	
	295	97	4.93	5 020	4	51	**2KJ3304 - ■ FM22 - ■ ■ A1**	
	FZ.49-LE100LK4E							
	51	565	28.74	3 610	0.85	47	**2KJ3303 - ■ FM22 - ■ ■ Q1**	
	55	515	26.24	3 710	0.93	47	**2KJ3303 - ■ FM22 - ■ ■ P1**	
	67	425	21.77	3 870	1.1	47	**2KJ3303 - ■ FM22 - ■ ■ N1**	
	71	400	20.49	3 910	1.2	47	**2KJ3303 - ■ FM22 - ■ ■ M1**	
	75	380	19.35	3 910	1.3	47	**2KJ3303 - ■ FM22 - ■ ■ N1**	
	88	320	16.47	3 970	1.5	47	**2KJ3303 - ■ FM22 - ■ ■ K1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Geared motors up to 15 kW

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**FZ.49-LE100LK4E**							
	103	275	14.11	3 960	1.7	47	**2KJ3303 - ■ FM22 - ■ ■ J1**	
	117	240	12.4	3 950	2	47	**2KJ3303 - ■ FM22 - ■ ■ H1**	
	139	205	10.46	3 870	2.3	47	**2KJ3303 - ■ FM22 - ■ ■ G1**	
	160	180	9.12	3 800	2.7	47	**2KJ3303 - ■ FM22 - ■ ■ F1**	
	173	165	8.4	3 670	2.7	47	**2KJ3303 - ■ FM22 - ■ ■ E1**	
	202	142	7.2	3 590	3.2	47	**2KJ3303 - ■ FM22 - ■ ■ D1**	
	230	125	6.33	3 520	3.4	47	**2KJ3303 - ■ FM22 - ■ ■ C1**	
	272	105	5.34	3 420	3.8	47	**2KJ3303 - ■ FM22 - ■ ■ B1**	
	313	92	4.65	3 320	4.1	47	**2KJ3303 - ■ FM22 - ■ ■ A1**	
	FZ.39-LE100LK4E							
	118	240	12.38	3 360	0.86	36	**2KJ3302 - ■ FM22 - ■ ■ K1**	
	137	205	10.61	3 370	0.95	36	**2KJ3302 - ■ FM22 - ■ ■ J1**	
	159	180	9.13	3 310	1.1	36	**2KJ3302 - ■ FM22 - ■ ■ H1**	
	180	159	8.1	3 150	1	36	**2KJ3302 - ■ FM22 - ■ ■ G1**	
	216	133	6.74	3 100	1.1	36	**2KJ3302 - ■ FM22 - ■ ■ F1**	
	229	125	6.35	3 080	1.2	36	**2KJ3302 - ■ FM22 - ■ ■ E1**	
	256	112	5.69	3 040	1.2	36	**2KJ3302 - ■ FM22 - ■ ■ D1**	
	301	95	4.84	2 980	1.3	36	**2KJ3302 - ■ FM22 - ■ ■ C1**	
	351	82	4.15	2 900	1.4	36	**2KJ3302 - ■ FM22 - ■ ■ B1**	
	408	70	3.57	2 820	1.5	36	**2KJ3302 - ■ FM22 - ■ ■ A1**	
	FZ.29-LE100LK4E							
	208	137	6.98	2 040	0.89	29	**2KJ3301 - ■ FM22 - ■ ■ F1**	
	238	121	6.12	2 050	0.95	29	**2KJ3301 - ■ FM22 - ■ ■ E1**	
	262	109	5.55	2 060	0.99	29	**2KJ3301 - ■ FM22 - ■ ■ D1**	
	279	103	5.22	2 060	1	29	**2KJ3301 - ■ FM22 - ■ ■ C1**	
	316	91	4.6	2 050	1.1	29	**2KJ3301 - ■ FM22 - ■ ■ B1**	
	364	79	4	2 030	1.2	29	**2KJ3301 - ■ FM22 - ■ ■ A1**	
4	**FD.89-LE112ME4E**							
	18	2 090	79.95	14 900	0.88	90	**2KJ3406 - ■ GH22 - ■ ■ D1**	
	21	1 840	70.67	14 900	1	90	**2KJ3406 - ■ GH22 - ■ ■ C1**	
	24	1 570	60.09	14 900	1.2	90	**2KJ3406 - ■ GH22 - ■ ■ B1**	
	28	1 340	51.51	14 900	1.4	90	**2KJ3406 - ■ GH22 - ■ ■ A1**	
	FZ.89-LE112ME4E							
	24	1 610	61.72	14 900	1.1	89	**2KJ3306 - ■ GH22 - ■ ■ B2**	
	26	1 450	55.72	14 900	1.3	89	**2KJ3306 - ■ GH22 - ■ ■ A2**	
	29	1 320	50.54	14 900	1.4	89	**2KJ3306 - ■ GH22 - ■ ■ X1**	
	31	1 220	46.66	14 900	1.5	89	**2KJ3306 - ■ GH22 - ■ ■ W1**	
	34	1 110	42.41	14 900	1.7	89	**2KJ3306 - ■ GH22 - ■ ■ V1**	
	41	940	35.91	14 900	2	89	**2KJ3306 - ■ GH22 - ■ ■ U1**	
	43	880	33.8	14 900	2.1	89	**2KJ3306 - ■ GH22 - ■ ■ T1**	
	47	815	31.21	14 900	2.3	89	**2KJ3306 - ■ GH22 - ■ ■ S1**	
	53	725	27.77	14 900	2.5	89	**2KJ3306 - ■ GH22 - ■ ■ R1**	
	59	645	24.67	14 900	2.9	89	**2KJ3306 - ■ GH22 - ■ ■ Q1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
4	**FZ.79-LE112ME4E**							
	30	1 250	48.03	12 500	0.8	59	**2KJ3305 - ■ GH22 - ■ ■ W1**	
	34	1 130	43.18	12 500	0.89	59	**2KJ3305 - ■ GH22 - ■ ■ V1**	
	37	1 020	39.06	12 500	0.98	59	**2KJ3305 - ■ GH22 - ■ ■ U1**	
	40	940	36.05	12 500	1.1	59	**2KJ3305 - ■ GH22 - ■ ■ T1**	
	44	860	33.02	12 500	1.2	59	**2KJ3305 - ■ GH22 - ■ ■ S1**	
	53	725	27.71	12 500	1.4	59	**2KJ3305 - ■ GH22 - ■ ■ R1**	
	56	680	26.08	12 500	1.5	59	**2KJ3305 - ■ GH22 - ■ ■ Q1**	
	61	625	23.93	12 500	1.6	59	**2KJ3305 - ■ GH22 - ■ ■ P1**	
	70	545	20.9	12 500	1.8	59	**2KJ3305 - ■ GH22 - ■ ■ N1**	
	78	490	18.71	12 500	1.9	59	**2KJ3305 - ■ GH22 - ■ ■ M1**	
	89	425	16.36	12 500	1.9	59	**2KJ3305 - ■ GH22 - ■ ■ L1**	
	104	365	14.04	12 500	1.9	59	**2KJ3305 - ■ GH22 - ■ ■ K1**	
	118	325	12.41	12 500	1.9	59	**2KJ3305 - ■ GH22 - ■ ■ J1**	
	138	275	10.56	12 500	1.9	59	**2KJ3305 - ■ GH22 - ■ ■ H1**	
	161	235	9.05	12 500	1.9	59	**2KJ3305 - ■ GH22 - ■ ■ G1**	
	172	220	8.51	12 500	3.2	59	**2KJ3305 - ■ GH22 - ■ ■ F1**	
	196	195	7.44	12 500	3.7	59	**2KJ3305 - ■ GH22 - ■ ■ E1**	
	228	167	6.39	12 200	4.3	59	**2KJ3305 - ■ GH22 - ■ ■ D1**	
	259	148	5.64	11 800	4.7	59	**2KJ3305 - ■ GH22 - ■ ■ C1**	
	FZ.69-LE112ME4E							
	53	720	27.62	5 580	0.83	52	**2KJ3304 - ■ GH22 - ■ ■ P1**	
	64	600	22.92	5 710	1	52	**2KJ3304 - ■ GH22 - ■ ■ N1**	
	68	560	21.57	5 770	1.1	52	**2KJ3304 - ■ GH22 - ■ ■ M1**	
	72	530	20.37	5 780	1.1	52	**2KJ3304 - ■ GH22 - ■ ■ L1**	
	84	450	17.33	5 800	1.3	52	**2KJ3304 - ■ GH22 - ■ ■ K1**	
	98	385	14.85	5 770	1.5	52	**2KJ3304 - ■ GH22 - ■ ■ J1**	
	112	340	13.06	5 710	1.8	52	**2KJ3304 - ■ GH22 - ■ ■ H1**	
	133	285	11.01	5 620	2.1	52	**2KJ3304 - ■ GH22 - ■ ■ G1**	
	152	250	9.6	5 500	2.4	52	**2KJ3304 - ■ GH22 - ■ ■ F1**	
	164	230	8.9	5 380	2	52	**2KJ3304 - ■ GH22 - ■ ■ E1**	
	192	199	7.62	5 230	2.3	52	**2KJ3304 - ■ GH22 - ■ ■ D1**	
	218	175	6.7	5 110	2.5	52	**2KJ3304 - ■ GH22 - ■ ■ C1**	
	258	148	5.66	4 950	2.8	52	**2KJ3304 - ■ GH22 - ■ ■ B1**	
	296	129	4.93	4 800	3	52	**2KJ3304 - ■ GH22 - ■ ■ A1**	
	FZ.49-LE112ME4E							
	67	570	21.77	2 920	0.84	48	**2KJ3303 - ■ GH22 - ■ ■ N1**	
	71	535	20.49	3 020	0.9	48	**2KJ3303 - ■ GH22 - ■ ■ M1**	
	75	505	19.35	3 090	0.95	48	**2KJ3303 - ■ GH22 - ■ ■ L1**	
	89	430	16.47	3 240	1.1	48	**2KJ3303 - ■ GH22 - ■ ■ K1**	
	103	365	14.11	3 360	1.3	48	**2KJ3303 - ■ GH22 - ■ ■ J1**	
	118	320	12.4	3 420	1.5	48	**2KJ3303 - ■ GH22 - ■ ■ H1**	
	140	270	10.46	3 440	1.8	48	**2KJ3303 - ■ GH22 - ■ ■ G1**	
	160	235	9.12	3 430	2	48	**2KJ3303 - ■ GH22 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
4	**FZ.49-LE112ME4E**							
	174	220	8.4	3 270	2	48	**2KJ3303 - ■ GH22 - ■ ■ E1**	
	203	188	7.2	3 260	2.4	48	**2KJ3303 - ■ GH22 - ■ ■ D1**	
	231	166	6.33	3 220	2.6	48	**2KJ3303 - ■ GH22 - ■ ■ C1**	
	273	140	5.34	3 160	2.9	48	**2KJ3303 - ■ GH22 - ■ ■ B1**	
	314	122	4.65	3 100	3.1	48	**2KJ3303 - ■ GH22 - ■ ■ A1**	
	FZ.39-LE112ME4E							
	217	176	6.74	2 740	0.86	39	**2KJ3302 - ■ GH22 - ■ ■ F1**	
	230	166	6.35	2 740	0.9	39	**2KJ3302 - ■ GH22 - ■ ■ E1**	
	257	149	5.69	2 730	0.94	39	**2KJ3302 - ■ GH22 - ■ ■ D1**	
	302	127	4.84	2 700	1	39	**2KJ3302 - ■ GH22 - ■ ■ C1**	
	352	109	4.15	2 670	1.1	39	**2KJ3302 - ■ GH22 - ■ ■ B1**	
	409	93	3.57	2 630	1.2	39	**2KJ3302 - ■ GH22 - ■ ■ A1**	
	FZ.29-LE112ME4E							
	317	120	4.6	1 770	0.81	28	**2KJ3301 - ■ GH22 - ■ ■ B1**	
	365	105	4	1 780	0.87	28	**2KJ3301 - ■ GH22 - ■ ■ A1**	
5.5	**FD.89-LE132SF4E**							
	24	2 150	60.09	14 900	0.86	105	**2KJ3406 - ■ HG22 - ■ ■ B1**	
	28	1 840	51.51	14 900	1	105	**2KJ3406 - ■ HG22 - ■ ■ A1**	
	FZ.89-LE132SF4E							
	35	1 520	42.41	14 900	1.2	103	**2KJ3306 - ■ HG22 - ■ ■ V1**	
	41	1 280	35.91	14 900	1.4	103	**2KJ3306 - ■ HG22 - ■ ■ U1**	
	43	1 210	33.8	14 900	1.5	103	**2KJ3306 - ■ HG22 - ■ ■ T1**	
	47	1 110	31.21	14 900	1.7	103	**2KJ3306 - ■ HG22 - ■ ■ S1**	
	53	995	27.77	14 900	1.9	103	**2KJ3306 - ■ HG22 - ■ ■ R1**	
	59	880	24.67	14 900	2.1	103	**2KJ3306 - ■ HG22 - ■ ■ Q1**	
	66	790	22.08	14 900	2.3	103	**2KJ3306 - ■ HG22 - ■ ■ P1**	
	78	675	18.88	14 900	2.7	103	**2KJ3306 - ■ HG22 - ■ ■ N1**	
	87	600	16.86	14 900	3.1	103	**2KJ3306 - ■ HG22 - ■ ■ M1**	
	98	530	14.9	14 900	3.5	103	**2KJ3306 - ■ HG22 - ■ ■ L1**	
	193	270	7.6	14 900	4	103	**2KJ3306 - ■ HG22 - ■ ■ F1**	
	FZ.79-LE132SF4E							
	44	1 180	33.02	12 500	0.84	73	**2KJ3305 - ■ HG22 - ■ ■ S1**	
	53	990	27.71	12 500	1	73	**2KJ3305 - ■ HG22 - ■ ■ R1**	
	56	935	26.08	12 500	1.1	73	**2KJ3305 - ■ HG22 - ■ ■ Q1**	
	61	855	23.93	12 500	1.2	73	**2KJ3305 - ■ HG22 - ■ ■ P1**	
	70	745	20.9	12 500	1.3	73	**2KJ3305 - ■ HG22 - ■ ■ N1**	
	78	670	18.71	12 500	1.4	73	**2KJ3305 - ■ HG22 - ■ ■ M1**	
	90	585	16.36	12 500	1.4	73	**2KJ3305 - ■ HG22 - ■ ■ L1**	
	104	500	14.04	12 500	1.4	73	**2KJ3305 - ■ HG22 - ■ ■ K1**	
	118	445	12.41	12 500	1.4	73	**2KJ3305 - ■ HG22 - ■ ■ J1**	
	139	375	10.56	12 500	1.4	73	**2KJ3305 - ■ HG22 - ■ ■ H1**	
	162	320	9.05	12 500	1.4	73	**2KJ3305 - ■ HG22 - ■ ■ G1**	
	172	305	8.51	12 500	2.4	73	**2KJ3305 - ■ HG22 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
5.5	**FZ.79-LE132SF4E**							
	197	265	7.44	12 300	2.7	73	**2KJ3305 - ■ HG22 - ■ ■ E1**	
	229	225	6.39	11 900	3.1	73	**2KJ3305 - ■ HG22 - ■ ■ D1**	
	260	200	5.64	11 500	3.5	73	**2KJ3305 - ■ HG22 - ■ ■ C1**	
	305	172	4.8	11 100	3.8	73	**2KJ3305 - ■ HG22 - ■ ■ B1**	
	356	147	4.11	10 700	4.1	73	**2KJ3305 - ■ HG22 - ■ ■ A1**	
	FZ.69-LE132SF4E							
	72	730	20.37	4 540	0.82	65	**2KJ3304 - ■ HG22 - ■ ■ L1**	
	85	620	17.33	4 740	0.97	65	**2KJ3304 - ■ HG22 - ■ ■ K1**	
	99	530	14.85	4 870	1.1	65	**2KJ3304 - ■ HG22 - ■ ■ J1**	
	112	465	13.06	4 930	1.3	65	**2KJ3304 - ■ HG22 - ■ ■ H1**	
	133	395	11.01	4 930	1.5	65	**2KJ3304 - ■ HG22 - ■ ■ G1**	
	153	340	9.6	4 940	1.7	65	**2KJ3304 - ■ HG22 - ■ ■ F1**	
	165	315	8.9	4 820	1.5	65	**2KJ3304 - ■ HG22 - ■ ■ E1**	
	192	270	7.62	4 770	1.7	65	**2KJ3304 - ■ HG22 - ■ ■ D1**	
	219	240	6.7	4 690	1.8	65	**2KJ3304 - ■ HG22 - ■ ■ C1**	
	259	200	5.66	4 600	2	65	**2KJ3304 - ■ HG22 - ■ ■ B1**	
	297	177	4.93	4 490	2.2	65	**2KJ3304 - ■ HG22 - ■ ■ A1**	
	FZ.49-LE132SF4E							
	89	590	16.47	2 190	0.81	53	**2KJ3303 - ■ HG22 - ■ ■ K1**	
	104	505	14.11	2 440	0.95	53	**2KJ3303 - ■ HG22 - ■ ■ J1**	
	118	445	12.4	2 590	1.1	53	**2KJ3303 - ■ HG22 - ■ ■ H1**	
	140	375	10.46	2 750	1.3	53	**2KJ3303 - ■ HG22 - ■ ■ G1**	
	161	325	9.12	2 840	1.5	53	**2KJ3303 - ■ HG22 - ■ ■ F1**	
	174	300	8.4	2 700	1.5	53	**2KJ3303 - ■ HG22 - ■ ■ E1**	
	203	255	7.2	2 780	1.7	53	**2KJ3303 - ■ HG22 - ■ ■ D1**	
	231	225	6.33	2 800	1.9	53	**2KJ3303 - ■ HG22 - ■ ■ C1**	
	274	191	5.34	2 790	2.1	53	**2KJ3303 - ■ HG22 - ■ ■ B1**	
	315	167	4.65	2 780	2.2	53	**2KJ3303 - ■ HG22 - ■ ■ A1**	
7.5	**FZ.89-LE132MF4E**							
	35	2 070	42.41	14 900	0.89	110	**2KJ3306 - ■ HJ22 - ■ ■ V1**	
	41	1 750	35.91	14 900	1.1	110	**2KJ3306 - ■ HJ22 - ■ ■ U1**	
	43	1 650	33.8	14 900	1.1	110	**2KJ3306 - ■ HJ22 - ■ ■ T1**	
	47	1 520	31.21	14 900	1.2	110	**2KJ3306 - ■ HJ22 - ■ ■ S1**	
	53	1 350	27.77	14 900	1.4	110	**2KJ3306 - ■ HJ22 - ■ ■ R1**	
	59	1 200	24.67	14 900	1.5	110	**2KJ3306 - ■ HJ22 - ■ ■ Q1**	
	66	1 080	22.08	14 900	1.7	110	**2KJ3306 - ■ HJ22 - ■ ■ P1**	
	78	920	18.88	14 900	2	110	**2KJ3306 - ■ HJ22 - ■ ■ N1**	
	87	820	16.86	14 900	2.2	110	**2KJ3306 - ■ HJ22 - ■ ■ M1**	
	98	725	14.9	14 900	2.5	110	**2KJ3306 - ■ HJ22 - ■ ■ L1**	
	112	635	13.07	14 900	2.9	110	**2KJ3306 - ■ HJ22 - ■ ■ K1**	
	129	555	11.38	14 900	3.3	110	**2KJ3306 - ■ HJ22 - ■ ■ J1**	
	151	475	9.73	14 900	3.9	110	**2KJ3306 - ■ HJ22 - ■ ■ H1**	
	193	370	7.6	14 900	3	110	**2KJ3306 - ■ HJ22 - ■ ■ G1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Geared motors up to 15 kW

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
7.5	**FZ.89-LE132MF4E**							
	218	325	6.72	14 900	3.4	110	**2KJ3306 - ■ HJ22 - ■ ■ F1**	
	248	285	5.9	14 900	3.8	110	**2KJ3306 - ■ HJ22 - ■ ■ E1**	
	286	250	5.13	14 900	4.4	110	**2KJ3306 - ■ HJ22 - ■ ■ D1**	
	334	215	4.39	14 900	4.9	110	**2KJ3306 - ■ HJ22 - ■ ■ C1**	
	390	184	3.76	14 500	5.4	110	**2KJ3306 - ■ HJ22 - ■ ■ B1**	
	FZ.79-LE132MF4E							
	61	1 170	23.93	12 500	0.85	80	**2KJ3305 - ■ HJ22 - ■ ■ P1**	
	70	1 020	20.9	12 500	0.98	80	**2KJ3305 - ■ HJ22 - ■ ■ N1**	
	78	915	18.71	12 500	1	80	**2KJ3305 - ■ HJ22 - ■ ■ M1**	
	90	800	16.36	12 500	1	80	**2KJ3305 - ■ HJ22 - ■ ■ L1**	
	104	685	14.04	12 500	1	80	**2KJ3305 - ■ HJ22 - ■ ■ K1**	
	118	605	12.41	12 500	1	80	**2KJ3305 - ■ HJ22 - ■ ■ J1**	
	139	515	10.56	12 500	1	80	**2KJ3305 - ■ HJ22 - ■ ■ H1**	
	162	440	9.05	12 300	1	80	**2KJ3305 - ■ HJ22 - ■ ■ G1**	
	172	415	8.51	12 000	1.7	80	**2KJ3305 - ■ HJ22 - ■ ■ F1**	
	197	360	7.44	11 700	2	80	**2KJ3305 - ■ HJ22 - ■ ■ E1**	
	229	310	6.39	11 400	2.3	80	**2KJ3305 - ■ HJ22 - ■ ■ D1**	
	260	275	5.64	11 100	2.5	80	**2KJ3305 - ■ HJ22 - ■ ■ C1**	
	305	235	4.8	10 700	2.8	80	**2KJ3305 - ■ HJ22 - ■ ■ B1**	
	356	200	4.11	10 400	3	80	**2KJ3305 - ■ HJ22 - ■ ■ A1**	
	FZ.69-LE132MF4E							
	99	725	14.85	3 660	0.83	72	**2KJ3304 - ■ HJ22 - ■ ■ J1**	
	112	635	13.06	3 880	0.94	72	**2KJ3304 - ■ HJ22 - ■ ■ H1**	
	133	535	11.01	4 060	1.1	72	**2KJ3304 - ■ HJ22 - ■ ■ G1**	
	153	465	9.6	4 170	1.3	72	**2KJ3304 - ■ HJ22 - ■ ■ F1**	
	165	435	8.9	4 040	1.1	72	**2KJ3304 - ■ HJ22 - ■ ■ E1**	
	192	370	7.62	4 120	1.2	72	**2KJ3304 - ■ HJ22 - ■ ■ D1**	
	219	325	6.7	4 130	1.3	72	**2KJ3304 - ■ HJ22 - ■ ■ C1**	
	259	275	5.66	4 110	1.5	72	**2KJ3304 - ■ HJ22 - ■ ■ B1**	
	297	240	4.93	4 080	1.6	72	**2KJ3304 - ■ HJ22 - ■ ■ A1**	
9.2	**FZ.89-LE132ZMM4E**							
	41	2 150	35.91	14 900	0.86	117	**2KJ3306 - ■ HV22 - ■ ■ U1**	
	43	2 020	33.8	14 900	0.91	117	**2KJ3306 - ■ HV22 - ■ ■ T1**	
	47	1 870	31.21	14 900	0.99	117	**2KJ3306 - ■ HV22 - ■ ■ S1**	
	53	1 660	27.77	14 900	1.1	117	**2KJ3306 - ■ HV22 - ■ ■ R1**	
	59	1 480	24.67	14 900	1.3	117	**2KJ3306 - ■ HV22 - ■ ■ Q1**	
	66	1 320	22.08	14 900	1.4	117	**2KJ3306 - ■ HV22 - ■ ■ P1**	
	78	1 130	18.88	14 900	1.6	117	**2KJ3306 - ■ HV22 - ■ ■ N1**	
	87	1 010	16.86	14 900	1.8	117	**2KJ3306 - ■ HV22 - ■ ■ M1**	
	98	890	14.9	14 900	2.1	117	**2KJ3306 - ■ HV22 - ■ ■ L1**	
	112	780	13.07	14 900	2.4	117	**2KJ3306 - ■ HV22 - ■ ■ K1**	
	129	680	11.38	14 900	2.7	117	**2KJ3306 - ■ HV22 - ■ ■ J1**	
	151	580	9.73	14 900	3.2	117	**2KJ3306 - ■ HV22 - ■ ■ H1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
9.2	**FZ.89-LE132ZMM4E**							
	176	500	8.33	14 900	3.5	117	**2KJ3306 - ■ HV22 - ■ ■ G1**	
	193	455	7.6	14 900	2.4	117	**2KJ3306 - ■ HV22 - ■ ■ F1**	
	218	400	6.72	14 900	2.8	117	**2KJ3306 - ■ HV22 - ■ ■ E1**	
	248	350	5.9	14 900	3.1	117	**2KJ3306 - ■ HV22 - ■ ■ D1**	
	286	305	5.13	14 900	3.6	117	**2KJ3306 - ■ HV22 - ■ ■ C1**	
	334	260	4.39	14 900	4	117	**2KJ3306 - ■ HV22 - ■ ■ B1**	
	390	225	3.76	14 300	4.4	117	**2KJ3306 - ■ HV22 - ■ ■ A1**	
	FZ.79-LE132ZMM4E							
	70	1 250	20.9	12 200	0.8	87	**2KJ3305 - ■ HV22 - ■ ■ N1**	
	78	1 120	18.71	12 300	0.82	87	**2KJ3305 - ■ HV22 - ■ ■ M1**	
	90	980	16.36	12 300	0.82	87	**2KJ3305 - ■ HV22 - ■ ■ L1**	
	104	840	14.04	12 200	0.82	87	**2KJ3305 - ■ HV22 - ■ ■ K1**	
	118	740	12.41	12 200	0.82	87	**2KJ3305 - ■ HV22 - ■ ■ J1**	
	139	630	10.56	12 000	0.82	87	**2KJ3305 - ■ HV22 - ■ ■ H1**	
	162	540	9.05	11 800	0.82	87	**2KJ3305 - ■ HV22 - ■ ■ G1**	
	172	510	8.51	11 500	1.4	87	**2KJ3305 - ■ HV22 - ■ ■ F1**	
	197	445	7.44	11 300	1.6	87	**2KJ3305 - ■ HV22 - ■ ■ E1**	
	229	380	6.39	11 000	1.9	87	**2KJ3305 - ■ HV22 - ■ ■ D1**	
	260	335	5.64	10 800	2.1	87	**2KJ3305 - ■ HV22 - ■ ■ C1**	
	305	285	4.8	10 500	2.3	87	**2KJ3305 - ■ HV22 - ■ ■ B1**	
	356	245	4.11	10 100	2.5	87	**2KJ3305 - ■ HV22 - ■ ■ A1**	
11	**FZ.89-LE160MF4E**							
	47	2 230	31.21	14 900	0.83	131	**2KJ3306 - ■ JP22 - ■ ■ S1**	
	53	1 980	27.77	14 900	0.93	131	**2KJ3306 - ■ JP22 - ■ ■ R1**	
	60	1 760	24.67	14 900	1	131	**2KJ3306 - ■ JP22 - ■ ■ Q1**	
	67	1 570	22.08	14 900	1.2	131	**2KJ3306 - ■ JP22 - ■ ■ P1**	
	78	1 340	18.88	14 900	1.4	131	**2KJ3306 - ■ JP22 - ■ ■ N1**	
	87	1 200	16.86	14 900	1.5	131	**2KJ3306 - ■ JP22 - ■ ■ M1**	
	99	1 060	14.9	14 900	1.7	131	**2KJ3306 - ■ JP22 - ■ ■ L1**	
	112	930	13.07	14 900	2	131	**2KJ3306 - ■ JP22 - ■ ■ K1**	
	129	810	11.38	14 900	2.3	131	**2KJ3306 - ■ JP22 - ■ ■ J1**	
	151	695	9.73	14 900	2.7	131	**2KJ3306 - ■ JP22 - ■ ■ H1**	
	176	595	8.33	14 900	2.9	131	**2KJ3306 - ■ JP22 - ■ ■ G1**	
	193	540	7.6	14 900	2	131	**2KJ3306 - ■ JP22 - ■ ■ F1**	
	219	480	6.72	14 900	2.3	131	**2KJ3306 - ■ JP22 - ■ ■ E1**	
	249	420	5.9	14 900	2.6	131	**2KJ3306 - ■ JP22 - ■ ■ D1**	
	287	365	5.13	14 900	3	131	**2KJ3306 - ■ JP22 - ■ ■ C1**	
	335	310	4.39	14 600	3.4	131	**2KJ3306 - ■ JP22 - ■ ■ B1**	
	391	265	3.76	14 100	3.7	131	**2KJ3306 - ■ JP22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Geared motors up to 15 kW

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
11	**FZ.79-LE160MF4E**							
	173	605	8.51	10 900	1.2	100	**2KJ3305 - ■ JP22 - ■ ■ F1**	
	198	530	7.44	10 800	1.4	100	**2KJ3305 - ■ JP22 - ■ ■ E1**	
	230	455	6.39	10 600	1.6	100	**2KJ3305 - ■ JP22 - ■ ■ D1**	
	261	400	5.64	10 400	1.7	100	**2KJ3305 - ■ JP22 - ■ ■ C1**	
	306	340	4.8	10 100	1.9	100	**2KJ3305 - ■ JP22 - ■ ■ B1**	
	358	290	4.11	9 920	2.1	100	**2KJ3305 - ■ JP22 - ■ ■ A1**	
15	**FZ.89-LE160LD4E**							
	67	2 140	22.08	14 900	0.86	143	**2KJ3306 - ■ JU22 - ■ ■ P1**	
	78	1 830	18.88	14 900	1	143	**2KJ3306 - ■ JU22 - ■ ■ N1**	
	87	1 630	16.86	14 900	1.1	143	**2KJ3306 - ■ JU22 - ■ ■ M1**	
	99	1 440	14.9	14 900	1.3	143	**2KJ3306 - ■ JU22 - ■ ■ L1**	
	113	1 260	13.07	14 900	1.5	143	**2KJ3306 - ■ JU22 - ■ ■ K1**	
	130	1 100	11.38	14 900	1.7	143	**2KJ3306 - ■ JU22 - ■ ■ J1**	
	152	945	9.73	14 900	2	143	**2KJ3306 - ■ JU22 - ■ ■ H1**	
	177	805	8.33	14 900	2.2	143	**2KJ3306 - ■ JU22 - ■ ■ G1**	
	194	735	7.6	14 900	1.5	143	**2KJ3306 - ■ JU22 - ■ ■ F1**	
	219	650	6.72	14 900	1.7	143	**2KJ3306 - ■ JU22 - ■ ■ E1**	
	250	570	5.9	14 900	1.9	143	**2KJ3306 - ■ JU22 - ■ ■ D1**	
	288	495	5.13	14 600	2.2	143	**2KJ3306 - ■ JU22 - ■ ■ C1**	
	336	425	4.39	14 100	2.5	143	**2KJ3306 - ■ JU22 - ■ ■ B1**	
	392	365	3.76	13 600	2.7	143	**2KJ3306 - ■ JU22 - ■ ■ A1**	
	FZ.79-LE160LD4E							
	173	825	8.51	9 720	0.87	112	**2KJ3305 - ■ JU22 - ■ ■ F1**	
	198	720	7.44	9 740	1	112	**2KJ3305 - ■ JU22 - ■ ■ E1**	
	231	620	6.39	9 680	1.2	112	**2KJ3305 - ■ JU22 - ■ ■ D1**	
	262	545	5.64	9 630	1.3	112	**2KJ3305 - ■ JU22 - ■ ■ C1**	
	307	465	4.8	9 470	1.4	112	**2KJ3305 - ■ JU22 - ■ ■ B1**	
	359	395	4.11	9 320	1.5	112	**2KJ3305 - ■ JU22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1, 5 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Transmission ratios and torques

Selection and ordering data

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
FD.29														
298.58	4.9	150	5 220	0.02	94054/315	✓	✓							**2KJ3401 - ■■■■■ - Q1**
264.39	5.5	150	5 220	0.03	92537/350	✓	✓	✓	✓					**2KJ3401 - ■■■■■ - P1**
229.72	6.3	150	5 220	0.04	80401/350	✓	✓	✓	✓					**2KJ3401 - ■■■■■ - N1**
208.83	6.9	150	5 220	0.05	80401/385	✓	✓	✓	✓					**2KJ3401 - ■■■■■ - M1**
177.71	8.2	150	5 220	0.06	62197/350	✓	✓	✓	✓					**2KJ3401 - ■■■■■ - L1**
161.55	9	150	5 220	0.08	62197/385	✓	✓	✓	✓					**2KJ3401 - ■■■■■ - K1**
140.86	10	150	5 220	0.09	19721/140	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - J1**
126.09	11	150	5 220	0.12	48544/385	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - H1**
111.97	13	150	5 220	0.15	47027/420	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - G1**
103.36	14	150	5 220	0.18	47027/455	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - F1**
89.78	16	150	5 220	0.21	43993/490	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - E1**
78.02	19	150	5 220	0.19	13653/175	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - D1**
70.43	21	150	5 220	0.28	19721/280	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - C1**
66.29	22	150	5 220	0.34	39442/595	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - B1**
57.79	25	150	5 220	0.37	6068/105	✓	✓	✓	✓	✓				**2KJ3401 - ■■■■■ - A1**
FZ.29														
56.73	26	150	5 220	0.04	851/15	✓	✓							**2KJ3301 - ■■■■■ - C2**
50.32	29	150	5 220	0.05	1258/25	✓	✓	✓	✓					**2KJ3301 - ■■■■■ - B2**
43.66	33	150	4 970	0.06	2183/50	✓	✓	✓	✓					**2KJ3301 - ■■■■■ - A2**
39.69	37	150	4 780	0.08	2183/55	✓	✓	✓	✓					**2KJ3301 - ■■■■■ - X1**
34.04	43	150	4 480	0.1	851/25	✓	✓	✓	✓					**2KJ3301 - ■■■■■ - W1**
30.95	47	150	4 300	0.12	1702/55	✓	✓	✓	✓					**2KJ3301 - ■■■■■ - V1**
27.13	53	150	4 060	0.14	407/15	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - U1**
24.22	60	150	3 860	0.17	1332/55	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - T1**
21.58	67	150	3 670	0.21	259/12	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - S1**
19.92	73	150	3 540	0.25	259/13	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - R1**
17.44	83	150	3 330	0.3	1221/70	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - Q1**
15.29	95	150	3 140	0.3	1147/75	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - P1**
13.88	104	150	3 000	0.41	111/8	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - N1**
13.06	111	150	2 910	0.48	222/17	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - M1**
11.51	126	143	2 800	0.55	518/45	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - L1**
9.99	145	136	2 670	0.74	999/100	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - K1**
9.69	150	143	2 380	0.27	2664/275	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - J1**
8.63	168	130	2 360	0.33	259/30	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - H1**
7.97	182	120	2 360	0.39	518/65	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - G1**
6.98	208	123	2 180	0.48	1221/175	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - F1**
6.12	237	114	2 120	0.53	2294/375	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - E1**
5.55	261	108	2 080	0.7	111/20	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - D1**
5.22	278	106	2 060	0.81	444/85	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - C1**
4.6	315	97	2 050	0.96	1036/225	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - B1**
4	363	91	2 030	1.29	999/250	✓	✓	✓	✓	✓				**2KJ3301 - ■■■■■ - A1**

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
FD.39														
274.26	5.3	290	5 820	0.04	32637/119	✓	✓							**2KJ3402 - ■■■■■ - R1**
243.26	6	290	5 820	0.05	8514/35	✓	✓	✓	✓					**2KJ3402 - ■■■■■ - Q1**
211.06	6.9	290	5 820	0.06	251163/1190	✓	✓	✓	✓					**2KJ3402 - ■■■■■ - P1**
191.87	7.6	290	5 820	0.07	22833/119	✓	✓	✓	✓					**2KJ3402 - ■■■■■ - N1**
164.56	8.8	290	5 820	0.09	97911/595	✓	✓	✓	✓					**2KJ3402 - ■■■■■ - M1**
149.6	9.7	290	5 820	0.11	17802/119	✓	✓	✓	✓					**2KJ3402 - ■■■■■ - L1**
131.17	11	290	5 820	0.12	15609/119	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - K1**
117.08	12	290	5 820	0.15	13932/119	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - J1**
104.34	14	290	5 820	0.18	7095/68	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - H1**
96.31	15	290	5 820	0.22	21285/221	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - G1**
84.32	17	290	5 820	0.25	140481/1666	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - F1**
73.93	20	290	5 820	0.24	43989/595	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - E1**
67.07	22	290	5 820	0.34	63855/952	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - D1**
63.13	23	290	5 820	0.4	127710/2023	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - C1**
55.65	26	290	5 820	0.44	946/17	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - B1**
48.29	30	290	5 820	0.59	114939/2380	✓	✓	✓	✓	✓	✓			**2KJ3402 - ■■■■■ - A1**
FZ.39														
65.21	22	290	5 820	0.06	913/14	✓	✓							**2KJ3302 - ■■■■■ - B2**
57.99	25	230	6 040	0.08	4059/70	✓	✓	✓	✓					**2KJ3302 - ■■■■■ - A2**
50.91	28	240	6 000	0.09	1782/35	✓	✓	✓	✓					**2KJ3302 - ■■■■■ - X1**
46.29	31	255	5 950	0.11	324/7	✓	✓	✓	✓					**2KJ3302 - ■■■■■ - W1**
39.6	37	290	5 440	0.13	198/5	✓	✓	✓	✓					**2KJ3302 - ■■■■■ - V1**
36	40	255	5 470	0.16	36/1	✓	✓	✓	✓					**2KJ3302 - ■■■■■ - U1**
31.82	46	285	4 950	0.19	891/28	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - T1**
28.93	50	275	4 800	0.25	405/14	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - S1**
25.34	57	265	4 580	0.3	1419/56	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - R1**
23.39	62	260	4 440	0.36	4257/182	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - Q1**
20.71	70	250	4 260	0.42	4059/196	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - P1**
17.24	84	235	4 010	0.57	3861/224	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - N1**
16.22	89	230	3 930	0.66	3861/238	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - M1**
14.54	100	220	3 800	0.74	407/28	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - L1**
10.61	137	199	3 420	1.27	297/28			✓	✓	✓	✓			**2KJ3302 - ■■■■■ - J1**
9.13	159	189	3 250	1.63	1023/112			✓	✓	✓	✓			**2KJ3302 - ■■■■■ - H1**
8.1	179	167	3 090	0.7	3403/420	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - G1**
6.74	215	152	2 950	0.96	1079/160	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - F1**
6.35	228	149	2 890	1.11	1079/170	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - E1**
5.69	255	140	2 810	1.29	3071/540	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - D1**
4.84	300	128	2 710	1.73	581/120	✓	✓	✓	✓	✓	✓			**2KJ3302 - ■■■■■ - C1**
4.15	349	118	2 670	2.3	83/20			✓	✓	✓	✓			**2KJ3302 - ■■■■■ - B1**
3.57	406	108	2 620	3	2573/720			✓	✓	✓	✓			**2KJ3302 - ■■■■■ - A1**

Transmission ratios and torques

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
FD.49														
330.98	4.4	480	7 960	0.06	26809/81	✓	✓							**2KJ3403 - ■■■■■ - S1**
294.29	4.9	480	7 960	0.07	13243/45	✓	✓	✓	✓					**2KJ3403 - ■■■■■ - R1**
258.4	5.6	480	7 960	0.08	1292/5	✓	✓	✓	✓					**2KJ3403 - ■■■■■ - Q1**
234.91	6.2	480	7 960	0.1	2584/11	✓	✓	✓	✓					**2KJ3403 - ■■■■■ - P1**
200.98	7.2	480	7 960	0.12	9044/45	✓	✓	✓	✓					**2KJ3403 - ■■■■■ - N1**
182.71	7.9	480	7 960	0.14	18088/99	✓	✓	✓	✓					**2KJ3403 - ■■■■■ - M1**
161.5	9	480	7 960	0.17	323/2	✓	✓	✓	✓	✓	✓			**2KJ3403 - ■■■■■ - L1**
146.82	9.9	480	7 960	0.22	1615/11	✓	✓	✓	✓	✓	✓			**2KJ3403 - ■■■■■ - K1**
128.6	11	480	7 960	0.26	13889/108	✓	✓	✓	✓	✓	✓			**2KJ3403 - ■■■■■ - J1**
118.71	12	480	7 960	0.31	13889/117	✓	✓	✓	✓	✓	✓			**2KJ3403 - ■■■■■ - H1**
105.1	14	480	7 960	0.37	13243/126	✓	✓	✓	✓	✓	✓	✓		**2KJ3403 - ■■■■■ - G1**
87.48	17	480	7 450	0.5	4199/48	✓	✓	✓	✓	✓	✓	✓		**2KJ3403 - ■■■■■ - F1**
82.33	18	480	7 240	0.59	247/3	✓	✓	✓	✓	✓	✓	✓		**2KJ3403 - ■■■■■ - E1**
73.77	20	480	6 870	0.66	11951/162	✓	✓	✓	✓	✓	✓	✓		**2KJ3403 - ■■■■■ - D1**
62.81	23	480	6 350	0.86	2261/36	✓	✓	✓	✓	✓	✓	✓		**2KJ3403 - ■■■■■ - C1**
53.83	27	480	5 870	1.13	323/6	✓	✓	✓	✓	✓	✓	✓		**2KJ3403 - ■■■■■ - B1**
46.36	31	480	5 430	1.46	10013/216	✓	✓	✓	✓	✓	✓	✓		**2KJ3403 - ■■■■■ - A1**
FZ.49														
61.43	24	480	6 280	0.18	1843/30	✓	✓	✓	✓					**2KJ3303 - ■■■■■ - X1**
55.85	26	480	5 980	0.22	1843/33	✓	✓	✓	✓					**2KJ3303 - ■■■■■ - W1**
47.5	31	480	5 500	0.27	95/2	✓	✓	✓	✓					**2KJ3303 - ■■■■■ - V1**
43.18	34	480	5 230	0.33	475/11	✓	✓	✓	✓					**2KJ3303 - ■■■■■ - U1**
38.53	38	480	4 920	0.39	1387/36	✓	✓	✓	✓	✓	✓			**2KJ3303 - ■■■■■ - T1**
34.55	42	480	4 630	0.47	380/11	✓	✓	✓	✓	✓	✓			**2KJ3303 - ■■■■■ - S1**
31.14	47	480	4 370	0.55	1121/36	✓	✓	✓	✓	✓	✓			**2KJ3303 - ■■■■■ - R1**
28.74	50	480	4 170	0.65	1121/39	✓	✓	✓	✓	✓	✓			**2KJ3303 - ■■■■■ - Q1**
26.24	55	480	3 950	0.78	551/21	✓	✓	✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - P1**
21.77	67	480	3 520	1	1045/48	✓	✓	✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - N1**
20.49	71	480	3 390	1.15	1045/51	✓	✓	✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - M1**
19.35	75	480	3 270	1.3	1045/54	✓	✓	✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - L1**
16.47	88	480	2 930	1.61	247/15	✓	✓	✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - K1**
14.11	103	480	2 630	2	931/66			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - J1**
12.4	117	480	2 580	2.5	893/72			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - H1**
10.46	139	480	2 740	3.1	722/69			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - G1**
9.12	159	480	2 820	4.2	228/25			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - F1**
8.4	173	450	2 680	2.2	42/5	✓	✓	✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - E1**
7.2	201	450	2 750	2.8	1029/143			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - D1**
6.33	229	430	2 780	3.5	329/52			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - C1**
5.34	272	400	2 790	4.6	1596/299			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - B1**
4.65	312	375	2 780	6.1	1512/325			✓	✓	✓	✓	✓		**2KJ3303 - ■■■■■ - A1**

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
FD.69														
348.4	4.2	600	10 800	0.06	28220/81	✓	✓							**2KJ3404 - ■■■■■ - S1**
309.78	4.7	600	10 800	0.07	2788/9	✓	✓	✓	✓					**2KJ3404 - ■■■■■ - R1**
272	5.3	600	10 800	0.08	272/1	✓	✓	✓	✓					**2KJ3404 - ■■■■■ - Q1**
247.27	5.9	600	10 800	0.1	2720/11	✓	✓	✓	✓					**2KJ3404 - ■■■■■ - P1**
211.56	6.9	600	10 800	0.12	1904/9	✓	✓	✓	✓					**2KJ3404 - ■■■■■ - N1**
192.32	7.5	600	10 800	0.14	19040/99	✓	✓	✓	✓					**2KJ3404 - ■■■■■ - M1**
170	8.5	600	10 800	0.17	170/1	✓	✓	✓	✓	✓	✓			**2KJ3404 - ■■■■■ - L1**
154.55	9.4	600	10 800	0.22	1700/11	✓	✓	✓	✓	✓	✓			**2KJ3404 - ■■■■■ - K1**
135.37	11	600	10 800	0.26	3655/27	✓	✓	✓	✓	✓	✓			**2KJ3404 - ■■■■■ - J1**
124.96	12	600	10 800	0.31	14620/117	✓	✓	✓	✓	✓	✓			**2KJ3404 - ■■■■■ - H1**
110.63	13	600	10 800	0.38	6970/63	✓	✓	✓	✓	✓	✓	✓		**2KJ3404 - ■■■■■ - G1**
92.08	16	600	10 800	0.51	1105/12	✓	✓	✓	✓	✓	✓	✓		**2KJ3404 - ■■■■■ - F1**
86.67	17	600	10 800	0.6	260/3	✓	✓	✓	✓	✓	✓	✓		**2KJ3404 - ■■■■■ - E1**
77.65	19	600	10 400	0.66	6290/81	✓	✓	✓	✓	✓	✓	✓		**2KJ3404 - ■■■■■ - D1**
66.11	22	600	9 740	0.87	595/9	✓	✓	✓	✓	✓	✓	✓		**2KJ3404 - ■■■■■ - C1**
56.67	26	600	9 060	1.15	170/3			✓	✓	✓	✓	✓		**2KJ3404 - ■■■■■ - B1**
48.8	30	600	8 440	1.47	2635/54			✓	✓	✓	✓	✓		**2KJ3404 - ■■■■■ - A1**
FZ.69														
64.67	22	600	9 640	0.19	194/3	✓	✓	✓	✓					**2KJ3304 - ■■■■■ - X1**
58.79	25	600	9 220	0.23	1940/33	✓	✓	✓	✓					**2KJ3304 - ■■■■■ - W1**
50	29	600	8 540	0.29	50/1	✓	✓	✓	✓					**2KJ3304 - ■■■■■ - V1**
45.45	32	600	8 160	0.35	500/11	✓	✓	✓	✓					**2KJ3304 - ■■■■■ - U1**
40.56	36	600	7 720	0.41	365/9	✓	✓	✓	✓	✓	✓			**2KJ3304 - ■■■■■ - T1**
36.36	40	600	7 310	0.5	400/11	✓	✓	✓	✓	✓	✓			**2KJ3304 - ■■■■■ - S1**
32.78	44	600	6 930	0.58	295/9	✓	✓	✓	✓	✓	✓			**2KJ3304 - ■■■■■ - R1**
30.26	48	600	6 650	0.69	1180/39	✓	✓	✓	✓	✓	✓			**2KJ3304 - ■■■■■ - Q1**
27.62	52	600	6 340	0.83	580/21	✓	✓	✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - P1**
22.92	63	600	5 740	1.07	275/12	✓	✓	✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - N1**
21.57	67	600	5 550	1.23	1100/51	✓	✓	✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - M1**
20.37	71	600	5 370	1.39	550/27	✓	✓	✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - L1**
17.33	84	600	4 900	1.74	52/3	✓	✓	✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - K1**
14.85	98	600	4 460	2.2	490/33			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - J1**
13.06	111	600	4 120	2.7	235/18			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - H1**
11.01	132	600	4 030	3.5	760/69			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - G1**
9.6	151	600	4 130	3.8	48/5			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - F1**
8.9	163	475	4 030	2.4	89/10	✓	✓	✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - E1**
7.62	190	465	4 100	3.1	4361/572			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - D1**
6.7	216	440	4 120	3.9	4183/624			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - C1**
5.66	256	410	4 110	5.1	1691/299			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - B1**
4.93	294	385	4 070	6.8	1602/325			✓	✓	✓	✓	✓		**2KJ3304 - ■■■■■ - A1**

Transmission ratios and torques

Selection and ordering data (continued)

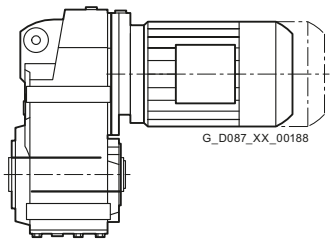
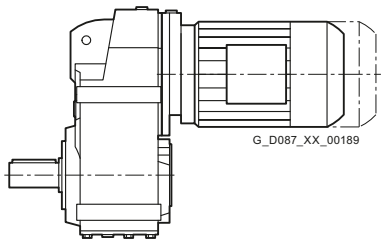
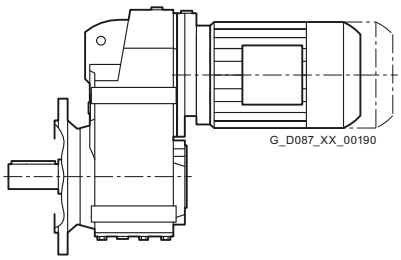
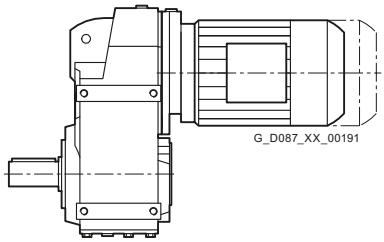
i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
FD.79														
357	4.1	1 000	12 500	0.17	57133/160		✓	✓	✓					**2KJ3405 - ■■■■■ - S1**
324.62	4.5	1 000	12 500	0.2	57133/176		✓	✓	✓					**2KJ3405 - ■■■■■ - R1**
276.09	5.3	1 000	12 500	0.25	8835/32		✓	✓	✓					**2KJ3405 - ■■■■■ - Q1**
250.99	5.8	1 000	12 500	0.3	44175/176		✓	✓	✓					**2KJ3405 - ■■■■■ - P1**
223.94	6.5	1 000	12 500	0.35	42997/192		✓	✓	✓	✓	✓			**2KJ3405 - ■■■■■ - N1**
200.8	7.2	1 000	12 500	0.42	8835/44		✓	✓	✓	✓	✓			**2KJ3405 - ■■■■■ - M1**
180.99	8	1 000	12 500	0.49	34751/192		✓	✓	✓	✓	✓			**2KJ3405 - ■■■■■ - L1**
167.07	8.7	1 000	12 500	0.58	34751/208		✓	✓	✓	✓	✓			**2KJ3405 - ■■■■■ - K1**
152.51	9.5	1 000	12 500	0.69	17081/112		✓	✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - J1**
126.54	11	1 000	12 500	0.87	32395/256		✓	✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - H1**
119.1	12	1 000	12 500	1.01	32395/272		✓	✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - G1**
112.48	13	1 000	12 500	1.15	32395/288		✓	✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - F1**
95.71	15	1 000	12 500	1.39	7657/80		✓	✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - E1**
81.99	18	1 000	12 500	1.7	28861/352			✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - D1**
72.09	20	1 000	12 500	2.1	27683/384			✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - C1**
60.82	24	1 000	12 500	2.6	11191/184			✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - B1**
53.01	27	1 000	12 500	3.5	5301/100			✓	✓	✓	✓	✓	✓	**2KJ3405 - ■■■■■ - A1**
FZ.79														
53.55	27	1 000	12 500	0.55	589/11		✓	✓	✓					**2KJ3305 - ■■■■■ - X1**
48.03	30	1 000	12 500	0.77	1729/36		✓	✓	✓	✓	✓			**2KJ3305 - ■■■■■ - W1**
43.18	34	1 000	12 500	0.87	475/11		✓	✓	✓	✓	✓			**2KJ3305 - ■■■■■ - V1**
39.06	37	1 000	12 500	0.97	703/18		✓	✓	✓	✓	✓			**2KJ3305 - ■■■■■ - U1**
36.05	40	1 000	12 500	1.15	1406/39		✓	✓	✓	✓	✓			**2KJ3305 - ■■■■■ - T1**
33.02	44	1 000	12 500	1.49	1387/42		✓	✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - S1**
27.71	52	1 000	12 500	1.62	665/24		✓	✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - R1**
26.08	56	1 000	12 500	1.85	1330/51		✓	✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - Q1**
23.93	61	1 000	12 500	2	646/27		✓	✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - P1**
20.9	69	1 000	12 500	2.9	209/10		✓	✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - N1**
18.71	77	924.3	12 500	3.6	1235/66			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - M1**
16.36	89	808.2	12 500	4.2	589/36			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - L1**
14.04	103	693.7	12 500	4.7	323/23			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - K1**
12.41	117	613.2	12 500	6	931/75			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - J1**
10.56	137	521.4	12 500	7.8	95/9					✓	✓	✓	✓	**2KJ3305 - ■■■■■ - H1**
9.05	160	446.9	12 300	10	190/21					✓	✓	✓	✓	**2KJ3305 - ■■■■■ - G1**
8.51	170	720	10 300	4.6	468/55			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - F1**
7.44	195	725	9 780	5.5	186/25			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - E1**
6.39	227	720	9 690	6.5	3672/575			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - D1**
5.64	257	700	9 620	8.3	3528/625			✓	✓	✓	✓	✓	✓	**2KJ3305 - ■■■■■ - C1**
4.8	302	650	9 480	11	24/5					✓	✓	✓	✓	**2KJ3305 - ■■■■■ - B1**
4.11	353	605	9 310	15	144/35					✓	✓	✓	✓	**2KJ3305 - ■■■■■ - A1**

Selection and ordering data (continued)

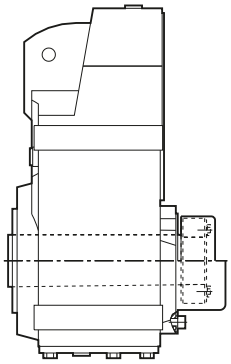
i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
FD.89														
335.3	4.3	1 850	14 900	0.42	370512/1105			✓	✓					**2KJ3406 - ■■■■■ - S1**
304.82	4.8	1 850	14 900	0.51	741024/2431			✓	✓					**2KJ3406 - ■■■■■ - R1**
273.41	5.3	1 850	14 900	0.71	4648/17			✓	✓	✓	✓			**2KJ3406 - ■■■■■ - Q1**
245.82	5.9	1 850	14 900	0.79	597600/2431			✓	✓	✓	✓			**2KJ3406 - ■■■■■ - P1**
222.33	6.5	1 850	14 900	0.88	49136/221			✓	✓	✓	✓			**2KJ3406 - ■■■■■ - N1**
205.23	7.1	1 850	14 900	1.03	589632/2873			✓	✓	✓	✓			**2KJ3406 - ■■■■■ - M1**
188	7.7	1 850	14 900	1.35	290832/1547			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - L1**
157.74	9.2	1 850	14 900	1.43	34860/221			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - K1**
148.46	9.8	1 850	14 900	1.64	557760/3757			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - J1**
136.21	11	1 850	14 900	1.79	5312/39			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - H1**
118.98	12	1 850	14 900	2.6	131472/1105			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - G1**
106.52	14	1 850	14 900	3.1	19920/187			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - F1**
93.14	16	1 850	14 900	3.7	20584/221			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - E1**
79.95	18	1 850	14 900	4	23904/299			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - D1**
70.67	21	1 850	14 900	5.1	390432/5525			✓	✓	✓	✓	✓	✓	**2KJ3406 - ■■■■■ - C1**
60.09	24	1 850	14 900	6.5	13280/221					✓	✓	✓	✓	**2KJ3406 - ■■■■■ - B1**
51.51	28	1 850	14 900	8.5	79680/1547					✓	✓	✓	✓	**2KJ3406 - ■■■■■ - A1**
FZ.89														
61.72	23	1 850	14 900	1.38	2407/39			✓	✓	✓	✓			**2KJ3306 - ■■■■■ - B2**
55.72	26	1 850	14 900	1.51	7968/143			✓	✓	✓	✓			**2KJ3306 - ■■■■■ - A2**
50.54	29	1 850	14 900	1.77	7885/156			✓	✓	✓	✓			**2KJ3306 - ■■■■■ - X1**
46.66	31	1 850	14 900	2.1	7885/169			✓	✓	✓	✓			**2KJ3306 - ■■■■■ - W1**
42.41	34	1 850	14 900	2.4	7719/182			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - V1**
35.91	40	1 850	14 900	2.9	3735/104			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - U1**
33.8	43	1 850	14 900	3	7470/221			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - T1**
31.21	46	1 850	14 900	4.5	3652/117			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - S1**
27.77	52	1 850	14 900	5.5	7221/260			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - R1**
24.67	59	1 850	14 900	6.7	7055/286			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - Q1**
22.08	66	1 850	14 900	6.7	6889/312			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - P1**
18.88	77	1 850	14 900	7.9	5644/299			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - N1**
16.86	86	1 850	14 900	10	5478/325			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - M1**
14.9	97	1 850	14 900	12	581/39					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - L1**
13.07	111	1 850	14 600	16	3569/273					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - K1**
11.38	127	1 850	14 600	20	3403/299					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - J1**
9.73	149	1 850	14 600	25	2656/273					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - H1**
8.33	174	1 740	14 500	31	2490/299					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - G1**
7.6	191	1 100	14 100	14	4752/625			✓	✓	✓	✓	✓	✓	**2KJ3306 - ■■■■■ - F1**
6.72	216	1 110	14 000	17	168/25					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - E1**
5.9	246	1 110	13 800	23	1032/175					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - D1**
5.13	283	1 110	13 600	29	2952/575					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - C1**
4.39	330	1 060	13 300	38	768/175					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - B1**
3.76	386	985	12 900	49	432/115					✓	✓	✓	✓	**2KJ3306 - ■■■■■ - A1**

Dimensions

Dimension drawing overview

Representation	Gearbox type	Dimension drawing on page
 G_D087_XX_00188	FDAD./FZAD.29	4/42
	FDAD./FZAD.39	4/46
	FDAD./FZAD.49	4/50
	FDAD./FZAD.69	4/54
	FDAD./FZAD.79	4/58
	FDAD./FZAD.89	4/62
 G_D087_XX_00189	FD.Z./FZ.Z.29	4/43
	FD.Z./FZ.Z.39	4/47
	FD.Z./FZ.Z.49	4/51
	FD.Z./FZ.Z.69	4/55
	FD.Z./FZ.Z.79	4/59
	FD.Z./FZ.Z.89	4/63
 G_D087_XX_00190	FD.F./FZ.F.29	4/44
	FD.F./FZ.F.39	4/48
	FD.F./FZ.F.49	4/52
	FD.F./FZ.F.69	4/56
	FD.F./FZ.F.79	4/60
	FD.F./FZ.F.89	4/64
 G_D087_XX_00191	FD../FZ..29	4/45
	FD../FZ..39	4/49
	FD../FZ..49	4/53
	FD../FZ..69	4/57
	FD../FZ..79	4/61
	FD../FZ..89	4/65

Dimension drawing overview (continued)

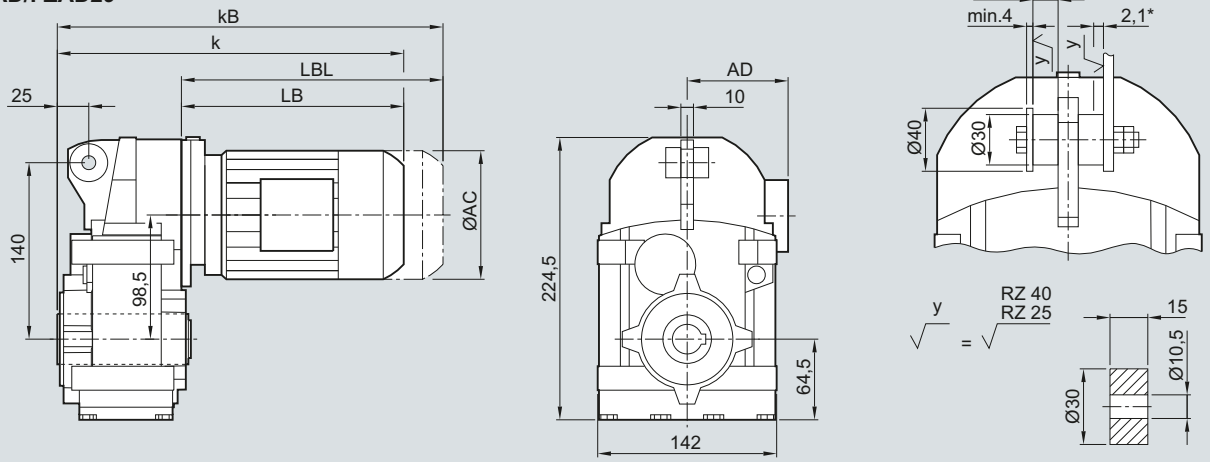
Representation	Gearbox type	Dimension drawing on page
	Protection cover for hollow shaft	4/66
	Inner contour of the flange design	4/67

Dimensions

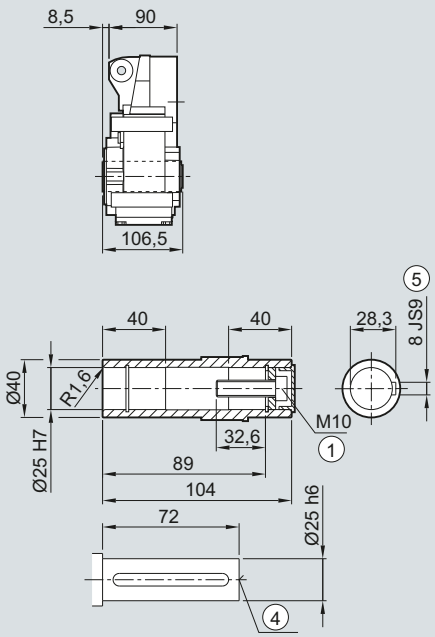
FDAD./FZAD.29 gearbox in a shaft-mounted design

FAD030, FADS030

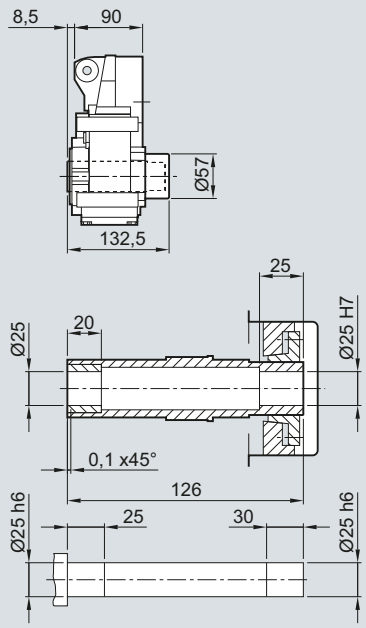
FDAD/FZAD29



FDAD/FZAD29



FDADS/FZADS29



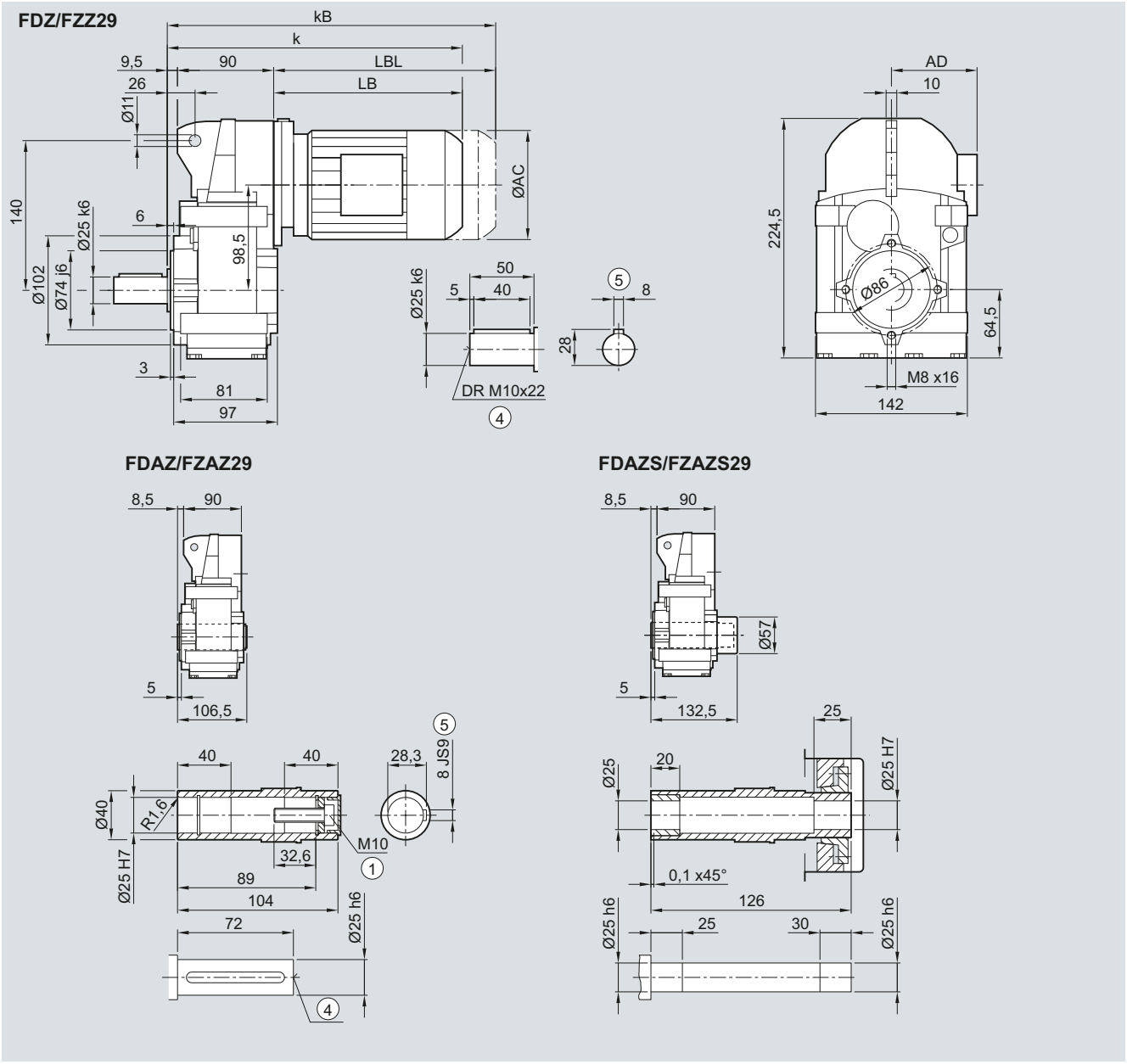
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	293.5	325.5	389.0	451.0	507.5
kB	338.0	380.5	449.0	521.0	586.0
LB	194.0	226.0	289.5	354.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

① ISO 4017 ④ DIN 332 ⑤ Feather key/keyway DIN 6885 * Spring compression at max. torque

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD.Z./FZ.Z.29 gearbox in a housing flange design

FZ030, FAZ030, FAZS030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	293.5	325.5	389.0	451.0	507.5
kB	338.0	380.5	449.0	521.0	586.0
LB	194.0	226.0	289.5	354.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

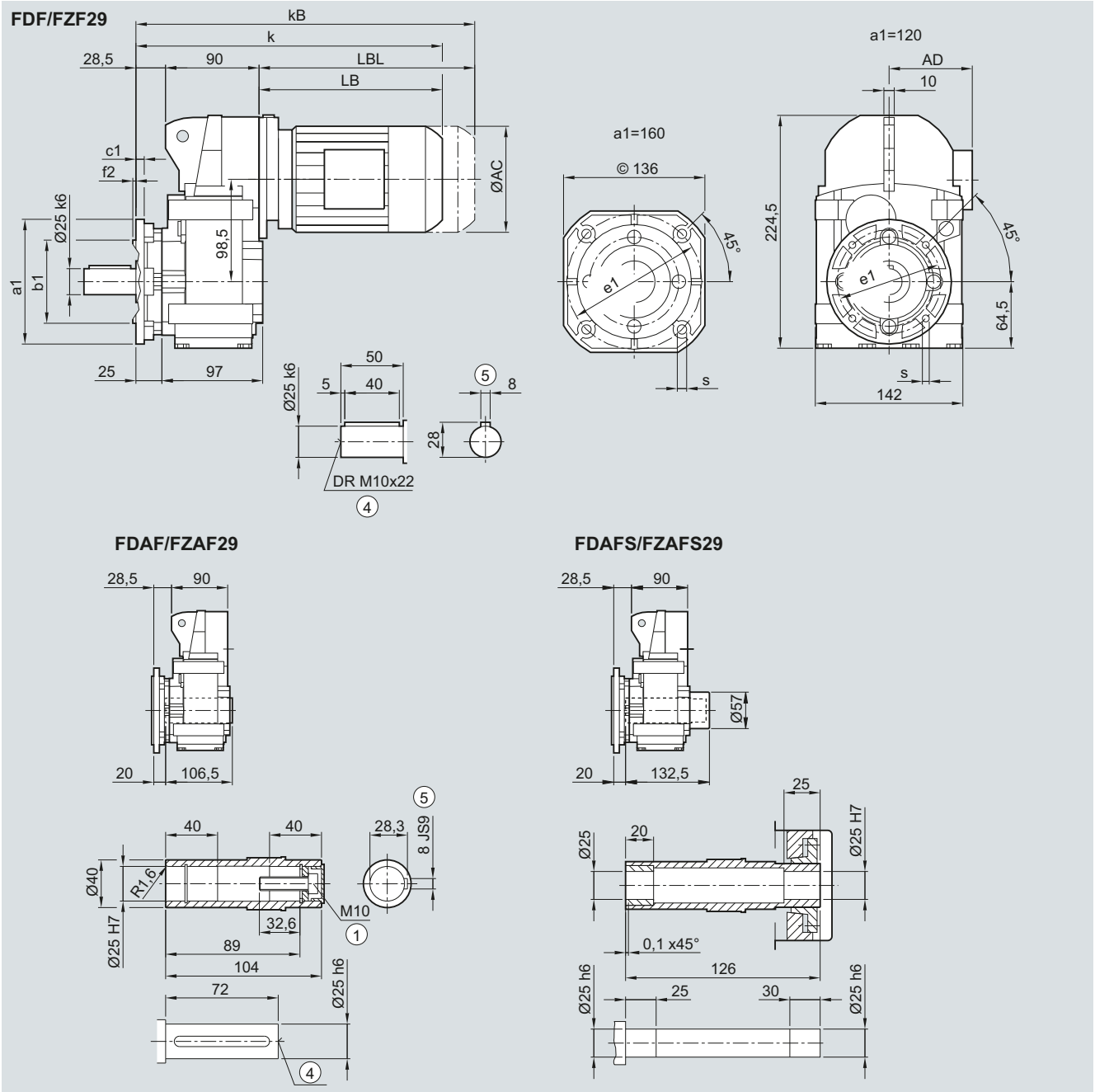
① ISO 4017 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FD.F./FZ.F.29 gearbox in a flange-mounted design

FF030, FAF030, FAFS030



Dimensions	a1	b1	c1	f1	e1	s
	120	80	8	3	100	6.6
	160	110	9	3.5	130	9

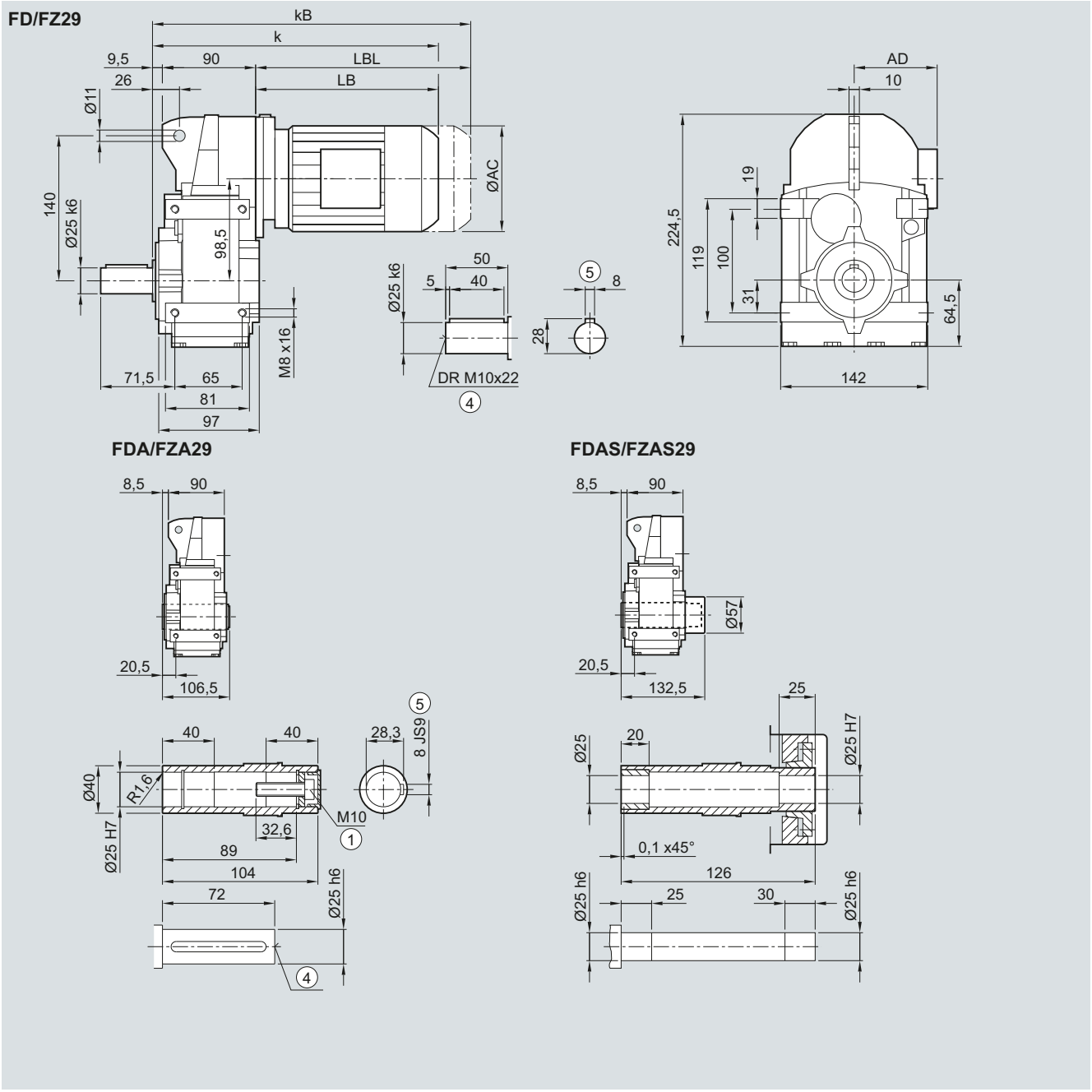
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	312.5	344.5	408.0	470.0	526.5
kB	357.0	399.5	468.0	540.0	605.0
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

① ISO 4017 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD../FZ..29 gearbox in a foot-mounted design

F030, FA030, FAS030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	293.5	325.5	389.0	451.0	507.5
kB	338.0	380.5	449.0	521.0	586.0
LB	194.0	226.0	289.5	354.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

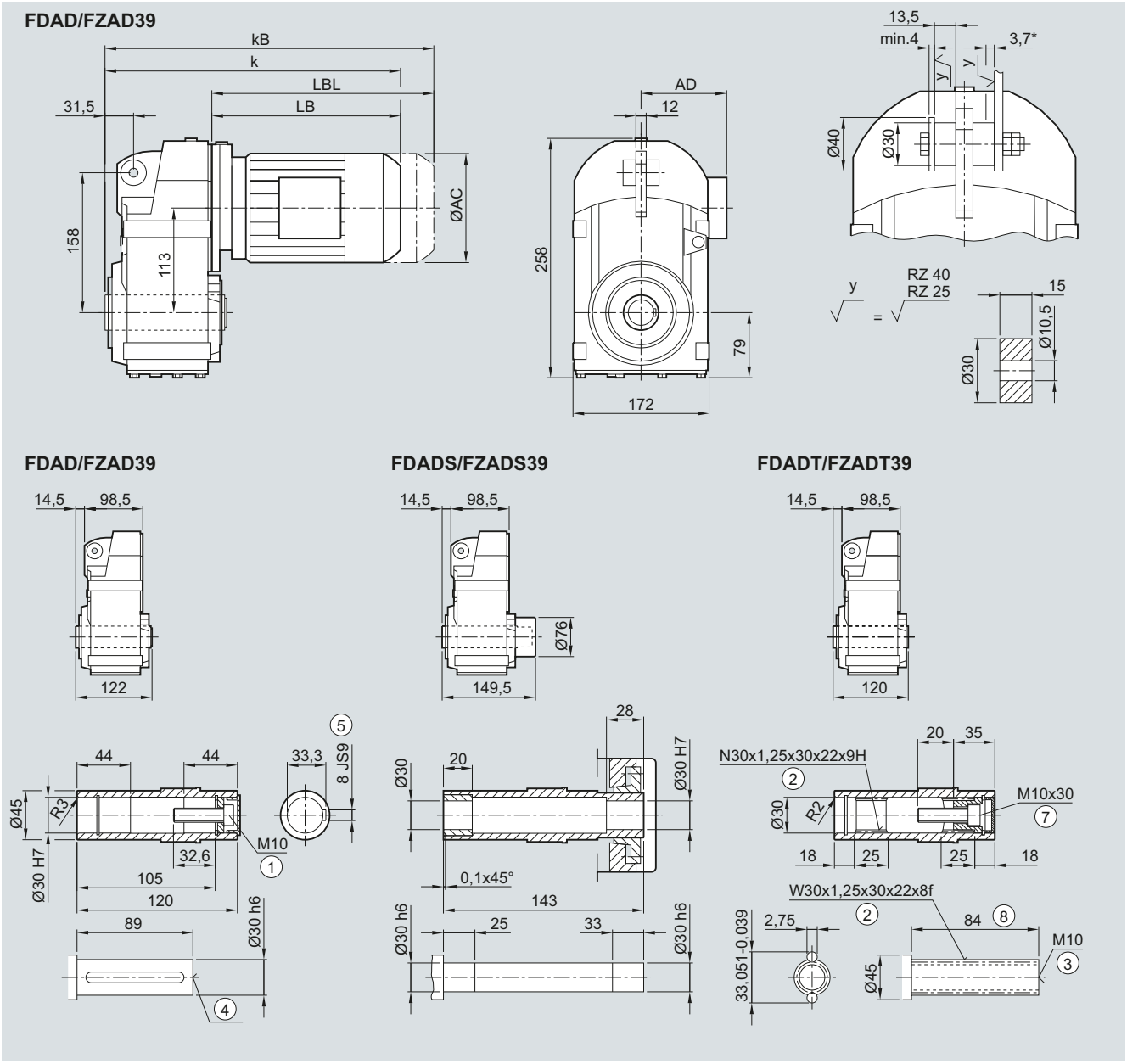
① ISO 4017 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FDAD./FZAD.39 gearbox in a shaft-mounted design

FAD030, FADS030, FADT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	307.0	339.0	402.5	464.5	521.0	531.0
kB	351.5	394.0	462.5	534.5	599.5	604.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

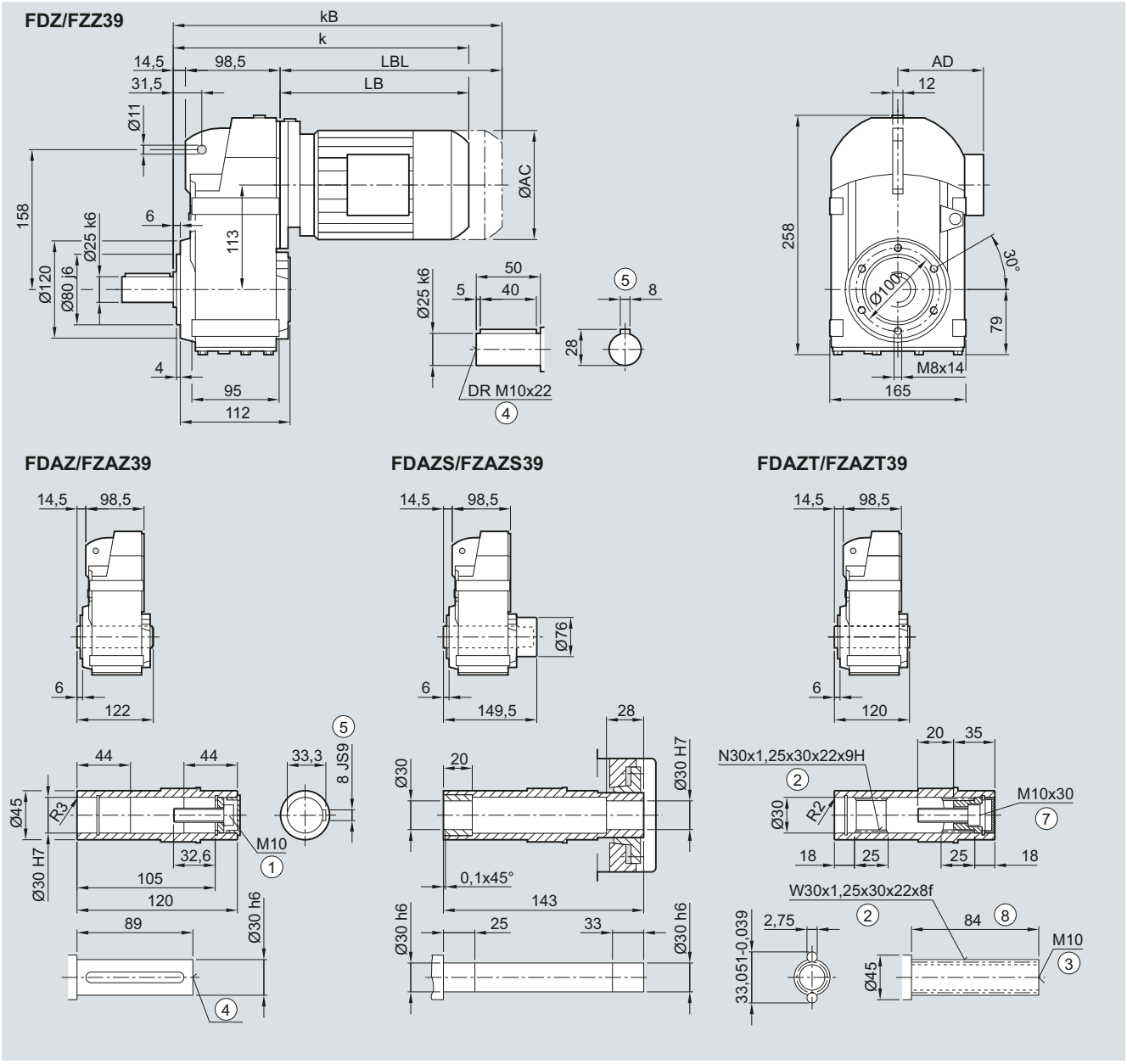
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

* Spring compression at max. torque

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD.Z./FZ.Z.39 gearbox in a housing flange design

FZ030, FAZ030, FAZS030, FAZT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	307.0	339.0	402.5	464.5	521.0	531.0
kB	351.5	394.0	462.5	534.5	599.5	604.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

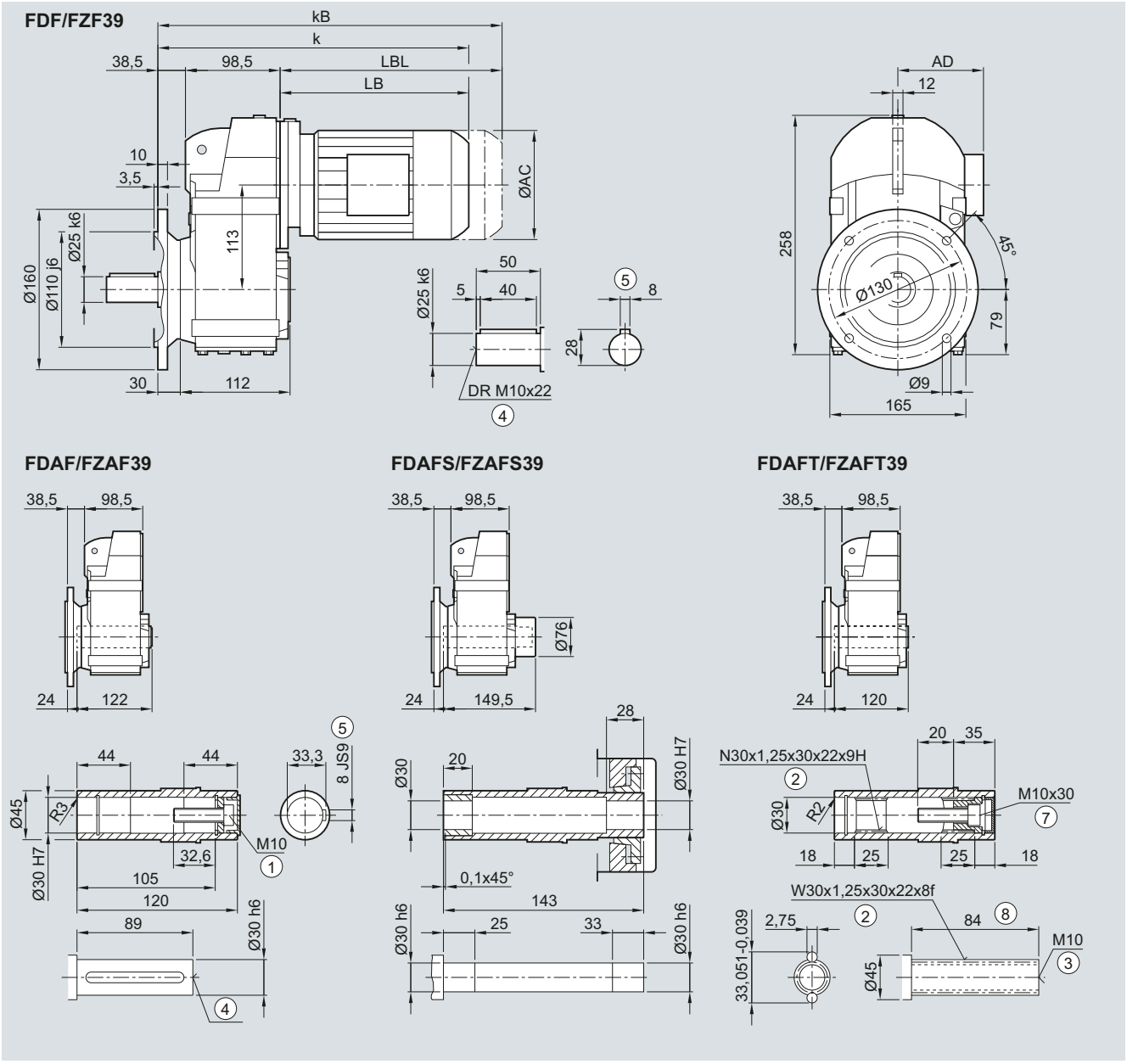
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FD.F./FZ.F.39 gearbox in a flange-mounted design

FF030, FAF030, FAFS030, FAFT030



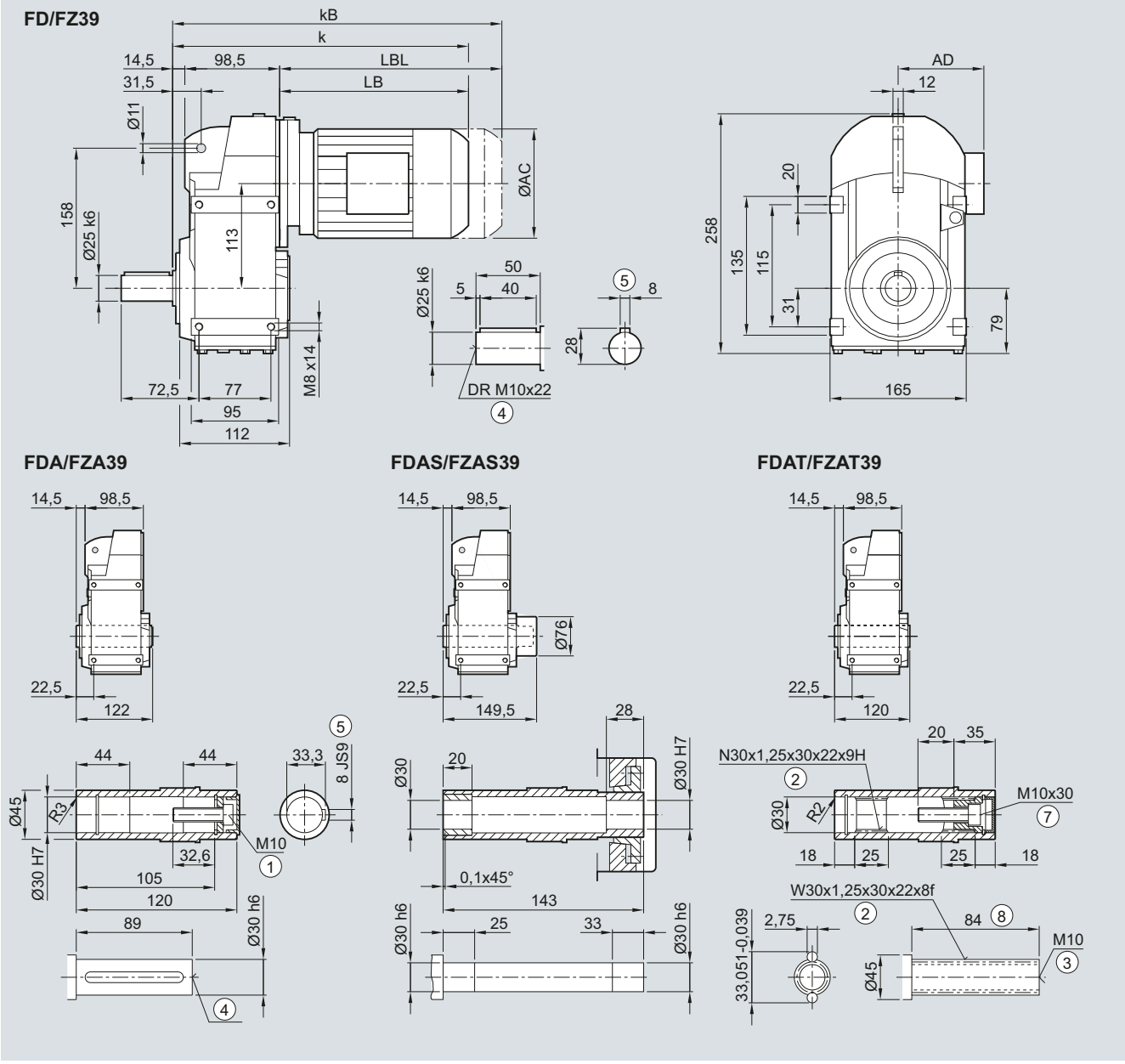
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	331.0	363.0	426.5	488.5	545.0	555.0
kB	375.5	418.0	486.5	558.5	623.5	628.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD../FZ..39 gearbox in a foot-mounted design

F030, FA030, FAS030, FAT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	307.0	339.0	402.5	464.5	521.0	531.0
kB	351.5	394.0	462.5	534.5	599.5	604.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

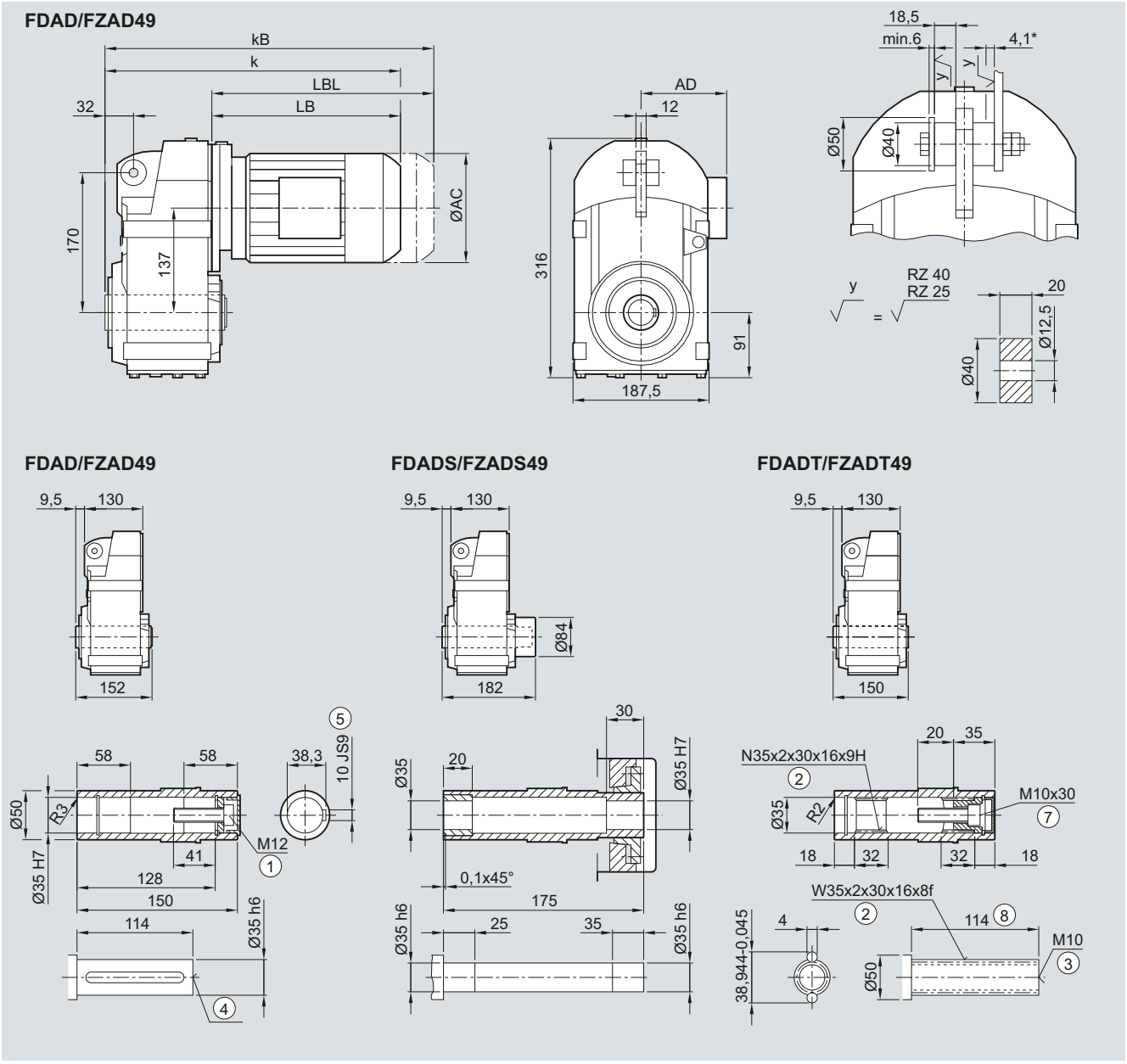
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FDAD./FZAD.49 gearbox in a shaft-mounted design

FAD030, FADS030, FADT030



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	356.0	419.5	481.5	538.0	548.0	601.0	651.0
kB	411.0	479.5	551.5	616.5	621.0	705.5	755.5
LB	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	271.5	340.0	412.0	477.0	481.5	566.0	616.0

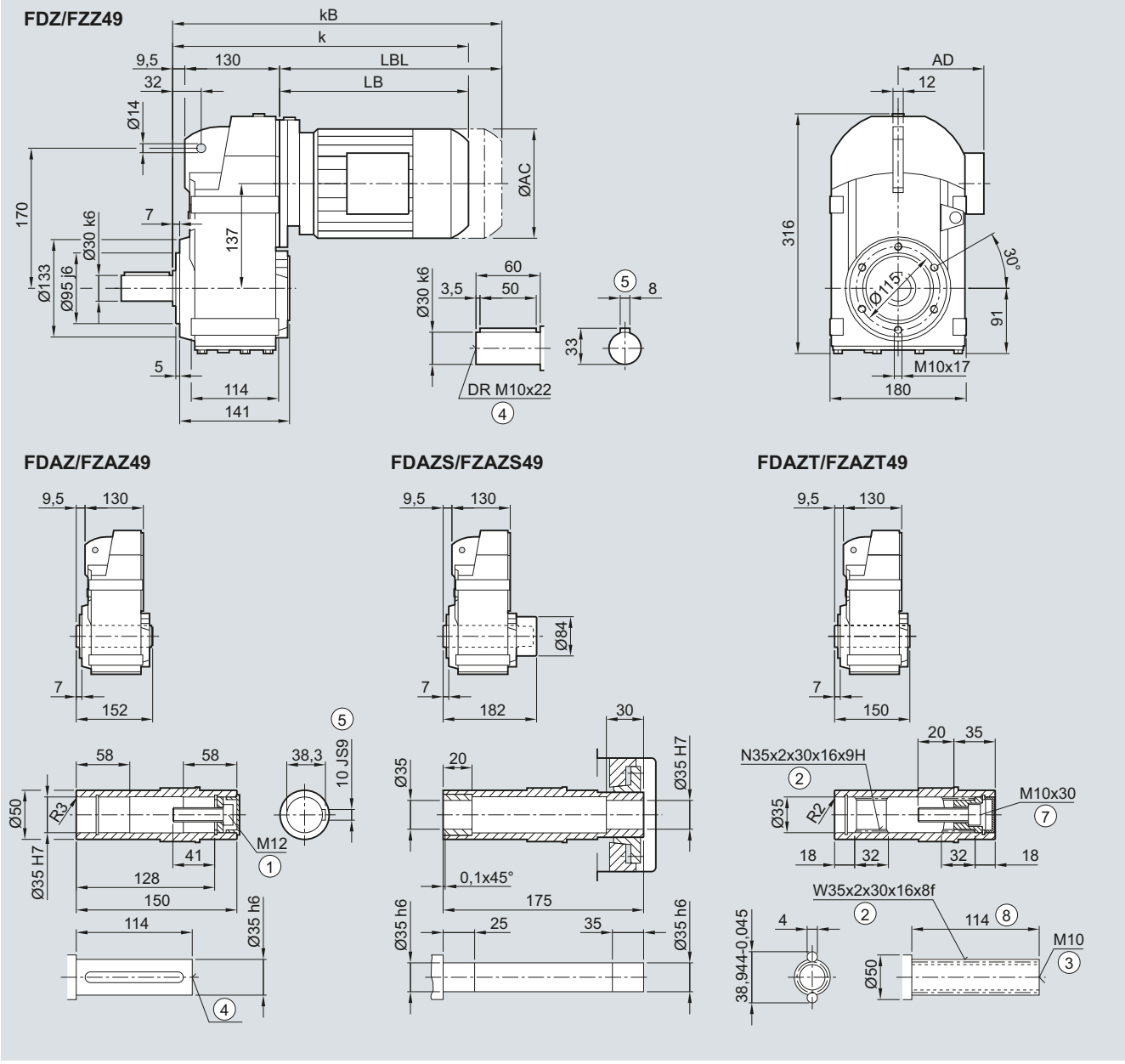
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

* Spring compression at max. torque

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD.Z./FZ.Z.49 gearbox in a housing flange design

FZ030, FAZ030, FAZS030, FAZT030



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	356.0	419.5	481.5	538.0	548.0	601.0	651.0
kB	411.0	479.5	551.5	616.5	621.0	705.5	755.5
LB	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	271.5	340.0	412.0	477.0	481.5	566.0	616.0

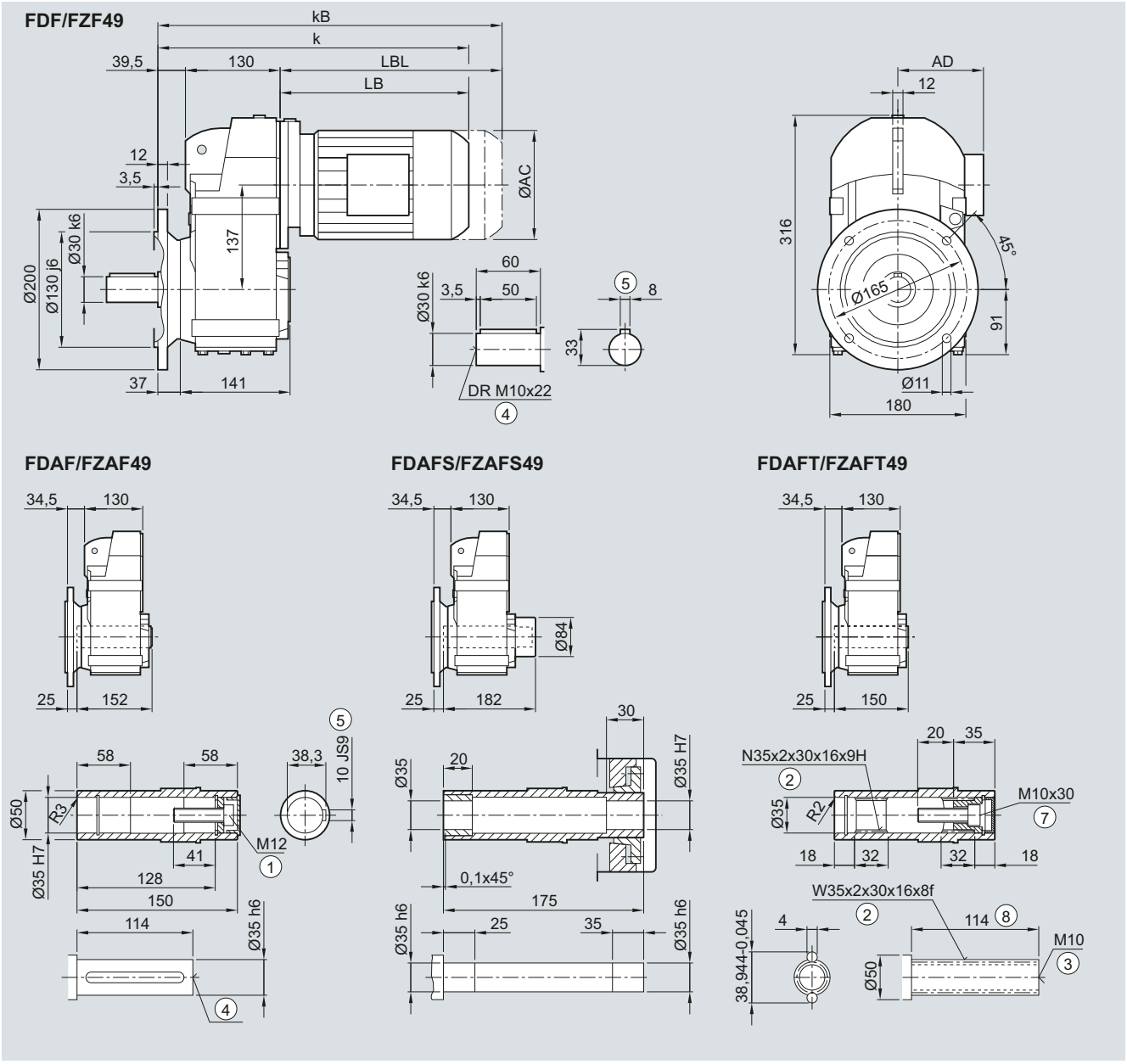
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FD.F./FZ.F.49 gearbox in a flange-mounted design

FF030, FAF030, FAFS030, FAFT030



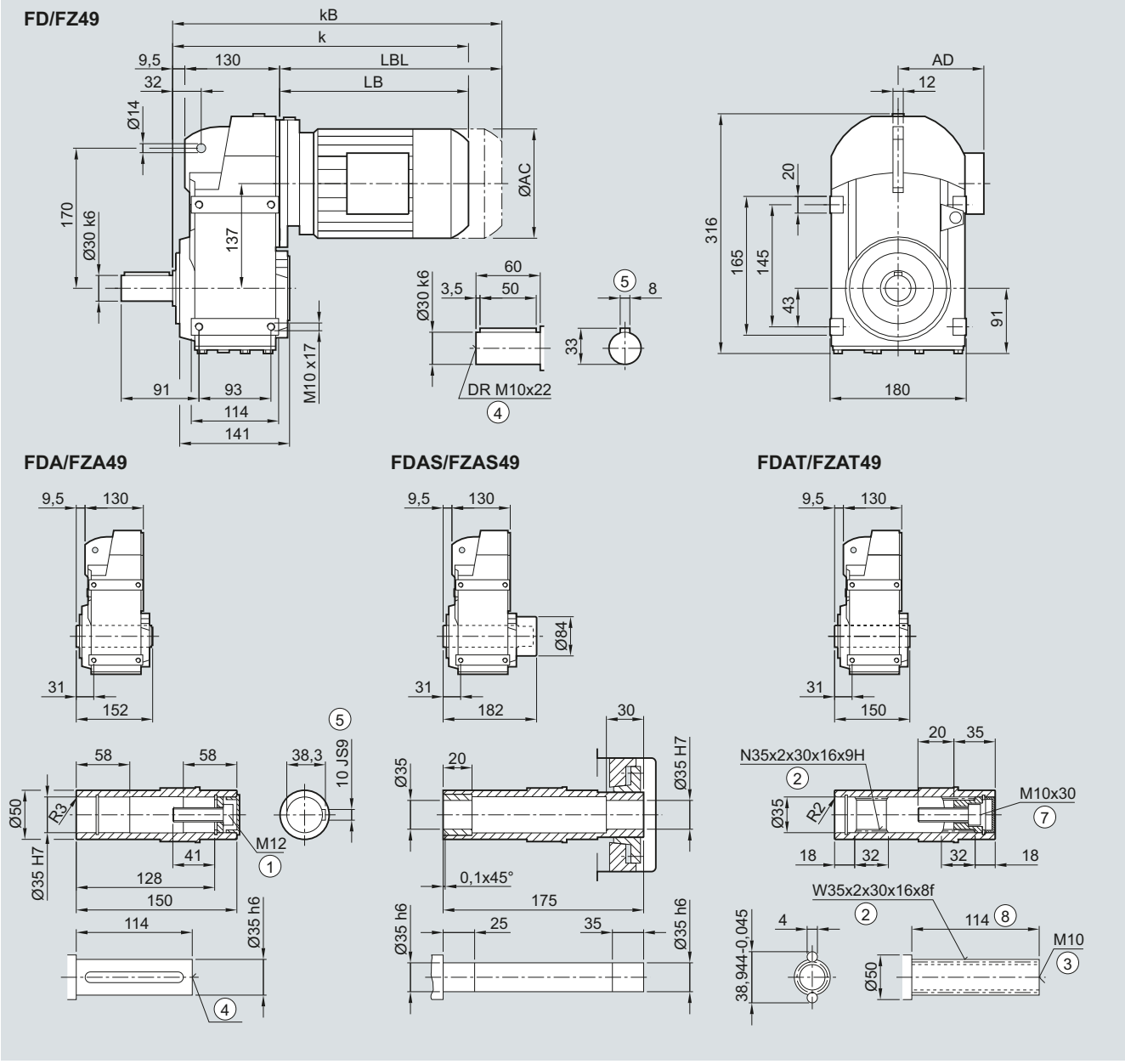
Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	286.0	449.5	511.5	568.0	578.0	631.0	681.0
kB	441.0	509.5	581.5	646.5	651.0	735.5	785.5
LB	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD../FZ..49 gearbox in a foot-mounted design

F030, FA030, FAS030, FAT030



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	356.0	419.5	481.5	538.0	548.0	601.0	651.0
kB	411.0	479.5	551.5	616.5	621.0	705.5	755.5
LB	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	271.5	340.0	412.0	477.0	481.5	566.0	616.0

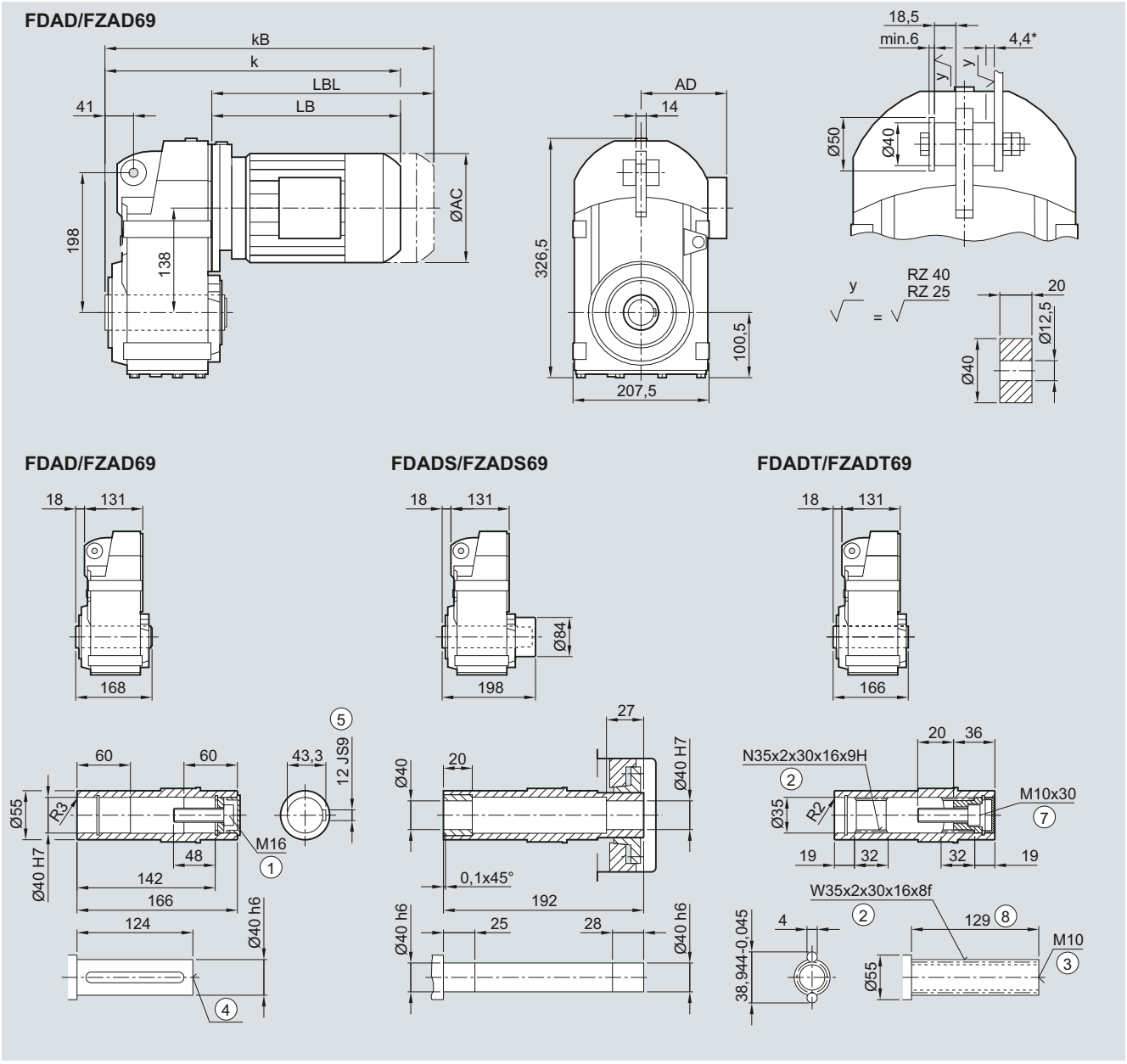
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FDAD./FZAD.69 gearbox in a shaft-mounted design

FAD030, FADS030, FADT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	333.5	365.5	429.0	491.0	547.5	557.5	610.5	660.5
kB	378.0	420.5	489.0	561.0	626.0	630.5	715.0	765.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

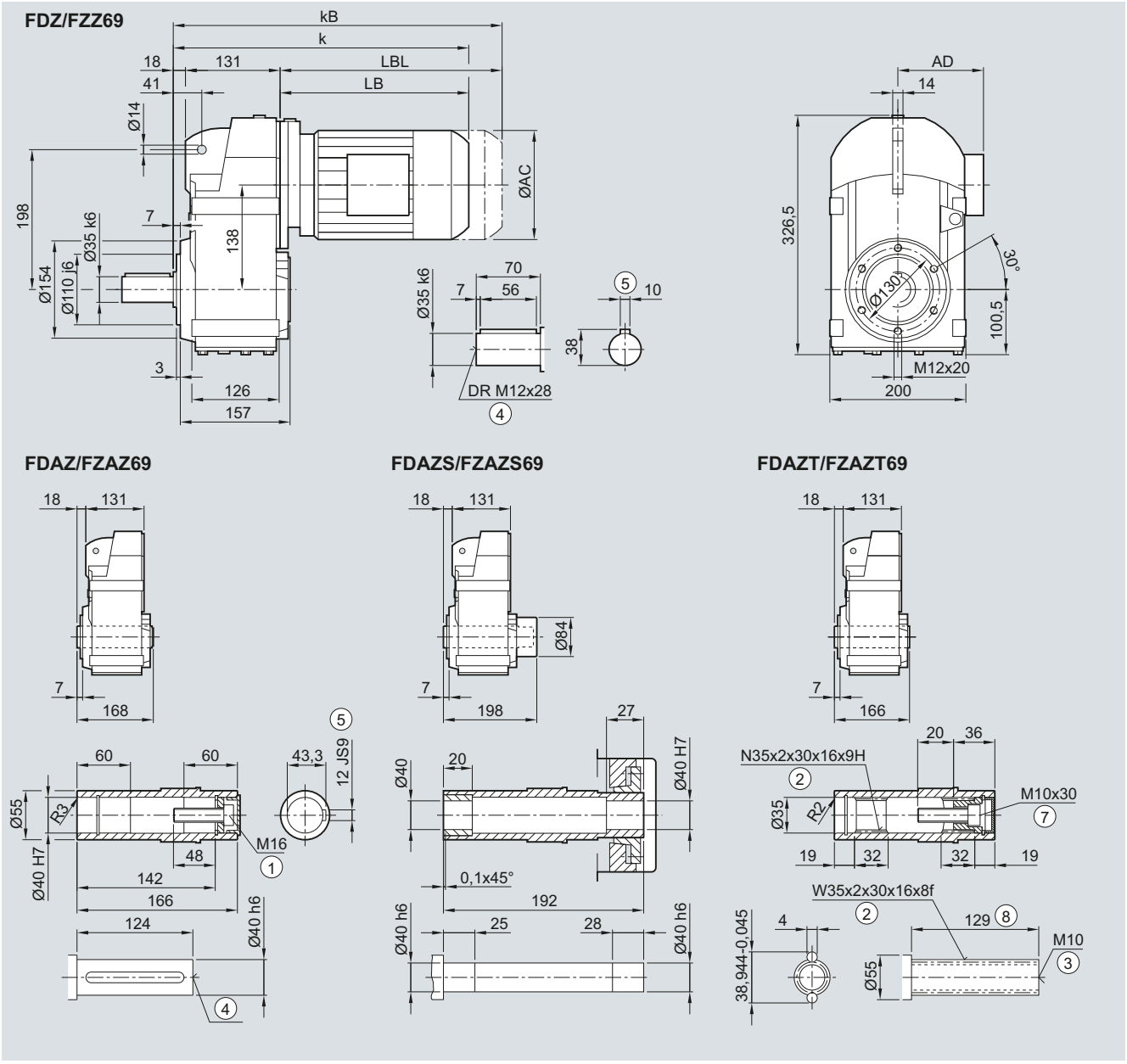
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

* Spring compression at max. torque

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD.Z./FZ.Z.69 gearbox in a housing flange design

FZ030, FAZ030, FAZS030, FAZT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	333.5	365.5	429.0	491.0	547.5	557.5	610.5	660.5
kB	378.0	420.5	489.0	561.0	626.0	630.5	715.0	765.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

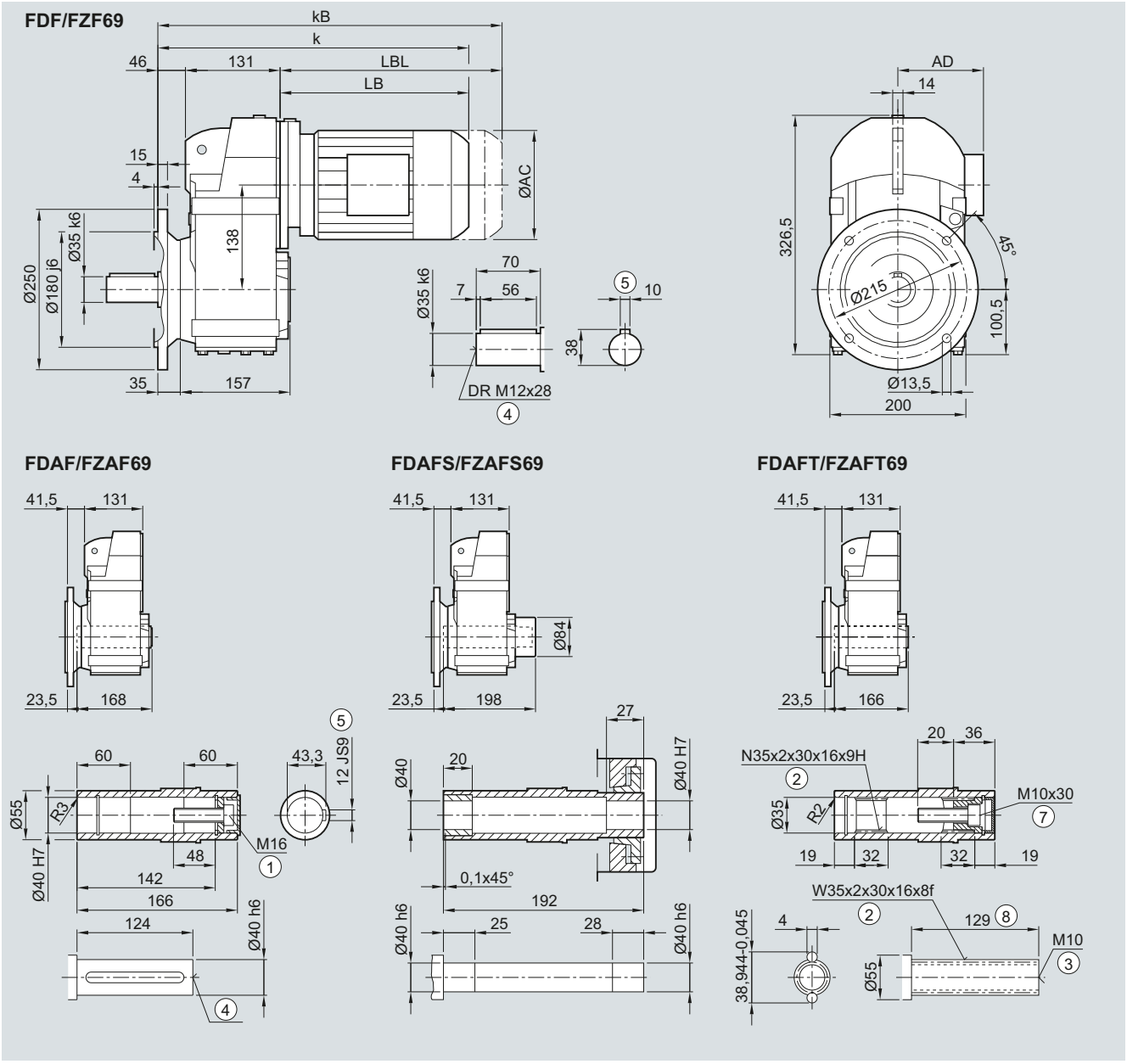
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FD.F./FZ.F.69 gearbox in a flange-mounted design

FF030, FAF030, FAFS030, FAFT030



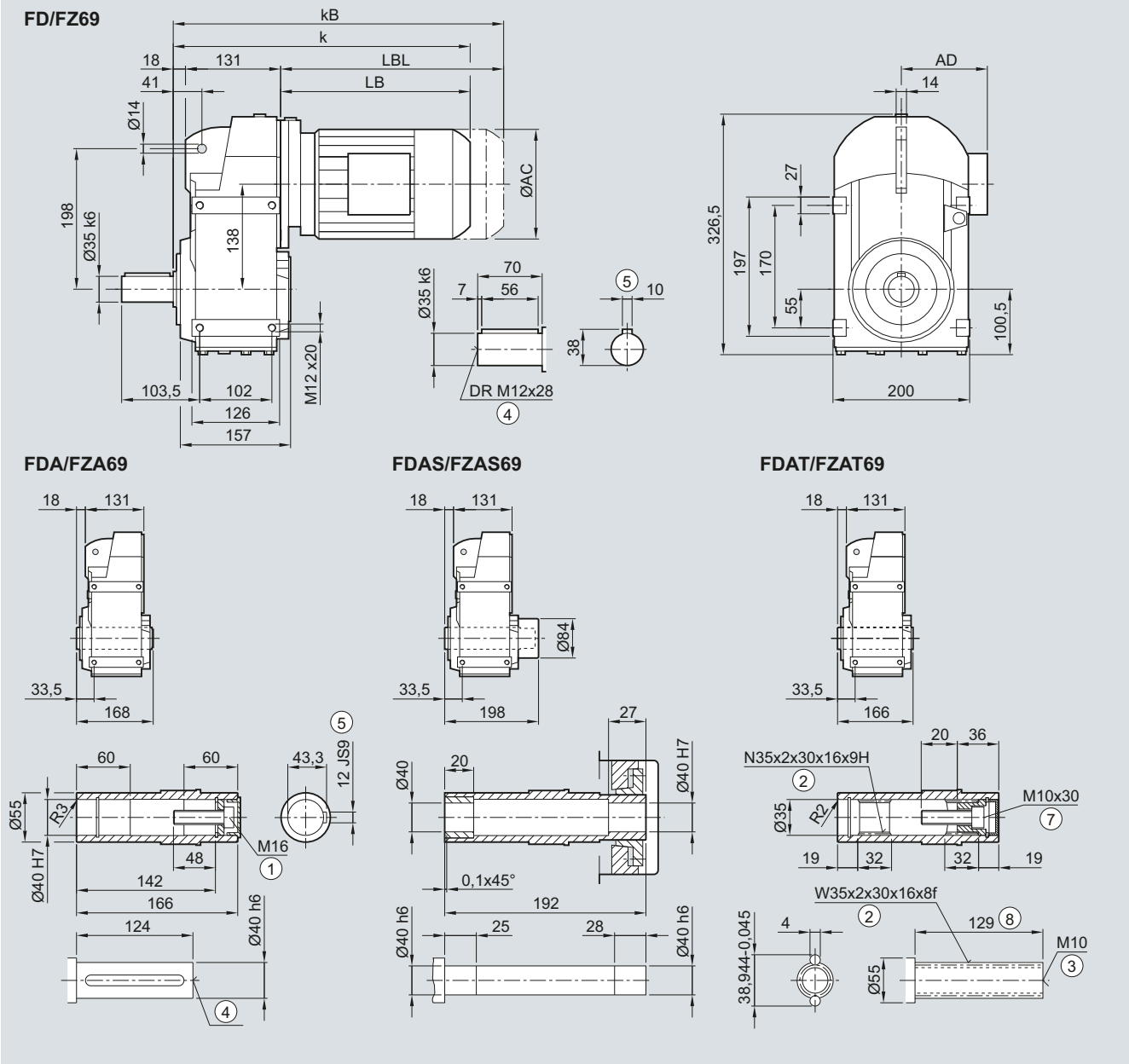
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	361.5	393.5	457.0	519.0	575.5	585.5	638.5	688.5
kB	406.0	448.5	517.0	589.0	654.0	658.5	743.0	793.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD../FZ..69 gearbox in a foot-mounted design

F030, FA030, FAS030, FAT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	333.5	365.5	429.0	491.0	547.5	557.5	610.5	660.5
kB	378.0	420.5	489.0	561.0	626.0	630.5	715.0	765.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

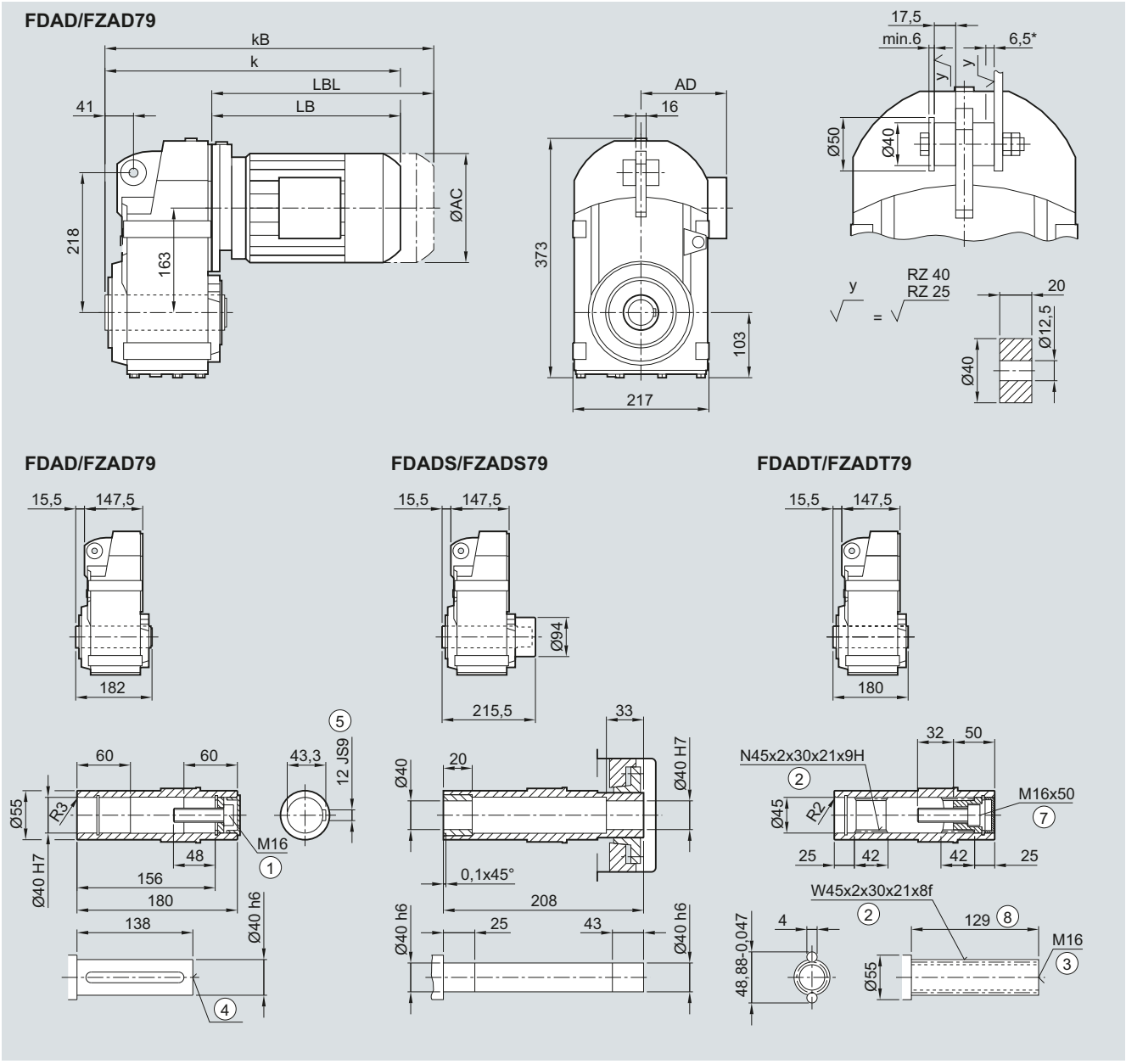
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FDAD./FZAD.79 gearbox in a shaft-mounted design

FAD030, FADS030, FADT030



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	377.5	437.0	499.0	555.5	565.5	618.5	668.5	700.5
kB	432.5	497.0	569.0	634.0	638.5	723.0	773.0	816.5
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

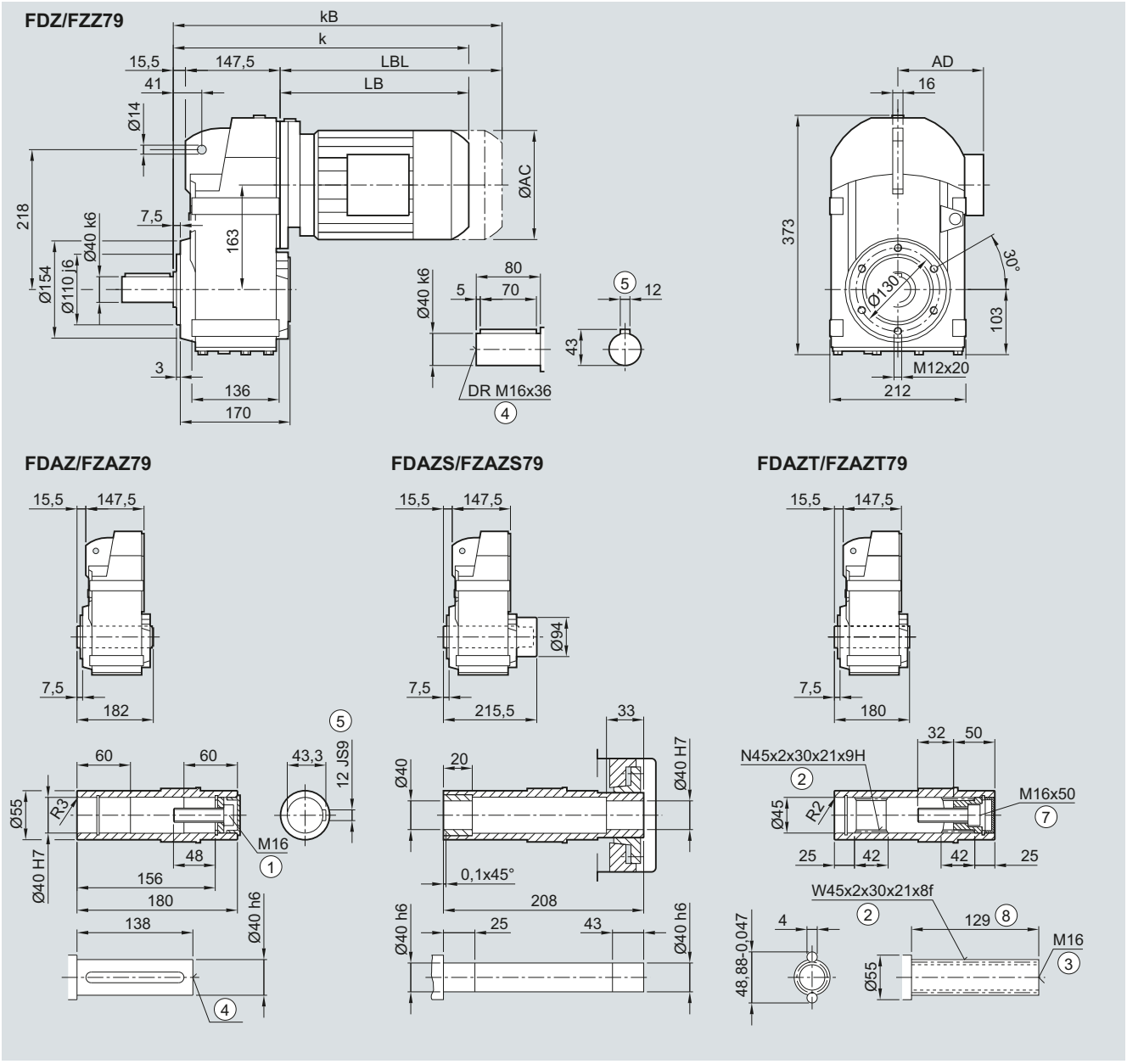
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

* Spring compression at max. torque

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD.Z./FZ.Z.79 gearbox in a housing flange design

FZ030, FAZ030, FAZS030, FAZT030



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	377.5	437.0	499.0	555.5	565.5	618.5	668.5	700.5
kB	432.5	497.0	569.0	634.0	638.5	723.0	773.0	816.5
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

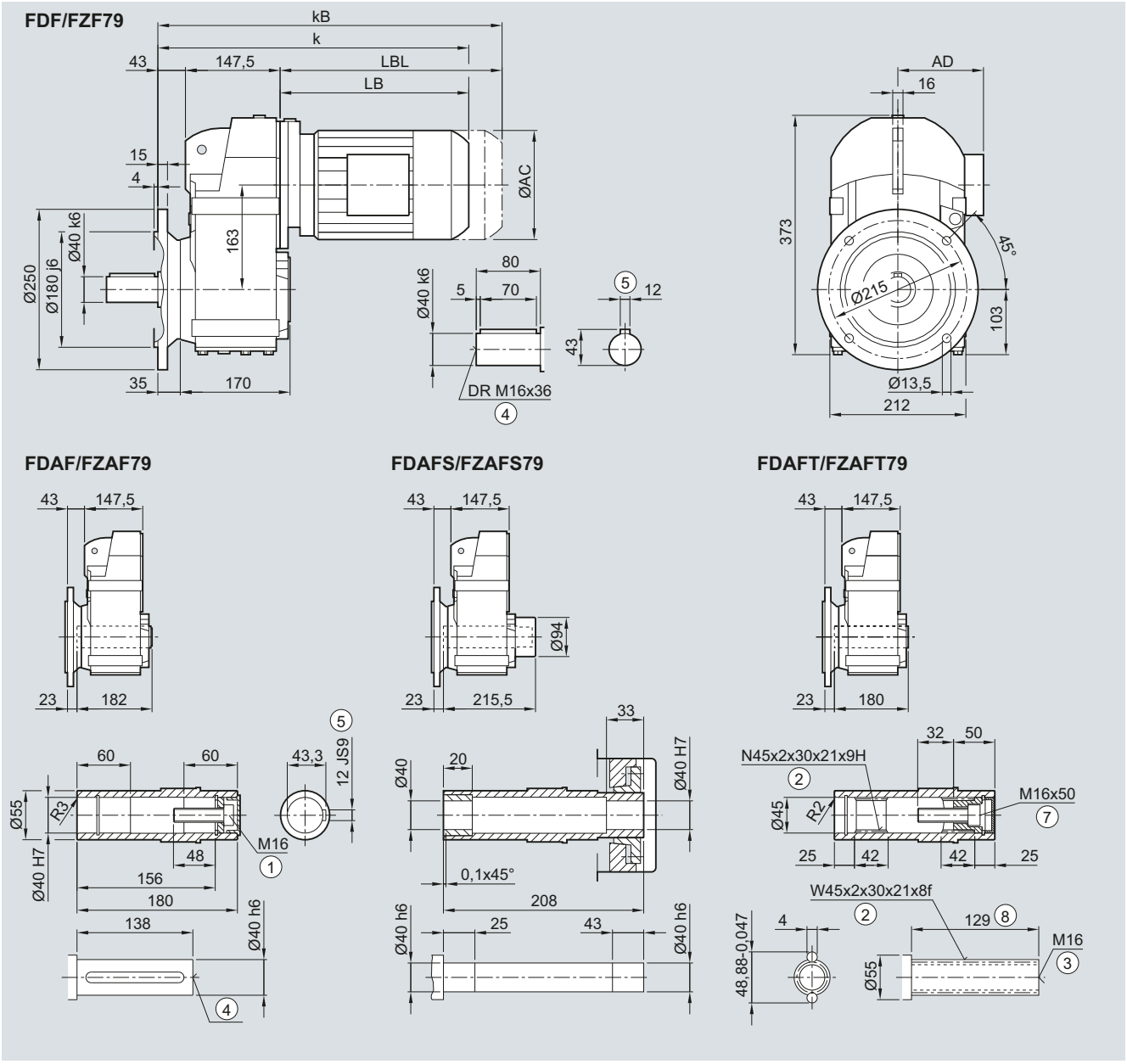
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FD.F./FZ.F.79 gearbox in a flange-mounted design

FF030, FAF030, FAFS030, FAFT030



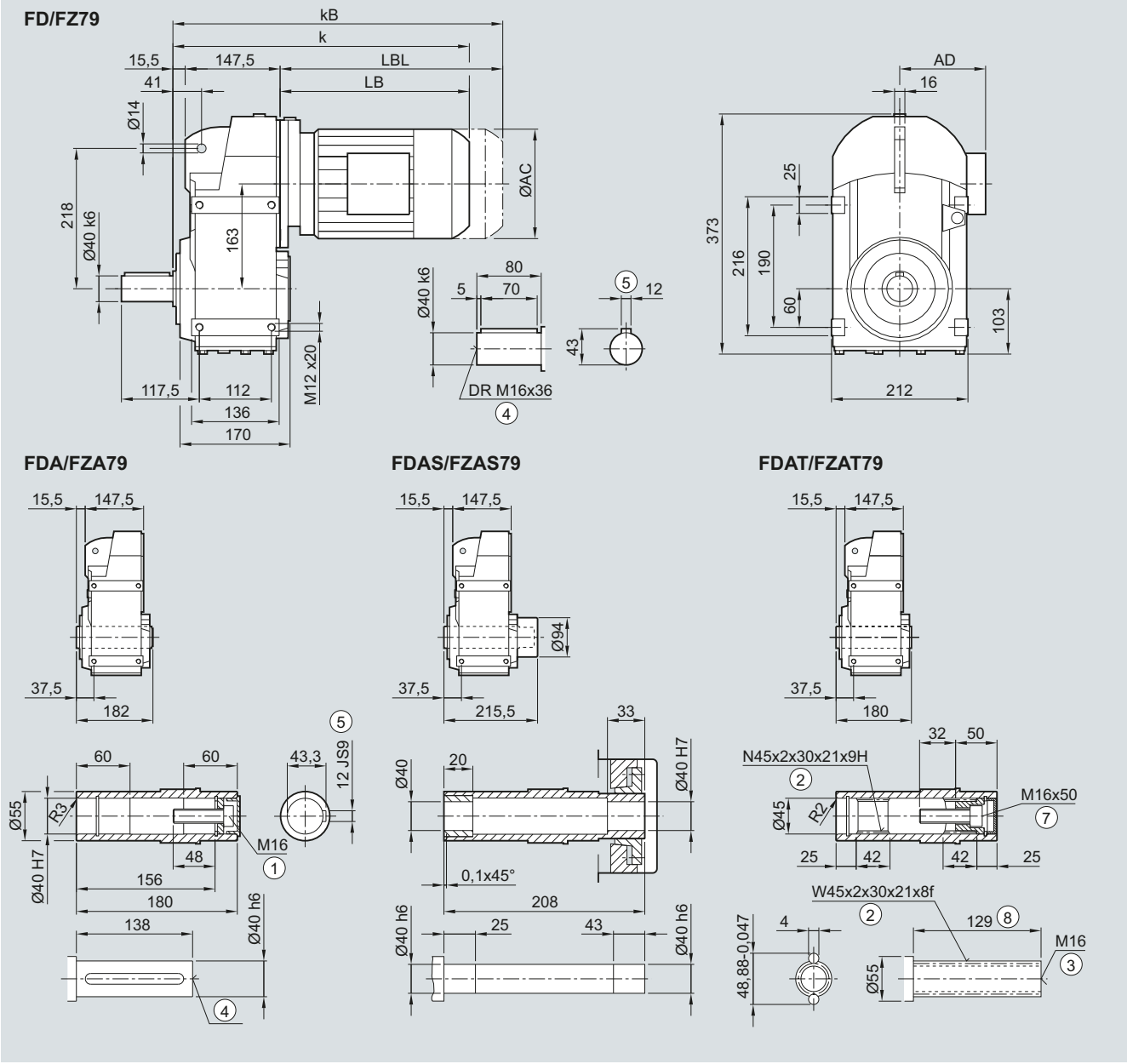
Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	405.0	464.5	526.5	583.0	593.0	646.0	696.0	728.0
kB	460.0	524.5	596.5	661.5	666.0	750.5	800.5	844.0
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

FD../FZ..79 gearbox in a foot-mounted design

F030, FA030, FAS030, FAT030



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	377.5	437.0	499.0	555.5	565.5	618.5	668.5	700.5
kB	432.5	497.0	569.0	634.0	638.5	723.0	773.0	816.5
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

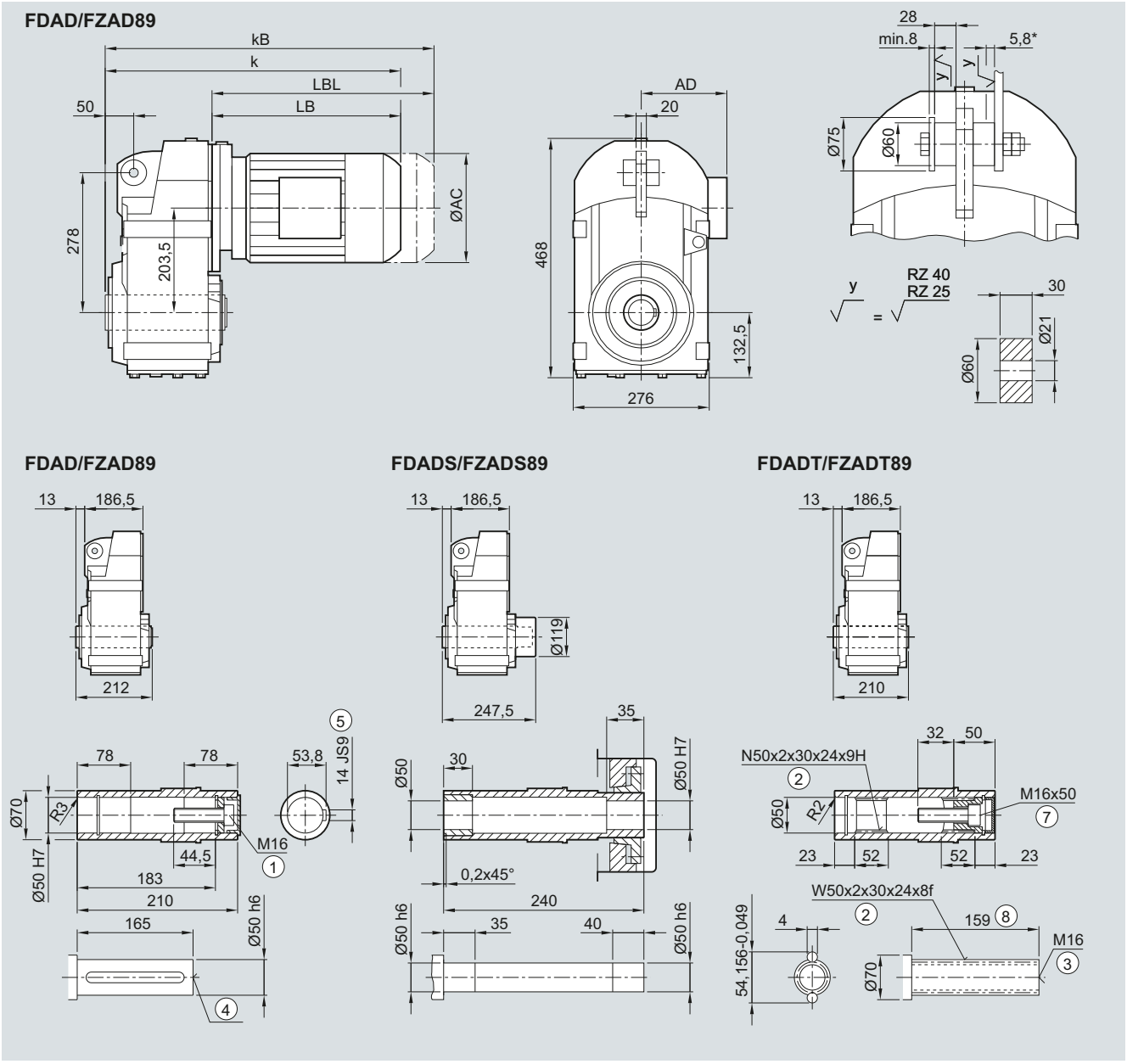
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

FDAD./FZAD.89 gearbox in a shaft-mounted design

FAD030, FADS030, FADT030



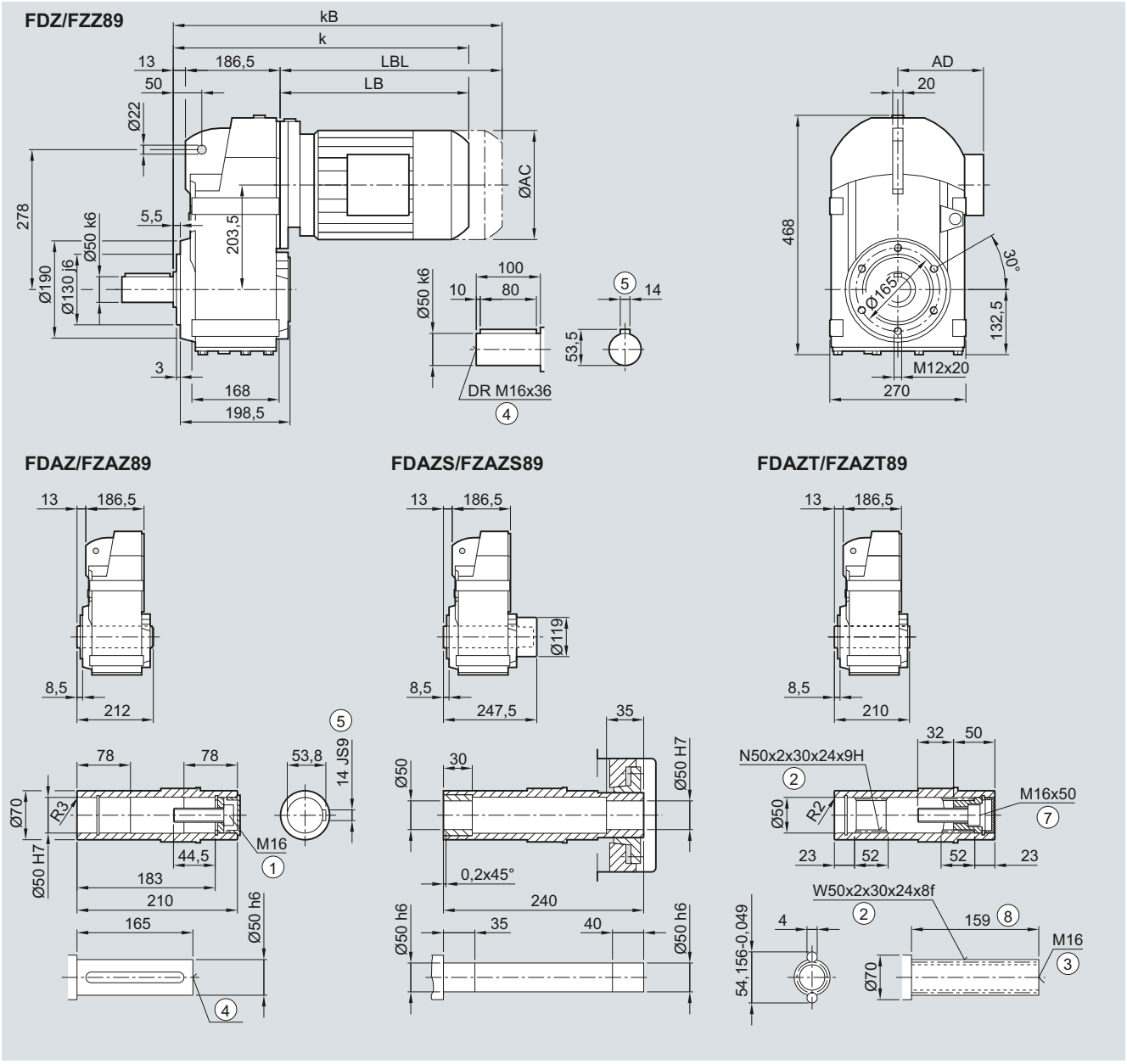
Motor	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	460.5	522.5	575.0	585.0	638.0	688.0	720.0
kB	520.5	592.5	653.5	658.0	742.5	792.5	836.0
LB	261.0	323.0	375.5	385.5	438.5	488.5	520.5
LBL	321.0	393.0	454.0	458.5	543.0	593.0	636.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

* Spring compression at max. torque

FD.Z./FZ.Z.89 gearbox in a housing flange design

FZ030, FAZ030, FAZS030, FAZT030



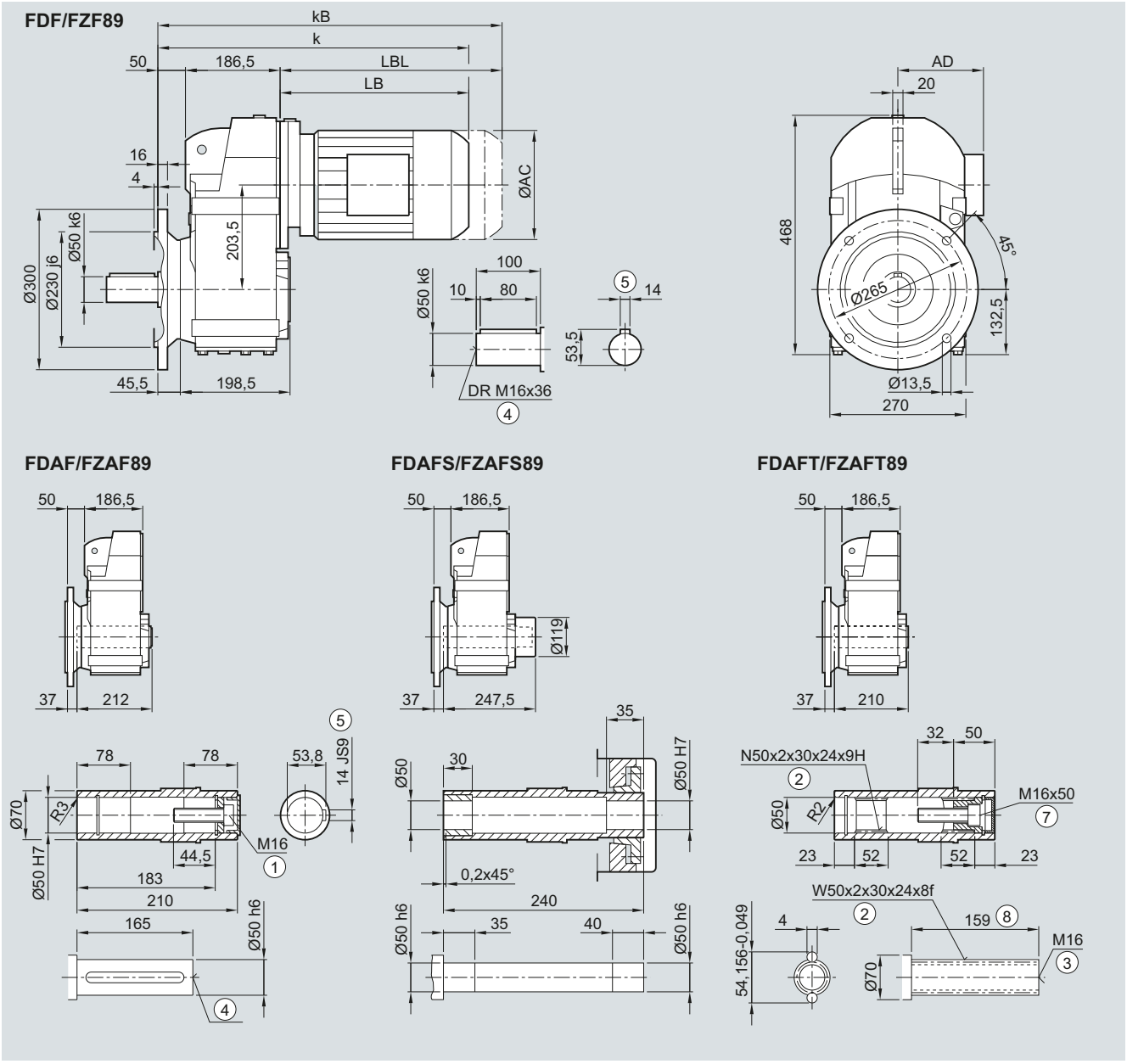
Motor	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	460.5	522.5	575.0	585.0	638.0	688.0	720.0
kB	520.5	592.5	653.5	658.0	742.5	792.5	836.0
LB	261.0	323.0	375.5	385.5	438.5	488.5	520.5
LBL	321.0	393.0	454.0	458.5	543.0	593.0	636.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

Dimensions

FD.F./FZ.F.89 gearbox in a flange-mounted design

FF030, FAF030, FAFS030, FAFT030

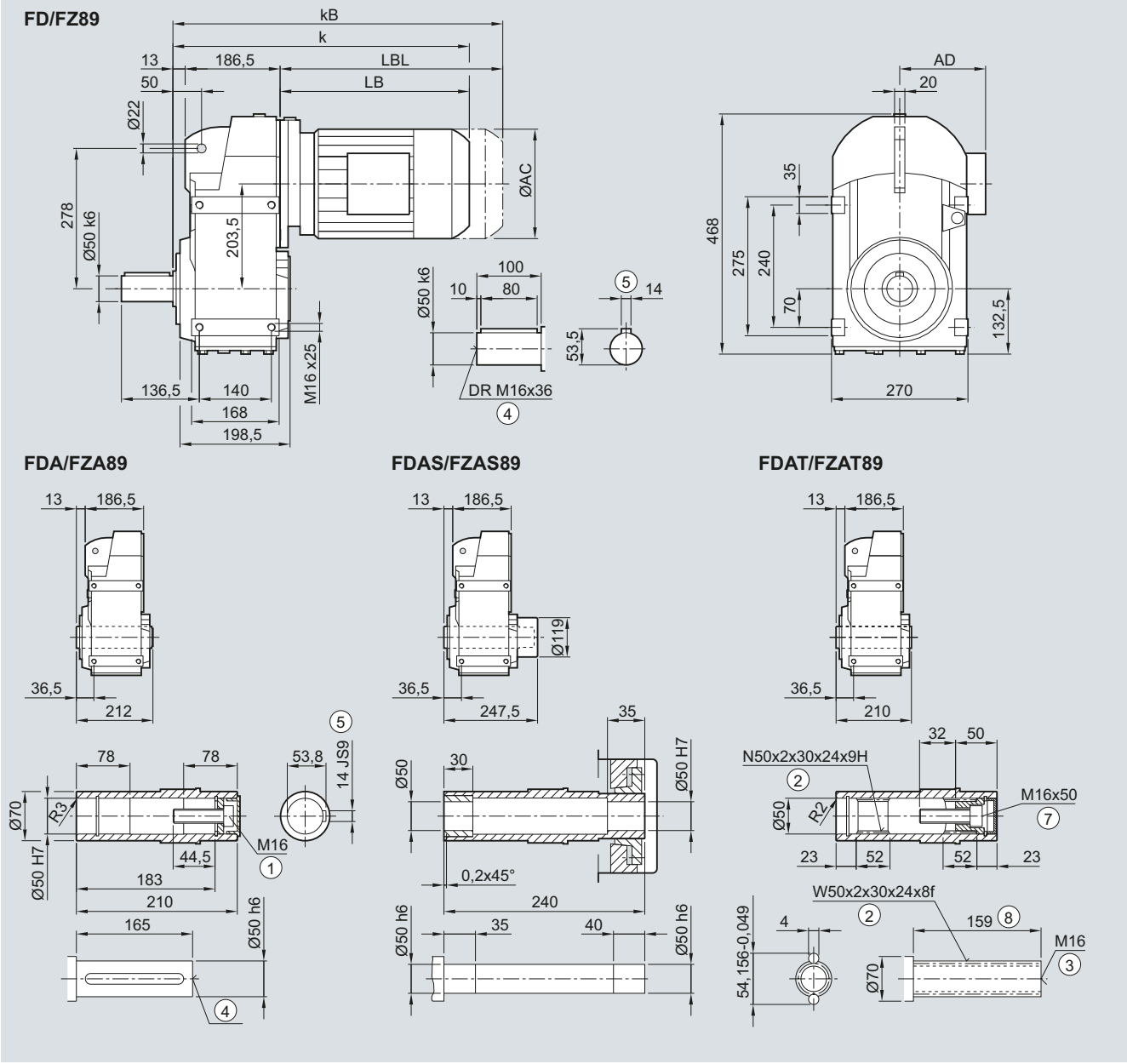


Motor	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	149.5	154.2	170.5	181.5	207.0	207.0	241.0
k	497.5	559.5	612.0	622.0	675.0	725.0	757.0
kB	557.5	629.5	690.5	695.0	779.5	829.5	873.0
LB	261.0	323.0	375.5	385.5	438.5	488.5	520.5
LBL	321.0	393.0	454.0	458.5	543.0	593.0	636.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

FD../FZ..89 gearbox in a foot-mounted design

F030, FA030, FAS030, FAT030



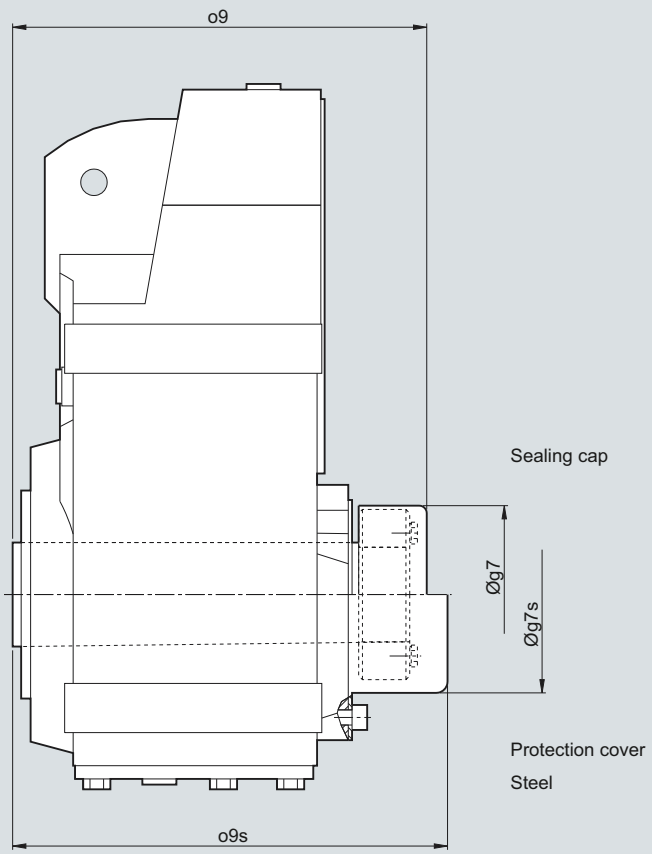
Motor	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	460.5	522.5	575.0	585.0	638.0	688.0	720.0
kB	520.5	592.5	653.5	658.0	742.5	792.5	836.0
LB	261.0	323.0	375.5	385.5	438.5	488.5	520.5
LBL	321.0	393.0	454.0	458.5	543.0	593.0	636.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

Dimensions

Protection cover for hollow shaft

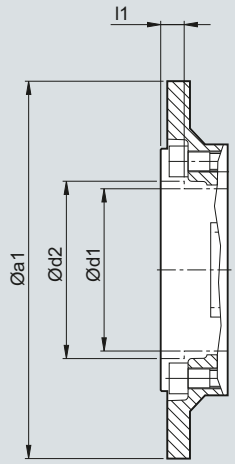
F.AS, F.AFS, F.AZS, F.ADS



Gearbox type	F.29	F.39	F.49	F.69	F.79	F.89
Rotating protective cover						
max. motor frame size that can be mounted		100	112	112	132	160
g7	57	76	84	84	94	119
o9	132.5	149.5	182	198	215.5	247.5
Protection cover						
max. motor frame size that can be mounted		80	100	100	112	132
g7s	58	86	86	99	99	137
o9s	135.5	170	198	210	223.5	284.5

Inner contour of the flange design

Design notes for the customer's interface, e.g. plug-in shaft for hollow shaft design



Gearbox type	FDAF./FZAF.29	FDAF./FZAF.29	FDAF./FZAF.39	FDAF./FZAF.49	FDAF./FZAF.69	FDAF./FZAF.79	FDAF./FZAF.89
a1	120	160	160	200	250	250	300
d1	66	66	77	86	100	100	126
d2	66	98	82	94	106	106	174
l1	0.0	6.5	8.5	12.5	10.0	10.0	18.0

Notes

Bevel geared motors

5

Orientation

SIMOGEAR bevel geared motor B

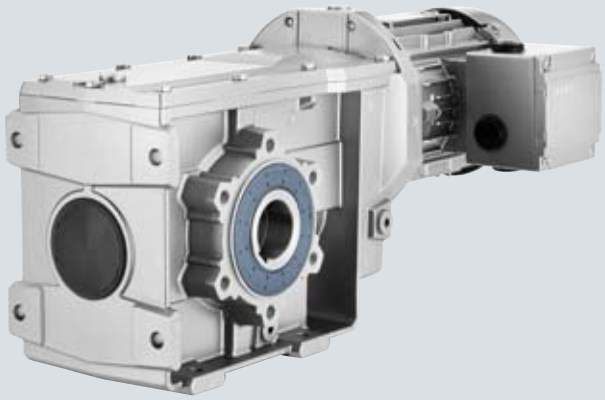


Fig. 5-1 Bevel geared motor B

SIMOGEAR bevel geared motor K

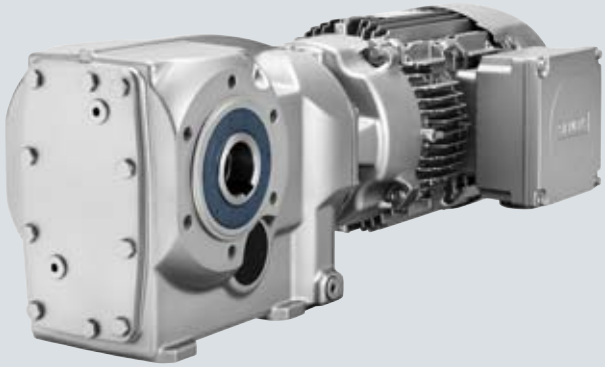


Fig. 5-2 Bevel geared motor K

SIMOGEAR bevel geared motors are available in the following versions for mounting in any position:

- 2 or 3 stages
- Shaft-mounted design with torque arm
- Flange-mounted design
- Design with integrated housing flange
- Foot-mounted design
- Hollow-shaft design with feather key, splined shaft or shrink disk
- Solid shaft design with feather key (at one end or both ends)

For 2-stage bevel gearboxes B, the torque arm is supplied loose to enable it to be mounted as required on site. The position of the torque arm can be freely selected.

Selection and ordering data

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.09	**K.39-LA63MF6**							
	5.4	159	157.32	6 300	1.4	14	**2KJ3504 - ■ BD11 - ■ ■ J2**	**P01**
	6.1	141	139.54	6 370	1.6	14	**2KJ3504 - ■ BD11 - ■ ■ H2**	**P01**
	7	122	121.07	6 440	1.8	14	**2KJ3504 - ■ BD11 - ■ ■ G2**	**P01**
	7.7	111	110.06	6 480	2	14	**2KJ3504 - ■ BD11 - ■ ■ F2**	**P01**
	B.29-LA63MF6							
	18	47	46.85	4 200	2.3	8	**2KJ3504 - ■ BD11 - ■ ■ B2**	**P01**
	20	42	41.56	4 200	2.6	8	**2KJ3504 - ■ BD11 - ■ ■ A2**	**P01**
	24	36	36.06	4 200	3	8	**2KJ3504 - ■ BD11 - ■ ■ X1**	**P01**
	26	33	32.78	4 200	3.3	8	**2KJ3504 - ■ BD11 - ■ ■ W1**	**P01**
	B.29-LA63MD4							
	29	30	46.85	4 200	3.7	8	**2KJ3501 - ■ BB11 - ■ ■ B2**	
	32	26	41.56	4 200	4.2	8	**2KJ3501 - ■ BB11 - ■ ■ A2**	
	37	23	36.06	4 200	4.8	8	**2KJ3501 - ■ BB11 - ■ ■ X1**	
	41	21	32.78	4 200	5.3	8	**2KJ3501 - ■ BB11 - ■ ■ W1**	
	48	18	28.11	4 200	6.1	8	**2KJ3501 - ■ BB11 - ■ ■ V1**	
	53	16	25.56	4 200	6.8	8	**2KJ3501 - ■ BB11 - ■ ■ U1**	
	60	14	22.41	4 200	7.7	8	**2KJ3501 - ■ BB11 - ■ ■ T1**	
	68	13	20	4 200	8.6	8	**2KJ3501 - ■ BB11 - ■ ■ S1**	
	76	11	17.82	4 200	9.7	8	**2KJ3501 - ■ BB11 - ■ ■ R1**	
	82	10	16.45	4 200	10	8	**2KJ3501 - ■ BB11 - ■ ■ Q1**	
	94	9.2	14.4	4 200	12	8	**2KJ3501 - ■ BB11 - ■ ■ P1**	
	107	8	12.63	4 200	14	8	**2KJ3501 - ■ BB11 - ■ ■ N1**	
	118	7.3	11.46	4 200	15	8	**2KJ3501 - ■ BB11 - ■ ■ M1**	
	172	5	7.84	3 860	15	8	**2KJ3501 - ■ BB11 - ■ ■ H1**	
0.12	**K.49-LA63MG6**							
	4.2	270	200.25	8 640	1.6	21	**2KJ3505 - ■ BE11 - ■ ■ J2**	**P01**
	4.8	240	178.06	8 730	1.7	21	**2KJ3505 - ■ BE11 - ■ ■ H2**	**P01**
	5.4	210	156.34	8 820	2	21	**2KJ3505 - ■ BE11 - ■ ■ G2**	**P01**
	K.39-LA63MG6							
	5.4	210	157.32	6 110	1	14	**2KJ3504 - ■ BE11 - ■ ■ J2**	**P01**
	6.1	188	139.54	6 200	1.2	14	**2KJ3504 - ■ BE11 - ■ ■ H2**	**P01**
	7	163	121.07	6 290	1.3	14	**2KJ3504 - ■ BE11 - ■ ■ G2**	**P01**
	7.7	148	110.06	6 340	1.5	14	**2KJ3504 - ■ BE11 - ■ ■ F2**	**P01**
	K.39-LA63ME4							
	8.6	134	157.32	6 400	1.6	14	**2KJ3504 - ■ BC11 - ■ ■ J2**	
	9.7	118	139.54	6 460	1.9	14	**2KJ3504 - ■ BC11 - ■ ■ H2**	
	11	103	121.07	6 510	2.1	14	**2KJ3504 - ■ BC11 - ■ ■ G2**	
	B.29-LA63MG6							
	18	63	46.85	4 200	1.7	8	**2KJ3501 - ■ BE11 - ■ ■ B2**	**P01**
	20	56	41.56	4 200	2	8	**2KJ3501 - ■ BE11 - ■ ■ A2**	**P01**
	24	49	36.06	4 200	2.3	8	**2KJ3501 - ■ BE11 - ■ ■ X1**	**P01**
	26	44	32.78	4 200	2.5	8	**2KJ3501 - ■ BE11 - ■ ■ W1**	**P01**

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.12	**B.29-LA63ME4**							
	29	40	46.85	4 200	2.8	8	**2KJ3501 - ■ BC11 - ■ ■ B2**	
	32	35	41.56	4 200	3.1	8	**2KJ3501 - ■ BC11 - ■ ■ A2**	
	37	31	36.06	4 200	3.6	8	**2KJ3501 - ■ BC11 - ■ ■ X1**	
	41	28	32.78	4 200	4	8	**2KJ3501 - ■ BC11 - ■ ■ W1**	
	48	24	28.11	4 200	4.6	8	**2KJ3501 - ■ BC11 - ■ ■ V1**	
	53	22	25.56	4 200	5.1	8	**2KJ3501 - ■ BC11 - ■ ■ U1**	
	60	19	22.41	4 200	5.8	8	**2KJ3501 - ■ BC11 - ■ ■ T1**	
	68	17	20	4 200	6.5	8	**2KJ3501 - ■ BC11 - ■ ■ S1**	
	76	15	17.82	4 200	7.3	8	**2KJ3501 - ■ BC11 - ■ ■ R1**	
	82	14	16.45	4 200	7.9	8	**2KJ3501 - ■ BC11 - ■ ■ Q1**	
	94	12	14.4	4 200	9	8	**2KJ3501 - ■ BC11 - ■ ■ P1**	
	107	11	12.63	4 200	10	8	**2KJ3501 - ■ BC11 - ■ ■ N1**	
	118	9.7	11.46	4 200	11	8	**2KJ3501 - ■ BC11 - ■ ■ M1**	
	125	9.2	10.78	4 200	12	8	**2KJ3501 - ■ BC11 - ■ ■ L1**	
	142	8.1	9.51	4 100	14	8	**2KJ3501 - ■ BC11 - ■ ■ K1**	
	172	6.7	7.84	3 840	11	8	**2KJ3501 - ■ BC11 - ■ ■ H1**	
	183	6.3	7.38	3 770	12	8	**2KJ3501 - ■ BC11 - ■ ■ G1**	
	207	5.5	6.51	3 620	14	8	**2KJ3501 - ■ BC11 - ■ ■ F1**	
0.18	**K.79-LA71MG6**							
	3.5	490	244.25	12 400	1.7	35	**2KJ3508 - ■ CD11 - ■ ■ J2**	**P01**
	3.8	445	222.05	12 400	1.8	35	**2KJ3508 - ■ CD11 - ■ ■ H2**	**P01**
	K.69-LA71MG6							
	4.3	395	196.59	11 300	1.5	29	**2KJ3507 - ■ CD11 - ■ ■ H2**	**P01**
	4.8	360	178.72	11 400	1.7	29	**2KJ3507 - ■ CD11 - ■ ■ G2**	**P01**
	5.6	305	152	11 500	2	29	**2KJ3507 - ■ CD11 - ■ ■ F2**	**P01**
	6.2	275	138.18	11 600	2.1	29	**2KJ3507 - ■ CD11 - ■ ■ E2**	**P01**
	K.49-LA71MG6							
	4.2	405	200.25	7 940	1	23	**2KJ3505 - ■ CD11 - ■ ■ J2**	**P01**
	4.8	360	178.06	8 290	1.2	23	**2KJ3505 - ■ CD11 - ■ ■ H2**	**P01**
	5.4	315	156.34	8 510	1.3	23	**2KJ3505 - ■ CD11 - ■ ■ G2**	**P01**
	6	285	142.13	8 600	1.5	23	**2KJ3505 - ■ CD11 - ■ ■ F2**	**P01**
	K.49-LA63MF4							
	6.7	255	200.25	8 690	1.6	21	**2KJ3505 - ■ BD11 - ■ ■ J2**	
	7.6	225	178.06	8 770	1.9	21	**2KJ3505 - ■ BD11 - ■ ■ H2**	
	8.6	199	156.34	8 850	2.1	21	**2KJ3505 - ■ BD11 - ■ ■ G2**	
	K.39-LA71MG6							
	7	245	121.07	5 980	0.9	15	**2KJ3504 - ■ CD11 - ■ ■ G2**	**P01**
	7.7	220	110.06	6 080	0.99	15	**2KJ3504 - ■ CD11 - ■ ■ F2**	**P01**
	K.39-LA63MF4							
	8.6	200	157.32	6 150	1.1	14	**2KJ3504 - ■ BD11 - ■ ■ J2**	
	9.7	178	139.54	6 230	1.2	14	**2KJ3504 - ■ BD11 - ■ ■ H2**	
	11	154	121.07	6 320	1.4	14	**2KJ3504 - ■ BD11 - ■ ■ G2**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.18	**K.39-LA63MF4**							
	12	140	110.06	6 370	1.6	14	**2KJ3504 - ■ BD11 - ■ ■ F2**	
	14	120	94.39	6 450	1.8	14	**2KJ3504 - ■ BD11 - ■ ■ E2**	
	16	109	85.81	6 490	2	14	**2KJ3504 - ■ BD11 - ■ ■ D2**	
	18	96	75.24	6 530	2.3	14	**2KJ3504 - ■ BD11 - ■ ■ C2**	
	B.39-LA71MG6							
	15	114	56.36	6 970	2.2	14	**2KJ3502 - ■ CD11 - ■ ■ A2**	**P01**
	17	101	50.11	6 970	2.1	14	**2KJ3502 - ■ CD11 - ■ ■ X1**	**P01**
	B.29-LA71MG6							
	18	95	46.85	4 200	1.2	9	**2KJ3501 - ■ CD11 - ■ ■ B2**	**P01**
	20	84	41.56	4 200	1.3	9	**2KJ3501 - ■ CD11 - ■ ■ A2**	**P01**
	B.29-LA71MG6							
	24	73	36.06	4 200	1.5	9	**2KJ3501 - ■ CD11 - ■ ■ X1**	**P01**
	26	66	32.78	4 200	1.7	9	**2KJ3501 - ■ CD11 - ■ ■ W1**	**P01**
	B.29-LA63MF4							
	29	60	46.85	4 200	1.8	8	**2KJ3501 - ■ BD11 - ■ ■ B2**	
	32	53	41.56	4 200	2.1	8	**2KJ3501 - ■ BD11 - ■ ■ A2**	
	37	46	36.06	4 200	2.4	8	**2KJ3501 - ■ BD11 - ■ ■ X1**	
	41	42	32.78	4 200	2.6	8	**2KJ3501 - ■ BD11 - ■ ■ W1**	
	48	36	28.11	4 200	3.1	8	**2KJ3501 - ■ BD11 - ■ ■ V1**	
	53	32	25.56	4 200	3.4	8	**2KJ3501 - ■ BD11 - ■ ■ U1**	
	60	28	22.41	4 200	3.9	8	**2KJ3501 - ■ BD11 - ■ ■ T1**	
	68	26	20	4 200	4.3	8	**2KJ3501 - ■ BD11 - ■ ■ S1**	
	76	23	17.82	4 200	4.8	8	**2KJ3501 - ■ BD11 - ■ ■ R1**	
	82	21	16.45	4 200	5.3	8	**2KJ3501 - ■ BD11 - ■ ■ Q1**	
	94	18	14.4	4 200	6	8	**2KJ3501 - ■ BD11 - ■ ■ P1**	
	107	16	12.63	4 200	6.8	8	**2KJ3501 - ■ BD11 - ■ ■ N1**	
	118	15	11.46	4 200	7.5	8	**2KJ3501 - ■ BD11 - ■ ■ M1**	
	125	14	10.78	4 200	8	8	**2KJ3501 - ■ BD11 - ■ ■ L1**	
	142	12	9.51	4 060	9.1	8	**2KJ3501 - ■ BD11 - ■ ■ K1**	
	164	10	8.25	3 890	10	8	**2KJ3501 - ■ BD11 - ■ ■ J1**	
	172	10	7.84	3 810	7.5	8	**2KJ3501 - ■ BD11 - ■ ■ H1**	
	183	9.4	7.38	3 740	8	8	**2KJ3501 - ■ BD11 - ■ ■ G1**	
	207	8.3	6.51	3 590	9	8	**2KJ3501 - ■ BD11 - ■ ■ F1**	
	239	7.2	5.65	3 430	10	8	**2KJ3501 - ■ BD11 - ■ ■ E1**	
	266	6.5	5.07	3 330	12	8	**2KJ3501 - ■ BD11 - ■ ■ D1**	
	282	6.1	4.78	3 260	12	8	**2KJ3501 - ■ BD11 - ■ ■ C1**	
	321	5.4	4.21	3 130	14	8	**2KJ3501 - ■ BD11 - ■ ■ B1**	
0.25	**K.79-LA71MH6**							
	3.5	675	244.25	12 400	1.2	36	**2KJ3508 - ■ CE11 - ■ ■ J2**	**P01**
	3.9	615	222.05	12 400	1.3	36	**2KJ3508 - ■ CE11 - ■ ■ H2**	**P01**
	4.6	520	188.85	12 400	1.6	36	**2KJ3508 - ■ CE11 - ■ ■ G2**	**P01**
	5	475	171.69	12 400	1.7	36	**2KJ3508 - ■ CE11 - ■ ■ F2**	**P01**

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.25	**K.79-LA71MG4**							
	5.5	430	244.25	12 400	1.9	35	**2KJ3508 - ■ CD11 - ■ ■ J2**	
	6.1	390	222.05	12 400	2.1	35	**2KJ3508 - ■ CD11 - ■ ■ H2**	
	K.69-LA71MH6							
	4.4	545	196.59	10 900	1.1	31	**2KJ3507 - ■ CE11 - ■ ■ H2**	**P01**
	4.8	495	178.72	11 100	1.2	31	**2KJ3507 - ■ CE11 - ■ ■ G2**	**P01**
	5.7	420	152	11 200	1.4	31	**2KJ3507 - ■ CE11 - ■ ■ F2**	**P01**
	6.2	380	138.18	11 300	1.6	31	**2KJ3507 - ■ CE11 - ■ ■ E2**	**P01**
	K.69-LA71MG4							
	6.9	345	196.59	11 400	1.7	29	**2KJ3507 - ■ CD11 - ■ ■ H2**	
	7.6	315	178.72	11 500	1.9	29	**2KJ3507 - ■ CD11 - ■ ■ G2**	
	K.49-LA71MH6							
	4.8	490	178.06	7 270	0.85	24	**2KJ3505 - ■ CE11 - ■ ■ H2**	**P01**
	5.5	430	156.34	7 740	0.97	24	**2KJ3505 - ■ CE11 - ■ ■ G2**	**P01**
	6.1	395	142.13	8 020	1.1	24	**2KJ3505 - ■ CE11 - ■ ■ F2**	**P01**
	K.49-LA71MG4							
	6.7	350	200.25	8 370	1.2	23	**2KJ3505 - ■ CD11 - ■ ■ J2**	
	7.6	315	178.06	8 510	1.3	23	**2KJ3505 - ■ CD11 - ■ ■ H2**	
	8.6	275	156.34	8 630	1.5	23	**2KJ3505 - ■ CD11 - ■ ■ G2**	
	9.5	250	142.13	8 700	1.7	23	**2KJ3505 - ■ CD11 - ■ ■ F2**	
	11	215	121.6	8 800	2	23	**2KJ3505 - ■ CD11 - ■ ■ E2**	
	12	196	110.55	8 860	2.1	23	**2KJ3505 - ■ CD11 - ■ ■ D2**	
	K.39-LA71MG4							
	9.7	245	139.54	5 980	0.89	15	**2KJ3504 - ■ CD11 - ■ ■ H2**	
	11	210	121.07	6 110	1	15	**2KJ3504 - ■ CD11 - ■ ■ G2**	
	12	195	110.06	6 170	1.1	15	**2KJ3504 - ■ CD11 - ■ ■ F2**	
	14	167	94.39	6 270	1.3	15	**2KJ3504 - ■ CD11 - ■ ■ E2**	
	16	152	85.81	6 330	1.4	15	**2KJ3504 - ■ CD11 - ■ ■ D2**	
	18	133	75.24	6 400	1.7	15	**2KJ3504 - ■ CD11 - ■ ■ C2**	
	20	119	67.16	6 450	1.9	15	**2KJ3504 - ■ CD11 - ■ ■ B2**	
	23	106	59.85	6 500	2.1	15	**2KJ3504 - ■ CD11 - ■ ■ A2**	
	24	98	55.25	6 530	2.3	15	**2KJ3504 - ■ CD11 - ■ ■ X1**	
	B.39-LA71MH6							
	15	156	56.36	6 970	1.6	16	**2KJ3502 - ■ CE11 - ■ ■ A2**	**P01**
	17	139	50.11	6 970	1.5	16	**2KJ3502 - ■ CE11 - ■ ■ X1**	**P01**
	20	122	44	6 970	2	16	**2KJ3502 - ■ CE11 - ■ ■ W1**	**P01**
	22	111	40	6 970	2.1	16	**2KJ3502 - ■ CE11 - ■ ■ V1**	**P01**
	B.39-LA71MG4							
	27	89	50.11	6 970	2.4	14	**2KJ3502 - ■ CD11 - ■ ■ X1**	
	B.29-LA71MH6							
	18	130	46.85	4 030	0.85	11	**2KJ3501 - ■ CE11 - ■ ■ B2**	**P01**
	21	115	41.56	4 110	0.95	11	**2KJ3501 - ■ CE11 - ■ ■ A2**	**P01**
	24	100	36.06	4 190	1.1	11	**2KJ3501 - ■ CE11 - ■ ■ X1**	**P01**

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.25	**B.29-LA71MH6**							
	26	91	32.78	4 200	1.2	11	**2KJ3501 - ■ CE11 - ■ ■ W1**	**P01**
	B.29-LA71MG4							
	29	83	46.85	4 200	1.3	9	**2KJ3501 - ■ CD11 - ■ ■ B2**	
	32	74	41.56	4 200	1.5	9	**2KJ3501 - ■ CD11 - ■ ■ A2**	
	37	64	36.06	4 200	1.7	9	**2KJ3501 - ■ CD11 - ■ ■ X1**	
	41	58	32.78	4 200	1.9	9	**2KJ3501 - ■ CD11 - ■ ■ W1**	
	48	50	28.11	4 200	2.2	9	**2KJ3501 - ■ CD11 - ■ ■ V1**	
	53	45	25.56	4 200	2.4	9	**2KJ3501 - ■ CD11 - ■ ■ U1**	
	60	40	22.41	4 200	2.8	9	**2KJ3501 - ■ CD11 - ■ ■ T1**	
	68	35	20	4 200	3.1	9	**2KJ3501 - ■ CD11 - ■ ■ S1**	
	76	32	17.82	4 200	3.5	9	**2KJ3501 - ■ CD11 - ■ ■ R1**	
	82	29	16.45	4 200	3.8	9	**2KJ3501 - ■ CD11 - ■ ■ Q1**	
	94	26	14.4	4 200	4.3	9	**2KJ3501 - ■ CD11 - ■ ■ P1**	
	107	22	12.63	4 200	4.9	9	**2KJ3501 - ■ CD11 - ■ ■ N1**	
	118	20	11.46	4 200	5.4	9	**2KJ3501 - ■ CD11 - ■ ■ M1**	
	125	19	10.78	4 180	5.8	9	**2KJ3501 - ■ CD11 - ■ ■ L1**	
	142	17	9.51	4 010	6.5	9	**2KJ3501 - ■ CD11 - ■ ■ K1**	
	164	15	8.25	3 840	7.5	9	**2KJ3501 - ■ CD11 - ■ ■ J1**	
	172	14	7.84	3 770	5.4	9	**2KJ3501 - ■ CD11 - ■ ■ H1**	
	183	13	7.38	3 700	5.7	9	**2KJ3501 - ■ CD11 - ■ ■ G1**	
	207	12	6.51	3 550	6.5	9	**2KJ3501 - ■ CD11 - ■ ■ F1**	
	239	10	5.65	3 400	7.5	9	**2KJ3501 - ■ CD11 - ■ ■ E1**	
	266	9	5.07	3 300	8.3	9	**2KJ3501 - ■ CD11 - ■ ■ D1**	
	282	8.5	4.78	3 240	8.8	9	**2KJ3501 - ■ CD11 - ■ ■ C1**	
	321	7.4	4.21	3 110	9.9	9	**2KJ3501 - ■ CD11 - ■ ■ B1**	
	370	6.5	3.65	2 970	11	9	**2KJ3501 - ■ CD11 - ■ ■ A1**	
0.37	**K.89-LE80MD6E**							
	3.9	900	231.8	15 400	1.8	61	**2KJ3510 - ■ DC22 - ■ ■ K2**	**P01**
	4.3	815	210.72	15 400	2	61	**2KJ3510 - ■ DC22 - ■ ■ J2**	**P01**
	K.79-LE80MD6E							
	3.7	945	244.25	12 400	0.86	38	**2KJ3508 - ■ DC22 - ■ ■ J2**	**P01**
	4.1	860	222.05	12 400	0.95	38	**2KJ3508 - ■ DC22 - ■ ■ H2**	**P01**
	4.8	730	188.85	12 400	1.1	38	**2KJ3508 - ■ DC22 - ■ ■ G2**	**P01**
	5.3	665	171.69	12 400	1.2	38	**2KJ3508 - ■ DC22 - ■ ■ F2**	**P01**
	K.79-LA71MH4							
	5.6	630	244.25	12 400	1.3	36	**2KJ3508 - ■ CE11 - ■ ■ J2**	
	6.2	570	222.05	12 400	1.4	36	**2KJ3508 - ■ CE11 - ■ ■ H2**	
	7.3	485	188.85	12 400	1.7	36	**2KJ3508 - ■ CE11 - ■ ■ G2**	
	8	440	171.69	12 400	1.9	36	**2KJ3508 - ■ CE11 - ■ ■ F2**	
	8.9	395	153.18	12 400	2.1	36	**2KJ3508 - ■ CE11 - ■ ■ E2**	
	K.69-LE80MD6E							
	5.1	690	178.72	10 300	0.86	33	**2KJ3507 - ■ DC22 - ■ ■ G2**	**P01**
	6	590	152	10 800	1	33	**2KJ3507 - ■ DC22 - ■ ■ F2**	**P01**

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**K.69-LE80MD6E**							
	6.6	535	138.18	11 000	1.1	33	**2KJ3507 - ■ DC22 - ■ ■ E2**	**P01**
	K.69-LA71MH4							
	7	505	196.59	11 000	1.2	31	**2KJ3507 - ■ CE11 - ■ ■ H2**	
	7.7	460	178.72	11 100	1.3	31	**2KJ3507 - ■ CE11 - ■ ■ G2**	
	9	390	152	11 300	1.5	31	**2KJ3507 - ■ CE11 - ■ ■ F2**	
	9.9	355	138.18	11 400	1.7	31	**2KJ3507 - ■ CE11 - ■ ■ E2**	
	11	315	123.29	11 500	1.9	31	**2KJ3507 - ■ CE11 - ■ ■ D2**	
	12	285	110.55	11 600	2.1	31	**2KJ3507 - ■ CE11 - ■ ■ C2**	
	K.49-LA71MH4							
	6.8	515	200.25	7 080	0.81	24	**2KJ3505 - ■ CE11 - ■ ■ J2**	
	7.7	455	178.06	7 550	0.91	24	**2KJ3505 - ■ CE11 - ■ ■ H2**	
	8.8	400	156.34	7 980	1	24	**2KJ3505 - ■ CE11 - ■ ■ G2**	
	9.6	365	142.13	8 250	1.1	24	**2KJ3505 - ■ CE11 - ■ ■ F2**	
	11	310	121.6	8 530	1.3	24	**2KJ3505 - ■ CE11 - ■ ■ E2**	
	12	285	110.55	8 600	1.5	24	**2KJ3505 - ■ CE11 - ■ ■ D2**	
	14	250	97.71	8 700	1.7	24	**2KJ3505 - ■ CE11 - ■ ■ C2**	
	15	225	88.83	8 770	1.8	24	**2KJ3505 - ■ CE11 - ■ ■ B2**	
	18	200	77.81	8 820	2.1	24	**2KJ3505 - ■ CE11 - ■ ■ A2**	
	19	185	71.82	8 670	2.3	24	**2KJ3505 - ■ CE11 - ■ ■ X1**	
	B.49-LE80MD6E							
	15	230	59.28	9 930	2	24	**2KJ3503 - ■ DC22 - ■ ■ C2**	**P01**
	17	205	53.89	9 930	2.2	24	**2KJ3503 - ■ DC22 - ■ ■ B2**	**P01**
	K.39-LA71MH4							
	15	240	94.39	6 000	0.9	17	**2KJ3504 - ■ CE11 - ■ ■ E2**	
	16	220	85.81	6 080	0.99	17	**2KJ3504 - ■ CE11 - ■ ■ D2**	
	18	194	75.24	6 170	1.1	17	**2KJ3504 - ■ CE11 - ■ ■ C2**	
	20	173	67.16	6 250	1.3	17	**2KJ3504 - ■ CE11 - ■ ■ B2**	
	23	154	59.85	6 320	1.4	17	**2KJ3504 - ■ CE11 - ■ ■ A2**	
	25	143	55.25	6 360	1.5	17	**2KJ3504 - ■ CE11 - ■ ■ X1**	
	28	125	48.37	6 430	1.8	17	**2KJ3504 - ■ CE11 - ■ ■ W1**	
	32	109	42.41	6 490	2	17	**2KJ3504 - ■ CE11 - ■ ■ V1**	
	36	99	38.47	6 530	2.2	17	**2KJ3504 - ■ CE11 - ■ ■ U1**	
	38	93	36.21	6 530	2.4	17	**2KJ3504 - ■ CE11 - ■ ■ T1**	
	43	82	31.92	6 470	2.7	17	**2KJ3504 - ■ CE11 - ■ ■ S1**	
	B.39-LE80MD6E							
	18	195	50.11	6 970	1.1	19	**2KJ3502 - ■ DC22 - ■ ■ X1**	**P01**
	21	171	44	6 970	1.5	19	**2KJ3502 - ■ DC22 - ■ ■ W1**	**P01**
	23	155	40	6 970	1.5	19	**2KJ3502 - ■ DC22 - ■ ■ V1**	**P01**
	B.39-LA71MH4							
	24	145	56.36	6 970	1.7	16	**2KJ3502 - ■ CE11 - ■ ■ A2**	
	27	129	50.11	6 970	1.6	16	**2KJ3502 - ■ CE11 - ■ ■ X1**	
	31	113	44	6 970	2.2	16	**2KJ3502 - ■ CE11 - ■ ■ W1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.37	**B.39-LA71MH4**							
	34	103	40	6 970	2.2	16	**2KJ3502 - ■ CE11 - ■ ■ V1**	
	B.29-LE80MD6E							
	28	127	32.78	4 050	0.86	14	**2KJ3501 - ■ DC22 - ■ ■ W1**	**P01**
	B.29-LA71MH4							
	29	121	46.85	4 080	0.91	11	**2KJ3501 - ■ CE11 - ■ ■ B2**	
	33	107	41.56	4 150	1	11	**2KJ3501 - ■ CE11 - ■ ■ A2**	
	38	93	36.06	4 200	1.2	11	**2KJ3501 - ■ CE11 - ■ ■ X1**	
	42	84	32.78	4 200	1.3	11	**2KJ3501 - ■ CE11 - ■ ■ W1**	
	49	72	28.11	4 200	1.5	11	**2KJ3501 - ■ CE11 - ■ ■ V1**	
	54	66	25.56	4 200	1.7	11	**2KJ3501 - ■ CE11 - ■ ■ U1**	
	61	58	22.41	4 200	1.9	11	**2KJ3501 - ■ CE11 - ■ ■ T1**	
	68	52	20	4 200	2.1	11	**2KJ3501 - ■ CE11 - ■ ■ S1**	
	77	46	17.82	4 200	2.4	11	**2KJ3501 - ■ CE11 - ■ ■ R1**	
	83	42	16.45	4 200	2.6	11	**2KJ3501 - ■ CE11 - ■ ■ Q1**	
	95	37	14.4	4 200	3	11	**2KJ3501 - ■ CE11 - ■ ■ P1**	
	108	33	12.63	4 200	3.4	11	**2KJ3501 - ■ CE11 - ■ ■ N1**	
	120	30	11.46	4 140	3.7	11	**2KJ3501 - ■ CE11 - ■ ■ M1**	
	127	28	10.78	4 070	4	11	**2KJ3501 - ■ CE11 - ■ ■ L1**	
	144	24	9.51	3 930	4.5	11	**2KJ3501 - ■ CE11 - ■ ■ K1**	
	166	21	8.25	3 770	5.2	11	**2KJ3501 - ■ CE11 - ■ ■ J1**	
	175	20	7.84	3 690	3.7	11	**2KJ3501 - ■ CE11 - ■ ■ H1**	
	186	19	7.38	3 620	3.9	11	**2KJ3501 - ■ CE11 - ■ ■ G1**	
	210	17	6.51	3 480	4.5	11	**2KJ3501 - ■ CE11 - ■ ■ F1**	
	242	15	5.65	3 340	5.1	11	**2KJ3501 - ■ CE11 - ■ ■ E1**	
	270	13	5.07	3 250	5.7	11	**2KJ3501 - ■ CE11 - ■ ■ D1**	
	287	12	4.78	3 190	6	11	**2KJ3501 - ■ CE11 - ■ ■ C1**	
	325	11	4.21	3 070	6.8	11	**2KJ3501 - ■ CE11 - ■ ■ B1**	
	375	9.4	3.65	2 930	7.8	11	**2KJ3501 - ■ CE11 - ■ ■ A1**	
0.55	**K.89-LE80MH6E**							
	3.9	1 360	231.8	15 400	1.2	62	**2KJ3510 - ■ DE22 - ■ ■ K2**	**P01**
	4.2	1 230	210.72	15 400	1.3	62	**2KJ3510 - ■ DE22 - ■ ■ J2**	**P01**
	4.7	1 100	189.01	15 400	1.4	62	**2KJ3510 - ■ DE22 - ■ ■ H2**	**P01**
	5.3	995	169.94	15 400	1.6	62	**2KJ3510 - ■ DE22 - ■ ■ G2**	**P01**
	5.8	900	153.7	15 400	1.8	62	**2KJ3510 - ■ DE22 - ■ ■ F2**	**P01**
	K.89-LE80MD4E							
	6.2	845	231.8	15 400	1.9	61	**2KJ3510 - ■ DC22 - ■ ■ K2**	
	6.8	765	210.72	15 400	2.1	61	**2KJ3510 - ■ DC22 - ■ ■ J2**	
	K.79-LE80MH6E							
	5.2	1 000	171.69	12 400	0.81	39	**2KJ3508 - ■ DE22 - ■ ■ F2**	**P01**
	K.79-LE80MD4E							
	5.9	890	244.25	12 400	0.92	38	**2KJ3508 - ■ DC22 - ■ ■ J2**	
	6.5	810	222.05	12 400	1	38	**2KJ3508 - ■ DC22 - ■ ■ H2**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.55	**K.79-LE80MD4E**							
	7.6	685	188.85	12 400	1.2	38	**2KJ3508 - ■ DC22 - ■ ■ G2**	
	8.4	625	171.69	12 400	1.3	38	**2KJ3508 - ■ DC22 - ■ ■ F2**	
	9.4	555	153.18	12 400	1.5	38	**2KJ3508 - ■ DC22 - ■ ■ E2**	
	10	500	137.35	12 400	1.6	38	**2KJ3508 - ■ DC22 - ■ ■ D2**	
	12	450	123.8	12 400	1.8	38	**2KJ3508 - ■ DC22 - ■ ■ C2**	
	13	415	114.28	12 400	2	38	**2KJ3508 - ■ DC22 - ■ ■ B2**	
	14	380	104.32	12 400	2.2	38	**2KJ3508 - ■ DC22 - ■ ■ A2**	
	K.69-LE80MD4E							
	7.3	715	196.59	10 100	0.84	33	**2KJ3507 - ■ DC22 - ■ ■ H2**	
	8.1	650	178.72	10 500	0.92	33	**2KJ3507 - ■ DC22 - ■ ■ G2**	
	9.5	550	152	10 900	1.1	33	**2KJ3507 - ■ DC22 - ■ ■ F2**	
	10	500	138.18	11 000	1.2	33	**2KJ3507 - ■ DC22 - ■ ■ E2**	
	12	450	123.29	11 200	1.3	33	**2KJ3507 - ■ DC22 - ■ ■ D2**	
	13	400	110.55	11 300	1.5	33	**2KJ3507 - ■ DC22 - ■ ■ C2**	
	14	360	99.64	11 400	1.7	33	**2KJ3507 - ■ DC22 - ■ ■ B2**	
	16	335	91.98	11 400	1.8	33	**2KJ3507 - ■ DC22 - ■ ■ A2**	
	17	305	83.96	11 500	2	33	**2KJ3507 - ■ DC22 - ■ ■ X1**	
	21	250	69.67	11 600	2.4	33	**2KJ3507 - ■ DC22 - ■ ■ W1**	
	K.49-LE80MD4E							
	10	515	142.13	7 080	0.81	26	**2KJ3505 - ■ DC22 - ■ ■ F2**	
	12	440	121.6	7 670	0.95	26	**2KJ3505 - ■ DC22 - ■ ■ E2**	
	13	400	110.55	7 980	1	26	**2KJ3505 - ■ DC22 - ■ ■ D2**	
	15	355	97.71	8 250	1.2	26	**2KJ3505 - ■ DC22 - ■ ■ C2**	
	16	320	88.83	8 180	1.3	26	**2KJ3505 - ■ DC22 - ■ ■ B2**	
	19	280	77.81	8 030	1.5	26	**2KJ3505 - ■ DC22 - ■ ■ A2**	
	20	260	71.82	7 910	1.6	26	**2KJ3505 - ■ DC22 - ■ ■ X1**	
	23	230	63.59	7 750	1.8	26	**2KJ3505 - ■ DC22 - ■ ■ W1**	
	27	193	52.93	7 470	2.2	26	**2KJ3505 - ■ DC22 - ■ ■ V1**	
	29	182	49.82	7 380	2.3	26	**2KJ3505 - ■ DC22 - ■ ■ U1**	
	B.49-LE80MH6E							
	15	345	59.28	9 930	1.3	25	**2KJ3503 - ■ DE22 - ■ ■ C2**	**P01**
	17	315	53.89	9 930	1.4	25	**2KJ3503 - ■ DE22 - ■ ■ B2**	**P01**
	20	265	45.83	9 930	1.7	25	**2KJ3503 - ■ DE22 - ■ ■ A2**	**P01**
	21	245	41.67	9 930	1.8	25	**2KJ3503 - ■ DE22 - ■ ■ X1**	**P01**
	B.49-LE80MD4E							
	24	215	59.28	9 930	2.1	24	**2KJ3503 - ■ DC22 - ■ ■ C2**	
	27	197	53.89	9 930	2.3	24	**2KJ3503 - ■ DC22 - ■ ■ B2**	
	K.39-LE80MD4E							
	19	270	75.24	5 890	0.8	20	**2KJ3504 - ■ DC22 - ■ ■ C2**	
	21	245	67.16	5 980	0.9	20	**2KJ3504 - ■ DC22 - ■ ■ B2**	
	24	215	59.85	6 100	1	20	**2KJ3504 - ■ DC22 - ■ ■ A2**	
	26	200	55.25	6 150	1.1	20	**2KJ3504 - ■ DC22 - ■ ■ X1**	
	30	176	48.37	6 240	1.2	20	**2KJ3504 - ■ DC22 - ■ ■ W1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.55	**K.39-LE80MD4E**							
	34	155	42.41	6 320	1.4	20	**2KJ3504 - ■ DC22 - ■ ■ V1**	
	37	140	38.47	6 280	1.6	20	**2KJ3504 - ■ DC22 - ■ ■ U1**	
	40	132	36.21	6 210	1.7	20	**2KJ3504 - ■ DC22 - ■ ■ T1**	
	45	116	31.92	6 050	1.9	20	**2KJ3504 - ■ DC22 - ■ ■ S1**	
	52	101	27.7	5 850	2.2	20	**2KJ3504 - ■ DC22 - ■ ■ R1**	
	54	98	26.89	5 810	2.2	20	**2KJ3504 - ■ DC22 - ■ ■ Q1**	
	60	87	23.97	5 660	2.5	20	**2KJ3504 - ■ DC22 - ■ ■ P1**	
	65	81	22.12	5 550	2.7	20	**2KJ3504 - ■ DC22 - ■ ■ N1**	
	74	71	19.37	5 360	3.1	20	**2KJ3504 - ■ DC22 - ■ ■ M1**	
	B.39-LE80MH6E							
	20	255	44	6 970	0.97	20	**2KJ3502 - ■ DE22 - ■ ■ W1**	**P01**
	22	235	40	6 970	0.98	20	**2KJ3502 - ■ DE22 - ■ ■ V1**	**P01**
	B.39-LE80MD4E							
	29	183	50.11	6 970	1.1	19	**2KJ3502 - ■ DC22 - ■ ■ X1**	
	33	160	44	6 970	1.6	19	**2KJ3502 - ■ DC22 - ■ ■ W1**	
	36	146	40	6 970	1.6	19	**2KJ3502 - ■ DC22 - ■ ■ V1**	
	42	125	34.22	6 970	2	19	**2KJ3502 - ■ DC22 - ■ ■ U1**	
	46	113	31.11	6 970	2.2	19	**2KJ3502 - ■ DC22 - ■ ■ T1**	
	52	100	27.5	6 970	2.5	19	**2KJ3502 - ■ DC22 - ■ ■ S1**	
	58	91	25	6 970	2.7	19	**2KJ3502 - ■ DC22 - ■ ■ R1**	
	66	80	21.9	6 970	3.1	19	**2KJ3502 - ■ DC22 - ■ ■ Q1**	
	B.29-LE80MD4E							
	40	132	36.06	4 020	0.84	14	**2KJ3501 - ■ DC22 - ■ ■ X1**	
	44	120	32.78	4 080	0.92	14	**2KJ3501 - ■ DC22 - ■ ■ W1**	
	51	103	28.11	4 170	1.1	14	**2KJ3501 - ■ DC22 - ■ ■ V1**	
	56	93	25.56	4 200	1.2	14	**2KJ3501 - ■ DC22 - ■ ■ U1**	
	64	82	22.41	4 200	1.3	14	**2KJ3501 - ■ DC22 - ■ ■ T1**	
	72	73	20	4 200	1.5	14	**2KJ3501 - ■ DC22 - ■ ■ S1**	
	81	65	17.82	4 200	1.7	14	**2KJ3501 - ■ DC22 - ■ ■ R1**	
	88	60	16.45	4 200	1.8	14	**2KJ3501 - ■ DC22 - ■ ■ Q1**	
	100	52	14.4	4 200	2.1	14	**2KJ3501 - ■ DC22 - ■ ■ P1**	
	114	46	12.63	4 060	2.4	14	**2KJ3501 - ■ DC22 - ■ ■ N1**	
	126	42	11.46	3 960	2.6	14	**2KJ3501 - ■ DC22 - ■ ■ M1**	
	134	39	10.78	3 900	2.8	14	**2KJ3501 - ■ DC22 - ■ ■ L1**	
	151	35	9.51	3 760	3.2	14	**2KJ3501 - ■ DC22 - ■ ■ K1**	
	175	30	8.25	3 620	3.7	14	**2KJ3501 - ■ DC22 - ■ ■ J1**	
	184	29	7.84	3 530	2.6	14	**2KJ3501 - ■ DC22 - ■ ■ H1**	
	195	27	7.38	3 480	2.8	14	**2KJ3501 - ■ DC22 - ■ ■ G1**	
	221	24	6.51	3 350	3.2	14	**2KJ3501 - ■ DC22 - ■ ■ F1**	
	255	21	5.65	3 220	3.6	14	**2KJ3501 - ■ DC22 - ■ ■ E1**	
	284	18	5.07	3 150	4	14	**2KJ3501 - ■ DC22 - ■ ■ D1**	
	301	17	4.78	3 090	4.2	14	**2KJ3501 - ■ DC22 - ■ ■ C1**	
	342	15	4.21	2 980	4.8	14	**2KJ3501 - ■ DC22 - ■ ■ B1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**K.89-LE90SH6E**							
	4	1 790	231.8	15 400	0.89	65	**2KJ3510 - ■ EC22 - ■ ■ K2**	**P01**
	4.4	1 630	210.72	15 400	0.98	65	**2KJ3510 - ■ EC22 - ■ ■ J2**	**P01**
	4.9	1 460	189.01	15 400	1.1	65	**2KJ3510 - ■ EC22 - ■ ■ H2**	**P01**
	5.4	1 310	169.94	15 400	1.2	65	**2KJ3510 - ■ EC22 - ■ ■ G2**	**P01**
	K.89-LE80MH4E							
	6.2	1 150	231.8	15 400	1.4	62	**2KJ3510 - ■ DE22 - ■ ■ K2**	
	6.8	1 040	210.72	15 400	1.5	62	**2KJ3510 - ■ DE22 - ■ ■ J2**	
	7.6	940	189.01	15 400	1.7	62	**2KJ3510 - ■ DE22 - ■ ■ H2**	
	8.5	845	169.94	15 400	1.9	62	**2KJ3510 - ■ DE22 - ■ ■ G2**	
	9.4	760	153.7	15 400	2.1	62	**2KJ3510 - ■ DE22 - ■ ■ F2**	
	K.79-LE80MH4E							
	7.6	935	188.85	12 400	0.87	39	**2KJ3508 - ■ DE22 - ■ ■ G2**	
	8.4	850	171.69	12 400	0.96	39	**2KJ3508 - ■ DE22 - ■ ■ F2**	
	9.4	760	153.18	12 400	1.1	39	**2KJ3508 - ■ DE22 - ■ ■ E2**	
	10	680	137.35	12 400	1.2	39	**2KJ3508 - ■ DE22 - ■ ■ D2**	
	12	615	123.8	12 400	1.3	39	**2KJ3508 - ■ DE22 - ■ ■ C2**	
	13	565	114.28	12 400	1.4	39	**2KJ3508 - ■ DE22 - ■ ■ B2**	
	14	515	104.32	12 400	1.6	39	**2KJ3508 - ■ DE22 - ■ ■ A2**	
	17	430	86.56	12 400	1.9	39	**2KJ3508 - ■ DE22 - ■ ■ X1**	
	18	405	81.47	12 400	2	39	**2KJ3508 - ■ DE22 - ■ ■ W1**	
	19	380	76.94	12 400	2.1	39	**2KJ3508 - ■ DE22 - ■ ■ V1**	
	K.69-LE80MH4E							
	10	685	138.18	10 300	0.87	34	**2KJ3507 - ■ DE22 - ■ ■ E2**	
	12	610	123.29	10 800	0.98	34	**2KJ3507 - ■ DE22 - ■ ■ D2**	
	13	550	110.55	10 900	1.1	34	**2KJ3507 - ■ DE22 - ■ ■ C2**	
	14	495	99.64	11 100	1.2	34	**2KJ3507 - ■ DE22 - ■ ■ B2**	
	16	455	91.98	11 200	1.3	34	**2KJ3507 - ■ DE22 - ■ ■ A2**	
	17	415	83.96	11 200	1.4	34	**2KJ3507 - ■ DE22 - ■ ■ X1**	
	21	345	69.67	11 100	1.7	34	**2KJ3507 - ■ DE22 - ■ ■ W1**	
	22	325	65.57	11 000	1.8	34	**2KJ3507 - ■ DE22 - ■ ■ V1**	
	23	305	61.93	10 900	1.9	34	**2KJ3507 - ■ DE22 - ■ ■ U1**	
	27	260	52.69	10 500	2.3	34	**2KJ3507 - ■ DE22 - ■ ■ T1**	
	K.49-LE80MH4E							
	15	485	97.71	7 240	0.86	27	**2KJ3505 - ■ DE22 - ■ ■ C2**	
	16	440	88.83	7 240	0.95	27	**2KJ3505 - ■ DE22 - ■ ■ B2**	
	19	385	77.81	7 210	1.1	27	**2KJ3505 - ■ DE22 - ■ ■ A2**	
	20	355	71.82	7 170	1.2	27	**2KJ3505 - ■ DE22 - ■ ■ X1**	
	23	315	63.59	7 090	1.3	27	**2KJ3505 - ■ DE22 - ■ ■ W1**	
	27	260	52.93	6 950	1.6	27	**2KJ3505 - ■ DE22 - ■ ■ V1**	
	29	245	49.82	6 890	1.7	27	**2KJ3505 - ■ DE22 - ■ ■ U1**	
	32	220	44.63	6 770	1.9	27	**2KJ3505 - ■ DE22 - ■ ■ T1**	
	38	189	38	6 570	2.2	27	**2KJ3505 - ■ DE22 - ■ ■ S1**	
	44	162	32.57	6 370	2.6	27	**2KJ3505 - ■ DE22 - ■ ■ R1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**B.49-LE90SH6E**							
	16	455	59.28	9 930	0.98	28	**2KJ3503 - ■ EC22 - ■ ■ C2**	**P01**
	17	415	53.89	9 930	1.1	28	**2KJ3503 - ■ EC22 - ■ ■ B2**	**P01**
	20	355	45.83	9 930	1.3	28	**2KJ3503 - ■ EC22 - ■ ■ A2**	**P01**
	22	320	41.67	9 930	1.4	28	**2KJ3503 - ■ EC22 - ■ ■ X1**	**P01**
	B.49-LE80MH4E							
	24	295	59.28	9 930	1.5	25	**2KJ3503 - ■ DE22 - ■ ■ C2**	
	27	265	53.89	9 930	1.7	25	**2KJ3503 - ■ DE22 - ■ ■ B2**	
	31	225	45.83	9 930	2	25	**2KJ3503 - ■ DE22 - ■ ■ A2**	
	35	205	41.67	9 780	2.2	25	**2KJ3503 - ■ DE22 - ■ ■ X1**	
	39	185	37.18	9 500	2.4	25	**2KJ3503 - ■ DE22 - ■ ■ W1**	
	43	166	33.33	9 240	2.7	25	**2KJ3503 - ■ DE22 - ■ ■ V1**	
	K.39-LE80MH4E							
	26	275	55.25	5 870	0.8	21	**2KJ3504 - ■ DE22 - ■ ■ X1**	
	30	240	48.37	5 980	0.91	21	**2KJ3504 - ■ DE22 - ■ ■ W1**	
	34	210	42.41	5 900	1	21	**2KJ3504 - ■ DE22 - ■ ■ V1**	
	37	191	38.47	5 820	1.1	21	**2KJ3504 - ■ DE22 - ■ ■ U1**	
	40	180	36.21	5 770	1.2	21	**2KJ3504 - ■ DE22 - ■ ■ T1**	
	45	159	31.92	5 660	1.4	21	**2KJ3504 - ■ DE22 - ■ ■ S1**	
	52	138	27.7	5 520	1.6	21	**2KJ3504 - ■ DE22 - ■ ■ R1**	
	54	134	26.89	5 490	1.6	21	**2KJ3504 - ■ DE22 - ■ ■ Q1**	
	60	119	23.97	5 370	1.8	21	**2KJ3504 - ■ DE22 - ■ ■ P1**	
	65	110	22.12	5 280	2	21	**2KJ3504 - ■ DE22 - ■ ■ N1**	
	74	96	19.37	5 140	2.3	21	**2KJ3504 - ■ DE22 - ■ ■ M1**	
	85	84	16.98	4 990	2.6	21	**2KJ3504 - ■ DE22 - ■ ■ L1**	
	93	77	15.41	4 870	2.9	21	**2KJ3504 - ■ DE22 - ■ ■ K1**	
	99	72	14.5	4 800	3.1	21	**2KJ3504 - ■ DE22 - ■ ■ J1**	
	113	64	12.78	4 650	3.5	21	**2KJ3504 - ■ DE22 - ■ ■ H1**	
	143	50	10.04	4 300	3.7	21	**2KJ3504 - ■ DE22 - ■ ■ F1**	
	B.39-LE80MH4E							
	29	245	50.11	6 970	0.84	20	**2KJ3502 - ■ DE22 - ■ ■ X1**	
	33	215	44	6 970	1.1	20	**2KJ3502 - ■ DE22 - ■ ■ W1**	
	36	199	40	6 970	1.2	20	**2KJ3502 - ■ DE22 - ■ ■ V1**	
	42	170	34.22	6 970	1.5	20	**2KJ3502 - ■ DE22 - ■ ■ U1**	
	46	155	31.11	6 970	1.6	20	**2KJ3502 - ■ DE22 - ■ ■ T1**	
	52	137	27.5	6 970	1.8	20	**2KJ3502 - ■ DE22 - ■ ■ S1**	
	58	124	25	6 970	2	20	**2KJ3502 - ■ DE22 - ■ ■ R1**	
	66	109	21.9	6 970	2.3	20	**2KJ3502 - ■ DE22 - ■ ■ Q1**	
	71	101	20.21	6 970	2.5	20	**2KJ3502 - ■ DE22 - ■ ■ P1**	
	80	89	17.9	6 970	2.8	20	**2KJ3502 - ■ DE22 - ■ ■ N1**	
	97	74	14.9	6 970	3.4	20	**2KJ3502 - ■ DE22 - ■ ■ M1**	
	B.29-LE80MH4E							
	56	127	25.56	4 050	0.87	15	**2KJ3501 - ■ DE22 - ■ ■ U1**	
	64	111	22.41	4 130	0.99	15	**2KJ3501 - ■ DE22 - ■ ■ T1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
0.75	**B.29-LE80MH4E**							
	72	100	20	4 190	1.1	15	**2KJ3501 - ■ DE22 - ■ ■ S1**	
	81	89	17.82	4 200	1.2	15	**2KJ3501 - ■ DE22 - ■ ■ R1**	
	88	82	16.45	4 140	1.3	15	**2KJ3501 - ■ DE22 - ■ ■ Q1**	
	100	72	14.4	4 020	1.5	15	**2KJ3501 - ■ DE22 - ■ ■ P1**	
	114	63	12.63	3 910	1.8	15	**2KJ3501 - ■ DE22 - ■ ■ N1**	
	126	57	11.46	3 820	1.9	15	**2KJ3501 - ■ DE22 - ■ ■ M1**	
	134	54	10.78	3 760	2.1	15	**2KJ3501 - ■ DE22 - ■ ■ L1**	
	151	47	9.51	3 650	2.3	15	**2KJ3501 - ■ DE22 - ■ ■ K1**	
	175	41	8.25	3 510	2.7	15	**2KJ3501 - ■ DE22 - ■ ■ J1**	
	184	39	7.84	3 430	1.9	15	**2KJ3501 - ■ DE22 - ■ ■ H1**	
	195	37	7.38	3 370	2	15	**2KJ3501 - ■ DE22 - ■ ■ G1**	
	221	32	6.51	3 270	2.3	15	**2KJ3501 - ■ DE22 - ■ ■ F1**	
	255	28	5.65	3 140	2.7	15	**2KJ3501 - ■ DE22 - ■ ■ E1**	
	284	25	5.07	3 090	2.9	15	**2KJ3501 - ■ DE22 - ■ ■ D1**	
	301	24	4.78	3 030	3.1	15	**2KJ3501 - ■ DE22 - ■ ■ C1**	
	342	21	4.21	2 920	3.5	15	**2KJ3501 - ■ DE22 - ■ ■ B1**	
	395	18	3.65	2 810	4	15	**2KJ3501 - ■ DE22 - ■ ■ A1**	
1.1	**K.89-LE90LL6E**							
	5.5	1 900	169.94	15 400	0.84	68	**2KJ3510 - ■ EN22 - ■ ■ G2**	**P01**
	K.89-LE90SG4E							
	6.1	1 700	231.8	15 400	0.94	64	**2KJ3510 - ■ EK22 - ■ ■ K2**	
	6.8	1 550	210.72	15 400	1	64	**2KJ3510 - ■ EK22 - ■ ■ J2**	
	7.5	1 390	189.01	15 400	1.1	64	**2KJ3510 - ■ EK22 - ■ ■ H2**	
	8.4	1 250	169.94	15 400	1.3	64	**2KJ3510 - ■ EK22 - ■ ■ G2**	
	9.3	1 130	153.7	15 400	1.4	64	**2KJ3510 - ■ EK22 - ■ ■ F2**	
	10	1 040	141.88	15 400	1.5	64	**2KJ3510 - ■ EK22 - ■ ■ E2**	
	11	955	129.96	15 400	1.7	64	**2KJ3510 - ■ EK22 - ■ ■ D2**	
	13	800	109.04	15 400	2	64	**2KJ3510 - ■ EK22 - ■ ■ C2**	
	14	755	102.63	15 400	2.1	64	**2KJ3510 - ■ EK22 - ■ ■ B2**	
	K.79-LE90SG4E							
	10	1 010	137.35	12 400	0.81	41	**2KJ3508 - ■ EK22 - ■ ■ D2**	
	12	910	123.8	12 400	0.9	41	**2KJ3508 - ■ EK22 - ■ ■ C2**	
	12	840	114.28	12 400	0.97	41	**2KJ3508 - ■ EK22 - ■ ■ B2**	
	14	765	104.32	12 400	1.1	41	**2KJ3508 - ■ EK22 - ■ ■ A2**	
	16	635	86.56	12 400	1.3	41	**2KJ3508 - ■ EK22 - ■ ■ X1**	
	17	600	81.47	12 400	1.4	41	**2KJ3508 - ■ EK22 - ■ ■ W1**	
	19	565	76.94	12 400	1.4	41	**2KJ3508 - ■ EK22 - ■ ■ V1**	
	22	480	65.47	12 400	1.7	41	**2KJ3508 - ■ EK22 - ■ ■ U1**	
	25	410	56.08	12 400	2	41	**2KJ3508 - ■ EK22 - ■ ■ T1**	
	29	360	49.31	12 400	2.3	41	**2KJ3508 - ■ EK22 - ■ ■ S1**	
	34	305	41.6	12 400	2.6	41	**2KJ3508 - ■ EK22 - ■ ■ R1**	
	K.69-LE90SG4E							
	14	735	99.64	9 990	0.82	36	**2KJ3507 - ■ EK22 - ■ ■ B2**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**K.69-LE90SG4E**							
	15	675	91.98	10 100	0.88	36	**2KJ3507 - ■ EK22 - ■ ■ A2**	
	17	615	83.96	10 100	0.97	36	**2KJ3507 - ■ EK22 - ■ ■ X1**	
	20	510	69.67	10 000	1.2	36	**2KJ3507 - ■ EK22 - ■ ■ W1**	
	22	480	65.57	9 960	1.2	36	**2KJ3507 - ■ EK22 - ■ ■ V1**	
	23	455	61.93	9 890	1.3	36	**2KJ3507 - ■ EK22 - ■ ■ U1**	
	27	385	52.69	9 700	1.5	36	**2KJ3507 - ■ EK22 - ■ ■ T1**	
	32	330	45.14	9 470	1.8	36	**2KJ3507 - ■ EK22 - ■ ■ S1**	
	36	290	39.69	9 260	2.1	36	**2KJ3507 - ■ EK22 - ■ ■ R1**	
	43	245	33.48	8 950	2.3	36	**2KJ3507 - ■ EK22 - ■ ■ Q1**	
	49	215	29.18	8 690	2.6	36	**2KJ3507 - ■ EK22 - ■ ■ P1**	
	K.49-LE90SG4E							
	22	465	63.59	5 960	0.9	29	**2KJ3505 - ■ EK22 - ■ ■ W1**	
	27	390	52.93	5 970	1.1	29	**2KJ3505 - ■ EK22 - ■ ■ V1**	
	29	365	49.82	5 980	1.1	29	**2KJ3505 - ■ EK22 - ■ ■ U1**	
	32	325	44.63	5 980	1.3	29	**2KJ3505 - ■ EK22 - ■ ■ T1**	
	38	280	38	5 890	1.5	29	**2KJ3505 - ■ EK22 - ■ ■ S1**	
	44	240	32.57	5 790	1.7	29	**2KJ3505 - ■ EK22 - ■ ■ R1**	
	51	205	28.05	5 690	2	29	**2KJ3505 - ■ EK22 - ■ ■ Q1**	
	54	194	26.3	5 620	2.2	29	**2KJ3505 - ■ EK22 - ■ ■ P1**	
	61	172	23.28	5 510	2.4	29	**2KJ3505 - ■ EK22 - ■ ■ N1**	
	74	143	19.38	5 330	2.9	29	**2KJ3505 - ■ EK22 - ■ ■ M1**	
	78	134	18.24	5 270	3.1	29	**2KJ3505 - ■ EK22 - ■ ■ L1**	
	146	72	9.75	4 530	3.8	29	**2KJ3505 - ■ EK22 - ■ ■ F1**	
	155	68	9.18	4 460	4	29	**2KJ3505 - ■ EK22 - ■ ■ E1**	
	173	61	8.22	4 330	4.2	29	**2KJ3505 - ■ EK22 - ■ ■ D1**	
	B.49-LE90LL6E							
	20	515	45.83	9 860	0.87	31	**2KJ3503 - ■ EN22 - ■ ■ A2**	**P01**
	22	465	41.67	9 780	0.96	31	**2KJ3503 - ■ EN22 - ■ ■ X1**	**P01**
	B.49-LE90SG4E							
	24	435	59.28	9 680	1	27	**2KJ3503 - ■ EK22 - ■ ■ C2**	
	26	395	53.89	9 560	1.1	27	**2KJ3503 - ■ EK22 - ■ ■ B2**	
	31	335	45.83	9 320	1.3	27	**2KJ3503 - ■ EK22 - ■ ■ A2**	
	34	305	41.67	9 150	1.5	27	**2KJ3503 - ■ EK22 - ■ ■ X1**	
	38	270	37.18	8 970	1.6	27	**2KJ3503 - ■ EK22 - ■ ■ W1**	
	43	245	33.33	8 750	1.8	27	**2KJ3503 - ■ EK22 - ■ ■ V1**	
	47	220	30.05	8 560	2	27	**2KJ3503 - ■ EK22 - ■ ■ U1**	
	51	200	27.74	8 430	2.2	27	**2KJ3503 - ■ EK22 - ■ ■ T1**	
	56	187	25.32	8 230	2.4	27	**2KJ3503 - ■ EK22 - ■ ■ S1**	
	68	155	21.01	7 870	2.9	27	**2KJ3503 - ■ EK22 - ■ ■ R1**	
	72	146	19.77	7 750	3.1	27	**2KJ3503 - ■ EK22 - ■ ■ Q1**	
	K.39-LE90SG4E							
	39	265	36.21	5 030	0.82	23	**2KJ3504 - ■ EK22 - ■ ■ T1**	
	45	235	31.92	4 990	0.93	23	**2KJ3504 - ■ EK22 - ■ ■ S1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**K.39-LE90SG4E**							
	51	200	27.7	4 980	1.1	23	**2KJ3504 - ■ EK22 - ■ ■ R1**	
	53	198	26.89	4 930	1.1	23	**2KJ3504 - ■ EK22 - ■ ■ Q1**	
	59	177	23.97	4 870	1.2	23	**2KJ3504 - ■ EK22 - ■ ■ P1**	
	64	163	22.12	4 820	1.3	23	**2KJ3504 - ■ EK22 - ■ ■ N1**	
	74	143	19.37	4 730	1.5	23	**2KJ3504 - ■ EK22 - ■ ■ M1**	
	84	125	16.98	4 640	1.8	23	**2KJ3504 - ■ EK22 - ■ ■ L1**	
	92	114	15.41	4 550	1.9	23	**2KJ3504 - ■ EK22 - ■ ■ K1**	
	98	107	14.5	4 500	2.1	23	**2KJ3504 - ■ EK22 - ■ ■ J1**	
	112	94	12.78	4 400	2.3	23	**2KJ3504 - ■ EK22 - ■ ■ H1**	
	128	82	11.09	4 260	2.7	23	**2KJ3504 - ■ EK22 - ■ ■ G1**	
	142	74	10.04	4 070	2.5	23	**2KJ3504 - ■ EK22 - ■ ■ F1**	
	162	65	8.81	3 950	2.8	23	**2KJ3504 - ■ EK22 - ■ ■ E1**	
	178	59	7.99	3 870	3	23	**2KJ3504 - ■ EK22 - ■ ■ D1**	
	189	55	7.52	3 820	3.1	23	**2KJ3504 - ■ EK22 - ■ ■ C1**	
	215	49	6.63	3 700	3.3	23	**2KJ3504 - ■ EK22 - ■ ■ B1**	
	248	42	5.75	3 580	3.5	23	**2KJ3504 - ■ EK22 - ■ ■ A1**	
	B.39-LE90SG4E							
	42	250	34.22	6 970	0.99	22	**2KJ3502 - ■ EK22 - ■ ■ U1**	
	46	225	31.11	6 970	1.1	22	**2KJ3502 - ■ EK22 - ■ ■ T1**	
	52	200	27.5	6 970	1.2	22	**2KJ3502 - ■ EK22 - ■ ■ S1**	
	57	184	25	6 970	1.4	22	**2KJ3502 - ■ EK22 - ■ ■ R1**	
	65	161	21.9	6 970	1.5	22	**2KJ3502 - ■ EK22 - ■ ■ Q1**	
	71	149	20.21	6 970	1.7	22	**2KJ3502 - ■ EK22 - ■ ■ P1**	
	80	132	17.9	6 970	1.9	22	**2KJ3502 - ■ EK22 - ■ ■ N1**	
	96	110	14.9	6 800	2.3	22	**2KJ3502 - ■ EK22 - ■ ■ M1**	
	102	103	14.02	6 710	2.4	22	**2KJ3502 - ■ EK22 - ■ ■ L1**	
	113	93	12.56	6 510	2.7	22	**2KJ3502 - ■ EK22 - ■ ■ K1**	
	133	79	10.69	6 240	3	22	**2KJ3502 - ■ EK22 - ■ ■ J1**	
	155	68	9.17	5 980	3.4	22	**2KJ3502 - ■ EK22 - ■ ■ H1**	
	181	58	7.89	5 740	3.8	22	**2KJ3502 - ■ EK22 - ■ ■ G1**	
	216	49	6.6	5 490	4.1	22	**2KJ3502 - ■ EK22 - ■ ■ F1**	
	229	46	6.21	5 400	4.4	22	**2KJ3502 - ■ EK22 - ■ ■ E1**	
	B.29-LE90SG4E							
	80	131	17.82	3 840	0.84	17	**2KJ3501 - ■ EK22 - ■ ■ R1**	
	87	121	16.45	3 800	0.91	17	**2KJ3501 - ■ EK22 - ■ ■ Q1**	
	99	106	14.4	3 720	1	17	**2KJ3501 - ■ EK22 - ■ ■ P1**	
	113	93	12.63	3 640	1.2	17	**2KJ3501 - ■ EK22 - ■ ■ N1**	
	124	84	11.46	3 580	1.3	17	**2KJ3501 - ■ EK22 - ■ ■ M1**	
	132	80	10.78	3 530	1.4	17	**2KJ3501 - ■ EK22 - ■ ■ L1**	
	150	70	9.51	3 450	1.6	17	**2KJ3501 - ■ EK22 - ■ ■ K1**	
	173	61	8.25	3 340	1.8	17	**2KJ3501 - ■ EK22 - ■ ■ J1**	
	182	58	7.84	3 250	1.3	17	**2KJ3501 - ■ EK22 - ■ ■ H1**	
	193	54	7.38	3 210	1.4	17	**2KJ3501 - ■ EK22 - ■ ■ G1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.1	**B.29-LE90SG4E**							
	219	48	6.51	3 120	1.6	17	**2KJ3501 - ■ EK22 - ■ ■ F1**	
	252	42	5.65	3 010	1.8	17	**2KJ3501 - ■ EK22 - ■ ■ E1**	
	281	37	5.07	2 990	2	17	**2KJ3501 - ■ EK22 - ■ ■ D1**	
	298	35	4.78	2 950	2.1	17	**2KJ3501 - ■ EK22 - ■ ■ C1**	
	338	31	4.21	2 850	2.4	17	**2KJ3501 - ■ EK22 - ■ ■ B1**	
	390	27	3.65	2 740	2.7	17	**2KJ3501 - ■ EK22 - ■ ■ A1**	
1.5	**K.89-LE90LH4E**							
	7.6	1 880	189.01	15 400	0.85	67	**2KJ3510 - ■ EM22 - ■ ■ H2**	
	8.4	1 690	169.94	15 400	0.94	67	**2KJ3510 - ■ EM22 - ■ ■ G2**	
	9.3	1 530	153.7	15 400	1	67	**2KJ3510 - ■ EM22 - ■ ■ F2**	
	10	1 410	141.88	15 400	1.1	67	**2KJ3510 - ■ EM22 - ■ ■ E2**	
	11	1 290	129.96	15 400	1.2	67	**2KJ3510 - ■ EM22 - ■ ■ D2**	
	13	1 080	109.04	15 400	1.5	67	**2KJ3510 - ■ EM22 - ■ ■ C2**	
	14	1 020	102.63	15 400	1.6	67	**2KJ3510 - ■ EM22 - ■ ■ B2**	
	15	940	94.16	15 400	1.7	67	**2KJ3510 - ■ EM22 - ■ ■ A2**	
	17	820	82.25	15 400	1.9	67	**2KJ3510 - ■ EM22 - ■ ■ X1**	
	19	735	73.64	15 400	2.2	67	**2KJ3510 - ■ EM22 - ■ ■ W1**	
	K.79-LE90LH4E							
	17	860	86.56	12 400	0.95	44	**2KJ3508 - ■ EM22 - ■ ■ X1**	
	18	810	81.47	12 400	1	44	**2KJ3508 - ■ EM22 - ■ ■ W1**	
	19	765	76.94	12 400	1.1	44	**2KJ3508 - ■ EM22 - ■ ■ V1**	
	22	650	65.47	12 400	1.3	44	**2KJ3508 - ■ EM22 - ■ ■ U1**	
	26	560	56.08	12 400	1.5	44	**2KJ3508 - ■ EM22 - ■ ■ T1**	
	29	490	49.31	12 400	1.7	44	**2KJ3508 - ■ EM22 - ■ ■ S1**	
	34	415	41.6	12 400	1.9	44	**2KJ3508 - ■ EM22 - ■ ■ R1**	
	40	360	36.26	12 400	2.1	44	**2KJ3508 - ■ EM22 - ■ ■ Q1**	
	44	325	32.78	12 400	2.5	44	**2KJ3508 - ■ EM22 - ■ ■ P1**	
	53	270	27.2	12 400	2.9	44	**2KJ3508 - ■ EM22 - ■ ■ N1**	
	K.69-LE90LH4E							
	21	695	69.67	8 670	0.86	39	**2KJ3507 - ■ EM22 - ■ ■ W1**	
	22	655	65.57	8 690	0.92	39	**2KJ3507 - ■ EM22 - ■ ■ V1**	
	23	615	61.93	8 720	0.97	39	**2KJ3507 - ■ EM22 - ■ ■ U1**	
	27	525	52.69	8 670	1.1	39	**2KJ3507 - ■ EM22 - ■ ■ T1**	
	32	450	45.14	8 580	1.3	39	**2KJ3507 - ■ EM22 - ■ ■ S1**	
	36	395	39.69	8 480	1.5	39	**2KJ3507 - ■ EM22 - ■ ■ R1**	
	43	330	33.48	8 320	1.7	39	**2KJ3507 - ■ EM22 - ■ ■ Q1**	
	49	290	29.18	8 130	1.9	39	**2KJ3507 - ■ EM22 - ■ ■ P1**	
	55	260	26.05	7 960	2.3	39	**2KJ3507 - ■ EM22 - ■ ■ N1**	
	59	245	24.52	7 870	2.4	39	**2KJ3507 - ■ EM22 - ■ ■ M1**	
	62	230	23.15	7 800	2.5	39	**2KJ3507 - ■ EM22 - ■ ■ L1**	
	73	197	19.7	7 540	2.8	39	**2KJ3507 - ■ EM22 - ■ ■ K1**	
	85	169	16.88	7 290	3.1	39	**2KJ3507 - ■ EM22 - ■ ■ J1**	
	97	148	14.84	7 080	3.5	39	**2KJ3507 - ■ EM22 - ■ ■ H1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**K.69-LE90LH4E**							
	154	93	9.34	6 140	4	39	**2KJ3507 - ■ EM22 - ■ ■ E1**	
	K.49-LE90LH4E							
	29	495	49.82	4 950	0.84	32	**2KJ3505 - ■ EM22 - ■ ■ U1**	
	32	445	44.63	5 020	0.94	32	**2KJ3505 - ■ EM22 - ■ ■ T1**	
	38	375	38	5 130	1.1	32	**2KJ3505 - ■ EM22 - ■ ■ S1**	
	44	325	32.57	5 110	1.3	32	**2KJ3505 - ■ EM22 - ■ ■ R1**	
	51	280	28.05	5 090	1.5	32	**2KJ3505 - ■ EM22 - ■ ■ Q1**	
	55	260	26.3	5 090	1.6	32	**2KJ3505 - ■ EM22 - ■ ■ P1**	
	62	230	23.28	5 040	1.8	32	**2KJ3505 - ■ EM22 - ■ ■ N1**	
	74	193	19.38	4 930	2.2	32	**2KJ3505 - ■ EM22 - ■ ■ M1**	
	79	182	18.24	4 880	2.3	32	**2KJ3505 - ■ EM22 - ■ ■ L1**	
	88	163	16.34	4 800	2.6	32	**2KJ3505 - ■ EM22 - ■ ■ K1**	
	103	139	13.91	4 670	3	32	**2KJ3505 - ■ EM22 - ■ ■ J1**	
	120	119	11.93	4 540	3.5	32	**2KJ3505 - ■ EM22 - ■ ■ H1**	
	147	97	9.75	4 310	2.8	32	**2KJ3505 - ■ EM22 - ■ ■ F1**	
	156	92	9.18	4 240	2.9	32	**2KJ3505 - ■ EM22 - ■ ■ E1**	
	175	82	8.22	4 150	3.1	32	**2KJ3505 - ■ EM22 - ■ ■ D1**	
	205	70	7	3 990	3.4	32	**2KJ3505 - ■ EM22 - ■ ■ C1**	
	239	60	6	3 850	3.8	32	**2KJ3505 - ■ EM22 - ■ ■ B1**	
	278	52	5.17	3 700	4.1	32	**2KJ3505 - ■ EM22 - ■ ■ A1**	
	B.49-LE90LH4E							
	27	535	53.89	8 600	0.84	30	**2KJ3503 - ■ EM22 - ■ ■ B2**	
	31	455	45.83	8 490	0.98	30	**2KJ3503 - ■ EM22 - ■ ■ A2**	
	34	415	41.67	8 400	1.1	30	**2KJ3503 - ■ EM22 - ■ ■ X1**	
	39	370	37.18	8 280	1.2	30	**2KJ3503 - ■ EM22 - ■ ■ W1**	
	43	330	33.33	8 160	1.4	30	**2KJ3503 - ■ EM22 - ■ ■ V1**	
	48	300	30.05	8 010	1.5	30	**2KJ3503 - ■ EM22 - ■ ■ U1**	
	52	275	27.74	7 910	1.6	30	**2KJ3503 - ■ EM22 - ■ ■ T1**	
	57	250	25.32	7 790	1.8	30	**2KJ3503 - ■ EM22 - ■ ■ S1**	
	68	210	21.01	7 480	2.1	30	**2KJ3503 - ■ EM22 - ■ ■ R1**	
	73	197	19.77	7 390	2.3	30	**2KJ3503 - ■ EM22 - ■ ■ Q1**	
	77	186	18.67	7 300	2.4	30	**2KJ3503 - ■ EM22 - ■ ■ P1**	
	90	159	15.89	7 030	2.8	30	**2KJ3503 - ■ EM22 - ■ ■ N1**	
	105	136	13.61	6 780	3.3	30	**2KJ3503 - ■ EM22 - ■ ■ M1**	
	173	83	8.29	6 020	4	30	**2KJ3503 - ■ EM22 - ■ ■ H1**	
	184	78	7.8	5 920	4.2	30	**2KJ3503 - ■ EM22 - ■ ■ G1**	
	K.39-LE90LH4E							
	52	275	27.7	4 280	0.8	26	**2KJ3504 - ■ EM22 - ■ ■ R1**	
	53	265	26.89	4 310	0.82	26	**2KJ3504 - ■ EM22 - ■ ■ Q1**	
	60	235	23.97	4 330	0.92	26	**2KJ3504 - ■ EM22 - ■ ■ P1**	
	65	220	22.12	4 290	1	26	**2KJ3504 - ■ EM22 - ■ ■ N1**	
	74	193	19.37	4 270	1.1	26	**2KJ3504 - ■ EM22 - ■ ■ M1**	
	85	170	16.98	4 220	1.3	26	**2KJ3504 - ■ EM22 - ■ ■ L1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
1.5	**K.39-LE90LH4E**							
	93	154	15.41	4 180	1.4	26	**2KJ3504 - ■ EM22 - ■ ■ K1**	
	99	145	14.5	4 150	1.5	26	**2KJ3504 - ■ EM22 - ■ ■ J1**	
	112	128	12.78	4 080	1.7	26	**2KJ3504 - ■ EM22 - ■ ■ H1**	
	129	111	11.09	3 990	2	26	**2KJ3504 - ■ EM22 - ■ ■ G1**	
	143	100	10.04	3 780	1.8	26	**2KJ3504 - ■ EM22 - ■ ■ F1**	
	163	88	8.81	3 700	2.1	26	**2KJ3504 - ■ EM22 - ■ ■ E1**	
	180	80	7.99	3 640	2.2	26	**2KJ3504 - ■ EM22 - ■ ■ D1**	
	191	75	7.52	3 600	2.3	26	**2KJ3504 - ■ EM22 - ■ ■ C1**	
	216	66	6.63	3 510	2.4	26	**2KJ3504 - ■ EM22 - ■ ■ B1**	
	250	57	5.75	3 410	2.6	26	**2KJ3504 - ■ EM22 - ■ ■ A1**	
	B.39-LE90LH4E							
	46	310	31.11	6 970	0.81	25	**2KJ3502 - ■ EM22 - ■ ■ T1**	
	52	275	27.5	6 970	0.91	25	**2KJ3502 - ■ EM22 - ■ ■ S1**	
	57	250	25	6 970	1	25	**2KJ3502 - ■ EM22 - ■ ■ R1**	
	66	215	21.9	6 970	1.1	25	**2KJ3502 - ■ EM22 - ■ ■ Q1**	
	71	200	20.21	6 910	1.2	25	**2KJ3502 - ■ EM22 - ■ ■ P1**	
	80	179	17.9	6 740	1.4	25	**2KJ3502 - ■ EM22 - ■ ■ N1**	
	96	149	14.9	6 490	1.7	25	**2KJ3502 - ■ EM22 - ■ ■ M1**	
	102	140	14.02	6 400	1.8	25	**2KJ3502 - ■ EM22 - ■ ■ L1**	
	114	125	12.56	6 250	2	25	**2KJ3502 - ■ EM22 - ■ ■ K1**	
	134	107	10.69	6 010	2.2	25	**2KJ3502 - ■ EM22 - ■ ■ J1**	
	156	92	9.17	5 780	2.5	25	**2KJ3502 - ■ EM22 - ■ ■ H1**	
	182	79	7.89	5 570	2.8	25	**2KJ3502 - ■ EM22 - ■ ■ G1**	
	217	66	6.6	5 360	3	25	**2KJ3502 - ■ EM22 - ■ ■ F1**	
	231	62	6.21	5 270	3.2	25	**2KJ3502 - ■ EM22 - ■ ■ E1**	
	258	56	5.56	5 110	3.6	25	**2KJ3502 - ■ EM22 - ■ ■ D1**	
	303	47	4.74	4 880	4.2	25	**2KJ3502 - ■ EM22 - ■ ■ C1**	
	353	40	4.06	4 670	4.9	25	**2KJ3502 - ■ EM22 - ■ ■ B1**	
	410	35	3.5	4 470	5.5	25	**2KJ3502 - ■ EM22 - ■ ■ A1**	
	B.29-LE90LH4E							
	114	126	12.63	3 330	0.87	20	**2KJ3501 - ■ EM22 - ■ ■ N1**	
	125	114	11.46	3 290	0.96	20	**2KJ3501 - ■ EM22 - ■ ■ M1**	
	133	108	10.78	3 260	1	20	**2KJ3501 - ■ EM22 - ■ ■ L1**	
	151	95	9.51	3 210	1.2	20	**2KJ3501 - ■ EM22 - ■ ■ K1**	
	174	82	8.25	3 140	1.3	20	**2KJ3501 - ■ EM22 - ■ ■ J1**	
	183	78	7.84	3 030	0.96	20	**2KJ3501 - ■ EM22 - ■ ■ H1**	
	194	74	7.38	3 000	1	20	**2KJ3501 - ■ EM22 - ■ ■ G1**	
	220	65	6.51	2 940	1.2	20	**2KJ3501 - ■ EM22 - ■ ■ F1**	
	254	56	5.65	2 860	1.3	20	**2KJ3501 - ■ EM22 - ■ ■ E1**	
	283	51	5.07	2 860	1.5	20	**2KJ3501 - ■ EM22 - ■ ■ D1**	
	300	48	4.78	2 820	1.6	20	**2KJ3501 - ■ EM22 - ■ ■ C1**	
	341	42	4.21	2 740	1.8	20	**2KJ3501 - ■ EM22 - ■ ■ B1**	
	393	36	3.65	2 650	2	20	**2KJ3501 - ■ EM22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**K.89-LE100LE4E**							
	11	1 870	129.96	15 400	0.85	74	**2KJ3510 - ■ FL22 - ■ ■ D2**	
	13	1 570	109.04	15 400	1	74	**2KJ3510 - ■ FL22 - ■ ■ C2**	
	14	1 480	102.63	15 400	1.1	74	**2KJ3510 - ■ FL22 - ■ ■ B2**	
	15	1 360	94.16	15 400	1.2	74	**2KJ3510 - ■ FL22 - ■ ■ A2**	
	18	1 180	82.25	15 400	1.3	74	**2KJ3510 - ■ FL22 - ■ ■ X1**	
	20	1 060	73.64	15 400	1.5	74	**2KJ3510 - ■ FL22 - ■ ■ W1**	
	23	930	64.39	15 400	1.7	74	**2KJ3510 - ■ FL22 - ■ ■ V1**	
	26	795	55.27	15 400	2	74	**2KJ3510 - ■ FL22 - ■ ■ U1**	
	30	705	48.85	15 400	2.3	74	**2KJ3510 - ■ FL22 - ■ ■ T1**	
	35	600	41.54	15 400	2.6	74	**2KJ3510 - ■ FL22 - ■ ■ S1**	
	K.79-LE100LE4E							
	22	945	65.47	12 400	0.87	53	**2KJ3508 - ■ FL22 - ■ ■ U1**	
	26	810	56.08	12 400	1	53	**2KJ3508 - ■ FL22 - ■ ■ T1**	
	30	710	49.31	12 400	1.2	53	**2KJ3508 - ■ FL22 - ■ ■ S1**	
	35	600	41.6	12 400	1.3	53	**2KJ3508 - ■ FL22 - ■ ■ R1**	
	40	520	36.26	12 400	1.5	53	**2KJ3508 - ■ FL22 - ■ ■ Q1**	
	44	470	32.78	12 400	1.7	53	**2KJ3508 - ■ FL22 - ■ ■ P1**	
	53	390	27.2	12 400	2	53	**2KJ3508 - ■ FL22 - ■ ■ N1**	
	57	370	25.6	12 400	2.1	53	**2KJ3508 - ■ FL22 - ■ ■ M1**	
	60	345	24.17	12 400	2.2	53	**2KJ3508 - ■ FL22 - ■ ■ L1**	
	71	295	20.57	12 400	2.5	53	**2KJ3508 - ■ FL22 - ■ ■ K1**	
	83	250	17.62	12 400	2.8	53	**2KJ3508 - ■ FL22 - ■ ■ J1**	
	94	220	15.49	12 400	3.1	53	**2KJ3508 - ■ FL22 - ■ ■ H1**	
	111	189	13.07	12 400	3.5	53	**2KJ3508 - ■ FL22 - ■ ■ G1**	
	138	152	10.51	12 400	2.9	53	**2KJ3508 - ■ FL22 - ■ ■ E1**	
	161	130	9.01	12 400	3.5	53	**2KJ3508 - ■ FL22 - ■ ■ D1**	
	184	114	7.92	12 400	3.9	53	**2KJ3508 - ■ FL22 - ■ ■ C1**	
	K.69-LE100LE4E							
	32	650	45.14	7 100	0.92	48	**2KJ3507 - ■ FL22 - ■ ■ S1**	
	37	570	39.69	7 180	1	48	**2KJ3507 - ■ FL22 - ■ ■ R1**	
	43	480	33.48	7 200	1.2	48	**2KJ3507 - ■ FL22 - ■ ■ Q1**	
	50	420	29.18	7 150	1.3	48	**2KJ3507 - ■ FL22 - ■ ■ P1**	
	56	375	26.05	7 100	1.6	48	**2KJ3507 - ■ FL22 - ■ ■ N1**	
	59	350	24.52	7 080	1.7	48	**2KJ3507 - ■ FL22 - ■ ■ M1**	
	63	330	23.15	7 040	1.8	48	**2KJ3507 - ■ FL22 - ■ ■ L1**	
	74	280	19.7	6 910	2	48	**2KJ3507 - ■ FL22 - ■ ■ K1**	
	86	240	16.88	6 740	2.2	48	**2KJ3507 - ■ FL22 - ■ ■ J1**	
	98	210	14.84	6 600	2.4	48	**2KJ3507 - ■ FL22 - ■ ■ H1**	
	116	181	12.52	6 360	2.7	48	**2KJ3507 - ■ FL22 - ■ ■ G1**	
	133	158	10.91	6 180	3	48	**2KJ3507 - ■ FL22 - ■ ■ F1**	
	156	135	9.34	5 730	2.7	48	**2KJ3507 - ■ FL22 - ■ ■ E1**	
	182	116	8.01	5 550	3.2	48	**2KJ3507 - ■ FL22 - ■ ■ D1**	
	207	102	7.04	5 400	3.6	48	**2KJ3507 - ■ FL22 - ■ ■ C1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**K.69-LE100LE4E**							
	245	86	5.94	5 200	4	48	**2KJ3507 - ■ FL22 - ■ ■ B1**	
	281	75	5.18	5 030	4.4	48	**2KJ3507 - ■ FL22 - ■ ■ A1**	
	K.49-LE100LE4E							
	45	470	32.57	3 950	0.89	41	**2KJ3505 - ■ FL22 - ■ ■ R1**	
	52	405	28.05	4 080	1	41	**2KJ3505 - ■ FL22 - ■ ■ Q1**	
	55	380	26.3	4 120	1.1	41	**2KJ3505 - ■ FL22 - ■ ■ P1**	
	62	335	23.28	4 190	1.2	41	**2KJ3505 - ■ FL22 - ■ ■ N1**	
	75	280	19.38	4 220	1.5	41	**2KJ3505 - ■ FL22 - ■ ■ M1**	
	80	260	18.24	4 250	1.6	41	**2KJ3505 - ■ FL22 - ■ ■ L1**	
	89	235	16.34	4 210	1.8	41	**2KJ3505 - ■ FL22 - ■ ■ K1**	
	105	200	13.91	4 170	2.1	41	**2KJ3505 - ■ FL22 - ■ ■ J1**	
	122	172	11.93	4 100	2.4	41	**2KJ3505 - ■ FL22 - ■ ■ H1**	
	142	148	10.27	4 020	2.8	41	**2KJ3505 - ■ FL22 - ■ ■ G1**	
	149	141	9.75	3 920	2	41	**2KJ3505 - ■ FL22 - ■ ■ F1**	
	158	133	9.18	3 880	2	41	**2KJ3505 - ■ FL22 - ■ ■ E1**	
	177	119	8.22	3 820	2.1	41	**2KJ3505 - ■ FL22 - ■ ■ D1**	
	208	101	7	3 720	2.4	41	**2KJ3505 - ■ FL22 - ■ ■ C1**	
	242	87	6	3 600	2.6	41	**2KJ3505 - ■ FL22 - ■ ■ B1**	
	281	75	5.17	3 490	2.8	41	**2KJ3505 - ■ FL22 - ■ ■ A1**	
	B.49-LE100LE4E							
	39	535	37.18	7 130	0.84	39	**2KJ3503 - ■ FL22 - ■ ■ W1**	
	44	480	33.33	7 120	0.94	39	**2KJ3503 - ■ FL22 - ■ ■ V1**	
	48	430	30.05	7 100	1	39	**2KJ3503 - ■ FL22 - ■ ■ U1**	
	52	400	27.74	7 030	1.1	39	**2KJ3503 - ■ FL22 - ■ ■ T1**	
	57	365	25.32	6 980	1.2	39	**2KJ3503 - ■ FL22 - ■ ■ S1**	
	69	300	21.01	6 840	1.5	39	**2KJ3503 - ■ FL22 - ■ ■ R1**	
	74	285	19.77	6 770	1.6	39	**2KJ3503 - ■ FL22 - ■ ■ Q1**	
	78	270	18.67	6 700	1.7	39	**2KJ3503 - ■ FL22 - ■ ■ P1**	
	92	225	15.89	6 560	2	39	**2KJ3503 - ■ FL22 - ■ ■ N1**	
	107	197	13.61	6 340	2.3	39	**2KJ3503 - ■ FL22 - ■ ■ M1**	
	122	173	11.97	6 180	2.6	39	**2KJ3503 - ■ FL22 - ■ ■ L1**	
	144	146	10.1	5 950	3.1	39	**2KJ3503 - ■ FL22 - ■ ■ K1**	
	165	127	8.8	5 770	3.5	39	**2KJ3503 - ■ FL22 - ■ ■ J1**	
	176	120	8.29	5 780	2.8	39	**2KJ3503 - ■ FL22 - ■ ■ H1**	
	187	113	7.8	5 690	2.9	39	**2KJ3503 - ■ FL22 - ■ ■ G1**	
	197	106	7.37	5 610	3.1	39	**2KJ3503 - ■ FL22 - ■ ■ F1**	
	232	90	6.27	5 380	3.6	39	**2KJ3503 - ■ FL22 - ■ ■ E1**	
	271	78	5.37	5 150	4.3	39	**2KJ3503 - ■ FL22 - ■ ■ D1**	
	308	68	4.72	4 970	4.8	39	**2KJ3503 - ■ FL22 - ■ ■ C1**	
	K.39-L100LE4E							
	86	245	16.98	3 510	0.9	31	**2KJ3504 - ■ FL22 - ■ ■ L1**	
	94	220	15.41	3 550	0.99	31	**2KJ3504 - ■ FL22 - ■ ■ K1**	
	100	205	14.5	3 580	1.1	31	**2KJ3504 - ■ FL22 - ■ ■ J1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
2.2	**K.39-L100LE4E**							
	114	185	12.78	3 540	1.2	31	**2KJ3504 - ■ FL22 - ■ ■ H1**	
	131	160	11.09	3 520	1.4	31	**2KJ3504 - ■ FL22 - ■ ■ G1**	
	145	145	10.04	3 290	1.3	31	**2KJ3504 - ■ FL22 - ■ ■ F1**	
	165	127	8.81	3 270	1.4	31	**2KJ3504 - ■ FL22 - ■ ■ E1**	
	182	115	7.99	3 250	1.5	31	**2KJ3504 - ■ FL22 - ■ ■ D1**	
	193	109	7.52	3 220	1.6	31	**2KJ3504 - ■ FL22 - ■ ■ C1**	
	219	96	6.63	3 180	1.7	31	**2KJ3504 - ■ FL22 - ■ ■ B1**	
	253	83	5.75	3 120	1.8	31	**2KJ3504 - ■ FL22 - ■ ■ A1**	
	B.39-LE100LE4E							
	72	290	20.21	6 180	0.86	31	**2KJ3502 - ■ FL22 - ■ ■ P1**	
	81	255	17.9	6 110	0.97	31	**2KJ3502 - ■ FL22 - ■ ■ N1**	
	98	215	14.9	5 940	1.2	31	**2KJ3502 - ■ FL22 - ■ ■ M1**	
	104	200	14.02	5 900	1.2	31	**2KJ3502 - ■ FL22 - ■ ■ L1**	
	116	181	12.56	5 780	1.4	31	**2KJ3502 - ■ FL22 - ■ ■ K1**	
	136	154	10.69	5 620	1.6	31	**2KJ3502 - ■ FL22 - ■ ■ J1**	
	159	132	9.17	5 450	1.7	31	**2KJ3502 - ■ FL22 - ■ ■ H1**	
	184	114	7.89	5 270	1.9	31	**2KJ3502 - ■ FL22 - ■ ■ G1**	
	220	95	6.6	5 130	2.1	31	**2KJ3502 - ■ FL22 - ■ ■ F1**	
	234	90	6.21	5 050	2.2	31	**2KJ3502 - ■ FL22 - ■ ■ E1**	
	262	80	5.56	4 920	2.5	31	**2KJ3502 - ■ FL22 - ■ ■ D1**	
	307	68	4.74	4 710	2.9	31	**2KJ3502 - ■ FL22 - ■ ■ C1**	
	358	59	4.06	4 520	3.4	31	**2KJ3502 - ■ FL22 - ■ ■ B1**	
	416	50	3.5	4 340	3.8	31	**2KJ3502 - ■ FL22 - ■ ■ A1**	
	B.29-LE100LE4E							
	153	137	9.51	2 800	0.8	26	**2KJ3501 - ■ FL22 - ■ ■ K1**	
	176	119	8.25	2 780	0.92	26	**2KJ3501 - ■ FL22 - ■ ■ J1**	
	224	94	6.51	2 620	0.8	26	**2KJ3501 - ■ FL22 - ■ ■ F1**	
	258	82	5.65	2 580	0.92	26	**2KJ3501 - ■ FL22 - ■ ■ E1**	
	287	73	5.07	2 650	1	26	**2KJ3501 - ■ FL22 - ■ ■ D1**	
	304	69	4.78	2 620	1.1	26	**2KJ3501 - ■ FL22 - ■ ■ C1**	
	346	61	4.21	2 560	1.2	26	**2KJ3501 - ■ FL22 - ■ ■ B1**	
	399	53	3.65	2 490	1.4	26	**2KJ3501 - ■ FL22 - ■ ■ A1**	
3	**K.89-LE100LK4E**							
	15	1 850	94.16	15 400	0.86	78	**2KJ3510 - ■ FM22 - ■ ■ A2**	
	18	1 620	82.25	15 400	0.99	78	**2KJ3510 - ■ FM22 - ■ ■ X1**	
	20	1 450	73.64	15 400	1.1	78	**2KJ3510 - ■ FM22 - ■ ■ W1**	
	23	1 260	64.39	15 400	1.3	78	**2KJ3510 - ■ FM22 - ■ ■ V1**	
	26	1 080	55.27	15 400	1.5	78	**2KJ3510 - ■ FM22 - ■ ■ U1**	
	30	960	48.85	15 400	1.7	78	**2KJ3510 - ■ FM22 - ■ ■ T1**	
	35	815	41.54	15 400	1.9	78	**2KJ3510 - ■ FM22 - ■ ■ S1**	
	37	770	39.29	15 400	2.1	78	**2KJ3510 - ■ FM22 - ■ ■ R1**	
	44	645	32.96	15 400	2.5	78	**2KJ3510 - ■ FM22 - ■ ■ Q1**	
	47	610	31.03	15 400	2.6	78	**2KJ3510 - ■ FM22 - ■ ■ P1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**K.79-LE100LK4E**							
	30	970	49.31	12 400	0.84	57	**2KJ3508 - ■ FM22 - ■ ■ S1**	
	35	815	41.6	12 400	0.98	57	**2KJ3508 - ■ FM22 - ■ ■ R1**	
	40	710	36.26	12 400	1.1	57	**2KJ3508 - ■ FM22 - ■ ■ Q1**	
	44	645	32.78	12 400	1.3	57	**2KJ3508 - ■ FM22 - ■ ■ P1**	
	53	535	27.2	12 400	1.5	57	**2KJ3508 - ■ FM22 - ■ ■ N1**	
	57	500	25.6	12 400	1.6	57	**2KJ3508 - ■ FM22 - ■ ■ M1**	
	60	475	24.17	12 400	1.6	57	**2KJ3508 - ■ FM22 - ■ ■ L1**	
	71	405	20.57	12 400	1.8	57	**2KJ3508 - ■ FM22 - ■ ■ K1**	
	83	345	17.62	12 400	2.1	57	**2KJ3508 - ■ FM22 - ■ ■ J1**	
	94	305	15.49	12 400	2.3	57	**2KJ3508 - ■ FM22 - ■ ■ H1**	
	111	255	13.07	12 400	2.6	57	**2KJ3508 - ■ FM22 - ■ ■ G1**	
	128	220	11.39	12 400	2.9	57	**2KJ3508 - ■ FM22 - ■ ■ F1**	
	138	205	10.51	12 400	2.2	57	**2KJ3508 - ■ FM22 - ■ ■ E1**	
	161	177	9.01	12 400	2.5	57	**2KJ3508 - ■ FM22 - ■ ■ D1**	
	184	156	7.92	12 400	2.9	57	**2KJ3508 - ■ FM22 - ■ ■ C1**	
	218	132	6.68	12 400	3.5	57	**2KJ3508 - ■ FM22 - ■ ■ B1**	
	250	115	5.82	12 100	3.8	57	**2KJ3508 - ■ FM22 - ■ ■ A1**	
	K.69-LE100LK4E							
	43	655	33.48	5 960	0.88	52	**2KJ3507 - ■ FM22 - ■ ■ Q1**	
	50	575	29.18	6 050	0.97	52	**2KJ3507 - ■ FM22 - ■ ■ P1**	
	56	510	26.05	6 140	1.2	52	**2KJ3507 - ■ FM22 - ■ ■ N1**	
	59	480	24.52	6 150	1.2	52	**2KJ3507 - ■ FM22 - ■ ■ M1**	
	63	455	23.15	6 150	1.3	52	**2KJ3507 - ■ FM22 - ■ ■ L1**	
	74	385	19.7	6 160	1.4	52	**2KJ3507 - ■ FM22 - ■ ■ K1**	
	86	330	16.88	6 100	1.6	52	**2KJ3507 - ■ FM22 - ■ ■ J1**	
	98	290	14.84	6 030	1.8	52	**2KJ3507 - ■ FM22 - ■ ■ H1**	
	116	245	12.52	5 910	2	52	**2KJ3507 - ■ FM22 - ■ ■ G1**	
	133	215	10.91	5 780	2.2	52	**2KJ3507 - ■ FM22 - ■ ■ F1**	
	156	184	9.34	5 300	2	52	**2KJ3507 - ■ FM22 - ■ ■ E1**	
	182	158	8.01	5 180	2.3	52	**2KJ3507 - ■ FM22 - ■ ■ D1**	
	207	139	7.04	5 070	2.6	52	**2KJ3507 - ■ FM22 - ■ ■ C1**	
	245	117	5.94	4 920	2.9	52	**2KJ3507 - ■ FM22 - ■ ■ B1**	
	281	102	5.18	4 790	3.2	52	**2KJ3507 - ■ FM22 - ■ ■ A1**	
	K.49-LE100LK4E							
	55	515	26.3	3 070	0.81	45	**2KJ3505 - ■ FM22 - ■ ■ P1**	
	62	455	23.28	3 260	0.92	45	**2KJ3505 - ■ FM22 - ■ ■ N1**	
	75	380	19.38	3 440	1.1	45	**2KJ3505 - ■ FM22 - ■ ■ M1**	
	80	355	18.24	3 510	1.2	45	**2KJ3505 - ■ FM22 - ■ ■ L1**	
	89	320	16.34	3 550	1.3	45	**2KJ3505 - ■ FM22 - ■ ■ K1**	
	105	270	13.91	3 630	1.5	45	**2KJ3505 - ■ FM22 - ■ ■ J1**	
	122	235	11.93	3 610	1.8	45	**2KJ3505 - ■ FM22 - ■ ■ H1**	
	142	200	10.27	3 620	2.1	45	**2KJ3505 - ■ FM22 - ■ ■ G1**	
	149	192	9.75	3 490	1.4	45	**2KJ3505 - ■ FM22 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**K.49-LE100LK4E**							
	158	181	9.18	3 480	1.5	45	**2KJ3505 - ■ FM22 - ■ ■ E1**	
	177	162	8.22	3 460	1.6	45	**2KJ3505 - ■ FM22 - ■ ■ D1**	
	208	138	7	3 410	1.7	45	**2KJ3505 - ■ FM22 - ■ ■ C1**	
	242	118	6	3 350	1.9	45	**2KJ3505 - ■ FM22 - ■ ■ B1**	
	281	102	5.17	3 270	2.1	45	**2KJ3505 - ■ FM22 - ■ ■ A1**	
	B.49-LE100LK4E							
	52	545	27.74	6 070	0.82	43	**2KJ3503 - ■ FM22 - ■ ■ T1**	
	57	495	25.32	6 110	0.9	43	**2KJ3503 - ■ FM22 - ■ ■ S1**	
	69	410	21.01	6 110	1.1	43	**2KJ3503 - ■ FM22 - ■ ■ R1**	
	74	385	19.77	6 100	1.2	43	**2KJ3503 - ■ FM22 - ■ ■ Q1**	
	78	365	18.67	6 070	1.2	43	**2KJ3503 - ■ FM22 - ■ ■ P1**	
	92	310	15.89	5 990	1.4	43	**2KJ3503 - ■ FM22 - ■ ■ N1**	
	107	265	13.61	5 880	1.7	43	**2KJ3503 - ■ FM22 - ■ ■ M1**	
	122	235	11.97	5 760	1.9	43	**2KJ3503 - ■ FM22 - ■ ■ L1**	
	144	199	10.1	5 600	2.3	43	**2KJ3503 - ■ FM22 - ■ ■ K1**	
	165	173	8.8	5 460	2.6	43	**2KJ3503 - ■ FM22 - ■ ■ J1**	
	176	163	8.29	5 520	2	43	**2KJ3503 - ■ FM22 - ■ ■ H1**	
	187	154	7.8	5 450	2.1	43	**2KJ3503 - ■ FM22 - ■ ■ G1**	
	197	145	7.37	5 380	2.3	43	**2KJ3503 - ■ FM22 - ■ ■ F1**	
	232	123	6.27	5 180	2.7	43	**2KJ3503 - ■ FM22 - ■ ■ E1**	
	271	106	5.37	4 980	3.1	43	**2KJ3503 - ■ FM22 - ■ ■ D1**	
	308	93	4.72	4 820	3.6	43	**2KJ3503 - ■ FM22 - ■ ■ C1**	
	366	78	3.98	4 620	4.2	43	**2KJ3503 - ■ FM22 - ■ ■ B1**	
	419	68	3.47	4 450	4.8	43	**2KJ3503 - ■ FM22 - ■ ■ A1**	
	K.39-LE100LK4E							
	114	250	12.78	2 950	0.87	35	**2KJ3504 - ■ FM22 - ■ ■ H1**	
	131	215	11.09	3 020	1	35	**2KJ3504 - ■ FM22 - ■ ■ G1**	
	145	198	10.04	2 730	0.93	35	**2KJ3504 - ■ FM22 - ■ ■ F1**	
	165	173	8.81	2 790	1.1	35	**2KJ3504 - ■ FM22 - ■ ■ E1**	
	182	157	7.99	2 810	1.1	35	**2KJ3504 - ■ FM22 - ■ ■ D1**	
	193	148	7.52	2 820	1.2	35	**2KJ3504 - ■ FM22 - ■ ■ C1**	
	219	131	6.63	2 810	1.2	35	**2KJ3504 - ■ FM22 - ■ ■ B1**	
	253	113	5.75	2 810	1.3	35	**2KJ3504 - ■ FM22 - ■ ■ A1**	
	B.39-LE100LK4E							
	98	290	14.9	5 360	0.85	35	**2KJ3502 - ■ FM22 - ■ ■ M1**	
	104	275	14.02	5 330	0.91	35	**2KJ3502 - ■ FM22 - ■ ■ L1**	
	116	245	12.56	5 290	1	35	**2KJ3502 - ■ FM22 - ■ ■ K1**	
	136	210	10.69	5 180	1.1	35	**2KJ3502 - ■ FM22 - ■ ■ J1**	
	159	181	9.17	5 070	1.3	35	**2KJ3502 - ■ FM22 - ■ ■ H1**	
	184	155	7.89	4 950	1.4	35	**2KJ3502 - ■ FM22 - ■ ■ G1**	
	220	130	6.6	4 890	1.5	35	**2KJ3502 - ■ FM22 - ■ ■ F1**	
	234	122	6.21	4 830	1.6	35	**2KJ3502 - ■ FM22 - ■ ■ E1**	
	262	109	5.56	4 720	1.8	35	**2KJ3502 - ■ FM22 - ■ ■ D1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
3	**B.39-LE100LK4E**							
	307	93	4.74	4 540	2.1	35	**2KJ3502 - ■ FM22 - ■ ■ C1**	
	358	80	4.06	4 370	2.5	35	**2KJ3502 - ■ FM22 - ■ ■ B1**	
	416	69	3.5	4 210	2.8	35	**2KJ3502 - ■ FM22 - ■ ■ A1**	
4	**K.89-LE112ME4E**							
	20	1 920	73.64	15 400	0.83	78	**2KJ3510 - ■ GH22 - ■ ■ W1**	
	23	1 680	64.39	15 400	0.95	78	**2KJ3510 - ■ GH22 - ■ ■ V1**	
	26	1 440	55.27	15 400	1.1	78	**2KJ3510 - ■ GH22 - ■ ■ U1**	
	30	1 270	48.85	15 400	1.3	78	**2KJ3510 - ■ GH22 - ■ ■ T1**	
	35	1 080	41.54	15 400	1.4	78	**2KJ3510 - ■ GH22 - ■ ■ S1**	
	37	1 020	39.29	15 400	1.6	78	**2KJ3510 - ■ GH22 - ■ ■ R1**	
	44	860	32.96	15 400	1.9	78	**2KJ3510 - ■ GH22 - ■ ■ Q1**	
	47	810	31.03	15 400	2	78	**2KJ3510 - ■ GH22 - ■ ■ P1**	
	51	745	28.46	15 400	2.1	78	**2KJ3510 - ■ GH22 - ■ ■ N1**	
	59	650	24.86	15 400	2.5	78	**2KJ3510 - ■ GH22 - ■ ■ M1**	
	66	580	22.26	15 400	2.7	78	**2KJ3510 - ■ GH22 - ■ ■ L1**	
	75	505	19.46	15 400	3.1	78	**2KJ3510 - ■ GH22 - ■ ■ K1**	
	139	275	10.51	15 400	3.1	78	**2KJ3510 - ■ GH22 - ■ ■ E1**	
	162	235	9.02	15 400	3.4	78	**2KJ3510 - ■ GH22 - ■ ■ D1**	
	183	205	7.97	15 400	3.7	78	**2KJ3510 - ■ GH22 - ■ ■ C1**	
	215	177	6.78	15 400	4.1	78	**2KJ3510 - ■ GH22 - ■ ■ B1**	
	251	152	5.81	15 400	4.4	78	**2KJ3510 - ■ GH22 - ■ ■ A1**	
	K.79-LE112ME4E							
	40	945	36.26	12 400	0.81	58	**2KJ3508 - ■ GH22 - ■ ■ Q1**	
	45	855	32.78	12 400	0.96	58	**2KJ3508 - ■ GH22 - ■ ■ P1**	
	54	710	27.2	12 400	1.1	58	**2KJ3508 - ■ GH22 - ■ ■ N1**	
	57	670	25.6	12 400	1.2	58	**2KJ3508 - ■ GH22 - ■ ■ M1**	
	60	630	24.17	12 400	1.2	58	**2KJ3508 - ■ GH22 - ■ ■ L1**	
	71	535	20.57	12 400	1.4	58	**2KJ3508 - ■ GH22 - ■ ■ K1**	
	83	460	17.62	12 400	1.6	58	**2KJ3508 - ■ GH22 - ■ ■ J1**	
	94	405	15.49	12 400	1.7	58	**2KJ3508 - ■ GH22 - ■ ■ H1**	
	112	340	13.07	12 400	1.9	58	**2KJ3508 - ■ GH22 - ■ ■ G1**	
	128	295	11.39	12 400	2.2	58	**2KJ3508 - ■ GH22 - ■ ■ F1**	
	139	275	10.51	12 400	1.6	58	**2KJ3508 - ■ GH22 - ■ ■ E1**	
	162	235	9.01	12 400	1.9	58	**2KJ3508 - ■ GH22 - ■ ■ D1**	
	184	205	7.92	12 400	2.2	58	**2KJ3508 - ■ GH22 - ■ ■ C1**	
	219	175	6.68	12 300	2.6	58	**2KJ3508 - ■ GH22 - ■ ■ B1**	
	251	152	5.82	11 900	2.8	58	**2KJ3508 - ■ GH22 - ■ ■ A1**	
	K.69-LE112ME4E							
	56	680	26.05	4 910	0.88	52	**2KJ3507 - ■ GH22 - ■ ■ N1**	
	60	640	24.52	5 000	0.93	52	**2KJ3507 - ■ GH22 - ■ ■ M1**	
	63	605	23.15	5 070	0.97	52	**2KJ3507 - ■ GH22 - ■ ■ L1**	
	74	515	19.7	5 220	1.1	52	**2KJ3507 - ■ GH22 - ■ ■ K1**	
	86	440	16.88	5 310	1.2	52	**2KJ3507 - ■ GH22 - ■ ■ J1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
4	**K.69-LE112ME4E**							
	98	385	14.84	5 350	1.3	52	**2KJ3507 - ■ GH22 - ■ ■ H1**	
	117	325	12.52	5 330	1.5	52	**2KJ3507 - ■ GH22 - ■ ■ G1**	
	134	285	10.91	5 270	1.6	52	**2KJ3507 - ■ GH22 - ■ ■ F1**	
	156	240	9.34	4 790	1.5	52	**2KJ3507 - ■ GH22 - ■ ■ E1**	
	182	210	8.01	4 710	1.7	52	**2KJ3507 - ■ GH22 - ■ ■ D1**	
	207	184	7.04	4 660	2	52	**2KJ3507 - ■ GH22 - ■ ■ C1**	
	246	155	5.94	4 570	2.2	52	**2KJ3507 - ■ GH22 - ■ ■ B1**	
	282	136	5.18	4 480	2.4	52	**2KJ3507 - ■ GH22 - ■ ■ A1**	
	K.49-LE112ME4E							
	75	505	19.38	2 460	0.83	46	**2KJ3505 - ■ GH22 - ■ ■ M1**	
	80	475	18.24	2 560	0.88	46	**2KJ3505 - ■ GH22 - ■ ■ L1**	
	89	425	16.34	2 730	0.98	46	**2KJ3505 - ■ GH22 - ■ ■ K1**	
	105	360	13.91	2 920	1.2	46	**2KJ3505 - ■ GH22 - ■ ■ J1**	
	122	310	11.93	3 020	1.3	46	**2KJ3505 - ■ GH22 - ■ ■ H1**	
	142	265	10.27	3 110	1.5	46	**2KJ3505 - ■ GH22 - ■ ■ G1**	
	150	255	9.75	2 960	1.1	46	**2KJ3505 - ■ GH22 - ■ ■ F1**	
	159	240	9.18	2 980	1.1	46	**2KJ3505 - ■ GH22 - ■ ■ E1**	
	178	215	8.22	3 010	1.2	46	**2KJ3505 - ■ GH22 - ■ ■ D1**	
	209	183	7	3 030	1.3	46	**2KJ3505 - ■ GH22 - ■ ■ C1**	
	243	157	6	3 020	1.4	46	**2KJ3505 - ■ GH22 - ■ ■ B1**	
	282	135	5.17	2 990	1.6	46	**2KJ3505 - ■ GH22 - ■ ■ A1**	
	B.49-LE112ME4E							
	69	550	21.01	5 170	0.82	43	**2KJ3503 - ■ GH22 - ■ ■ R1**	
	74	515	19.77	5 230	0.87	43	**2KJ3503 - ■ GH22 - ■ ■ Q1**	
	78	485	18.67	5 260	0.92	43	**2KJ3503 - ■ GH22 - ■ ■ P1**	
	92	415	15.89	5 280	1.1	43	**2KJ3503 - ■ GH22 - ■ ■ N1**	
	107	355	13.61	5 280	1.3	43	**2KJ3503 - ■ GH22 - ■ ■ M1**	
	122	310	11.97	5 250	1.4	43	**2KJ3503 - ■ GH22 - ■ ■ L1**	
	145	260	10.1	5 180	1.7	43	**2KJ3503 - ■ GH22 - ■ ■ K1**	
	166	230	8.8	5 070	2	43	**2KJ3503 - ■ GH22 - ■ ■ J1**	
	176	215	8.29	5 210	1.5	43	**2KJ3503 - ■ GH22 - ■ ■ H1**	
	187	200	7.8	5 170	1.6	43	**2KJ3503 - ■ GH22 - ■ ■ G1**	
	198	193	7.37	5 090	1.7	43	**2KJ3503 - ■ GH22 - ■ ■ F1**	
	233	164	6.27	4 930	2	43	**2KJ3503 - ■ GH22 - ■ ■ E1**	
	272	141	5.37	4 770	2.3	43	**2KJ3503 - ■ GH22 - ■ ■ D1**	
	309	123	4.72	4 640	2.7	43	**2KJ3503 - ■ GH22 - ■ ■ C1**	
	367	104	3.98	4 460	3.2	43	**2KJ3503 - ■ GH22 - ■ ■ B1**	
	421	91	3.47	4 310	3.6	43	**2KJ3503 - ■ GH22 - ■ ■ A1**	
4	**B.39-LE112ME4E**							
	137	280	10.69	4 640	0.86	38	**2KJ3502 - ■ GH22 - ■ ■ J1**	
	159	240	9.17	4 600	0.96	38	**2KJ3502 - ■ GH22 - ■ ■ H1**	
	185	205	7.89	4 560	1.1	38	**2KJ3502 - ■ GH22 - ■ ■ G1**	
	221	173	6.6	4 580	1.2	38	**2KJ3502 - ■ GH22 - ■ ■ F1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
4	**B.39-LE112ME4E**							
	235	162	6.21	4 550	1.2	38	**2KJ3502 - ■ GH22 - ■ ■ E1**	
	263	145	5.56	4 460	1.4	38	**2KJ3502 - ■ GH22 - ■ ■ D1**	
	308	124	4.74	4 320	1.6	38	**2KJ3502 - ■ GH22 - ■ ■ C1**	
	360	106	4.06	4 180	1.9	38	**2KJ3502 - ■ GH22 - ■ ■ B1**	
	417	92	3.5	4 040	2.1	38	**2KJ3502 - ■ GH22 - ■ ■ A1**	
5.5	**K.89-LE132SF4E**							
	27	1 980	55.27	15 400	0.81	92	**2KJ3510 - ■ HG22 - ■ ■ U1**	
	30	1 750	48.85	15 400	0.91	92	**2KJ3510 - ■ HG22 - ■ ■ T1**	
	35	1 480	41.54	15 400	1.1	92	**2KJ3510 - ■ HG22 - ■ ■ S1**	
	37	1 400	39.29	15 400	1.1	92	**2KJ3510 - ■ HG22 - ■ ■ R1**	
	44	1 180	32.96	15 400	1.4	92	**2KJ3510 - ■ HG22 - ■ ■ Q1**	
	47	1 110	31.03	15 400	1.4	92	**2KJ3510 - ■ HG22 - ■ ■ P1**	
	51	1 020	28.46	15 400	1.6	92	**2KJ3510 - ■ HG22 - ■ ■ N1**	
	59	890	24.86	15 400	1.8	92	**2KJ3510 - ■ HG22 - ■ ■ M1**	
	66	795	22.26	15 400	2	92	**2KJ3510 - ■ HG22 - ■ ■ L1**	
	75	695	19.46	15 400	2.2	92	**2KJ3510 - ■ HG22 - ■ ■ K1**	
	88	595	16.71	15 400	2.5	92	**2KJ3510 - ■ HG22 - ■ ■ J1**	
	99	530	14.77	15 400	2.7	92	**2KJ3510 - ■ HG22 - ■ ■ H1**	
	117	450	12.56	15 400	3	92	**2KJ3510 - ■ HG22 - ■ ■ G1**	
	136	385	10.76	15 400	3.2	92	**2KJ3510 - ■ HG22 - ■ ■ F1**	
	139	375	10.51	15 400	2.2	92	**2KJ3510 - ■ HG22 - ■ ■ E1**	
	162	320	9.02	15 400	2.5	92	**2KJ3510 - ■ HG22 - ■ ■ D1**	
	184	285	7.97	15 400	2.7	92	**2KJ3510 - ■ HG22 - ■ ■ C1**	
	216	240	6.78	15 400	3	92	**2KJ3510 - ■ HG22 - ■ ■ B1**	
	252	205	5.81	15 400	3.2	92	**2KJ3510 - ■ HG22 - ■ ■ A1**	
	K.79-LE132SF4E							
	54	975	27.2	12 400	0.82	71	**2KJ3508 - ■ HG22 - ■ ■ N1**	
	57	915	25.6	12 400	0.86	71	**2KJ3508 - ■ HG22 - ■ ■ M1**	
	61	865	24.17	12 400	0.89	71	**2KJ3508 - ■ HG22 - ■ ■ L1**	
	71	735	20.57	12 400	1	71	**2KJ3508 - ■ HG22 - ■ ■ K1**	
	83	630	17.62	12 400	1.1	71	**2KJ3508 - ■ HG22 - ■ ■ J1**	
	95	555	15.49	12 400	1.3	71	**2KJ3508 - ■ HG22 - ■ ■ H1**	
	112	465	13.07	12 400	1.4	71	**2KJ3508 - ■ HG22 - ■ ■ G1**	
	129	405	11.39	12 400	1.6	71	**2KJ3508 - ■ HG22 - ■ ■ F1**	
	139	375	10.51	12 400	1.2	71	**2KJ3508 - ■ HG22 - ■ ■ E1**	
	163	320	9.01	12 400	1.4	71	**2KJ3508 - ■ HG22 - ■ ■ D1**	
	185	280	7.92	12 300	1.6	71	**2KJ3508 - ■ HG22 - ■ ■ C1**	
	219	235	6.68	11 900	1.9	71	**2KJ3508 - ■ HG22 - ■ ■ B1**	
	252	205	5.82	11 500	2.1	71	**2KJ3508 - ■ HG22 - ■ ■ A1**	
	K.69-LE132SF4E							
	87	605	16.88	4 120	0.88	65	**2KJ3507 - ■ HG22 - ■ ■ J1**	
	99	530	14.84	4 300	0.97	65	**2KJ3507 - ■ HG22 - ■ ■ H1**	
	117	445	12.52	4 460	1.1	65	**2KJ3507 - ■ HG22 - ■ ■ G1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
5.5	**K.69-LE132SF4E**							
	134	390	10.91	4 510	1.2	65	**2KJ3507 - ■ HG22 - ■ ■ F1**	
	157	335	9.34	3 930	1.1	65	**2KJ3507 - ■ HG22 - ■ ■ E1**	
	183	285	8.01	4 030	1.3	65	**2KJ3507 - ■ HG22 - ■ ■ D1**	
	208	250	7.04	4 060	1.4	65	**2KJ3507 - ■ HG22 - ■ ■ C1**	
	247	210	5.94	4 080	1.6	65	**2KJ3507 - ■ HG22 - ■ ■ B1**	
	283	186	5.18	4 020	1.8	65	**2KJ3507 - ■ HG22 - ■ ■ A1**	
	B.49-LE132SF4E							
	108	485	13.61	4 400	0.92	56	**2KJ3503 - ■ HG22 - ■ ■ M1**	
	122	425	11.97	4 480	1	56	**2KJ3503 - ■ HG22 - ■ ■ L1**	
	145	360	10.1	4 510	1.2	56	**2KJ3503 - ■ HG22 - ■ ■ K1**	
	166	315	8.8	4 500	1.4	56	**2KJ3503 - ■ HG22 - ■ ■ J1**	
	177	295	8.29	4 730	1.1	56	**2KJ3503 - ■ HG22 - ■ ■ H1**	
	188	280	7.8	4 690	1.2	56	**2KJ3503 - ■ HG22 - ■ ■ G1**	
	199	260	7.37	4 690	1.2	56	**2KJ3503 - ■ HG22 - ■ ■ F1**	
	234	225	6.27	4 570	1.5	56	**2KJ3503 - ■ HG22 - ■ ■ E1**	
	273	193	5.37	4 460	1.7	56	**2KJ3503 - ■ HG22 - ■ ■ D1**	
	310	169	4.72	4 360	2	56	**2KJ3503 - ■ HG22 - ■ ■ C1**	
	368	143	3.98	4 220	2.3	56	**2KJ3503 - ■ HG22 - ■ ■ B1**	
	422	124	3.47	4 110	2.6	56	**2KJ3503 - ■ HG22 - ■ ■ A1**	
7.5	**K.89-LE132MF4E**							
	37	1 920	39.29	15 400	0.83	99	**2KJ3510 - ■ HJ22 - ■ ■ R1**	
	44	1 610	32.96	15 400	0.99	99	**2KJ3510 - ■ HJ22 - ■ ■ Q1**	
	47	1 510	31.03	15 400	1.1	99	**2KJ3510 - ■ HJ22 - ■ ■ P1**	
	51	1 390	28.46	15 400	1.1	99	**2KJ3510 - ■ HJ22 - ■ ■ N1**	
	59	1 210	24.86	15 400	1.3	99	**2KJ3510 - ■ HJ22 - ■ ■ M1**	
	66	1 080	22.26	15 400	1.5	99	**2KJ3510 - ■ HJ22 - ■ ■ L1**	
	75	950	19.46	15 400	1.6	99	**2KJ3510 - ■ HJ22 - ■ ■ K1**	
	88	815	16.71	15 400	1.8	99	**2KJ3510 - ■ HJ22 - ■ ■ J1**	
	99	720	14.77	15 400	2	99	**2KJ3510 - ■ HJ22 - ■ ■ H1**	
	117	610	12.56	15 400	2.2	99	**2KJ3510 - ■ HJ22 - ■ ■ G1**	
	136	525	10.76	15 400	2.4	99	**2KJ3510 - ■ HJ22 - ■ ■ F1**	
	139	510	10.51	15 400	1.6	99	**2KJ3510 - ■ HJ22 - ■ ■ E1**	
	162	440	9.02	15 400	1.8	99	**2KJ3510 - ■ HJ22 - ■ ■ D1**	
	184	390	7.97	15 400	2	99	**2KJ3510 - ■ HJ22 - ■ ■ C1**	
	216	330	6.78	15 400	2.2	99	**2KJ3510 - ■ HJ22 - ■ ■ B1**	
	252	280	5.81	15 400	2.4	99	**2KJ3510 - ■ HJ22 - ■ ■ A1**	
	K.79-LE132MF4E							
	83	860	17.62	12 400	0.83	78	**2KJ3508 - ■ HJ22 - ■ ■ J1**	
	95	755	15.49	12 400	0.92	78	**2KJ3508 - ■ HJ22 - ■ ■ H1**	
	112	635	13.07	12 400	1	78	**2KJ3508 - ■ HJ22 - ■ ■ G1**	
	129	555	11.39	12 400	1.2	78	**2KJ3508 - ■ HJ22 - ■ ■ F1**	
	139	510	10.51	12 100	0.87	78	**2KJ3508 - ■ HJ22 - ■ ■ E1**	
	163	440	9.01	11 900	1	78	**2KJ3508 - ■ HJ22 - ■ ■ D1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
7.5	**K.79-LE132MF4E**							
	185	385	7.92	11 700	1.2	78	**2KJ3508 - ■ HJ22 - ■ ■ C1**	
	219	325	6.68	11 300	1.4	78	**2KJ3508 - ■ HJ22 - ■ ■ B1**	
	252	285	5.82	11 000	1.5	78	**2KJ3508 - ■ HJ22 - ■ ■ A1**	
	K.69-LE132MF4E							
	117	610	12.52	3 290	0.8	72	**2KJ3507 - ■ HJ22 - ■ ■ G1**	
	134	530	10.91	3 520	0.88	72	**2KJ3507 - ■ HJ22 - ■ ■ F1**	
	157	455	9.34	2 860	0.81	72	**2KJ3507 - ■ HJ22 - ■ ■ E1**	
	183	390	8.01	3 090	0.93	72	**2KJ3507 - ■ HJ22 - ■ ■ D1**	
	208	340	7.04	3 260	1.1	72	**2KJ3507 - ■ HJ22 - ■ ■ C1**	
	247	290	5.94	3 360	1.2	72	**2KJ3507 - ■ HJ22 - ■ ■ B1**	
	283	250	5.18	3 450	1.3	72	**2KJ3507 - ■ HJ22 - ■ ■ A1**	
	B.49-LE132MF4E							
	145	490	10.1	3 650	0.91	63	**2KJ3503 - ■ HJ22 - ■ ■ K1**	
	166	430	8.8	3 740	1	63	**2KJ3503 - ■ HJ22 - ■ ■ J1**	
	177	405	8.29	4 080	0.81	63	**2KJ3503 - ■ HJ22 - ■ ■ H1**	
	188	380	7.8	4 100	0.87	63	**2KJ3503 - ■ HJ22 - ■ ■ G1**	
	199	360	7.37	4 100	0.92	63	**2KJ3503 - ■ HJ22 - ■ ■ F1**	
	234	305	6.27	4 100	1.1	63	**2KJ3503 - ■ HJ22 - ■ ■ E1**	
	273	260	5.37	4 060	1.3	63	**2KJ3503 - ■ HJ22 - ■ ■ D1**	
	310	230	4.72	4 010	1.4	63	**2KJ3503 - ■ HJ22 - ■ ■ C1**	
	368	195	3.98	3 920	1.7	63	**2KJ3503 - ■ HJ22 - ■ ■ B1**	
	422	170	3.47	3 840	1.9	63	**2KJ3503 - ■ HJ22 - ■ ■ A1**	
9.2	**K.89-LE132ZMM4E**							
	44	1 970	32.96	15 400	0.81	106	**2KJ3510 - ■ HV22 - ■ ■ Q1**	
	47	1 860	31.03	15 400	0.86	106	**2KJ3510 - ■ HV22 - ■ ■ P1**	
	51	1 700	28.46	15 400	0.94	106	**2KJ3510 - ■ HV22 - ■ ■ N1**	
	59	1 490	24.86	15 400	1.1	106	**2KJ3510 - ■ HV22 - ■ ■ M1**	
	66	1 330	22.26	15 400	1.2	106	**2KJ3510 - ■ HV22 - ■ ■ L1**	
	75	1 160	19.46	15 400	1.3	106	**2KJ3510 - ■ HV22 - ■ ■ K1**	
	88	1 000	16.71	15 400	1.5	106	**2KJ3510 - ■ HV22 - ■ ■ J1**	
	99	885	14.77	15 400	1.6	106	**2KJ3510 - ■ HV22 - ■ ■ H1**	
	117	750	12.56	15 400	1.8	106	**2KJ3510 - ■ HV22 - ■ ■ G1**	
	136	645	10.76	15 400	1.9	106	**2KJ3510 - ■ HV22 - ■ ■ F1**	
	139	630	10.51	15 400	1.3	106	**2KJ3510 - ■ HV22 - ■ ■ E1**	
	162	540	9.02	15 400	1.5	106	**2KJ3510 - ■ HV22 - ■ ■ D1**	
	184	475	7.97	15 400	1.6	106	**2KJ3510 - ■ HV22 - ■ ■ C1**	
	216	405	6.78	15 400	1.8	106	**2KJ3510 - ■ HV22 - ■ ■ B1**	
	252	345	5.81	15 400	1.9	106	**2KJ3510 - ■ HV22 - ■ ■ A1**	
	K.79-LE132ZMM4E							
	112	780	13.07	11 900	0.85	85	**2KJ3508 - ■ HV22 - ■ ■ G1**	
	129	680	11.39	11 800	0.94	85	**2KJ3508 - ■ HV22 - ■ ■ F1**	
	163	540	9.01	11 300	0.83	85	**2KJ3508 - ■ HV22 - ■ ■ D1**	
	185	475	7.92	11 100	0.95	85	**2KJ3508 - ■ HV22 - ■ ■ C1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Selection and ordering data (continued)

P_{rated}	n_2	T_2	i_{tot}	F_{R2}	f_B	m	Order No.	Order code
kW	rpm	Nm	-	N	-	kg	(Order No. supplement ➞ below)	Number of poles
9.2	**K.79-LE132ZMM4E**							
	219	400	6.68	10 900	1.1	85	**2KJ3508 - ■ HV22 - ■ ■ B1**	
	252	345	5.82	10 700	1.2	85	**2KJ3508 - ■ HV22 - ■ ■ A1**	
11	**K.89-LE160MF4E**							
	59	1 770	24.86	15 400	0.9	120	**2KJ3510 - ■ JP22 - ■ ■ M1**	
	66	1 590	22.26	15 400	1	120	**2KJ3510 - ■ JP22 - ■ ■ L1**	
	76	1 390	19.46	15 400	1.1	120	**2KJ3510 - ■ JP22 - ■ ■ K1**	
	88	1 190	16.71	15 400	1.2	120	**2KJ3510 - ■ JP22 - ■ ■ J1**	
	100	1 050	14.77	15 400	1.3	120	**2KJ3510 - ■ JP22 - ■ ■ H1**	
	117	895	12.56	15 400	1.5	120	**2KJ3510 - ■ JP22 - ■ ■ G1**	
	137	765	10.76	15 400	1.6	120	**2KJ3510 - ■ JP22 - ■ ■ F1**	
	140	750	10.51	15 400	1.1	120	**2KJ3510 - ■ JP22 - ■ ■ E1**	
	163	645	9.02	15 400	1.2	120	**2KJ3510 - ■ JP22 - ■ ■ D1**	
	184	570	7.97	15 400	1.4	120	**2KJ3510 - ■ JP22 - ■ ■ C1**	
	217	485	6.78	15 400	1.5	120	**2KJ3510 - ■ JP22 - ■ ■ B1**	
	253	415	5.81	15 000	1.6	120	**2KJ3510 - ■ JP22 - ■ ■ A1**	
15	**K.89-LE160LD4E**							
	76	1 890	19.46	15 400	0.83	132	**2KJ3510 - ■ JU22 - ■ ■ K1**	
	88	1 620	16.71	15 400	0.91	132	**2KJ3510 - ■ JU22 - ■ ■ J1**	
	100	1 430	14.77	15 400	0.99	132	**2KJ3510 - ■ JU22 - ■ ■ H1**	
	117	1 220	12.56	15 400	1.1	132	**2KJ3510 - ■ JU22 - ■ ■ G1**	
	137	1 040	10.76	15 400	1.2	132	**2KJ3510 - ■ JU22 - ■ ■ F1**	
	140	1 020	10.51	15 000	0.83	132	**2KJ3510 - ■ JU22 - ■ ■ E1**	
	164	875	9.02	14 900	0.91	132	**2KJ3510 - ■ JU22 - ■ ■ D1**	
	185	770	7.97	14 700	0.99	132	**2KJ3510 - ■ JU22 - ■ ■ C1**	
	218	655	6.78	14 500	1.1	132	**2KJ3510 - ■ JU22 - ■ ■ B1**	
	254	560	5.81	14 200	1.2	132	**2KJ3510 - ■ JU22 - ■ ■ A1**	

Order No. supplement		
Shaft design	**1, 5, 6, 7 or 9**	➞ Page 7/32
Frequency and voltage	**2 or 9**	➞ Page 8/2
Gearbox mounting type	**A, D, F or H**	➞ Page 7/28

Transmission ratios and torques

Selection and ordering data

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
B.29														
46.85	30.9	110	4 130	0.04	1265/27	✓	✓							**2KJ3501 - ■■■■■ - B2**
41.56	34.9	110	4 130	0.05	374/9	✓	✓	✓	✓					**2KJ3501 - ■■■■■ - A2**
36.06	40.2	110	4 130	0.06	649/18	✓	✓	✓	✓					**2KJ3501 - ■■■■■ - X1**
32.78	44.2	110	4 130	0.07	295/9	✓	✓	✓	✓					**2KJ3501 - ■■■■■ - W1**
28.11	51.6	110	4 130	0.09	253/9	✓	✓	✓	✓					**2KJ3501 - ■■■■■ - V1**
25.56	56.7	110	4 130	0.11	230/9	✓	✓	✓	✓					**2KJ3501 - ■■■■■ - U1**
22.41	64.7	110	4 130	0.13	605/27	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - T1**
20	72.5	110	4 130	0.16	20/1	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - S1**
17.82	81.4	110	4 000	0.19	1925/108	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - R1**
16.45	88.1	110	3 870	0.23	1925/117	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - Q1**
14.4	100.7	110	3 660	0.26	605/42	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - P1**
12.63	114.8	110	3 460	0.27	341/27	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - N1**
11.46	126.5	110	3 320	0.38	275/24	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - M1**
10.78	134.5	110	3 230	0.44	550/51	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - L1**
9.51	152.5	110	3 050	0.5	770/81	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - K1**
8.25	175.8	110	2 870	0.67	33/4	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - J1**
7.84	184.9	75	3 050	0.41	345/44	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - H1**
7.38	196.5	75	2 980	0.48	1380/187	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - G1**
6.51	222.7	75	2 820	0.54	644/99	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - F1**
5.65	256.6	75	2 660	0.73	621/110	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - E1**
5.07	286	74	2 650	0.6	345/68	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - D1**
4.78	303.3	74	2 580	0.7	1380/289	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - C1**
4.21	344.4	74	2 450	0.82	644/153	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - B1**
3.65	397.3	73	2 320	1.1	621/170	✓	✓	✓	✓	✓				**2KJ3501 - ■■■■■ - A1**

Selection and ordering data (continued)

i_{tot}	n_2	T_{2N}	F_{R2}	J_G	R_{ex}	63	71	80	90	100	112	132	160	Order No.
-	rpm	Nm	N	10^{-4} kgm²	-									
B.39														
56.36	25.7	250	6 970	0.06	4565/81	✓	✓							2KJ3502 - ■■■■■ - A2
50.11	28.9	210	6 970	0.08	451/9	✓	✓	✓	✓					2KJ3502 - ■■■■■ - X1
44	33	250	6 970	0.09	44/1	✓	✓	✓	✓					2KJ3502 - ■■■■■ - W1
40	36.3	230	6 970	0.11	40/1	✓	✓	✓	✓					2KJ3502 - ■■■■■ - V1
34.22	42.4	250	6 970	0.13	308/9	✓	✓	✓	✓					2KJ3502 - ■■■■■ - U1
31.11	46.6	250	6 970	0.16	280/9	✓	✓	✓	✓					2KJ3502 - ■■■■■ - T1
27.5	52.7	250	6 970	0.2	55/2	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - S1
25	58	250	6 970	0.26	25/1	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - R1
21.9	66.2	250	6 720	0.3	2365/108	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - Q1
20.21	71.7	250	6 490	0.36	2365/117	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - P1
17.9	81	250	6 160	0.43	2255/126	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - N1
14.9	97.3	250	5 680	0.58	715/48	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - M1
14.02	103.4	250	5 530	0.67	715/51	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - L1
12.56	115.4	250	5 260	0.75	2035/162	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - K1
10.69	135.6	240	4 960	0.98	385/36	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - J1
9.17	158.1	230	4 700	1.29	55/6			✓	✓	✓	✓			2KJ3502 - ■■■■■ - H1
7.89	183.8	220	4 550	1.66	1705/216			✓	✓	✓	✓			2KJ3502 - ■■■■■ - G1
6.6	219.7	200	4 590	0.94	897/136	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - F1
6.21	233.5	200	4 550	1.08	1794/289	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - E1
5.56	260.8	200	4 460	1.26	851/153	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - D1
4.74	305.9	200	4 330	1.69	161/34	✓	✓	✓	✓	✓	✓			2KJ3502 - ■■■■■ - C1
4.06	357.1	200	4 190	2.3	69/17			✓	✓	✓	✓			2KJ3502 - ■■■■■ - B1
3.5	414.3	192	4 050	3	713/204			✓	✓	✓	✓			2KJ3502 - ■■■■■ - A1

Transmission ratios and torques

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
B.49														
59.28	24.5	450	9 510	0.19	1067/18	✓	✓	✓	✓					**2KJ3503 - ■■■■■ - C2**
53.89	26.9	450	9 120	0.23	485/9	✓	✓	✓	✓					**2KJ3503 - ■■■■■ - B2**
45.83	31.6	450	8 480	0.28	275/6	✓	✓	✓	✓					**2KJ3503 - ■■■■■ - A2**
41.67	34.8	450	8 120	0.34	125/3	✓	✓	✓	✓					**2KJ3503 - ■■■■■ - X1**
37.18	39	450	7 710	0.4	4015/108	✓	✓	✓	✓	✓	✓			**2KJ3503 - ■■■■■ - W1**
33.33	43.5	450	7 330	0.48	100/3	✓	✓	✓	✓	✓	✓			**2KJ3503 - ■■■■■ - V1**
30.05	48.3	450	6 980	0.56	3245/108	✓	✓	✓	✓	✓	✓			**2KJ3503 - ■■■■■ - U1**
27.74	52.3	450	6 710	0.67	3245/117	✓	✓	✓	✓	✓	✓			**2KJ3503 - ■■■■■ - T1**
25.32	57.3	450	6 420	0.8	1595/63	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - S1**
21.01	69	450	5 850	1.03	3025/144	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - R1**
19.77	73.3	450	5 680	1.18	3025/153	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - Q1**
18.67	77.7	450	5 510	1.34	3025/162	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - P1**
15.89	91.3	450	5 070	1.66	143/9			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - N1**
13.61	106.5	450	4 660	2.1	245/18			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - M1**
11.97	121.1	450	4 340	2.5	2585/216			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - L1**
10.1	143.6	450	3 940	3.3	2090/207			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - K1**
8.8	164.8	450	3 630	4.4	44/5			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - J1**
8.29	174.9	330	4 550	1.52	2255/272	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - H1**
7.8	185.9	330	4 420	1.74	2255/289	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - G1**
7.37	196.7	330	4 300	1.97	2255/306	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - F1**
6.27	231.3	330	3 970	2.5	533/85	✓	✓	✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - E1**
5.37	270	330	3 700	3.3	2009/374			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - D1**
4.72	307.2	330	3 690	4.1	1927/408			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - C1**
3.98	364.3	330	3 660	5.4	1558/391			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - B1**
3.47	417.9	325	3 610	7.2	1476/425			✓	✓	✓	✓	✓		**2KJ3503 - ■■■■■ - A1**

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
K.39														
157.32	9.2	220	6 080	0.04	3933/25	✓	✓							**2KJ3504 - ■■■■■ - J2**
139.54	10.4	220	6 080	0.05	17442/125	✓	✓	✓	✓					**2KJ3504 - ■■■■■ - H2**
121.07	12	220	6 080	0.06	30267/250	✓	✓	✓	✓					**2KJ3504 - ■■■■■ - G2**
110.06	13.2	220	6 080	0.07	30267/275	✓	✓	✓	✓					**2KJ3504 - ■■■■■ - F2**
94.39	15.4	220	6 080	0.09	11799/125	✓	✓	✓	✓					**2KJ3504 - ■■■■■ - E2**
85.81	16.9	220	6 080	0.11	23598/275	✓	✓	✓	✓					**2KJ3504 - ■■■■■ - D2**
75.24	19.3	220	6 080	0.12	1881/25	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - C2**
67.16	21.6	220	6 080	0.15	18468/275	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - B2**
59.85	24.2	220	6 080	0.18	1197/20	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - A2**
55.25	26.2	220	6 080	0.22	3591/65	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - X1**
48.37	30	220	6 080	0.26	16929/350	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - W1**
42.41	34.2	220	5 790	0.24	5301/125	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - V1**
38.47	37.7	220	5 540	0.34	1539/40	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - U1**
36.21	40	220	5 390	0.4	3078/85	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - T1**
31.92	45.4	220	5 090	0.44	798/25	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - S1**
27.7	52.3	220	4 760	0.6	13851/500	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - R1**
26.89	53.9	220	4 690	0.23	6804/253	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - Q1**
23.97	60.5	220	4 440	0.28	2205/92	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - P1**
22.12	65.6	220	4 270	0.34	6615/299	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - N1**
19.37	74.9	220	4 000	0.42	891/46	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - M1**
16.98	85.4	220	3 740	0.45	1953/115	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - L1**
15.41	94.1	220	3 560	0.6	2835/184	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - K1**
14.5	100	220	3 450	0.69	5670/391	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - J1**
12.78	113.5	220	3 220	0.81	294/23	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - H1**
11.09	130.7	220	2 990	1.09	5103/460	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - G1**
10.04	144.4	184	2 890	0.5	231/23	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - F1**
8.81	164.6	183	2 790	0.56	3038/345	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - E1**
7.99	181.5	175	2 810	0.73	735/92	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - D1**
7.52	192.8	171	2 810	0.84	2940/391	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - C1**
6.63	218.7	161	2 820	1	1372/207	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - B1**
5.75	252.2	150	2 810	1.34	1323/230	✓	✓	✓	✓	✓	✓			**2KJ3504 - ■■■■■ - A1**

Transmission ratios and torques

Selection and ordering data (continued)

i_{tot}	n_2	T_{2N}	F_{R2}	J_G	R_{ex}	63	71	80	90	100	112	132	160	Order No.
-	rpm	Nm	N	10^{-4} kgm²	-									
K.49														
200.25	7.2	420	7 820	0.06	12616/63	✓	✓							**2KJ3505 - ■■■■■ - J2**
178.06	8.1	420	7 820	0.07	6232/35	✓	✓	✓	✓					**2KJ3505 - ■■■■■ - H2**
156.34	9.3	420	7 820	0.08	5472/35	✓	✓	✓	✓					**2KJ3505 - ■■■■■ - G2**
142.13	10.2	420	7 820	0.1	10944/77	✓	✓	✓	✓					**2KJ3505 - ■■■■■ - F2**
121.6	11.9	420	7 820	0.12	608/5	✓	✓	✓	✓					**2KJ3505 - ■■■■■ - E2**
110.55	13.1	420	7 820	0.14	1216/11	✓	✓	✓	✓					**2KJ3505 - ■■■■■ - D2**
97.71	14.8	420	7 720	0.17	684/7	✓	✓	✓	✓	✓	✓			**2KJ3505 - ■■■■■ - C2**
88.83	16.3	420	7 370	0.22	6840/77	✓	✓	✓	✓	✓	✓			**2KJ3505 - ■■■■■ - B2**
77.81	18.6	420	6 910	0.25	1634/21	✓	✓	✓	✓	✓	✓			**2KJ3505 - ■■■■■ - A2**
71.82	20.2	420	6 650	0.3	6536/91	✓	✓	✓	✓	✓	✓			**2KJ3505 - ■■■■■ - X1**
63.59	22.8	420	6 250	0.37	3116/49	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - W1**
52.93	27.4	420	5 680	0.5	741/14	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - V1**
49.82	29.1	420	5 510	0.58	5928/119	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - U1**
44.63	32.5	420	5 190	0.65	2812/63	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - T1**
38	38.2	420	4 750	0.85	38/1	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - S1**
32.57	44.5	420	4 350	1.11	228/7			✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - R1**
28.05	51.7	420	3 970	1.43	589/21			✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - Q1**
26.3	55.1	420	3 820	0.52	55040/2093	✓	✓	✓	✓	✓	✓			**2KJ3505 - ■■■■■ - P1**
23.28	62.3	420	3 540	0.65	26240/1127	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - N1**
19.38	74.8	420	3 130	0.9	3120/161	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - M1**
18.24	79.5	420	3 010	1.03	49920/2737	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - L1**
16.34	88.7	420	2 780	1.21	23680/1449	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - K1**
13.91	104.2	420	2 880	1.62	320/23	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - J1**
11.93	121.5	420	3 000	2.2	1920/161			✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - H1**
10.27	141.2	415	3 080	2.9	4960/483			✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - G1**
9.75	148.7	275	2 960	1.03	39/4	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - F1**
9.18	158	270	2 980	1.19	156/17	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - E1**
8.22	176.4	255	3 010	1.4	74/9	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - D1**
7	207.1	240	3 030	1.88	7/1	✓	✓	✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - C1**
6	241.7	225	3 020	2.5	6/1			✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - B1**
5.17	280.5	210	2 990	3	31/6			✓	✓	✓	✓	✓		**2KJ3505 - ■■■■■ - A1**

Selection and ordering data (continued)

i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
K.69														
196.59	7.4	600	10 800	0.17	14744/75	✓	✓	✓	✓					**2KJ3507 - ■■■■■ - H2**
178.72	8.1	600	10 800	0.2	29488/165	✓	✓	✓	✓					**2KJ3507 - ■■■■■ - G2**
152	9.5	600	10 800	0.25	152/1	✓	✓	✓	✓					**2KJ3507 - ■■■■■ - F2**
138.18	10.5	600	10 800	0.3	1520/11	✓	✓	✓	✓					**2KJ3507 - ■■■■■ - E2**
123.29	11.8	600	10 800	0.35	5548/45	✓	✓	✓	✓	✓	✓			**2KJ3507 - ■■■■■ - D2**
110.55	13.1	600	10 800	0.42	1216/11	✓	✓	✓	✓	✓	✓			**2KJ3507 - ■■■■■ - C2**
99.64	14.6	600	10 800	0.49	4484/45	✓	✓	✓	✓	✓	✓			**2KJ3507 - ■■■■■ - B2**
91.98	15.8	600	10 600	0.58	17936/195	✓	✓	✓	✓	✓	✓			**2KJ3507 - ■■■■■ - A2**
83.96	17.3	600	10 100	0.69	8816/105	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - X1**
69.67	20.8	600	9 300	0.87	209/3	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - W1**
65.57	22.1	600	9 030	1.01	3344/51	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - V1**
61.93	23.4	600	8 780	1.15	1672/27	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - U1**
52.69	27.5	600	8 100	1.4	3952/75	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - T1**
45.14	32.1	600	7 470	1.7	7448/165			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - S1**
39.69	36.5	600	6 980	2.1	1786/45			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - R1**
33.48	43.3	580	6 500	2.6	11552/345			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - Q1**
29.18	49.7	555	6 200	3.5	3648/125			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - P1**
26.05	55.7	600	5 510	1.25	3751/144	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - N1**
24.52	59.1	595	5 350	1.44	3751/153	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - M1**
23.15	62.6	585	5 240	1.63	3751/162	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - L1**
19.7	73.6	555	4 960	2.1	4433/225	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - K1**
16.88	85.9	530	4 690	2.6	1519/90			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - J1**
14.84	97.7	515	4 440	3.3	16027/1080			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - H1**
12.52	115.8	490	4 170	4.3	12958/1035			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - G1**
10.91	132.9	470	3 970	5.7	1364/125			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - F1**
9.34	155.2	370	3 640	2.4	3224/345	✓	✓	✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - E1**
8.01	181	365	3 330	3.1	6076/759			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - D1**
7.04	206	365	3 210	3.8	1457/207			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - C1**
5.94	244.1	345	3 350	5.1	9424/1587			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - B1**
5.18	279.9	330	3 420	6.8	2976/575			✓	✓	✓	✓	✓		**2KJ3507 - ■■■■■ - A1**

Transmission ratios and torques

Selection and ordering data (continued)

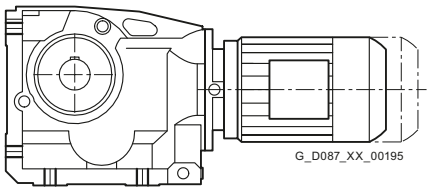
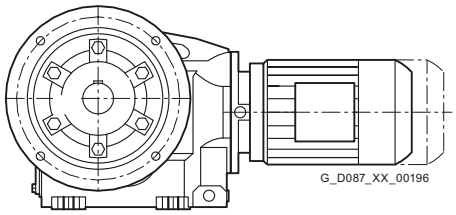
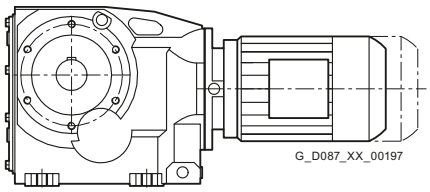
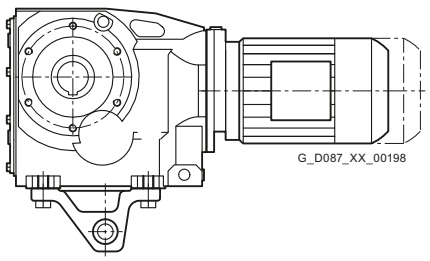
i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
K.79														
244.25	5.9	820	12 400	0.17	175861/720	✓	✓	✓	✓					**2KJ3508 - ■■■■■ - J2**
222.05	6.5	820	12 400	0.2	175861/792	✓	✓	✓	✓					**2KJ3508 - ■■■■■ - H2**
188.85	7.7	820	12 400	0.25	9065/48	✓	✓	✓	✓					**2KJ3508 - ■■■■■ - G2**
171.69	8.4	820	12 400	0.31	45325/264	✓	✓	✓	✓					**2KJ3508 - ■■■■■ - F2**
153.18	9.5	820	12 400	0.35	132349/864	✓	✓	✓	✓	✓	✓			**2KJ3508 - ■■■■■ - E2**
137.35	10.6	820	12 400	0.42	9065/66	✓	✓	✓	✓	✓	✓			**2KJ3508 - ■■■■■ - D2**
123.8	11.7	820	12 400	0.5	106967/864	✓	✓	✓	✓	✓	✓			**2KJ3508 - ■■■■■ - C2**
114.28	12.7	820	12 400	0.59	106967/936	✓	✓	✓	✓	✓	✓			**2KJ3508 - ■■■■■ - B2**
104.32	13.9	820	12 400	0.7	7511/72	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - A2**
86.56	16.8	820	12 400	0.89	99715/1152	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - X1**
81.47	17.8	820	12 400	1.02	99715/1224	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - W1**
76.94	18.8	820	12 400	1.16	99715/1296	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - V1**
65.47	22.1	820	12 400	1.42	23569/360	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - U1**
56.08	25.9	820	12 400	1.73	88837/1584			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - T1**
49.31	29.4	820	12 400	2.1	85211/1728			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - S1**
41.6	34.9	800	12 400	2.7	34447/828			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - R1**
36.26	40	770	12 400	3.6	1813/50			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - Q1**
32.78	44.2	820	12 400	0.94	6293/192	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - P1**
27.2	53.3	800	12 400	1.23	83545/3072	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - N1**
25.6	56.6	785	12 400	1.41	83545/3264	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - M1**
24.17	60	770	12 400	1.6	83545/3456	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - L1**
20.57	70.5	740	12 400	2	19747/960	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - K1**
17.62	82.3	715	12 400	2.6	74431/4224			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - J1**
15.49	93.6	695	12 400	3.2	71393/4608			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - H1**
13.07	110.9	665	12 400	4.2	28861/2208			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - G1**
11.39	127.3	645	12 000	5.5	4557/400			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - F1**
10.51	138	445	12 400	2.3	1209/115	✓	✓	✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - E1**
9.01	160.9	450	11 900	3	4557/506			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - D1**
7.92	183.1	450	11 300	3.7	1457/184			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - C1**
6.68	217.1	455	10 900	4.9	3534/529			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - B1**
5.82	249.1	430	10 700	6.6	3348/575			✓	✓	✓	✓	✓		**2KJ3508 - ■■■■■ - A1**

Selection and ordering data (continued)

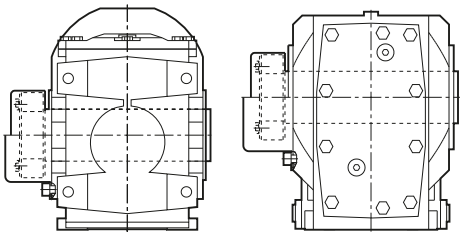
i_{tot} -	n_2 rpm	T_{2N} Nm	F_{R2} N	J_G 10^{-4} kgm²	R_{ex} -	63	71	80	90	100	112	132	160	Order No.
K.89														
231.8	6.3	1 600	15 400	0.42	10199/44		✓	✓	✓					**2KJ3510 - ■■■■■ - K2**
210.72	6.9	1 600	15 400	0.51	50995/242		✓	✓	✓					**2KJ3510 - ■■■■■ - J2**
189.01	7.7	1 600	15 400	0.71	149695/792		✓	✓	✓	✓	✓			**2KJ3510 - ■■■■■ - H2**
169.94	8.5	1 600	15 400	0.8	41125/242		✓	✓	✓	✓	✓			**2KJ3510 - ■■■■■ - G2**
153.7	9.4	1 600	15 400	0.88	60865/396		✓	✓	✓	✓	✓			**2KJ3510 - ■■■■■ - F2**
141.88	10.2	1 600	15 400	1.05	60865/429		✓	✓	✓	✓	✓			**2KJ3510 - ■■■■■ - E2**
129.96	11.2	1 600	15 400	1.37	17155/132		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - D2**
109.04	13.3	1 600	15 400	1.45	57575/528		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - C2**
102.63	14.1	1 600	15 400	1.66	57575/561		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - B2**
94.16	15.4	1 600	15 400	1.81	27965/297		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - A2**
82.25	17.6	1 600	15 400	2.6	329/4		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - X1**
73.64	19.7	1 600	15 400	3.2	106925/1452			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - W1**
64.39	22.5	1 600	15 400	3.7	50995/792			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - V1**
55.27	26.2	1 600	15 400	4.1	27965/506			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - U1**
48.85	29.7	1 600	15 400	5.2	16121/330			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - T1**
41.54	34.9	1 570	15 400	6.6	8225/198					✓	✓	✓	✓	**2KJ3510 - ■■■■■ - S1**
39.29	36.9	1 600	15 400	1.86	11315/288		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - R1**
32.96	44	1 600	15 400	2.1	37975/1152		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - Q1**
31.03	46.7	1 600	15 400	2.4	37975/1224		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - P1**
28.46	50.9	1 600	15 400	2.7	18445/648		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - N1**
24.86	58.3	1 600	15 400	3.8	2387/96		✓	✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - M1**
22.26	65.1	1 600	15 400	4.7	70525/3168			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - L1**
19.46	74.5	1 560	15 400	5.7	33635/1728					✓	✓	✓	✓	**2KJ3510 - ■■■■■ - K1**
16.71	86.8	1 480	15 400	6.8	18445/1104			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - J1**
14.77	98.2	1 420	15 400	8.6	10633/720			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - H1**
12.56	115.4	1 330	15 400	11	5425/432					✓	✓	✓	✓	**2KJ3510 - ■■■■■ - G1**
10.76	134.8	1 250	15 400	15	775/72					✓	✓	✓	✓	**2KJ3510 - ■■■■■ - F1**
10.51	138	845	15 400	6.4	6727/640			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - E1**
9.02	160.8	800	15 400	7.7	33201/3680			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - D1**
7.97	181.9	770	14 800	9.8	31899/4000			✓	✓	✓	✓	✓	✓	**2KJ3510 - ■■■■■ - C1**
6.78	213.9	720	14 500	13	217/32					✓	✓	✓	✓	**2KJ3510 - ■■■■■ - B1**
5.81	249.6	675	14 200	17	93/16					✓	✓	✓	✓	**2KJ3510 - ■■■■■ - A1**

Dimensions

Dimension drawing overview

Representation	Gearbox type	Dimension drawing on page
 G_D087_XX_00195	B..29	5/42
	B..39	5/46
	B..49	5/50
	K..39	5/54
	K..49	5/58
	K..69	5/62
	K..79	5/66
	K..89	5/70
 G_D087_XX_00196	B.F.29	5/43
	B.F.39	5/47
	B.F.49	5/51
	K.F.39	5/55
	K.F.49	5/59
	K.F.69	5/63
	K.F.79	5/67
	K.F.89	5/71
 G_D087_XX_00197	B.Z.29	5/44
	B.Z.39	5/48
	B.Z.49	5/52
	K.Z.39	5/56
	K.Z.49	5/60
	K.Z.69	5/64
	K.Z.79	5/68
	K.Z.89	5/72
 G_D087_XX_00198	BAD.29	5/45
	BAD.39	5/49
	BAD.49	5/53
	KAD.39	5/57
	KAD.49	5/61
	KAD.69	5/65
	KAD.79	5/69
	KAD.89	5/73

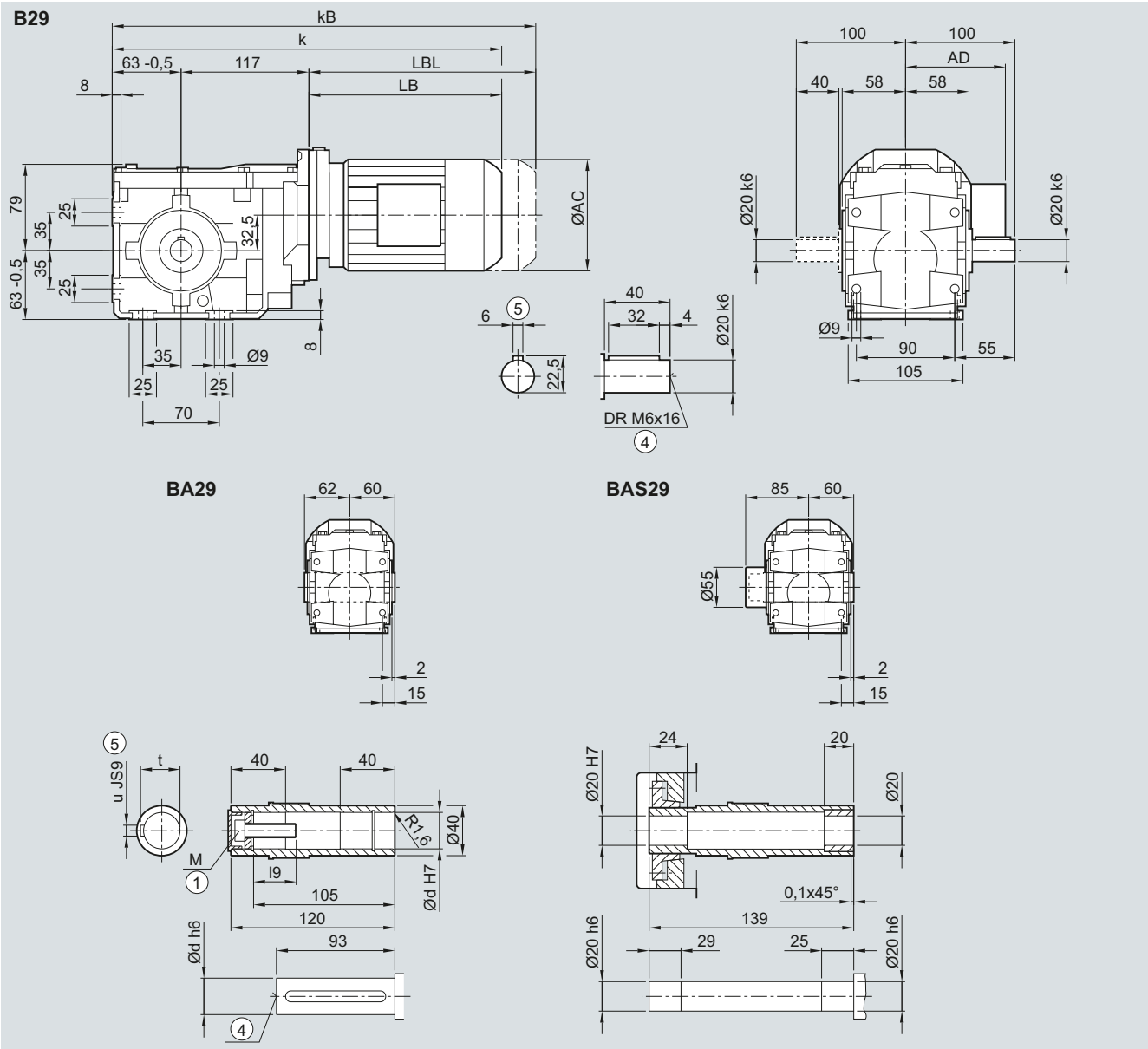
Dimension drawing overview (continued)

Representation	Gearbox type	Dimension drawing on page
	Protection cover for hollow shaft	5/74
	Inner contour of the flange design	5/75

Dimensions

B..29 gearbox in a foot-mounted design

B030, BA030, BAS030



Dimensions	d	l9	M	t	u
	20	23.4	M6	22.8	6
	25	27.6	M10	28.3	8

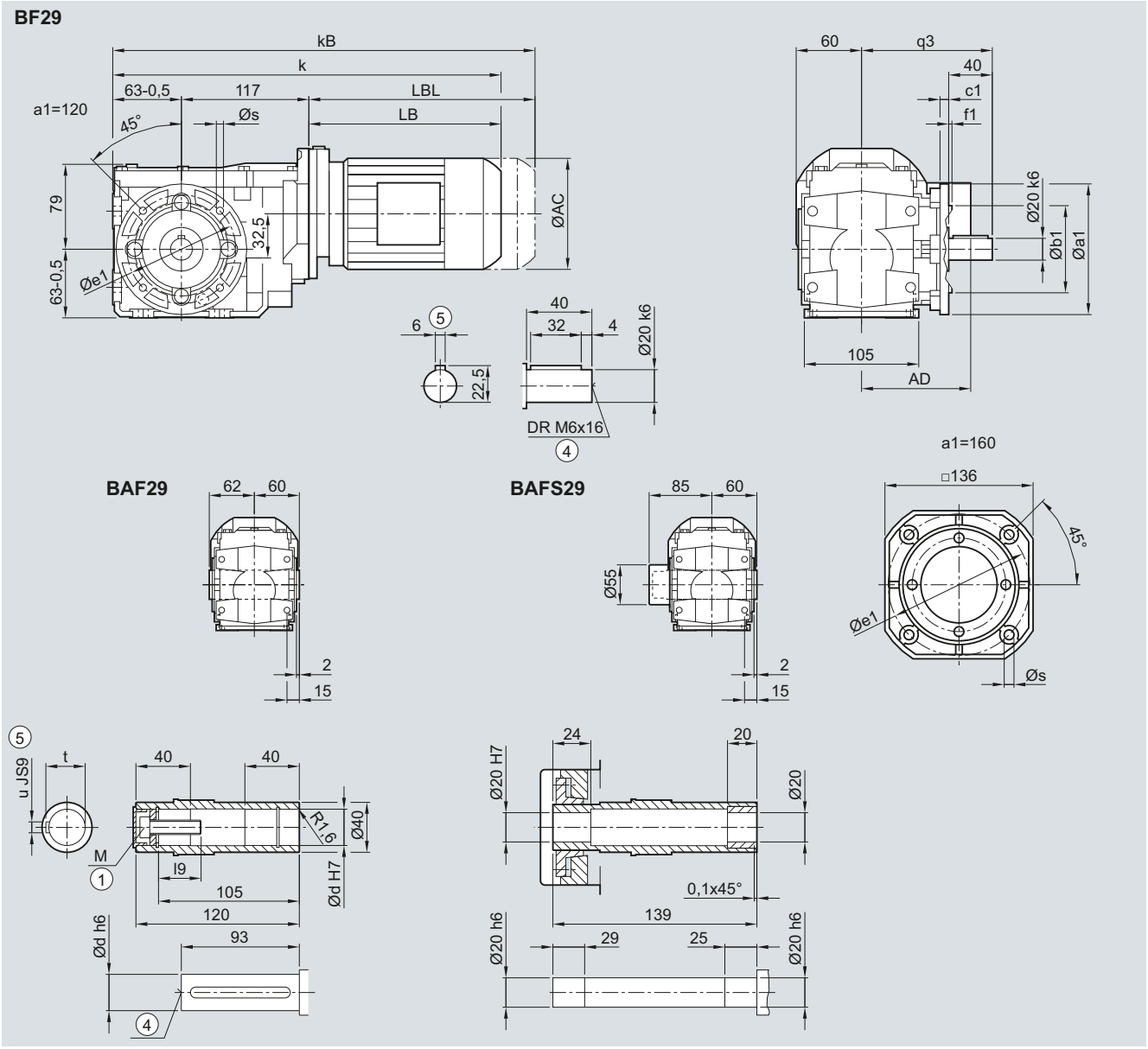
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	374.0	406.0	469.5	531.5	588.0
kB	418.5	461.0	529.5	601.5	666.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

B.F.29 gearbox in a flange-mounted design

BF030, BAF030, BAFS030



Dimensions	a1	b1	c1	f1	e1	s
	120	80	8	3	100	6.6
	160	110	9	3.5	130	9

Dimensions	d	l9	M	t	u
	20	23.4	M6	22.8	6
	25	27.6	M10	28.3	8

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	374.0	406.0	469.5	531.5	588.0
kB	418.5	461.0	529.5	601.5	666.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

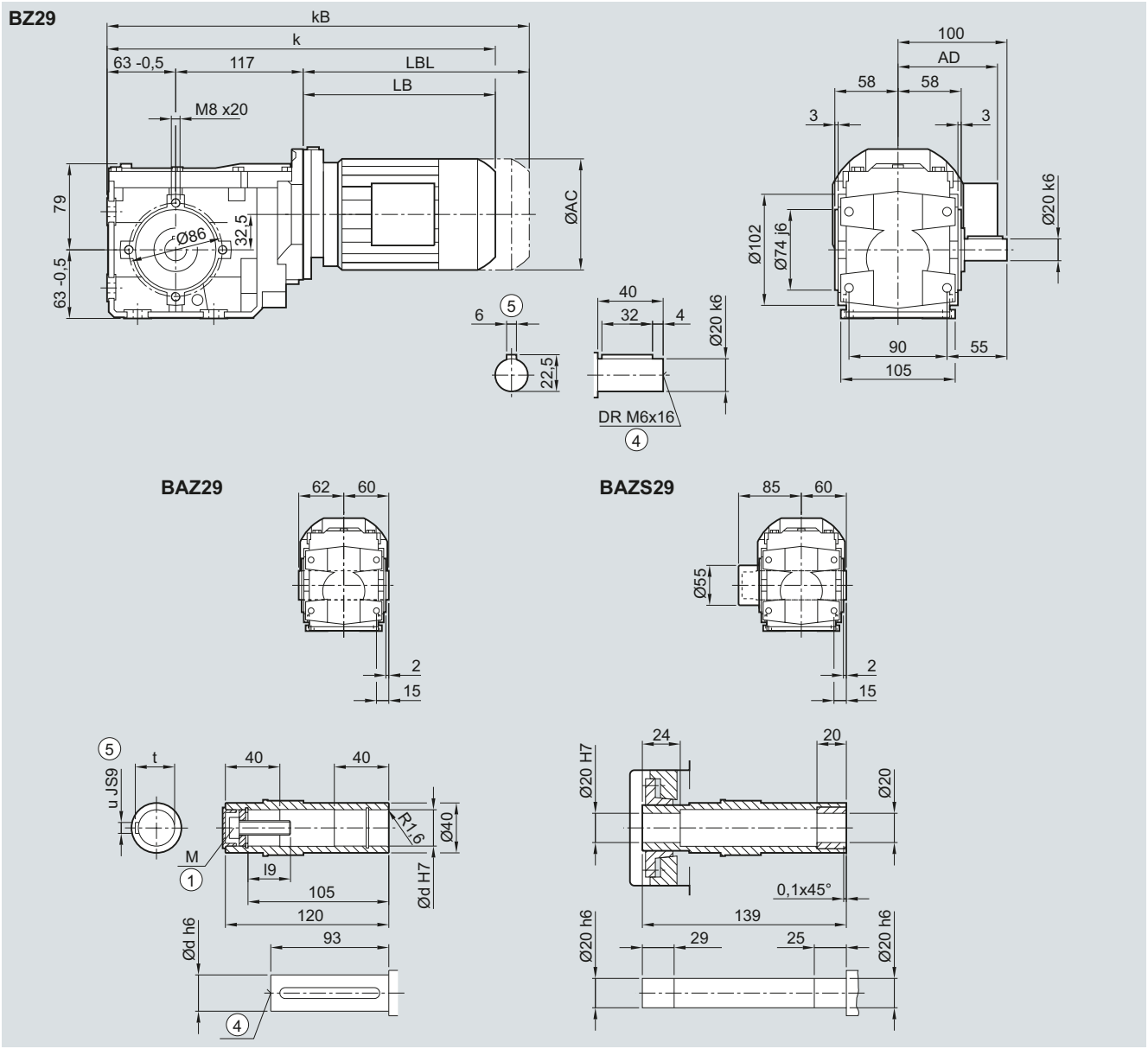
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

B.Z.29 gearbox in a housing flange design

BZ030, BAZ030, BAZS030



Dimensions	d	l9	M	t	u
	20	23.4	M6	22.8	6
	25	27.6	M10	28.3	8

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	374.0	406.0	469.5	531.5	588.0
kB	418.5	461.0	529.5	601.5	666.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

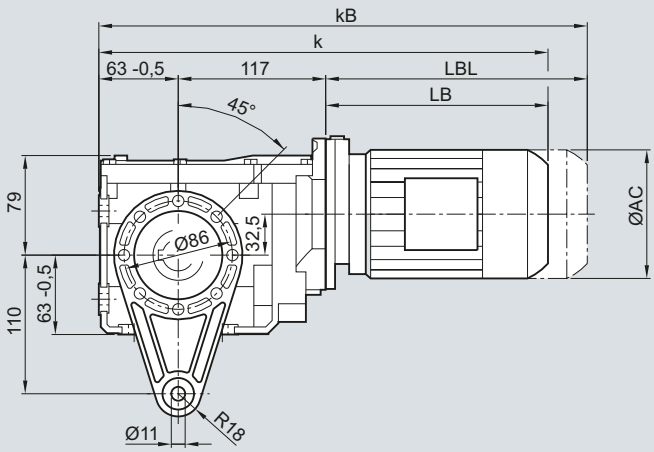
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

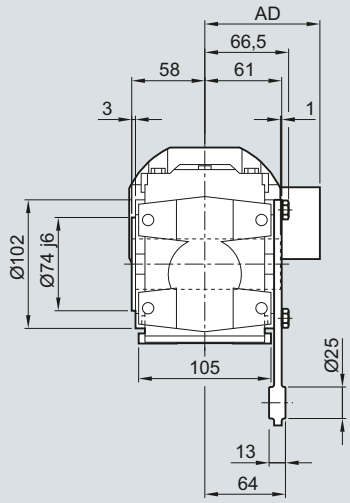
() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

BAD.29 gearbox in a shaft-mounted design

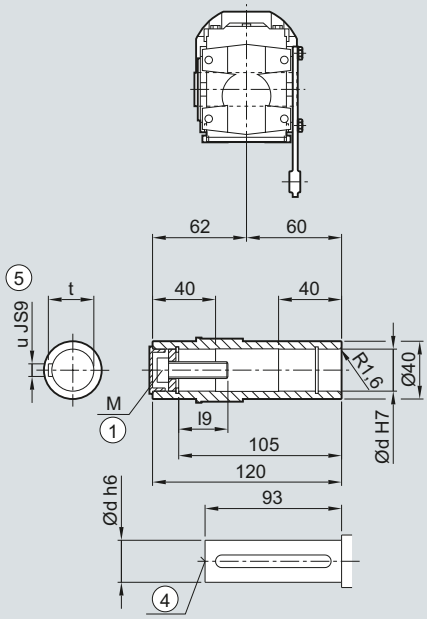
BAD030, BADS030

BAD29

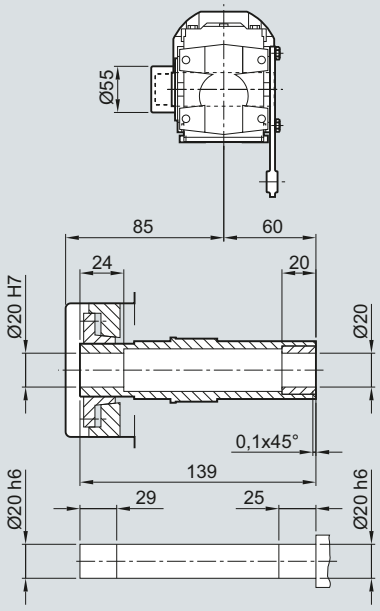




BAD29



BADS29



Dimensions	d	l9	M	t	u
	20	23.4	M6	22.8	6
	25	27.6	M10	28.3	8

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L
AC	117.8	138.8	156.3	173.8	198.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5
k	374.0	406.0	469.5	531.5	588.0
kB	418.5	461.0	529.5	601.5	666.5
LB	194.0	226.0	289.5	351.5	408.0
LBL	238.5	281.0	349.5	421.5	486.5

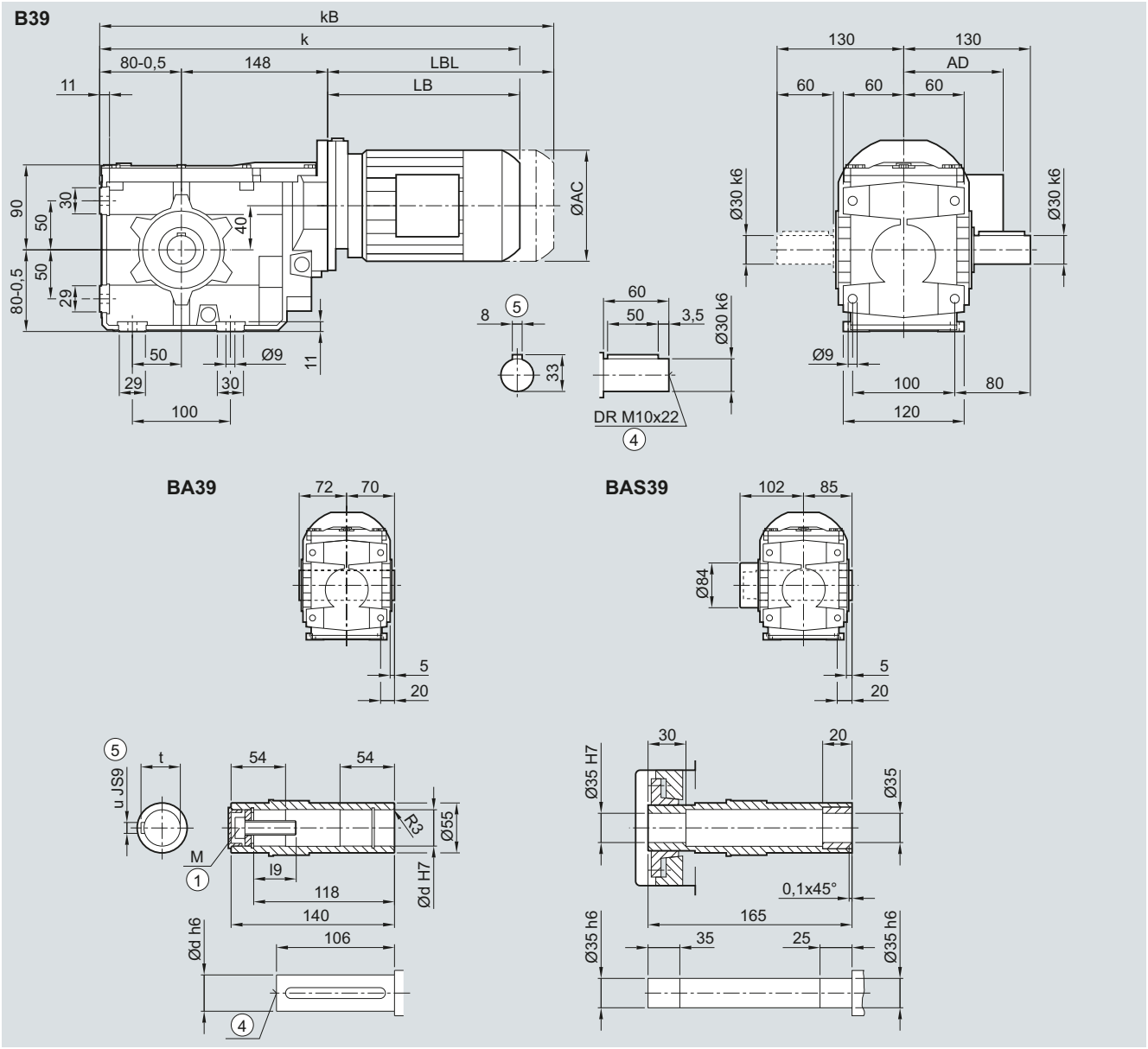
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

B..39 gearbox in a foot-mounted design

B030, BA030, BAS030



Dimensions	d	l9	M	t	u
	30	30.6	M10	33.3	8
	35	40	M12	38.3	10
	40	47.75	M16	43.3	12

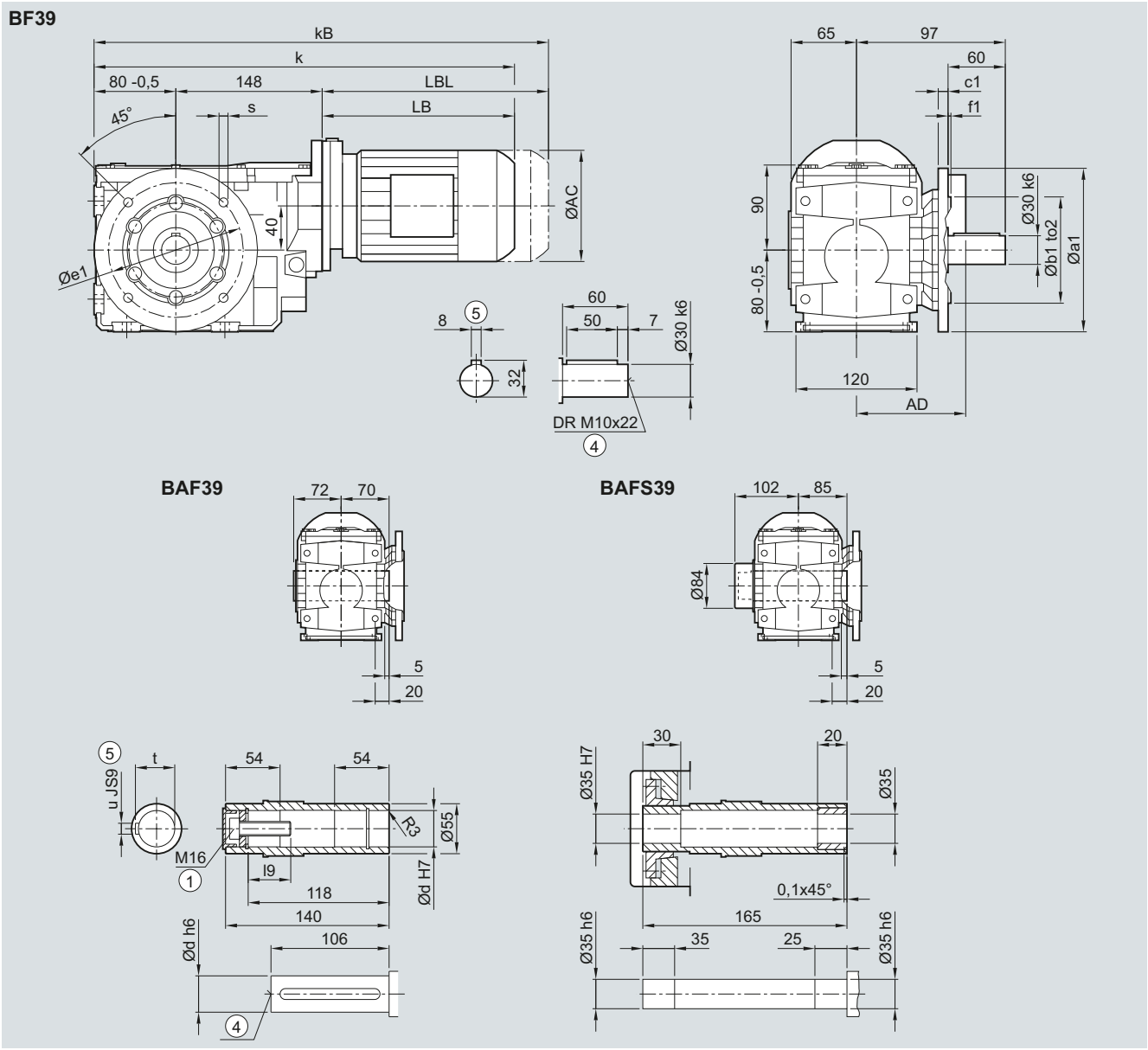
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	422.0	454.0	517.5	579.5	636.0	646.0
kB	466.5	509.0	577.5	649.5	714.5	719.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

B.F.39 gearbox in a flange-mounted design

BF030, BAF030, BAFS030



Dimensions	a1	b1	c1	f1	e1	s
	160	110	10	3.5	130	11
	200	130	12	3.5	165	11

Dimensions	d	l9	M	t	u
	30	30.6	M10	33.3	8
	35	40	M12	38.3	10
	40	47.75	M16	43.3	12

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	422.0	454.0	517.5	579.5	636.0	646.0
kB	466.5	509.0	577.5	649.5	714.5	719.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

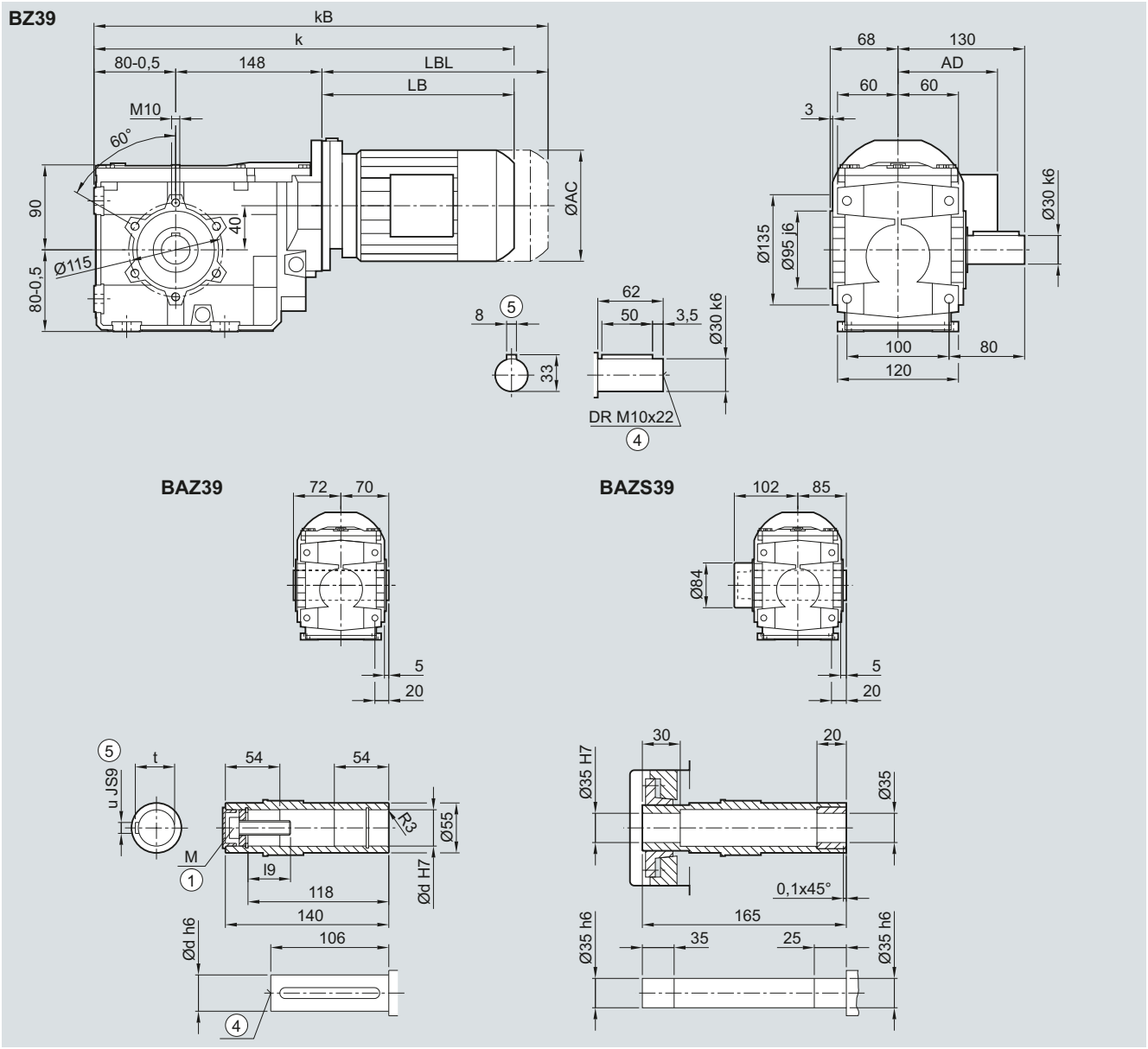
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

B.Z.39 gearbox in a housing flange design

BZ030, BAZ030, BAZS030



Dimensions	d	l9	M	t	u
	30	30.6	M10	33.3	8
	35	40	M12	38.3	10
	40	47.75	M16	43.3	12

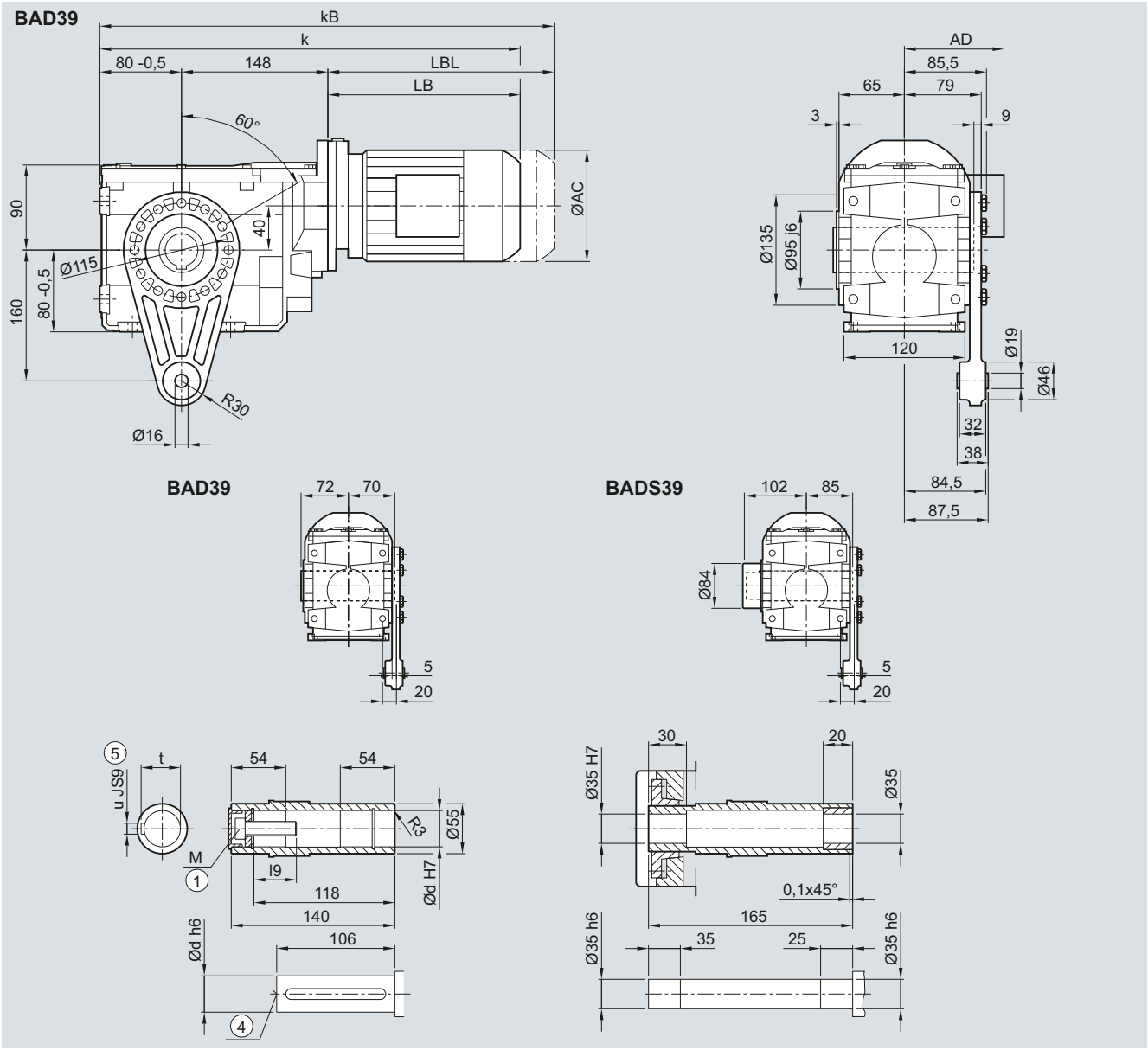
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	422.0	454.0	517.5	579.5	636.0	646.0
kB	466.5	509.0	577.5	649.5	714.5	719.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

BAD.39 gearbox in a shaft-mounted design

BAD030, BADS030



Dimensions	d	l9	M	t	u
	30	30.6	M10	33.3	8
	35	40	M12	38.3	10
	40	47.75	M16	43.3	12

Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	422.0	454.0	517.5	579.5	636.0	646.0
kB	466.5	509.0	577.5	649.5	714.5	719.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

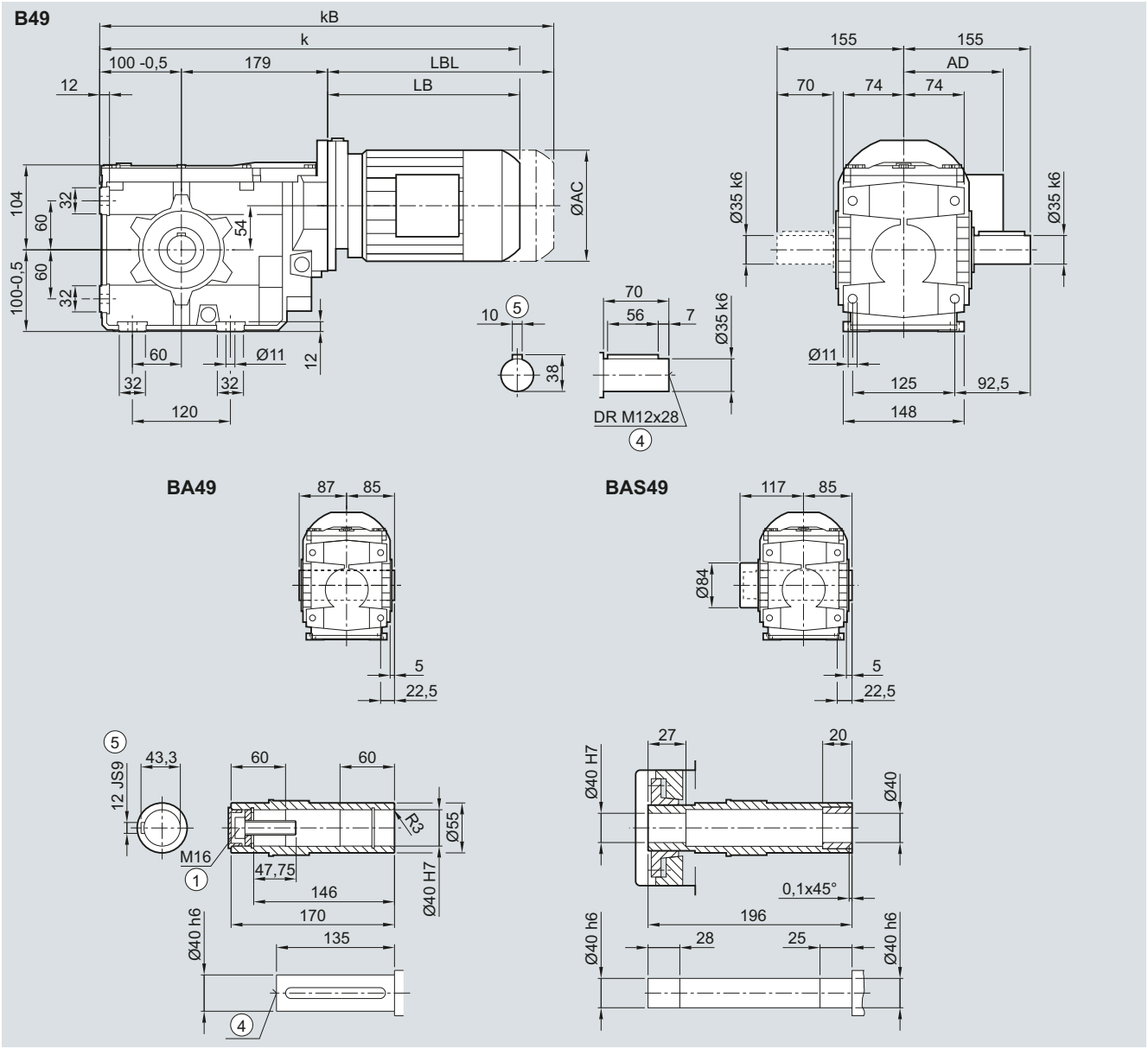
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

B..49 gearbox in a foot-mounted design

B030, BA030, BAS030



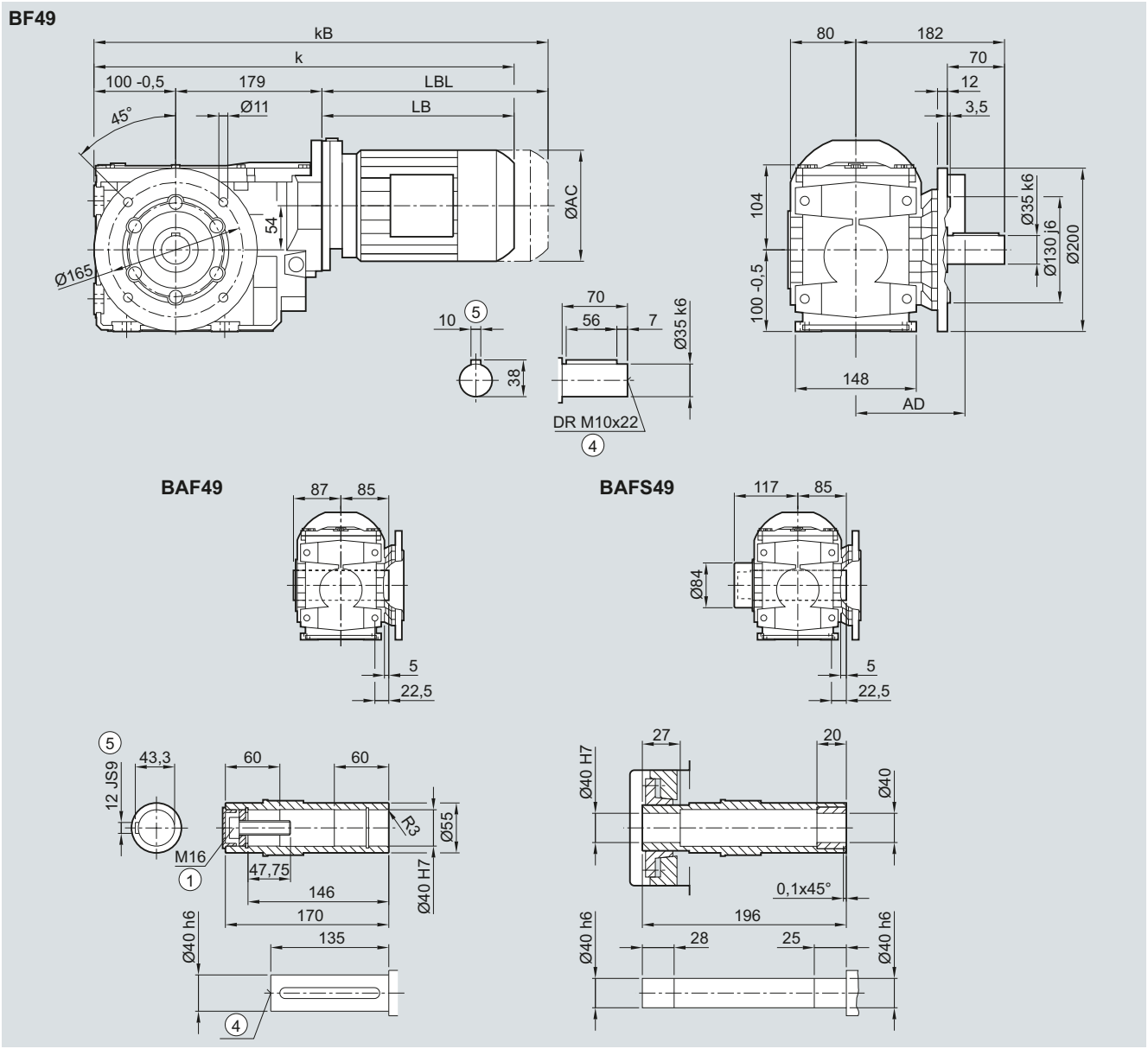
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	463.5	495.5	559.0	621.0	677.5	687.5	740.5	790.5
kB	508.0	550.5	619.0	691.0	756.0	760.5	845.0	895.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

B.F.49 gearbox in a flange-mounted design

BF030, BAF030, BAFS030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	463.5	495.5	559.0	621.0	677.5	687.5	740.5	790.5
kB	508.0	550.5	619.0	691.0	756.0	760.5	845.0	895.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

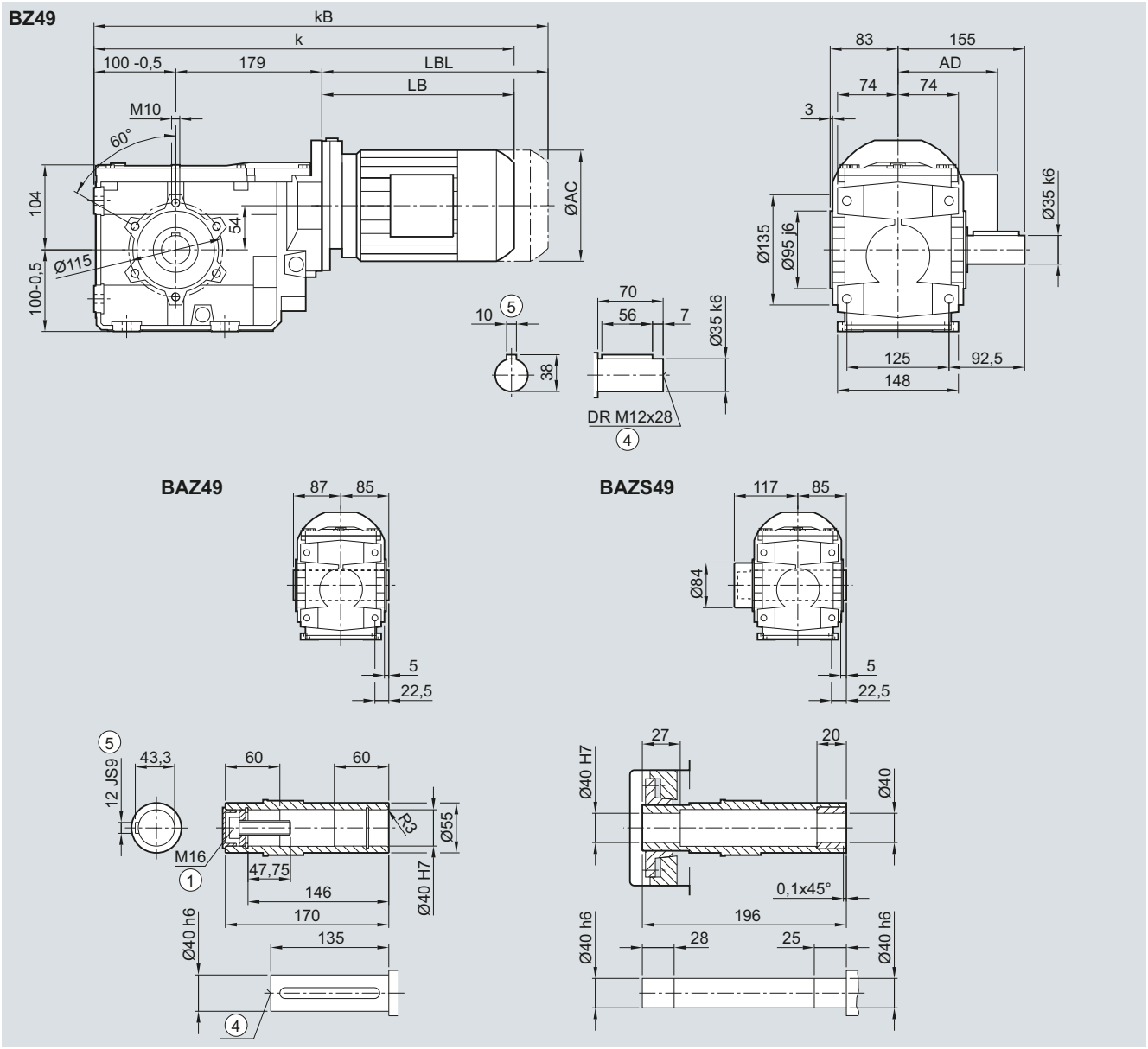
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

B.Z.49 gearbox in a housing flange design

BZ030, BAZ030, BAZS030



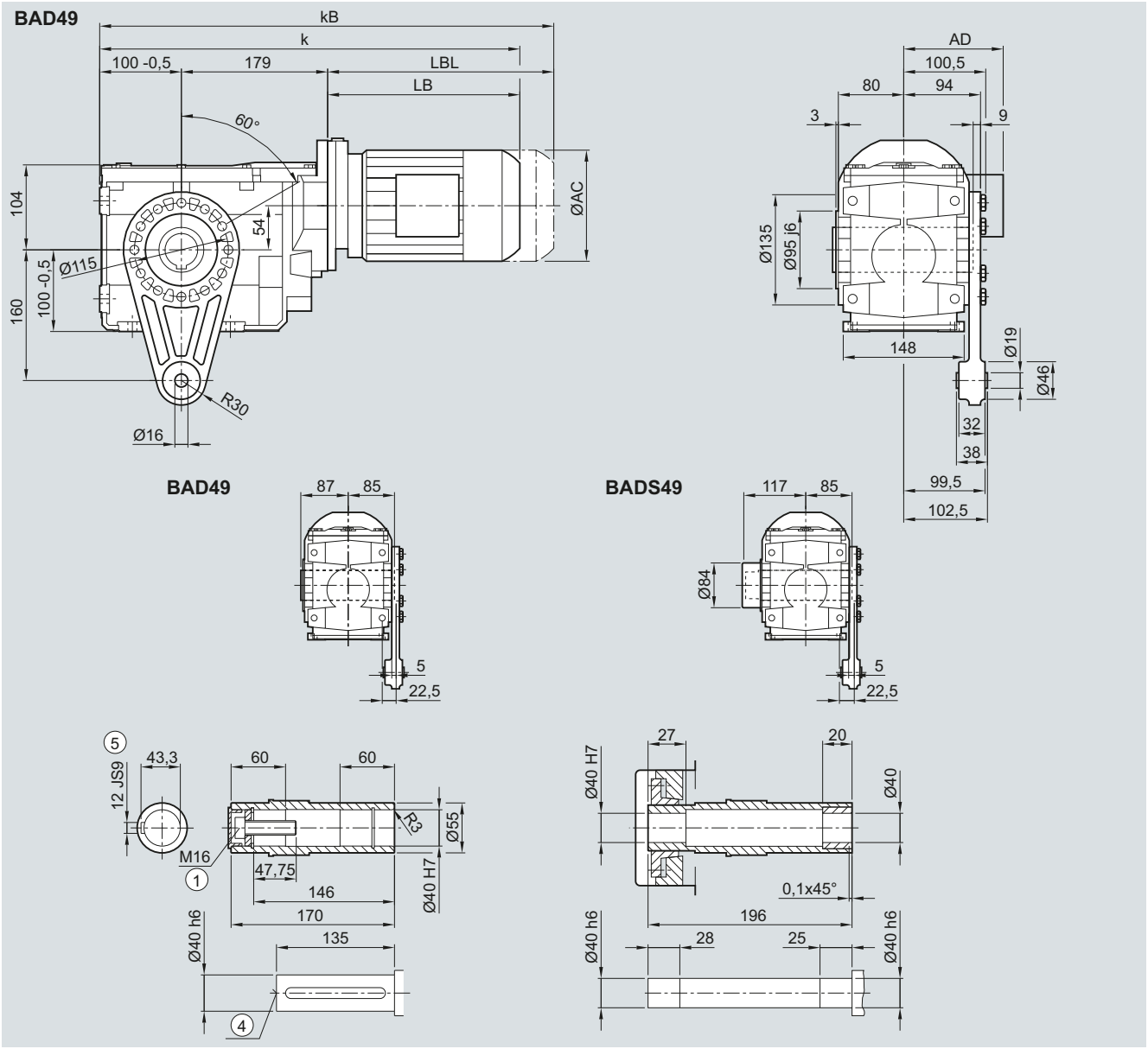
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	463.5	495.5	559.0	621.0	677.5	687.5	740.5	790.5
kB	508.0	550.5	619.0	691.0	756.0	760.5	845.0	895.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

BAD.49 gearbox in a shaft-mounted design

BAD030, BADS030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	463.5	495.5	559.0	621.0	677.5	687.5	740.5	790.5
kB	508.0	550.5	619.0	691.0	756.0	760.5	845.0	895.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

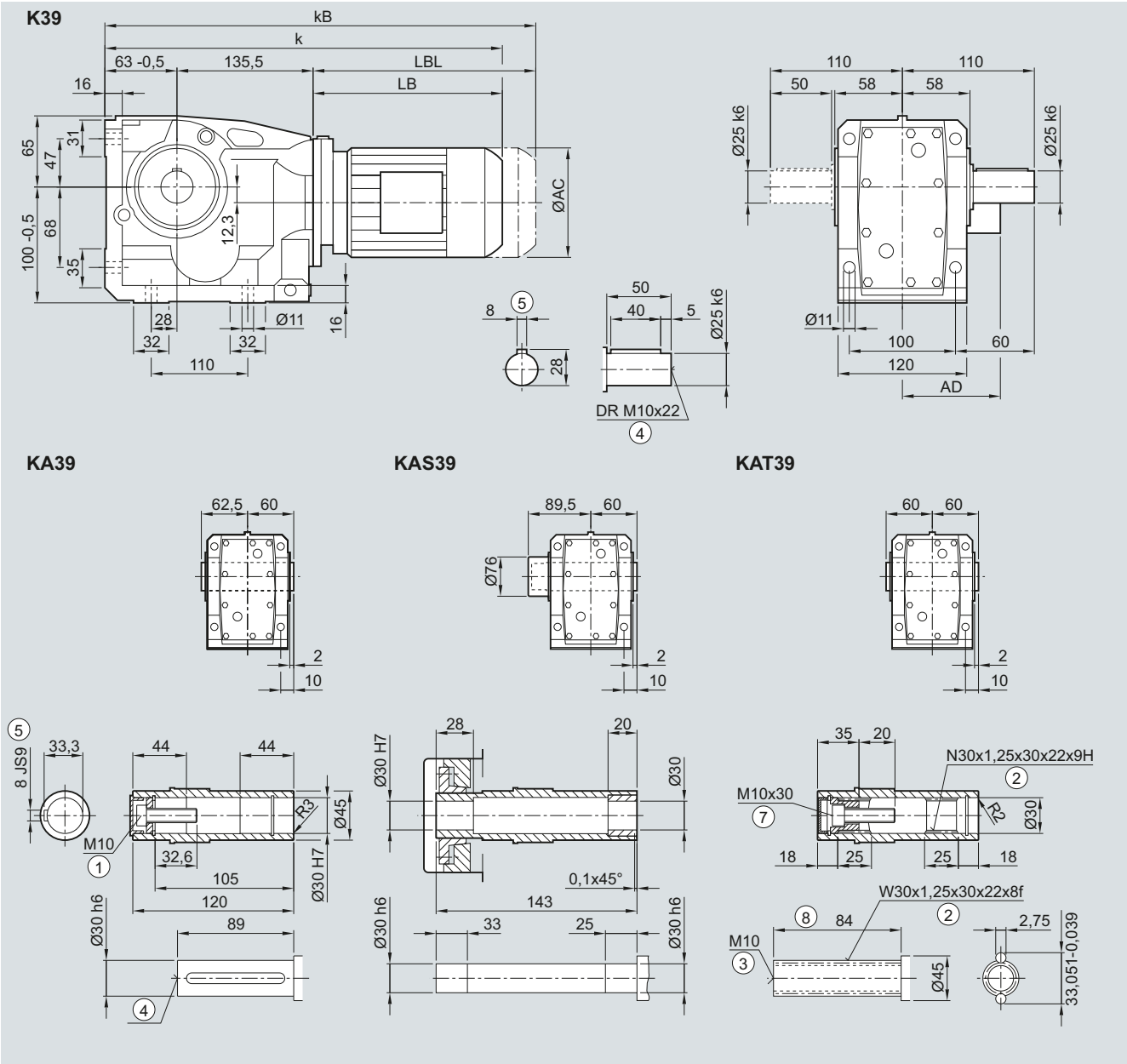
① ISO 4014 ④ DIN 332 ⑤ Feather key/keyway DIN 6885

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K..39 gearbox in a foot-mounted design

K030, KA030, KAS030, KAT030



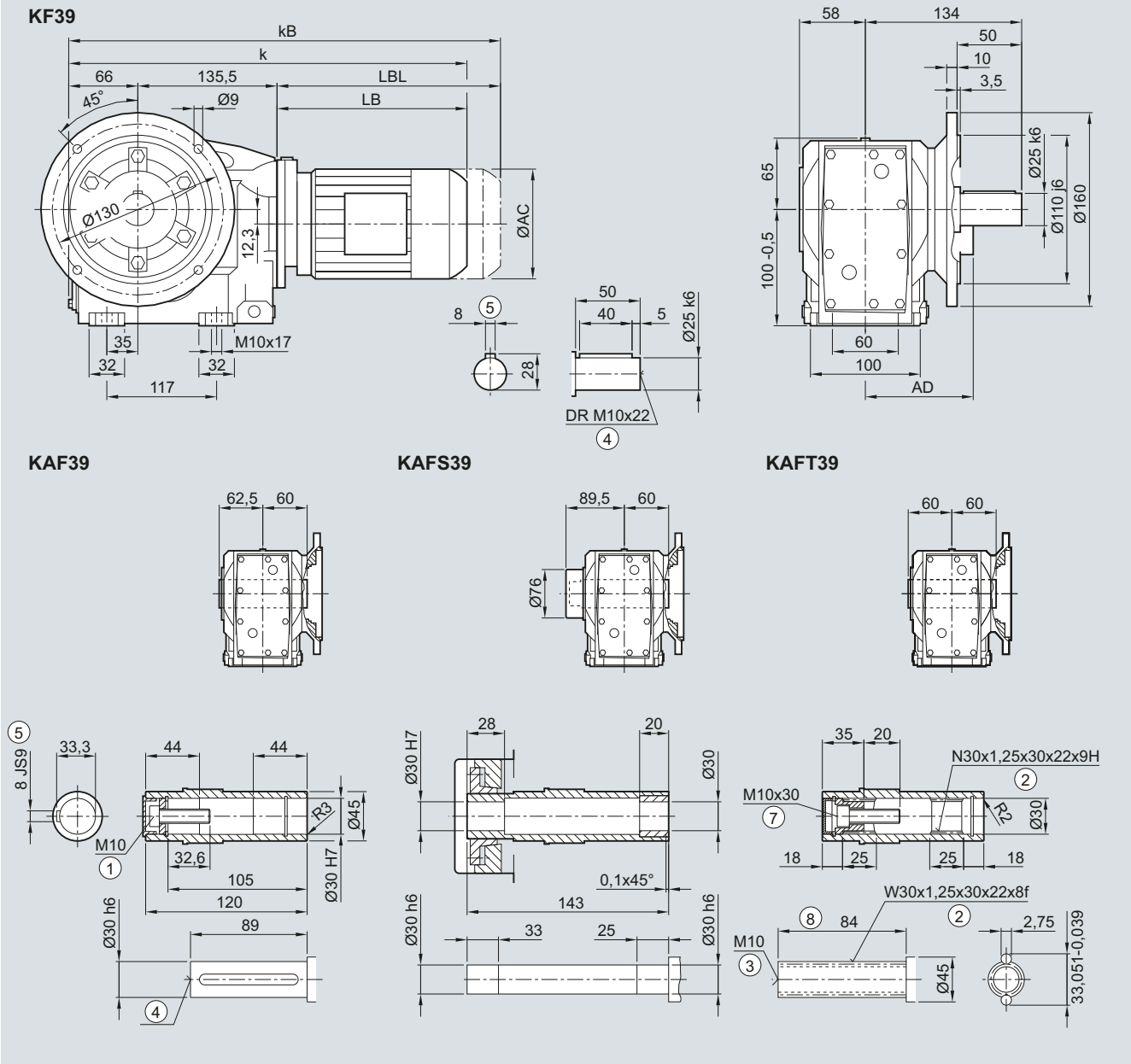
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	392.0	424.0	487.5	549.5	606.0	616.0
kB	436.5	479.0	547.5	619.5	684.5	689.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

K.F.39 gearbox in a flange-mounted design

KF030, KAF030, KAFS030, KAFT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	395.0	427.0	490.5	552.5	609.0	619.0
kB	439.5	482.0	550.5	622.5	687.5	692.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

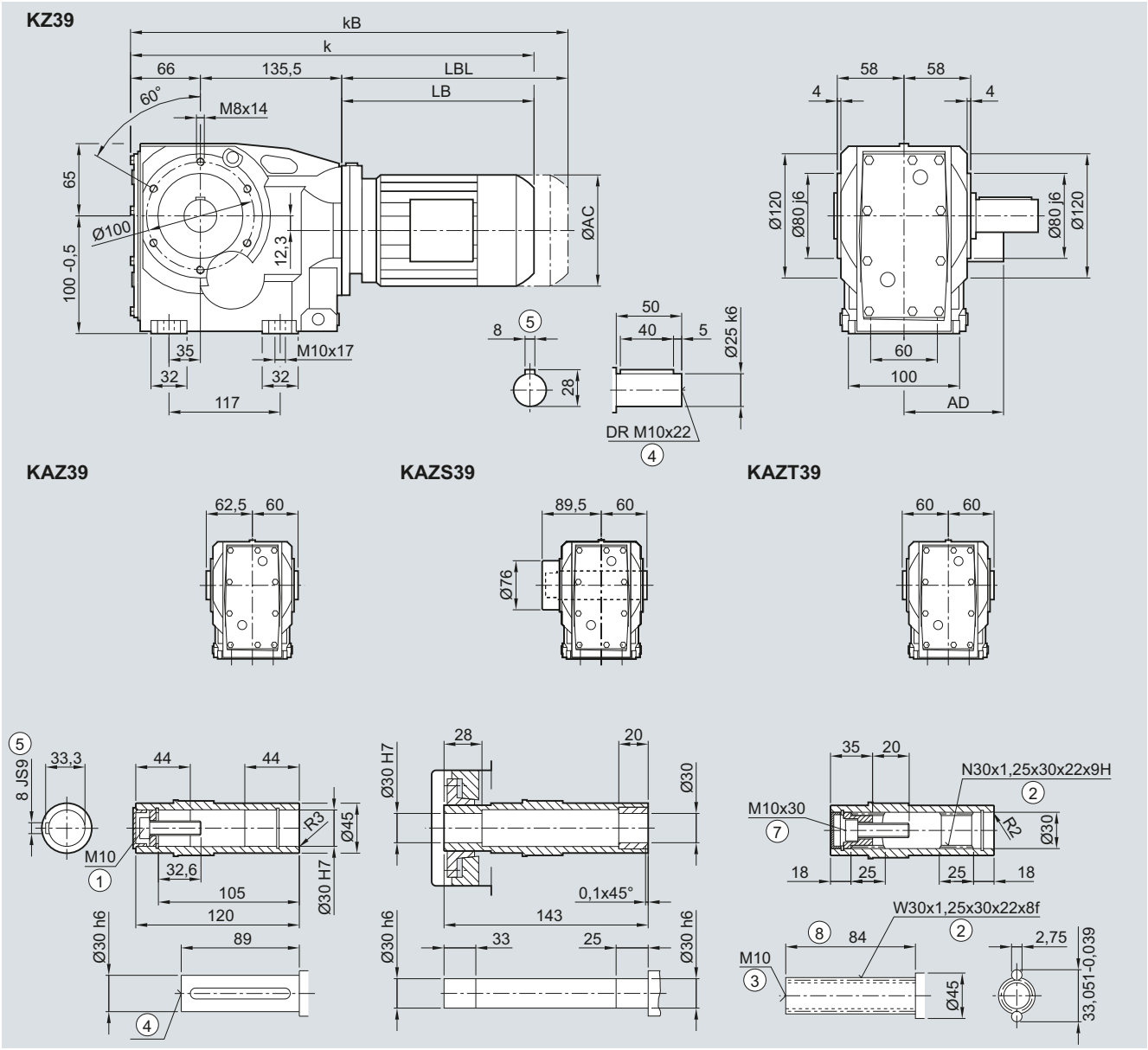
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K.Z.39 gearbox in a housing flange design

KZ030, KAZ030, KAZS030, KAZT030



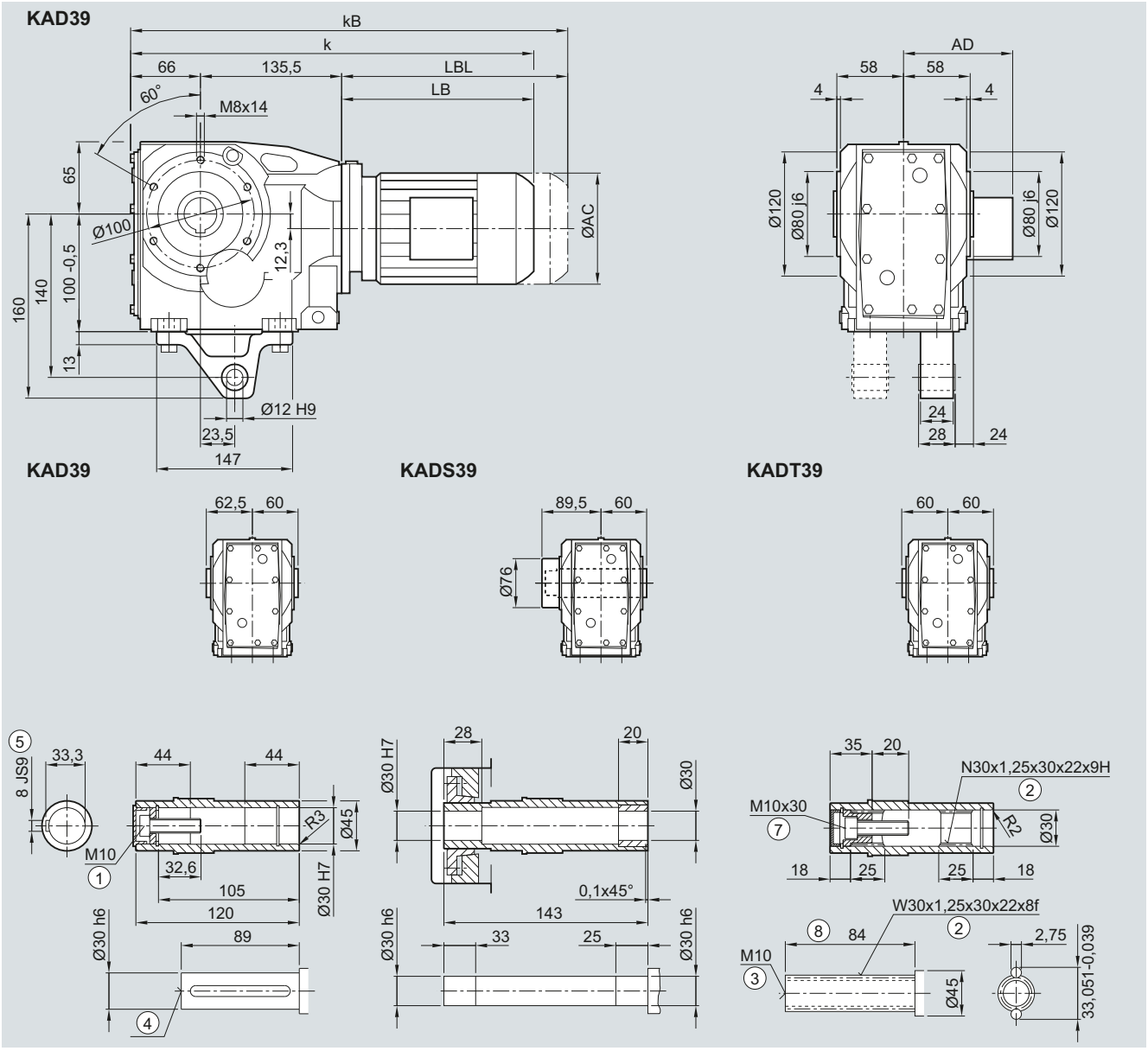
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	395.0	427.0	490.5	552.5	609.0	619.0
kB	439.5	482.0	550.5	622.5	687.5	692.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

KAD.39 gearbox in a shaft-mounted design

KAD030, KADS030, KADT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M
AC	117.8	138.8	156.3	173.8	198.0	222.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5
k	395.0	427.0	490.5	552.5	609.0	619.0
kB	439.5	482.0	550.5	622.5	687.5	692.0
LB	194.0	226.0	289.5	351.5	408.0	418.0
LBL	238.5	281.0	349.5	421.5	486.5	491.0

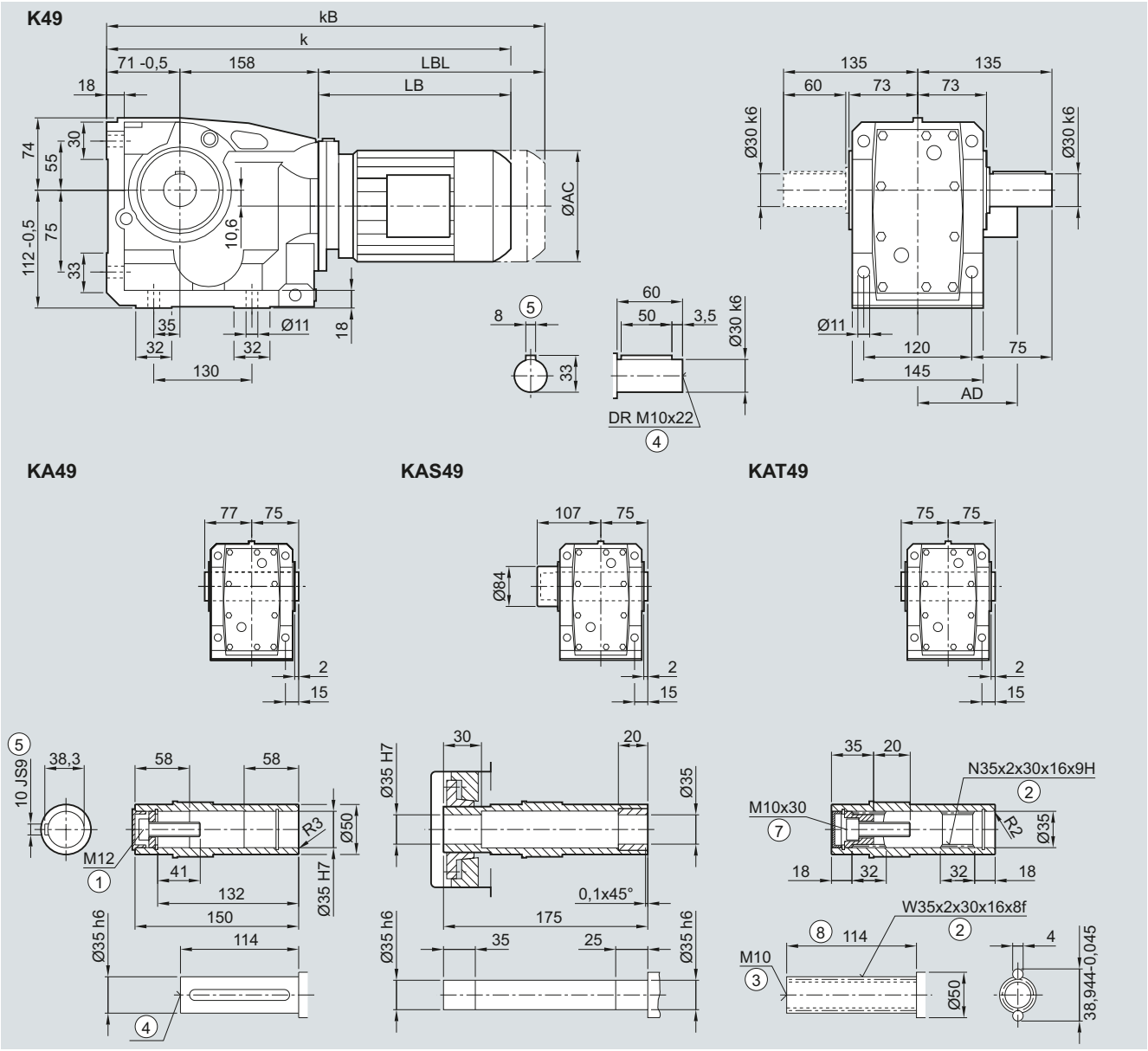
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K..49 gearbox in a foot-mounted design

K030, KA030, KAS030, KAT030



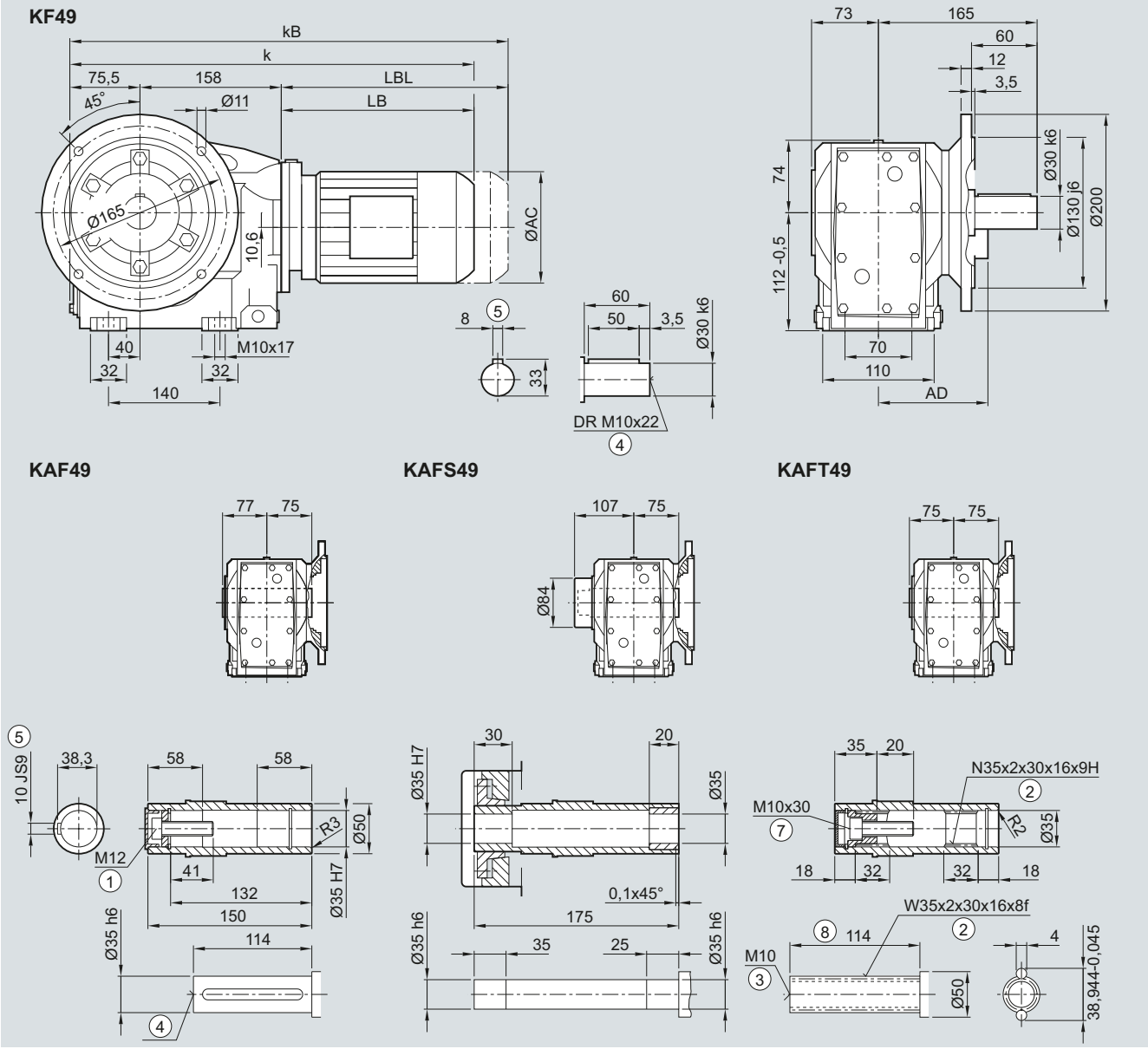
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	413.5	445.5	509.0	571.0	627.0	637.5	690.5	740.5
kB	458	500.5	569.0	641.0	706.0	710.0	795.0	845.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

K.F.49 gearbox in a flange-mounted design

KF030, KAF030, KAFS030, KAFT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	418.0	450.0	513.5	575.5	632.0	642.0	695.0	745.0
kB	462.5	505.0	573.5	645.5	710.5	715.0	799.5	849.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

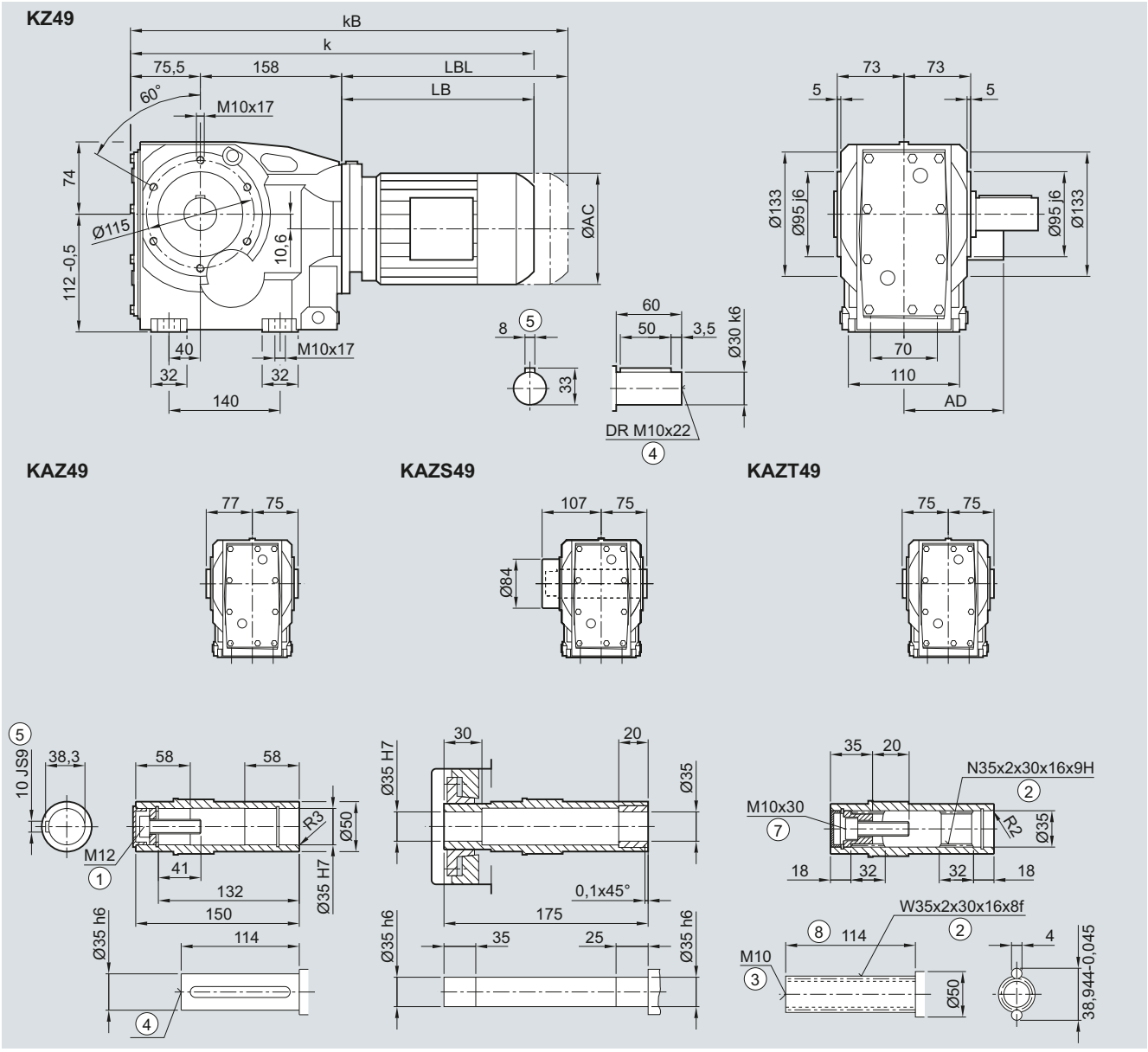
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K.Z.49 gearbox in a housing flange design

KZ030, KAZ030, KAZS030, KAZT030



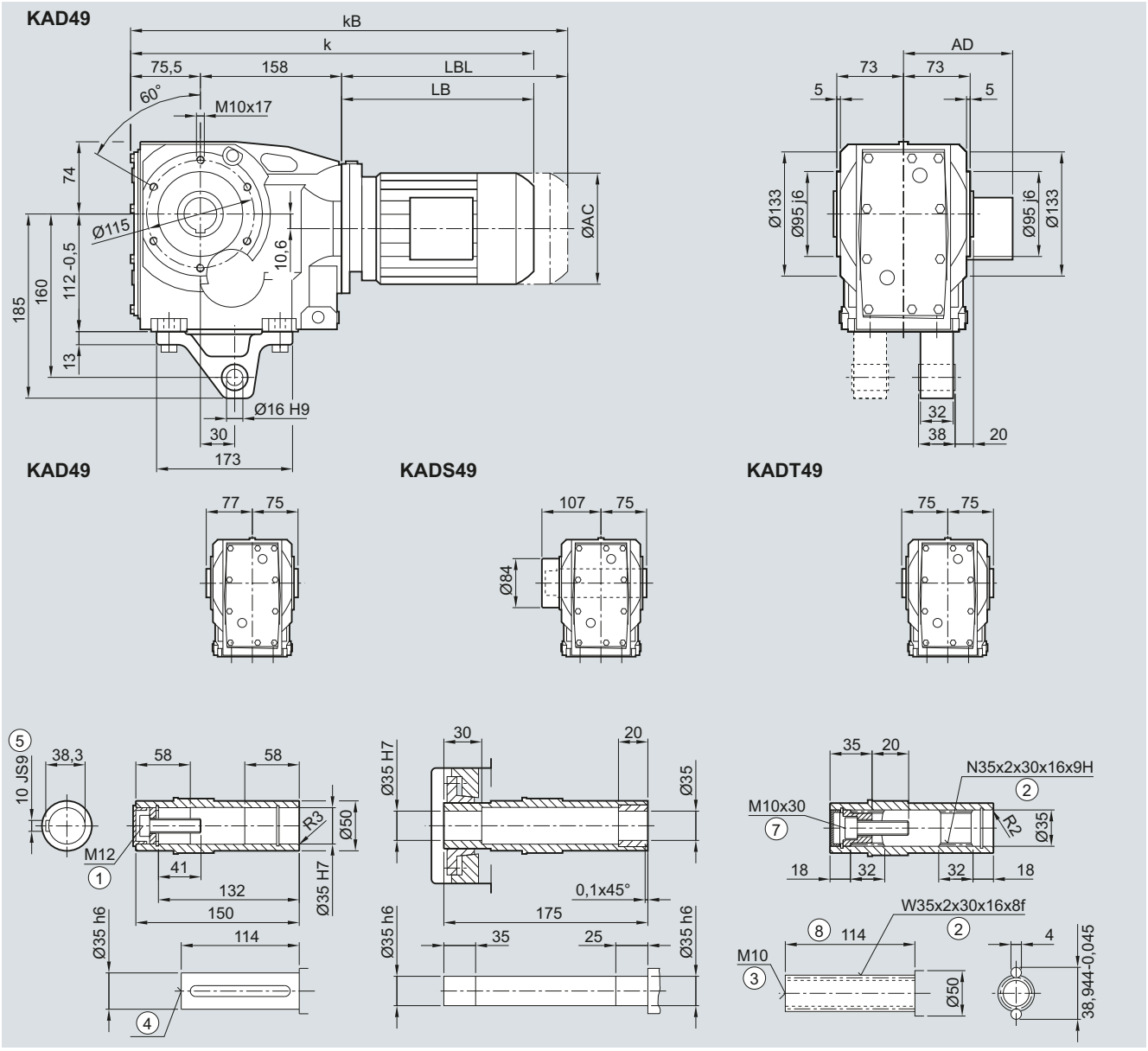
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	418.0	450.0	513.5	575.5	632.0	642.0	695.0	745.0
kB	462.5	505.0	573.5	645.5	710.5	715.0	799.5	849.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

KAD.49 gearbox in a shaft-mounted design

KAD030, KADS030, KADT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	418.0	450.0	513.5	575.5	632.0	642.0	695.0	745.0
kB	462.5	505.0	573.5	645.5	710.5	715.0	799.5	849.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

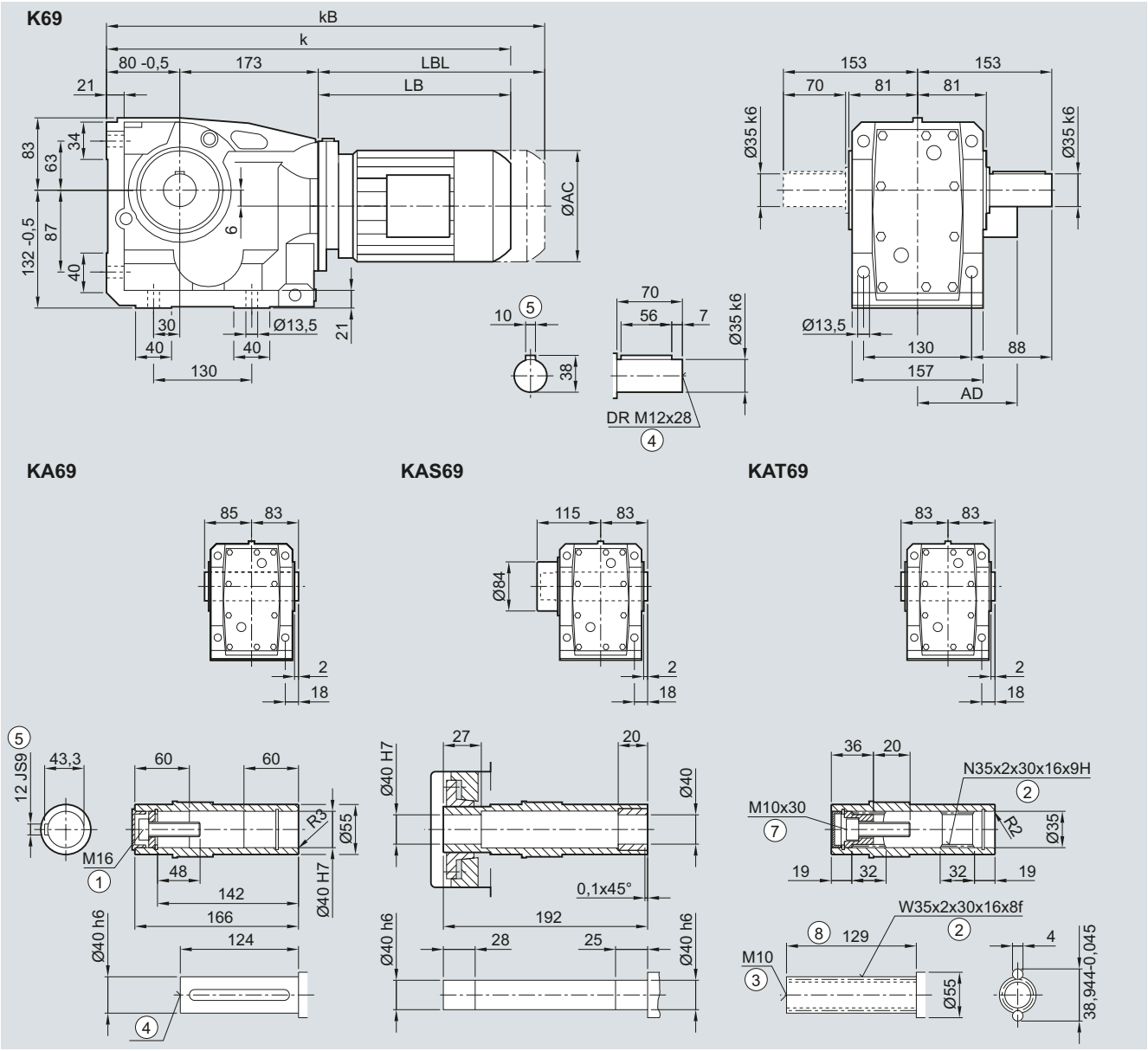
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K..69 gearbox in a foot-mounted design

K030, KA030, KAS030, KAT030



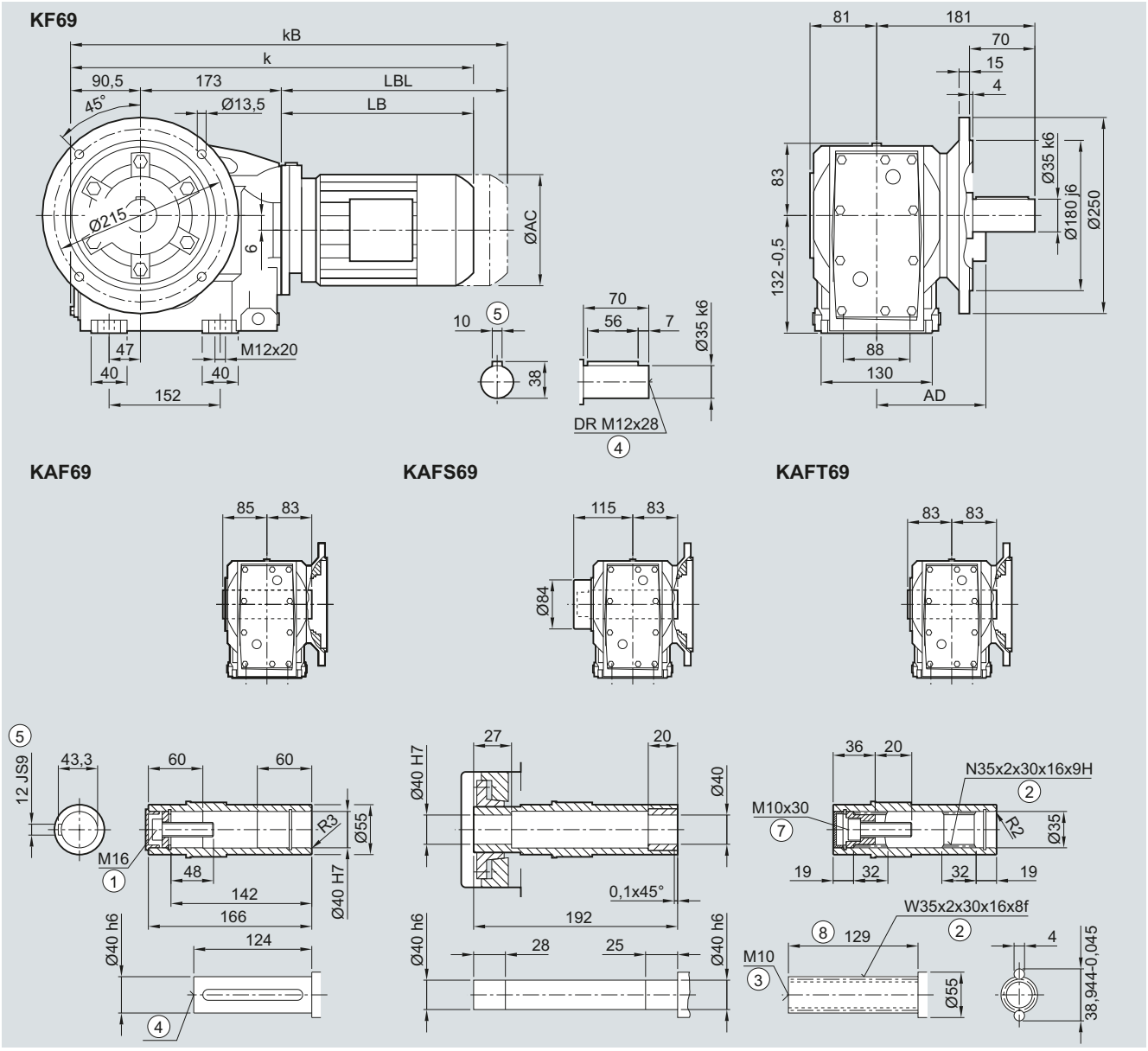
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	437	469.0	532.5	594.5	651.0	661.0	714.0	764.0
kB	481.5	524.0	592.5	664.5	729.5	734.0	818.5	868.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

K.F.69 gearbox in a flange-mounted design

KF030, KAF030, KAFS030, KAFT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	448.0	480.0	543.5	605.5	662.0	672.0	725.0	775.0
kB	492.5	535.0	603.5	675.5	740.5	745.0	829.5	879.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

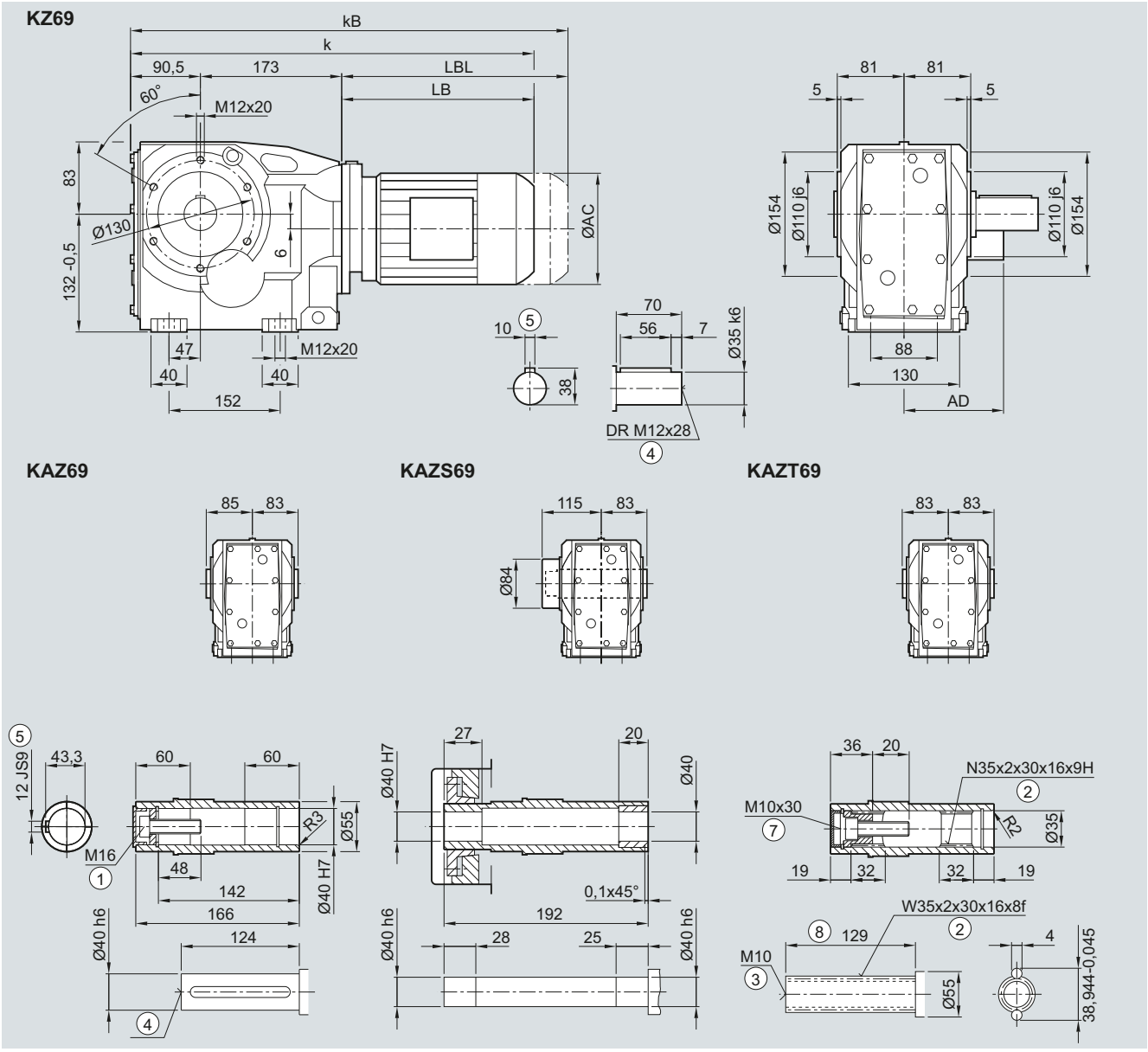
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K.Z.69 gearbox in a housing flange design

KZ030, KAZ030, KAZS030, KAZT030



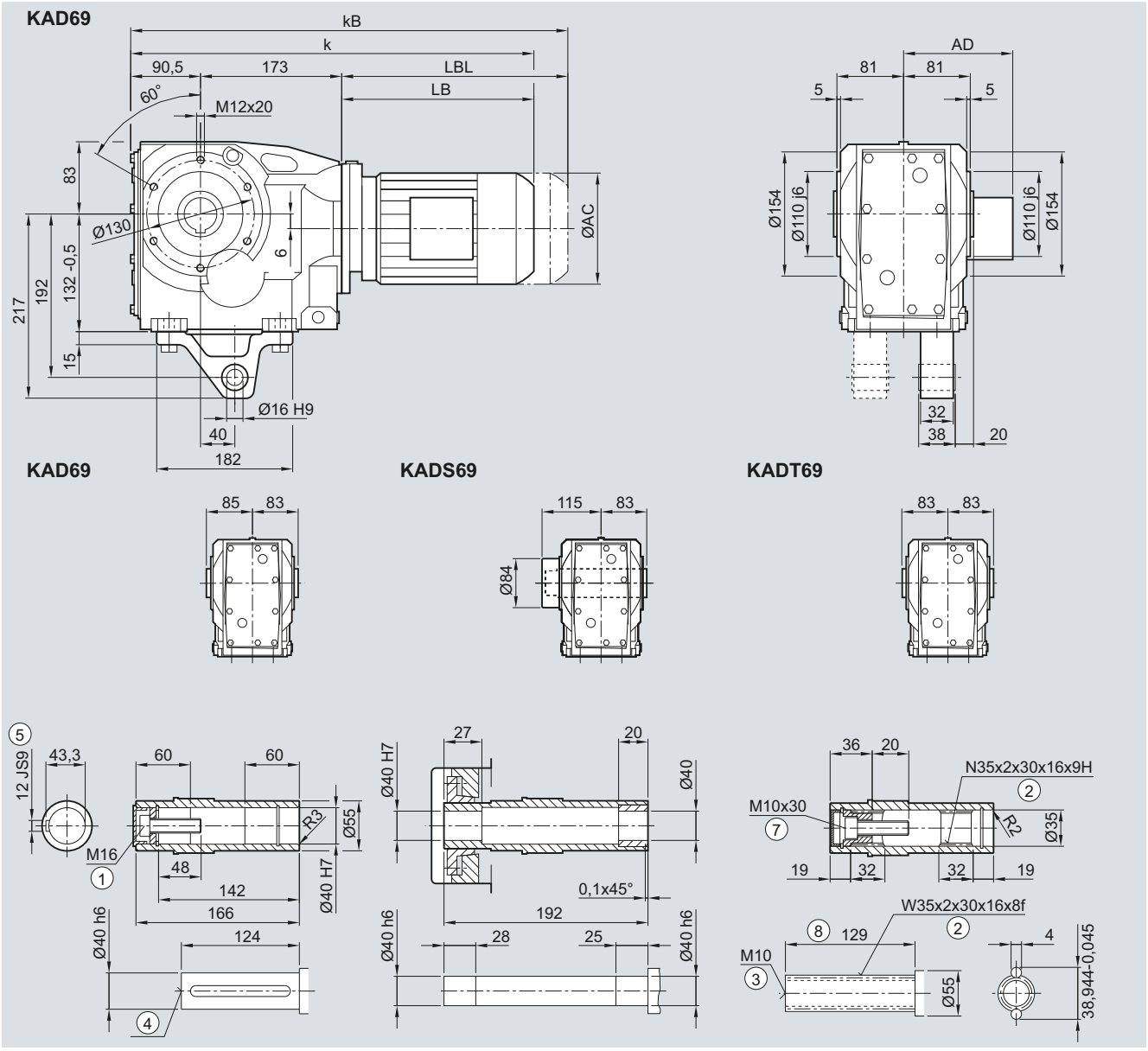
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	448.0	480.0	543.5	605.5	662.0	672.0	725.0	775.0
kB	492.5	535.0	603.5	675.5	740.5	745.0	829.5	879.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

KAD.69 gearbox in a shaft-mounted design

KAD030, KADS030, KADT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	448.0	480.0	543.5	605.5	662.0	672.0	725.0	775.0
kB	492.5	535.0	603.5	675.5	740.5	745.0	829.5	879.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

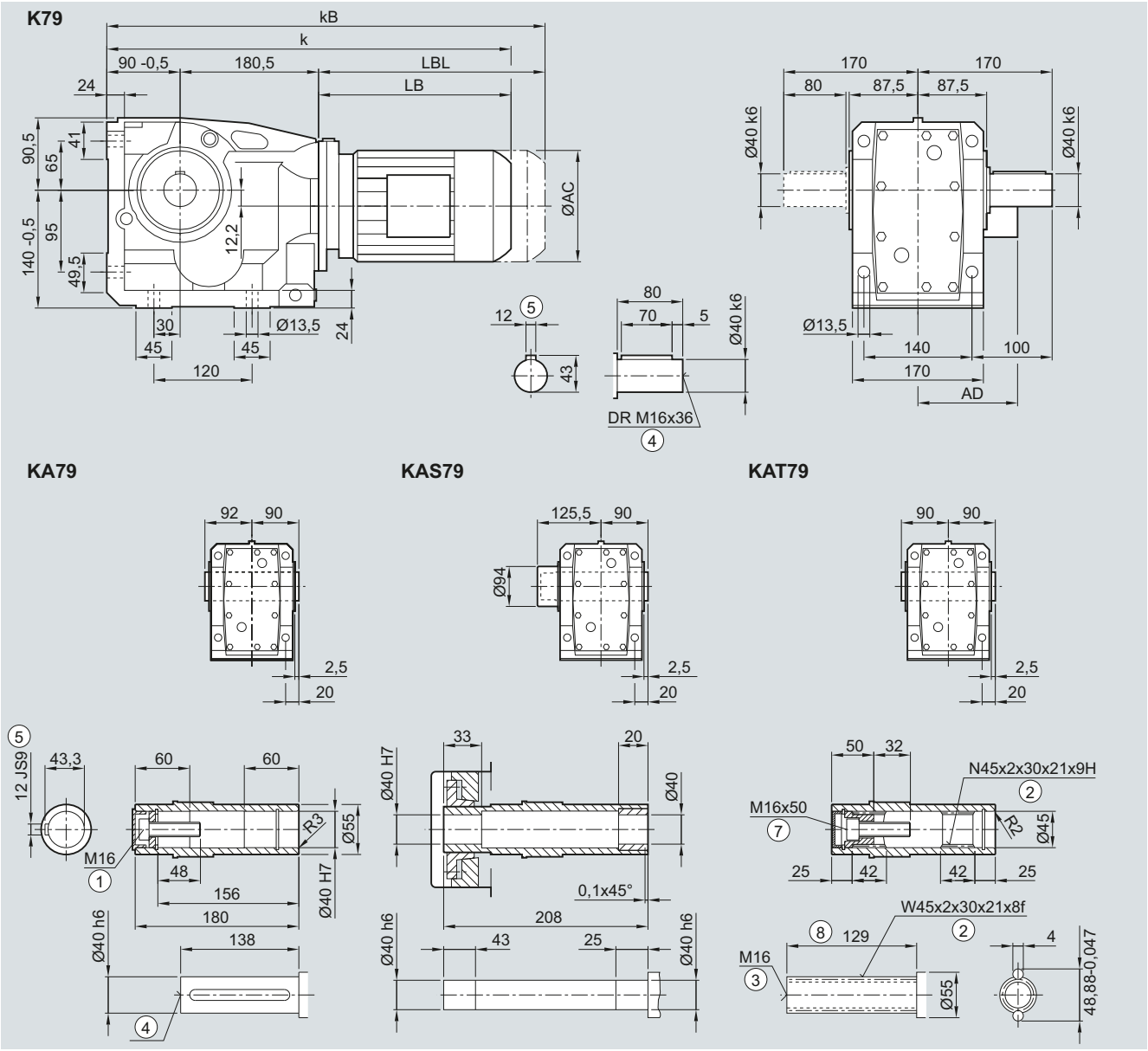
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K..79 gearbox in a foot-mounted design

K030, KA030, KAS030, KAT030



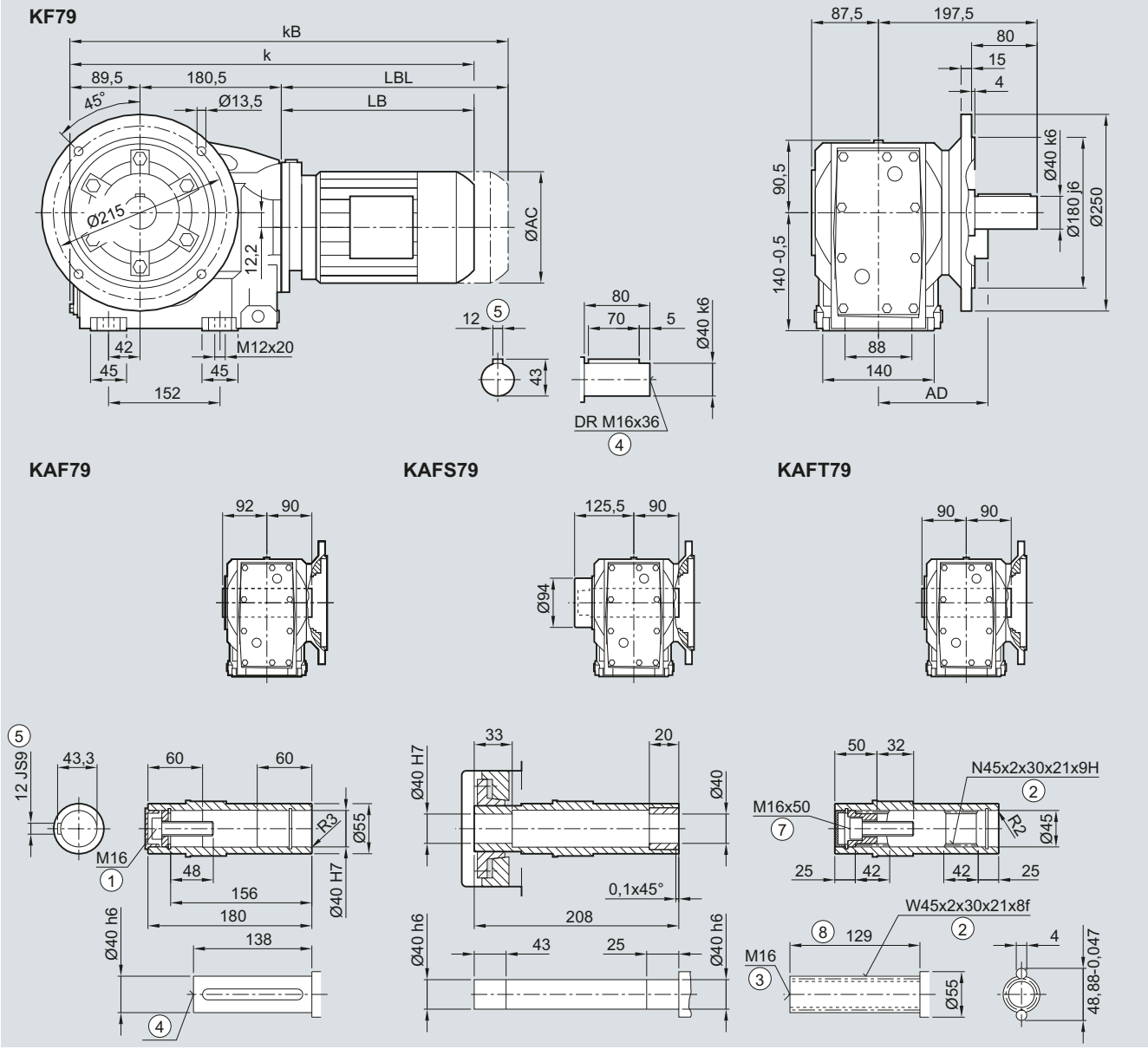
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	454.5	486.5	550.0	612.0	668.5	678.5	731.5	781.5
kB	499	541.5	610.0	682.0	747.0	751.5	836.0	886.0
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

K.F.79 gearbox in a flange-mounted design

KF030, KAF030, KAFS030, KAFT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	454.0	486.0	549.5	611.5	668.0	678.0	731.0	781.0
kB	498.5	541.0	609.0	681.5	746.5	751.0	835.5	885.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

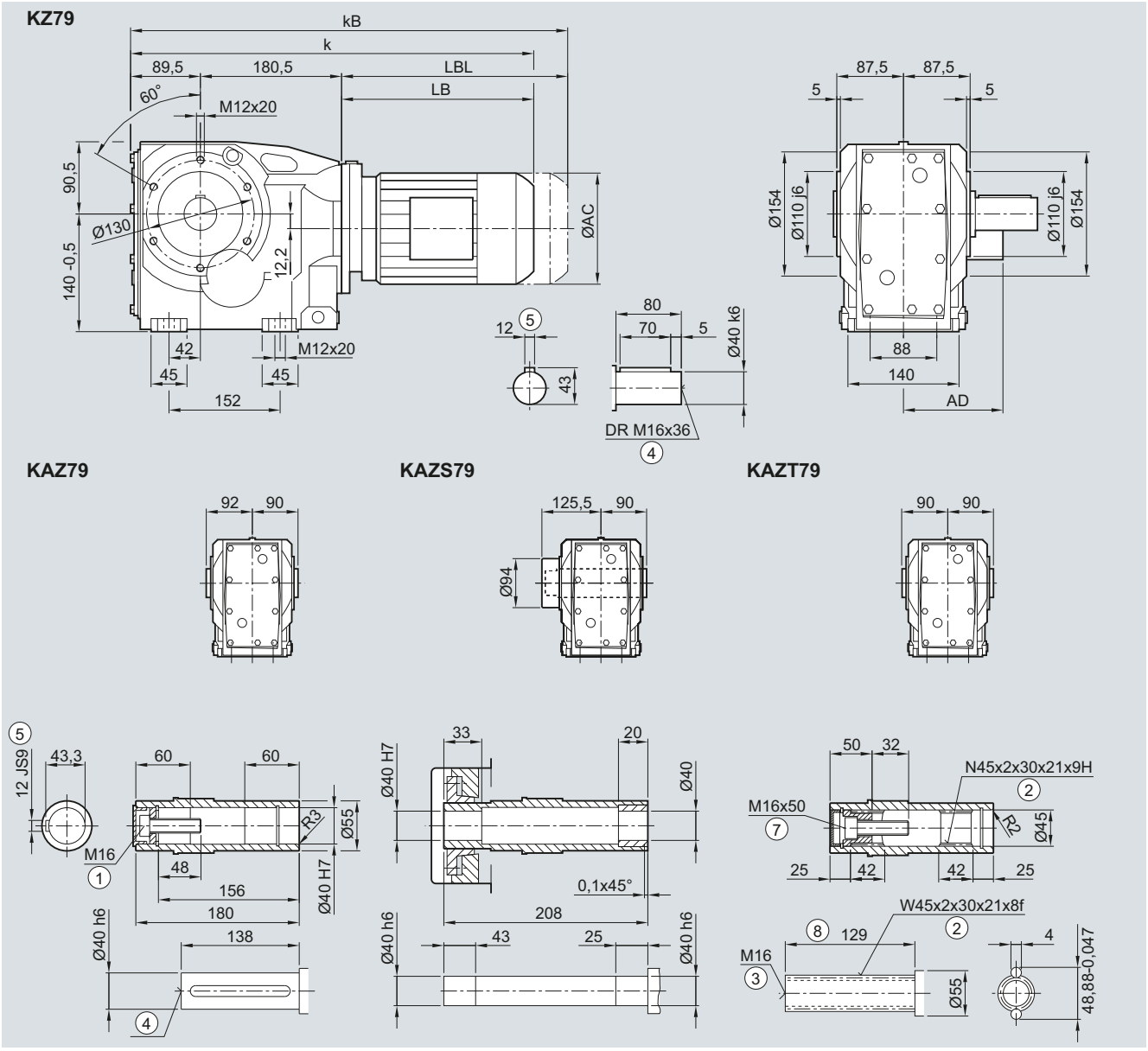
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K.Z.79 gearbox in a housing flange design

KZ030, KAZ030, KAZS030, KAZT030



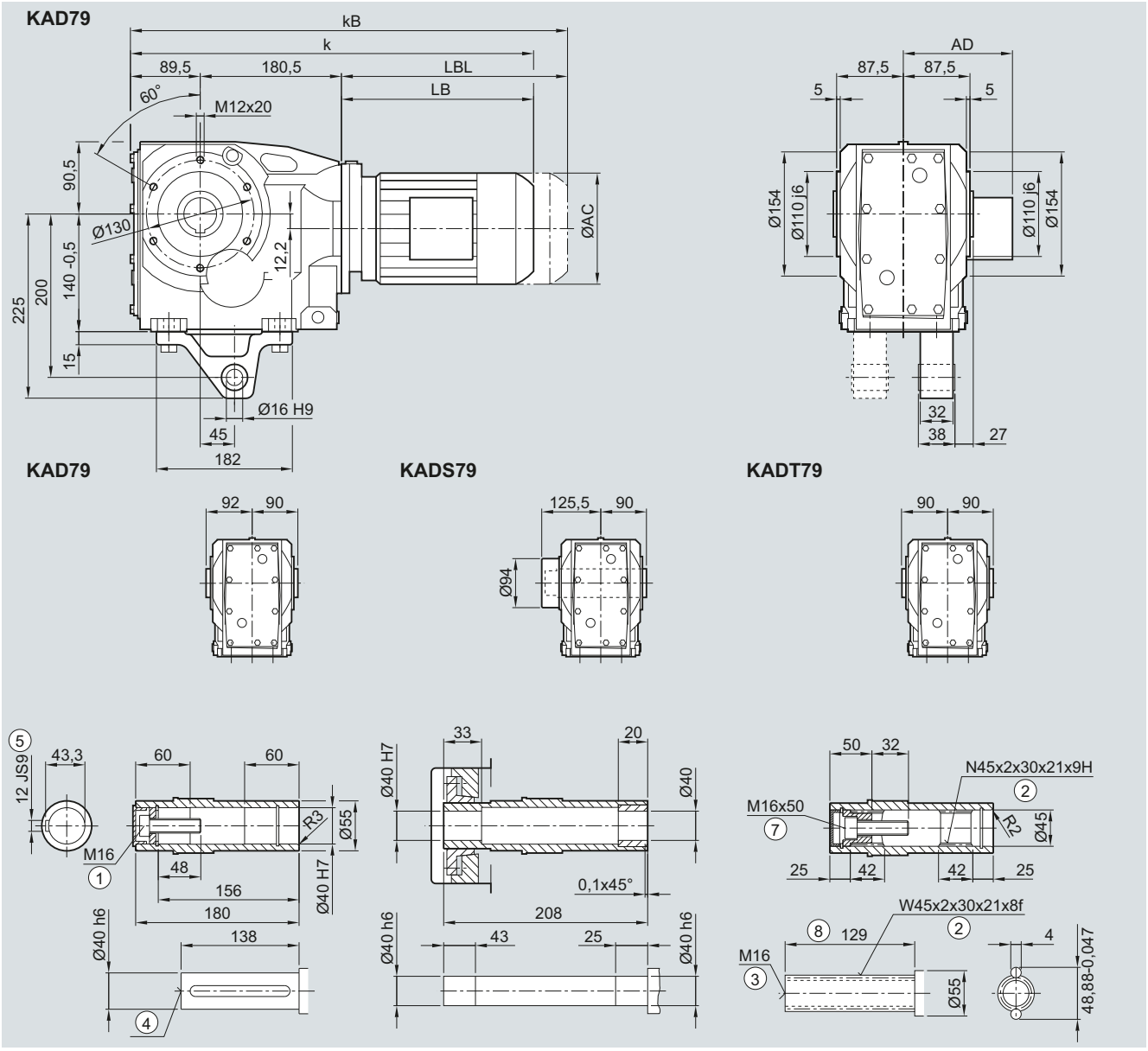
Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	454.0	486.0	549.5	611.5	668.0	678.0	731.0	781.0
kB	498.5	541.0	609.0	681.5	746.5	751.0	835.5	885.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

KAD.79 gearbox in a shaft-mounted design

KAD030, KADS030, KADT030



Motor	LA63M	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM
AC	117.8	138.8	156.3	173.8	198.0	222.0	264.0	264.0
AD	124.0 (136.0)	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0
k	454.0	486.0	549.5	611.5	668.0	678.0	731.0	781.0
kB	498.5	541.0	609.0	681.5	746.5	751.0	835.5	885.5
LB	184.5	216.5	280.0	342.0	398.5	408.5	461.5	511.5
LBL	229.0	271.5	340.0	412.0	477.0	481.5	566.0	616.0

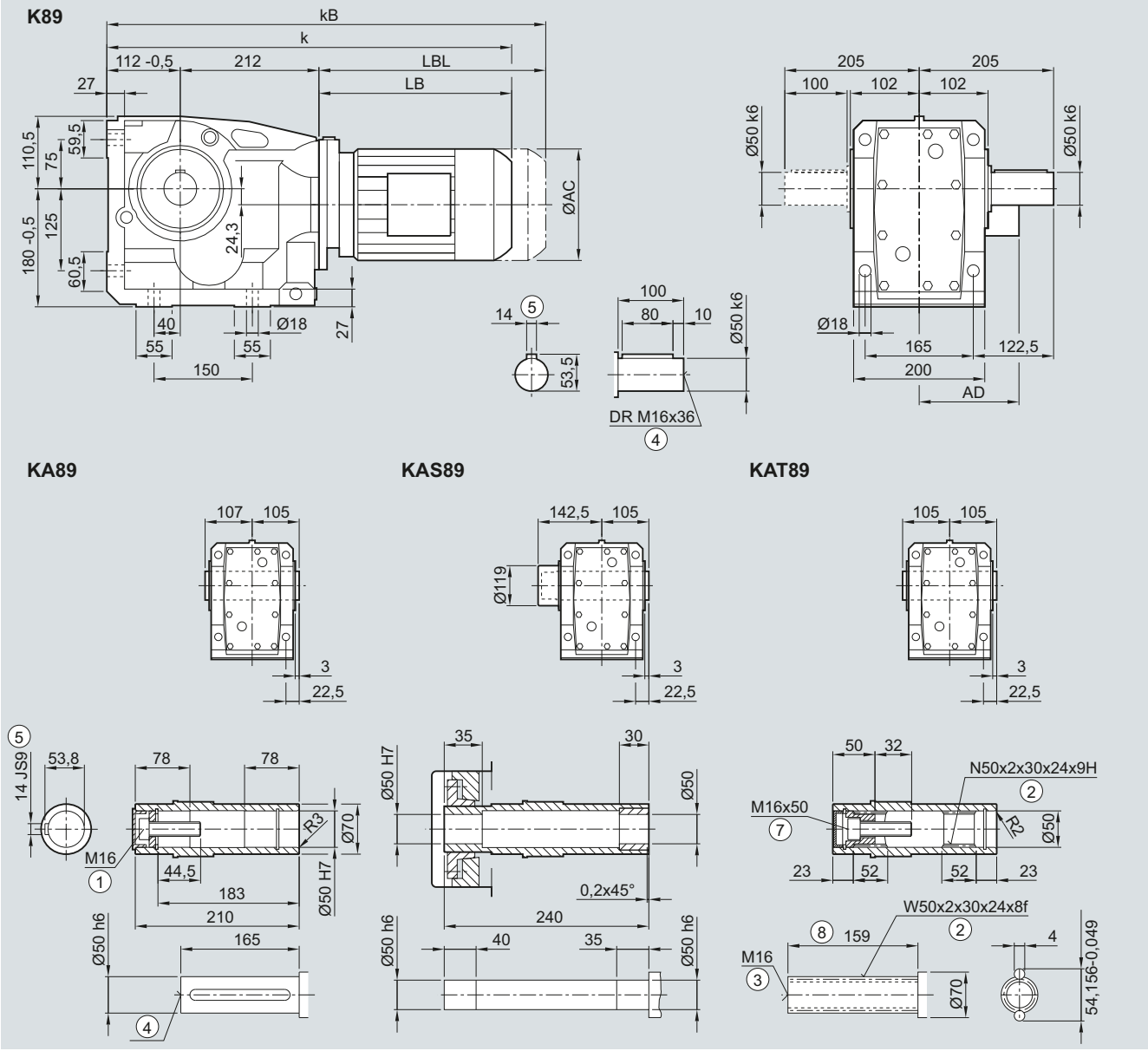
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K..89 gearbox in a foot-mounted design

K030, KA030, KAS030, KAT030



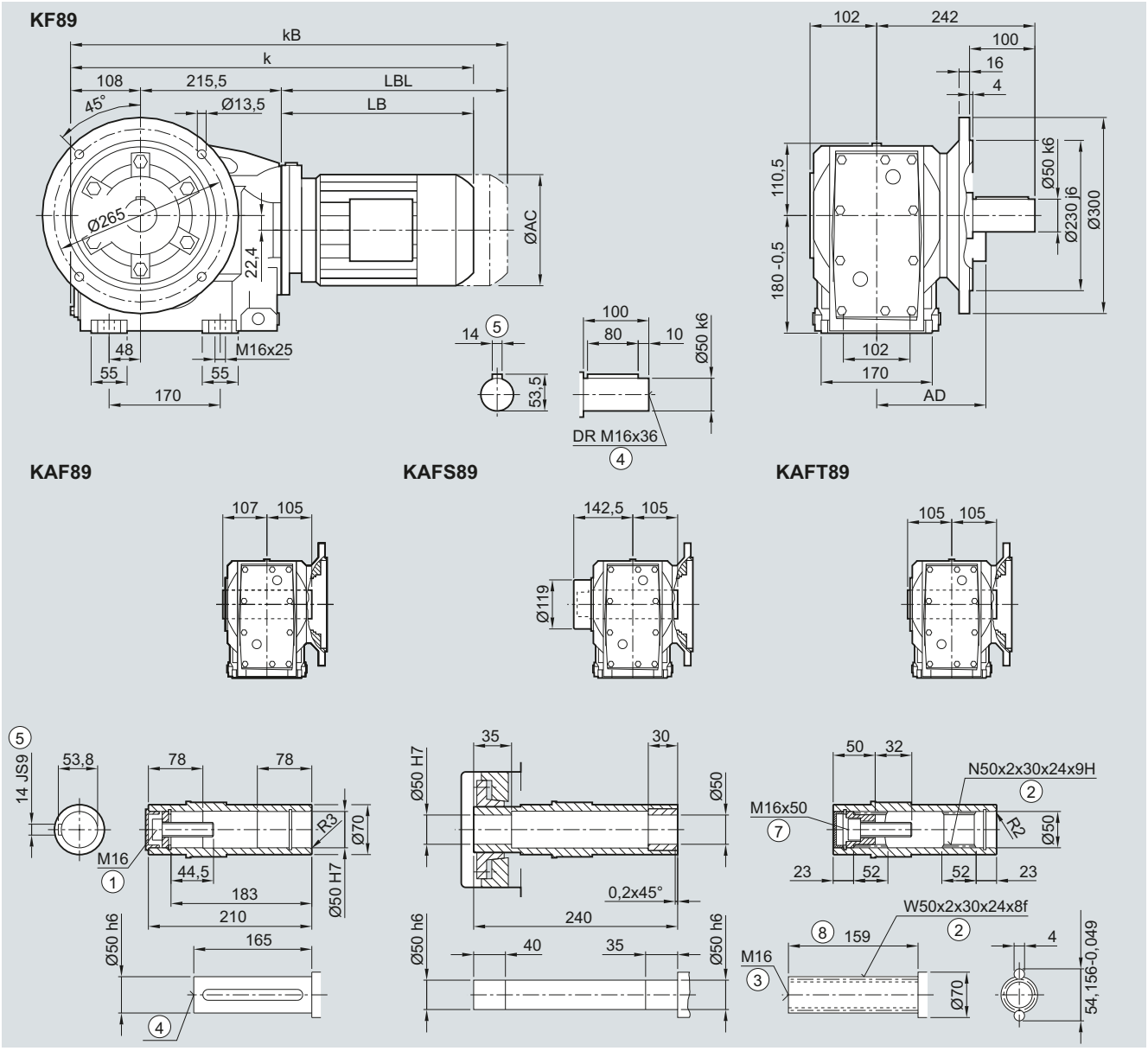
Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	538.0	597.5	659.5	716.0	726.0	779.0	829.0	861.0
kB	593.0	657.5	729.5	794.5	799.0	883.5	933.5	977.0
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

K.F.89 gearbox in a flange-mounted design

KF030, KAF030, KAFS030, KAFT030



Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	538.0	597.5	659.5	716.0	726.0	779.0	829.0	861.0
kB	593.0	657.5	729.5	794.5	799.0	883.5	933.5	977.0
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

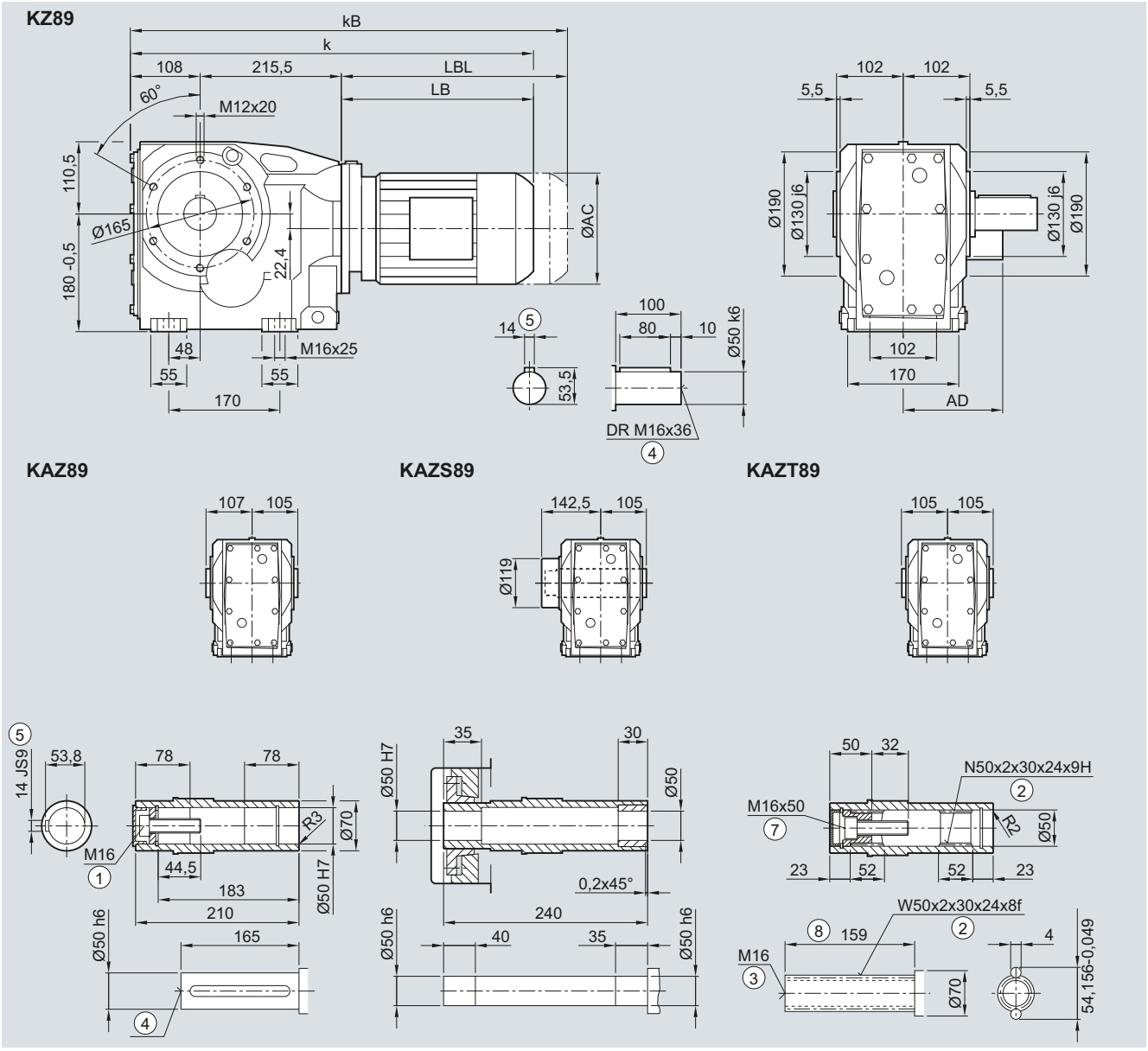
① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

K.Z.89 gearbox in a housing flange design

KZ030, KAZ030, KAZS030, KAZT030



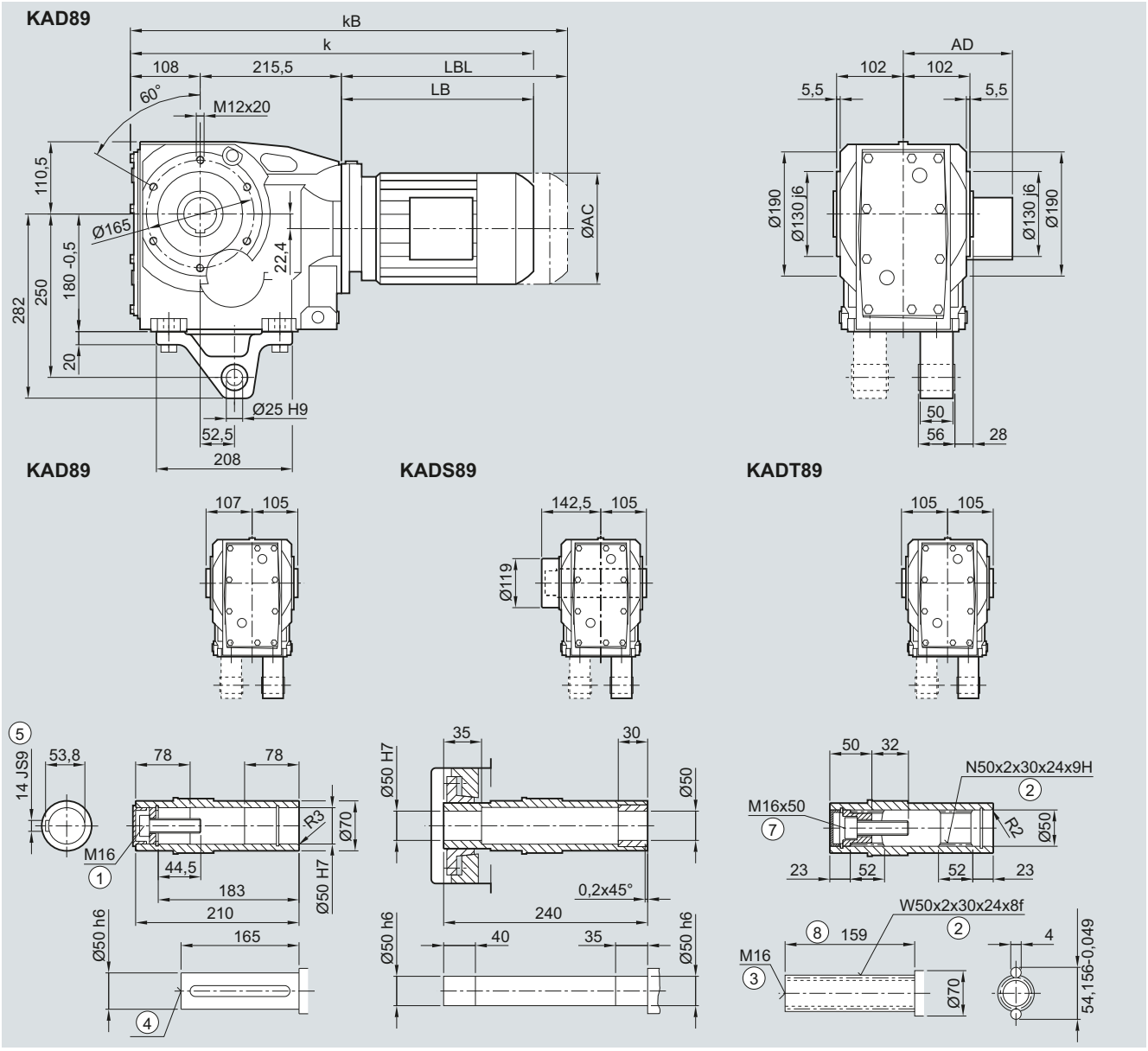
Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	538.0	597.5	659.5	716.0	726.0	779.0	829.0	861.0
kB	593.0	657.5	729.5	794.5	799.0	883.5	933.5	977.0
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

KAD.89 gearbox in a shaft-mounted design

KAD030, KADS030, KADT030



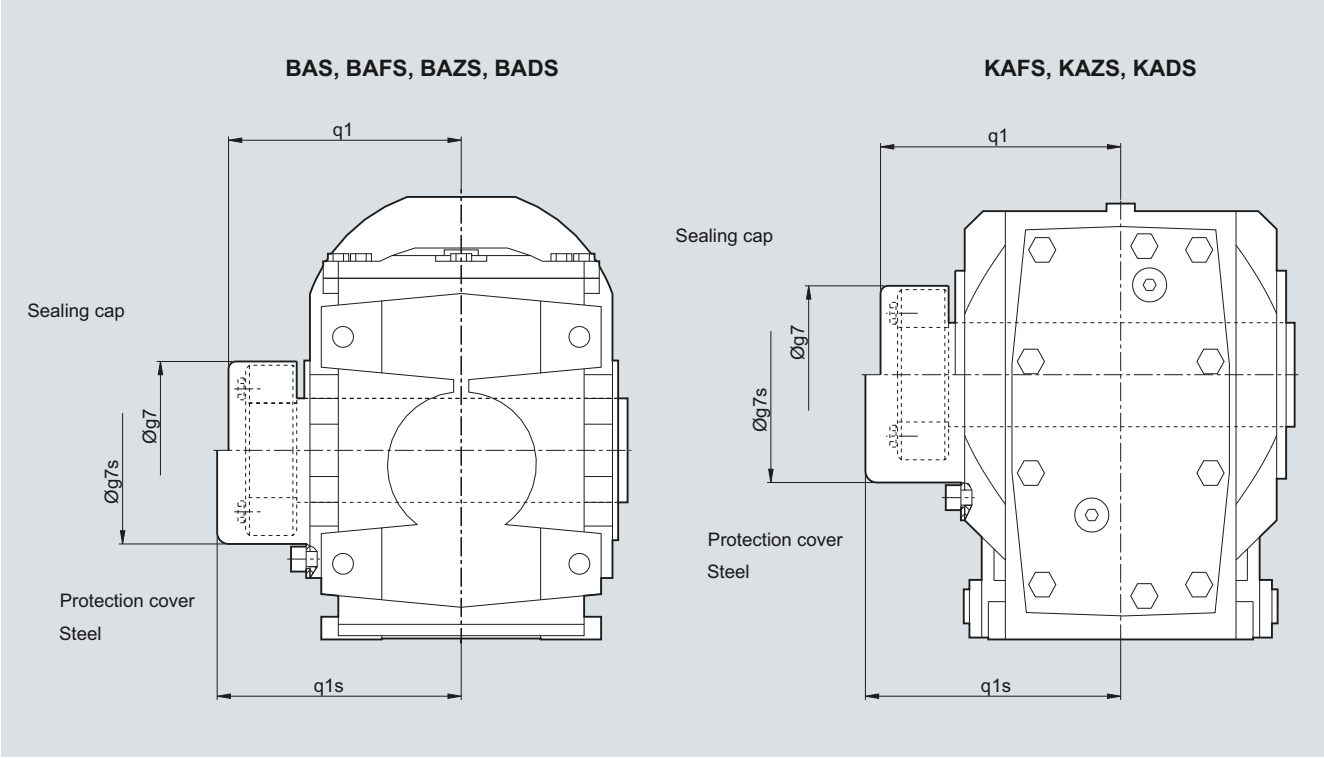
Motor	LA71M	LE80M	LE90S/L	LE100L	LE112M	LE132S/M	LE132ZM	LE160M/L
AC	138.8	156.3	173.8	198.0	222.0	264.0	264.0	318.0
AD	134.0 (146.0)	149.2	154.2	170.5	181.5	207.0	207.0	241.0
k	538.0	597.5	659.5	716.0	726.0	779.0	829.0	861.0
kB	593.0	657.5	729.5	794.5	799.0	883.5	933.5	977.0
LB	214.5	274.0	336.0	392.5	402.5	455.5	505.5	537.5
LBL	269.5	334.0	406.0	471.0	475.5	560.0	610.0	653.5

① ISO 4014 ② DIN 5480 ③ DIN 332-D ④ DIN 332 ⑤ Feather key/keyway DIN 6885 ⑦ ISO 4762 ⑧ Without locating shoulder +1 mm

() Dimensions in brackets for terminal box with 9 terminals (YY/Y connection).

Dimensions

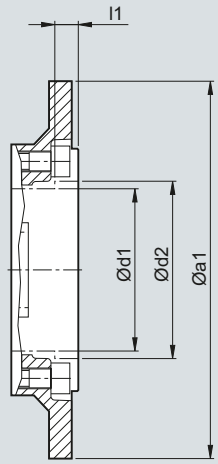
Protection cover for hollow shaft



Gearbox type	B.29	B.39	B.49	K.39	K.49	K.69	K.79	K.89
Rotating protective cover								
g7	55	84	84	76	84	84	94	119
q1	91	102	117	89.5	107	115	125.5	142.5
Protection cover								
g7s	58	86	86	82.5	86	99	99	137
q1s	91	119	134	109	122	126	132.5	176.5

Inner contour of the flange design

Design notes for the customer's interface, e.g. plug-in shaft for hollow shaft design



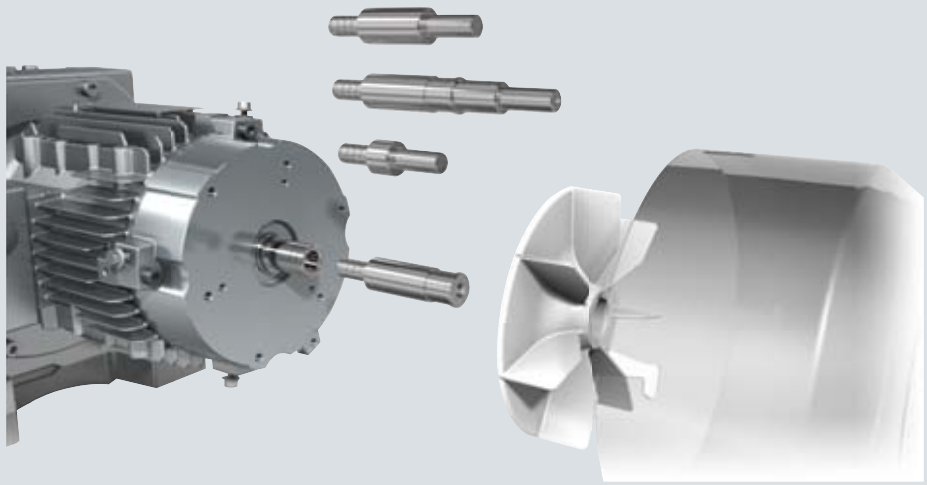
Gearbox type	BAF.29	BAF.29	BAF.39	BAF.49	KAF.39	KAF.49	KAF.69	KAF.79	KAF.89
a1	120	160	200	200	160	200	250	250	300
d1	66	66	90	90	77	86	100	100	126
d2	66	98	115	115	82	94	106	106	174
l1	0.0	6.5	10.0	10.0	8.5	12.5	10.0	10.0	18.0

Notes

Motors

Orientation

The modular MODULOG principle



Brake motor

Motor with forced ventilation

G_D087_EN_00158

The modular MODULOG principle has a range of benefits for machine and plant designers.

The name MODULOG stands for a clear and transparent **modu**lar motor system, which offers optimum **log**istics, that enables users to assemble powerful, durable, and extremely easy-to-service motors in line with their own requirements for most applications, from just a few standard components.

At the heart of this modular system is the basic motor, which is designed to comply with international line supply conditions, and a mounting shaft system, which can be individually configured, at the non-drive end.

Functional expansions, such as brakes, backstops, rotary encoders, external fan, canopy, a second motor shaft extension, etc. can be combined almost arbitrarily as "additional functional components".

Technical data at a glance

The motors comply with all applicable international (IEC), European (EN, CENELEC), and national (DIN/VDE) standards:

Motor type	Three-phase induction motors with squirrel cage rotor
Connection types	You can establish the connection type that can be used from the product number suffixes in the selection and ordering data for the required motor.
Number of poles	2, 4, 6
Rated speed (synchronous speed)	1 000 … 3 600 rpm
Rated power	0.09 … 15 kW (4-pole)
Rated torque	0.85 … 97.1 Nm (4-pole)
Stator winding insulation	Temperature class 155 (F), utilized to temperature class 130 (B), optionally temperature class 180 (H)
Degree of protection acc. to IEC 60034-5 (EN 60034-5)	IP55 Optional IP65, IP56
Cooling acc. to IEC 60034-6 (EN 60034-6)	Self-cooled (IC 411) Optionally, force ventilated (IC 416)
Coolant temperature	-20 … +40 °C
Installation altitude	Up to 1 000 m above sea level
Rated voltage	200 … 690 V You can establish the voltage that can be used from the selection and ordering data for the required motor.
Rated frequency	50 Hz, 60 Hz, 87 Hz
Vibration severity acc. to IEC 60034-14 (EN 60034-14)	Vibration severity A
Balancing type	Half-key balancing
Sound pressure level, sound power level acc. to IEC 60034-9 (EN 60034-9)	You can establish the corresponding sound pressure level and sound power level from the selection and ordering data for the required motor.
Weight	You can establish the corresponding weight from the selection and ordering data for the required motor.
Rating plates	See "Rating plate" in the Chapter "General options"
Connection and terminal boxes	See "Connection, circuit and terminal boxes" in the Chapter "Motor options"

Technical data at a glance (continued)

The geared motors comply with the applicable IEC/EN standards

IEC	EN/HD	DIN/VDE	Title
IEC 60027-4	EN 60027-4	DIN EN 60027-4	Formula symbols for electrical engineering Part 4: Rotating electrical machines
IEC 60034-1	EN 60034-1	DIN EN 60034-1 VDE 0530-1	Rotating electrical machines: - Rating and performance
IEC 60034-2-1	EN 60034-2-1	DIN EN 60034-2-1 VDE 0530-2-1	- Standard technique to determine the losses and efficiency based on testing (with the exception for machines for track and road vehicles) (IEC 60034-2-1:2007); German Edition EN 60034-2-1:2007
IEC 60034-5	EN 60034-5	DIN EN 60034-5 VDE 0530-5	- Degrees of protection provided by integral design of rotating electrical machines (IP code) – Classification
IEC 60034-6	EN 60034-6	DIN EN 60034-6 VDE 0530-6	- Classification of cooling methods (IC code)
IEC 60034-7	EN 60034-7	DIN EN 60034-7 VDE 0530-7	- Classification of types of construction, mounting types and terminal box position (IM code)
IEC 60034-8	EN 60034-8	DIN EN 60034-8 VDE 0530-8	- Terminal markings and direction of rotation
IEC 60034-9	EN 60034-9	DIN EN 60034-9 VDE 0530-9	- Noise limits
IEC 60034-12	EN 60034-12	DIN EN 60034-12 VDE 0530-12	- Starting behavior of three-phase squirrel cage induction motors, with the exception of pole-changing motors
IEC 60034-14	EN 60034-14	DIN EN 60034-14 VDE 0530-14	- Mechanical vibration of certain machines with shaft heights 56 mm and higher
IEC TS 60034-17	–	DIN VDE 0530-17	- Inverter-fed squirrel-cage induction motors – Application guide
IEC 60038	HD 472	DIN IEC 60038	IEC standard voltages
–	EN 50347	DIN EN 50347	Three-phase induction motors for general applications with standardized dimensions and power ratings – frame sizes 56 up to 315 and flange sizes 65 up to 740
IEC 60085	EN 60085	DIN EN 60085	Electrical insulation, thermal evaluation + designation
IEC 60445	EN 60445	DIN EN 60445 VDE 0197	Identification of equipment terminals and of terminations of certain designated conductors
IEC 60529	EN 60529	DIN EN 60529 VDE 0470-1	Degrees of protection provided by the enclosure (IP code)
–	EN 50262	DIN EN 50262 VDE 0619	Cable glands for electrical installation
–	–	DIN 42925	Terminal box cable entries for three-phase squirrel cage induction motors at rated voltages from 400 V to 690 V

Tolerances

The following tolerances apply to the electrical values listed in the power tables according to EN 60034-1:

Description	Tolerance
Efficiency	≤ 150 kW: – 0.15 $(1 - \eta)$ > 150 kW: – 0.1 $(1 - \eta)$
Power factor	$\frac{1 - \cos\varphi}{6}$ (minimum 0.02/maximum 0.07)
Slip at full load and operating temperature	±20 % of the setpoint slip for $P_{rated} \geq 1$ kW ±30 % of the setpoint slip for $P_{rated} < 1$ kW
Starting torque	-15 % and +25 %
Breakdown torque	-10 % without upper limit
Starting current	+20 % without lower limit
Moment of inertia	±10 %

Technical data at a glance (continued)

Efficiency and power factor

The efficiency η and power factor cos φ for each rated power are listed in the selection tables in the individual sections of this catalog.

Table 6-1 Partial-load power factor

4/4 of full load	1/4	1/2	3/4	5/4
0.92	0.70	0.86	0.90	0.92
0.91	0.65	0.85	0.89	0.91
0.90	0.63	0.83	0.88	0.90
0.89	0.61	0.80	0.86	0.89
0.88	0.57	0.78	0.85	0.88
0.87	0.53	0.76	0.84	0.87
0.86	0.51	0.75	0.83	0.86
0.85	0.49	0.73	0.81	0.86
0.84	0.47	0.71	0.80	0.85
0.83	0.45	0.69	0.79	0.84
0.82	0.43	0.67	0.77	0.83
0.81	0.41	0.66	0.76	0.82
0.80	0.40	0.65	0.75	0.81
0.79	0.38	0.63	0.74	0.80
0.78	0.36	0.61	0.72	0.80
0.77	0.34	0.59	0.71	0.79
0.76	0.32	0.58	0.70	0.78
0.75	0.30	0.56	0.69	0.78
0.74	0.29	0.55	0.68	0.77
0.73	0.28	0.54	0.67	0.77
0.72	0.27	0.52	0.63	0.76
0.71	0.26	0.50	0.62	0.76

For motors with Standard Efficiency (IE1) and High Efficiency (IE2), the 3/4 load efficiency is also listed in the selection tables. The part-load values stated in the tables below are averages; precise values can be provided on request.

Table 6-2 Partial-load efficiency in %

4/4 of full load	1/4	1/2	3/4	5/4
97	93	96.0	97.0	96.5
96	92	95.0	96.0	95.5
95	90	93.5	95.0	94.5
94	89	92.5	94.0	93.5
93	88	91.5	93.0	92.5
92	87	91.0	92.0	91.5
91	86	90.0	91.0	90.0
90	85	89.0	90.0	89.0
89	84	88.0	89.0	88.0
88	80	87.0	88.0	87.0
87	79	86.0	87.0	86.0
86	78	85.0	86.0	85.0
85	76	84.0	85.0	83.5
84	74	83.0	84.0	82.5
83	72	82.0	83.0	81.5
82	70	81.0	82.0	80.5
81	68	80.0	81.0	79.5
80	66	79.0	80.0	78.5
79	64	77.0	79.5	77.5
78	62	75.5	78.5	76.5
77	60	74.0	77.5	75.0
76	58	73.0	76.0	74.0
75	56	72.0	75.0	73.0
74	55	71.0	74.0	72.0
73	54	70.0	73.0	71.0
72	53	68.0	72.0	70.0
71	52	67.0	71.0	69.0
70	51	66.0	70.0	68.0
69	50	65.0	69.0	67.0
68	49	64.0	67.5	66.0
67	48	62.0	66.5	65.0
66	47	61.0	65.0	64.0
65	46	60.0	64.0	63.0
64	45	59.0	63.0	62.0
63	44	57.0	62.0	61.0
62	43	56.0	60.5	60.5
61	42	55.0	59.5	59.5
60	41	54.0	58.5	58.5

EMC measures

SIMOGEAR geared motors are designed as components for installation in systems and machines. The manufacturer of the system or machine is responsible in complying with EMC directive 2004/108/EC.

LA and LE motors when correctly used in continuous duty connected to the line supply fulfill standards EMC EN 50081 and EN 50082.

Motors with High Efficiency IE2

IE2

Selection and ordering data

4-pole, 1 500 rpm at 50 Hz

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	4-pole
63	LA63MD4	0.09	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**B**	**1**	**1**	–
	LA63ME4	0.12	1 350	0.85	0.43	0.75	53.60	52.10	2.80	**B**	**C**	**1**	**1**	–
	LA63MF4	0.18	1 350	1.27	0.58	0.77	58.30	56.80	3.00	**B**	**D**	**1**	**1**	–
71	LA71MG4	0.25	1 350	1.77	0.75	0.78	61.90	60.40	3.00	**C**	**D**	**1**	**1**	–
	LA71MH4	0.37	1 370	2.58	1.04	0.78	65.80	64.80	3.30	**C**	**E**	**1**	**1**	–
80	LE80MD4E	0.55	1 440	3.65	1.37	0.74	78.10	78.60	5.30	**D**	**C**	**2**	**2**	–
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MH4E	0.75	1 440	4.97	1.79	0.76	79.60	79.60	5.60	**D**	**E**	**2**	**2**	–
90	LE90SG4E	1.10	1 425	7.73	2.50	0.78	81.40	81.40	5.60	**E**	**K**	**2**	**2**	–
	LE90LH4E	1.50	1 435	9.98	3.30	0.79	82.80	82.80	6.40	**E**	**M**	**2**	**2**	–
100	LE100LE4E	2.20	1 455	14.4	4.65	0.81	84.30	84.30	6.90	**F**	**L**	**2**	**2**	–
	LE100LK4E	3.00	1 455	19.7	6.20	0.82	85.50	85.50	6.90	**F**	**M**	**2**	**2**	–
112	LE112ME4E	4.00	1 460	26.2	8.20	0.81	86.60	86.60	7.10	**G**	**H**	**2**	**2**	–
132	LE132SF4E	5.50	1 465	35.9	11.30	0.80	87.70	87.70	6.90	**H**	**G**	**2**	**2**	–
	LE132MF4E	7.50	1 465	48.9	14.70	0.83	88.70	88.70	6.90	**H**	**J**	**2**	**2**	–
	LE132ZMM4E	9.20	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**H**	**V**	**2**	**2**	–
160	LE160MF4E	11.00	1 470	71.5	21.00	0.85	89.80	89.80	6.70	**J**	**P**	**2**	**2**	–
	LE160LD4E	15.00	1 475	97.1	28.00	0.85	90.60	90.60	7.30	**J**	**U**	**2**	**2**	–

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	4-pole
63	LA63MD4	O. R.	O. R.	O. R.	44	55	20 000	2.9	3.20	**B**	**B**	**1**	**1**	–
	LA63ME4	1.90	2.00	2.10	44	55	20 000	2.9	3.20	**B**	**C**	**1**	**1**	–
	LA63MF4	1.90	1.90	2.10	44	55	10 000	3.7	3.60	**B**	**D**	**1**	**1**	–
71	LA71MG4	1.90	1.90	2.10	46	57	10 000	5.2	4.30	**C**	**D**	**1**	**1**	–
	LA71MH4	1.90	2.10	2.10	46	57	10 000	7.7	5.80	**C**	**E**	**1**	**1**	–
80	LE80MD4E	2.20	3.10	2.40	53	64	10 000	17.0	9.30	**D**	**C**	**2**	**2**	–
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MH4E	2.20	3.10	2.40	53	64	10 000	21.0	10.00	**D**	**E**	**2**	**2**	–
90	LE90SG4E	2.30	2.90	2.50	56	68	8 000	36.0	12.00	**E**	**K**	**2**	**2**	–
	LE90LH4E	2.60	3.40	2.90	56	68	8 000	28.0	15.00	**E**	**M**	**2**	**2**	–
100	LE100LE4E	2.10	3.30	2.30	60	72	7 000	86.0	20.00	**F**	**L**	**2**	**2**	–
	LE100LK4E	2.00	3.10	2.20	60	72	7 000	110.0	24.00	**F**	**M**	**2**	**2**	–
112	LE112ME4E	2.50	3.20	2.80	58	70	5 000	140.0	24.00	**G**	**H**	**2**	**2**	–
132	LE132SF4E	2.30	2.90	2.50	64	76	3 000	270.0	35.00	**H**	**G**	**2**	**2**	–
	LE132MF4E	2.30	2.90	2.50	64	76	3 000	340.0	42.00	**H**	**J**	**2**	**2**	–
	LE132ZMM4E	O. R.	O. R.	O. R.	64	76	1 600	O. R.	O. R.	**H**	**V**	**2**	**2**	–
160	LE160MF4E	2.10	2.80	2.30	65	77	2 000	650.0	61.00	**J**	**P**	**2**	**2**	–
	LE160LD4E	2.30	3.00	2.50	65	77	2 000	830.0	73.00	**J**	**U**	**2**	**2**	–

O. R. On request

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

2-pole, 3 000 rpm at 50 Hz

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	2-pole
63	LA63ME2	0.18	2 820	0.61	0.51	0.82	62.00	60.50	3.70	**B**	**C**	**1**	**1**	**P00**
	LA63MF2	0.25	2 830	0.84	0.70	0.82	63.00	62.00	4.00	**B**	**D**	**1**	**1**	**P00**
71	LA71MG2	0.37	2 740	1.29	0.99	0.82	66.00	65.00	3.50	**C**	**D**	**1**	**1**	**P00**
	LA71MH2	0.55	2 800	1.88	1.36	0.82	71.00	71.00	4.30	**C**	**E**	**1**	**1**	**P00**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MA2E	0.75	2 805	2.55	1.67	0.84	77.40	77.90	4.90	**D**	**B**	**2**	**2**	**P00**
	LE80ME2E	1.10	2 835	3.71	2.40	0.83	79.60	79.60	6.00	**D**	**M**	**2**	**2**	**P00**
90	LE90SG2E	1.50	2 885	4.96	3.15	0.84	81.30	81.30	6.90	**E**	**K**	**2**	**2**	**P00**
	LE90LH2E	2.20	2 890	7.27	4.50	0.85	83.20	83.20	7.10	**E**	**M**	**2**	**2**	**P00**
100	LE100LD2E	3.00	2 905	9.86	6.10	0.84	84.60	84.60	7.00	**F**	**K**	**2**	**2**	**P00**
112	LE112MA2E	4.00	2 950	12.9	7.80	0.86	85.80	85.80	7.40	**G**	**G**	**2**	**2**	**P00**
132	LE132SB2E	5.50	2 950	17.8	10.50	0.87	87.00	87.00	6.60	**H**	**E**	**2**	**2**	**P00**
	LE132SF2E	7.50	2 950	24.3	14.10	0.87	88.10	88.10	7.50	**H**	**G**	**2**	**2**	**P00**
160	LE160MB2E	11.00	2 955	35.5	20.50	0.87	89.40	89.40	7.40	**J**	**N**	**2**	**2**	**P00**
	LE160MG2E	15.00	2 955	48.5	27.00	0.88	90.30	90.30	7.60	**J**	**Q**	**2**	**2**	**P00**
	LE160LB2E	18.50	2 955	59.8	33.50	0.88	90.90	90.90	7.90	**J**	**T**	**2**	**2**	**P00**

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	2-pole
63	LA63ME2	2.00	2.20	2.20	49	60	7 000	1.8	3.20	**B**	**C**	**1**	**1**	**P00**
	LA63MF2	2.00	2.20	2.20	49	60	7 000	2.2	3.60	**B**	**D**	**1**	**1**	**P00**
71	LA71MG2	2.30	2.30	1.70	52	63	7 000	2.9	4.50	**C**	**D**	**1**	**1**	**P00**
	LA71MH2	2.50	2.60	1.70	52	63	7 000	4.1	6.00	**C**	**E**	**1**	**1**	**P00**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MA2E	1.90	2.30	2.10	60	71	6 000	8.0	8.30	**D**	**B**	**2**	**2**	**P00**
	LE80ME2E	2.70	3.10	3.00	60	71	6 000	11.0	10.00	**D**	**M**	**2**	**2**	**P00**
90	LE90SG2E	2.70	3.60	3.00	65	77	5 000	17.0	12.00	**E**	**K**	**2**	**2**	**P00**
	LE90LH2E	2.50	3.70	2.80	65	77	5 000	21.0	14.00	**E**	**M**	**2**	**2**	**P00**
100	LE100LD2E	2.30	3.30	2.50	67	79	3 000	44.0	20.00	**F**	**K**	**2**	**2**	**P00**
112	LE112MA2E	2.40	3.30	2.60	69	81	2 000	92.0	22.00	**G**	**G**	**2**	**2**	**P00**
132	LE132SB2E	1.80	2.90	2.00	68	80	1 000	200.0	32.00	**H**	**E**	**2**	**2**	**P00**
	LE132SF2E	2.20	3.10	2.40	68	80	1 000	240.0	36.00	**H**	**G**	**2**	**2**	**P00**
160	LE160MB2E	2.10	3.20	2.30	70	82	600	450.0	57.00	**J**	**N**	**2**	**2**	**P00**
	LE160MG2E	2.40	3.40	2.60	70	82	600	530.0	65.00	**J**	**Q**	**2**	**2**	**P00**
	LE160LB2E	2.90	3.60	3.20	70	82	600	610.0	74.00	**J**	**T**	**2**	**2**	**P00**

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

6-pole, 1 000 rpm at 50 Hz

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	6-pole
63	LE63MF6	0.09	850	1.01	0.39	0.66	50.20	48.70	2.00	**B**	**D**	**1**	**1**	**P01**
	LA63MG6	0.12	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**E**	**1**	**1**	**P01**
71	LA71MG6	0.18	850	2.02	0.67	0.68	57.30	55.80	2.30	**C**	**D**	**1**	**1**	**P01**
	LA71MH6	0.25	860	2.78	0.77	0.76	61.90	60.40	2.70	**C**	**E**	**1**	**1**	**P01**
80	LE80MD6E	0.37	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**
	LE80MH6E	0.55	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
90	LE90SH6E	0.75	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**
	LE90LL6E	1.10	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**
100	LE100LL6E	1.50	970	14.8	3.70	0.73	79.80	79.80	6.20	**F**	**N**	**2**	**2**	**P01**
112	LE112ME6E	2.20	965	21.8	5.20	0.75	81.80	81.80	6.00	**G**	**H**	**2**	**2**	**P01**
132	LE132SC6E	3.00	970	29.5	7.00	0.74	83.30	83.30	5.60	**H**	**F**	**2**	**2**	**P01**
	LE132MB6E	4.00	970	39.4	8.70	0.78	84.60	84.60	5.60	**H**	**H**	**2**	**2**	**P01**
	LE132MJ6E	5.50	970	54.2	12.00	0.77	86.00	86.00	6.10	**H**	**L**	**2**	**2**	**P01**
160	LE160ML6E	7.50	975	73.5	16.10	0.77	87.20	87.20	6.30	**J**	**H**	**2**	**2**	**P01**
	LE160LL6E	11.00	975	107.7	22.50	0.80	88.70	88.70	6.20	**J**	**V**	**2**	**2**	**P01**

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	6-pole
63	LE63MF6	1.80	1.90	2.00	39	50	15 000	3.7	3.60	**B**	**D**	**1**	**1**	**P01**
	LA63MG6	O. R.	O. R.	O. R.	39	50	15 000	3.7	3.60	**B**	**E**	**1**	**1**	**P01**
71	LA71MG6	2.10	1.90	2.30	39	50	15 000	5.5	4.30	**C**	**D**	**1**	**1**	**P01**
	LA71MH6	2.20	2.00	2.40	39	50	15 000	8.0	5.30	**C**	**E**	**1**	**1**	**P01**
80	LE80MD6E	O. R.	O. R.	O. R.	O. R.	O. R.	12 000	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**
	LE80MH6E	O. R.	O. R.	O. R.	O. R.	O. R.	12 000	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
90	LE90SH6E	O. R.	O. R.	O. R.	O. R.	O. R.	10 000	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**
	LE90LL6E	O. R.	O. R.	O. R.	O. R.	O. R.	10 000	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**
100	LE100LL6E	2.00	2.90	2.20	59	71	9 000	110.0	24.00	**F**	**N**	**2**	**2**	**P01**
112	LE112ME6E	2.10	3.10	2.30	57	69	8 000	140.0	24.00	**G**	**H**	**2**	**2**	**P01**
132	LE132SC6E	1.60	2.60	1.80	63	75	6 000	240.0	31.00	**H**	**F**	**2**	**2**	**P01**
	LE132MB6E	1.60	2.50	1.80	63	75	6 000	290.0	36.00	**H**	**H**	**2**	**2**	**P01**
	LE132MJ6E	1.90	2.80	2.10	63	75	5 000	370.0	45.00	**H**	**L**	**2**	**2**	**P01**
160	LE160ML6E	1.80	2.80	2.00	67	79	4 000	980.0	67.00	**J**	**H**	**2**	**2**	**P01**
	LE160LL6E	1.70	2.70	1.90	67	79	4 000	750.0	83.00	**J**	**V**	**2**	**2**	**P01**

O. R. On request

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

4-pole, 1 800 rpm at 60 Hz, 50 Hz power

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	4-pole
63	LA63MD4	0.09	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**B**	**1**	**1**	–
	LA63ME4	0.12	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**C**	**1**	**1**	–
	LA63MF4	0.18	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**D**	**1**	**1**	–
71	LA71MG4	0.25	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**C**	**D**	**1**	**1**	–
	LA71MH4	0.37	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**C**	**E**	**1**	**1**	–
80	LE80MD4E	0.55	1 750	3	1.17	0.74	80.00	80.00	O. R.	**D**	**C**	**2**	**2**	–
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MH4E	0.75	1 750	4.09	1.58	0.72	82.50	82.50	O. R.	**D**	**E**	**2**	**2**	–
90	LE90SG4E	1.10	1 740	6.04	2.20	0.74	84.00	84.00	O. R.	**E**	**K**	**2**	**2**	–
	LE90LH4E	1.50	1 745	8.21	3.00	0.75	84.00	84.00	O. R.	**E**	**M**	**2**	**2**	–
100	LE100LE4E	2.20	1 760	11.9	4.05	0.78	87.50	87.50	O. R.	**F**	**L**	**2**	**2**	–
	LE100LK4E	3.00	1 765	16.2	5.40	0.79	87.50	87.50	O. R.	**F**	**M**	**2**	**2**	–
112	LE112ME4E	4.00	1 770	21.6	6.90	0.77	87.50	87.50	O. R.	**G**	**H**	**2**	**2**	–
132	LE132SF4E	5.50	1 770	29.7	9.90	0.78	89.50	89.50	O. R.	**H**	**G**	**2**	**2**	–
	LE132MF4E	7.50	1 770	40.5	12.80	0.82	89.50	89.50	O. R.	**H**	**J**	**2**	**2**	–
	LE132ZMM4E	9.20	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**H**	**V**	**2**	**2**	–
160	LE160MF4E	11.00	1 775	59	18.10	0.84	91.00	91.00	O. R.	**J**	**P**	**2**	**2**	–
	LE160LD4E	15.00	1 780	80.5	24.50	0.84	91.00	91.00	O. R.	**J**	**U**	**2**	**2**	–

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	4-pole
63	LA63MD4	O. R.	O. R.	O. R.	46	57	15 000	2.9	3.20	**B**	**B**	**1**	**1**	–
	LA63ME4	O. R.	O. R.	O. R.	46	57	15 000	2.9	3.20	**B**	**C**	**1**	**1**	–
	LA63MF4	O. R.	O. R.	O. R.	46	57	15 000	3.7	3.60	**B**	**D**	**1**	**1**	–
71	LA71MG4	O. R.	O. R.	O. R.	48	59	15 000	5.2	4.30	**C**	**D**	**1**	**1**	–
	LA71MH4	O. R.	O. R.	O. R.	48	59	15 000	7.7	5.80	**C**	**E**	**1**	**1**	–
80	LE80MD4E	O. R.	O. R.	O. R.	55	66	10 000	17.0	9.30	**D**	**C**	**2**	**2**	–
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MH4E	O. R.	O. R.	O. R.	55	66	10 000	21.0	10.00	**D**	**E**	**2**	**2**	–
90	LE90SG4E	O. R.	O. R.	O. R.	58	70	8 000	36.0	12.00	**E**	**K**	**2**	**2**	–
	LE90LH4E	O. R.	O. R.	O. R.	58	70	8 000	28.0	15.00	**E**	**M**	**2**	**2**	–
100	LE100LE4E	O. R.	O. R.	O. R.	62	74	7 000	86.0	20.00	**F**	**L**	**2**	**2**	–
	LE100LK4E	O. R.	O. R.	O. R.	62	74	7 000	110.0	24.00	**F**	**M**	**2**	**2**	–
112	LE112ME4E	O. R.	O. R.	O. R.	62	74	5 000	140.0	24.00	**G**	**H**	**2**	**2**	–
132	LE132SF4E	O. R.	O. R.	O. R.	68	80	3 000	270.0	35.00	**H**	**G**	**2**	**2**	–
	LE132MF4E	O. R.	O. R.	O. R.	68	80	3 000	340.0	42.00	**H**	**J**	**2**	**2**	–
	LE132ZMM4E	O. R.	O. R.	O. R.	O. R.	O. R.	1 600	O. R.	O. R.	**H**	**V**	**2**	**2**	–
160	LE160MF4E	O. R.	O. R.	O. R.	69	81	2 000	650.0	61.00	**J**	**P**	**2**	**2**	–
	LE160LD4E	O. R.	O. R.	O. R.	69	81	2 000	830.0	73.00	**J**	**U**	**2**	**2**	–

O. R. On request

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

2-pole, 3 600 rpm at 60 Hz, 50 Hz power

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	2-pole
63	LA63ME2	0.18	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**C**	**1**	**1**	**P00**
	LA63MF2	0.25	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**D**	**1**	**1**	**P00**
71	LA71MG2	0.37	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**C**	**D**	**1**	**1**	**P00**
	LA71MH2	0.55	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**C**	**E**	**1**	**1**	**P00**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MA2E	0.75	3 445	2.08	1.50	0.83	75.50	75.50	O. R.	**D**	**B**	**2**	**2**	**P00**
	LE80ME2E	1.10	3 465	3.03	2.05	0.82	82.50	82.50	O. R.	**D**	**M**	**2**	**2**	**P00**
90	LE90SG2E	1.50	3 505	4.09	2.75	0.82	84.00	84.00	O. R.	**E**	**K**	**2**	**2**	**P00**
	LE90LH2E	2.20	3 510	5.99	3.90	0.83	85.50	85.50	O. R.	**E**	**M**	**2**	**2**	**P00**
100	LE100LD2E	3.00	3 520	8.14	5.20	0.83	87.50	87.50	O. R.	**F**	**K**	**2**	**2**	**P00**
112	LE112MA2E	4.00	3 565	10.7	6.30	0.84	87.50	87.50	O. R.	**G**	**G**	**2**	**2**	**P00**
132	LE132SB2E	5.50	3 555	14.8	9.10	0.86	88.50	88.50	O. R.	**H**	**E**	**2**	**2**	**P00**
	LE132SF2E	7.50	3 560	20.1	12.10	0.87	89.50	89.50	O. R.	**H**	**G**	**2**	**2**	**P00**
160	LE160MB2E	11.00	3 560	29.5	17.80	0.86	90.20	90.20	O. R.	**J**	**N**	**2**	**2**	**P00**
	LE160MG2E	15.00	3 565	40.2	24.00	0.87	90.20	90.20	O. R.	**J**	**Q**	**2**	**2**	**P00**
	LE160LB2E	18.50	3 565	49.6	29.50	0.87	91.00	91.00	O. R.	**J**	**T**	**2**	**2**	**P00**

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	2-pole
63	LA63ME2	O. R.	O. R.	O. R.	53	64	5 000	1.8	3.20	**B**	**C**	**1**	**1**	**P00**
	LA63MF2	O. R.	O. R.	O. R.	53	64	5 000	2.2	3.60	**B**	**D**	**1**	**1**	**P00**
71	LA71MG2	O. R.	O. R.	O. R.	56	67	5 000	2.9	4.50	**C**	**D**	**1**	**1**	**P00**
	LA71MH2	O. R.	O. R.	O. R.	56	67	5 000	4.1	6.00	**C**	**E**	**1**	**1**	**P00**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MA2E	O. R.	O. R.	O. R.	64	75	3 000	8.0	8.30	**D**	**B**	**2**	**2**	**P00**
	LE80ME2E	O. R.	O. R.	O. R.	64	75	3 000	11.0	10.00	**D**	**M**	**2**	**2**	**P00**
90	LE90SG2E	O. R.	O. R.	O. R.	69	81	2 000	17.0	12.00	**E**	**K**	**2**	**2**	**P00**
	LE90LH2E	O. R.	O. R.	O. R.	69	81	2 000	21.0	14.00	**E**	**M**	**2**	**2**	**P00**
100	LE100LD2E	O. R.	O. R.	O. R.	71	83	2 000	44.0	20.00	**F**	**K**	**2**	**2**	**P00**
112	LE112MA2E	O. R.	O. R.	O. R.	73	85	1 300	92.0	22.00	**G**	**G**	**2**	**2**	**P00**
132	LE132SB2E	O. R.	O. R.	O. R.	72	84	800	200.0	32.00	**H**	**E**	**2**	**2**	**P00**
	LE132SF2E	O. R.	O. R.	O. R.	72	84	800	240.0	36.00	**H**	**G**	**2**	**2**	**P00**
160	LE160MB2E	O. R.	O. R.	O. R.	77	89	500	450.0	57.00	**J**	**N**	**2**	**2**	**P00**
	LE160MG2E	O. R.	O. R.	O. R.	77	89	500	530.0	65.00	**J**	**Q**	**2**	**2**	**P00**
	LE160LB2E	O. R.	O. R.	O. R.	77	89	500	610.0	74.00	**J**	**T**	**2**	**2**	**P00**

O. R. On request

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

6-pole, 1 200 rpm at 60 Hz, 50 Hz power

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	6-pole
63	LA63MF6	0.09	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**D**	**1**	**1**	**P01**
	LA63MG6	0.12	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**E**	**1**	**1**	**P01**
71	LA71MG6	0.18	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**C**	**D**	**1**	**1**	**P01**
	LA71MH6	0.25	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**C**	**E**	**1**	**1**	**P01**
80	LE80MD6E	0.37	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**
	LE80MH6E	0.55	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
90	LE90SH6E	0.75	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**
	LE90LL6E	1.10	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**
100	LE100LL6E	1.50	1 175	12.2	3.15	0.69	86.50	86.50	O. R.	**F**	**N**	**2**	**2**	**P01**
112	LE112ME6E	2.20	1 170	18	4.30	0.73	87.50	87.50	O. R.	**G**	**H**	**2**	**2**	**P01**
132	LE132SC6E	3.00	1 175	24.4	6.10	0.70	87.50	87.50	O. R.	**H**	**F**	**2**	**2**	**P01**
	LE132MB6E	4.00	1 180	32.4	7.30	0.73	87.50	87.50	O. R.	**H**	**H**	**2**	**2**	**P01**
	LE132MJ6E	5.50	1 175	44.7	10.40	0.74	89.50	89.50	O. R.	**H**	**L**	**2**	**2**	**P01**
160	LE160ML6E	7.50	1 180	60.5	14.20	0.74	89.50	89.50	O. R.	**J**	**H**	**2**	**2**	**P01**
	LE160LL6E	11.00	1 180	89	19.60	0.78	90.20	90.20	O. R.	**J**	**V**	**2**	**2**	**P01**

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	6-pole
63	LA63MF6	O. R.	O. R.	O. R.	43	54	10 500	3.7	3.60	**B**	**D**	**1**	**1**	**P01**
	LA63MG6	O. R.	O. R.	O. R.	43	54	10 500	3.7	3.60	**B**	**E**	**1**	**1**	**P01**
71	LA71MG6	O. R.	O. R.	O. R.	43	54	10 500	5.5	4.30	**C**	**D**	**1**	**1**	**P01**
	LA71MH6	O. R.	O. R.	O. R.	43	54	10 500	8.0	5.30	**C**	**E**	**1**	**1**	**P01**
80	LE80MD6E	O. R.	O. R.	O. R.	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**
	LE80MH6E	O. R.	O. R.	O. R.	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
90	LE90SH6E	O. R.	O. R.	O. R.	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**
	LE90LL6E	O. R.	O. R.	O. R.	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**
100	LE100LL6E	O. R.	O. R.	O. R.	62	74	6 300	110.0	24.00	**F**	**N**	**2**	**2**	**P01**
112	LE112ME6E	O. R.	O. R.	O. R.	60	72	5 600	140.0	24.00	**G**	**H**	**2**	**2**	**P01**
132	LE132SC6E	O. R.	O. R.	O. R.	67	79	4 200	240.0	31.00	**H**	**F**	**2**	**2**	**P01**
	LE132MB6E	O. R.	O. R.	O. R.	67	79	4 200	290.0	36.00	**H**	**H**	**2**	**2**	**P01**
	LE132MJ6E	O. R.	O. R.	O. R.	67	79	3 500	370.0	45.00	**H**	**L**	**2**	**2**	**P01**
160	LE160ML6E	O. R.	O. R.	O. R.	70	82	2 800	980.0	67.00	**J**	**H**	**2**	**2**	**P01**
	LE160LL6E	O. R.	O. R.	O. R.	70	82	2 800	750.0	83.00	**J**	**V**	**2**	**2**	**P01**

O. R. On request

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

4-pole, 1 800 rpm at 60 Hz, 60 Hz power

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	4-pole
63	LA63MD4	0.11	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**B**	**1**	**1**	–
	LA63ME4	0.14	1 650	0.81	0.43	0.74	56.00	54.50	O. R.	**B**	**C**	**1**	**1**	–
	LA63MF4	0.21	1 650	1.22	0.59	0.77	58.30	56.80	O. R.	**B**	**D**	**1**	**1**	–
71	LA71MG4	0.29	1 650	1.68	0.76	0.77	61.90	60.40	O. R.	**C**	**D**	**1**	**1**	–
	LA71MH4	0.43	1 670	2.46	1.08	0.76	65.80	64.80	O. R.	**C**	**E**	**1**	**1**	–
80	LE80MD4E	0.63	1 735	3.47	1.30	0.76	80.00	80.00	O. R.	**D**	**C**	**2**	**2**	–
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MH4E	0.86	1 740	4.72	1.72	0.76	82.50	82.50	O. R.	**D**	**E**	**2**	**2**	–
90	LE90SG4E	1.27	1 725	7.03	2.45	0.78	84.00	84.00	O. R.	**E**	**K**	**2**	**2**	–
	LE90LH4E	1.75	1 730	9.66	3.30	0.79	84.00	84.00	O. R.	**E**	**M**	**2**	**2**	–
100	LE100LE4E	2.55	1 755	13.9	4.45	0.82	87.50	87.50	O. R.	**F**	**L**	**2**	**2**	–
	LE100LK4E	3.45	1 755	18.8	6.00	0.82	87.50	87.50	O. R.	**F**	**M**	**2**	**2**	–
112	LE112ME4E	4.55	1 760	24.7	8.00	0.82	87.50	87.50	O. R.	**G**	**H**	**2**	**2**	–
132	LE132SF4E	6.30	1 765	34.1	10.90	0.81	89.50	89.50	O. R.	**H**	**G**	**2**	**2**	–
	LE132MF4E	8.60	1 765	46.5	14.50	0.83	89.50	89.50	O. R.	**H**	**J**	**2**	**2**	–
	LE132ZMM4E	10.50	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**H**	**V**	**2**	**2**	–
160	LE160MF4E	12.60	1 770	68	20.50	0.85	91.00	91.00	O. R.	**J**	**P**	**2**	**2**	–
	LE160LD4E	17.30	1 775	93	27.50	0.86	92.40	92.40	O. R.	**J**	**U**	**2**	**2**	–

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	4-pole
63	LA63MD4	O. R.	O. R.	O. R.	46	57	15 000	2.9	3.20	**B**	**B**	**1**	**1**	–
	LA63ME4	O. R.	O. R.	O. R.	46	57	15 000	2.9	3.20	**B**	**C**	**1**	**1**	–
	LA63MF4	O. R.	O. R.	O. R.	46	57	15 000	3.7	3.60	**B**	**D**	**1**	**1**	–
71	LA71MG4	O. R.	O. R.	O. R.	48	59	15 000	5.2	4.30	**C**	**D**	**1**	**1**	–
	LA71MH4	O. R.	O. R.	O. R.	48	59	15 000	7.7	5.80	**C**	**E**	**1**	**1**	–
80	LE80MD4E	O. R.	O. R.	O. R.	55	66	10 000	17.0	9.30	**D**	**C**	**2**	**2**	–
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MH4E	O. R.	O. R.	O. R.	55	66	10 000	21.0	10.00	**D**	**E**	**2**	**2**	–
90	LE90SG4E	O. R.	O. R.	O. R.	58	70	8 000	36.0	12.00	**E**	**K**	**2**	**2**	–
	LE90LH4E	O. R.	O. R.	O. R.	58	70	8 000	28.0	15.00	**E**	**M**	**2**	**2**	–
100	LE100LE4E	O. R.	O. R.	O. R.	62	74	7 000	86.0	20.00	**F**	**L**	**2**	**2**	–
	LE100LK4E	O. R.	O. R.	O. R.	62	74	7 000	110.0	24.00	**F**	**M**	**2**	**2**	–
112	LE112ME4E	O. R.	O. R.	O. R.	62	74	5 000	140.0	24.00	**G**	**H**	**2**	**2**	–
132	LE132SF4E	O. R.	O. R.	O. R.	68	80	3 000	270.0	35.00	**H**	**G**	**2**	**2**	–
	LE132MF4E	O. R.	O. R.	O. R.	68	80	3 000	340.0	42.00	**H**	**J**	**2**	**2**	–
	LE132ZMM4E	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**H**	**V**	**2**	**2**	–
160	LE160MF4E	O. R.	O. R.	O. R.	69	81	2 000	650.0	61.00	**J**	**P**	**2**	**2**	–
	LE160LD4E	O. R.	O. R.	O. R.	68	81	2 000	830.0	73.00	**J**	**U**	**2**	**2**	–

O. R. On request

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

2-pole, 3 600 rpm at 60 Hz, 60 Hz power

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	2-pole
63	LA63ME2	0.21	3 410	0.59	0.51	0.81	64.00	63.00	O. R.	**B**	**C**	**1**	**1**	**P00**
	LA63MF2	0.29	3 420	0.81	0.68	0.82	65.00	64.00	O. R.	**B**	**D**	**1**	**1**	**P00**
71	LA71MG2	0.43	3 340	1.23	1.00	0.82	66.00	65.00	O. R.	**C**	**D**	**1**	**1**	**P00**
	LA71MH2	0.63	3 400	1.77	1.36	0.82	71.00	71.00	O. R.	**C**	**E**	**1**	**1**	**P00**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MA2E	0.86	3 410	2.41	1.70	0.84	75.50	75.50	O. R.	**D**	**B**	**2**	**2**	**P00**
	LE80ME2E	1.27	3 430	3.54	2.30	0.84	82.50	82.50	O. R.	**D**	**M**	**2**	**2**	**P00**
90	LE90SG2E	1.75	3 480	4.8	3.10	0.85	84.00	84.00	O. R.	**E**	**K**	**2**	**2**	**P00**
	LE90LH2E	2.55	3 485	6.99	4.35	0.86	85.50	85.50	O. R.	**E**	**M**	**2**	**2**	**P00**
100	LE100LD2E	3.45	3 505	9.4	5.80	0.85	87.50	87.50	O. R.	**F**	**K**	**2**	**2**	**P00**
112	LE112MA2E	4.55	3 550	12.2	7.50	0.87	87.50	87.50	O. R.	**G**	**G**	**2**	**2**	**P00**
132	LE132SB2E	6.30	3 550	16.9	10.20	0.88	88.50	88.50	O. R.	**H**	**E**	**2**	**2**	**P00**
	LE132SF2E	8.60	3 550	23.1	13.70	0.88	89.50	89.50	O. R.	**H**	**G**	**2**	**2**	**P00**
160	LE160MB2E	12.60	3 555	33.8	19.90	0.88	90.20	90.20	O. R.	**J**	**N**	**2**	**2**	**P00**
	LE160MG2E	17.30	3 555	46.5	27.00	0.89	91.00	91.00	O. R.	**J**	**Q**	**2**	**2**	**P00**
	LE160LB2E	21.30	3 555	57	33.00	0.89	91.00	91.00	O. R.	**J**	**T**	**2**	**2**	**P00**

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{BK}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	2-pole
63	LA63ME2	O. R.	O. R.	O. R.	53	64	5 000	1.8	3.20	**B**	**C**	**1**	**1**	**P00**
	LA63MF2	O. R.	O. R.	O. R.	53	64	5 000	2.2	3.60	**B**	**D**	**1**	**1**	**P00**
71	LA71MG2	O. R.	O. R.	O. R.	56	67	5 000	2.9	4.50	**C**	**D**	**1**	**1**	**P00**
	LA71MH2	O. R.	O. R.	O. R.	56	67	5 000	4.1	6.00	**C**	**E**	**1**	**1**	**P00**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
80	LE80MA2E	O. R.	O. R.	O. R.	64	75	3 000	8.0	8.30	**D**	**B**	**2**	**2**	**P00**
	LE80ME2E	O. R.	O. R.	O. R.	64	75	3 000	11.0	10.00	**D**	**M**	**2**	**2**	**P00**
90	LE90SG2E	O. R.	O. R.	O. R.	69	81	2 000	17.0	12.00	**E**	**K**	**2**	**2**	**P00**
	LE90LH2E	O. R.	O. R.	O. R.	69	81	2 000	21.0	14.00	**E**	**M**	**2**	**2**	**P00**
100	LE100LD2E	O. R.	O. R.	O. R.	71	83	2 000	44.0	20.00	**F**	**K**	**2**	**2**	**P00**
112	LE112MA2E	O. R.	O. R.	O. R.	73	85	1 300	92.0	22.00	**G**	**G**	**2**	**2**	**P00**
132	LE132SB2E	O. R.	O. R.	O. R.	72	84	800	200.0	32.00	**H**	**E**	**2**	**2**	**P00**
	LE132SF2E	O. R.	O. R.	O. R.	72	84	800	240.0	36.00	**H**	**G**	**2**	**2**	**P00**
160	LE160MB2E	O. R.	O. R.	O. R.	77	89	500	450.0	57.00	**J**	**N**	**2**	**2**	**P00**
	LE160MG2E	O. R.	O. R.	O. R.	77	89	500	530.0	65.00	**J**	**Q**	**2**	**2**	**P00**
	LE160LB2E	O. R.	O. R.	O. R.	77	89	500	610.0	74.00	**J**	**T**	**2**	**2**	**P00**

O. R. On request

Motors with High Efficiency IE2

IE2

Selection and ordering data (continued)

6-pole, 1 200 rpm at 60 Hz, 60 Hz power

Size	Motor	P_{rated}	n_{rated}	T_{rated}	I_{rated}	cos φ	η		I_{St}/I_{rated}	Order No.				Order code
							4/4 load	3/4 load		Data position				Number of poles
		kW	rpm	Nm	A	-	%	%	-	9.	10.	11.	12.	6-pole
63	LA63MF6	0.10	1 050	0.91	0.39	0.67	48.00	46.50	O. R.	**B**	**D**	**1**	**1**	**P01**
	LA63MG6	0.14	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**B**	**E**	**1**	**1**	**P01**
71	LA71MG6	0.21	1 050	1.19	0.69	0.67	57.30	55.80	O. R.	**C**	**D**	**1**	**1**	**P01**
	LA71MH6	0.29	1 060	2.61	0.78	0.75	61.90	60.40	O. R.	**C**	**E**	**1**	**1**	**P01**
80	LE80MD6E	0.43	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**
	LE80MH6E	0.63	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
90	LE90SH6E	0.86	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**
	LE90LL6E	1.27	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**
100	LE100LL6E	1.75	1 170	14.3	3.45	0.74	86.50	86.50	O. R.	**F**	**N**	**2**	**2**	**P01**
112	LE112ME6E	2.55	1 165	20.9	4.75	0.77	87.50	87.50	O. R.	**G**	**H**	**2**	**2**	**P01**
132	LE132SC6	3.45	1 170	28.2	6.60	0.75	87.50	87.50	O. R.	**H**	**F**	**2**	**2**	**P01**
	LE132MB6E	4.55	1 170	37.1	8.30	0.79	87.50	87.50	O. R.	**H**	**H**	**2**	**2**	**P01**
	LE132MJ6E	6.30	1 170	51.5	11.30	0.78	89.50	89.50	O. R.	**H**	**L**	**2**	**2**	**P01**
160	LE160ML6E	8.60	1 175	70	15.50	0.78	89.50	89.50	O. R.	**J**	**H**	**2**	**2**	**P01**
	LE160LL6E	12.60	1 175	102	21.50	0.81	90.20	90.20	O. R.	**J**	**V**	**2**	**2**	**P01**

O. R. On request

Selection and ordering data (continued)

Size	Motor	T_{St}/T_{rated}	T_{Bk}/T_{rated}	T_A/T_{rated}	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No.				Order code
										Data position				Number of poles
		-	-	-	dB (A)	dB (A)	1/h	10^{-4} kgm²	kg	9.	10.	11.	12.	6-pole
63	LA63MF6	O. R.	O. R.	O. R.	43	54	10 500	3.7	3.60	**B**	**D**	**1**	**1**	**P01**
	LA63MG6	O. R.	O. R.	O. R.	43	54	10 500	3.7	3.60	**B**	**E**	**1**	**1**	**P01**
71	LA71MG6	O. R.	O. R.	O. R.	43	54	10 500	5.5	4.30	**C**	**D**	**1**	**1**	**P01**
	LA71MH6	O. R.	O. R.	O. R.	43	54	10 500	8.0	5.30	**C**	**E**	**1**	**1**	**P01**
80	LE80MD6E	O. R.	O. R.	O. R.	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**
	LE80MH6E	O. R.	O. R.	O. R.	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**
Efficiency: High Efficiency IE2 (IE2 version acc. to IEC 60034-30)														
90	LE90SH6E	O. R.	O. R.	O. R.	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**
	LE90LL6E	O. R.	O. R.	O. R.	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**
100	LE100LL6E	O. R.	O. R.	O. R.	62	74	6 300	110.0	24.00	**F**	**N**	**2**	**2**	**P01**
112	LE112ME6E	O. R.	O. R.	O. R.	60	72	5 600	140.0	24.00	**G**	**H**	**2**	**2**	**P01**
132	LE132SC6	O. R.	O. R.	O. R.	67	79	4 200	240.0	31.00	**H**	**F**	**2**	**2**	**P01**
	LE132MB6E	O. R.	O. R.	O. R.	67	79	4 200	290.0	36.00	**H**	**H**	**2**	**2**	**P01**
	LE132MJ6E	O. R.	O. R.	O. R.	67	79	3 500	370.0	45.00	**H**	**L**	**2**	**2**	**P01**
160	LE160ML6E	O. R.	O. R.	O. R.	70	82	2 800	980.0	67.00	**J**	**H**	**2**	**2**	**P01**
	LE160LL6E	O. R.	O. R.	O. R.	70	82	2 800	750.0	83.00	**J**	**V**	**2**	**2**	**P01**

O. R. On request

NEMA Energy Efficient motors MG1
Table 12-11

Selection and ordering data

4-pole, 1 800 rpm at 60 Hz, 50 Hz power

Size	Motor	P_{rated}		n_{rated}	T_{rated}	EISA CC no.	I_{rated}	cos φ	η 4/4 load	3/4 load
		kW	hp	rpm	Nm	CC032A	A	-	%	%
63	LA63MD4	0.09	0.12	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA63ME4	0.12	0.16	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA63MF4	0.18	0.25	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
71	LA71MG4	0.25	0.33	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA71MH4	0.37	0.50	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
80	LE80MD4E	0.55	0.75	1 750	3	–	1.17	0.74	80.00	80.00
Efficiency: NEMA Energy Efficient NEE										
80	LE80MH4E	0.75	1.00	1 750	4.09	–	1.58	0.72	82.50	82.50
90	LE90SG4E	1.10	1.50	1 740	6.04	–	2.20	0.74	84.00	84.00
	LE90LH4E	1.50	2.00	1 745	8.21	–	3.00	0.75	84.00	84.00
100	LE100LE4E	2.20	3.00	1 760	11.9	–	4.05	0.78	87.50	87.50
	LE100LK4E	3.00	4.00	1 765	16.2	–	5.40	0.79	87.50	87.50
112	LE112ME4E	4.00	5.00	1 770	21.6	✓	6.90	0.77	87.50	87.50
132	LE132SF4E	5.50	7.50	1 770	29.7	✓	9.90	0.78	89.50	89.50
	LE132MF4E	7.50	10.00	1 770	40.5	✓	12.80	0.82	89.50	89.50
	LE132ZMM4E	9.20	O. R.	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
160	LE160MF4E	11.00	15.00	1 775	59	✓	18.10	0.84	91.00	91.00
	LE160LD4E	15.00	20.00	1 780	80.5	✓	24.50	0.84	91.00	91.00

O. R. On request

Selection and ordering data (continued)

Size	Motor	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No. Data position				Order code Number of poles	Specification	
		dB (A)	dB (A)	1/h	10^{-4} kgm^2	kg	9.	10.	11.	12.	4-pole	NEMA	UL-R/CSA
63	LA63MD4	46	57	15 000	2.9	3.20	**B**	**B**	**1**	**1**	**–**	**N65**	**N38**
	LA63ME4	46	57	15 000	2.9	3.20	**B**	**C**	**1**	**1**	**–**	**N65**	**N38**
	LA63MF4	46	57	15 000	3.7	3.60	**B**	**D**	**1**	**1**	**–**	**N65**	**N38**
71	LA71MG4	48	59	15 000	5.2	4.30	**C**	**D**	**1**	**1**	**–**	**N65**	**N38**
	LA71MH4	48	59	15 000	7.7	5.80	**C**	**E**	**1**	**1**	**–**	**N65**	**N38**
80	LE80MD4E	55	66	10 000	17.0	9.30	**D**	**C**	**2**	**2**	**–**	**N65**	**N38***
Efficiency: NEMA Energy Efficient NEE													
80	LE80MH4E	55	66	10 000	21.0	10.00	**D**	**E**	**2**	**2**	**–**	**N65**	**N38***
90	LE90SG4E	58	70	8 000	36.0	12.00	**E**	**K**	**2**	**2**	**–**	**N65**	**N38***
	LE90LH4E	58	70	8 000	28.0	15.00	**E**	**M**	**2**	**2**	**–**	**N65**	**N38***
100	LE100LE4E	62	74	7 000	86.0	20.00	**F**	**L**	**2**	**2**	**–**	**N65**	**N38**
	LE100LK4E	62	74	7 000	110.0	24.00	**F**	**M**	**2**	**2**	**–**	**N65**	**N38**
112	LE112ME4E	62	74	5 000	140.0	24.00	**G**	**H**	**2**	**2**	**–**	**N65**	**N38**
132	LE132SF4E	68	80	3 000	270.0	35.00	**H**	**G**	**2**	**2**	**–**	**N65**	**N38**
	LE132MF4E	68	80	3 000	340.0	42.00	**H**	**J**	**2**	**2**	**–**	**N65**	**N38**
	LE132ZMM4E	O. R.	O. R.	1 600	O. R.	O. R.	**H**	**V**	**2**	**2**	**–**	**N65**	**N38**
160	LE160MF4E	69	81	2 000	650.0	61.00	**J**	**P**	**2**	**2**	**–**	**N65**	**N38**
	LE160LD4E	69	81	2 000	830.0	73.00	**J**	**U**	**2**	**2**	**–**	**N65**	**N38**

O. R. On request

* For motors, sizes 80 and 90, certification according to UL-R/CSA is possible from the middle of 2012

NEMA Energy Efficient motors MG1 Table 12-11

IE2

Selection and ordering data (continued)

2-pole, 3 600 rpm at 60 Hz, 50 Hz power

Size	Motor	P_{rated}		n_{rated}	T_{rated}	EISA CC no.	I_{rated}	cos φ	η 4/4 load	η 3/4 load
		kW	hp	rpm	Nm	CC032A	A	-	%	%
63	LA63ME2	0.18	0.25	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA63MF2	0.25	0.33	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
71	LA71MG2	0.37	0.50	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA71MH2	0.55	0.75	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
Efficiency: NEMA Energy Efficient NEE										
80	LE80MA2E	0.75	1.00	3 445	2.08	–	1.50	0.83	75.50	75.50
	LE80ME2E	1.10	1.50	3 465	3.03	–	2.05	0.82	82.50	82.50
90	LE90SG2E	1.50	2.00	3 505	4.09	–	2.75	0.82	84.00	84.00
	LE90LH2E	2.20	3.00	3 510	5.99	–	3.90	0.83	85.50	85.50
100	LE100LD2E	3.00	4.00	3 520	8.14	–	5.20	0.83	87.50	87.50
112	LE112MA2E	4.00	5.00	3 565	10.7	✓	6.30	0.84	87.50	87.50
132	LE132SB2E	5.50	7.50	3 555	14.8	✓	9.10	0.86	88.50	88.50
	LE132SF2E	7.50	10.00	3 560	20.1	✓	12.10	0.87	89.50	89.50
160	LE160MB2E	11.00	15.00	3 560	29.5	✓	17.80	0.86	90.20	90.20
	LE160MG2E	15.00	20.00	3 565	40.2	✓	24.00	0.87	90.20	90.20
	LE160LB2E	18.50	25.00	3 565	49.6	✓	29.50	0.87	91.00	91.00

O. R. On request

Selection and ordering data (continued)

Size	Motor	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No. Data position				Order code Number of poles	Specification	
		dB (A)	dB (A)	1/h	10^{-4} kgm^2	kg	9.	10.	11.	12.	2-pole	NEMA	UL-R/CSA
63	LA63ME2	53	64	5 000	1.8	3.20	**B**	**C**	**1**	**1**	**P00**	**N65**	**N38**
	LA63MF2	53	64	5 000	2.2	3.60	**B**	**D**	**1**	**1**	**P00**	**N65**	**N38**
71	LA71MG2	56	67	5 000	2.9	4.50	**C**	**D**	**1**	**1**	**P00**	**N65**	**N38**
	LA71MH2	56	67	5 000	4.1	6.00	**C**	**E**	**1**	**1**	**P00**	**N65**	**N38**
Efficiency: NEMA Energy Efficient NEE													
80	LE80MA2E	64	75	3 000	8.0	8.30	**D**	**B**	**2**	**2**	**P00**	**N65**	**N38***
	LE80ME2E	64	75	3 000	11.0	10.00	**D**	**M**	**2**	**2**	**P00**	**N65**	**N38***
90	LE90SG2E	69	81	2 000	17.0	12.00	**E**	**K**	**2**	**2**	**P00**	**N65**	**N38***
	LE90LH2E	69	81	2 000	21.0	14.00	**E**	**M**	**2**	**2**	**P00**	**N65**	**N38***
100	LE100LD2E	71	83	2 000	44.0	20.00	**F**	**K**	**2**	**2**	**P00**	**N65**	**N38**
112	LE112MA2E	73	85	1 300	92.0	22.00	**G**	**G**	**2**	**2**	**P00**	**N65**	**N38**
132	LE132SB2E	72	84	800	200.0	32.00	**H**	**E**	**2**	**2**	**P00**	**N65**	**N38**
	LE132SF2E	72	84	800	240.0	36.00	**H**	**G**	**2**	**2**	**P00**	**N65**	**N38**
160	LE160MB2E	77	89	500	450.0	57.00	**J**	**N**	**2**	**2**	**P00**	**N65**	**N38**
	LE160MG2E	77	89	500	530.0	65.00	**J**	**Q**	**2**	**2**	**P00**	**N65**	**N38**
	LE160LB2E	77	89	500	610.0	74.00	**J**	**T**	**2**	**2**	**P00**	**N65**	**N38**

* For motors, sizes 80 and 90, certification according to UL-R/CSA is possible from the middle of 2012

NEMA Energy Efficient motors MG1
Table 12-11

IE2

Selection and ordering data (continued)

6-pole, 1 200 rpm at 60 Hz, 50 Hz power

Size	Motor	P_{rated}		n_{rated}	T_{rated}	EISA CC no.	I_{rated}	cos φ	η 4/4 load	3/4 load
		kW	hp	rpm	Nm	CC032A	A	-	%	%
63	LA63MF6	0.09	0.12	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA63MG6	0.12	0.16	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
71	LA71MG6	0.18	0.25	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA71MH6	0.25	0.33	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
80	LE80MD6E	0.37	0.50	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LE80MH6E	0.55	0.75	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
Efficiency: NEMA Energy Efficient NEE										
90	LE90SH6E	0.75	1.00	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LE90LL6E	1.10	1.50	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
100	LE100LL6E	1.50	2.00	1 175	12.2	–	3.15	0.69	86.50	86.50
112	LE112ME6E	2.20	3.00	1 170	18	✓	4.30	0.73	87.50	87.50
132	LE132SC6E	3.00	4.00	1 175	24.4	–	6.10	0.70	87.50	87.50
	LE132MB6E	4.00	5.00	1 180	32.4	✓	7.30	0.73	87.50	87.50
	LE132MJ6E	5.50	7.50	1 175	44.7	✓	10.40	0.74	89.50	89.50
160	LE160ML6E	7.50	10.00	1 180	60.5	✓	14.20	0.74	89.50	89.50
	LE160LL6E	11.00	15.00	1 180	89	✓	19.60	0.78	90.20	90.20

O. R. On request

Selection and ordering data (continued)

Size	Motor	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No. Data position				Order code Number of poles	Specification	
		dB (A)	dB (A)	1/h	10^{-4} kgm^2	kg	9.	10.	11.	12.	6-pole	NEMA	UL-R/CSA
63	LA63MF6	43	54	10 500	3.7	3.60	**B**	**D**	**1**	**1**	**P01**	**N65**	**N38**
	LA63MG6	43	54	10 500	3.7	3.60	**B**	**E**	**1**	**1**	**P01**	**N65**	**N38**
71	LA71MG6	43	54	10 500	5.5	4.30	**C**	**D**	**1**	**1**	**P01**	**N65**	**N38**
	LA71MH6	43	54	10 500	8.0	5.30	**C**	**E**	**1**	**1**	**P01**	**N65**	**N38**
80	LE80MD6E	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**	**N65**	**N38***
	LE80MH6E	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**	**N65**	**N38***
Efficiency: NEMA Energy Efficient NEE													
90	LE90SH6E	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**	**N65**	**N38***
	LE90LL6E	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**	**N65**	**N38***
100	LE100LL6E	62	74	6 300	110.0	24.00	**F**	**N**	**2**	**2**	**P01**	**N65**	**N38**
112	LE112ME6E	60	72	5 600	140.0	24.00	**G**	**H**	**2**	**2**	**P01**	**N65**	**N38**
132	LE132SC6E	67	79	4 200	240.0	31.00	**H**	**F**	**2**	**2**	**P01**	**N65**	**N38**
	LE132MB6E	67	79	4 200	290.0	36.00	**H**	**H**	**2**	**2**	**P01**	**N65**	**N38**
	LE132MJ6E	67	79	3 500	370.0	45.00	**H**	**L**	**2**	**2**	**P01**	**N65**	**N38**
160	LE160ML6E	70	82	2 800	980.0	67.00	**J**	**H**	**2**	**2**	**P01**	**N65**	**N38**
	LE160LL6E	70	82	2 800	750.0	83.00	**J**	**V**	**2**	**2**	**P01**	**N65**	**N38**

O. R. On request

* For motors, sizes 80 and 90, certification according to UL-R/CSA is possible from the middle of 2012

NEMA Energy Efficient motors MG1
Table 12-11

IE2

Selection and ordering data (continued)

4-pole, 1 800 rpm at 60 Hz, 60 Hz power

Size	Motor	P_{rated}		n_{rated}	T_{rated}	EISA CC no.	I_{rated}	cos φ	η 4/4 load	η 3/4 load
		kW	hp	rpm	Nm	CC032A	A	-	%	%
63	LA63MD4	0.11	0.15	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LA63ME4	0.14	0.19	1 650	0.81	–	0.43	0.74	56.00	54.50
	LA63MF4	0.21	0.28	1 650	1.22	–	0.59	0.77	58.30	56.80
71	LA71MG4	0.29	0.39	1 650	1.68	–	0.76	0.77	61.90	60.40
	LA71MH4	0.43	0.58	1 670	2.46	–	1.08	0.76	65.80	64.80
80	LE80MD4E	0.63	0.85	1 735	3.47	–	1.30	0.76	80.00	80.00
Efficiency: NEMA Energy Efficient NEE										
80	LE80MH4E	0.86	1.15	1 740	4.72	–	1.72	0.76	82.50	82.50
90	LE90SG4E	1.27	1.70	1 725	7.03	–	2.45	0.78	84.00	84.00
	LE90LH4E	1.75	2.35	1 730	9.66	–	3.30	0.79	84.00	84.00
100	LE100LE4E	2.55	3.40	1 755	13.9	–	4.45	0.82	87.50	87.50
	LE100LK4E	3.45	4.60	1 755	18.8	–	6.00	0.82	87.50	87.50
112	LE112ME4E	4.55	6.10	1 760	24.7	–	8.00	0.82	87.50	87.50
132	LE132SF4E	6.30	8.40	1 765	34.1	–	10.90	0.81	89.50	89.50
	LE132MF4E	8.60	11.50	1 765	46.5	–	14.50	0.83	89.50	89.50
	LE132ZMM4E	10.50	O. R.	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
160	LE160MF4E	12.60	16.90	1 770	68	–	20.50	0.85	91.00	91.00
	LE160LD4E	17.30	23.20	1 775	93	–	27.50	0.86	92.40	92.40

O. R. On request

Selection and ordering data (continued)

Size	Motor	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No. Data position				Order code Number of poles	Specification	
		dB (A)	dB (A)	1/h	10^{-4} kgm^2	kg	9.	10.	11.	12.	4-pole	NEMA	UL-R/CSA
63	LA63MD4	46	57	15 000	2.9	3.20	**B**	**B**	**1**	**1**	**–**	**N65**	**N38**
	LA63ME4	46	57	15 000	2.9	3.20	**B**	**C**	**1**	**1**	**–**	**N65**	**N38**
	LA63MF4	46	57	15 000	3.7	3.60	**B**	**D**	**1**	**1**	**–**	**N65**	**N38**
71	LA71MG4	48	59	15 000	5.2	4.30	**C**	**D**	**1**	**1**	**–**	**N65**	**N38**
	LA71MH4	48	59	15 000	7.7	5.80	**C**	**E**	**1**	**1**	**–**	**N65**	**N38**
80	LE80MD4E	55	66	10 000	17.0	9.30	**D**	**C**	**2**	**2**	**–**	**N65**	**N38***
Efficiency: NEMA Energy Efficient NEE													
80	LE80MH4E	55	66	10 000	21.0	10.00	**D**	**E**	**2**	**2**	**–**	**N65**	**N38***
90	LE90SG4E	58	70	8 000	36.0	12.00	**E**	**K**	**2**	**2**	**–**	**N65**	**N38***
	LE90LH4E	58	70	8 000	28.0	15.00	**E**	**M**	**2**	**2**	**–**	**N65**	**N38***
100	LE100LE4E	62	74	7 000	86.0	20.00	**F**	**L**	**2**	**2**	**–**	**N65**	**N38**
	LE100LK4E	62	74	7 000	110.0	24.00	**F**	**M**	**2**	**2**	**–**	**N65**	**N38**
112	LE112ME4E	62	74	5 000	140.0	24.00	**G**	**H**	**2**	**2**	**–**	**N65**	**N38**
132	LE132SF4E	68	80	3 000	270.0	35.00	**H**	**G**	**2**	**2**	**–**	**N65**	**N38**
	LE132MF4E	68	80	3 000	340.0	42.00	**H**	**J**	**2**	**2**	**–**	**N65**	**N38**
	LE132ZMM4E	O. R.	O. R.	O. R.	O. R.	O. R.	**H**	**V**	**2**	**2**	**–**	**N65**	**N38**
160	LE160MF4E	69	81	2 000	650.0	61.00	**J**	**P**	**2**	**2**	**–**	**N65**	**N38**
	LE160LD4E	68	81	2 000	830.0	73.00	**J**	**U**	**2**	**2**	**–**	**N65**	**N38**

O. R. On request

* For motors, sizes 80 and 90, certification according to UL-R/CSA is possible from the middle of 2012

NEMA Energy Efficient motors MG1 Table 12-11

IE2

Selection and ordering data (continued)

2-pole, 3 600 rpm at 60 Hz, 60 Hz power

Size	Motor	P_{rated}		n_{rated}	T_{rated}	EISA CC no.	I_{rated}	cos φ	η 4/4 load	η 3/4 load
		kW	hp	rpm	Nm	CC032A	A	-	%	%
63	LA63ME2	0.21	0.28	3 410	0.59	–	0.51	0.81	64.00	63.00
	LA63MF2	0.29	0.39	3 420	0.81	–	0.68	0.82	65.00	64.00
71	LA71MG2	0.43	0.58	3 340	1.23	–	1.00	0.82	66.00	65.00
	LA71MH2	0.63	0.85	3 400	1.77	–	1.36	0.82	71.00	71.00
Efficiency: NEMA Energy Efficient NEE										
80	LE80MA2E	0.86	1.15	3 410	2.41	–	1.70	0.84	75.50	75.50
	LE80ME2E	1.27	1.70	3 430	3.54	–	2.30	0.84	82.50	82.50
90	LE90SG2E	1.75	2.35	3 480	4.8	–	3.10	0.85	84.00	84.00
	LE90LH2E	2.55	3.40	3 485	6.99	–	4.35	0.86	85.50	85.50
100	LE100LD2E	3.45	4.60	3 505	9.4	–	5.80	0.85	87.50	87.50
112	LE112MA2E	4.55	6.10	3 550	12.2	–	7.50	0.87	87.50	87.50
132	LE132SB2E	6.30	8.40	3 550	16.9	–	10.20	0.88	88.50	88.50
	LE132SF2E	8.60	11.50	3 550	23.1	–	13.70	0.88	89.50	89.50
160	LE160MB2E	12.60	16.90	3 555	33.8	–	19.90	0.88	90.20	90.20
	LE160MG2E	17.30	23.20	3 555	46.5	–	27.00	0.89	91.00	91.00
	LE160LB2E	21.30	28.60	3 555	57	–	33.00	0.89	91.00	91.00

Selection and ordering data (continued)

Size	Motor	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No. Data position				Order code Number of poles	Specification	
		dB (A)	dB (A)	1/h	10^{-4} kgm^2	kg	9.	10.	11.	12.	2-pole	NEMA	UL-R/CSA
63	LA63ME2	53	64	5 000	1.8	3.20	**B**	**C**	**1**	**1**	**P00**	**N65**	**N38**
	LA63MF2	53	64	5 000	2.2	3.60	**B**	**D**	**1**	**1**	**P00**	**N65**	**N38**
71	LA71MG2	56	67	5 000	2.9	4.50	**C**	**D**	**1**	**1**	**P00**	**N65**	**N38**
	LA71MH2	56	67	5 000	4.1	6.00	**C**	**E**	**1**	**1**	**P00**	**N65**	**N38**
Efficiency: NEMA Energy Efficient NEE													
80	LE80MA2E	64	75	3 000	8.0	8.30	**D**	**B**	**2**	**2**	**P00**	**N65**	**N38***
	LE80ME2E	64	75	3 000	11.0	10.00	**D**	**M**	**2**	**2**	**P00**	**N65**	**N38***
90	LE90SG2E	69	81	2 000	17.0	12.00	**E**	**K**	**2**	**2**	**P00**	**N65**	**N38***
	LE90LH2E	69	81	2 000	21.0	14.00	**E**	**M**	**2**	**2**	**P00**	**N65**	**N38***
100	LE100LD2E	71	83	2 000	44.0	20.00	**F**	**K**	**2**	**2**	**P00**	**N65**	**N38**
112	LE112MA2E	73	85	1 300	92.0	22.00	**G**	**G**	**2**	**2**	**P00**	**N65**	**N38**
132	LE132SB2E	72	84	800	200.0	32.00	**H**	**E**	**2**	**2**	**P00**	**N65**	**N38**
	LE132SF2E	72	84	800	240.0	36.00	**H**	**G**	**2**	**2**	**P00**	**N65**	**N38**
160	LE160MB2E	77	89	500	450.0	57.00	**J**	**N**	**2**	**2**	**P00**	**N65**	**N38**
	LE160MG2E	77	89	500	530.0	65.00	**J**	**Q**	**2**	**2**	**P00**	**N65**	**N38**
	LE160LB2E	77	89	500	610.0	74.00	**J**	**T**	**2**	**2**	**P00**	**N65**	**N38**

* For motors, sizes 80 and 90, certification according to UL-R/CSA is possible from the middle of 2012

NEMA Energy Efficient motors MG1 Table 12-11

IE2

Selection and ordering data (continued)

6-pole, 1 200 rpm at 60 Hz, 60 Hz power

Size	Motor	P_{rated}		n_{rated}	T_{rated}	EISA CC no.	I_{rated}	cos φ	η 4/4 load	η 3/4 load
		kW	hp	rpm	Nm	CC032A	A	-	%	%
63	LA63MF6	0.10	0.13	1 050	0.91	–	0.39	0.67	48.00	46.50
	LA63MG6	0.14	0.19	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
71	LA71MG6	0.21	0.28	1 050	1.19	–	0.69	0.67	57.30	55.80
	LA71MH6	0.29	0.39	1 060	2.61	–	0.78	0.75	61.90	60.40
80	LE80MD6E	0.43	0.58	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LE80MH6E	0.63	0.85	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
Efficiency: NEMA Energy Efficient NEE										
90	LE90SH6E	0.86	1.15	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
	LE90LL6E	1.27	1.70	O. R.	O. R.	–	O. R.	O. R.	O. R.	O. R.
100	LE100LL6E	1.75	2.35	1 170	14.3	–	3.45	0.74	86.50	86.50
112	LE112ME6E	2.55	3.40	1 165	20.9	–	4.75	0.77	87.50	87.50
132	LE132SC6	3.45	4.60	1 170	28.2	–	6.60	0.75	87.50	87.50
	LE132MB6E	4.55	6.10	1 170	37.1	–	8.30	0.79	87.50	87.50
	LE132MJ6E	6.30	8.40	1 170	51.5	–	11.30	0.78	89.50	89.50
160	LE160ML6E	8.60	11.50	1 175	70	–	15.50	0.78	89.50	89.50
	LE160LL6E	12.60	16.90	1 175	102	–	21.50	0.81	90.20	90.20

O. R. On request

Selection and ordering data (continued)

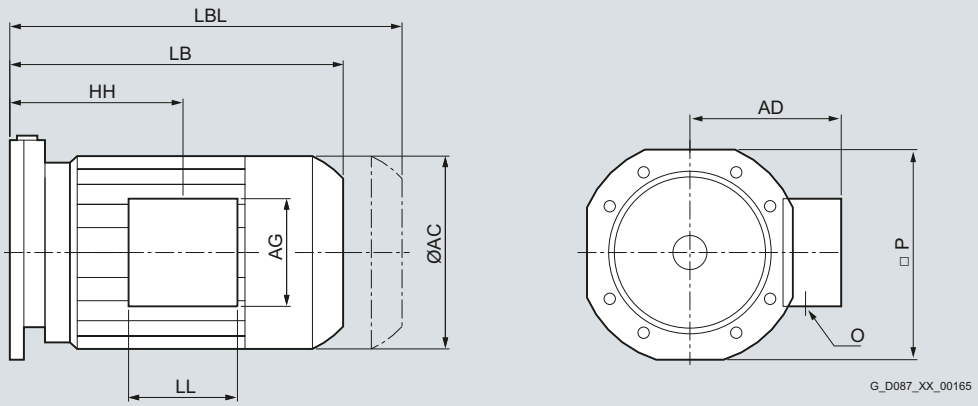
Size	Motor	L_{pfA}	L_{WA}	Z_0	J_{mot}	m_{mot}	Order No. Data position				Order code Number of poles	Specification	
		dB (A)	dB (A)	1/h	10^{-4} kgm^2	kg	9.	10.	11.	12.	6-pole	NEMA	UL-R/CSA
63	LA63MF6	43	54	10 500	3.7	3.60	**B**	**D**	**1**	**1**	**P01**	**N65**	**N38**
	LA63MG6	43	54	10 500	3.7	3.60	**B**	**E**	**1**	**1**	**P01**	**N65**	**N38**
71	LA71MG6	43	54	10 500	5.5	4.30	**C**	**D**	**1**	**1**	**P01**	**N65**	**N38**
	LA71MH6	43	54	10 500	8.0	5.30	**C**	**E**	**1**	**1**	**P01**	**N65**	**N38**
80	LE80MD6E	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**C**	**2**	**2**	**P01**	**N65**	**N38***
	LE80MH6E	O. R.	O. R.	8 400	O. R.	O. R.	**D**	**E**	**2**	**2**	**P01**	**N65**	**N38***
Efficiency: NEMA Energy Efficient NEE													
90	LE90SH6E	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**C**	**2**	**2**	**P01**	**N65**	**N38***
	LE90LL6E	O. R.	O. R.	7 000	O. R.	O. R.	**E**	**N**	**2**	**2**	**P01**	**N65**	**N38***
100	LE100LL6E	62	74	6 300	110.0	24.00	**F**	**N**	**2**	**2**	**P01**	**N65**	**N38**
112	LE112ME6E	60	72	5 600	140.0	24.00	**G**	**H**	**2**	**2**	**P01**	**N65**	**N38**
132	LE132SC6	67	79	4 200	240.0	31.00	**H**	**F**	**2**	**2**	**P01**	**N65**	**N38**
	LE132MB6E	67	79	4 200	290.0	36.00	**H**	**H**	**2**	**2**	**P01**	**N65**	**N38**
	LE132MJ6E	67	79	3 500	370.0	45.00	**H**	**L**	**2**	**2**	**P01**	**N65**	**N38**
160	LE160ML6E	70	82	2 800	980.0	67.00	**J**	**H**	**2**	**2**	**P01**	**N65**	**N38**
	LE160LL6E	70	82	2 800	750.0	83.00	**J**	**V**	**2**	**2**	**P01**	**N65**	**N38**

O. R. On request

* For motors, sizes 80 and 90, certification according to UL-R/CSA is possible from the middle of 2012

Dimensions

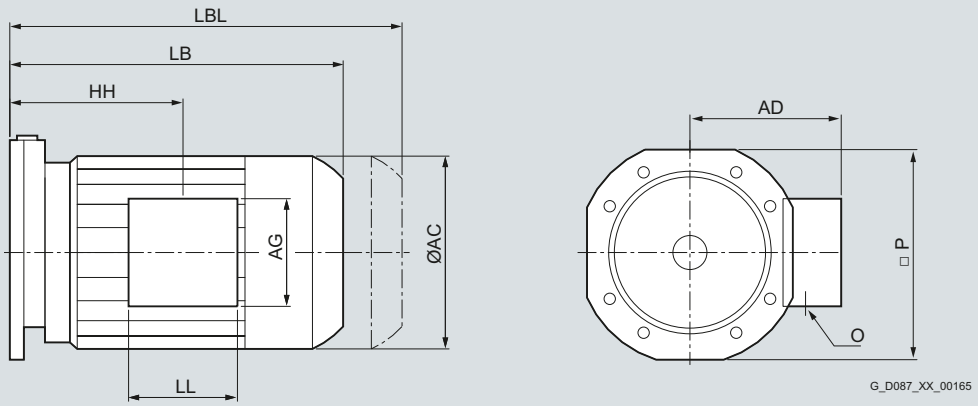
Motors



Motor	Gearbox type				Dimensions								
	D/Z	FD/FZ	B	K	P	HH	LB	LBL	AC	AD	O	LL	AG
LA63M	19	–	–	–	–	61.5	160.5	205.0	117.8	124.0 (136.0)	M20 x 1.5/M25 x 1.5	90	90
	29	29	29	–	120	95.0	194.0	238.5					
	39	39	39	39			194.0	238.5					
	49	49	49	49	160	85.5	184.5	229.0					
	59	–	–	–			184.5	229.0					
	69	69	–	69			184.5	229.0					
	–	–	–	79			184.5	229.0					
LA71M	19	–	–	–	–	93.5	184.5	239.5	138.8	134.0 (146.0)	M20 x 1.5/M25 x 1.5	90	90
	29	29	29	–	120	135.0	226.0	281.0					
	39	39	39	39			226.0	281.0					
	49	49	49	49	160	125.5	216.5	271.5					
	59	–	–	–			216.5	271.5					
	69	69	–	69			216.5	271.5					
	–	–	–	79			216.5	271.5					
	79	79	–	–	198	123.5	214.5	269.5					
	–	–	–	89			214.5	269.5					
LE80M	19	–	–	–	–	120.0	239.5	299.5	156.3	149.2	M20 x 1.5/M25 x 1.5	123	123
	29	29	29	–	120	170.0	289.5	349.5					
	39	39	39	39			289.5	349.5					
	49	49	49	49	160	160.5	280.0	340.0					
	59	–	–	–			280.0	340.0					
	69	69	–	69			280.0	340.0					
	–	–	–	79			280.0	340.0					
	79	79	–	–	198	154.5	274.0	334.0					
	–	–	–	89			274.0	334.0					
	89	89	–	–	245	141.5	261.0	321.0					
LE90S/L	29	29	29	–	120	207.5	351.5	421.5	173.8	154.2	M20 x 1.5/M25 x 1.5	123	123
	39	39	39	39			351.5	421.5					
	49	49	49	49	160	198.0	342.0	412.0					
	59	–	–	–			342.0	412.0					
	69	69	–	69			342.0	412.0					
	–	–	–	79			342.0	412.0					
	79	79	–	–	198	192.0	336.0	406.0					
	–	–	–	89			336.0	406.0					
	89	89	–	–	245	179.0	323.0	393.0					

Value in brackets, NPT gland

Motors (continued)



Motor	Gearbox type				Dimensions								
	D/Z	FD/FZ	B	K	P	HH	LB	LBL	AC	AD	O	LL	AG
LE100L	29	29	29	–	120	242.5	408.0	486.5	198.0	170.5	2 x M32 x 1.5	135	135
	39	39	39	39			408.0	486.5					
	49	49	49	49	160	233.0	398.5	477.0					
	59	–	–	–			398.5	477.0					
	69	69	–	69			398.5	477.0					
	–	–	–	79			398.5	477.0					
	79	79	–	–	198	227.0	392.5	471.0					
	–	–	–	89			392.5	471.0					
	89	89	–	–	245	210.0	375.5	454.0					
LE112M	29	29	29	–	120	244.0	418.0	491.0	222.0	181.5	2 x M32 x 1.5	135	135
	39	39	39	39			418.0	491.0					
	49	49	49	49	160	234.5	408.5	481.5					
	59	–	–	–			408.5	481.5					
	69	69	–	69			408.5	481.5					
	–	–	–	79			408.5	481.5					
	79	79	–	–	198	228.5	402.5	475.5					
	–	–	–	89			402.5	475.5					
	89	89	–	–	245	211.5	385.5	458.5					
LE132S/M	49	49	49	49	160	266.0	461.5	566.0	264.0	207.0	2 x M32 x 1.5	162	162
	59	–	–	–			461.5	566.0					
	69	69	–	69			461.5	566.0					
	–	–	–	79			461.5	566.0					
	79	79	–	–	198	260.0	455.5	560.0					
	–	–	–	89			455.5	560.0					
	89	89	–	–	245	243.0	438.5	543.0					
LE132ZM	49	49	49	49	160	316.0	511.5	616.0	264.0	207.0	2 x M32 x 1.5	162	162
	59	–	–	–			511.5	616.0					
	69	69	–	69			511.5	616.0					
	–	–	–	79			511.5	616.0					
	79	79	–	–	198	310.0	505.5	610.0					
	–	–	–	89			505.5	610.0					
	89	89	–	–	245	293.0	488.5	593.0					
LE160M/L	79	79	–	–	198	293.5	537.5	653.5	318.0	241.0	2 x M40 x 1.5	180	180
	–	–	–	89			537.5	653.5					
	89	89	–	–	245	276.5	520.5	636.5					

Value in brackets, NPT gland

Dimensions

Additional lengths for second shaft extension, handwheel and canopy

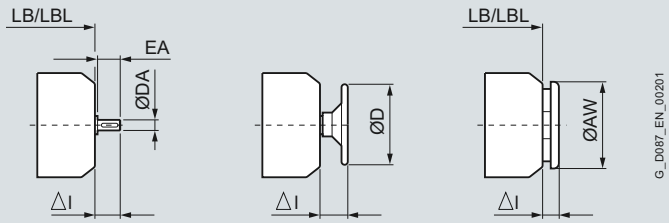


Fig. 1 Fig. 6 Fig. 2

Relevant diagram	1			6		2	
Motor	Second shaft extension			Handwheel at the second shaft extension		Canopy	
	DA	EA	Δl	D	Δl	AW	Δl
LA63M	11	23	27	–	–	122.8	11.9
LA71M	14	30	34	100	50	137.8	25.9
LE80M	14	30	34	100	50	137.8	25.9
LE90S	19	40	45	160	65	175.8	16
LE90L	19	40	45	160	65	175.8	16
LE100L	19	40	45	160	65	195	40
LE112M	24	50	56	200	77	195	40
LE132S	28	60	68	200	89	260	60
LE132M	28	60	68	200	89	260	60
LE132ZM	28	60	68	200	89	260	60
LE160M	38	80	88	315	111	260	60
LE160L	38	80	88	315	111	260	60

Additional lengths for encoder

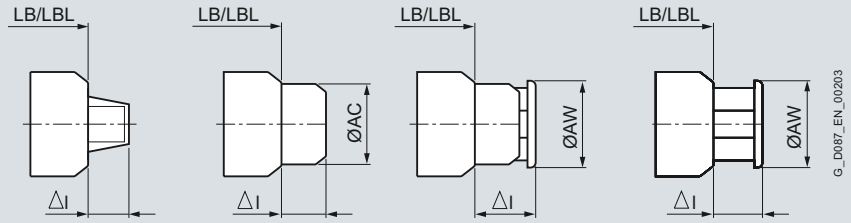


Fig. 3 Fig. 4 Fig. 5 Fig. 7

Relevant diagram	**3**	**4**			**5**			**7**		
Motor	**Encoder**	**Encoder under cover**			**Encoder under cover with canopy**			**Encoder with canopy**		
	ΔI	AC	ΔI		AW	ΔI		AW	ΔI	
	1XP		1XP	LL, HOG9, HOG10		1XP	LL, HOG9, HOG10		1XP	LL, HOG9, HOG10
LA63M	70	–	–	–	–	–	–	–	–	–
LA71M	70	139	75	–	138	101	–	–	–	–
LE80M	70	156.5	75	–	138	101	–	155	67.5	–
LE90S	70	174	75	–	176	91	–	155	67.5	–
LE90L	70	174	75	–	176	91	–	155	67.5	–
LE100L	–	–	–	–	–	–	–	195	83	–
LE112M	–	–	–	–	–	–	–	195	83	83
LE132S	–	–	–	–	–	–	–	260	87	87
LE132M	–	–	–	–	–	–	–	260	87	87
LE132ZM	–	–	–	–	–	–	–	260	87	87
LE160M	–	–	–	–	–	–	–	260	87	87
LE160L	–	–	–	–	–	–	–	260	87	87

Dimensions

Additional lengths for external fan, encoder and canopy

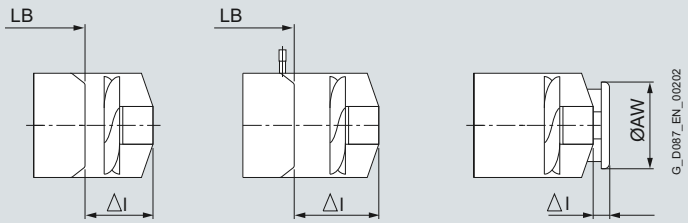


Fig. 8 Fig. 9 Fig. 10

Relevant diagram	8	9	9		9			10	
Motor	External fan	Brake + external fan	Encoder + external fan		Brake + encoder + external fan			Canopy for external fan	
	ΔI	ΔI	ΔI		ΔI			ΔI	AW
			1XP	LL, HOG9, HOG10	1XP	LL, HOG9	HOG10		
LA63M	–	–	–	–	–	–	–	–	–
LA71M	110.5	134.5	229.5	–	229.5	–	–	37	150
LE80M	89	118	213	–	213	–	–	40	170
LE90S	85	120	213	–	213	–	–	30	188
LE90L	85	120	213	–	213	–	–	30	188
LE100L	81.5	121.5	218.5	–	218.5	–	–	28	210
LE112M	81	113	206	–	206	–	–	33	249
LE132S	114.5	164.5	258.5	258.5	258.5	258.5	302.5	25	300
LE132M	114.5	164.5	258.5	258.5	258.5	258.5	302.5	25	300
LE132ZM	114.5	164.5	258.5	258.5	258.5	258.5	302.5	25	300
LE160M	131	191	285	285	285	285	329	32	338
LE160L	131	191	285	285	285	285	329	32	338

Gearbox options

Overview

The mounting position must be specified when you place your order to ensure that the gearbox is supplied with the correct quantity of oil.

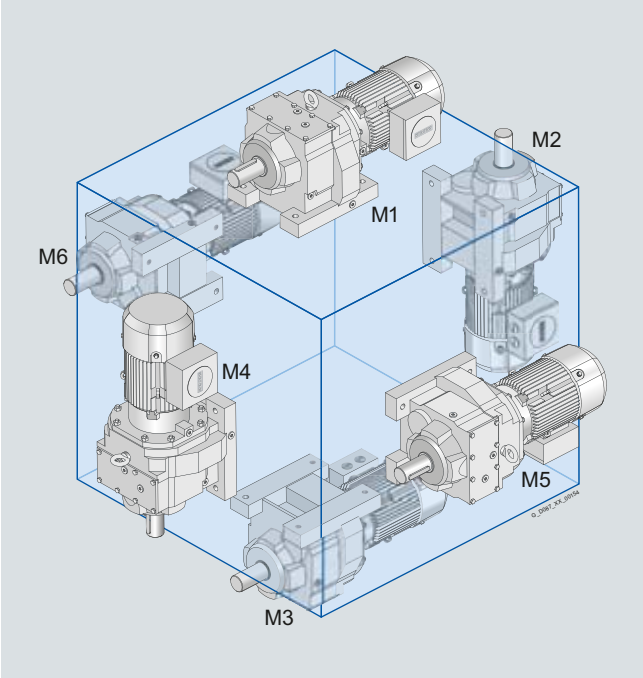


Fig. 7-1 Helical geared motors

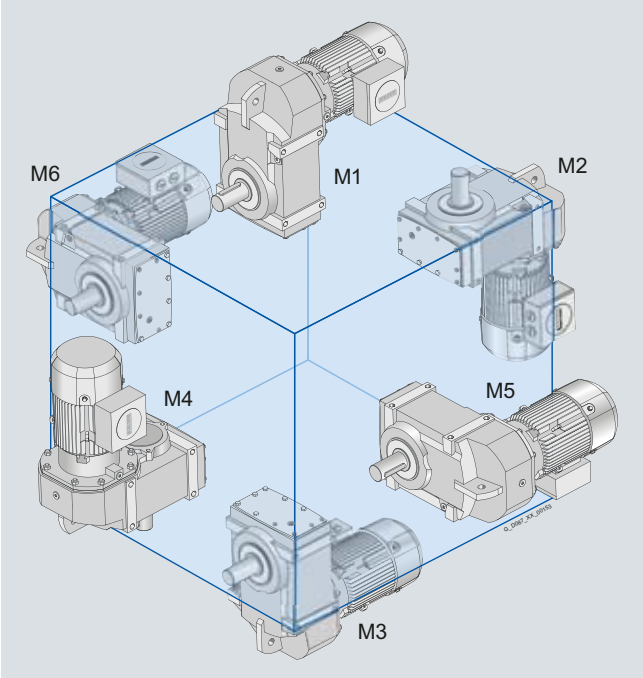


Fig. 7-2 Parallel shaft geared motors

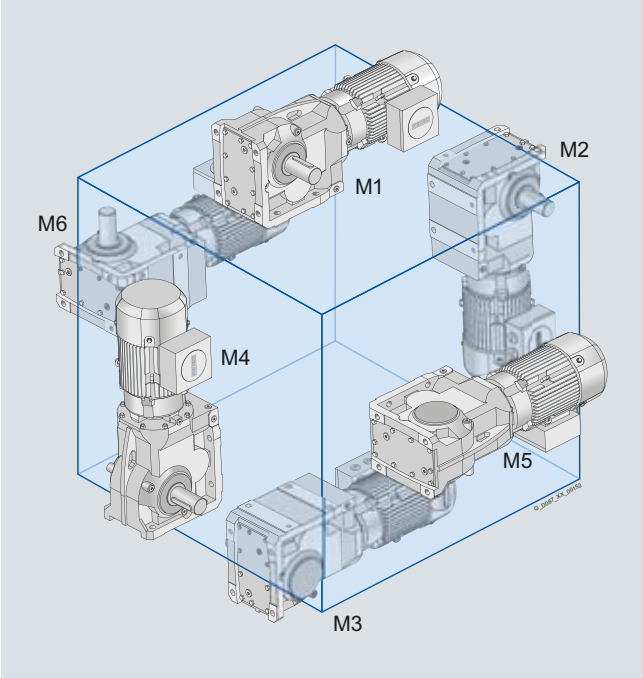


Fig. 7-3 Bevel geared motors

Overview (continued)

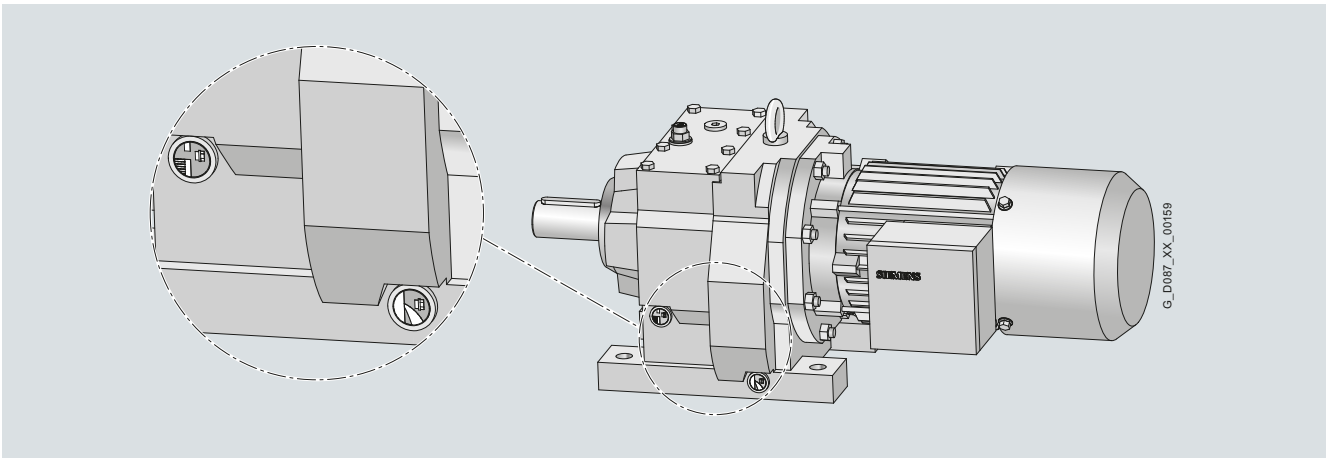


Fig. 7-4 Dimension drawing from EKat with details

Note:

Utilize the new function of our SIMOGEAR Configurator electronic catalog.

For the selected mounting position, the 3D dimension drawings show the exact position of the oil valves.

Table 7-1 Explanation of symbols

Symbol	
Oil valves	
	Venting
	Oil drain
	Oil level checking screw
Supplements	
*	On opposite side
A, B	Output side A, output side B
(2)	2-stage gearbox
(3)	3-stage gearbox
(1) ... (4)	Terminal box position
(A) ... (D)	Position of the cable entry

Overview (continued)

Comparison, mounting positions for SIMOGEAR and MOTOX

Mounting type	MOTOX		SIMOGEAR	
	Type of construction	Order code	Type of construction	Order code
Helical gearbox				
Foot-mounted design	B3	**D04**	M1	**D01**
	V6	**E14**	M2	**D02**
	B8	**D66**	M3	**D03**
	V5	**E02**	M4	**D04**
	B6	**D36**	M5	**D05**
	B7	**D57**	M6	**D06**
Flange-mounted design	B5	**D16**	M1	**D01**
	V3	**D96**	M2	**D02**
	B5-03	**D31**	M3	**D03**
	V1	**D88**	M4	**D04**
	B5-00	**D17**	M5	**D05**
	B5-02	**D26**	M6	**D06**
Housing flange design	B14	**D00**	M1	**D01**
	V19	**D95**	M2	**D02**
	B14-03	**D03**	M3	**D03**
	V18	**D94**	M4	**D04**
	B14-00	**D01**	M5	**D05**
	B14-02	**D02**	M6	**D06**
Parallel shaft gearbox				
Solid shaft	B5-01-A	**D22**	M1	**D01**
	V3-00-A	**D98**	M2	**D02**
	B5-03-A	**D32**	M3	**D03**
	V1-00-A	**D90**	M4	**D04**
	B5-00-A	**D18**	M5	**D05**
	B5-02-A	**D27**	M6	**D06**
Hollow shaft	H-01-A	**D76**	M1	**D01**
	H-06-A	**D86**	M2	**D02**
	H-02-A	**D78**	M3	**D03**
	H-05-A	**D84**	M4	**D04**
	H-04-A	**D82**	M5	**D05**
	H-03-A	**D80**	M6	**D06**

Overview (continued)

Mounting type	MOTOX		SIMOGEAR	
	Type of construction	Order code	Type of construction	Order code
Bevel gearboxes				
	Output side A			
Foot-mounted design	B3-00-A	**D06**	M1-A	**D11**
	B6-00-A	**D38**	M2-A	**D12**
Solid shaft	B8-00-A	**D68**	M3-A	**D13**
	B7-00-A	**D59**	M4-A	**D14**
	V5-00-A	**E03**	M5-A	**D15**
	V6-00-A	**E15**	M6-A	**D16**
Flange-mounted design	B5-01-A	**D22**	M1-A	**D11**
Housing flange design	B5-00-A	**D18**	M2-A	**D12**
	B5-03-A	**D32**	M3-A	**D13**
	B5-02-A	**D27**	M4-A	**D14**
Solid shaft	V1-00-A	**D90**	M5-A	**D15**
	V3-00-A	**D98**	M6-A	**D16**
Foot-mounted design	H-01-A	**D76**	M1-A	**D11**
Flange-mounted design	H-04-A	**D82**	M2-A	**D12**
Housing flange design	H-02-A	**D78**	M3-A	**D13**
	H-03-A	**D80**	M4-A	**D14**
	H-05-A	**D84**	M5-A	**D15**
	H-06-A	**D86**	M6-A	**D16**
	Output side B			
Foot-mounted design	B3-00-B	**D08**	M1-B	**D21**
	B6-00-B	**D40**	M2-B	**D22**
Solid shaft	B8-00-B	**D70**	M3-B	**D23**
	B7-00-B	**D61**	M4-B	**D24**
	V5-00-B	**E05**	M5-B	**D25**
	V6-00-B	**E17**	M6-B	**D26**
Flange-mounted design	B5-01-B	**D24**	M1-B	**D21**
Housing flange design	B5-00-B	**D20**	M2-B	**D22**
	B5-03-B	**D34**	M3-B	**D23**
	B5-02-B	**D29**	M4-B	**D24**
Solid shaft	V1-00-B	**D92**	M5-B	**D25**
	V3-00-B	**E00**	M6-B	**D26**
Foot-mounted design	H-01-B	**D77**	M1-B	**D21**
Flange-mounted design	H-04-B	**D83**	M2-B	**D22**
Housing flange design	H-02-B	**D79**	M3-B	**D23**
	H-03-B	**D81**	M4-B	**D24**
	H-05-B	**D85**	M5-B	**D25**
Hollow shaft	H-06-B	**D87**	M6-B	**D26**

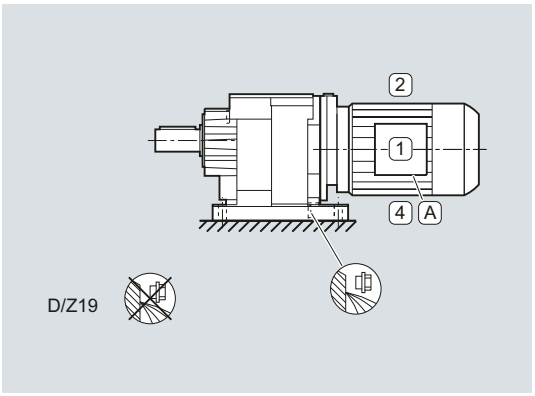
Helical gearbox

Helical gearboxes Z and D in a foot-mounted design, sizes 19 and 29

Oil valves

Sizes 19 and 29 are lubricated for life.

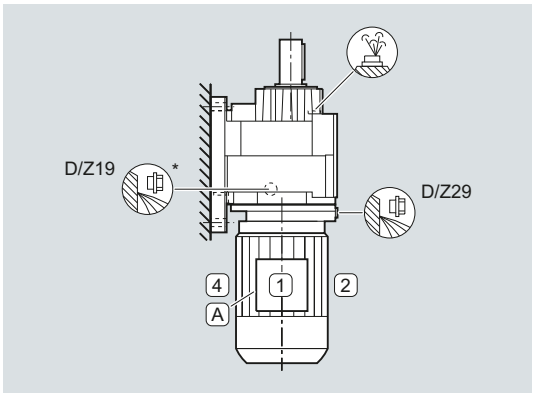
M1



Order code:

M1 **D01**

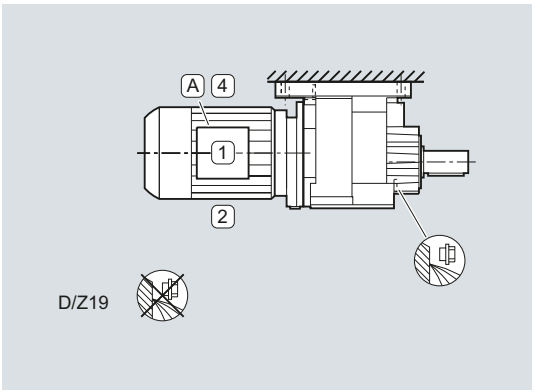
M2



Order code:

M2 **D02**

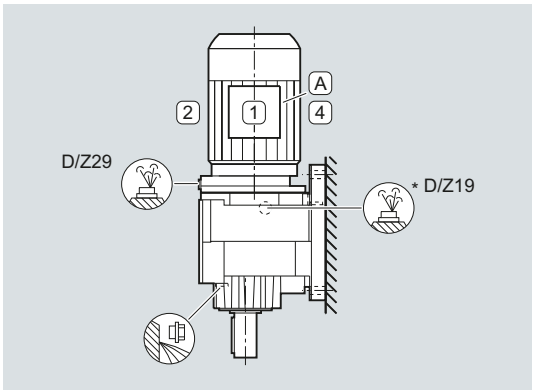
M3



Order code:

M3 **D03**

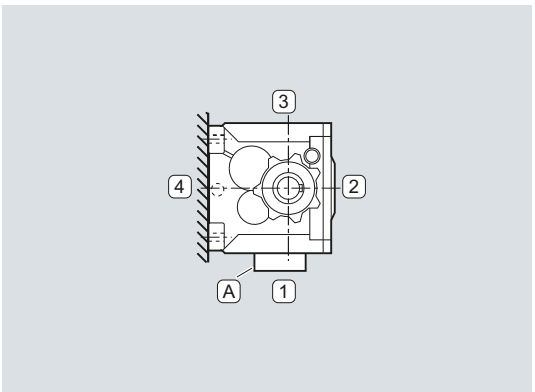
M4



Order code:

M4 **D04**

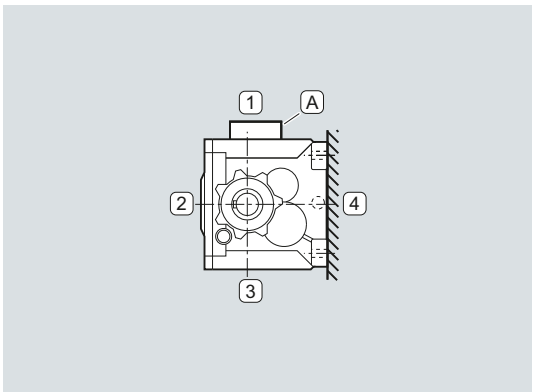
M5



Order code:

M5 **D05**

M6



Order code:

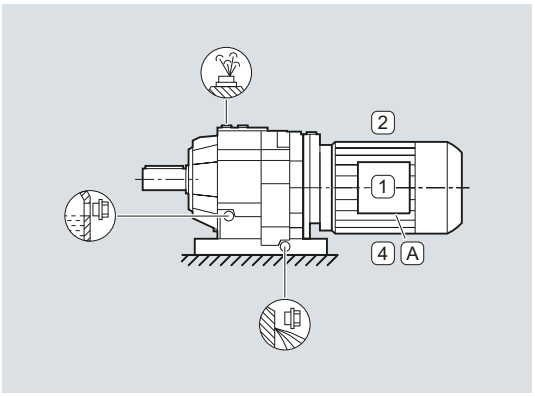
M6 **D06**

7

Helical gearboxes Z and D in a foot-mounted design, sizes 39 to 89

Oil valves

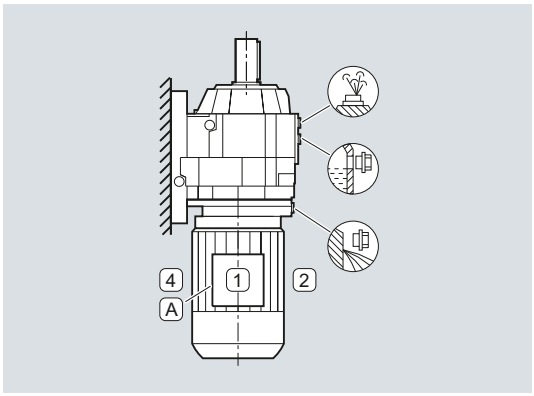
M1



Order code:

M1	**D01**

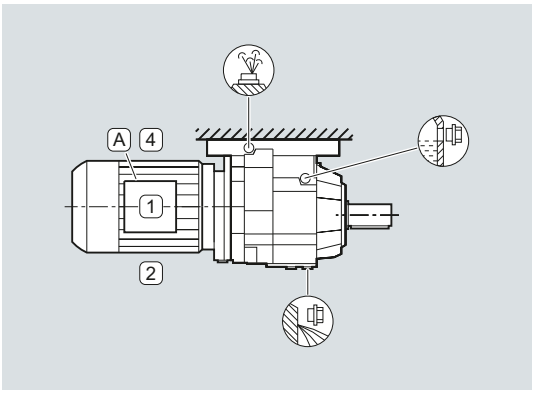
M2



Order code:

M2	**D02**

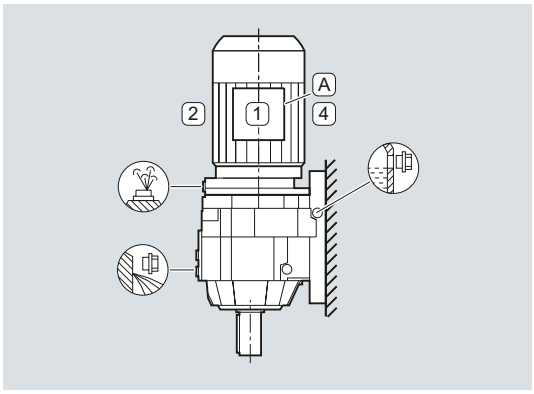
M3



Order code:

M3	**D03**

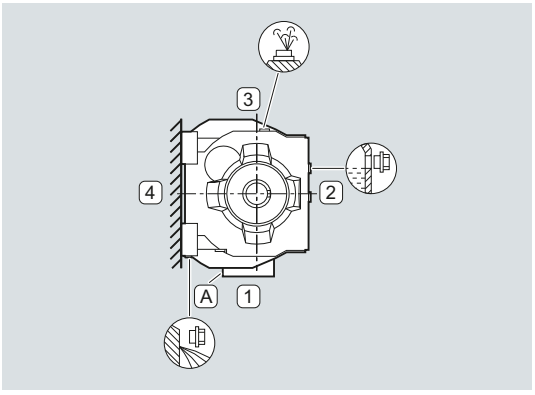
M4



Order code:

M4	**D04**

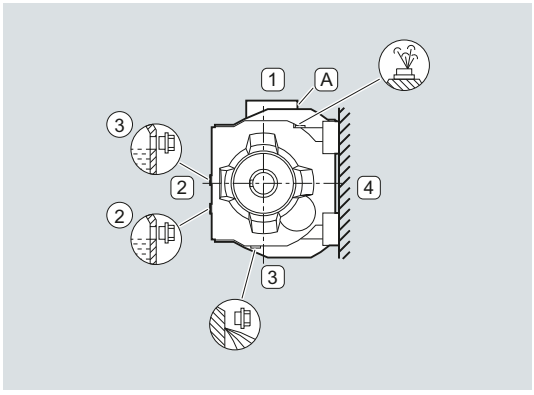
M5



Order code:

M5	**D05**

M6



Order code:

M6	**D06**

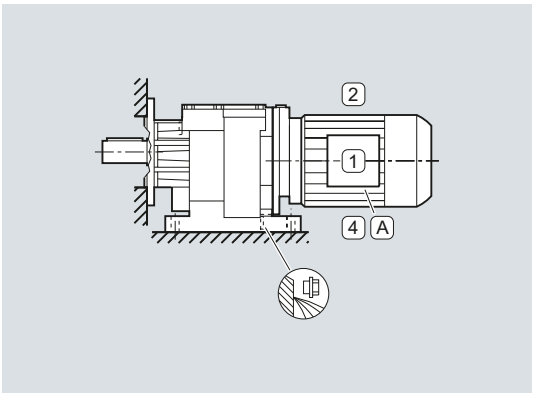
Helical gearbox

Helical gearboxes ZB and DB in a foot/flange-mounted design, size 29

Oil valves

Size 29 is lubricated for life.

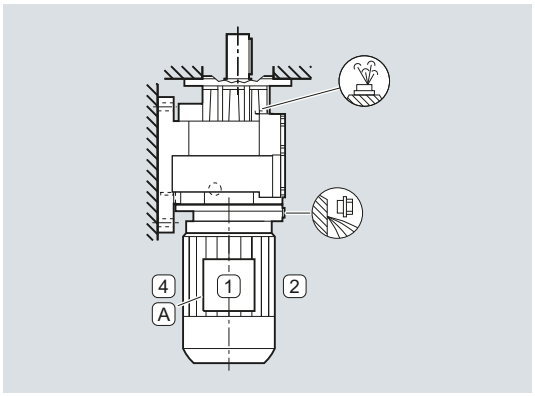
M1



Order code:

M1 **D01**

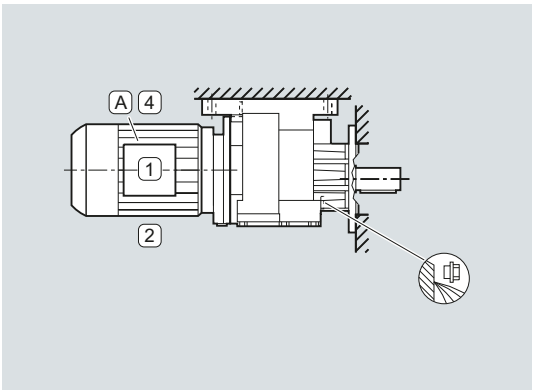
M2



Order code:

M2 **D02**

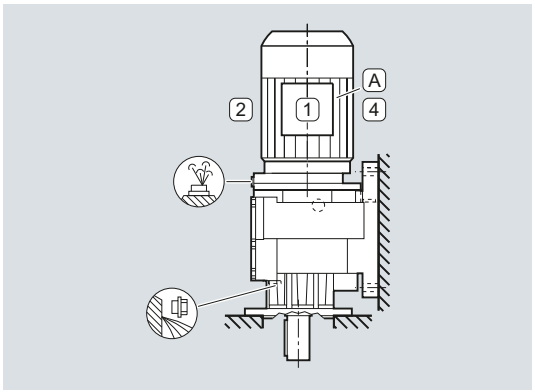
M3



Order code:

M3 **D03**

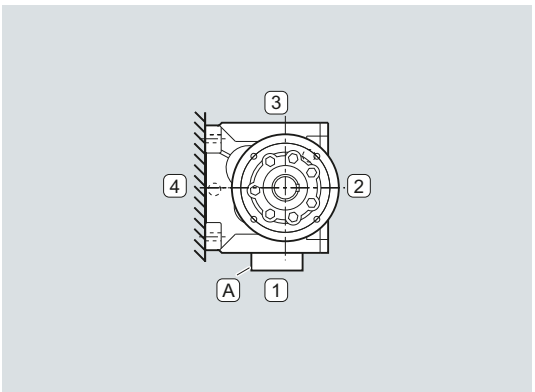
M4



Order code:

M4 **D04**

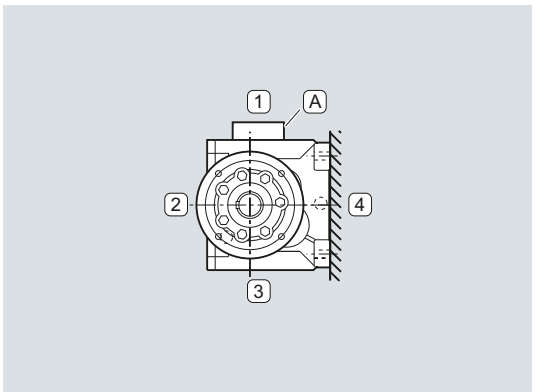
M5



Order code:

M5 **D05**

M6



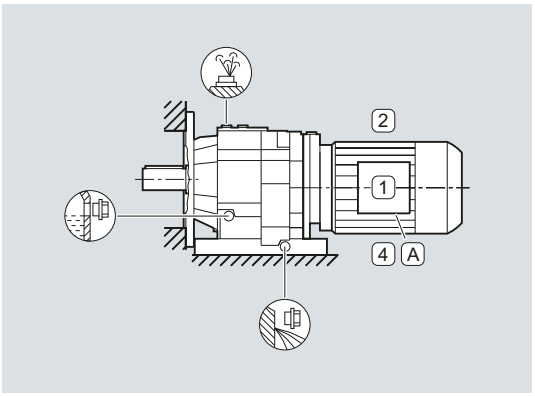
Order code:

M6 **D06**

Helical gearboxes ZB and DB in a foot/flange-mounted design, sizes 39 to 89

Oil valves

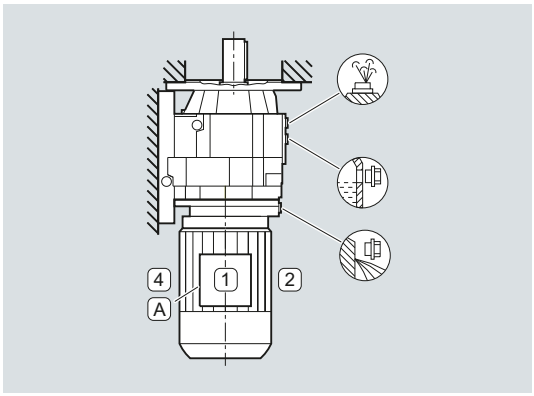
M1



Order code:

M1 **D01**

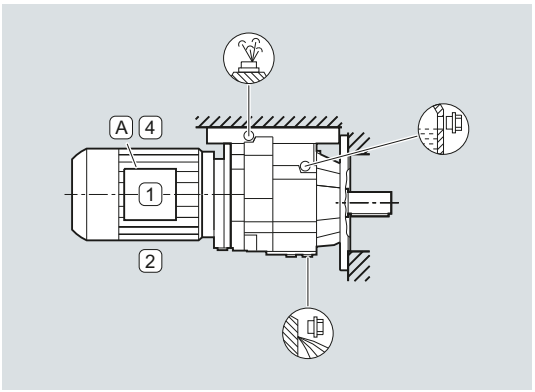
M2



Order code:

M2 **D02**

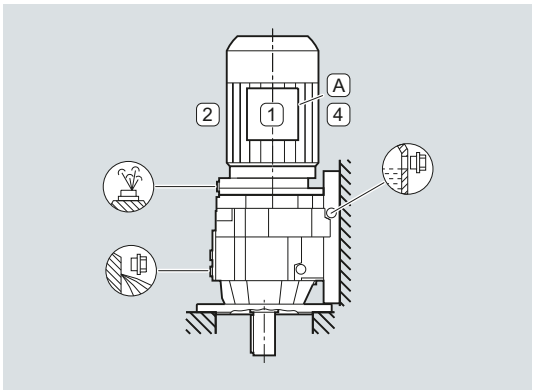
M3



Order code:

M3 **D03**

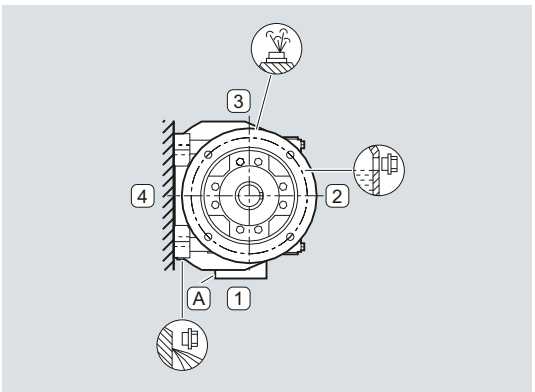
M4



Order code:

M4 **D04**

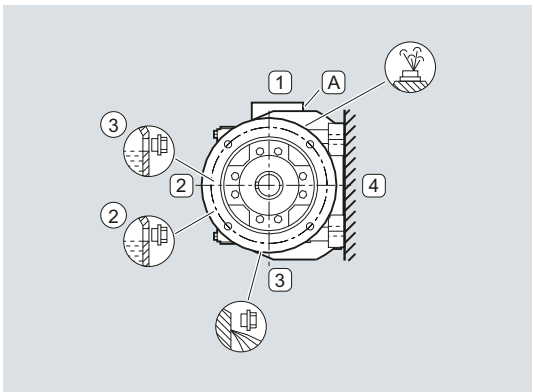
M5



Order code:

M5 **D05**

M6



Order code:

M6 **D06**

7

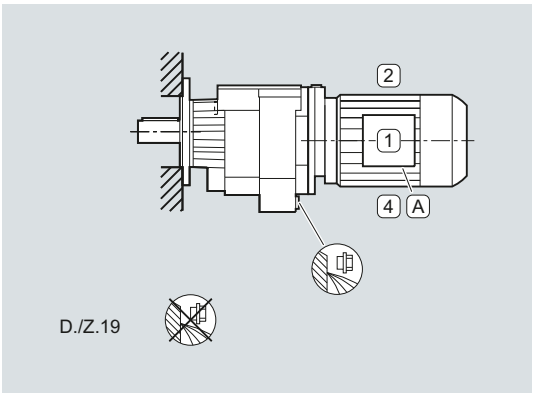
Helical gearbox

Helical gearboxes ZF and DF in a flange-mounted design or ZZ and DZ with housing flange, sizes 19 and 29

Oil valves

Sizes 19 and 29 are lubricated for life.

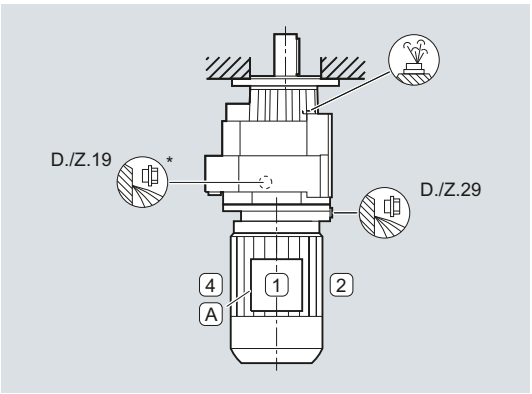
M1



Order code:

M1	**D01**

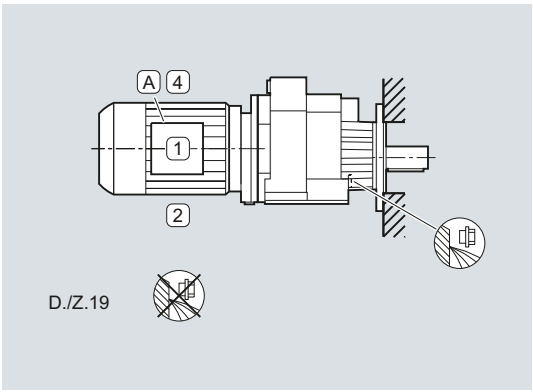
M2



Order code:

M2	**D02**

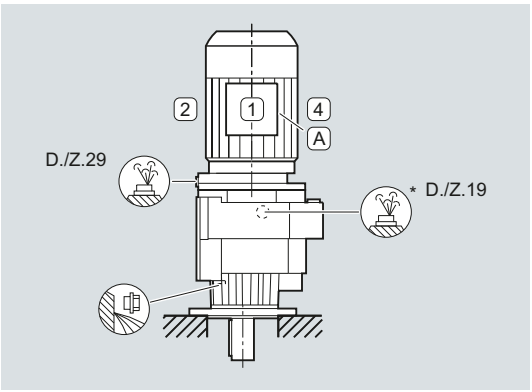
M3



Order code:

M3	**D03**

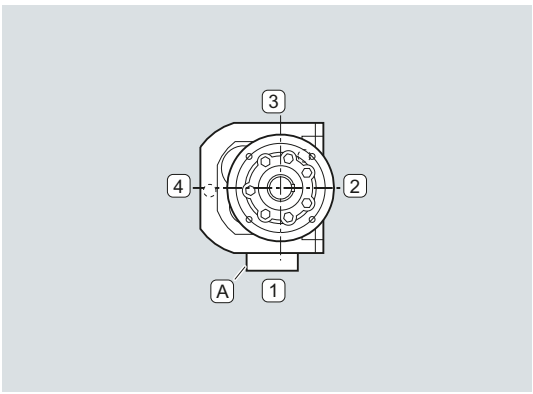
M4



Order code:

M4	**D04**

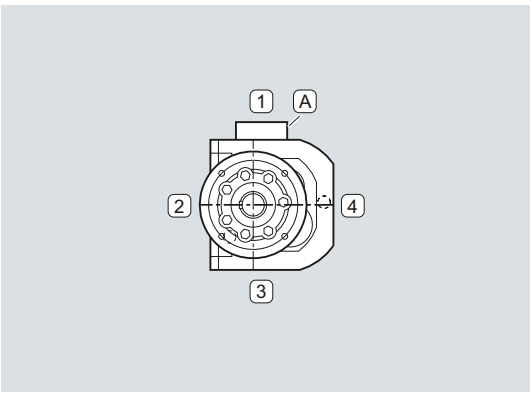
M5



Order code:

M5	**D05**

M6



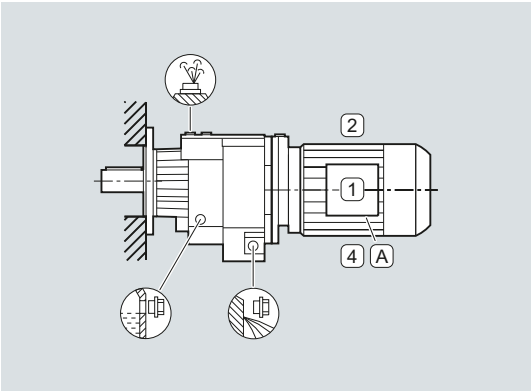
Order code:

M6	**D06**

Helical gearboxes ZF and DF in a flange-mounted design or ZZ and DZ with housing flange, size 39

Oil valves

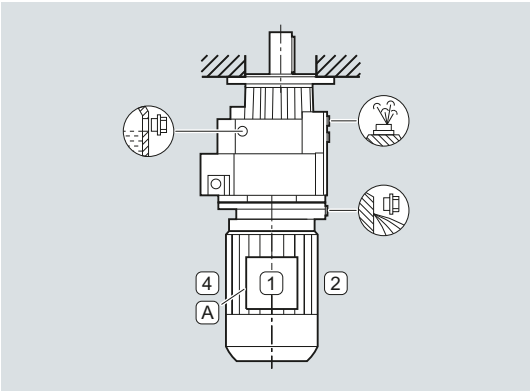
M1



Order code:

M1 **D01**

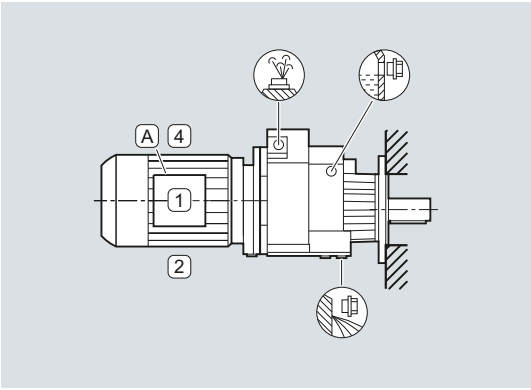
M2



Order code:

M2 **D02**

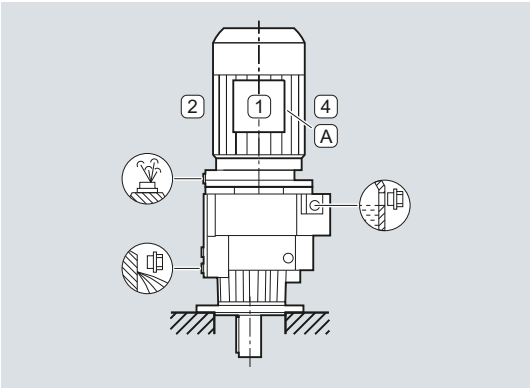
M3



Order code:

M3 **D03**

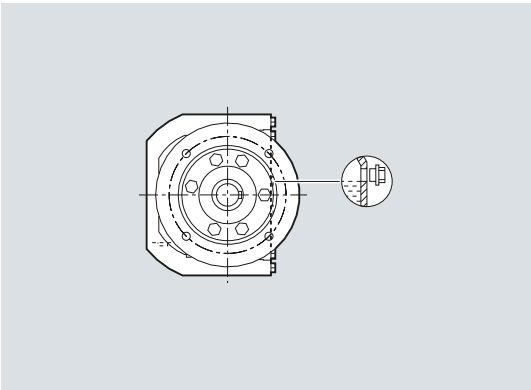
M4



Order code:

M4 **D04**

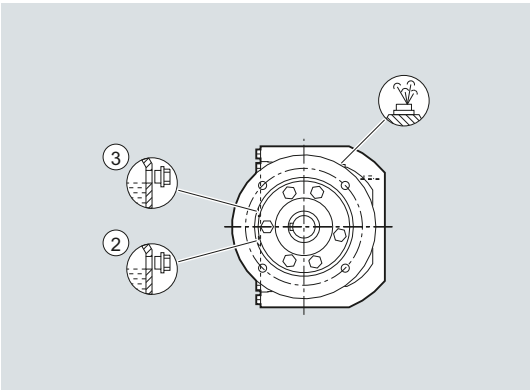
M5



Order code:

M5 **D05**

M6



Order code:

M6 **D06**

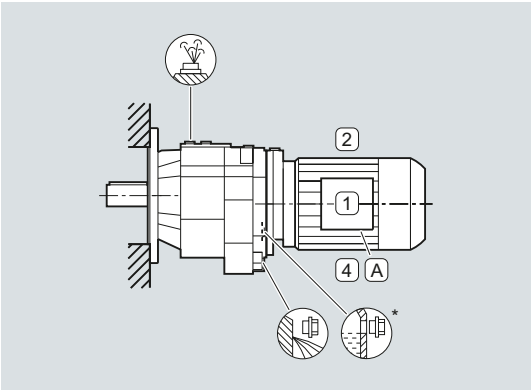
7

Helical gearbox

Helical gearboxes ZF and DF in a flange-mounted design or ZZ and DZ with housing flange, sizes 49 to 89

Oil valves

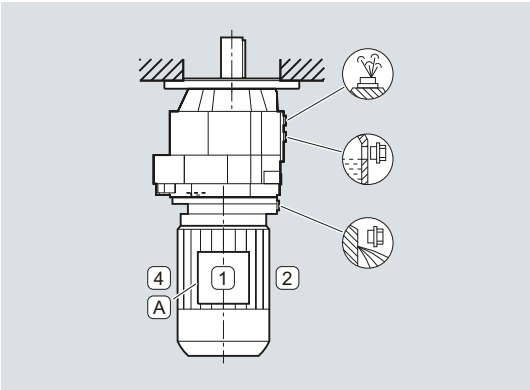
M1



Order code:

M1 **D01**

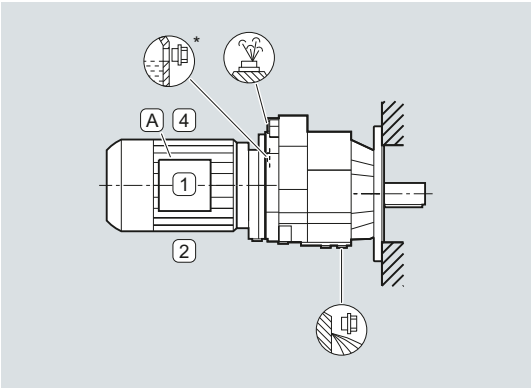
M2



Order code:

M2 **D02**

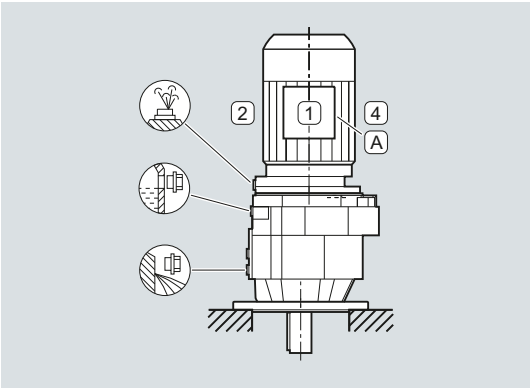
M3



Order code:

M3 **D03**

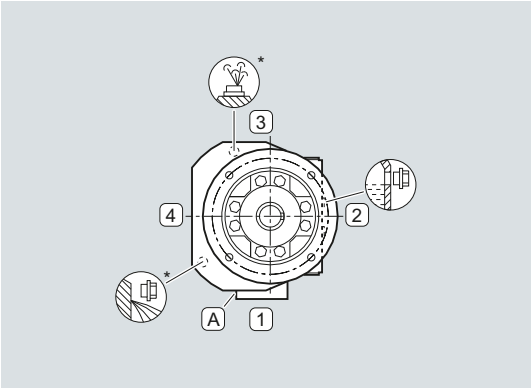
M4



Order code:

M4 **D04**

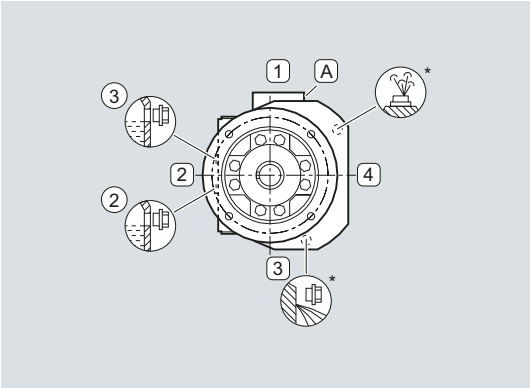
M5



Order code:

M5 **D05**

M6



Order code:

M6 **D06**

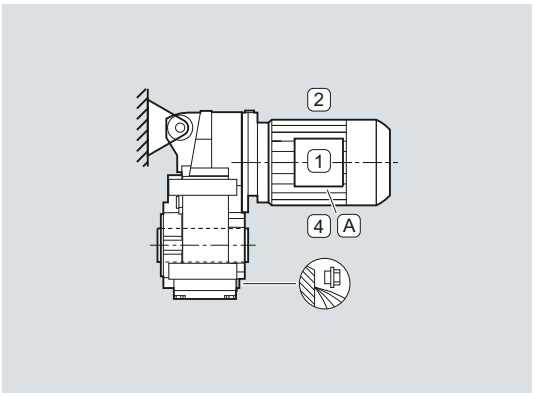
7

Parallel shaft gearboxes F.AD in a shaft-mounted design, size 29

Oil valves

Size 29 is lubricated for life.

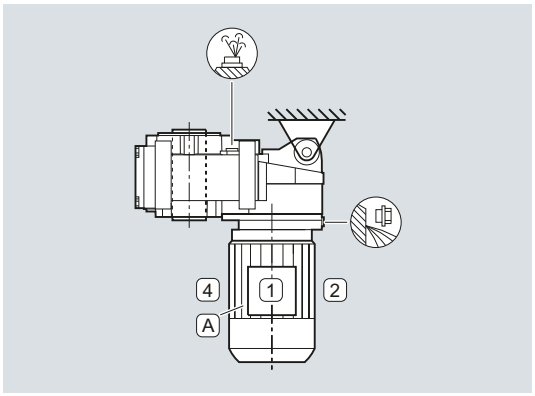
M1



Order code:

M1 **D01**

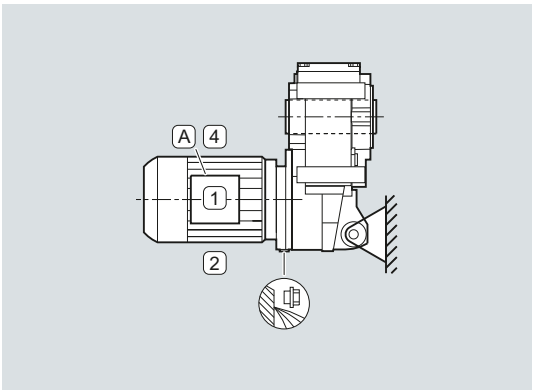
M2



Order code:

M2 **D02**

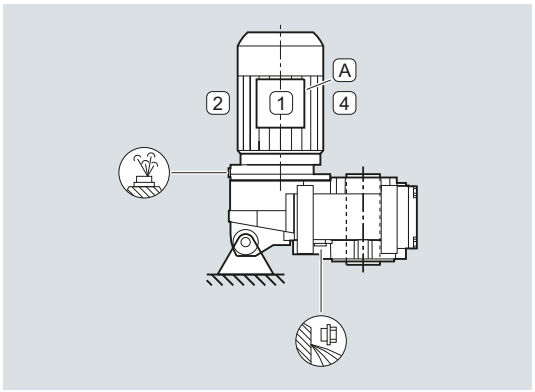
M3



Order code:

M3 **D03**

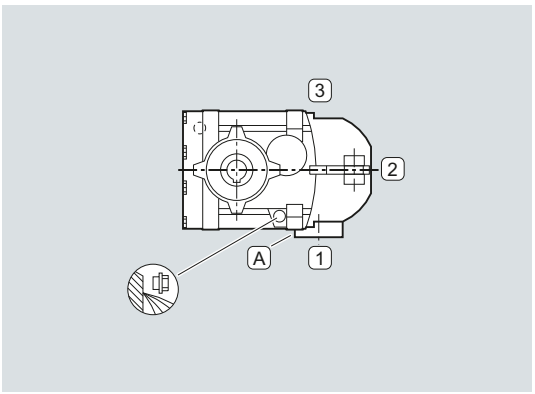
M4



Order code:

M4 **D04**

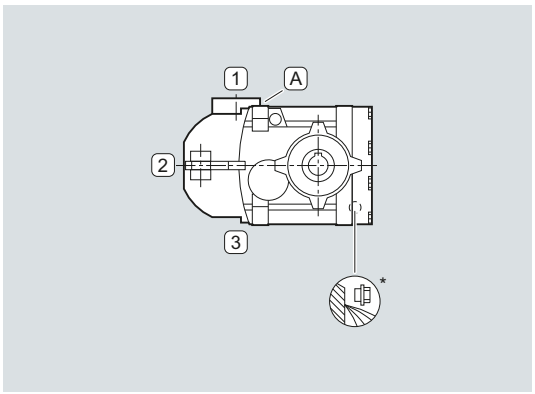
M5



Order code:

M5 **D05**

M6



Order code:

M6 **D06**

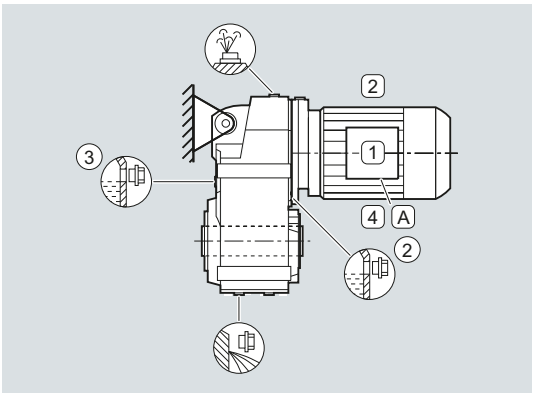
7

Parallel shaft gearbox

Parallel shaft gearboxes F.AD in a shaft-mounted design, sizes 39 to 89

Oil valves

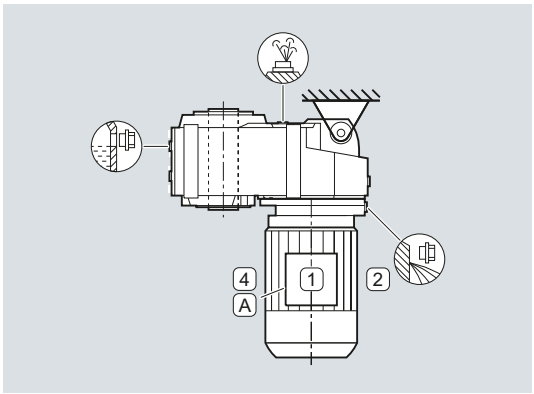
M1



Order code:

M1 **D01**

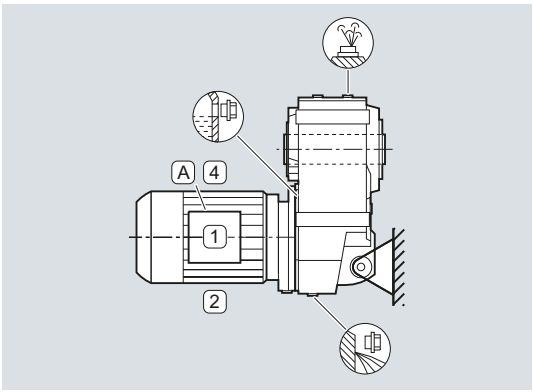
M2



Order code:

M2 **D02**

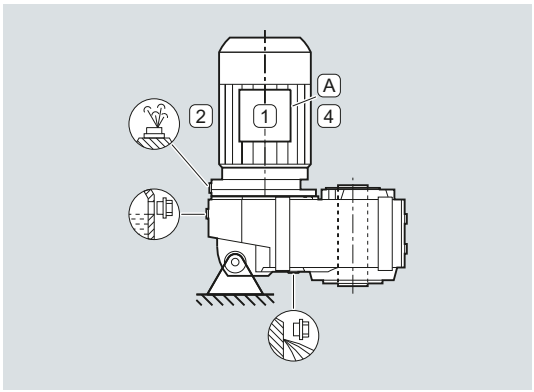
M3



Order code:

M3 **D03**

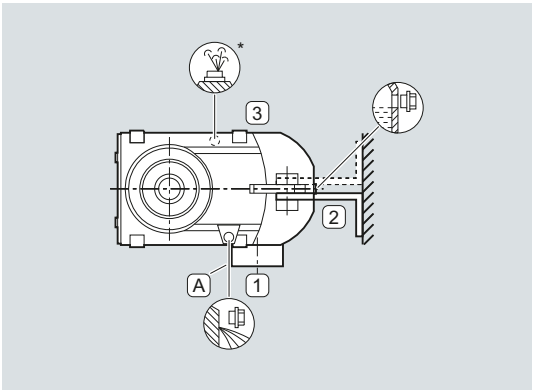
M4



Order code:

M4 **D04**

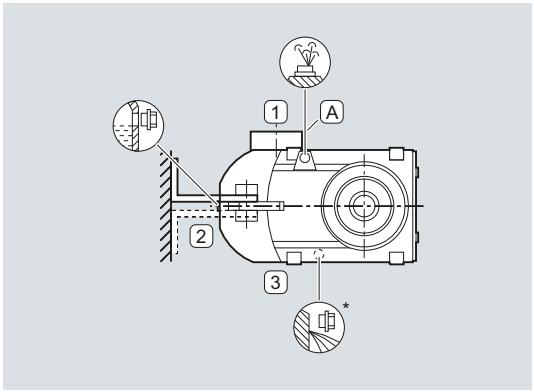
M5



Order code:

M5 **D05**

M6



Order code:

M6 **D06**

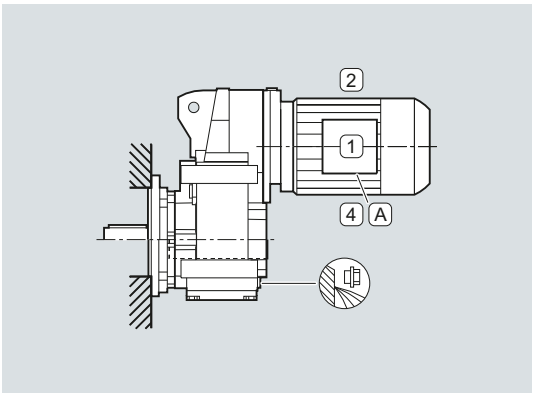
7

Parallel shaft gearboxes F..F in a flange-mounted design or F..Z with housing flange, size 29

Oil valves

Size 29 is lubricated for life.

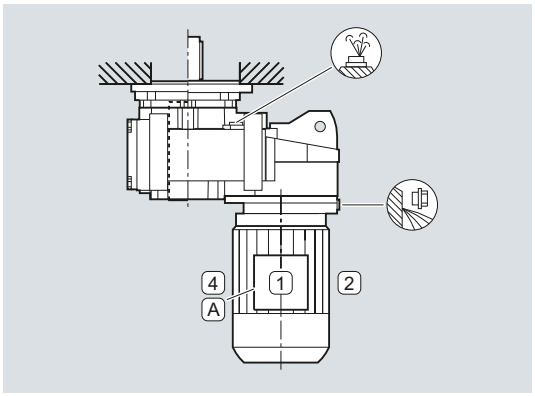
M1



Order code:

M1 **D01**

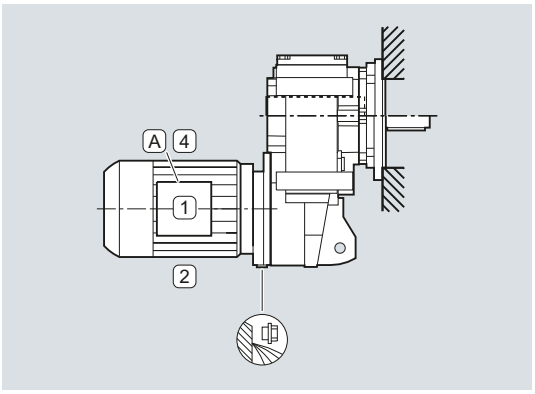
M2



Order code:

M2 **D02**

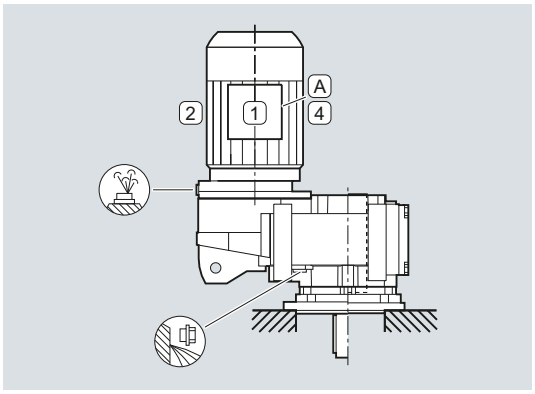
M3



Order code:

M3 **D03**

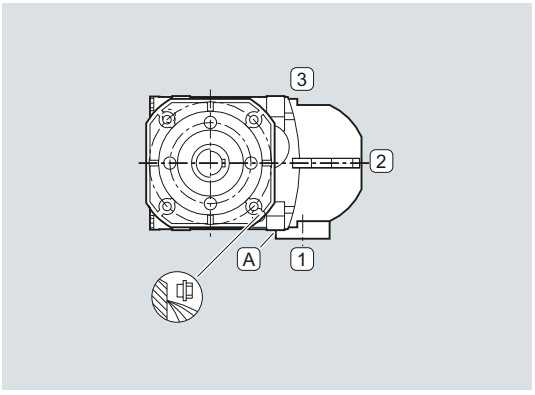
M4



Order code:

M4 **D04**

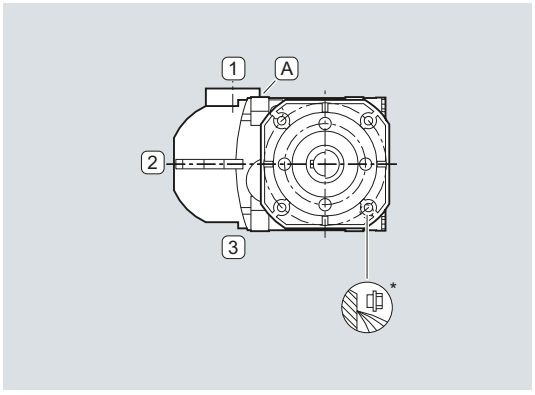
M5



Order code:

M5 **D05**

M6



Order code:

M6 **D06**

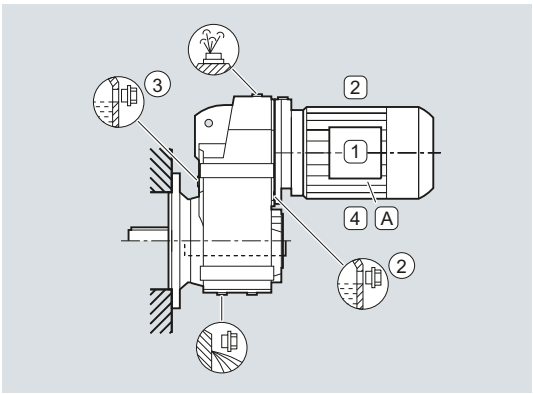
7

Parallel shaft gearbox

Parallel shaft gearboxes F..F in a flange-mounted design or F..Z with housing flange, sizes 39 to 89

Oil valves

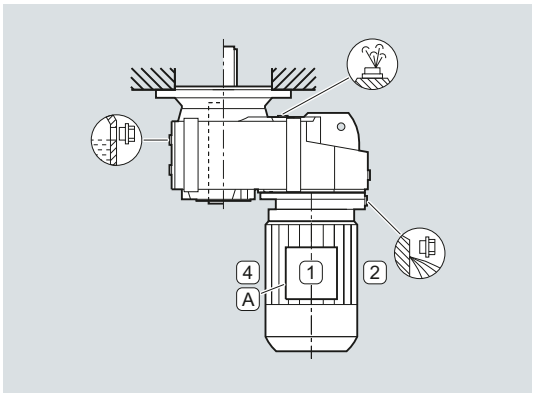
M1



Order code:

M1 **D01**

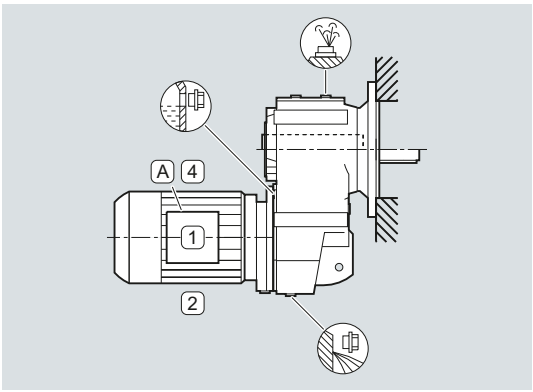
M2



Order code:

M2 **D02**

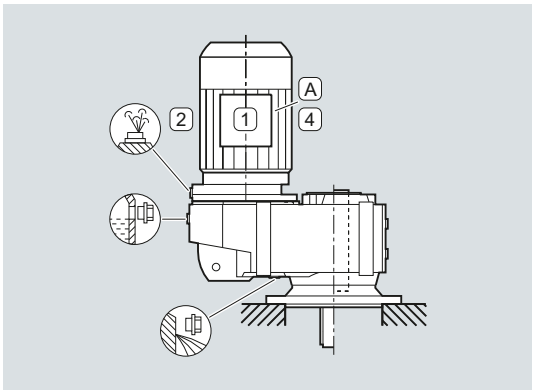
M3



Order code:

M3 **D03**

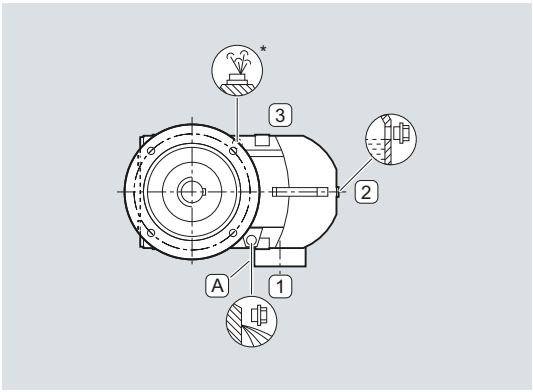
M4



Order code:

M4 **D04**

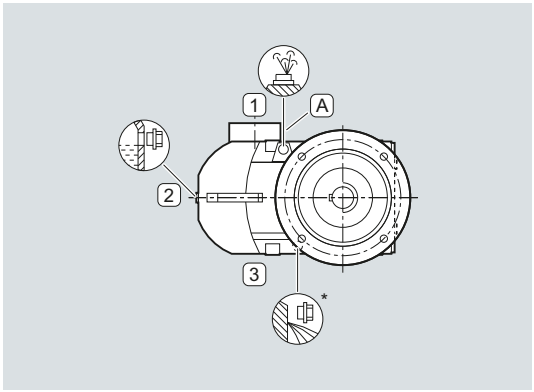
M5



Order code:

M5 **D05**

M6



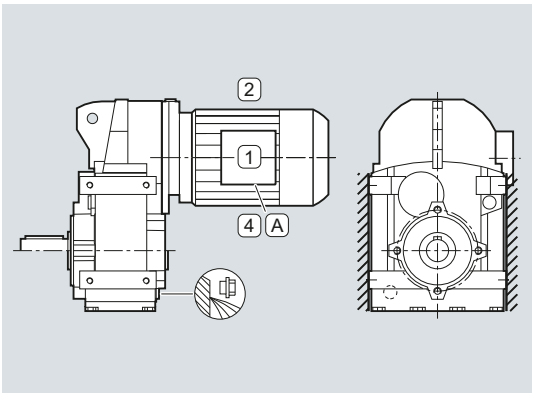
Order code:

M6 **D06**

Parallel shaft gearboxes F in a foot-mounted design, size 29

Oil valves

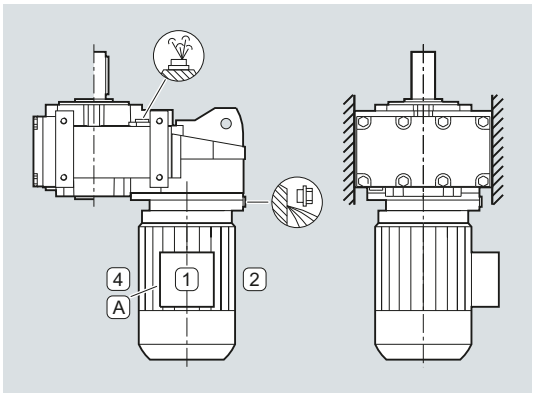
M1



Order code:

M1 **D01**

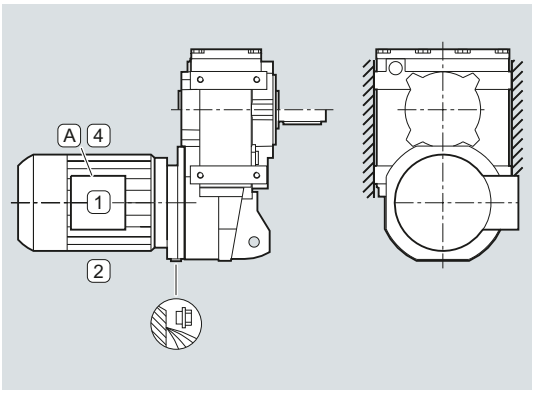
M2



Order code:

M2 **D02**

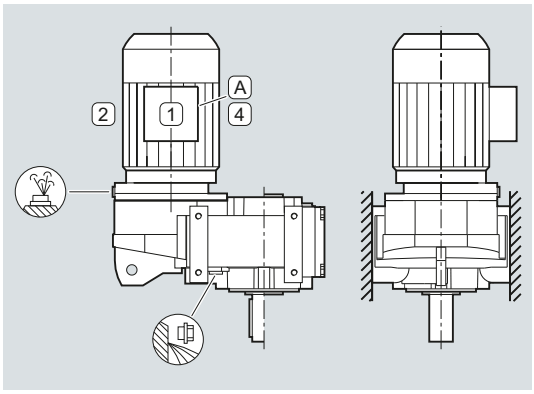
M3



Order code:

M3 **D03**

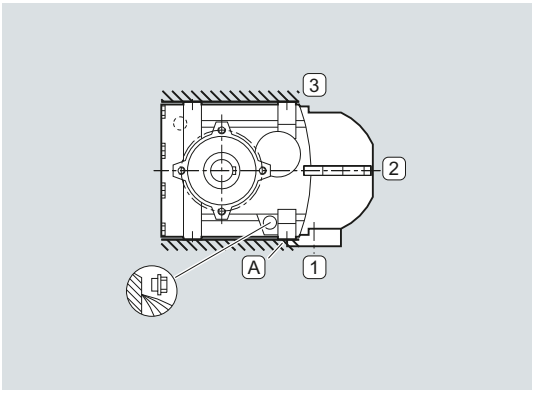
M4



Order code:

M4 **D04**

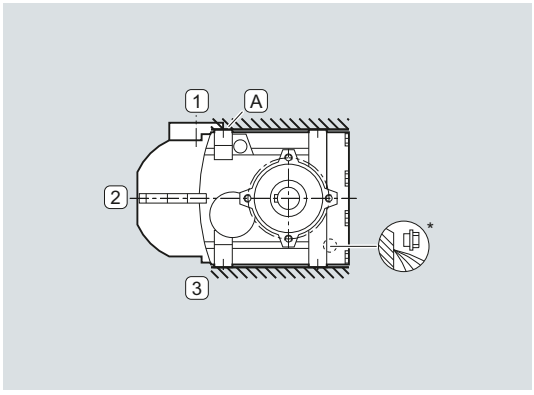
M5



Order code:

M5 **D05**

M6



Order code:

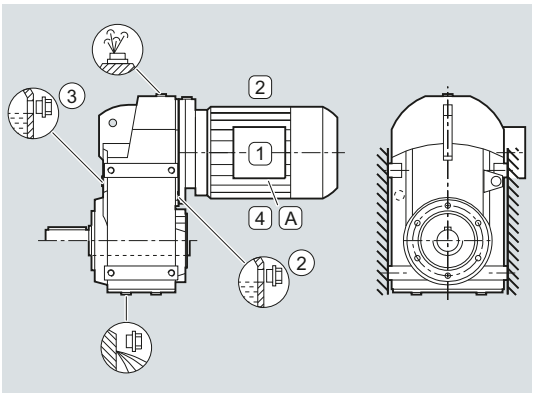
M6 **D06**

Parallel shaft gearbox

Parallel shaft gearboxes F in a foot-mounted design, sizes 39 to 89

Oil valves

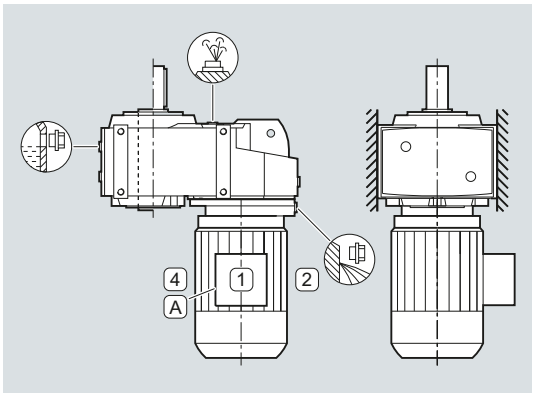
M1



Order code:

M1 **D01**

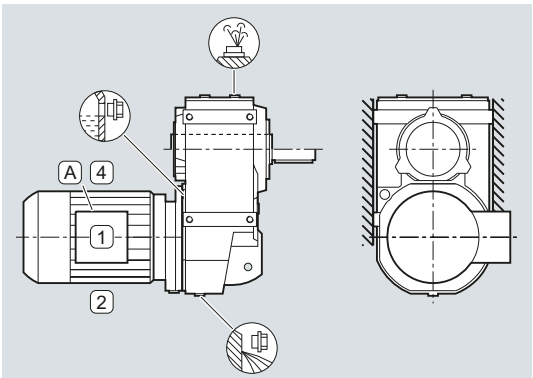
M2



Order code:

M2 **D02**

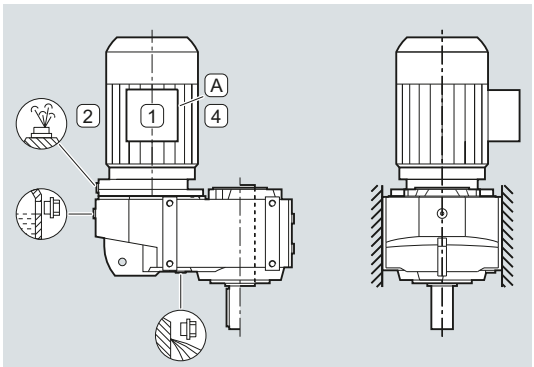
M3



Order code:

M3 **D03**

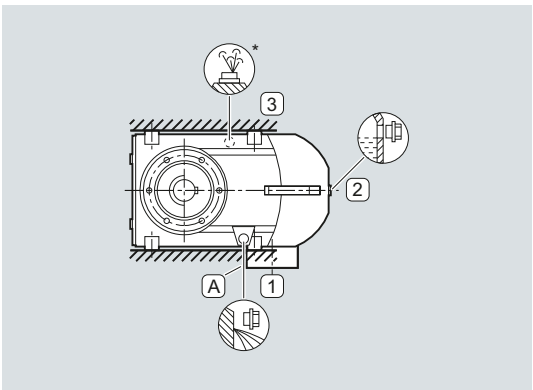
M4



Order code:

M4 **D04**

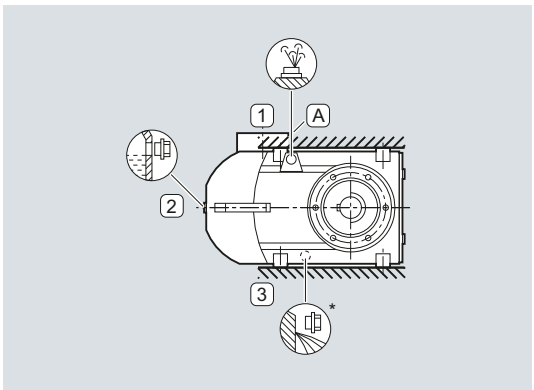
M5



Order code:

M5 **D05**

M6



Order code:

M6 **D06**

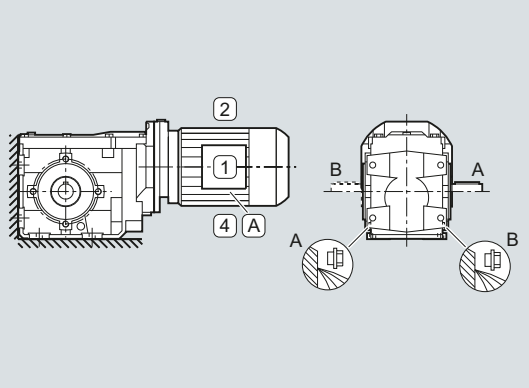
7

Bevel gearboxes B in a foot-mounted design, size 29

Oil valves

Size 29 is lubricated for life.

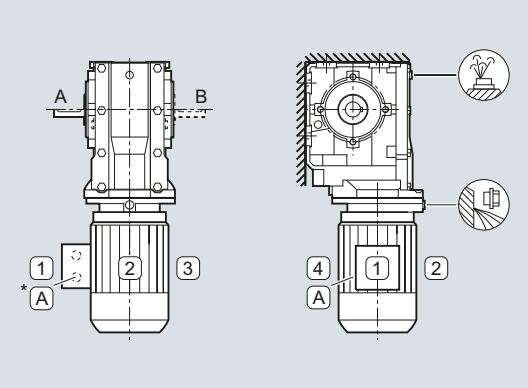
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

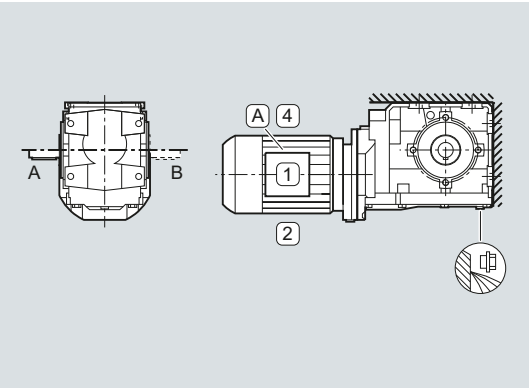
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

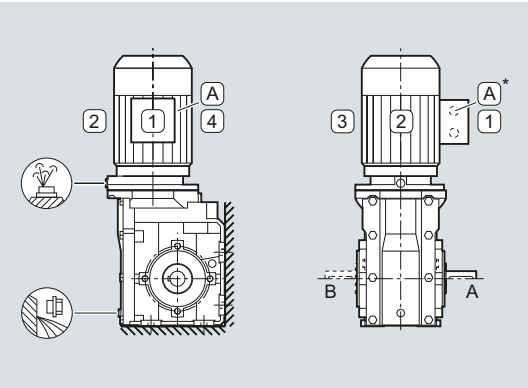
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

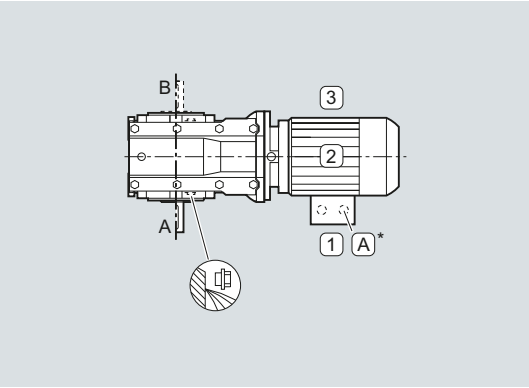
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

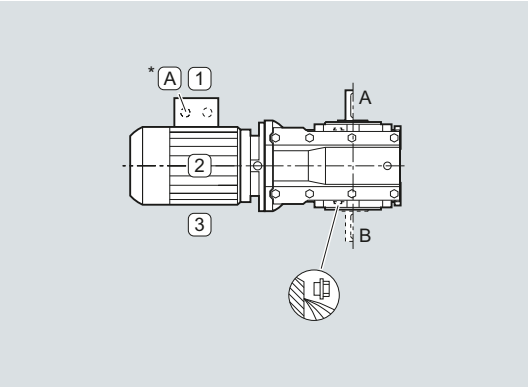
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6



Order code:

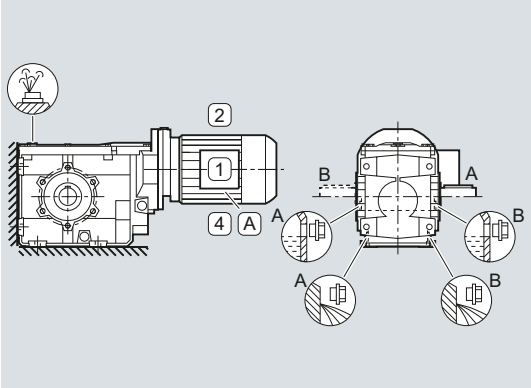
M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes

Bevel gearboxes B in a foot-mounted design, sizes 39 and 49

Oil valves

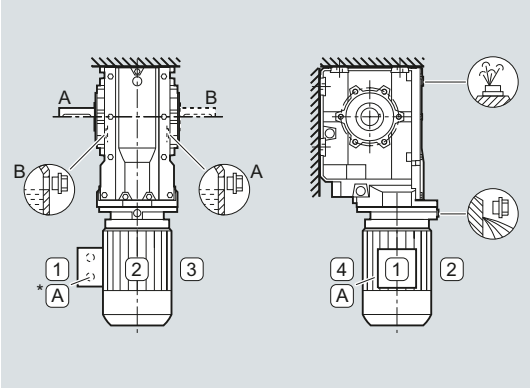
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

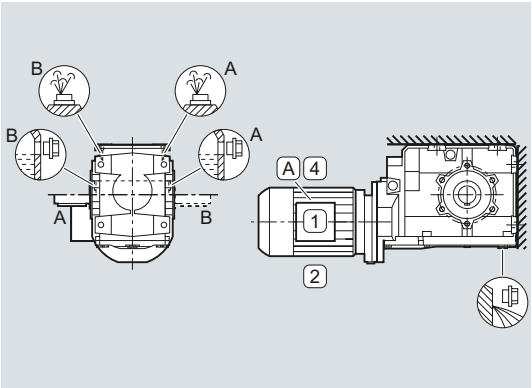
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

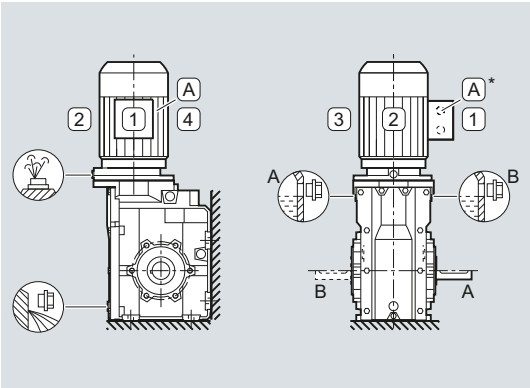
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

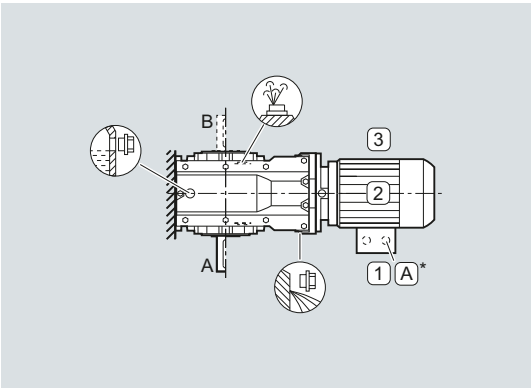
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

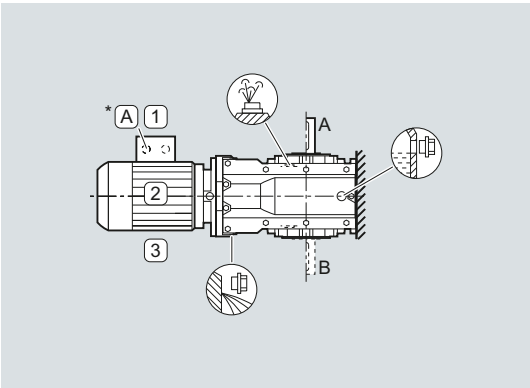
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6



Order code:

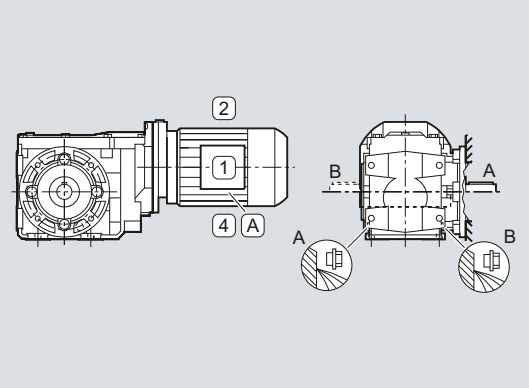
M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes B.Z in a housing flange and B.F in a flange-mounted design, size 29

Oil valves

Size 29 is lubricated for life.

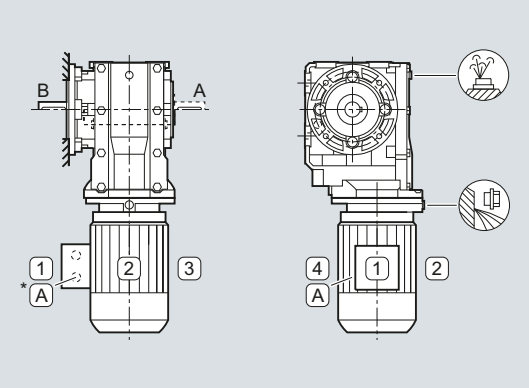
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

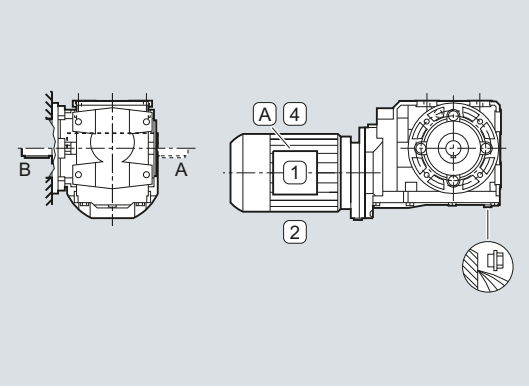
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

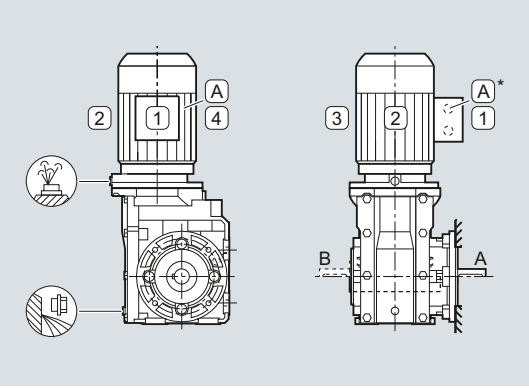
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

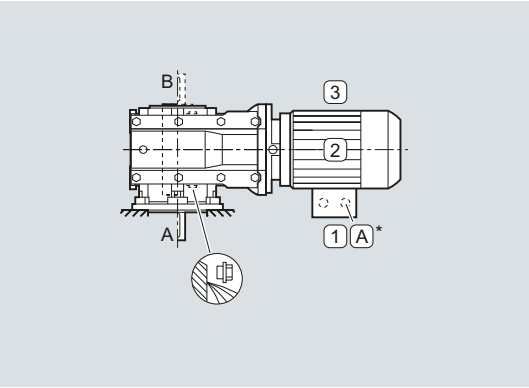
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

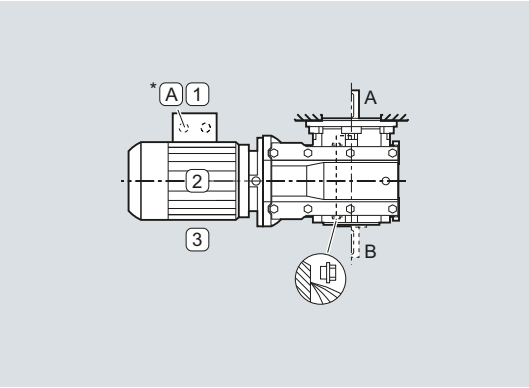
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6



Order code:

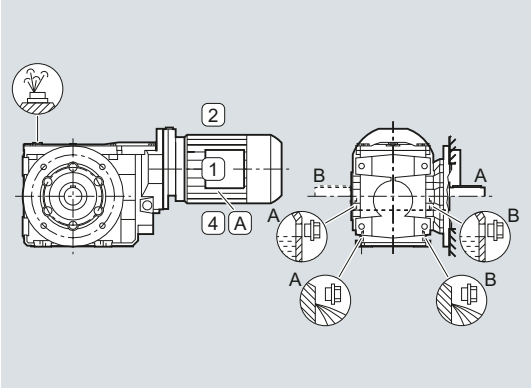
M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes

Bevel gearboxes B.Z in a housing flange and B.F in a flange-mounted design, sizes 39 and 49

Oil valves

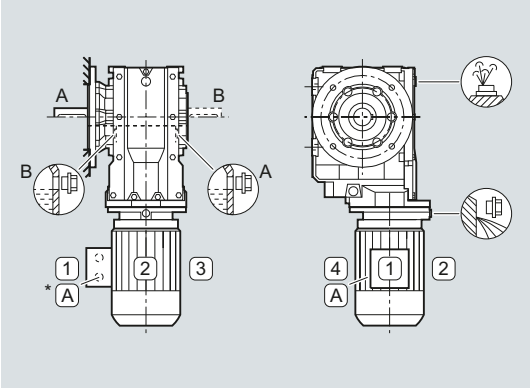
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

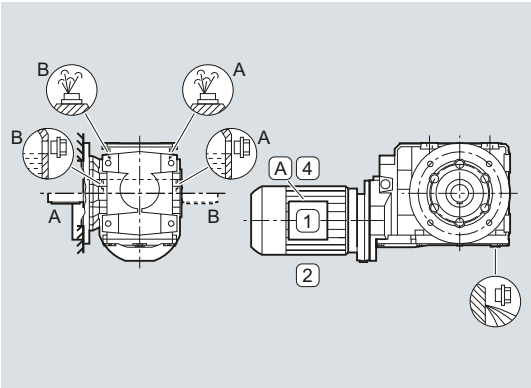
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

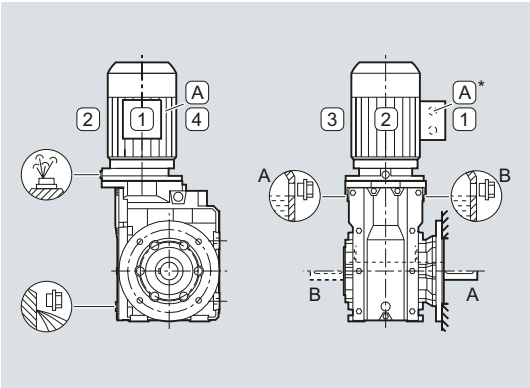
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

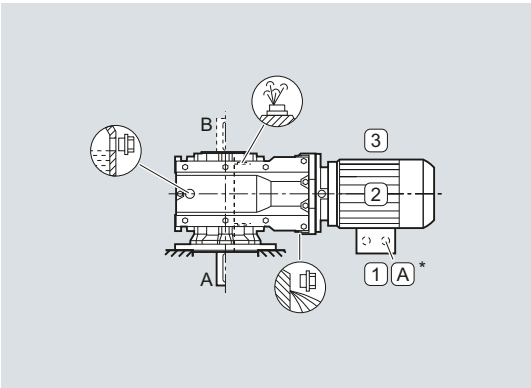
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

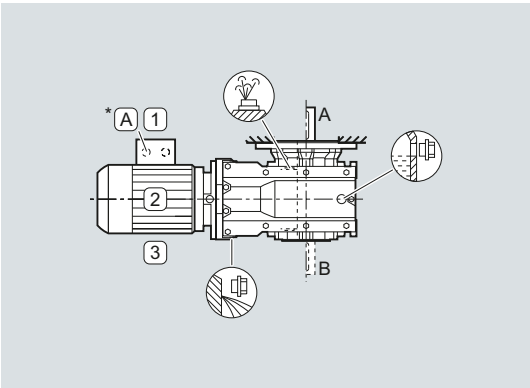
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6



Order code:

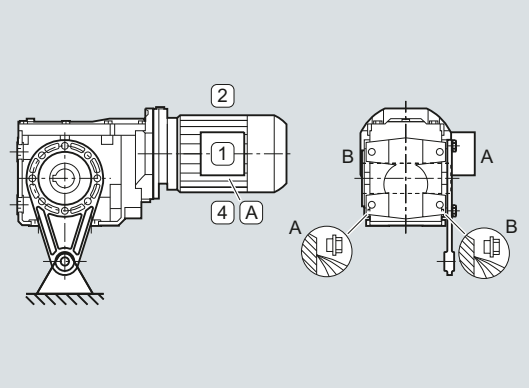
M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes BAD in a shaft-mounted design, size 29

Oil valves

Size 29 is lubricated for life.

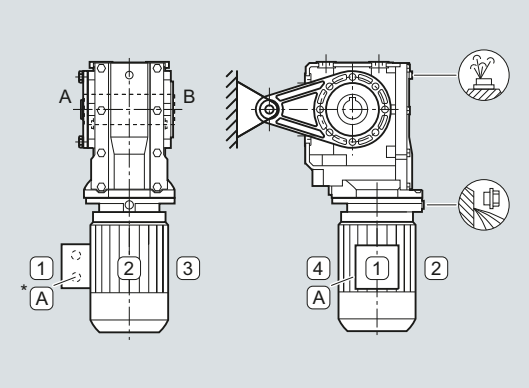
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

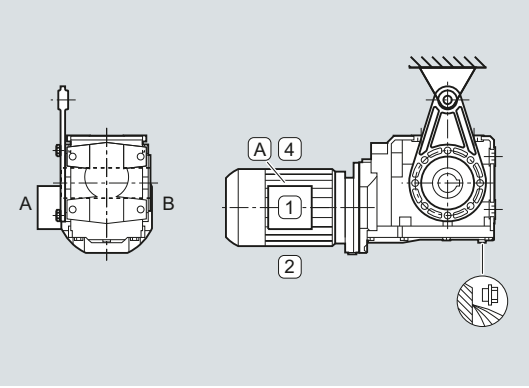
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

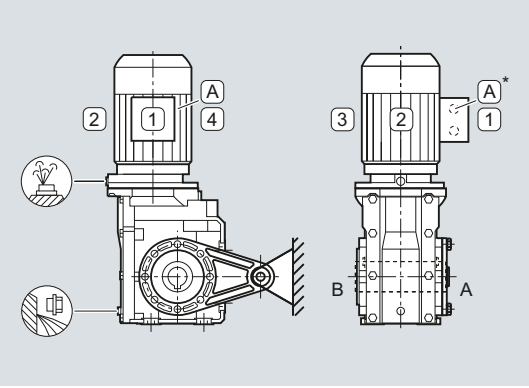
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

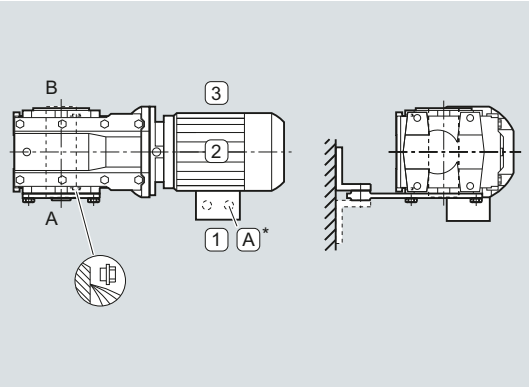
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

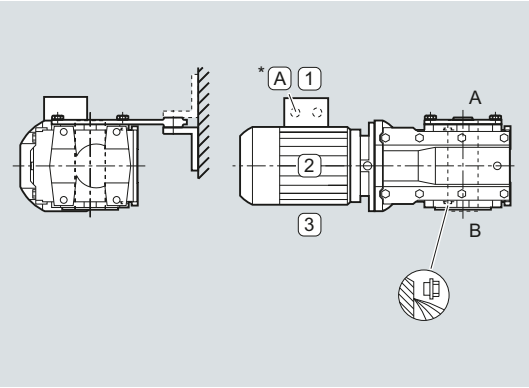
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6



Order code:

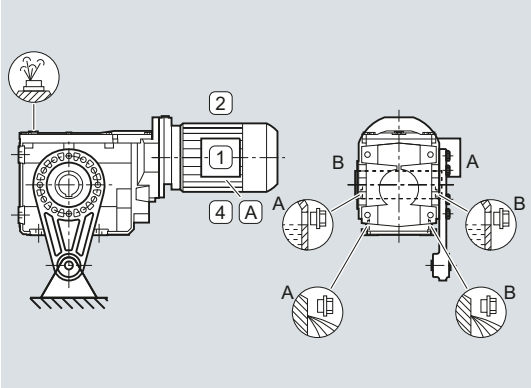
M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes

Bevel gearboxes BAD in a shaft-mounted design, sizes 39 and 49

Oil valves

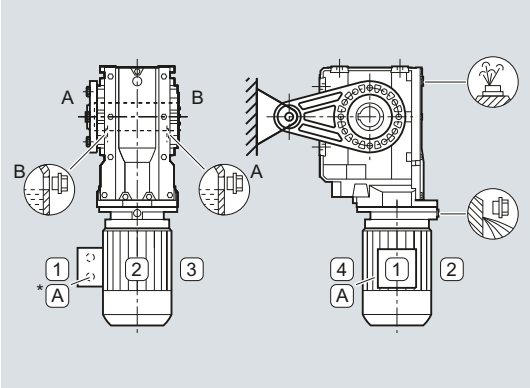
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

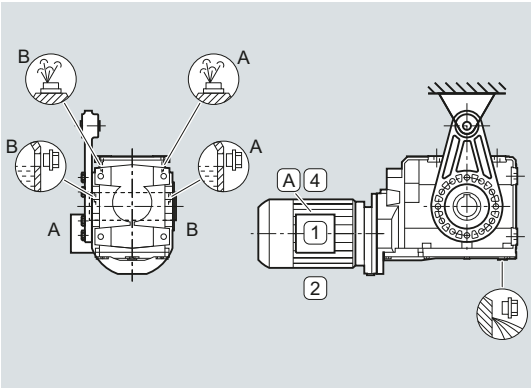
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

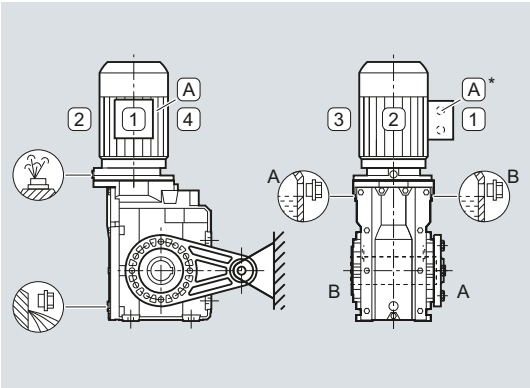
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

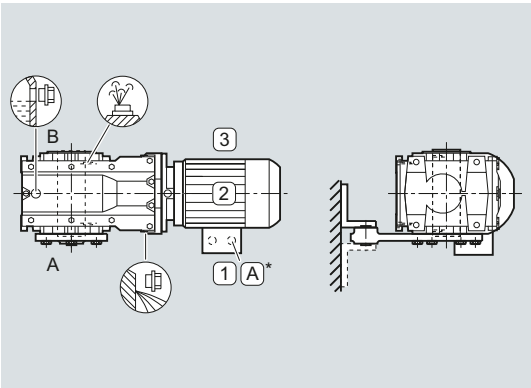
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

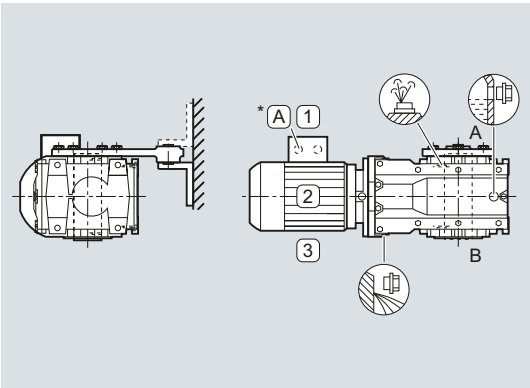
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6



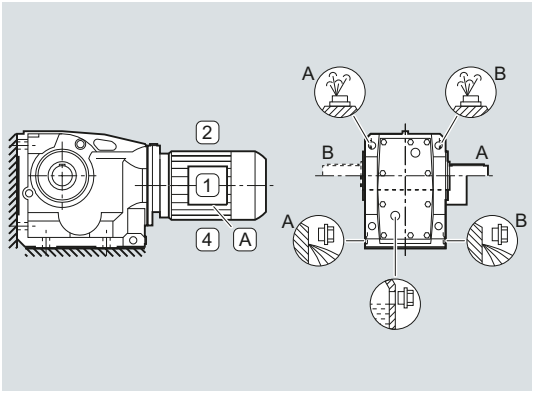
Order code:

M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes K in a foot-mounted design, sizes 39 to 89

Oil valves

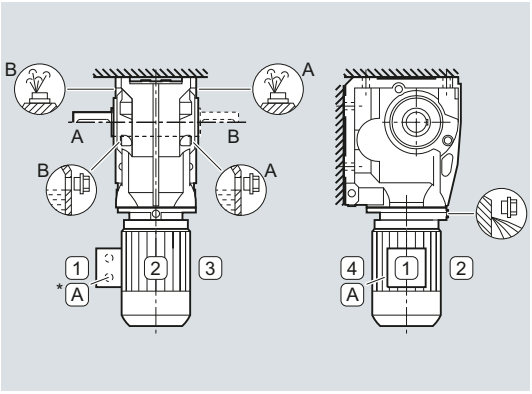
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

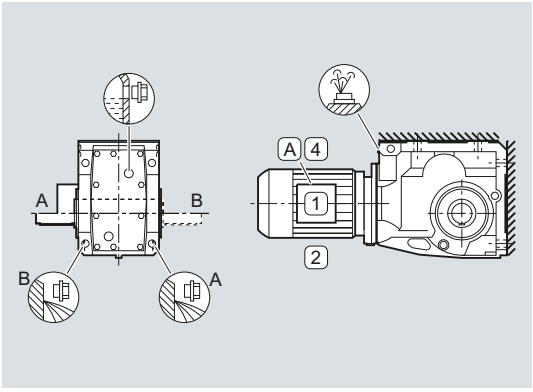
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

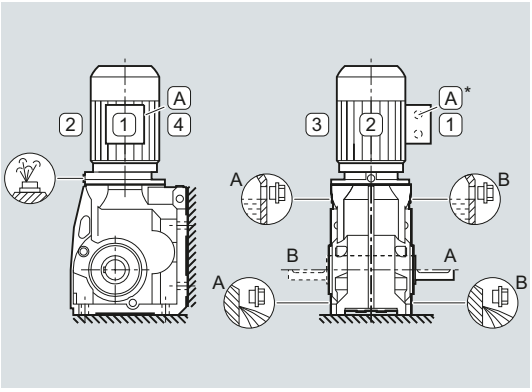
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

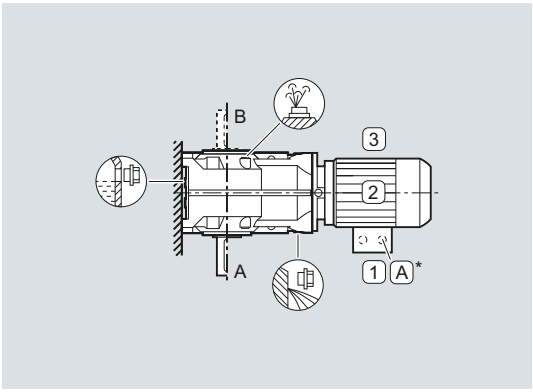
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

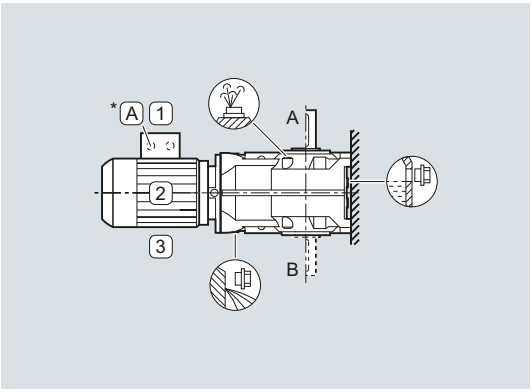
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6



Order code:

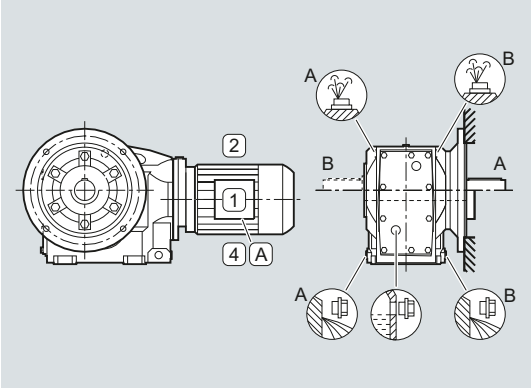
M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes

Bevel gearboxes KAZ in a housing flange and K.F in a flange-mounted design, sizes 39 and 89

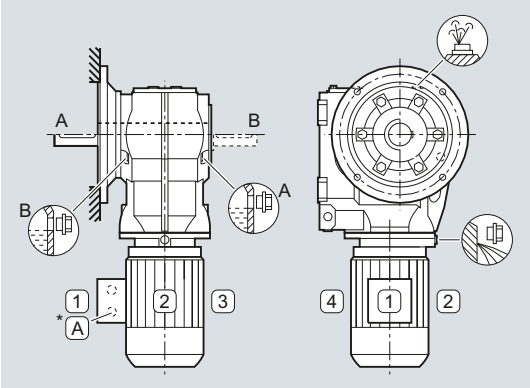
Oil valves

M1



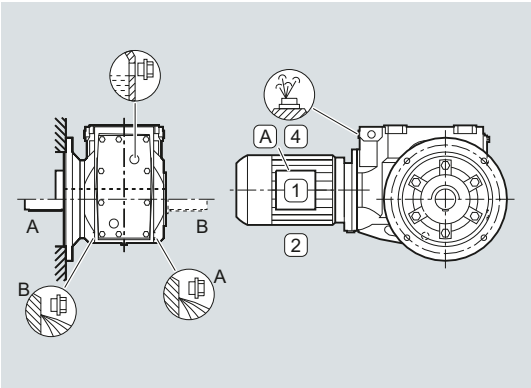
Order code:	
M1 output side A	**D11**
M1 output side B	**D21**

M2



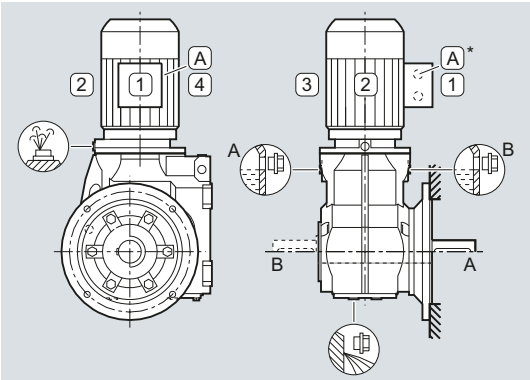
Order code:	
M2 output side A	**D12**
M2 output side B	**D22**

M3



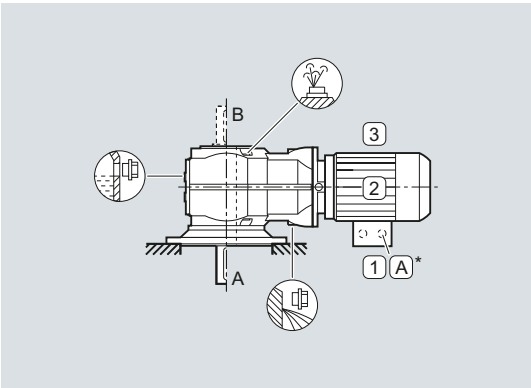
Order code:	
M3 output side A	**D13**
M3 output side B	**D23**

M4



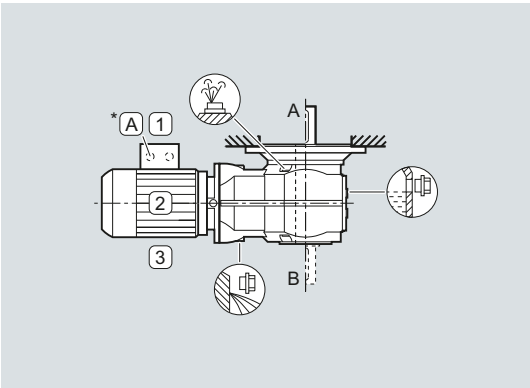
Order code:	
M4 output side A	**D14**
M4 output side B	**D24**

M5



Order code:	
M5 output side A	**D15**
M5 output side B	**D25**

M6

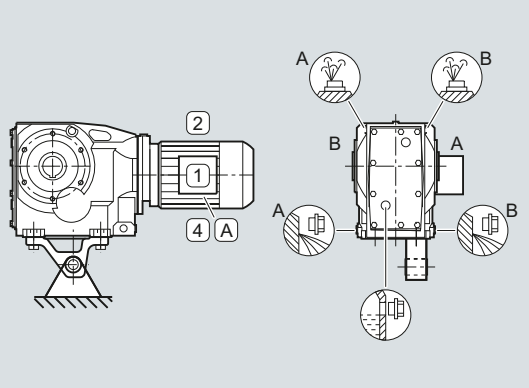


Order code:	
M6 output side A	**D16**
M6 output side B	**D26**

Bevel gearboxes KAD in a shaft-mounted design, sizes 39 and 89

Oil valves

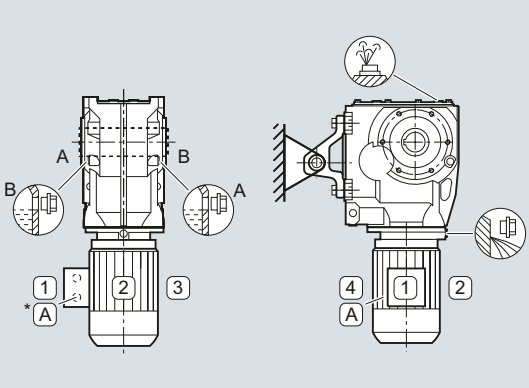
M1



Order code:

M1 output side A	**D11**
M1 output side B	**D21**

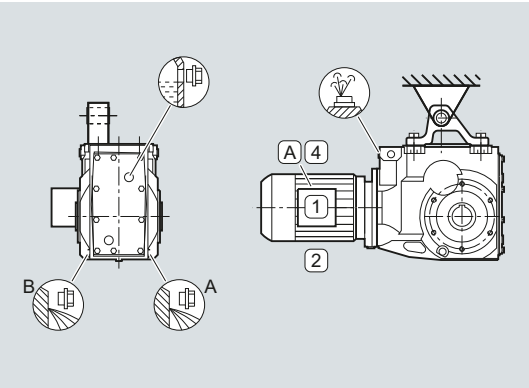
M2



Order code:

M2 output side A	**D12**
M2 output side B	**D22**

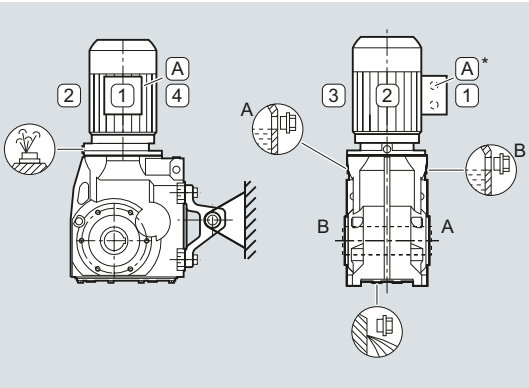
M3



Order code:

M3 output side A	**D13**
M3 output side B	**D23**

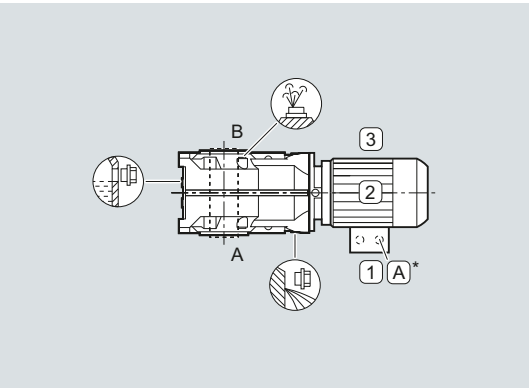
M4



Order code:

M4 output side A	**D14**
M4 output side B	**D24**

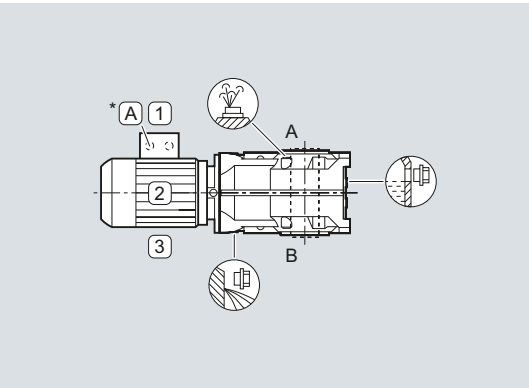
M5



Order code:

M5 output side A	**D15**
M5 output side B	**D25**

M6

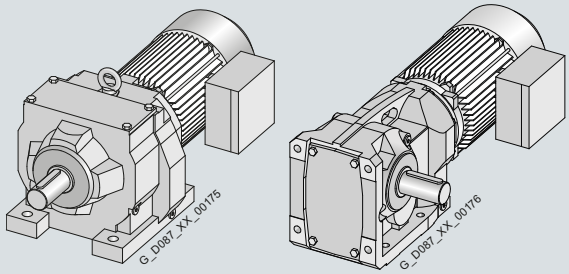
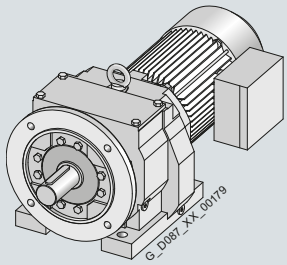
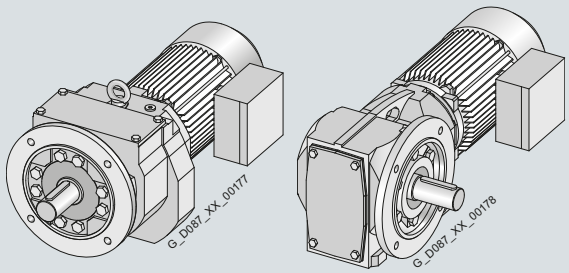
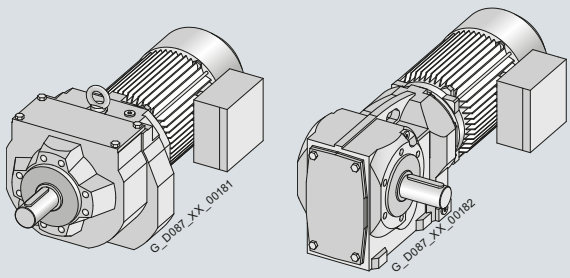
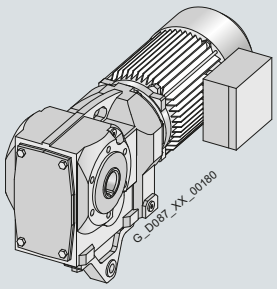


Order code:

M6 output side A	**D16**
M6 output side B	**D26**

Mounting types

Overview

Mounting type	Code in type designation 2. Data position	Possible for D, Z	 F	 B, K	Example	Order No. 14. Data position
Foot-mounted design	–	✓	✓	✓		**A**
Foot/flange-mounted design	B	✓[1)]				**B**
Flange-mounted design (A type)	F	✓	✓	✓		**F**
Housing flange (C type)	Z	✓	✓	✓		**H**
Shaft-mounted design (torque arm)	D		✓	✓		**D**

[1)] Not possible for size 19

Flange-mounted designs

The flange-mounted designs are available with different diameters.

Table 7-2 Flange diameter

Gearbox type	Flange diameter mm								Order code
Helical gearboxes DF and ZF or DB and ZB									
Gearbox size	**19**	**29**	**39**	**49**	**59**	**69**	**79**	**89**	
	120[1)]	120*	120*						**H02**
	140	140		140*					**H03**
	160	160	160	160	160*				**H04**
			200	200	200	200*			**H05**
					250	250	250*		**H06**
							300	300	**H07**
								350	**H08**
Parallel shaft gearboxes F..F									
Gearbox size	**29**		**39**	**49**	**69**		**79**	**89**	
	120								**H02**
	160		160						**H04**
				200					**H05**
					250		250		**H06**
								300	**H07**
Bevel gearboxes B.F									
Gearbox size	**29**			**39**			**49**		
	120								**H02**
	160			160					**H04**
				200			200		**H05**
Bevel gearboxes K.F									
Gearbox size	**39**		**49**		**69**		**79**	**89**	
	160								**H04**
			200						**H05**
					250		250		**H06**
								300	**H07**

[1)] Helical gearboxes, size 19 are available in a foot/flange-mounted design DB/ZB
* Helical gearboxes in a foot/flange-mounted design DB/ZB are only available with small flange

Mounting types

Flange-mounted designs (continued)

Water drain holes at the output flange

For helical gearboxes in a flange-mounted design, water drain holes can be located in the output flange. This is required for mounting position M2 (output shaft facing upwards), if there is a risk that water will collect in the output flange. This measure prevents the output seal from running in water.

Order code:	
Water drain holes at the output flange	**G77**

Table 7-3 Water drain holes

Flange diameter	**Possible for**							
mm								
Helical gearboxes Z and D								
Gearbox size	**19**	**29**	**39**	**49**	**59**	**69**	**79**	**89**
120		✓[1]	✓[1]					
140	✓	✓		✓				
160		✓	✓	✓	✓[1]			
200			✓	✓	✓	✓[2]		
250					✓	✓	✓[1]	
300							✓	✓
350								✓

[1] Water drain holes are possible for foot/flange-mounted designs
[2] Water drain holes are only possible for foot/flange-mounted designs

Parallel shaft gearboxes F.AD in a shaft-mounted design

The rubber buffers (supplied loose) are used to flexibly support the gearbox on the housing plate provided.

When mounting, the rubber buffers must be pretensioned to the dimension specified in the dimension drawing.

The elastomer used for support is manufactured out of natural rubber 70° ± 5 Shore A.

The rubber buffers are suitable for all mounting positions and can withstand temperatures of between –40 and +80 °C.

Order No. at 14th position	
Shaft-mounted design	**D**

The dimensions of the torque arm can be seen in the dimension drawings.

Bevel gearboxes KAD in a shaft-mounted design

The torque arm of bevel gearboxes K is mounted on the underside of the housing. The rubber elastic buffers are used to flexibly support the gearbox on the torque arm.

The elastomer used for support is manufactured out of natural rubber 60° Shore A.

The rubber elastic buffers are suitable for all mounting positions and can withstand temperatures of between –40 and +80 °C.

Order No. at 14th position	
Shaft-mounted design	**D**

The dimensions of the torque arm can be seen in the dimension drawings.

Bevel gearboxes BAD in a shaft-mounted design

The torque arm can be screwed to the gearbox housing at various positions.

The elastomer used for support is manufactured out of natural rubber 60° Shore A.

The rubber elastic buffers are suitable for all mounting positions and can withstand temperatures of between –40 and +80 °C.

Order No. at 14th position	
Shaft-mounted design	**D**

When ordered, the torque arm is supplied loose.

Size 29

Sizes 39 and 49

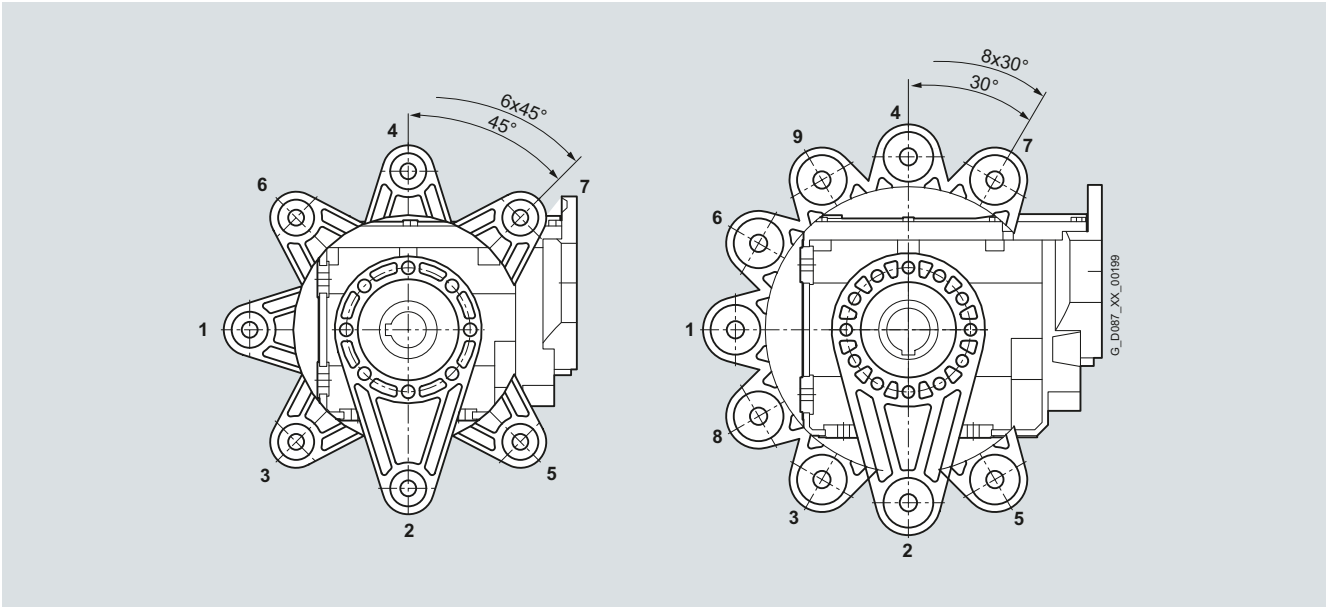


Fig. 7-5 Bevel gearboxes B in a shaft-mounted design

Shaft designs

Selection and ordering data

Shaft design	Dimensions								Order No.	Order number suffix
	mm								8. Data position	
Helical gearboxes Z and D										
Gearbox size	**19**	**29**	**39**	**49**	**59**	**69**	**79**	**89**		
Solid shaft	V20 x 40	V25 x 50	V25 x 50	V30 x 60	V35 x 70	V35 x 70	V40 x 80	V50 x 100	**1**	
Solid shaft, inches	V0.75" x 1.57"	V1" x 1.97"	V1" x 1.97"	V1.25" x 2.36"	V1.35" x 2.76"	V1.35" x 2.76"	V1.625" x 3.15"	V2.125" x 3.94"	**9**	**H6A**
Parallel shaft gearboxes F										
Gearbox size	**29**	**39**	**49**	**69**	**79**	**89**				
Solid shaft	V25 x 50	V25 x 50	V30 x 60	V35 x 70	V40 x 80	V50 x 100			**1**	
Solid shaft, inches	V1" x 1.97"	V1" x 1.97"	V1.25" x 2.36"	V1.35" x 2.76"	V1.625" x 3.15"	V2" x 3.94"			**9**	**H6A**
Hollow shaft	H25	H30	H35	H40	H40	H50			**5**	
Hollow shaft, inches	H1"	H1.25"	H1.375"	H1.5"	H1.5"	H2"			**9**	**H7A**
Hollow shaft with shrink disk	HS25	HS30	HS35	HS40	HS40	HS50			**9**	**H3A**
Splined hollow shaft		N30	N35	N35	N45	N50			**9**	**H4A**
Bevel gearbox B										
Gearbox size	**29**		**39**		**49**					
Solid shaft	V20 x 40		V30 x 60		V35 x 70				**1**	
Solid shaft, inches	V0.75" x 1.57"		V1" x 1.97"		V1.375“ x 2.76“				**9**	**H6A**
Solid shaft, both ends	VD20 x 40		VD30 x 60		VD35 x 70				**9**	**H5A**
Hollow shaft	H20		H30		H40				**5**	
	H25		H35						**6**	
			H40						**7**	
Hollow shaft, inches	H0.75"		H1.25"		H1.5“				**9**	**H7A**
Hollow shaft with shrink disk	HS20		HS35		HS40				**9**	**H3A**
Bevel gearbox K										
Gearbox size	**39**	**49**	**69**	**79**	**89**					
Solid shaft	V25 x 50	V30 x 60	V35 x 70	V40 x 80	V50 x 100				**1**	
Solid shaft, inches	V1" x 1.97"	V1.25" x 2.36"	V1.375" x 2.76"	V1.625" x 3.15"	V2" x 3.94"				**9**	**H6A**
Solid shaft, both ends	VD25 x 50	VD30 x 60	VD35 x 70	VD40 x 80	VD50 x 100				**9**	**H5A**
Hollow shaft	H30	H35	H40	H40	H50				**5**	
Hollow shaft, inches	H1.25"	H1.375"	H1.5"	H1.5"	H2"				**9**	**H7A**
Hollow shaft with shrink disk	HS30	HS35	HS40	HS40	HS50				**9**	**H3A**
Splined hollow shaft	N30	N35	N35	N45	N50				**9**	**H4A**

Hollow shaft cover

As standard, the bore of the hollow shaft is sealed using a plastic sealing cap.

Gearboxes with hollow shaft and shrink disk have, as standard, from size 39, a protective cap that also rotates.

For safety reasons, stationary protection covers may be required.

The dimensions of the rotating protection cover can be seen in the dimension drawings provided in the gearbox chapters.

Protection cover

For sizes 39 to 89, a stationary protection cover for the hollow shaft and hollow shaft with shrink disk can be selected.

Size 29 has, as standard, a stationary protection cover for the design with shrink disk. For the design with hollow shaft, for size 29, a protection cover can also be selected.

The dimensions of the protection cover can be seen in the separate dimension drawing provided in the gearbox chapters.

Order code:

Protection cover	**G60**

Radially reinforced output shaft bearings

If required, gearboxes are available with a radially reinforced output shaft bearing design. The reinforced bearings allow higher radial forces to be transferred.

Order code	
Radially reinforced output shaft bearings	**G20**

Table 7-4 Reinforced bearing

Design	**Possible for**								**Order code**
Helical gearboxes Z and D									
Gearbox size	**19**	**29**	**39**	**49**	**59**	**69**	**79**	**89**	
Radially reinforced output shaft bearings						✓	✓	✓	**G20**
Parallel shaft gearboxes F									
Gearbox size	**29**	**39**	**49**	**69**	**79**	**89**			
Radially reinforced output shaft bearings			✓*	✓	✓	✓			**G20**
Bevel gearbox K									
Gearbox size	**39**	**49**	**69**	**79**	**89**				
Radially reinforced output shaft bearings		✓*	✓	✓	✓				**G20**

* Not possible for flange-mounted design F

7

Lubrication

Overview

All geared motors are filled in the factory with a high-quality lubricant.

The lubricant type and quantity depend on the gearbox type, the particular application (ambient temperature) and the mounting position. Lubricants permitted for the various gearbox types and applications are listed in the lubricant table.

Gearbox lubricating oils

Table 7-5 Lubricants for helical gearboxes D and Z, parallel shaft gearboxes F, bevel gearboxes K

Area of application	Ambient temperature	Oil type	Order code
	°C	Designation acc. to DIN 51502	
Normal temperature (standard)	-10 … +40	CLP ISO VG220	**K06**
Low temperature application	-40 … +40	CLP ISO PAO VG220	**K12**
Extremely low temperature application	-40 … +10	CLP ISO PAO VG68	**K13**
High temperature application	0 … +80	CLP ISO PG VG460	**K08**
Longer oil service life	-20 … +50	CLP ISO PAO VG220	**K12**
		CLP ISO PG VG220	**K07**
Foodstuff area (USDA-H1)	-30 … +40	CLP ISO H1 VG460	**K11**
Biodegradable oil	-20 … +40	CLP ISO E VG220	**K10**

Table 7-6 Lubricants for bevel gearboxes B

Area of application	Ambient temperature	Oil type	Order code
	°C	Designation acc. to DIN 51502	
Normal temperature (standard)	-10 … +40	CLP ISO PG VG220	**K07**
Extremely low temperature application	-40 … +10	CLP ISO PAO VG220	**K12**
High temperature application	0 … +80	CLP ISO PG VG460	**K08**
Longer oil service life	-20 … +50	CLP ISO PAO VG220	**K12**
		CLP ISO PG VG220	**K07**
Foodstuff area (USDA-H1)	-20 … +40	CLP ISO H1 VG460	**K11**

CLP = mineral oil
CLP PG = polyglycol oil
E = Ester oil, organic oil (bio oil or risk of water pollution, class WGK1)
PAO = Poly-alpha-olefin oil
CLP H1 = physiologically safe oil (USDA-H1 approval)

For a list of approved oils from different lubricant manufacturers, please refer to the BA 7300 operating instructions.

For ambient conditions with a high air humidity and salt-laden air, we recommend that only mineral or PAO oils are used.

The standard gearbox design can be used with suitable lubricant selection in the range from -10 up to +40 °C. Outside this temperature range, additional options should be taken into consideration that go beyond the lubricant selection.

In addition, it must be checked as to whether the components and options used are suitable for the specified temperature range.

Oil quantities

The oil quantities corresponding to the applicable types of construction are specified in the operating instructions and on the rating plate.

Roller bearing greases for gearboxes and motors

The roller bearings of gearboxes and motors are lubricated in the factory with a roller bearing grease that is coordinated with the selected application area. The quantity of grease between the rolling elements and the space in front of the bearing depends on the operating conditions and the gearbox mounting position. For operation in the selected application areas, it is not necessary to lubricate the roller bearings.

We recommend that the grease filling of the roller bearings is also changed when the oil or shaft sealing rings are replaced.

For a list of approved greases from different lubricant manufacturers, please refer to the BA 7300 operating instructions.

Overview

As standard, the gearbox is supplied with high-quality radial shaft sealing rings with dust protection lips. This sealing design is reliable for a wide range of applications.

Special application areas and environmental conditions require special radial shaft sealing rings and materials, which are coordinated with the particular gearbox oil. This coordinated sealing system results in a high reliability of the gearbox sealing.

When compared to standard sealing systems, the maintenance intervals can be extended. This therefore reduces maintenance costs.

Selection criteria for the sealing

Normal environmental stress

Environment with low dust and pollution levels with low moisture.

Increased environmental stress

Environments with increased pollution and dust levels as well as low moisture.

Typical applications:

- Production areas with increased pollution and dust, such as wood chips, dusts or granulate as well as occasional spray water.

Longer service life

When compared to a standard seal, longer maintenance intervals can be assumed.

Description of the seals

Standard seal

High-quality NBR radial shaft sealing ring with dust protection lip.

Seal with longer service life

Towards the inside of the gearbox, the radial shaft sealing ring with dust protection lip has an additional axial seal. This has a sinusoidally-shaped dust protection lip. This sealing system has a high degree of reliability as result of the insensitivity with respect to pollution in the oil.

Seal for increased environmental stress

This seal is equipped with an additional fiber disk. In addition to the longer service life, it also provides increased protection against higher environmental stress as a result of moisture and dust. As a consequence, the sealing system has a high degree of reliability.

For additional environmental stress, e.g. water jets or significant levels of pollution as a result of production materials, please contact your local Siemens office.

Table 7-7 Optimum output shaft sealing system

Lubrication and environmental conditions		Output shaft sealing			
		Standard		Longer service life	
Area of application	Ambient temperature °C	Designation	Order code	Designation	Order code
Normal environmental stress					
Standard temperature	-10 … +40	Standard seal	–	Seal with longer service life	G23
Low temperature	-40 … +40				
Extremely low temperature	-40 … +10				
High temperature	0 … +80				
Longer oil service life	(-20 … +50)				
Foodstuff area (USDA-H1)	(-30 … +40)				
Biodegradable oil	(-20 … +40)	Standard seal	–		
Increased environmental stress					
Standard temperature	-10 … +40			Seal for increased environmental stress	G24
Low temperature	-40 … +40				
Extremely low temperature	-40 … +10				
High temperature	0 … +80				
Longer oil service life	(-20 … +50)				

Venting

Overview

Gearboxes from size 39 for standard mounting positions are supplied as standard with vent valve, oil level control and drain screw.

Gearbox sizes 19 and 29 are supplied ready for operation, lubricated for life and can be operated in mounting positions M1, M3, M5 and M6 without requiring a vent valve.

Pressure breather valve

Gearboxes from size 39 are supplied as standard with an installed pressure breather valve; this is suitable for both indoors and outdoors use.

After removing the transport lock, the pressure breather valve can be immediately used without requiring any additional measures.

Order code:

Pressure breather valve	**G45**

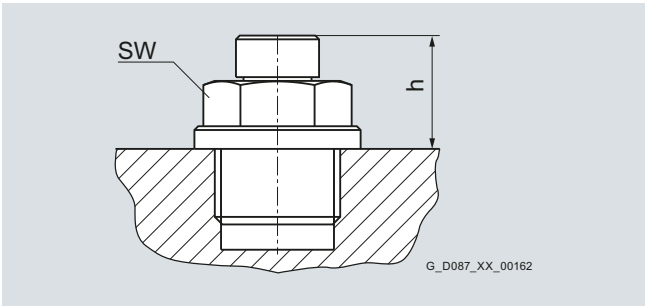


Fig. 7-6 Pressure breather valve

Technical data of the pressure breather valve

Gearbox type	Size	Width across flats	Thread	Dimension mm
		SW		h
Helical gearboxes Z and D	39	12	G 1/8 A	15
	49 … 79	13	G 1/4 A	15
	89	17	G 3/8 A	15
Parallel shaft gearboxes F	39	12	G 1/8 A	15
	49 … 79	13	G 1/4 A	15
	89	17	G 3/8 A	15
Bevel gearbox B	39	12	G 1/8 A	15
	49	13	G 1/4 A	15
Bevel gearbox K	39 … 49	12	G 1/8 A	15
	69 … 89	13	G 1/4 A	15

Oil expansion unit

The oil expansion unit increases the expansion space for the lubricant. For certain types of construction and at high operating temperatures, this avoids that lubricant escapes.

The oil expansion unit is supplied as a mounting kit, and can be mounted onto the geared motor vertically or at an angle.

Order code:

Oil expansion unit	**G47**

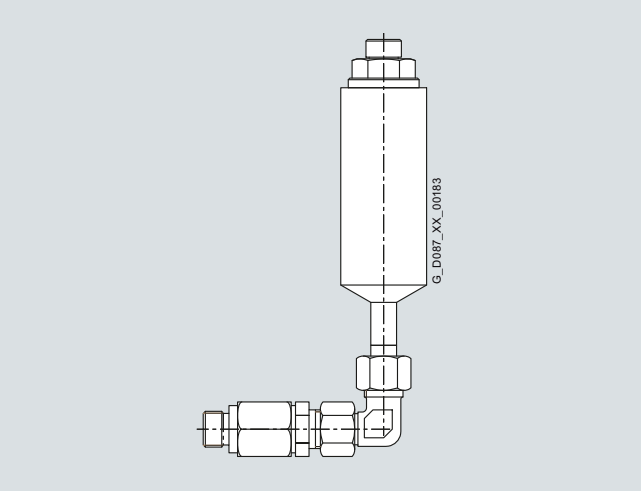


Fig. 7-7 Oil expansion unit

Oil level control

Oil sight glass

For sizes 39 and higher, the oil level is checked using the oil level checking screw.

An oil sight glass with reflector can be selected for visual monitoring.

Order code:

Oil sight glass	**G34**

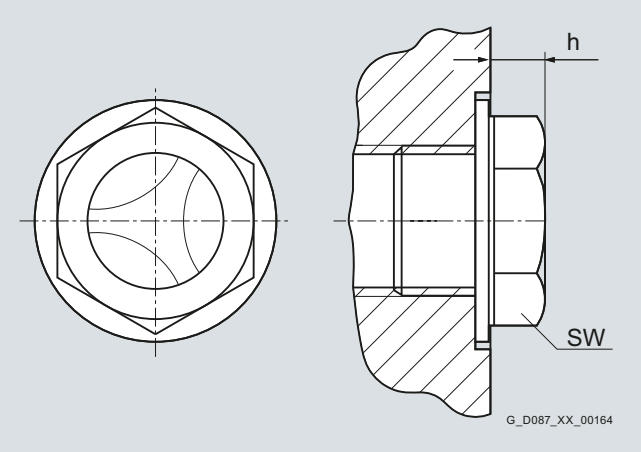


Fig. 7-8 Oil sight glass

Technical data of the oil sight glass

Gearbox type	Size	Width across flats	Thread	Dimension mm
		SW		h
Helical gearboxes Z and D	39	13	G 1/8 A	7
	49 … 79	16	G 1/4 A	8
	89	19	G 3/8 A	8
Parallel shaft gearboxes F	39	13	G 1/8 A	7
	49 … 79	16	G 1/4 A	8
	89	19	G 3/8 A	8
Bevel gearbox B	39	13	G 1/8 A	7
	49	16	G 1/4 A	8
Bevel gearbox K	39 … 49	13	G 1/8 A	7
	69 … 89	16	G 1/4 A	8

Oil drain

Magnetic oil drain screw

For gearboxes from size 39, a magnetic oil drain screw is available that is inserted in the oil drain hole. This serves to collect any metal particles in the gearbox oil.

Order code:

Magnetic oil drain screw	**G53**

Oil drain valve

For gearboxes from size 39, an oil drain valve is available in either a straight or angled design.

The oil drain valve is supplied complete with screw plug as kit.

Order code:

Oil drain valve, straight	**G54**
Oil drain valve, angled	**G55**

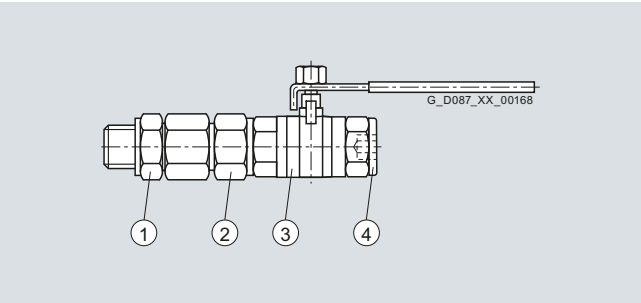


Fig. 7-9 Oil drain valve, straight

① Oil drain valve, straight
② EGE screw gland
③ GE screw gland
④ Screw plug

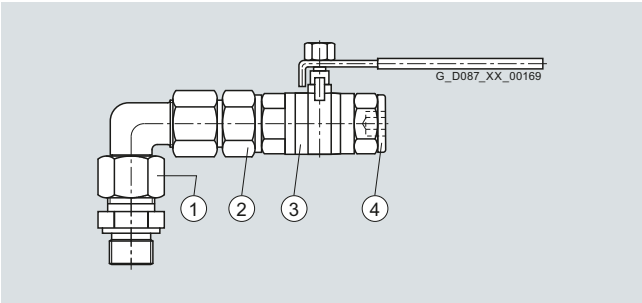


Fig. 7-10 Oil drain valve, angled

① Oil drain valve, angled
② EGE screw gland
③ GE screw gland
④ Screw plug

Oil drain (continued)

Table 7-8 Overview of venting and oil level control options

Design	Possible for								Order code
Helical gearboxes Z and D									
Size	**19**	**29**	**39**	**49**	**59**	**69**	**79**	**89**	
Lubricated for life	✓[1)]	✓[1)]							
Pressure breather valve			✓	✓	✓	✓	✓	✓	**G45**
Oil expansion unit			✓	✓	✓	✓	✓	✓	**G47**
Oil sight glass			✓	✓	✓	✓	✓	✓	**G34**
Magnetic oil drain screw			✓	✓	✓	✓	✓	✓	**G53**
Oil drain valve, straight			✓	✓	✓	✓	✓	✓	**G54**
Oil drain valve, angled			✓	✓	✓	✓	✓	✓	**G55**
Parallel shaft gearboxes F									
Size	**29**	**39**	**49**	**69**	**79**	**89**			
Lubricated for life	✓[1)]								
Pressure breather valve		✓	✓	✓	✓	✓			**G45**
Oil expansion unit		✓	✓	✓	✓	✓			**G47**
Oil sight glass		✓	✓	✓	✓	✓			**G34**
Magnetic oil drain screw		✓	✓	✓	✓	✓			**G53**
Oil drain valve, straight		✓	✓	✓	✓	✓			**G54**
Oil drain valve, angled		✓	✓	✓	✓	✓			**G55**
Bevel gearbox B									
Size	**29**		**39**		**49**				
Lubricated for life	✓[1)]								
Pressure breather valve			✓		✓				**G45**
Oil expansion unit			✓		✓				**G47**
Oil sight glass			✓		✓				**G34**
Magnetic oil drain screw			✓		✓				**G53**
Oil drain valve, straight			✓		✓				**G54**
Oil drain valve, angled			✓		✓				**G55**
Bevel gearbox K									
Size	**39**	**49**	**69**	**79**	**89**				
Pressure breather valve	✓	✓	✓	✓	✓				**G45**
Oil expansion unit	✓	✓	✓	✓	✓				**G47**
Oil sight glass	✓	✓	✓	✓	✓				**G34**
Magnetic oil drain screw	✓	✓	✓	✓	✓				**G53**
Oil drain valve, straight	✓	✓	✓	✓	✓				**G54**
Oil drain valve, angled	✓	✓	✓	✓	✓				**G55**

[1)] Gearboxes for mounting positions M2 and M4 are equipped with a vent valve.

Notes

Motor options

Voltages and frequencies

Duty types

The three-phase AC motors are designed for duty type S1 according to IEC 60034 (continuous duty).

For inverter operation, the motors are stamped with the applicable voltages with duty type S9.

Order code:

Duty type S9	**P91**

Standard voltages

The three-phase motors are available with rated voltages from 200 up to 690 V.

Motor sizes 63 up to 132 are generally supplied for the voltage range 230/400 V at 50 Hz.
For motor sizes from 132 and above, the standard version is 400/690 V at 50 Hz.

Our standard voltages are listed in the following table. These voltages are available at short notice.

Table 8-1 Standard motor voltages

Frequency	Voltages	Power	Possible specifications				Motor size								Order No.	Order No. suffix
Hz	V		CE	NEMA	UL-R/ CSA	China	63	71	80	90	100	112	132	160	13. Data position	
Voltages for 50//60 Hz																
50 Hz	230 V Δ/400 V Y	P_{50}	✓				✓	✓	✓	✓	✓	✓	–	–	**2**	
60 Hz	460 V Y	P_{60}			✓											
50 Hz	230 V Δ/400 V Y	P_{50}	✓				–	–	–	–	–	–	✓	✓	**9**	**N2A**
60 Hz	460 V Δ	P_{60}			✓											
50 Hz	400 V Δ/690 V Y	P_{50}	✓				–	–	–	–	–	–	✓	✓	**2**	
60 Hz	460 V Δ	P_{60}			✓											
50 Hz	400 V Δ/690 V Y	P_{50}	✓				✓	✓	✓	✓	✓	✓	–	–	**9**	**N2B**
60 Hz	460 V Δ	P_{60}			✓											
Voltages for 50 Hz																
50 Hz	500 V Y	P_{50}	✓				✓	✓	✓	✓	✓	✓	✓	✓	**9**	**N1C**
50 Hz	500 V Δ	P_{50}	✓				–	–	–	–	✓	✓	✓	✓	**9**	**N1D**
50 Hz	220 V Δ/380 V Y ± 10 %	P_{50}	✓			✓	■	■	■	■	■	■	■	■	**9**	**N1F**
50 Hz	380 V Δ/660 V Y ± 10 %	P_{50}	✓			✓	■	■	■	■	■	■	■	■	**9**	**N1G**
50 Hz +3/-5 %	240 V Δ/415 V Y ± 10 %	P_{50}	✓				■	■	■	■	■	■	■	■	**9**	**N1H**
50 Hz +3/-5 %	415 V Δ ± 10 %	P_{50}	✓				■	■	■	■	■	■	■	■	**9**	**N1J**
50 Hz	200 V Δ	P_{50}	✓				■	■	■	■	■	■	■	■	**9**	**N1K**

■ With additional price

Standard voltages (continued)

Table 8-1 Standard motor voltages

Frequency	Voltages	Power	Possible specifications				Motor size								Order No.	Order No. suffix
Hz	V		CE	NEMA	UL-R/ CSA	China	63	71	80	90	100	112	132	160	13. Data position	
Voltages for 60 Hz																
60 Hz	220 V Δ/380 V Y	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4C
60 Hz	220 V Δ/380 V Y	P_{60}	✓				■	■	■	■	■	■	■	■	9	N5C
60 Hz	380 V Δ/660 V Y	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4D
60 Hz	380 V Δ/660 V Y	P_{60}	✓				■	■	■	■	■	■	■	■	9	N5D
60 Hz	440 V Y	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4E
60 Hz	440 V Y	P_{60}	✓				■	■	■	■	■	■	■	■	9	N5E
60 Hz	440 V Δ	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4F
60 Hz	440 V Δ	P_{60}	✓				■	■	■	■	■	■	■	■	9	N5F
60 Hz	460 V Y	P_{50}	✓	✓	✓		■	■	■ [1]	■ [1]	■	■	■	■	9	N4H
60 Hz	460 V Y	P_{60}	✓	✓	✓		✓	✓	✓ [1]	✓ [1]	✓	✓	✓	✓	9	N5H
60 Hz	460 V Δ	P_{50}	✓	✓	✓		■	■	■ [1]	■ [1]	■	■	■	■	9	N4J
60 Hz	460 V Δ	P_{60}	✓	✓	✓		✓	✓	✓ [1]	✓ [1]	✓	✓	✓	✓	9	N5J
60 Hz	575 V Y	P_{50}	✓	✓	✓		■	■	■ [1]	■ [1]	■	■	■	■	9	N4L
60 Hz	575 V Y	P_{60}	✓	✓	✓		■	■	■ [1]	■ [1]	■	■	■	■	9	N5L
60 Hz	575 V Δ	P_{50}	✓	✓	✓		–	–	–	–	■	■	■	■	9	N4M
60 Hz	575 V Δ	P_{60}	✓	✓	✓		–	–	–	–	■	■	■	■	9	N5M
60 Hz	230 V YY/460 V Y	P_{50}	✓	✓	✓		■	■	■ [1]	■ [1]	■	■	■	■	9	N4N
60 Hz	230 V YY/460 V Y	P_{60}	✓	✓	✓		■	■	■ [1]	■ [1]	■	■	■	■	9	N5N
60 Hz	230 V Δ/400 V Y	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4A
60 Hz	400 V Δ/690 V Y	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4B
60 Hz	200 V Δ	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4P
60 Hz	208 V Δ	P_{50}	✓				■	■	■	■	■	■	■	■	9	N4Q
Motor voltages for inverter operation																
50 Hz	400 V Y	P_{50}	✓				✓	✓	✓	✓	✓	✓	✓	✓	9	N6B
50 Hz	400 V Δ	P_{50}	✓				✓	✓	✓	✓	✓	✓	✓	✓	9	N6C
50/87 Hz	230 V Δ/400 V Δ	P_{50}/P_{87}	✓				✓	✓	✓	✓	✓	✓	✓	✓	9	N6A
Voltages for brake motors with function rectifier																
50 Hz	400 V Y	P_{50}	✓				✓	✓	✓	✓	✓	✓	✓	✓	9	N6B
50 Hz	400 V Δ	P_{50}	✓				✓	✓	✓	✓	✓	✓	✓	✓	9	N6C
60 Hz	400 V Δ	P_{50}	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	9	N4G
60 Hz	400 V Δ	P_{60}	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	9	N5G
60 Hz	400 V Δ	P_{50}	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	9	N4K
60 Hz	460 V Δ	P_{60}	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	9	N5K

[1] For motors, sizes 80 and 90, certification according to UL-R/CSA is possible from the middle of 2012.
■ With additional price

8

Motor protection

Temperature sensor

The temperature sensor is a **positive temperature coefficient** (PTC) thermistor which offers comprehensive protection against thermal motor overload. The temperature of the winding can be accurately monitored thanks to its low thermal capacity and the excellent heat contact with the winding. The PTC thermistor exhibits a sudden change in resistance when a rated response temperature (NAT) is reached.

A tripping unit is used to evaluate the change in resistance and open auxiliary circuits via auxiliary contacts.

The switching hysteresis of the PTC thermistor is low, which facilitates fast restarting of the drive. Motors with this type of protection are recommended for heavy duty starting, intermittent duty, extreme changes in load, high ambient temperatures, or fluctuating supply systems.

Order code:

PTC thermistor for disconnection	**M10**
PTC thermistor for warning and disconnection	**M11**

Connection circuit diagram

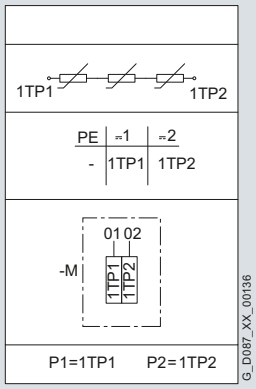


Fig. 8-1 Connection circuit diagram

Characteristic

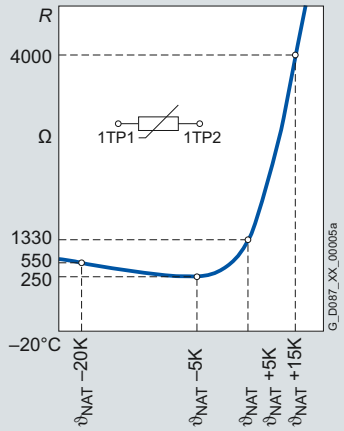


Fig. 8-2 Temperature sensor characteristic

Temperature switch

The temperature switch is a **winding thermostat** (NC contact) and is suitable as a protection device for slowly increasing motor temperatures. When the rated response temperature (NAT) is reached, it can open an auxiliary circuit. When the motor temperature decreases, the winding thermostat closes again as soon as the temperature falls significantly below the rated response temperature.

When the motor current rises quickly (e.g. with a locked rotor), these switches are not suitable due to their large thermal time constants.

Order code:

Winding thermostat for disconnection	**M12**
Winding thermostat for warning and disconnection	**M13**

Connection circuit diagram

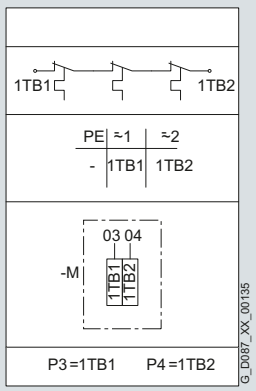


Fig. 8-3 Connection circuit diagram

Characteristic

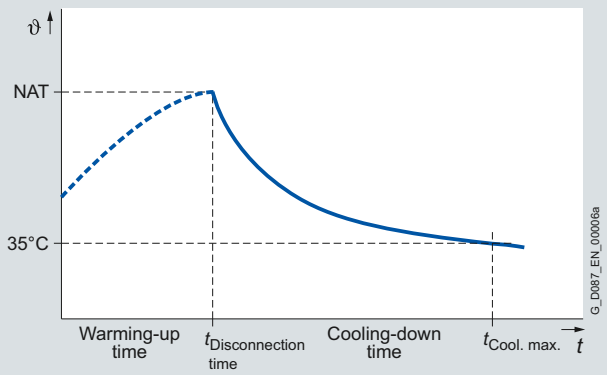


Fig. 8-4 Temperature switch characteristic

Temperature sensor KTY 84-130

This sensor is a PTC thermistor that changes its resistance depending on temperature in accordance with a defined curve. The temperature sensor KTY 84-130 can be used for monitoring the motor temperature for inverter operation.

Some inverters determine the motor temperature using the resistance of the temperature sensor. They can be set to a required temperature for warning and disconnection.

Motor temperature detection with embedded temperature sensor KTY 84-130.

Order code:

Temperature sensor KTY 84-130	**M16**

Connection circuit diagram

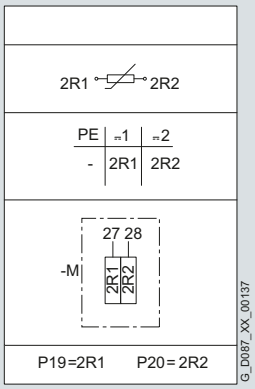


Fig. 8-5 Connection circuit diagram

Characteristic

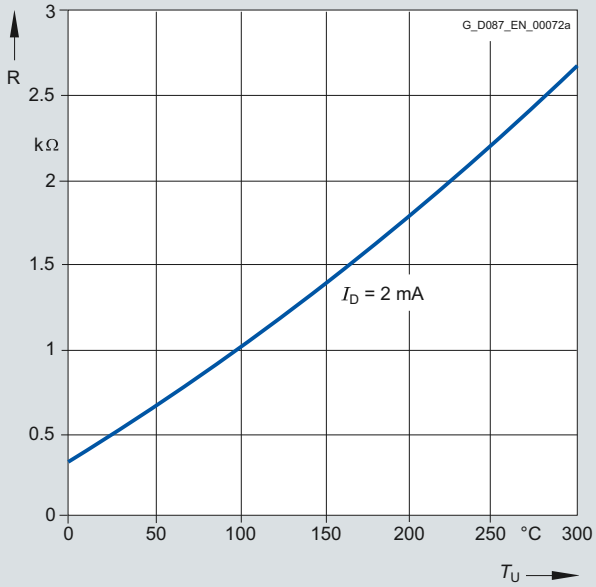


Fig. 8-6 Temperature sensor characteristic

1x PT100 resistance thermometer

This sensor is a PTC thermistor and at 0 °C has a resistance of 100 Ω. Its resistance changes almost linearly in the range between 0 and 100 °C. Changes in temperature are transferred to an evaluation device in the form of resistance changes.

The evaluation device is not included in the scope of supply.

Order code:

1x PT100 resistance thermometer	**M19**

Connection circuit diagram

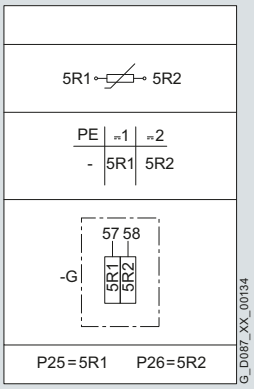


Fig. 8-7 Connection circuit diagram

Characteristic

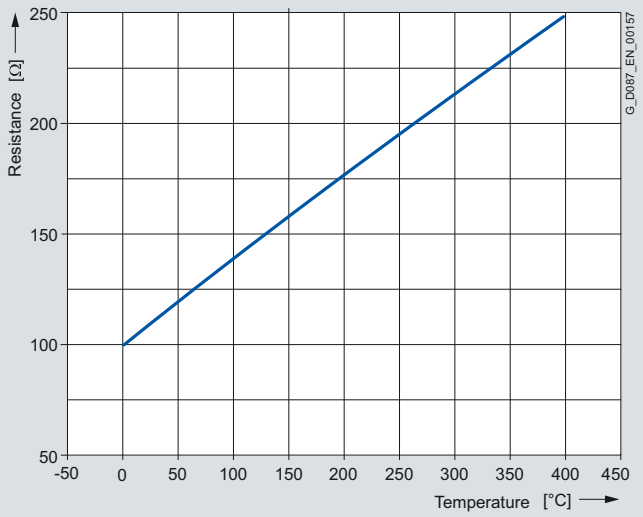


Fig. 8-8 Resistance thermometer characteristic

Motor protection

Selection and ordering data

Motor protection	Motor size								Order code
	63	71	80	90	100	112	132	160	
PTC thermistor, disconnection	✓	✓	✓	✓	✓	✓	✓	✓	**M10**
PTC thermistor, warning and disconnection	✓	✓	✓	✓	✓	✓	✓	✓	**M11**
Winding thermostat, disconnection	✓	✓	✓	✓	✓	✓	✓	✓	**M12**
Winding thermostat, warning and disconnection[1)]	✓	✓	✓	✓	✓	✓	✓	✓	**M13**
Temperature sensor KTY 84-130	✓	✓	✓	✓	✓	✓	✓	✓	**M16**
1x PT100 resistance thermometer	✓	✓	✓	✓	✓	✓	✓	✓	**M19**

1) Not possible for inverter operation

Table 8-2 Protective devices

Number of windings	Example	Function	Number of temperature-dependent protective devices	Number of terminals
1	Motors with one pole number	Disconnection	3	2
		Warning and disconnection	6	3

Anti-condensation heating

Anti-condensation heaters can be fitted to motors whose windings are exposed to climatic conditions where there is a risk of condensation, e.g. stationary motors in a damp environment or motors subject to considerable temperature fluctuations. Anti-condensation heating must not be switched on during operation.

Instead of an anti-condensation heater, another possibility is to connect a voltage that is approximately 4 to 10 % of the rated motor voltage to stator terminals U1 and V1; 20 to 30 % of rated motor current is sufficient to heat the motor.

Order code:

115 V anti-condensation heating	**M40**
230 V anti-condensation heating	**M41**

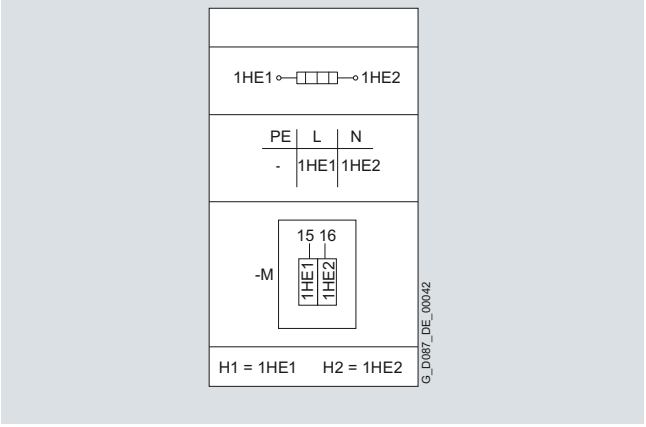


Fig. 8-9 Connection circuit diagram for the anti-condensation heating

Technical data of the anti-condensation heating

Motor size	Heating power
	W
63 … 71	12.5
80	25
90 … 112	50
132 … 160	100

DURIGNIT IR 2000 insulation

The DURIGNIT IR 2000 insulating system consists of high-quality enamel wires and insulating sheet materials in conjunction with solvent-free resin impregnation.

This ensures that these motors will have a high mechanical and electrical strength, high service value, and a long service life. The insulating system protects the winding to a large degree against aggressive gases, vapors, dust, oil, and increased air humidity. It can withstand the usual vibration stressing.

Temperature class

All motors are designed for temperature class 155 (F). They are utilized to temperature class 130 (B).

The 4-pole motors can be optionally implemented for temperature class 180 (H). The winding is utilized to temperature class 155 (F).

Order code:

Temperature class 180 (H)	**M08**

Increased air humidity/temperature with 30 to 60 g water per m³ of air

The motors in the standard range are designed for up to 30 g water per m³. A design for increased air humidity in the range between 30 to 60 g water per m³ of air as a function of the temperature is possible, as shown in the following table.

Order code:

Increased air humidity/temperature with 30 to 60 g water per m³ of air	**N54**

Table 8-3 Ambient air humidity

Relative air humidity	**Temperature**						
	+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C
10 %	2	3	5	8	13	20	29
15 %	3	5	8	12	19	30	44
20 %	3	6	10	17	26	39	58
25 %	4	8	13	21	32	49	
30 %	5	9	15	25	39	59	
35 %	6	11	18	29	45		
40 %	7	12	20	33	52		
45 %	8	14	23	38	58		
50 %	9	15	26	41			
55 %	10	17	28	46			
60 %	10	19	31	50			
65 %	11	20	33	54			
70 %	12	21	36	58			
75 %	13	23	38				
80 %	14	24	41				
85 %	15	26	43				
90 %	16	27	46				
95 %	16	29	49				
100 %	17	30	51				

Degrees of protection

Overview

Note:

The degree of protection only applies to the electrical equipment (motor, brake, encoder).

Depending on the application area, the applicable measures must be applied to the gearbox.

Table 8-4 Available degrees of protection

Degree of protection	Motor options that can be mounted	Order code
IP55	No restrictions	**K01**
IP56	Possible in conjunction with external fan, incremental encoder and absolute encoder	**K02**
IP65	Possible in conjunction with a brake, backstop, external fan, incremental encoder, absolute encoder, resolver, and motor plug	**K03**

Overview

The motors have radial-flow fans, which cool regardless of the direction of rotation of the motor (cooling method IC 411, IEC 60034-6). The air flows from the non-drive end (NDE) to the drive end (DE).

Self ventilation

The motor fan can either be a standard fan, metal fan, or high inertia fan.

Table 8-5 Fan design

Motor size	Fan	Material		Number of poles	Order code
		Fan	Fan cover		
63 ... 90	Standard fan	Plastic	Sheet metal	2 ... 6	
	Metal fan	Aluminum	Sheet metal	2 ... 6	**M21**
	High inertia fan	Steel core with plastic fan blades	Sheet metal	4 ... 6	**M22**
100 ... 132	Standard fan	Plastic	Sheet metal	2 ... 6	
	Metal fan	Aluminum	Sheet metal	2 ... 6	**M21**
	High inertia fan	Cast iron	Sheet metal	4 ... 6	**M22**
160	Standard fan	Plastic	Sheet metal	2 ... 6	
	Metal fan	Aluminum	Sheet metal	2 ... 6	**M21**

Standard fan

As standard, the motors are equipped with a plastic fan. This can be used for the entire standard ambient temperature range.

Metal fan

As an alternative to the standard plastic fans, aluminum fans are available for the motors.

Metal fans are used for specific environmental conditions, e.g. for

- If there are solid or dirt particles, such as wood chips, textile fibers in the cooling air
- Special motor designs for increased ambient temperatures exceeding +60 °C

Order code:

Metal fan	**M21**

High inertia fan

When required, 4-pole motors up to frame size 132 can be equipped with a high inertia fan.

High inertia fans as additional inertia are finely balanced according to DIN ISO 1940. Applications typically involve drives for travel gear, conveying equipment or generally to support soft starting and/or soft braking for line operation.

A high inertia fan increases the moment of inertia of the motor according to the table below.

Order code:

High inertia fan	**M22**

Table 8-6 Increased motor moment of inertia

Motor size	J_Z	m_{fan}
	10^{-4} kgm^2	kg
71	17.1	1.38
80	27.9	1.75
90S/90L	54.0	2.55
100L	116.0	3.30
112M	230.0	5.30
132S/132M/132ZM	562.0	9.10

Cooling and ventilation

Forced ventilation

Forced ventilation (external fan) can be combined with almost all brakes and encoders as required.

Order code:

External fan	**M23**

Technical data of the external fan

Motor size	Frequency	Rated voltage range			Rated current	Power consumption	Volume flow	Weight
	Hz	Phase	V	Connec-tion	A	W	m^3/h	kg
71	50	1 AC	230 ... 277	⊥(Δ)	0.12	33.00	78	1.45
		3 AC	220 ... 303/346 ... 525	Δ/Y	0.11/0.06	31.00		
	60	1 AC	230 ... 277	⊥(Δ)	0.12	33.00	98	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.11/0.06	31.00		
80	50	1 AC	230 ... 277	⊥(Δ)	0.14	37.00	127	1.50
		3 AC	200 ... 330/346 ... 525	Δ/Y	0.11/0.05	34.00		
	60	1 AC	230 ... 277	⊥(Δ)	0.14	37.00	148	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.11/0.06	34.00		
90	50	1 AC	230 ... 277	⊥(Δ)	0.29	65.00	200	1.90
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.38/0.22	91.00		
	60	1 AC	230 ... 277	⊥(Δ)	0.29	65.00	240	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.38/0.22	91.00		
100	50	1 AC	230 ... 277	⊥(Δ)	0.30	75.00	260	2.05
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.37/0.22	91.00		
	60	1 AC	230 ... 277	⊥(Δ)	0.30	75.00	310	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.37/0.22	91.00		
112	50	1 AC	230 ... 277	⊥(Δ)	0.37	94.00	337	2.15
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.35/0.20	103.00		
	60	1 AC	230 ... 277	⊥(Δ)	0.37	94.00	411	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.35/0.20	103.00		
132	50	1 AC	230 ... 277	⊥(Δ)	0.57	149.00	532	3.00
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.58/0.33	148.00		
	60	1 AC	230 ... 277	⊥(Δ)	0.57	149.00	633	
		3 AC	220 ... 332/380 ... 575	Δ/Y	0.58/0.33	148.00		
160	50	1 AC	230 ... 277	⊥(Δ)	0.97	253.00	953	4.20
		3 AC	200 ... 303/346 ... 525	Δ/Y	0.93/0.56	360.00		
	60	3 AC	220 ... 332/380 ... 575	Δ/Y	0.93/0.56	360.00	1 068	

Forced ventilation (continued)

Modular system in combination with self- and forced ventilation

Cooling method	Motor plug	Encoder					Brake				Back-stop	Second shaft extension
		Incremental encoder	Absolute encoder	Resolver	Encoder under cover	Encoder accessories	Without manual release	With manual release	Microswitch			
									Air flow monitoring[1]	Wear monitoring		
Self ventilation												
Standard fan	✓	✓	✓	✓	✓	✓	✓	✓	✓	On request	✓	✓
Metal fan	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
High inertia fan	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Canopy	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	–
Forced ventilation												
Canopy	✓	✓	✓	✓	–	✓	✓	✓	✓	On request	✓	–

[1] Not in conjunction with L4, L8, L16

8

Connection, circuit and terminal boxes

Location and position of the terminal box

The terminal box of the motor can be mounted in four different locations or positions. The position of the terminal box is always when viewing the drive end (DE) of the motor.

The standard position of the terminal box is on the right-hand side, with the cable entry from below (1A).

The terminal box is always located at the non-drive end (NDE) of the motor.

Table 8-7 Selection data, cable entry

Terminal box position	Cable entry position DE	Order code
Motor	**LA63 … 71, LE80 … 160**	
1	A	**M55**
	B	**M56**
	C	**M57**
	D	**M58**
2	A	**M59**
	B	**M60**
	C	**M61**
	D	**M62**
3	A	**M63**
	B	**M64**
	C	**M65**
	D	**M66**
4	A	**M67**
	B	**M68**
	C	**M69**
	D	**M70**

Terminal box position

When viewing DE

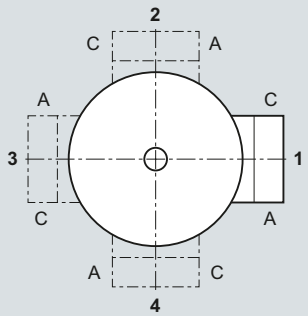


Fig. 8-10 Terminal box position

Cable entry position

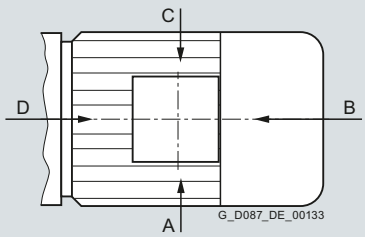


Fig. 8-11 Position of the cable entries

Motor connection

The number of winding ends depends on the winding design. Three-phase AC motors are connected to the three phase conductors L1, L2, and L3 of a three-phase line supply. The motor rated voltage in the operating connection must match the phase conductor voltages of the line supply.

When the three phases operate in sequence and are connected to the terminals of the motor in alphabetical order U1, V1 and W1, the motor rotates clockwise when viewing the DE motor shaft.

The direction of rotation of the motor can be reversed if two connecting cables are interchanged. Labeled terminals are provided to connect the protective conductor.

The connections for a brake, anti-condensation heating or thermal motor protection are also located in the terminal box.

Connection, circuit and terminal boxes (continued)

Terminal box

Table 8-8 Terminal box arrangement

Motor size	Terminals				Auxiliary terminals	
	Number	Contact screw thread	Max. connectable conductor	Cable entry	Number	Max. connectable conductor
			mm^2	Size		mm^2
63	6 (9 for YY/Y motor connection)	M4	1.5 (2.5 with cable lug)	1 x M25 x 1.5 + 1 x M20 x 1.5	8	2.5
71						
80						
90S/L						
100L			4	2 x M32 x 1.5	10	
112M						
132S/M			6			
160M/L		M5	16	2 x M40 x 1.5		

Motor connection D/Y

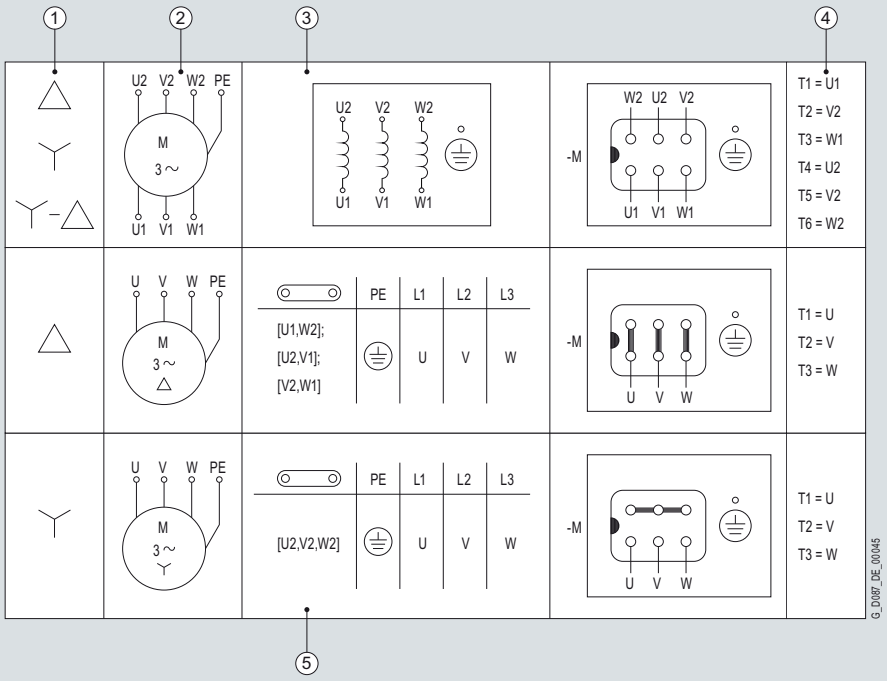


Fig. 8-12 Connection circuit diagram, motor connection D/Y

① Motor connection
② Circuit diagram symbols
③ Winding arrangement in the motor
④ Comparison:
Terminal designation acc. to NEMA MG1/acc. to IEC 60034-8
⑤ Location of the jumpers on the terminal board and juxtaposition of the line connection with the motor connection

Connection, circuit and terminal boxes (continued)

Motor connection Y

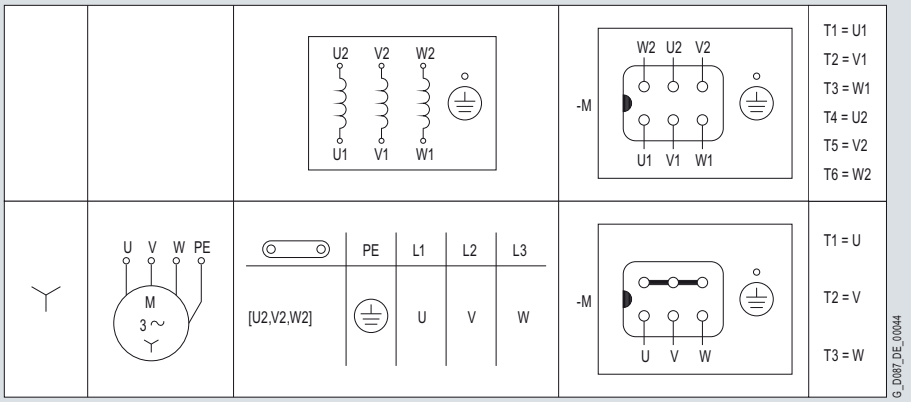


Fig. 8-13 Connection circuit diagram, motor connection Y

Motor connection YY/Y

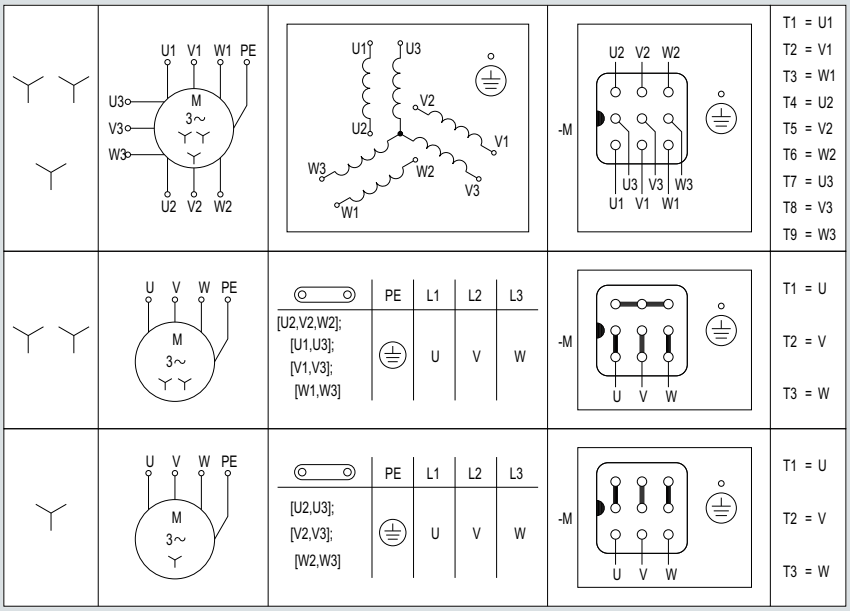


Fig. 8-14 Connection circuit diagram, motor connection YY/Y

Connection, circuit and terminal boxes (continued)

Terminal connection

The terminal board accommodates the terminals that are connected to the leads to the motor windings.

The terminals are designed so that up to size 160, the external (line) connections can be established without requiring cable lugs.

Table 8-9 Cable entries

Motor size	Number of cable entries	Terminal box material	Line feeder cable connection
63 ... 160L	2 cable entries incl. screw plugs	Aluminum alloy	With or without cable lug

External grounding

IEC 60034 specifies additional external grounding for motors with ratings of 100 kW and higher. For motors, sizes 63 up to 160 this is optionally available.

Order code:	
External grounding	**N53**

Table 8-10 Maximum conductor connection for external grounding

Motor size	Thread size	Conductor cross-section with grounding strap F_eZ_n mm²
63 ... 90	M4	Not possible
100 ... 112	M5	
132 ... 160	M6	

Modular system in combination with motor connection and terminal box

Modular system	Encoder system	Brake					Self ventilation Forced ventilation	Backstop	Second shaft extension
		Without manual release	With manual release		Microswitch				
			Without locking mechanism	With locking mechanism	Air flow monitoring 1)	Wear monitoring			
Terminal box	✓	✓	✓	✓	✓	On request	✓	✓	✓
Motor plug	✓	✓	✓	✓	–	On request	✓	✓	✓

1) Not in conjunction with L4, L8, L16

8

Motor plug

The motor plug is supplied ready for use and replaces the terminal box with terminal board.

Motor plugs are also available in an EMC design. A counterplug can also be provided.

In the basic design, the motor plug connection is in position B, see Page 12. The dimensions depend on the motor size.

Especially if a brake with a manual release lever is used in the direction of the non-drive end (NDE), a check must be made to ensure that the motor plug does not collide with the manual release lever in the direction of the drive and (DE).

The main advantages of a motor plug over a terminal box with terminals are as follows:

- Peripheral equipment can be quickly installed
- Reduction of installation and repair times for end users
- No wiring errors as a result of the plug system
- Replacement of a geared motor without having to make any intervention in the electronics.

The winding connections and, optionally, the power supply for the brake and the signal cables for the temperature sensors are connected in the plug housing.

The motor connection (star or delta connection) is selected by the customer in the form of the counterplug used.

HAN 10E motor plug

The motor plug is compatible with the products from the ECOFAST field device system.

The motor plug is available for motor sizes 63 to 132 and can be used for line voltages at the motor plug ≤ 500 V and rated currents ≤ 16 A.

The motor plug can be used in the standard temperature range from -20 up to +40 °C. A special design is required for higher temperatures.

Order code:

HAN 10E motor plug (2 bracket)	**N00**
HAN 10E motor plug (2 bracket) EMC	**N01**
HAN 10E motor plug (1 bracket)	**N04**
HAN 10E motor plug (1 bracket) EMC	**N06**
HAN 10E counterplug	**N18**

Technical data of the HAN 10E motor plug

Number of contacts	10 + ⏚
Max. voltage	500 V
Max. current load	16 A
Degree of protection	IP65

Connection assignment

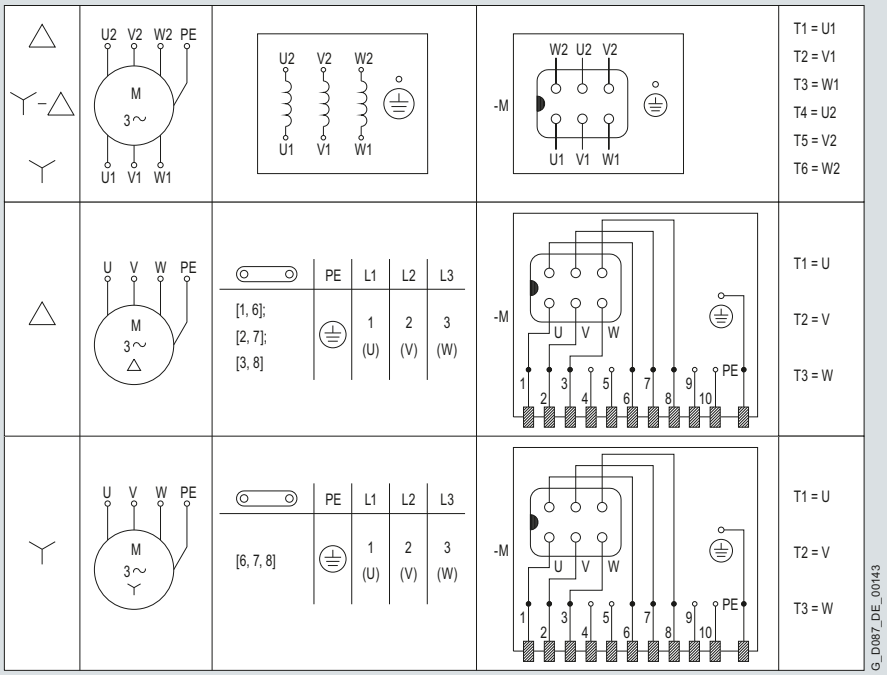


Fig. 8-15 Connection assignment, motor plug

HAN K4/4 motor plug

The motor plug is available for motor sizes 132 up to 160, and can be used for line voltages ≤ 690 V at the power connection and ≤ 250 V at the control connection – as well as rated currents ≤ 63 A at the power connection and ≤ 16 A at the control connection.

Order code:

HAN K4/4 motor plug (1 bracket)	**N08**
HAN K4/4 motor plug (1 bracket) EMC	**N09**
HAN K4/4 motor plug (2 bracket)	**N10**
HAN K4/4 motor plug (2 bracket) EMC	**N11**
HAN K4/4 counterplug	**N19**

Technical data of the HAN K4/4 motor plug

Number of contacts	4 + 4 + ⏚
Max. voltage power range	690 V (pollution degree 3)
Max. current load power range	63 A
Max. voltage control range	250 V (pollution degree 3)
Max. current load control range	16 A
Approvals	cUL-Rus
Degree of protection (interlocked)	IP65

Connection assignment

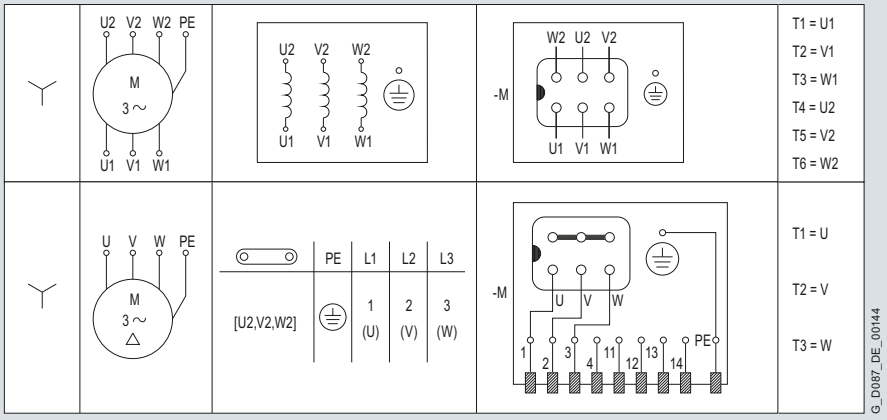


Fig. 8-16 Connection assignment, motor plug

Brake

Overview

SIMOGEAR geared motors can be supplied with fail-safe spring-operated disk brakes in order to reduce the motor run-on time or to hold loads, for example.

Our MODULOG modular system can be used to assign/mount several brake sizes to one motor size. This chapter specifies the assignment to the motor sizes and possible brake options.

Design and principle of operation

Single-disk, spring-operated brakes have two friction surfaces. When the brake is in a zero current state, a braking torque is generated using several springs.

The brake is released electromagnetically. When the motor brakes, the rotor which can be axially shifted on the hub or the shaft is pressed via the armature disk against the friction surface by means of the springs. In the braked state, there is a gap between the armature disk and the solenoid component.

To release the brake, the solenoid is energized with DC voltage. The resulting magnetic force attracts the armature disk onto the solenoid component against the spring force.

The spring force is then no longer applied to the rotor, which can now rotate freely.

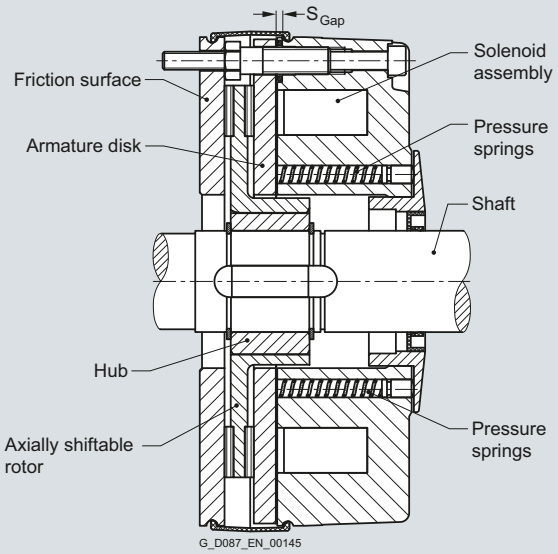


Fig. 8-17 Brake L

Selecting the brake

Our MODULOG modular system allows several brake sizes to be used with one motor size.

Table 8-11 Brake assignment

Brake type	Braking torque	Motor size								Order code
	Nm	63	71	80	90	100	112	132	160	
L4/1.4	1.4	✚	✚	✚						B01
L4/2	2.0	✚	✚	✚						B02
L4/3	3.0	✚	✚	✚						B03
L4	4.0	✓	✓	✚						B00
L4/5	5.0	✚	✚	✚						B57
L8/3	3.0		✚	✚	✚					B05
L8/4	4.0		✚	✚	✚					B06
L8/5	5.0		✚	✚	✚					B07
L8/6.3	6.3		✚	✚	✚					B08
L8	8.0		✚	✓	✚					B04
L8/10	10.0		✚	✚	✚					B09
L16/8	8.0			✚	✚	✚				B14
L16/10	10.0			✚	✚	✚				B11
L16/13	13.0			✚	✚	✚				B12
L16	16.0			•	✓	✚				B10
L16/20	20.0				✚	✚	✚			B13
L32/14	14.0				✚	✚	✚			B66
L32/18	18.0				✚	✚	✚			B16
L32/23	23.0				✚	✚	✚			B17
L32	32.0				✚	✓	✓			B15
L32/40	40.0					✚	✚			B18
L60/25	25.0					✚	✚			B67
L60/38	38.0					✚	✚			B20
L60/50	50.0					✚	✚			B21
L60	60.0						✚			B19
L80/25	25.0							✚		B24
L80/35	35.0							✚		B25
L80/50	50.0							✚		B26
L80/63	63.0							✚		B27
L80	80.0							✓		B22
L80/10	100.0							✚		B23
L150/60	60.0							✚	✚	B31
L150/80	80.0							✚	✚	B32
L150/100	100.0							✚	✚	B29
L150/125	125.0							✚	✚	B30
L150	150.0							✚	✓	B28
L260/100	100.0								✚	B34
L260/145	145.0								✚	B35
L260/180	180.0								✚	B36
L260/200	200.0								✚	B37
L260/240	240.0								✚	B38
L260	260.0								✚	B33

✓ Standard assignment
✚ Working brake and holding brake
• Can only be used as holding brake

Brake

Connecting the brake

Labeled terminals are provided in the main terminal box of the motor to connect the brake.

Connection circuit diagram with AC or DC control

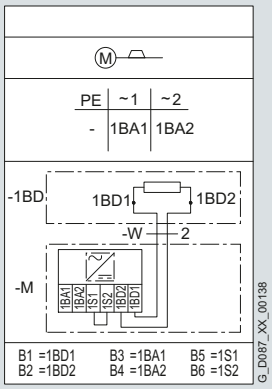


Fig. 8-18 Connection circuit diagram with AC control voltage

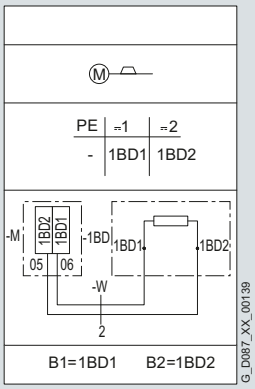


Fig. 8-19 Connection circuit diagram with DC control voltage

Function diagram of a brake switched on the AC or DC and AC sides

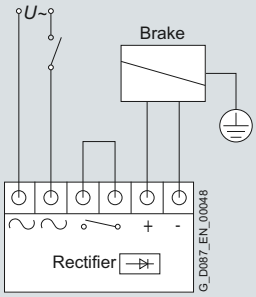


Fig. 8-20 Function diagram of a brake switched on the AC side

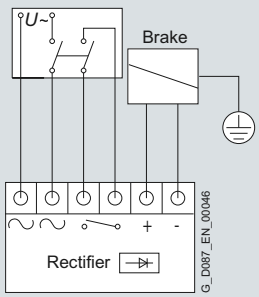


Fig. 8-21 Function diagram of a brake switched on the DC and AC sides

Supply voltages

The following supply voltages are available for brakes

Supply voltage	Motor sizes 63 … 160 Brake type								Order code
	L4	L8	L16	L32	L60	L80	L150	L260	
DC voltages									
24 V DC ± 10 %	✓	✓	✓	✓	✓	✓	✓	✓	**C66**
170 … 200 V DC	✓	✓	✓	✓	✓	✓	✓	✓	**C53**
AC voltages									
190 … 240 V AC	✓	✓	✓	✓	✓	✓	✓	✓	**C46**
380 ... 440 V AC	✓	✓	✓	✓	✓	✓	✓	✓	**C47**
410 ... 480 V AC	✓	✓	✓	✓	✓	✓	✓	✓	**C63**
AC voltages with function rectifier with disconnection on the DC side using voltage sensing									
220 ... 240 V AC	✓	✓	✓	✓	✓	✓	✓	✓	**C72**
410 … 460 V AC	✓	✓	✓	✓	✓	✓	✓	✓	**C74**

Function rectifier

The following table provides an overview of brake control with function rectifiers.

Table 8-12 Brake control with function rectifier

Function rectifier		**High-speed rectifier + disconnection on the DC side using**	
Technical data	Unit	**Current sensing**	**Voltage sensing**
Supply voltage	V_{AC} ± 10 %	220 … 460	220 … 500
Supply frequency	Hz	40 … 60	40 … 60
Max. output current up to an ambient temperature of +40 °C[1)]	A_{DC}	1.2	1.2
Output voltage	V_{DC}	0.445 x supply voltage (0.89 – max. 8 %) x supply voltage	0.445 x supply voltage (0.89 – max. 8 %) x supply voltage
Permissible continuous current of the current sensor	A_{DC}	0.27 … 34	–
Max. switching frequency[2)]	rpm	76[2)3)]	76[2)3)]
Supported motors		Max. motor current 34 A	No restrictions
Supported brakes		L4 … L260	L4 … L260
Suitable for		Braking operation for fast brake release + application	Braking operation for fast brake release + application
Inverter operation		Not suitable	Separate power supply required
Operation with driving loads and/or high moment of inertia		No restrictions	Separate power supply required
Suppressor circuit		Spark suppressor	Spark suppressor
Order code		**C59**	**C60**

1) At higher ambient temperatures the output current decreases.
2) The specified maximum switching frequencies are upper limit values. The switching frequency is essentially dependent on the braking power and the permissible operating energy of the brakes.
3) The maximum switching frequency is obtained from the overexcitation times and recovery times as well as switching-off in holding operation.

Duty cycle, function rectifier

The high-speed rectifier releases the brake with overexcitation and thus reduces the maximum duty cycle (on-load factor) of the brake.

Depending on the supply voltage and the switching frequency, the maximum duty cycle of the brake solenoid can be taken from the following diagrams and tables.

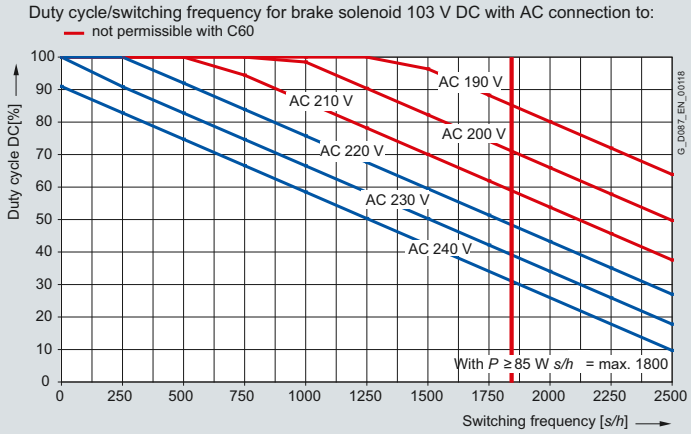


Fig. 8-22 Duty cycle/switching frequency for the 103 V DC brake solenoid

Supply voltage	**Switching frequency**										
	s/h								Up to brake size L80		
V_{AC}	1	250	500	750	1 000	1 250	1 500	1 750	2 000	2 250	2 500
220 … 240 V AC for separate power supply											
220	100	100	91	83	75	67	59	51	43	35	26
230	100	90	82	74	66	58	50	42	34	25	17
240	100	82	74	66	58	50	42	34	25	17	9

Function rectifier (continued)

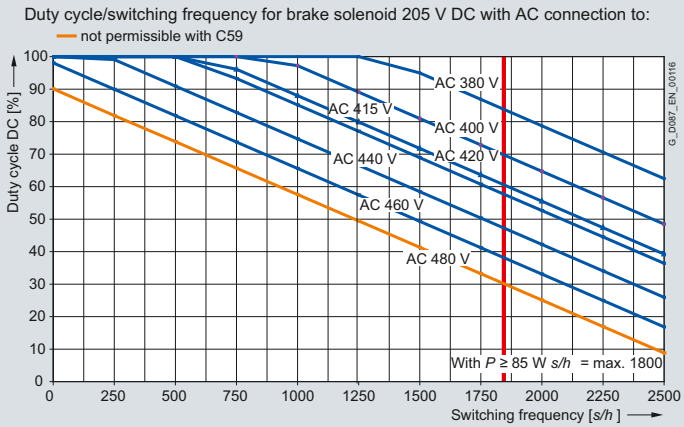


Fig. 8-23 Duty cycle/switching frequency for the 205 V DC brake solenoid

Supply voltage	Switching frequency										
	s/h								Up to brake size L80		
V_{AC}	1	250	500	750	1 000	1 250	1 500	1 750	2 000	2 250	2 500
400 V AC for connection at the motor terminal board											
410	100	100	100	100	100	100	94	86	78	70	62
460	100	100	100	100	97	89	80	72	64	56	48
480	100	100	100	93	85	77	68	60	52	44	36
380 … 440 V AC for separate power supply											
410	100	100	100	100	100	100	94	86	78	70	62
460	100	100	100	100	97	89	80	72	64	56	48
480	100	99	90	82	74	66	58	50	42	34	25

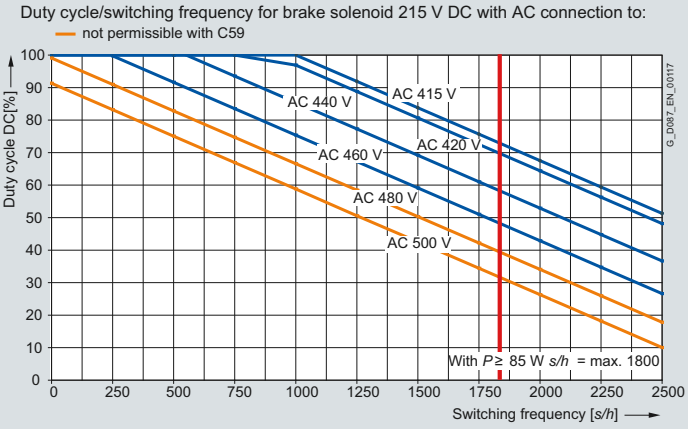


Fig. 8-24 Duty cycle/switching frequency for the 215 V DC brake solenoid

Supply voltage	Switching frequency										
	s/h								Up to brake size L80		
V_{AC}	1	250	500	750	1 000	1 250	1 500	1 750	2 000	2 250	2 500
410 … 480 V AC for separate power supply[1)]											
410	100	100	100	100	100	95	87	78	70	62	54
460	100	99	91	83	75	67	59	51	42	34	26
480	100	90	82	74	66	58	50	42	34	25	17

[1)] The brake power supply voltage can be limited by the rectifier.

Brake options

Manual brake release

Brakes can be supplied with a manual brake release lever. The manual brake release lever can be used to release the brake at zero current. When the brake has been released, the motor shaft can rotate freely in order to bring the output shaft to a certain position or for use as an emergency release in the event of a power failure, for example.

The manual brake release lever can be fixed in the released position using an additional locking mechanism mounted on the brake.

The manual brake release lever can be mounted in various different positions. The position of the manual brake release lever relates to the standard design of the motor. The standard position is "2".

Order code:

Manual brake release lever	**C02**
Manual brake release lever with locking mechanism	**C03**

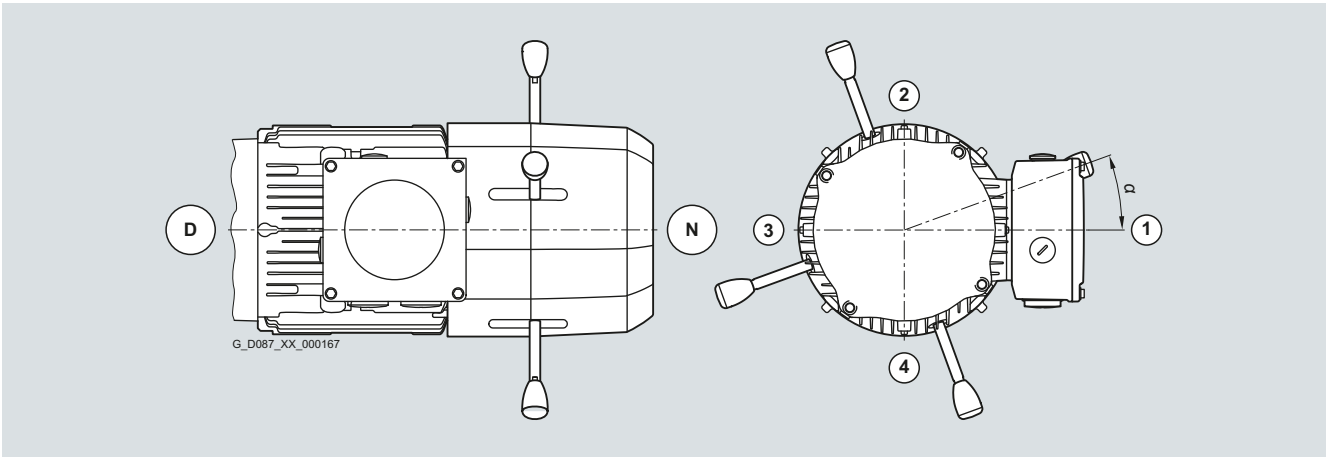


Fig. 8-25 Manual brake release lever position

Manual brake release lever position

Manual brake release lever position	Motor size								Order code
	63	71	80	90	100	112	132	160	
	Angle α								
1	0°	10°	0°	0°	0°	0°	0°	0°	**C26**
2	90°	100°	90°	90°	90°	90°	90°	90°	**C27**
3	180°	190°	180°	180°	180°	180°	180°	180°	**C28**
4	270°	280°	270°	270°	270°	270°	270°	270°	**C29**

Brake options (continued)

Dimensions of the manual brake release lever

The dimensions of the manual brake release lever depend on the size.

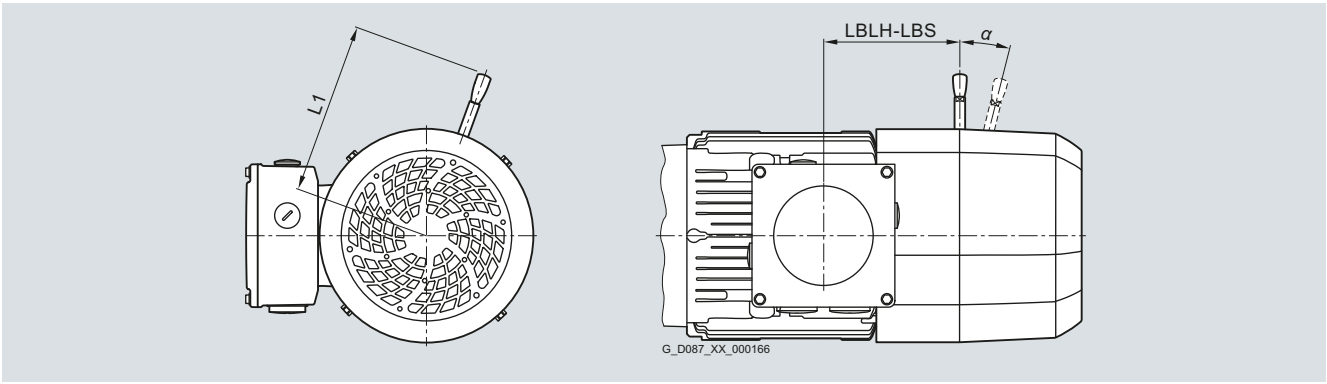


Fig. 8-26 Dimensions, manual brake release lever

Motor size	Brake type	Terminal box position	Distance			Angle, manual brake release lever
			Centerline of the motor up to the outermost position of the manual brake release lever	Centerline of the motor up to the outermost position of the manual brake release lever for design with locking mechanism	Center of the terminal box up to the center of the manual brake release lever	With the brake released
			mm	mm	mm	Tolerance +3°
			L1	L1	LBLH-LBS	χ
63	L4	1A, 2A, 3A, 4A	107	127	83.3	12°
71	L4	1A, 2A, 3A, 4A	107	127	71.8	12°
	L8	1A, 2A, 3A, 4A	116	136	72.3	10°
80	L4	1A, 2A, 3A, 4A	107	127	97.3	12°
	L8	1A, 2A, 3A, 4A	116	136	97.8	10°
	L16	1A, 2A, 3A, 4A	132	151	108.9	9°
90	L8	1A, 2A, 3A, 4A	116	136	102.8	10°
	L16	1A, 2A, 3A, 4A	132	151	113.9	9°
	L32	1A, 2A, 3A, 4A	161	161	115.9	10°
100	L16	1A, 2A, 3A, 4A	132	151	126.9	9°
	L32	1A, 2A, 3A, 4A	161	161	128.9	10°
	L60	1A, 2A, 3A, 4A	195	195	132.5	9°
112	L32	1A, 2A, 3A, 4A	161	161	128.9	10°
	L60	1A, 2A, 3A, 4A	195	195	132.5	9°
132	L80	1A, 2A, 3A, 4A	240	240	158	10°
	L150	1A, 2A, 3A, 4A	279	279	171.1	9°
132Z	L80	1A, 2A, 3A, 4A	240	240	158	10°
	L150	1A, 2A, 3A, 4A	279	279	171.1	9°
160	L150	1A, 2A, 3A, 4A	279	279	204.1	9°
	L260	1A, 2A, 3A, 4A	319	319	210.6	10°

Brake options (continued)

Manual brake release lever with locking mechanism

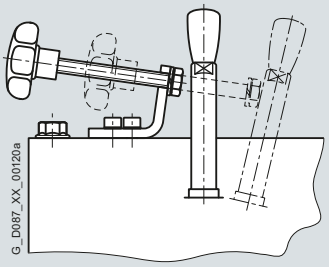


Fig. 8-27 Manual brake release lever with locking mechanism

Monitoring

Brake with microswitch to monitor the release

The air gap s_{Gap} is monitored by a microswitch, which can be mounted on the base plate of the solenoid.

The motor does not start up until the brake has been fully released (s_{Gap} = 0) and the armature disk is in contact with the solenoid. The microswitch is actuated and controls the motor contactor.

When the brake is switched off, the armature disk reaches the maximum air gap (s_{Gapmax}) and the microswitch opens. This means that the motor contactor is not controlled and the motor does not start.

This method is used for machines and units which require a precisely defined starting and braking procedures, as well as for fault monitoring of faulty rectifiers, interrupted connecting cables, faulty solenoids, and excessively large air gaps (brake solenoid cannot fully attract the armature disk).

Microswitches for monitoring brake release can be supplied for all brakes, sizes L32 to L260.

Order code:

Microswitch for monitoring brake release	**C04**

Cannot be combined with the option "Increased corrosion protection" (**C10**).

Circuit principle with microswitch

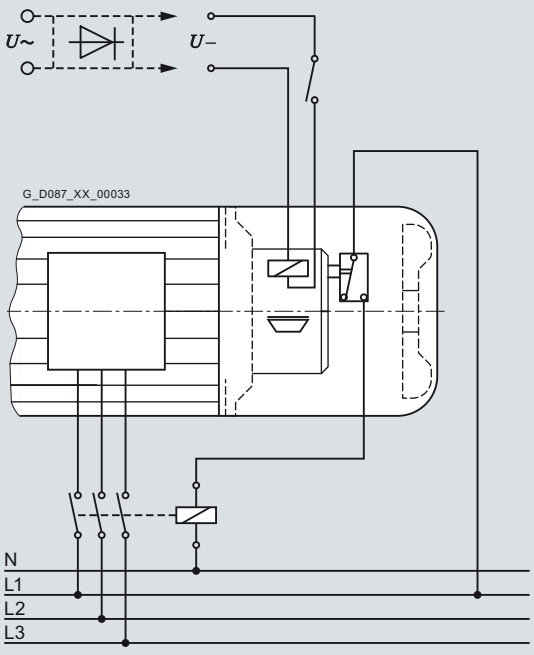


Fig. 8-28 Circuit principle with microswitch

Brake

Brake options (continued)

Enclosed brake

The brakes can be supplied as enclosed brakes.

Enclosed brakes include a dust protection ring around the circumference and an integrated shaft sealing ring at the shaft outlet. This prevents the release and penetration of dust, moisture, and other pollution. Other advantages are reduced noise when applying the brake as well as, in combination with a motor anti-condensation heater, a reduced risk of the rotor freezing on the friction surfaces.

In addition, a condensation drain hole can be incorporated in the dust protection ring.

The enclosed brake can also be shipped in combination with a manual brake release lever and a manual brake release lever with locking mechanism.

Order code:

Enclosed brake	**C01**
Enclosed brake with condensation drain hole	**C11**

Corrosion protection

Brakes are supplied as standard with anti-corrosion protection. A friction plate or adapter flange is always mounted between the mating friction surface (end shield on the ventilation side) and the rotor. The rotor is made of a rustproof material.

Brake with increased corrosion protection

The adapter flanges and armature disks of the brakes are chromium-plated for increased protection against corrosion. This prevents the friction surfaces from seizing up.

Increased corrosion protection is employed when a motor is used in corrosive environmental conditions (high air humidity, dripping water, crane systems, for example) and/or when longer standstill times are involved.

Order code:

Increased corrosion protection	**C10**

8

Overview of corrosion protection

Corrosion protection		**Brake type**							
Design	Material	**L4**	**L8**	**L16**	**L32**	**L60**	**L80**	**L150**	**L260**
Standard corrosion protection									
Friction surface to the motor	Friction plate of stainless steel	✓	✓	✓	✓	✓	✓		
	Adapter flange with thin zinc film							✓	✓
Armature disk	Gas-nitrided	✓	✓	✓	✓				
	Thin zinc film					✓	✓	✓	✓
Increased corrosion protection									
Friction surface to the motor	Friction plate of stainless steel	✓	✓	✓	✓	✓	✓		
	Chromium-plated adapter flange							✓	✓
Armature disk	Chromium-plated	✓	✓	✓	✓	✓	✓	✓	✓

Brake options (continued)

Wear-resistant lining

The brake can be supplied with a wear-resistant friction lining. This brake also has a reduced-noise rotor-hub connection that reduces rattling noises of the rotor, especially at low speeds and when fed from an inverter.

Order code:

Wear-resistant friction lining	**C06**

Possible modular system in combination with a brake

Design	Motor plug	Encoder					Ventilation	Backstop	Second shaft extension
		Incremental encoder	Absolute encoder	Resolver	Encoder under cover without canopy	Encoder acces-sories	Self ventilation Forced ventilation		
Brake	✓	✓	✓		✓	✓	✓		✓
Manual brake release	✓	✓	✓	–	✓	✓	✓	–	✓
• Without locking mechanism	✓	✓	✓	–	✓	✓	✓	–	✓
• With locking mechanism	✓	✓	✓	–	✓	✓	✓	–	✓
Microswitch	✓	✓	✓	–	✓	✓	✓	–	✓
• Air flow monitoring[1)]	✓	✓	✓	–	✓	✓	✓	–	✓

1) Not in conjunction with L4, L8, L16

Table 8-13 Brake options for motor sizes 63 up to 160

Option	Brake type							
	L4	L8	L16	L32	L60	L80	L150	L260
Without rectifier	✓	✓	✓	✓	✓	✓	✓	✓
Rectifier for disconnection on the DC and AC sides[1)]	✓	✓	✓	✓	✓	✓	✓	✓
Function rectifier for quickly releasing and applying the brake[1)]	✓	✓	✓	✓	✓	✓	✓	✓
Standard friction lining	✓	✓	✓	✓	✓	✓	✓	✓
Wear-resistant friction lining	✓	✓	✓	✓	✓	✓	✓	✓
Microswitch for monitoring brake release	–	–	–	✓	✓	✓	✓	✓
Manual brake release	✓	✓	✓	✓	✓[2)]	✓	✓	✓
Manual brake release with locking mechanism	✓	✓	✓	✓	✓[2)]	✓	✓	✓
Standard corrosion protection	✚	✚	✚	✚	✚	✚	✚	✚
Increased corrosion protection	✓	✓	✓	✓	✓	✓	✓	✓
Enclosed brake	✓	✓	✓	✓	✓	✓	✓	✓
Enclosed brake with condensation drain hole	✓	✓	✓	✓	✓	✓	✓	✓

✚ Standard design
1) Not possible for UL-R or CSA versions
2) Not possible for LA100

Brake

Technical data

Braking torques as a function of the speed and permissible speed limits

Brake type	Maximum permissible operating speed	Max. permissible no-load speed with emergency-stop function	Braking torque measured at the rated braking torque at 100 rpm		
			1 500 rpm	3 000 rpm	Maximum
	rpm	rpm	%	%	%
L4	3 600	6 000	87	80	65
L8	3 600	6 000	85	78	66
L16	4 000	4 000	83	76	
L32	3 600	3 600	81	74	
L60	6 000	6 000	80	73	67
L80	5 300	5 300	79	72	66
L150	4 400	4 400	77	70	
L260	3 700	3 700	75	68	

Permissible operating energy as a function of the switching frequency

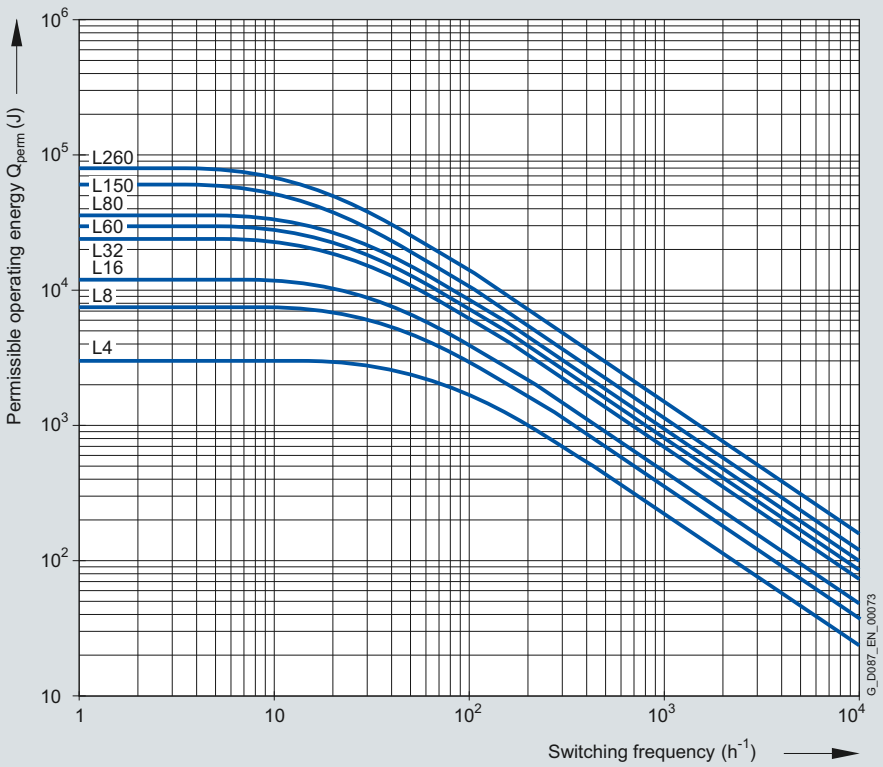


Fig. 8-29 Permissible operating energy

Technical data (continued)

Disconnection times, application times and moments of inertia

Brake type	Rated braking torque	Disconnection time		Applica-tion time	Response time	Rise time	Applica-tion time	Response time	Rise time	Weight	Moment of inertia	
	T_{br}	t_2		$t_1 = t_{11} + t_{12}$	t_{11}	t_{12}	$t_1 = t_{11} + t_{12}$	t_{11}	t_{12}		J_B	
	at 100 rpm	Standard excitation	Over-excitation	AC and DC switched or DC switched			AC switched					for wear-resistant lining
	Nm	ms	ms	ms	ms	ms	ms	ms	ms	kg	10^{-4} kgm^2	
L4/1.4	1.4	20	13	31	13.0	18.0	250	110	140	0.85	0.11	0.15
L4/2	2.0	27	17	22	9.0	13.0	175	77	98			
L4/3	3.0	29	18	30	12.0	18.0	230	101	129			
L4	4.0	45	28	28	15.0	13.0	190	120	70			
L4/5	5.0	56	35	25	13.0	12.0	158	100	58			
L8/3	3.0	21	12	65	39.0	26.0	510	326	184	1.5	0.34	0.61
L8/4	4.0	30	17	50	30.0	20.0	390	250	140			
L8/5	5.0	35	20	40	24.0	16.0	310	200	110			
L8/6.3	6.3	45	30	38	18.0	20.0	315	174	141			
L8	8.0	57	38	31	15.0	16.0	245	135	110			
L8/10	10.0	71	47	26	12.5	13.5	205	113	92			
L16/8	8.0	55	41	36	22.0	14.0	350	183	167	2.6	2	2
L16/10	10.0	48	36	58	35.0	23.0	680	355	325			
L16/13	13.0	60	34	50	30.0	20.0	560	293	267			
L16	16.0	76	48	47	28.0	19.0	460	240	220			
L16/20	20.0	93	59	38	23.0	15.0	390	204	186			
L32/14	14.0	65	50	46	27.0	19.0	400	210	290	3.9	4.5	4.5
L32/18	18.0	65	44	70	45.0	25.0	600	325	275			
L32/23	23.0	82	56	75	40.0	35.0	680	300	380			
L32	32.0	115	78	53	28.0	25.0	490	215	275			
L32/40	40.0	140	95	45	24.0	21.0	440	194	246			
L60/25	25.0	130	66	47	25.0	22.0	540	220	320	5.8	6.3	6.3
L60/38	38.0	140	60	60	24.0	36.0	800	290	510			
L60/50	50.0	175	75	50	20.0	30.0	665	240	425			
L60	60.0	210	90	42	17.0	25.0	580	210	370			
L80/25	25.0	95	56	103	48.0	55.0	1 600	690	710	8.4	15	15
L80/35	35.0	128	75	73	34.0	39.0	1 200	520	680			
L80/50	50.0	160	94	90	42.0	48.0	1 920	830	1 090			
L80/63	63.0	170	100	72	34.0	38.0	1 550	670	880			
L80	80.0	220	130	57	27.0	30.0	1 200	520	680			
L80/100	100.0	280	165	49	24.0	25.0	990	430	560			
L150/60	60.0	135	81	55	27.5	27.5	920	470	450	12.5	29	29
L150/80	80.0	180	108	40	20.0	20.0	690	350	340			
L150/100	100.0	180	108	93	48.0	45.0	1 300	700	600			
L150/125	125.0	225	135	85	44.0	41.0	1 200	650	550			
L150	150.0	270	160	78	33.0	45.0	1 080	480	600			
L260/100	100.0	210	95	205	82.0	123.0	1 775	605	1 170	21.0	73	73
L260/145	145.0	230	170	180	72.0	108.0	1 200	440	790			
L260/180	180.0	230	100	185	73.0	112.0	2 500	850	1 650			
L260/200	200.0	260	120	178	70.0	108.0	2 720	920	1 800			
L260/240	240.0	312	140	170	67.0	103.0	2 300	570	1 530			
L260	260.0	340	150	165	65.0	100.0	2 100	700	1 400			
L260/315	315.0	410	180	150	60.0	90.0	1 750	590	1 160			

Technical data (continued)

Working capacity

Brake type	Rated braking torque	Power consumption	Working capacity			Working capacity with wear-resistant friction lining		
			Friction energy until the brake lining is replaced W_{Tot}	Friction energy until the air gap is readjusted W_V		Friction energy until the brake lining is replaced W_{Tot}	Friction energy until the air gap is readjusted W_V	
	at 100 rpm	at +20 °C			With over-excitation			With over-excitation
	Nm	W	MJ	MJ	MJ	MJ	MJ	MJ
L4/1.4	1.4	20	156	46.8	52	312	94	104
L4/2	2.0		176		59	351		117
L4/3	3.0		170	39.6	57	339	80	113
L4	4.0		180	36.0	60	360	72	120
L4/5	5.0		176	23.4	59	351	46	117
L8/3	3.0	25	324	86.4	108	648	173	216
L8/4	4.0							
L8/5	5.0			75.6			151	
L8/6.3	6.3					756		
L8	8.0			64.8		648	130	
L8/10	10.0			54.0			108	
L16/8	8.0	30	405	108.0	162	810	216	324
L16/10	10.0							
L16/13	13.0							
L16	16.0							
L16/20	20.0		396	80.0	158	792	160	317
L32/14	14.0	40	948	285.0	284	1 896	570	568
L32/18	18.0				283			
L32/23	23.0			260.0		1 885	518	
L32	32.0			212.0	284	1 888	425	
L32/40	40.0			165.0		1 893	331	
L60/25	25.0	50	1 276	306.0	306	2 560	612	612
L60/38	38.0			280.0		2 553	560	
L60/50	50.0		1 320	238.0	317	2 640	476	635
L60	60.0		1 322					
L80/25	25.0	55	2 310	396.0	396	4 536	792	792
L80/35	35.0							
L80/50	50.0							
L80/63	63.0							
L80	80.0							
L80/100	100.0			260.0	389		519	778
L150/60	60.0	85	2 295	612.0	612	4 590	1 224	1 224
L150/80	80.0							
L150/100	100.0							
L150/125	125.0							
L150	150.0							
L260/100	100.0	100	4 680	936.0	1 287	7 020	1 872	2 574
L260/145	145.0							
L260/180	180.0		3 510					
L260/200	200.0							
L260/240	240.0							
L260	260.0							
L260/315	315.0	130	3 489	756.0	1 279	6 978	1 512	2 559

Technical data (continued)

No-load switching frequency

Motor type	Power 4-pole at 50 Hz kW	Brake type	Overexcitation Without 1/h	With 1/h	Without 1/h	With 1/h	Without 1/h	With 1/h	Without 1/h	With 1/h
			No-load switching frequency (Z_A)							
			4-pole		2-pole		6-pole		8-pole	
LA63M	0.12	L4/5, L4	–	–	–	–	–	–	–	–
	0.18	L4/3, L4/2, L4/1.4	–	–	–	–	–	–	–	–
LA71M	0.25	L4/5, L4	7 300	9 500	2 500	3 200	10 500	14 000	14 500	19 000
	0.37	L4/3, L4/2, L4/1.4	12 500	13 500	4 300	4 500	18 500	20 000	25 000	27 000
		L8/10, L8, L8/6.3	6 000	7 600	1 800	2 500	9 000	11 000	12 000	15 000
		L8/5, L8/4	8 900	11 000	2 900	3 500	13 000	16 000	17 500	22 000
		L8/3	11 000	12 000	3 500	4 000	16 500	18 000	22 000	24 000
LE80M	0.55	L4/5, L4	9 000	9 500	2 900	3 100	13 500	14 000	18 000	19 000
	0.75	L4/3, L4/2, L4/1.4	10 500	11 500	3 500	3 800	15 500	16 500	21 000	22 000
		L8/10, L8, L8/6.3	6 300	7 500	2 100	2 500	9 400	11 000	12 500	15 000
		L8/5, L8/4, L8/3	9 500	10 000	3 100	3 300	14 000	15 000	19 000	20 000
		L16/20	6 500	7 500	2 100	2 500	9 700	11 000	13 000	15 000
		L16/13, L16/10, L16/8	7 500	8 000	2 500	2 600	11 000	12 000	15 000	16 000
LE90S	1.1	L8/10, L8, L8/6.3	6 500	7 000	2 100	2 300	9 700	10 500	13 000	14 000
LE90L	1.5	L8/5, L8/4, L8/3	8 000	8 500	2 600	2 800	12 000	12 500	16 000	17 000
		L16/20, L16	3 200	4 300	1 000	1 400	4 800	6 400	6 400	8 500
		L16/13, L16/10, L16/8	6 500	7 000	2 100	2 300	9 700	10 500	13 000	14 000
		L32	2 200	3 000	700	1 000	3 300	4 500	4 400	6 000
		L32/23, L32/18	3 300	4 200	1 100	1 400	4 900	6 300	4 400	6 000
		L32/14	5 500	6 000	1 800	2 000	8 200	12 000	11 000	12 000
LE100L	2.2	L16/20, L16	6 000	6 500	2 000	2 100	9 000	9 700	12 000	13 000
	3.0	L16/13, L16/10, L16/8	6 500	7 000	2 100	2 300	9 700	10 500	14 000	14 000
		L32/40, L32	3 200	4 600	1 000	1 500	4 800	6 900	6 400	9 200
		L32/23, L32/18, L32/14	6 000	6 500	2 000	2 100	9 000	9 700	12 000	13 000
		L60/50	1 100	2 100	350	700	1 600	3 100	2 200	4 200
		L60/38, L60/25	3 200	4 600	1 000	1 500	4 800	6 900	9 200	9 200
LE112M	4.0	L32/40, L32	3 300	3 500	1 100	1 100	4 900	5 200	6 600	7 000
		L32/23, L32/18, L32/14	3 600	3 800	1 200	1 200	5 400	5 700	7 600	7 600
		L60, L60/50	2 600	3 200	850	1 050	3 900	4 800	5 200	6 400
		L60/38, L60/25	3 200	3 600	1 050	1 200	4 800	5 400	7 200	7 200
LE132S	5.5	L80/100, L80	1 850	2 050	600	6 500	2 700	3 000	3 700	4 100
LE132M	7.5	L80/63, L80/50	2 050	2 200	650	700	3 000	3 300	4 100	4 400
		L80/35, L80/25	2 200	2 350	700	750	3 300	3 500	4 400	4 700
		L150, L150/125	1 200	1 500	400	500	1 800	2 200	2 400	3 000
		L150/100, L150/80, L150/60	1 900	2 050	600	650	2 800	3 000	3 800	4 100
LE160M	11.0	L150, L150/125	1 400	1 550	450	500	2 100	2 300	2 800	3 100
LE160L	15.0	L150/100, L150/80, L150/60	1 650	1 750	550	550	2 400	2 600	3 300	3 500
		L260, L260/240	850	1 200	250	400	1 200	1 800	1 700	2 400
		L260/200, L260/180	1 050	1 300	350	400	1 500	1 900	2 100	2 600
		L260/145, L260/100	1 450	1 550	450	500	2 100	2 300	2 900	3 100

For 60 Hz operation, the no-load switching frequency is reduced by 25 %.

Encoder

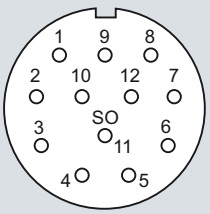
Incremental encoder

Incremental encoder 1XP8012

Technical data of the incremental encoder 1XP8012

Incremental encoder 1XP8012	**-11**	**-10**	**-12**	**-21**	**-20**	**-22**
Pulses per revolution	2 048	1 024	512	2 048	1 024	512
Incremental signals	HTL			TTL		
Supply voltage U_B	10 … 30 V_{DC}			5 V_{DC} ± 10 %		
Maximum current consumption without load	150 mA			120 mA		
Permissible load per output	I_{Load} ≤ 100 mA (except for $\overline{U_{aS}}$)			I_{Load} ≤ 20 mA		
Outputs	2 short-circuit proof square-wave pulses U_{a1}, U_{a2} (maximum 1 min) 2 short-circuit proof square-wave pulses $\overline{U_{a1}}$, $\overline{U_{a2}}$ (maximum 1 min) Zero pulse U_{a0} Zero pulse $\overline{U_{a0}}$ Fault-detection signal $\overline{U_{aS}}$			Square-wave pulses U_{a1}, U_{a2} Square-wave pulses $\overline{U_{a1}}$, $\overline{U_{a2}}$ Zero pulse U_{a0} Zero pulse $\overline{U_{a0}}$ Fault-detection signal $\overline{U_{aS}}$		
Signal level	U_{High} ≥ 21 V At $-I_{High}$ = 20 mA U_{Low} ≤ 2.8 V I_{Low} = 20 mA (U_p = 24 V)			U_{High} ≥ 2.5 V At $-I_{High}$ = 20 mA U_{Low} ≤ 0.5 V I_{Low} = 20 mA		
Minimum edge interval	0.8 µs at 160 kHz			0.45 µs at 300 kHz		
Switching times (10 … 90 %)	t_+ t_- ≤ 200 ns (with 1 m cable), except for $\overline{U_{aS}}$			t_+ t_- ≤ 30 ns (with 1 m cable)		
Maximum frequency	160 kHz			300 kHz		
Moment of inertia of rotor	4.3 x 10^{-6} kgm^2					
Maximum mechanical speed	6 000 rpm					
Vibration (55 … 2 000 Hz)	≤ 150 m/s^2 (EN 60068-2-6)					
Shock (6/2 ms)	≤ 1 000 m/s^2 (EN 60068-2-27)/≤ 2 000 m/s^2 (EN 60068-2-27)					
Degree of protection	IP66					
Connection system	12-pole flange socket, 0° coding					
Weight, approx.	0.30 kg					
Certification	CE, cUL-Rus					
Order code	**Q54**	**Q53**	**Q55**	**Q51**	**Q50**	**Q52**

Connection assignment of the flange socket



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	Voltage supply				**Incremental signals**						**Other signals**	
	12	2	10	11	5	6	8	1	3	4	7	9
	brown/green	blue	white/green	white	brown	green	gray	pink	red	black	violet	yellow
	U_P	Sensor U_P	0 V	Sensor 0 V	U_{a1}	$\overline{U_{a1}}$	U_{a2}	$\overline{U_{a2}}$	U_{a0}	$\overline{U_{a0}}$	$\overline{U_{aS}}$	Free

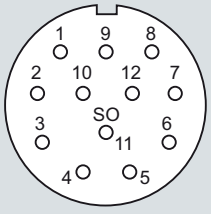
Incremental encoder (continued)

Incremental encoder 1XP8032

Technical data of the incremental encoder 1XP8032

Incremental encoder 1XP8032	-11	-10	-12	-21	-20	-22
Pulses per revolution	2 048	1 024	512	2 048	1 024	512
Incremental signals	HTL			TTL		
Supply voltage U_B	10 … 30 V_{DC}			5 V_{DC} ± 10 %		
Maximum current consumption without load	150 mA			120 mA		
Permissible load per output	I_{Load} ≤ 100 mA (except for $\overline{U_{aS}}$)			I_{Load} ≤ 20 mA		
Outputs	2 short-circuit proof square-wave pulses U_{a1}, U_{a2} (maximum 1 min) 2 short-circuit proof square-wave pulses $\overline{U_{a1}}$, $\overline{U_{a2}}$ (maximum 1 min) Zero pulse U_{a0} Zero pulse $\overline{U_{a0}}$ Fault-detection signal $\overline{U_{aS}}$			Square-wave pulses U_{a1}, U_{a2} Square-wave pulses $\overline{U_{a1}}$, $\overline{U_{a2}}$ Zero pulse U_{a0} Zero pulse $\overline{U_{a0}}$ Fault-detection signal $\overline{U_{aS}}$		
Signal level	U_{High} ≥ 21 V At $-I_{High}$ = 20 mA U_{Low} ≤ 2.8 V I_{Low} = 20 mA (U_p = 24 V)			U_{High} ≥ 2.5 V At $-I_{High}$ = 20 mA U_{Low} ≤ 0.5 V I_{Low} = 20 mA		
Minimum edge interval	0.8 µs at 160 kHz			0.45 µs at 300 kHz		
Switching times (10 … 90 %)	t_+ t_- ≤ 200 ns (with 1 m cable), except for $\overline{U_{aS}}$			t_+ t_- ≤ 30 ns (with 1 m cable)		
Maximum frequency	160 kHz			300 kHz		
Moment of inertia of rotor	4.3 x 10^{-6} kgm^2					
Maximum mechanical speed	6 000 rpm					
Vibration (55 … 2 000 Hz)	≤ 150 m/s^2 (EN 60068-2-6)					
Shock (6/2 ms)	≤ 1 000 m/s^2 (EN 60068-2-27)/≤ 2 000 m/s^2 (EN 60068-2-27)					
Degree of protection	IP66					
Connection system	0.8 m cable with 12-pole coupling socket, 0° coding					
Weight, approx.	0.30 kg					
Certification	CE, cUL-Rus					
Order code	**Q48**	**Q47**	**Q49**	**Q45**	**Q44**	**Q46**

Connection assignment of the flange socket



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	Voltage supply				Incremental signals						Other signals	
	12	2	10	11	5	6	8	1	3	4	7	9
	brown/ green	blue	white/ green	white	brown	green	gray	pink	red	black	violet	yellow
	U_P	Sensor U_P	0 V	Sensor 0 V	U_{a1}	$\overline{U_{a1}}$	U_{a2}	$\overline{U_{a2}}$	U_{a0}	$\overline{U_{a0}}$	$\overline{U_{aS}}$	Free

Encoder

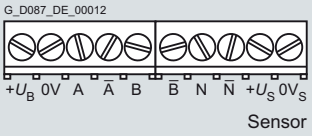
Incremental encoder (continued)

Incremental encoder 1XP8022

Technical data of the incremental encoder 1XP8022

Incremental encoder 1XP8022	-11	-10	-12	-21	-20	-22
Pulses per revolution	2 048	1 024	512	2 048	1 024	512
Incremental signals	HTL			TTL		
Supply voltage U_B	8 … 30 V_{DC} (reverse polarity protection)			5 V_{DC} ± 5 % (reverse polarity protection)		
Maximum current consumption without load	≤100 mA					
Permissible load per output	I_L ≤ 70 mA					
Outputs	2 square-wave pulses A, B 2 square-wave pulses $\overline{A}$, $\overline{B}$, Zero pulse N Zero pulse $\overline{N}$					
Signal level	U_{High} ≥ U_B – 3 V U_{Low} ≤ 1.5 V			U_{High} ≥ 2.5 V U_{Low} ≤ 0.5 V		
Minimum edge interval	500 ns			≤ 200 ns		
Switching times (10 … 90 %)	≤ 1 µs					
Maximum frequency	120 kHz					
Moment of inertia of rotor	6 x 10^{-6} kgm^2					
Maximum mechanical speed	8 000 rpm					
Vibration (55 … 2 000 Hz)	≤ 100 m/s^2 (EN 60068-2-6)					
Shock (11 ms)	≤ 1 000 m/s^2 (EN 60068-2-27)					
Degree of protection	IP66					
Connection system	Cable terminal box					
Weight, approx.	0.35 kg					
Certification	CE, cUL-Rus					
Order code	**Q60**	**Q59**	**Q61**	**Q57**	**Q56**	**Q58**

Connection assignment in the cable box



Connections									
red	blue	green	brown	gray	black	pink	white	yellow	violet
$+U_B$	0V	A	$\overline{A}$	B	$\overline{B}$	N	$\overline{N}$	$+U_S$	$0V_S$

8

Resolvers 1XP8013 and 1XP8023

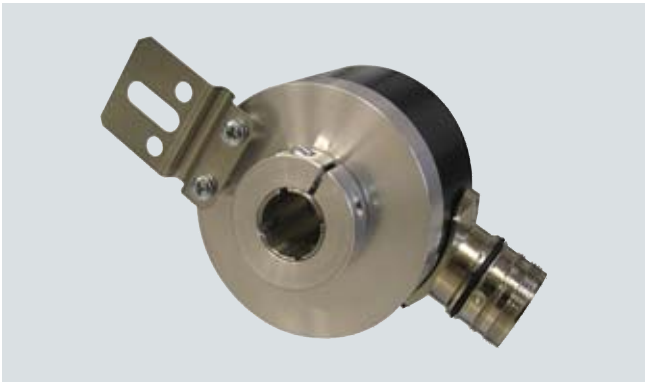


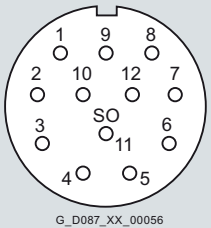
Fig. 8-30 Resolver 1XP8013

Fig. 8-31 Resolver 1XP8023

Technical data of the resolvers

Resolver	**1XP8013-10**	**1XP8023-10**	**1XP8013-11**	**1XP8023-11**
Input voltage	7 V_{RMS}		7 V_{RMS}	
Current consumption (maximum)	120 mA		65 mA	
Input frequency	5 kHz		10 kHz	
Phase shift	0° (+25°)		0° (± 10 °)	
Zero voltage (maximum)	50 mV		50 mV	
Pole pairs	1		1	
Primary side	R1 – R2		R1 – R2	
Impedance				
Z_{ro}	55 + j50 (± 20 %) Ω		70 + j100 (± 20 %) Ω	
Z_{so}	115 + j175 (± 20 %) Ω		180 + j300 (± 20 %) Ω	
Z_{ss}	115 + j160 (± 20 %) Ω		175 + j275 (± 20 %) Ω	
DC resistance				
Rotor	36 (± 10 %) Ω		36 (± 10 %) Ω	
Stator	60 (± 10 %) Ω		60 (± 10 %) Ω	
Maximum permissible mechanical speed	≤ 8 000 rpm		≤ 8 000 rpm	
Permissible electrical speed	≤ 8 000 rpm		≤ 8 000 rpm	
Vibration (55 … 2 000 Hz)	≤ 100 m/s²		≤ 100 m/s²	
Shock (6 ms)	≤ 1 000 m/s²		≤ 1 000 m/s²	
Connection system	Flange socket, 0° coding	1 m cable with coupling socket	Flange socket, 0° coding	1 m cable with coupling socket
Temperature range				
Flange socket or fixed cable	-30 … +80 °C		-30 … +80 °C	
Moving cable	–		-5 … +80 °C	
Degree of protection	IP65		IP65	
Weight, approx.	320 g	500 g	320 g	500 g
Certification	CE, cUL-Rus			
Order code	**Q85**	**Q88**	**Q87**	**Q86**

Connection assignment of the flange socket



G_D087_XX_00056

Input voltage		**Sine tap**		**Cosine tap**	
10	7	11	12	1	2
pink	white	red	blue	yellow	violet
R1	R2	S1	S3	S2	S4

8

Encoder

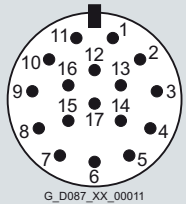
Absolute encoders 1XP8014 and 1XP8024

The multiturn absolute encoder can be shipped with EnDAT protocol or SSI protocol and mounted on the shaft.

Technical data of the absolute encoders

Absolute encoder	1XP8014-20	1XP8024-20	1XP8014-10	1XP8024-10
Supply voltage U_P	10 … 30 V		5 V ± 5 %	
Maximum current consumption without load	≤ 200 mA			
Absolute position values	SSI		EnDAT 2.1	
• Code	Gray		Dual	
• Positions per revolution	8 192 (13 bit)			
• Differentiable revolutions	4 096			
Incremental signals	~1 V_{pp}			
• Pulses per revolution	512		2 048	
• Outputs	Sine/cosine pulses A, B			
• Limit frequency -3 dB	≥ 200 kHz			
• Signal size	0.8 … 1.2 V_{pp}			
Moment of inertia of rotor	4.3 x 10^{-6} kgm^2			
Maximum permissible mechanical speed	≤ 6 000 rpm			
Permissible electrical speed with system accuracy	≤ 1 500 rpm/± 1 LSB ≤ 10 000 rpm/± 50 LSB			
Vibration (55 … 2 000 Hz)	15 g	30 g	15 g	30 g
Shock (6 ms)	100 g			
Temperature range	-20 … +80 °C		-20 … +80 °C	
Degree of protection	IP66			
Connection system	Flange socket, 17-pole with 0° coding	1 m cable with coupling socket	Flange socket, 17-pole with 0° coding	1 m cable with coupling socket
Weight, approx.	0.3 kg			
Certification	CE, cUL-Rus			
Order code	**Q80**	**Q81**	**Q82**	**Q83**

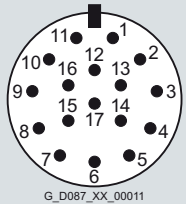
Connection assignment of the flange socket (SSI)



G_D087_XX_00011

Voltage supply					Incremental signals				Absolute position values				Other signals	
7	1	10	4	11	15	16	12	13	14	17	8	9	2	5
brown/ green	blue	white/ green	white		green/ black	yellow/ black	blue/ black	red/ black	gray	pink	violet	yellow/ black	black	green
U_P	Sensor U_P	0 V	Sensor 0 V	Inner shield	A+	A–	B+	B–	DATA	$\overline{DATA}$	CLOCK	$\overline{CLOCK}$	Direction of rotation	Zeros

Flange socket connection (EnDAT 2.1)



G_D087_XX_00011

Voltage supply					Incremental signals				Absolute position values					
7	1	10	4	11	15	16	12	13	14	17	8	9		
brown/ green	blue	white/ green	white		green/ black	yellow/ black	blue/ black	red/ black	gray	pink	violet	yellow/ black	black	green
U_P	Sensor U_P	0 V	Sensor 0 V	Inner shield	A+	A–	B+	B–	DATA	$\overline{DATA}$	CLOCK	$\overline{CLOCK}$		

8

Rugged encoders

Rotary pulse encoder LL 861 900 220

Fig. 8-32 Leine und Linde LL 861 900 220

With its rugged design, this rotary pulse encoder is also suitable for demanding operating environments. It is resistant to shock and vibration and has insulated bearings.

The rotary pulse encoder LL 861 900 220 is only available from motor size 112 and higher.

The version of the rotary pulse encoder with a diagnostics system (ADS) can be supplied by Leine und Linde.

Technical data for LL 861 900 220 (HTL version)

Supply voltage U_B	**+9 … +30 V**
Current consumption without load	Max. 80 mA
Permissible load current per output	40 mA
Pulses per revolution	1 024
Outputs	6 short-circuit proof square-wave pulses A, A', B, B', 0, 0', high current HTL
Pulse offset between the two outputs	90° ± 25° electrical
Output amplitude	$U_{High} \geq U_B - 4$ V $U_{Low} \leq 2.5$ V
Pulse duty factor	1:1 ± 10 %
Rate of change	50 V/µs (without load)
Maximum frequency	100 kHz for 350 m cable
Maximum speed	4 000 rpm
Temperature range	-20 … +40 °C, on request up to +80 °C
Degree of protection	IP65
Maximum permissible radial cantilever force	300 N
Maximum permissible axial force	100 N
Connection system	Terminal strips in the encoder Cable connection, M20 x 1.5 radial
Weight, approx.	1.3 kg
Order code	**Q92**

Manufacturer:

Leine und Linde (Germany) GmbH
Bahnhofstrasse 36
73430 Aalen, Germany

Phone: +49 73 61-78093-0
Fax: +49 73 61-78093-11

http://www.leinelinde.com
E-mail: info@leinelinde.de

Rugged encoders (continued)

Rotary pulse encoder HOG9 D 1024 I

Fig. 8-33 Hübner HOG9 D 1024 I

The encoder is equipped with insulated bearings.

The rotary pulse encoder HOG9 D 1024 I is only available from motor size 112 and higher.

Technical data for HOG9 D 1024 I (HTL version)

Supply voltage U_B	**+9 … +30 V**
Current consumption without load	50 … 100 mA
Permissible load current per output	60 mA, 300 mA peak
Pulses per revolution	1 024
Outputs	4 short-circuit proof square-wave pulses A, B and A', B'
Pulse offset between the two outputs	90° ± 20°
Output amplitude	$U_{High} \geq U_B - 3.5$ V $U_{Low} \leq 1.5$ V
Pulse duty factor	1:1 ± 20 %
Rate of change	10 V/µs (without load)
Maximum frequency	120 kHz
Maximum speed	7 000 rpm
Temperature range	-20 … +40 °C, on request from -30 … +100 °C
Degree of protection	IP56
Maximum permissible radial cantilever force	300 N
Maximum permissible axial force	200 N
Connection system	Radial connector (mating connector is part of the scope of delivery)
Mechanical design acc. to Hübner Ident. No.	73 522 E
Weight	0.7 kg
Order code	**Q93**

Manufacturer:

Baumer Hübner GmbH
Max-Dohrn-Str. 2+4
10589 Berlin, Germany
Phone: +49 30-6 90 03-0
Fax: +49 30-6 90 03-1 04
http://www.baumerhuebner.com
E-mail: info@baumerhuebner.com

Rugged encoders (continued)

Rotary pulse encoder HOG10 D 1024 I

Fig. 8-34 Hübner HOG10 D 1024 I

This encoder is extremely rugged and is therefore suitable for difficult operating conditions. It is equipped with insulated bearings.

The rotary pulse encoder HOG10 D 1024 I is only available from motor size 112 and higher.

Technical data for HOG10 D 1024 I (HTL version)

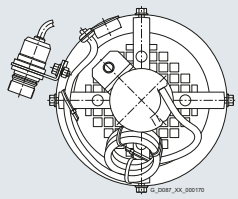
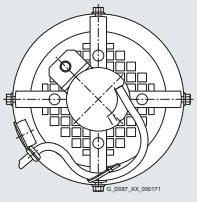
Supply voltage U_B	**+9 … +30 V**
Current consumption without load	Approx. 100 mA
Permissible load current per output	60 mA, 300 mA peak
Pulses per revolution	1 024
Outputs	4 short-circuit proof square-wave pulses A, B and A', B'
Pulse offset between the two outputs	90° ± 20 %
Output amplitude	$U_{High} \geq U_B - 3.5$ V $U_{Low} \leq 1.5$ V
Pulse duty factor	1:1 ± 20 %
Rate of change	10 V/µs (without load)
Maximum frequency	120 kHz
Maximum speed	7 000 rpm
Temperature range	-20 … +40 °C, on request from -40 … +100 °C
Degree of protection	IP66
Maximum permissible radial cantilever force	400 N
Maximum permissible axial force	250 N
Connection system	Terminals, cable connection M20 x 1.5
Mechanical design acc. to Hübner Ident. No.	74 055 E
Weight, approx.	1.6 kg
Order code	**Q94**

Manufacturer:

Baumer Hübner GmbH
Max-Dohrn-Str. 2+4
10589 Berlin, Germany
Phone: +49 30-6 90 03-0
Fax: +49 30-6 90 03-1 04
http://www.baumerhuebner.com
E-mail: info@baumerhuebner.com

Encoder

Mechanical protection

Design	Figure	Encoder type	Connection system	Flange/coupling socket mounting
Protection plate				
For self-ventilated motors up to size 90, the encoder is mounted outside the fan cover. In the standard version, the encoder is covered by a protective metal plate.		1XP8012-..	Flange socket	
		1XP8014-..		
		1XP8013-..		
		1XP8022-..	Cable terminal box	
		1XP8032-..	0.8 m cable + flange socket	
		1XP8024-..	1 m cable + coupling socket	
		1XP8023-..		
Canopy				
From motor size 100, a canopy (painted red) is used to protect the encoder.		1XP8012-..	Flange socket	
		1XP8014-..		
		1XP8013-..		
		1XP8022-..	Cable terminal box	
		1XP8032-..	0.8 m cable + flange socket	
		1XP8024-..	1 m cable + coupling socket	
		1XP8023-..		
Fan cover of the motor (with external fan)				
For force-ventilated motors the encoder is mounted inside the fan cover.		1XP8012-..	Flange socket (from motor size 132)	
		1XP8014-..		
		1XP8013-..		
		1XP8022-..	Cable terminal box	
		1XP8032-..	0.8 m cable + flange socket	The flange socket is attached to the motor cooling fins using a claw.
		1XP8024-..	1 m cable + coupling socket	The cable is freely fed out of the fan cover.
		1XP8023-..		
Encoder under cover				
Optionally, for motor sizes 71 to 90, instead of the protective metal plate, a protective cover can be ordered. This provides additional mechanical protection for the encoder.		1XP8022-..	Cable terminal box	
		1XP8032-..	0.8 m cable + flange socket	The flange socket is attached to the cover using a bracket. 
		1XP8024-..	1 m cable + coupling socket	The cable is fed to the outside through a cutout with protective envelope. 
		1XP8023-..		

8

Motors prepared for encoder mounting

Motors can be supplied with the optional encoder mounting interface. Encoders up to a maximum total weight of 500 g can be mounted.

This option is suitable for applications with medium shock and vibration requirements. At medium cycle frequencies of the application, speeds up to 3 600/min are possible.

Order code:	
Prepared for encoder mounting	**N50**

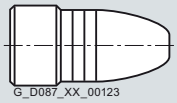
Encoder accessories

Connector

A straight connector for shielded cables up to 8 mm in diameter can be supplied for encoders with flange socket – incremental encoder 1XP8012, resolvers 1XP8013 and 1XP8023 and absolute encoders 1XP8014 and 1XP8024.

Order code:	
Connector	**Q62**

Selection table for the connector



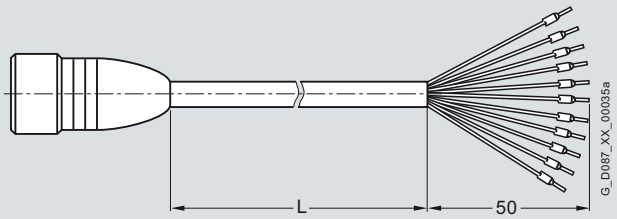
Encoder type	Order code Order No.
	Connector
Incremental encoders 1XP8012, 1XP8032	**Q62** FDU:55190000565002
Resolvers 1XP8013 and 1XP8023	**Q62** FDU:55190000565002
Absolute encoders 1XP8014 and 1XP8024	**Q62** FDU:55190000565003

Encoder accessories (continued)

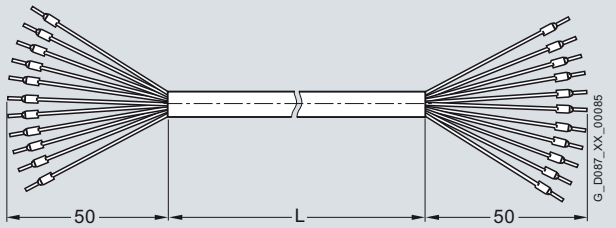
Cable with end sleeves

A pre-assembled cable with end sleeves and three different cable lengths can be supplied for the encoders.

Selection table for the cable with end sleeves



Encoder type	Order code		
	Order No.		
Free cable length L	**2 m**	**8 m**	**15 m**
Incremental encoders 1XP8012, 1XP8032	**Q69** FDU:70000004013446	**Q70** FDU:70000004013447	**Q71** FDU:70000004013448
Resolvers 1XP8013 and 1XP8023	**Q69** FDU:70000004013576	**Q70** FDU:70000004013577	**Q71** FDU:70000004013578
Absolute encoders 1XP8014 and 1XP8024	**Q69** FDU:70000004013454	**Q70** FDU:70000004013455	**Q71** FDU:70000004013456



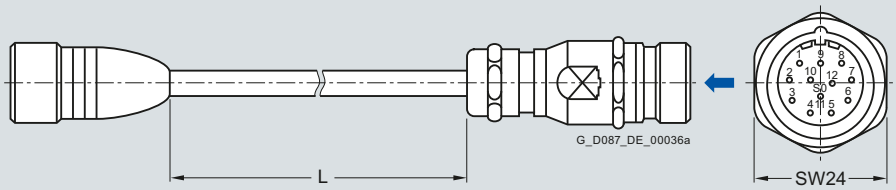
Encoder type	Order code		
	Order No.		
Free cable length L	**2 m**	**8 m**	**15 m**
Incremental encoder 1XP8022	**Q63** FDU:70000004013418	**Q64** FDU:70000004013419	**Q65** FDU:70000004013420

Encoder accessories (continued)

Cable with coupling socket

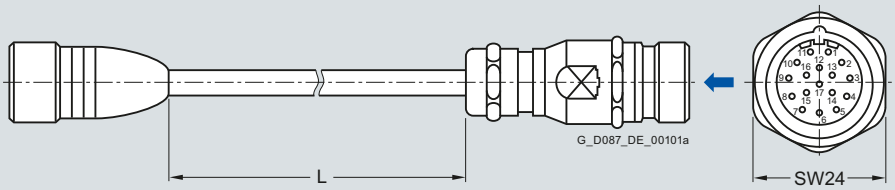
A cable with a straight coupling socket can be supplied for the encoders.

Selection table for the cable with coupling socket

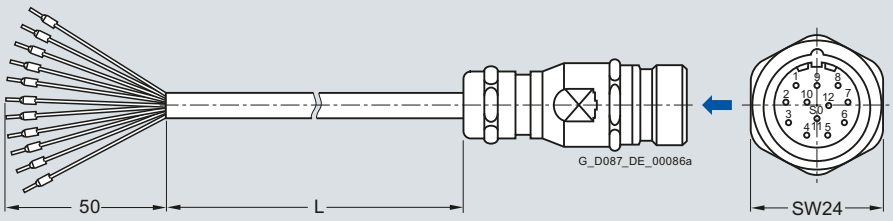


Encoder type	Order code		
	Order No.		
Free cable length L	**2 m**	**8 m**	**15 m**
Incremental encoders 1XP8012, 1XP8032	**Q72** FDU:70000004013449	**Q73** FDU:70000004013450	**Q74** FDU:70000004013451
Resolvers 1XP8013 and 1XP8023	**Q72** FDU:70000004013579	**Q73** FDU:70000004013580	**Q74** FDU:70000004013581

For the connection assignment of the coupling socket, see the encoder flange socket.



Encoder type	Order code		
	Order No.		
Free cable length L	**2 m**	**8 m**	**15 m**
Absolute encoders 1XP8014 and 1XP8024	**Q72** FDU:70000004013457	**Q73** FDU:70000004013458	**Q74** FDU:70000004013459



Encoder type	Order code		
	Order No.		
Free cable length L	**2 m**	**8 m**	**15 m**
Incremental encoder 1XP8022	**Q66** FDU:70000004013421	**Q67** FDU:70000004013422	**Q68** FDU:70000004013443

8

Encoder accessories (continued)

EnDAT gateways for absolute encoders

Using interface converters (gateways), EnDAT absolute encoders can be integrated in networks with a serial bus system (Profibus DP, CANopen and DeviceNET).

The absolute encoder can be connected to the gateway using cables for absolute encoders **Q72**, **Q73** or **Q74**.

Order code:	
Gateway EnDAT Profibus DP	**Q02**
Gateway EnDAT CANopen	**Q03**
Gateway EnDAT DeviceNET	**Q04**

Modular system in combination with encoder systems

Encoder	Motor plug	Brake	Self ventilation			Forced ventilation	Backstop
			Standard fan	Metal fan	High inertia fan		
Incremental encoder							
1XP8012-..	✓	✓	✓	✓	✓	✓	✓
1XP8022-..	✓	✓	✓	✓	✓	✓	✓
1XP8032-..	✓	✓	✓	✓	✓	✓	✓
Absolute encoder							
1XP8014-..	✓	✓	✓	✓	✓	✓	✓
1XP8024-..	✓	✓	✓	✓	✓	✓	✓
Resolver							
1XP8013-..	✓	✓	✓	✓	✓	✓	✓
1XP8023-..	✓	✓	✓	✓	✓	✓	✓

1) Only in conjunction with encoder under cover

Backstop

Motors, sizes 71 to 160, can be supplied with a backstop, which prevents them from rotating in the opposite direction to that used in operation.

Above the disengage speed, in the operational direction of rotation, there is no connection between the inner and outer rings of the backstop.

For starting and stopping below the disengage speed, the operating time may be a maximum of 20 seconds.

In the direction of rotation opposite to the operational direction of rotation, there is a fixed connection between the inner and outer rings of the backstop. This allows the rated backstop torque to be transmitted.

When selecting the backstop, the direction of rotation of the geared motor output shaft must be specified.

Please note that motor speeds lower than the disengage speed can damage the backstop.

Order code:

Backstop	**N23**

Order code, output shaft direction of rotation:

Clockwise	**K18**
Counterclockwise	**K19**

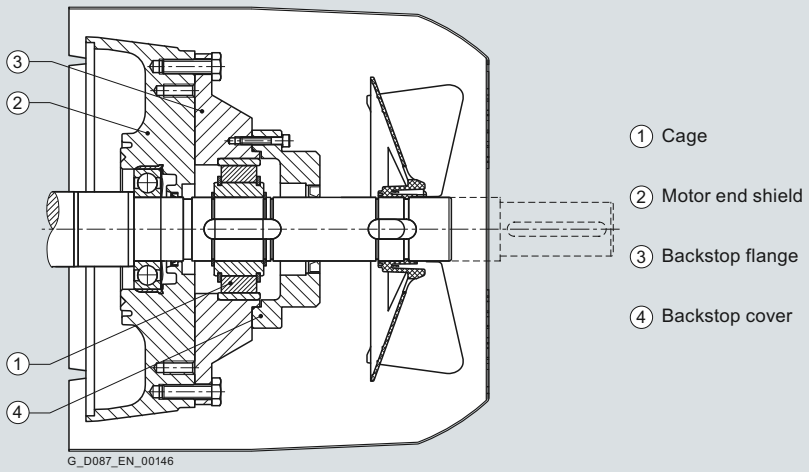


Fig. 8-35 Backstop

Technical data of the backstop

Motor size	Rated torque	Disengage speed	Maximum speed	Weight	Moment of inertia of cage and inner ring
	T_{SP}	n_{dis}	n_{max}	m_{Bstp}	J_{Bstp}
	Nm	rpm	rpm	kg	10^{-4} kgm^2
63	–	–	–	–	–
71	100	890	5 000	0.26	1.0
80	100	890	5 000	0.26	1.0
90	150	860	5 000	0.42	2.0
100	150	860	5 000	0.42	2.0
112	150	860	5 000	0.42	2.0
132	420	750	5 000	1.16	8.0
160	800	700	5 000	1.16	8.0

Modular system in combination with backstop

Modular system	Motor plug	Brake	Encoder	Self ventilation Forced ventilation	Second shaft extension
Backstop	✓	–	✓	✓	✓

Second shaft extension and handwheel

Second shaft extension

For 4-pole motors a free, second shaft extension can be supplied on the non-drive end (NDE). The second shaft extension has a 60° centering hole to DIN 332, Part 2 with M3 to M24 tapped hole depending on the shaft diameter.

For a coupling output, the second shaft extension can transmit the full rated power. Please also enquire about the power that can be transmitted and permissible cantilever force if belt pulleys, chains, or gear pinions are used on the second shaft extension.

A second shaft extension cannot be provided if a rotary pulse encoder and/or an external fan has been mounted to the motor.

Order code:

Second shaft extension	**N39**

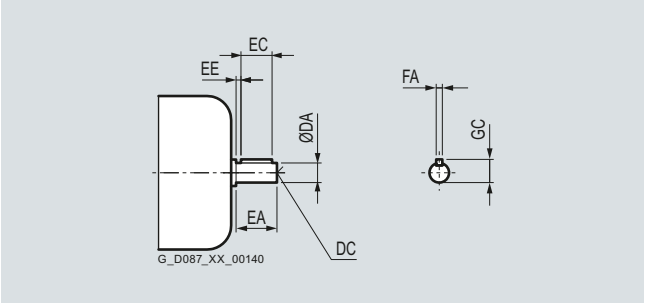


Fig. 8-36 Second motor shaft extension

Table 8-14 Technical data of the second shaft extension

Motor size	DA	EA	Distance between fan cover and shaft shoulder	DC	EC	EE	FA	GC
63	–	–	–	–	–	–	–	–
71	14	30	4	M5	22	4	5	16
80	14	30	4	M5	22	4	5	16
90	19	40	5	M6	32	4	6	21.5
100	19	40	5	M6	32	4	6	21.5
112	24	50	6	M8	40	5	8	27
132	28	60	8	M10	50	5	8	31
160	38	80	8	M12	70	5	10	41

Handwheel

Motors, sizes 71 to 160, can be supplied with a second shaft extension and additionally with a handwheel.

The handwheel is a disk-type handwheel in accordance with DIN 3670. By mounting it on the second shaft extension of the motor, the geared motor can be rotated even when the motor winding is in a no-voltage state.

Order code:

Handwheel	**N40**

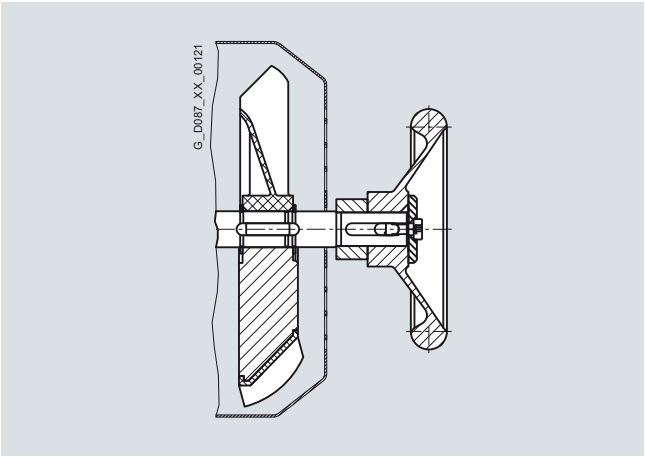


Fig. 8-37 Handwheel

Modular system in combination with second shaft extension

Modular system	Motor plug	Brake	Backstop	Encoder	Self ventilation	Forced ventilation
Second shaft extension						
Without handwheel	✓	✓	✓	–	✓	–
With handwheel	✓	✓	✓	–	✓	–

Hexagonal recess

All self-ventilated motors, sizes 71 to 160 with mounted brake or backstop have a hexagonal recess in the motor shaft extension at the non-drive end (NDE). As a consequence, frequently it is not necessary to mount a handwheel.

A hexagonal recess is not possible for rotary pulse encoder or second shaft extension.

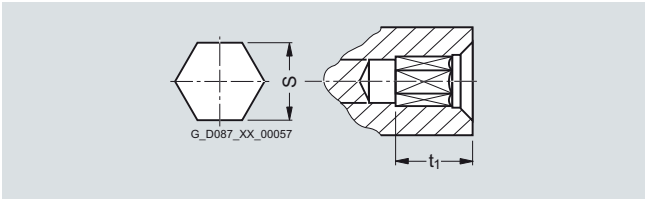


Fig. 8-38 Hexagonal recess

Table 8-15 Width across flats for hexagonal recess

Motor type	Width across flats	Bore depth
	mm	mm
LA71	6	9
LE80		
LE90		
LE100		
LE112	10	12
LE132		
LE160		

Canopy

Geared motors with a vertical mounting position (motor at the top) can also be fitted with a canopy. The canopy prevents small items from falling into the geared motor; in the case of outdoors installation, its primary function is to serve as a rain canopy.

If the motor is to be used or stored in the open air, we recommend that it is kept under additional cover to protect it from prolonged exposure to direct sunlight, rain, snow, ice, or dust.

Order code:	
Canopy	**N22**

Condensation drain hole

Condensation can accumulate inside the motor as result of environmental effects. This can result in corrosion and lower clearances and creepage distances.

The condensation is drained to the outside through the condensation drain hole. Depending on the mounting position, the drain holes are located at the DE and/or NDE of the motor.

For gearbox F.29, a condensation drain hole is not possible for mounting position M3.

For gearbox Z19, a condensation drain hole is only possible for mounting position M2.

Order code:	
Condensation drain hole	**N46**

Internal motor corrosion protection

The outer surfaces of the geared motors have a high quality paint finish.

For special applications, it may be necessary to apply a protective coating to the inner surfaces of the motor as well.

Order code:	
Internal motor corrosion protection	**N41**

General options

Increased protection against humidity and tropical climates

Increased protection against humidity and tropical climates can be optionally supplied for the (geared) motors, sizes 63 to 160. This design is suitable for air humidity in the range between 30 and 60 g water per m^3 air as a function of the temperature (see Page 8/7).

The increased protection against humidity and tropical climates includes surface treatment with corrosivity category C2 (**L03**), increased winding protection against moisture and acid (**N54**), internal motor corrosion protection (**N41**) and temperature class (155) F.

Please contact Siemens, if the motor requires other functions (brake, backstop, encoder systems).

Order code:

Increased protection against humidity and tropical climates	**N43**

Increased protection against acids and alkalis

Increased protection against acid and alkalis can be optionally supplied for the (geared) motors, sizes 63 to 160. This design is suitable for city and industrial atmospheres with moderate pollution as a result of sulfur dioxide, coastal areas with low salt levels and aggressive atmospheres up to 1 % acid or alkali concentration.

The increased protection against acids and alkalis includes surface treatment with corrosivity category C3 (**L04**), increased winding protection against moisture and acid (**N54**), internal motor corrosion protection (**N41**) and temperature class (155) F.

Please contact Siemens, if the motor requires other functions (brake, backstop, encoder systems).

Order code:

Increased protection against acids and alkalis	**N44**

Extreme ambient temperatures

The ambient temperature range for products listed in the catalog extends from -10 to +40 °C. In addition, when using the recommended oils, drives can be selected for the range extending from -20 to +40 °C.

When appropriately modified, SIMOGEAR geared motors can be operated at temperatures extending from -40 to -20 °C. After specifying the temperature range, the operating and starting mode as well as the load, we will gladly offer this design.

Technical changes especially involve the electrical components as well as the selection of lubricants and seals.

At higher ambient temperatures above +40 °C, the permissible oil sump temperature must not be exceeded. Please contact Siemens if you would like your drive to be thermally checked.

In addition, at higher temperatures, a special motor design is required, which we will be glad to offer.

Surface treatment

We offer five high-quality paint systems in various colors to protect drives against corrosion and external environmental effects.

Our corrosion protection system is designed in accordance with the corrosivity categories of DIN EN ISO 12944-2.

Geared motors, size 49 and higher, are painted in RAL 7016 (anthracite gray) to corrosivity category C1 as standard. This ensures that they are protected against corrosion for indoors use.

Geared motors, sizes 19 to 39 with an aluminum housing are supplied unpainted as standard.

All of the unpainted parts of the products are treated with corrosion protection for 6 months. Other treatments are possible.

Table 9-1 Overview of surface treatment

Corrosivity category	Paint system			Description	Order code
	Primer	Intermediate coat	Top coat		
Surface protection					
Aluminum gearbox housing[1]					
C1/unpainted (standard)	–	–	–	• Indoor installation • Heated buildings with neutral atmospheres	**L00**
C1 Normal environmental stress	–	–	1-component hydro paint	• Resistant to greases, conditionally resistant to mineral oils, aliphatic solvents • Standard paint	**L02**
Cast iron gearbox housing[2]					
C1 Normal environmental stress	–	–	1-component hydro paint	• Indoor installation • Heated buildings with neutral atmospheres • Resistant to greases, conditionally resistant to mineral oils, aliphatic solvents • Standard paint	**L02**
All geared motors					
C2 Low environmental stress	2-component polyurethane	–	2-component polyurethane	• Indoor and outdoor installation • Unheated buildings with condensation, production areas with low humidity, e.g. warehouses and sports facilities • Atmospheres with little pollution, rural areas • Resistant to greases, mineral oils and sulfuric acid (10 %), caustic soda (10 %) and conditionally resistant to aliphatic solvents	**L03**
C3 Average environmental stress	2-component polyurethane	–	2-component polyurethane	• Indoor and outdoor installation • Production areas with high humidity and some air pollution, e.g. food production areas, dairies, laundries and breweries • Urban and industrial atmospheres, moderate contamination from sulfur dioxide, coastal areas with low salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (10 %)	**L04**
C4 High environmental stress	2-component epoxy zinc phosphate	–	2-component polyurethane	• Indoor and outdoor installation • Chemical plants, swimming pools, wastewater treatment plants, electroplating shops, and boathouses above seawater • Industrial areas and coastal areas with moderate salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (10 %)	**L20**

[1] Helical gearboxes D/Z19 to D/Z39, parallel shaft gearboxes F29 and bevel gearboxes B29 and B39

[2] The bevel gearbox B49 is painted as standard

Surface treatment (continued)

Table 9-1 Overview of surface treatment

Corrosivity category	Paint system			Description	Order code
	Primer	Intermediate coat	Top coat		
Surface protection					
All geared motors					
C5 Very high environmental stress	2-component epoxy zinc phosphate	2-component epoxy iron mica	2-component polyurethane	• Indoor and outdoor installation • Buildings/areas with almost constant condensation and high degrees of pollution, e.g. malt factories and aseptic areas • Industrial areas with high humidity and aggressive atmosphere, coastal areas and offshore environments with high salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (20 %)	**L05**
Primer				**Ability to be painted**	
C2 G	2-component polyurethane	–	–	• 2-component polyurethane paint, 2-component epoxy paint and acid-hardening paint, 2-component acrylic paint	**L01**
C4 G	2-component epoxy zinc phosphate	–	–	• 2-component polyurethane paint, 2-component epoxy paint and acid-hardening paint, 2-component acrylic paint	**L09**
Unpainted	–	–	–	• Plastic paint, synthetic resin paint, oil paint, 2-component polyurethane paint, 2-component epoxy paint	**L00**

Surface pretreatment

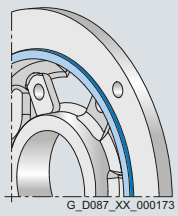
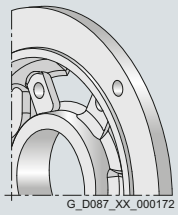
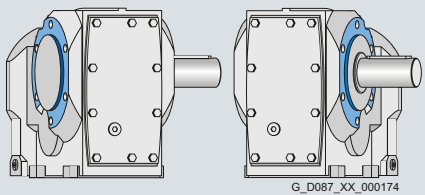
For especially demanding applications, the drives can also be pretreated in order to achieve a uniform paint coat thickness also at hidden locations or those difficult to access.

Order code:	
Special pretreatment	**L19**

Surface treatment (continued)

Painting flange surfaces

For flange-mounted designs, the flange surface and centering are not painted as standard. The versions listed in the table can be optionally selected.

Design	Possible for	Figure	Order code
Centering not painted	Gearbox in a flange-mounted design	 G_D087_XX_000173	**L11**
Flange completely painted	Gearbox in a flange-mounted design	 G_D087_XX_000172	**L12**
Centering flange not painted on both sides	Bevel gearbox with housing flange	 G_D087_XX_000174	**L27**

Surfaces marked blue are not painted

Colors

In addition to anthracite gray (RAL 7016), you can select from other standard colors.

RAL color	Designation	Color, example:	Order code
RAL 7016	Anthracite gray (standard)		**L75**
RAL 5015	Sky blue		**L50**
RAL 7011	Iron gray		**L51**
RAL 7030	Stone gray		**L55**
RAL 7031	Blue gray		**L53**
RAL 7035	Light gray		**L54**

Special colors

The drives can be painted in other colors on request.

Preservation

All gearboxes and geared motors are preserved as standard for 6 months.

Long-term preservation up to 36 months

If the gearboxes are stored for longer than 6 months, then we recommend the "Long-term preservation" option. A VCI corrosion inhibitor (volatile corrosion inhibitor) is added to the gearbox oil.

Until commissioning, it is not permissible that the gearbox is opened, as otherwise the VCI corrosion inhibitor will vaporize. The oil level must be checked before commissioning. Corrosion protection is also applied to the flange contact surfaces and shaft extensions. We recommend that the gearbox is stored in the appropriate mounting position.

Storage conditions

Geared motors, stored in dry, dust free and evenly tempered rooms do not require any special packaging.

In all other areas, the units must be packaged in foil with desiccant and moisture indicator. If required, protection must be provided against mold and termites. The storage location must be vibration- and shock-free. The storage conditions must be regularly checked.

Order code:

Long-term preservation up to 36 months	**K17**

For information about storage and commissioning please refer to the operating instructions.

Rating plate

Overview

The rating plates on the gearboxes and geared motors are normally manufactured out of coated aluminum foil. They are covered with a special masking film which ensures permanent resistance to UV radiation and media of all kinds (oils, greases, salt water, cleaning agents, etc.).

The adhesive and the material ensure firm adhesion and long-term legibility within the operating temperature range from -40 °C to +155 °C.

For geared motors, the rating plate is attached to a stainless steel plate on the motor.

For specific designs, additional rating plates are attached to the motor.

Second rating plate, supplied loose

For all gearboxes and geared motors, an additional rating plate can be supplied loose.

Order code:

Second rating plate, supplied loose	**K41**

Second rating plate, attached

When requested, a second rating plate can be attached to the motor.

Order code:

Second rating plate, attached	**K68**

Example of a rating plate

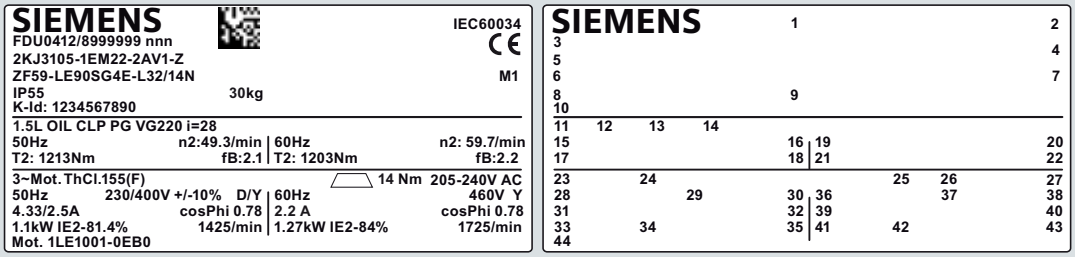


Fig. 9-1 Rating plate example

General data

1 Matrix code
2 Applicable standard
3 **Serial No.**
4 CE marking or other marking, if required
5 Order No.
6 Model – Type – Size
7 Type of construction (IM)
8 Degree of protection acc. to IEC 60034-5 or IEC 60529
9 Weight *m* [kg]
10 Customer ID
11 Oil quantity [l] main gearbox/intermediate gearbox
12 Oil type
13 Oil viscosity ISO VG class to DIN 51519 / ISO 3448
14 Total transmission ratio

Frequency 1

15 Rated frequency *f* [Hz]
16 Gearbox output speed n_2 [rpm]
17 Geared motor output torque T_2 [Nm]
18 Service factor f_B

Frequency 2

19 Rated frequency *f* [Hz]
20 Gearbox output speed n_2 [rpm]
21 Geared motor output torque T_2 [Nm]
22 Service factor f_B

When ordering a replacement/spare part, always specify the serial No.

Motor data

23 Phase number and type of motor current
24 Temperature class Th.Cl.
25 Symbols (IEC 60617-2): = brake
26 Rated braking torque T_{br} [Nm]
27 Brake supply voltage *U* [V]

Frequency 1

28 Rated frequency *f* [Hz]
29 Rated voltage / range *U* [V]
30 Circuit, graphic symbols acc. to DIN EN 60617 Part 6 / IEC 60617-6
31 Rated current I_{rated} [A]
32 Power factor cos φ
33 Rated power P_{rated} [kW], duty type if ≠ S1
34 Efficiency class marking acc. to IEC 60034-30
35 Rated speed n_{rated} [rpm]

Frequency 2

36 Rated frequency *f* [Hz]
37 Rated voltage / range *U* [V]
38 Rated current I_{rated} [A]
39 Power factor cos φ
40 Circuit, graphic symbols acc. to DIN EN 60617 Part 6 / IEC 60617-6
41 Rated power P_{rated} [kW], duty type if ≠ S1
42 Efficiency class marking
43 Rated speed n_{rated} [rpm]
44 Motor designation, active part

Fig. 9-2 Example, rating plate on the motor

Operating instructions

The geared motors are shipped with a set of operating instructions in German/English and a Manual Collection on CD for each delivery batch.

The operating instructions include the following documents:

- Replacement part drawings and lists
- Declaration of incorporation of partly completed machinery according to the EC Machinery Directive 2006/42/EC (gearboxes)
- EC Declaration of Conformity according to Directive 2006/95/EC (motors).

The Manual Collection contains all of the operating instructions in Czech, Dutch, English, French, German, Italian, Russian, Spanish, and Swedish.

Table 9-2 Documentation provided with the product

Documentation provided with the product	Language	Order code
1 set of operating instructions and 1 Manual Collection (CD) for each geared motor	German	**W21**
	English	**W22**

Test certificates

On request, the following documents are available by e-mail:

Table 9-3 Additional documentation (by e-mail)

Additional documentation	The following is checked:	Order code
Declaration of compliance with the order EN 10204-2.1 and factory test report EN 10204-2.2, geared motor	–	**On request**
Factory test report EN 10204-2.2 for material	–	**On request**
Acceptance test certificate EN 10204-3.1 for the motor	• 3 no-load currents of the 3 phases • Power loss for no-load operation • No-load speed	**W10**
Acceptance test certificate EN 10204-3.1 for gearboxes	• Output shaft diameter • Concentricity of the output shaft • Concentricity of the input shaft (for gearboxes with input unit A only) • Input shaft diameter (for gearboxes with input unit A only) • Noise (subjective evaluation)	**W11**
Acceptance test certificate EN 10204-3.1 for paint finish	–	**W12**

Appendix

List of order codes

Order code	Special version Designation	Detailed data Chapter/Page
Brake type		
B00 to B66	Brake types according to size and braking torque	8/19
Brake design		
C01	Enclosed brake	8/26
C02	Manual brake release lever	8/23
C03	Manual brake release lever with locking mechanism	8/25
C04	Microswitch for monitoring brake release	8/25
C06	Wear-resistant friction lining	8/27
C10	Increased corrosion protection for brake	8/26
C11	Enclosed brake with condensation drain hole	8/26
Manual brake release lever position		
C26	1	8/23
C27	2	8/23
C28	3	8/23
C29	4	8/23
Brake supply voltage		
C46 ... C74	Standard voltages, brake	8/20
Function rectifier		
C59	Function rectifier with disconnection on the DC side by sensing the current	8/21
C60	Function rectifier with disconnection on the DC side by sensing the voltage	8/21
Mounting positions		
D01 ... D06	Mounting positions of the geared motors (helical and parallel shaft gearboxes)	7/2, 7/4, 7/6 … 7/16
D11 ... D16 **D21 ... D26**	Mounting position of the geared motors (bevel gearboxes)	7/2, 7/4, 7/19 … 7/27
Output shaft bearings		
G20	Radially reinforced output shaft bearings	7/33
Output sealing		
G23	Seal with longer service life	7/35
G24	Seal for increased environmental stress	7/35
Oil level control		
G34	Oil sight glass	7/38
Gearbox venting		
G47	Oil expansion unit	7/37
Oil drain		
G53	Magnetic oil drain screw	7/38
G54	Oil drain valve, straight	7/38
G55	Oil drain valve, angled	7/38
Hollow shaft cover		
G60	Protection cover	7/32
Flange diameter		
H01 ... H08	Flange diameter	7/29
Water drain holes		
G77	Water drain holes at the output flange	7/30

Order code	Special version Designation	Detailed data Chapter/Page
Degree of protection		
K01	IP55	8/8
K02	IP56	8/8
K03	IP65	8/8
Lubricants		
K06	CLP ISO VG220	7/34
K07	CLP ISO PG VG220	7/34
K08	CLP ISO PG VG460	7/34
K10	CLP ISO E VG220	7/34
K11	CLP ISO H1 VG460	7/34
K12	CLP ISO PAO VG220	7/34
K13	CLP ISO PAO VG68	7/34
Long-term preservation		
K17	Long-term preservation up to 36 months	9/7
Direction of rotation of the output shaft (required with backstop)		
K18	Clockwise	1/22
K19	Counterclockwise	1/22
Rating plate and additional plates		
K41	Second rating plate, supplied loose	9/8
K68	Second rating plate, attached	9/8
Surface treatment		
L00	Unpainted	9/4
L01	Primed according to corrosivity category C2 G	9/4
L02	Surface protection for normal environmental stress C1	9/4
L03	Surface protection for low environmental stress C2	9/4
L04	Surface protection for average environmental stress C3	9/4
L05	Surface protection for very high environmental stress C5	9/4
L09	Primed according to corrosivity category C4 G	9/4
L11	Centering not painted	9/6
L12	Flange completely painted	9/6
L19	Special pretreatment	9/5
L20	Surface protection for high environmental stress C4	9/4
L27	Centerings not painted on both sides	9/6
RAL colors		
L50	RAL 5015 sky blue	9/6
L51	RAL 7011 iron gray	9/6
L53	RAL 7031 blue gray	9/6
L54	RAL 7035 light gray	9/6
L55	RAL 7030 stone gray	9/6
L75	RAL 7016 anthracite gray	9/6
	Other colors on request	9/6

List of order codes

Order code	Special version Designation	Detailed data Chapter/Page
Insulating material class		
M08	Temperature class 180 (H)	8/7
N54	Increased air humidity/temperature with 30 to 60 g water per m^3 of air	8/7
Thermal motor protection		
M10	PTC thermistor for disconnection (PTC)	8/4
M11	PTC thermistor for warning and disconnection (PTC)	8/4
M12	Winding thermostat for disconnection (WT)	8/4
M13	Winding thermostat for warning and disconnection (WT)	8/4
M16	Temperature sensor KTY 84-130	8/5
M19	1x PT100 resistance thermometer	8/5
Fan		
M21	Metal fan	8/9
M22	High inertia fan	8/9
M23	External fan	8/10
Anti-condensation heating		
M40	Supply voltage 115 V	8/6
M41	Supply voltage 230 V	8/6
Terminal box position		
M55 ... M70	Location and position of the terminal box	8/12
Motor plug		
N00	HAN 10E motor plug (2 bracket)	8/16
N01	HAN 10E motor plug (2 bracket) EMC	8/16
N04	HAN 10E motor plug (1 bracket)	8/16
N06	HAN 10E motor plug (1 bracket) EMC	8/16
N08	HAN K4/4 motor plug (1 bracket)	8/17
N09	HAN K4/4 motor plug (1 bracket) EMC	8/17
N10	HAN K4/4 motor plug (2 bracket)	8/17
N11	HAN K4/4 motor plug (2 bracket) EMC	8/17
N18	HAN 10E counterplug	8/16
N19	HAN K4/4 counterplug	8/17
Canopy		
N22	Canopy	8/47
Backstop on motor		
N23	Motor backstop	8/45
Second shaft extension on motor		
N39	Second shaft extension	8/46
Handwheel		
N40	Handwheel	8/46
Geared motors for use worldwide		
N38	Design in accordance with UL-R and CSA	1/18
N65	Design in accordance with NEMA (electrical)	1/18
N67	Design for the Chinese market	1/18
Designs for special environmental conditions		
N41	Internal motor corrosion protection	8/48
N43	Increased protection against humidity and tropical climates	9/2
N44	Increased protection against acids and alkalis	9/2
N46	Condensation drain hole	8/48
External grounding		
N53	External grounding	8/15

Order code	Special version Designation	Detailed data Chapter/Page
Motors prepared for encoder mounting		
N50	Prepared for encoder mounting	8/41
Pole number of the motor		
P00	2-pole	Chapter 6
P01	6-pole	Chapter 6
EnDAT gateways for absolute encoders		
Q02	Gateway EnDAT Profibus DP	8/44
Q03	Gateway EnDAT CANopen	8/44
Q04	Gateway EnDAT DeviceNET	8/44
Incremental encoder IN		
Q44	Rotary pulse encoder 1XP8032-20 (IN 1024 TTL with coupling socket)	8/33
Q45	Rotary pulse encoder 1XP8032-21 (IN 2048 TTL with coupling socket)	8/33
Q46	Rotary pulse encoder 1XP8032-22 (IN 512 TTL with coupling socket)	8/33
Q47	Rotary pulse encoder 1XP8032-10 (IN 1024 HTL with coupling socket)	8/33
Q48	Rotary pulse encoder 1XP8032-11 (IN 2048 HTL with coupling socket)	8/33
Q49	Rotary pulse encoder 1XP8032-12 (IN 512 HTL with coupling socket)	8/33
Q50	Rotary pulse encoder 1XP8012-20 (IN 1024 TTL with flange socket)	8/32
Q51	Rotary pulse encoder 1XP8012-21 (IN 2048 TTL with flange socket)	8/32
Q52	Rotary pulse encoder 1XP8012-22 (IN 512 TTL with flange socket)	8/32
Q53	Rotary pulse encoder 1XP8012-10 (IN 1024 HTL with flange socket)	8/32
Q54	Rotary pulse encoder 1XP8012-11 (IN 2048 HTL with flange socket)	8/32
Q55	Rotary pulse encoder 1XP8012-12 (IN 512 HTL with flange socket)	8/32
Q56	Rotary pulse encoder 1XP8022-20 (IN 1024 TTL with cable box)	8/34
Q57	Rotary pulse encoder 1XP8022-21 (IN 2048 TTL with cable box)	8/34
Q58	Rotary pulse encoder 1XP8022-22 (IN 512 TTL with cable box)	8/34
Q59	Rotary pulse encoder 1XP8022-10 (IN 1024 HTL with cable box)	8/34
Q60	Rotary pulse encoder 1XP8022-11 (IN 2048 HTL with cable box)	8/34
Q61	Rotary pulse encoder 1XP8022-12 (IN 512 HTL with cable box)	8/34
Modular set of cables for encoders 1XP8012, 1XP8032, 1XP8013, 1XP8023, 1XP8014 and 1XP8024		
Q62	Connector	8/41
Q69	Cable with connector and end sleeves, 2 m	8/42
Q70	Cable with connector and end sleeves, 8 m	8/42
Q71	Cable with connector and end sleeves, 15 m	8/42
Q72	Cable with coupling socket, 2 m	8/43
Q73	Cable with coupling socket, 8 m	8/43
Q74	Cable with coupling socket, 15 m	8/43
Modular set of cables for encoder 1XP8022		
Q63	Cable with end sleeves, 2 m	8/42
Q64	Cable with end sleeves, 8 m	8/42
Q65	Cable with end sleeves, 15 m	8/42
Q66	Cable with coupling socket, 2 m	8/43
Q67	Cable with coupling socket, 8 m	8/43
Q68	Cable with coupling socket, 15 m	8/43
Absolute encoder IA		
Q80	Absolute encoder 1XP8014-20 (IA SSI protocol with flange socket)	8/36
Q81	Absolute encoder 1XP8024-20 (IA SSI protocol cable with coupling socket)	8/36
Q82	Absolute encoder 1XP8014-10 (IA EnDAT protocol with flange socket)	8/36
Q83	Absolute encoder 1XP8024-10 (IA EnDAT protocol cable with coupling socket)	8/36

List of order codes

Order code	Special version Designation	Detailed data Chapter/Page
Resolver IR		
Q85	Resolver 1XP8013-10 (IR with flange socket)	8/35
Q86	Resolver 1XP8023-11 (IR cable with coupling socket)	8/35
Q87	Resolver 1XP8013-11 (IR with flange socket)	8/35
Q88	Resolver 1XP8023-10 (IR cable with coupling socket)	8/35
Rugged encoders		
Q92	Rotary pulse encoder LL Leine und Linde	8/37
Q93	Rotary pulse encoder HOG 9	8/38
Q94	Rotary pulse encoder HOG 10	8/39
Mechanical protection		
Q95	Encoder under cover	8/40

List of variables to dimension the drive

Overview of data to dimension drives

Code	Description	Unit
a	Gearbox constant for calculating the radial force	kNmm
α	Force application angle	°
b, d, l, y, z	Gearbox constants	mm
C	Additional factor to calculate the radial force	–
cos φ	Power factor	–
d	Diameter of the input element	mm
d_0	Average diameter of the mounted transmission element	mm
DCF	Cyclic duration factor	%
η	Efficiency	%
f	Rated frequency	Hz
f_B	Service factor	–
f_{B1}	Required service factor	–
f_{Btot}	Service factor of the driven machine	–
f_{br}	Braking torque correction factor	–
f_{limit}	Limit frequency	Hz
F_{ax}	Permissible axial force	N
F_r	Radial force at the output shaft	N
F_{R2}	Permissible radial force at the center of shaft extension (l/2)	N
F_{Ravail}	Available radial force from the mounted transmission element	N
F_x	Permissible radial force from out of center force application point	N
F_{xperm1}	Permissible radial force, limited by the bearing service life, at a distance of x from the shaft shoulder	N
F_{xperm2}	Permissible radial force, limited by the shaft strength, at a distance of x from the shaft shoulder	N
i_{tot}	Transmission ratio	–
I_{St}	Starting current	A
I_{rated}	Rated current	A
J_2	Moment of inertia referred to the output speed of the gearbox	kgm^2
J_B	Moment of inertia of the brake	kgm^2
J_G	Moment of inertia of the gearbox reduced to the input shaft	kgm^2
J_{mot}	Moment of inertia of the motor	kgm^2
J_{Bstp}	Moment of inertia of cage and inner ring	kgm^2
J_x	Moment of inertia of the load referred to the motor shaft	kgm^2
J_z	Additional moment of inertia of a high inertia fan	kgm^2
k	Factor for taking into account operating conditions	–
k_{DC}	Factor for increased power	–
k_{FI}	Factor for taking into account the additional moment of inertia	–
k_{HT}	Factor for abnormal coolant temperature and installation altitude	–
k_M	Factor for taking into account the load torque while accelerating	–
k_P	Factor for taking into account the required power and duty cycle	–

Code	Description	Unit
L_{h10}	Nominal bearing service life	h
L_{na}	Modified bearing service life	h
L_{rated}	Service life of the brake lining until readjustment	h
$L_{ratedmax}$	Service life of the brake lining until replacement	h
L_{pfA}	Measuring surface sound pressure level	dB (A)
L_{WA}	Sound power level	dB (A)
m	Drive weight without any oil	kg
m_{AF}	Mass acceleration factor	–
m_{fan}	Fan weight	kg
m_{mot}	Motor weight (without end shield at DE)	kg
m_{Bstp}	Weight of the backstop	kg
n_1	Input speed of the gearbox	rpm
n_2	Output speed of the gearbox	rpm
n_{dis}	Disengage speed	rpm
n_{br}	Braking speed	rpm
n_{max}	Maximum speed	rpm
n_{rated}	Rated speed	rpm
P_1	Actual steady-state power of the motor	kW
P_{DC}	Power for the new duty cycle	kW
P_{req}	Required input power	kW
P_{rated}	Rated motor power	kW
P_{perm}	Permissible motor power	kW
Q_{perm}	Permissible operating energy	J
r	Radius of the output element	m
R_{ex}	Exact number of teeth ratio	–
s_{br}	Braking distance	m
s_{Gap}	Brake air gap	mm
s_{Gapmax}	Maximum brake air gap	mm
t_1	Application time of the brake	ms
t_2	Disconnection time	ms
t_3	Slipping time	ms
t_{11}	Response time	ms
t_{12}	Rise time	ms
t_s	Cycle duration	ms
t_{br}	Braking time	s
T_2	Geared motor output torque	Nm
T_{2req}	Required input torque of the driven machine	Nm
T_{2N}	Maximum output torque of the gearbox	Nm
T_{St}	Relative starting torque	Nm
T_{br}	Rated braking torque	Nm
T_{DC}	Torque for the new duty cycle	Nm
T_{req}	Required torque	Nm
T_A	Acceleration torque of the motor	Nm
T_{Bk}	Breakdown torque	Nm
T_{rated}	Rated motor torque	Nm
T_{SP}	Rated backstop torque	Nm
T_x	Load torque	Nm

Overview of data to dimension drives (continued)

Code	Description	Unit
U	Rated voltage	V
v	Travel velocity	m/s
W	Friction energy per braking operation	J
W_{tot}	Friction energy until the brake lining is replaced	MJ
W_V	Friction energy until the brake is readjusted	MJ
x	Distance from the shaft shoulder up to the point where force is applied	mm
Z	Switching frequency	1/h
Z_0	No-load switching frequency	1/h
Z_{perm}	Permissible switching frequency	1/h
ϑ_{amb}	Ambient temperature	°C

List of variables to dimension the drive

Important drive technology variables

SI unit Size	Symbol		Unit symbol		Designation or conversion factor*
	SI	Previously	SI	Previously	
Length (distance)	l	L, s	m	m	1 km = 1 000 m
Area	A	F	m^2	m^2	1 m^2 = 100 dm^2
Volume	V	V	m^3	m^3	1 m^3 = 1 000 dm^3 1 dm^3 = 1 l
Plane angle	α, β, γ	α, β, γ	rad	Degrees °	1 rad = 1 m/m 1 L = π/2 rad 1° = π/180 rad
Rotation angle	ϕ	φ		Degrees °	1' = 1°/60; 1'' = 1'/60
Time					1 min = 60 s 1 h = 60 min
Time period/duration	t	t	s	s	1 d = 24 h
Frequency	f	f	Hz	1/s	1 Hz = 1/s
Speed	n	n	rpm	rpm	Rotations per minute
Velocity	v	v	m/s	m/s	1 km/h = $\frac{1}{3.6}$ m/s
Acceleration Acceleration due to gravity	a g	b g	m/s^2	m/s^2	g = 9.81 m/s^2
Angular velocity	ω	Ω	rad/s	1/s	
Angular acceleration	α	ζ	rad/s^2	$1/s^2$	
Mass	m	m	kg	kg	1
Density		d	kg/dm^3	kg/dm^3	10^3
Force Force due to weight	F G	P, K G	N	kp	9.81 1 N = 1 kg · 1 m/s^2
Pressure Mechanical tension	p σ	p σ	Pa N/m^2 N/mm^2	 kp/cm^2 kp/mm^2	1 Pa = 1 N/m^2 9.81 · 10^4 9.81
Work Energy Quantity of heat	W W Q	A E Q	 J	kpm kcal	9.81 4187 1 J = 1 Nm = 1 Ws
Torque of a force Torque Bending torque	 T	M_t M_d M_b	Nm	kpm	9.81 1 Nm = 1 J
Power	P	N	W	PS	735.5 1 W = 1 J/s = 1 Nm/s = $\frac{kgm^2}{s^3}$
Moment of inertia	J	θ	kgm^2	kpm^2	9.81

* The numerical value of a variable in previously used units multiplied by the conversion rate gives the numerical value of the variable in SI units.

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Conversion from kW to hp:

1 kW = 1.34102 hp

1 hp = 0.745700 kW

1 hp = 1.01387 PS

hp = horse power (US)

PS = Pferdestärke (horsepower in German)

Important drive technology variables (continued)

SI unit Size	Symbol		Unit symbol		Designation or conversion factor*
	SI	Previously	SI	Previously	
Dynamic viscosity	η	η	Pa · s	P	10^{-1}
Kinematic viscosity	υ	υ	m^2/s	St	10^{-4}
Electric current	I	I	A	A	1 A = 1 W/V = 1 V/Ω
Electrical voltage	U	U	V	V	1 V = 1 W/A
Electrical resistance	R	R	Ω	Ω	1 Ω = 1 V/A = 1/S
Electrical conductance	G	G	S	S	1 S = 1/Ω
Electrical capacitance	C	C	F	F	1 F = 1 C/V
Electric charge	Q	Q	C	C	1 C = 1 A · s
Inductance	L	L	H	H	1 H = 1 Vs/A
Magnetic flux density Induction	B	B	T	G	10^4 1 T = 1 Wb/m^2
Magnetic field strength	H	H	A/m	A/m	
Magnetic flux	ϕ	ϕ	Wb	M	10^8 1 Wb = 1 V · s
Temperature	T(ϑ)	t	K(°C)	°C	0 K = -273.15 °C

* The numerical value of a variable in previously used units multiplied by the conversion rate gives the numerical value of the variable in SI units.

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Lists

List of abbreviations

Abbreviation	Meaning
AC	Alternating Current, three-phase
CAD	Computer-Aided Design
CCC	China Compulsory Certification
CEL	China Energy Label
CEMEP	Comité Européen de Constructeurs de Machines Électriques et d'Électronique de Puissance (European sector committee of manufacturers of electrical machines)
CONT	Continuous duty
CQC	China Quality Certification Center
CSA	Canadian Standards Association
CT	Coolant temperature
DC	Direct Current
DC	Duty cycle
DE	Drive end
DIN	German Institute for Standardization (DIN)
EBPG	Energy-related products directive
EC	European Community
EFF	Efficiency
EISA	Energy Independence and Security Act
EMC	Electromagnetic compatibility
EN	European standard
EPAct	Energy Policy Act
EU	European Union
EuP	Energy Using Products
FVA	Forschungsvereinigung Antriebstechnik e. V. (Research Association for Drive Technology)
HF	High frequency
HTL	High Transistor Logic
IEC	International Electrotechnical Commission
IP	International Protection
ISO	International Organization for Standardization
MODULOG	Modular logistically optimized design (motor)
NAT	Rated response temperature
NDE	Non-drive end
NEE	NEMA Energy Efficient
NEMA	National Electrical Manufacturers Association
NN	Sea level
NPT	National Pipe Thread
PAO	Polyalphaolefine
PE	Protective Earth, grounding
PG	Polyglycol
PTC	Positive Temperature Coefficient
SA	Site altitude (installation altitude)
SSI	Simple Sensor Interface
SW	Width across flats
TIA	Totally Integrated Automation
TIP	Totally Integrated Power
TTL	Transistor Transistor Logic
UL-R	Underwriters Laboratories Inc. – Recognition Mark
VDE	Association of Electrical Engineering, Electronics and Information Technology (Germany)
VDI	Association of German Engineers
WGK	Class, signifying risk of water pollution

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- 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

Contact

Visit our site on the Internet at:

http://www.siemens.com/sitrain

or let us advise you personally.

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Fax: +49 (911) 895-7576

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.

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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 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" is 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.

IA/DT Training En 10.07.2012

Partners 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.

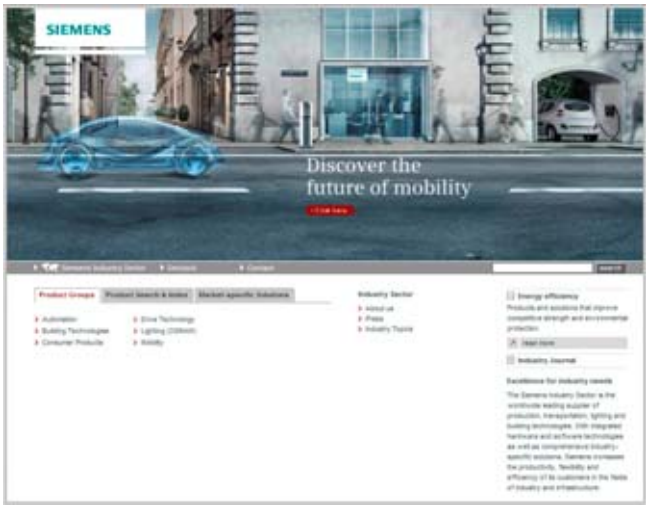
At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry Automation and Drive Technologies range.

Your personal contact can be found in our Contacts Database at: www.siemens.com/automation/partner

You start by selecting a

- Product group,
- Country,
- City,
- Service.

Siemens Industry Automation and Drive Technologies in the WWW



A detailed knowledge of the range of products and services available is essential when planning and configuring automation systems. It goes without saying that this information must always be fully up-to-date.

Siemens Industry Automation and Drive Technologies has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

Under the address

www.siemens.com/industry

you will find everything you need to know about products, systems and services.

Product Selection Using the Interactive Catalog CA 01 of Industry

Detailed information together with convenient interactive functions:
The interactive catalog CA 01 covers more than 80 000 products and thus provides a full summary of the Siemens Industry Automation and Drive Technologies product base.

Here you will find everything that you need to solve tasks in the fields of automation, switchgear, installation and drives.
All information is linked into a user interface which is easy to work with and intuitive.

After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the interactive catalog CA 01 can be found in the Internet under

www.siemens.com/automation/ca01

or on DVD.

Easy Shopping with the Industry Mall

The Industry Mall is the virtual department store of Siemens AG in the Internet. Here you have access to a huge range of products presented in electronic catalogs in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure from selection through ordering to tracking of the order to be carried out online via the Internet.

Numerous functions are available to support you.

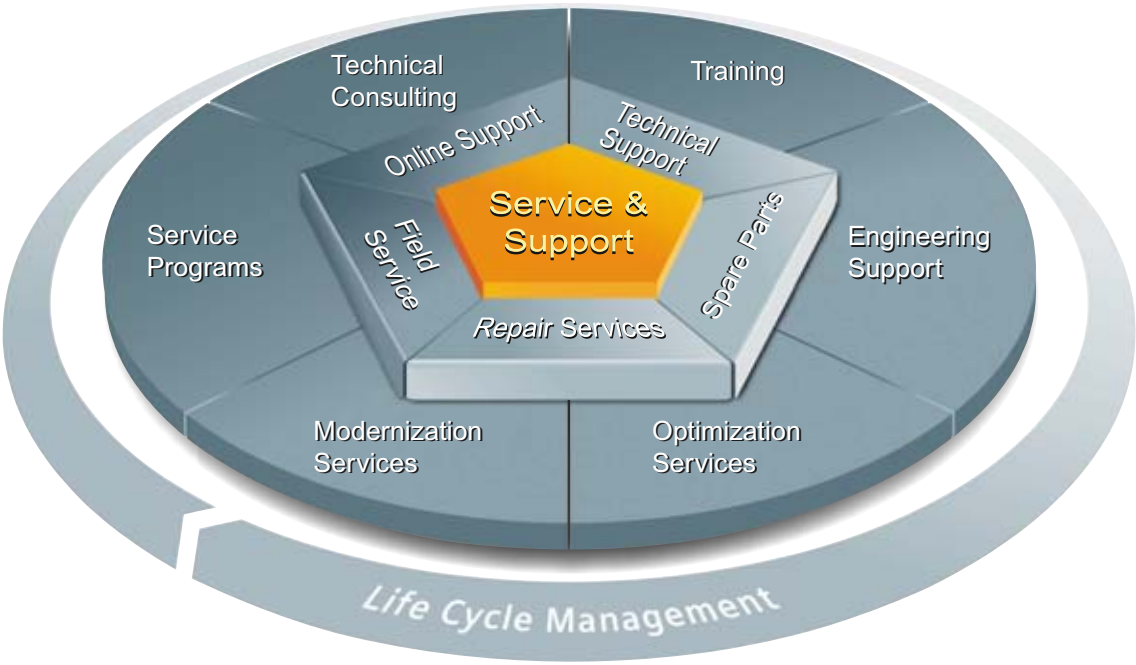
For example, powerful search functions make it easy to find the required products, which can be immediately checked for availability. Customer-specific discounts and preparation of quotes can be carried out online as well as order tracking and tracing.

Please visit the Industry Mall on the Internet under:

www.siemens.com/industrymall

Appendix
Siemens Industry Online Support

Unmatched complete service for the entire life cycle



For machine constructors, solution providers and plant operators: The service offering from Siemens Industry, Automation and Drive Technologies includes comprehensive services for a wide range of different users in all sectors of the manufacturing and process industry

To accompany our products and systems, we offer integrated and structured services that provide valuable support in every phase of the life cycle of your machine or plant – from planning and implementation through commissioning as far as maintenance and modernization.

Our Service & Support accompanies you worldwide in all matters concerning automation and drives from Siemens. We provide direct on-site support in more than 100 countries through all phases of the life cycle of your machines and plants.

You have an experienced team of specialists at your side to provide active support and bundled know-how. Regular training courses and intensive contact among our employees – even across continents – ensure reliable service in the most diverse areas.

Online Support

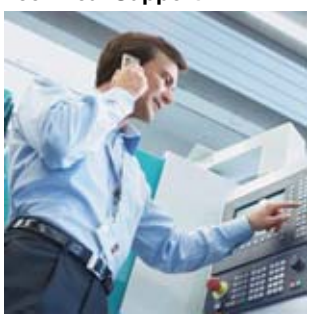
The comprehensive online information platform supports you in all aspects of our Service & Support at any time and from any location in the world.

www.siemens.com/automation/service&support

Technical Consulting

Support in planning and designing your project: From detailed actual-state analysis, definition of the goal and consulting on product and system questions right through to the creation of the automation solution.

Technical Support



Expert advice on technical questions with a wide range of demand-optimized services for all our products and systems.

www.siemens.com/automation/support-request

Training

Extend your competitive edge – through practical know-how directly from the manufacturer.

www.siemens.com/sitrain

Contact information is available in the Internet at:
www.siemens.com/automation/partner

Unmatched complete service for the entire life cycle

Engineering Support

Support during project engineering and development with services fine-tuned to your requirements, from configuration through to implementation of an automation project.

Field Service

Our Field Service offers you services for commissioning and maintenance – to ensure that your machines and plants are always available.

Spare parts

In every sector worldwide, plants and systems are required to operate with constantly increasing reliability. We will provide you with the support you need to prevent a standstill from occurring in the first place: with a worldwide network and optimum logistics chains.

Repairs

Downtimes cause problems in the plant as well as unnecessary costs. We can help you to reduce both to a minimum – with our worldwide repair facilities.

Optimization

During the service life of machines and plants, there is often a great potential for increasing productivity or reducing costs. To help you achieve this potential, we are offering a complete range of optimization services.

Modernization

You can also rely on our support when it comes to modernization – with comprehensive services from the planning phase all the way to commissioning.

Service programs

Our service programs are selected service packages for an automation and drives system or product group. The individual services are coordinated with each over to ensure smooth coverage of the entire life cycle and support optimum use of your products and systems.

The services of a Service Program can be flexibly adapted at any time and used separately.

Examples of service programs:

- Service contracts
- Plant IT Security Services
- Life Cycle Services for Drive Engineering
- SIMATIC PCS 7 Life Cycle Services
- SINUMERIK Manufacturing Excellence
- SIMATIC Remote Support Services

Advantages at a glance:

- Reduced downtimes for increased productivity
- Optimized maintenance costs due to a tailored scope of services
- Costs that can be calculated and therefore planned
- Service reliability due to guaranteed response times and spare part delivery times
- Customer service personnel will be supported and relieved of additional tasks
- Comprehensive service from a single source, fewer interfaces and greater expertise

Contact information is available in the Internet at:
www.siemens.com/automation/partner

Knowledge Base on DVD

For locations without online connections to the Internet there are excerpts of the free part of the information sources available on DVD (Service & Support Knowledge Base). This DVD contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service & Support.

The DVD also includes a full-text search and our Knowledge Manager for targeted searches for solutions. The DVD will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on DVD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base** DVD from your Siemens contact.

Order no. **6ZB5310-0EP30-0BA2**

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Conditions of sale and delivery/Export regulations

1. General Provisions

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note that the scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

1.1 For customers with a seat or registered office in Germany

For customers with a seat or registered office in Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"[1)] and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office in Germany"[1)] and,
- for other supplies and services, the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"[1)].

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For customers with a seat or registered office outside Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"[1)] and,
- 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"[1)] and
- for other supplies and/or services, the "General Conditions for Supplies of Siemens Industry for Customers with a Seat or Registered Office outside of Germany"[1)].

2. Prices

The prices are in € (Euro) ex point of delivery, exclusive of packaging.

The sales tax (value added tax) is not included in the prices. It shall be charged separately at the respective rate according to the applicable statutory legal regulations.

Prices are subject to change without prior notice. We will charget the prices valid at the time of delivery.

To compensate for variations in the price of raw materials (e.g. silver, copper, aluminum, lead, gold, dysprosium and neodym), surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The metal factor of a product indicates the basic official price (for those raw materials concerned) as of which the surcharges on the price of the product are applied, and with what method of calculation.

An exact explanation of the metal factor can be downloaded at:

www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

To calculate the surcharge (except in the cases of dysprosium and neodym), the official price from the day prior to that on which the order was received or the release order was effected is used.

To calculate the surcharge applicable to dysprosium and neodym ("rare earths"), the corresponding three-month basic average price in the quarter prior to that in which the order was received or the release order was effected is used with a one-month buffer (details on the calculation can be found in the explanation of the metal factor).

3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches apply only to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the individual pages of this catalog – especially with regard to data, dimensions and weights given – these are subject to change without prior notice.

4. Export regulations

We shall not be obligated to fulfill any agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes and/or other sanctions.

Export of goods listed in this catalog may be subject to licensing requirements. We will indicate in the delivery details whether licenses are required under German, European and US export lists. Goods labeled with "AL" not equal to "N" are subject to European or German export authorization when being exported out of the EU. Goods labeled with "ECCN" not equal to "N" are subject to US re-export authorization.

The export indications can be viewed in advance in the description of the respective goods on the Industry Mall, our online catalog system. Only the export labels "AL" and "ECCN" indicated on order confirmations, delivery notes and invoices are authoritative.

Even without a label, or with label "AL:N" or "ECCN:N", authorization may be required i .a. due to the final disposition and intended use of goods.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you must comply with all applicable national and international (re-)export control regulations.

If required for the purpose of conducting export control checks, you (upon request by us) shall promptly provide us with all information pertaining to the particular end customer, final disposition and intended use of goods delivered by us respectively works and services provided by us, as well as to any export control restrictions existing in this relation.

The products listed in this catalog may be subject to European/German and/or US export regulations. Any export requiring approval is therefore subject to authorization by the relevant authorities.

Errors excepted and subject to change without prior notice.

[1)] The text of the Terms and Conditions of Siemens AG can be downloaded at www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

Catalogs

Industry Automation, Drive Technologies and Low-Voltage Power 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

	Catalog
for Industry Automation, Drive Technologies and Low Voltage Distribution	**CA 01**

Drive Systems

Variable-Speed Drives	
SINAMICS G130 Drive Converter Chassis Units SINAMICS G150 Drive Converter Cabinet Units	D 11
SINAMICS GM150, SINAMICS SM150 Medium-Voltage Converters	D 12
ROBICON Perfect Harmony Medium-Voltage Air-Cooled Drives Germany Edition	D 15.1
SINAMICS S120 Chassis Format Units and Cabinet Modules SINAMICS S150 Converter Cabinet Units	D 21.3
SINAMICS DCM Converter Units	D 23.1
SINAMICS and Motors for Single-Axis Drives	D 31
Three-phase Induction Motors • H-compact • H-compact PLUS	D 84.1
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
PDF: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units	*DA 22*
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
SINUMERIK, SIMODRIVE and Motors for Machine Tools	NC 60
SINUMERIK, SINAMICS S120 and Motors for Machine Tools	NC 61
Low-Voltage Three-Phase-Motors	
IEC Squirrel-Cage Motors	D 81.1
MOTOX Geared Motors	D 87.1
Mechanical Driving Machines	
FLENDER Standard Couplings	MD 10.1
FLENDER SIG Standard industrial gear unit	MD 30.1

Low-Voltage Power Distribution and Electrical Installation Technology

SENTRON Protection, Switching, Measuring and Monitoring Devices	LV 10.1
SIVACON · ALPHA Switchboards and Distribution Systems	LV 10.2
SIVACON 8PS Busbar Trunking Systems	LV 70
GAMMA Building Control	ET G1
PDF: DELTA Switches and Socket Outlets	*ET D1*

Motion Control

	Catalog
SINAMICS and Motors for Single-Axis Drives	D 31
SINUMERIK & SIMODRIVE Automation Systems for Machine Tools	NC 60
SINUMERIK & SINAMICS Equipment for Machine Tools	NC 61
SINUMERIK 808D, SINAMICS V60 and G120 and SIMOTICS 1FL5 and 1LE1 motors	NC 81.1
SINUMERIK 828D BASIC T/BASIC M, SINAMICS S120 Combi and 1FK7/1PH8 motors	NC 82
SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21
Drive and Control Components for Cranes	CR 1

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
SIREC Recorders and Accessories	MP 20
SIPART, Controllers and Software	MP 31
Products for Weighing Technology	WT 10
PDF: Process Analytical Instruments	*PA 01*
PDF: Process Analytics, Components for the System Integration	*PA 11*

Safety Integrated

Safety Technology for Factory Automation	SI 10

SIMATIC HMI/PC-based Automation

Human Machine Interface Systems/ PC-based Automation	ST 80/ ST PC

SIMATIC Ident

Industrial Identification Systems	ID 10

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
PDF: Migration solutions with the SIMATIC PCS 7 Process Control System	*ST PCS 7.2*

SIMATIC NET

Industrial Communication	IK PI

SINVERT Photovoltaics

Inverters and Components for Photovoltaic Installations	RE 10

SIRIUS Industrial Controls

SIRIUS Industrial Controls	IC 10
SIRIUS Industrial Controls (selected content from catalog IC 10)	IC 90

System Solutions

Applications and Products for Industry are part of the interactive catalog CA 01

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Download-Center

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www.siemens.com/drives/infocenter

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Drive Technologies Division
Mechanical Drives
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