

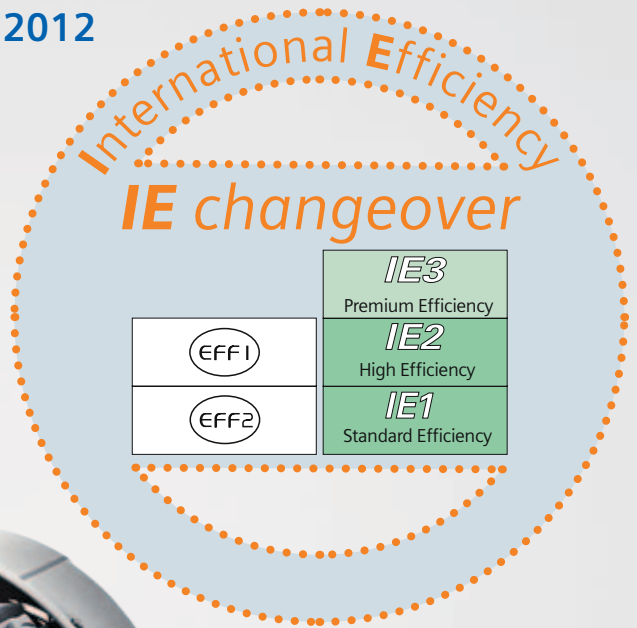
SIMOTICS Low-Voltage Motors

Type series 1LE, 1PC, 1LA, 1LG, 1LL, 1LP, 1MA, 1MJ, 1PP, 1PQ

Frame sizes 63 to 450

Power range 0.09 to 1250 kW

Catalog D 81.1 · January 2012



Motors

Answers for industry.

SIEMENS

Statutory minimum efficiencies in the European economic area

Please note that the minimum efficiency IE2 will be required by law from June 16, 2011 for many low-voltage motors that are sold/installed in the European economic area. In order to avoid additional costs for changing from IE1 to IE2 in 2011, we as a manufacturer recommend using the newly ordered products only for IE2. The statutory EU regulation (EC) No. 640/2009 (of July 22, 2009) governs the minimum efficiencies for electrical drives in the European economic area. It is based on the directive 2005/32/EC of the European Parliament and of the Council of July 6, 2005.

Energy saving/Energy-saving program SinaSave

Further information regarding energy savings and the Energy-saving program SinaSave can be found at the following internet address:

www.siemens.com/energysaving

Selection tool DT Configurator



The DT Configurator covers the product range of low-voltage motors and MICROMASTER 4 / SINAMICS inverters and converters as well as frequency converters for SIMATIC ET 200 distributed I/O. The range of available products is being continuously expanded.

Online access in the Siemens Industry Mall

The DT Configurator is integrated in the Siemens Industry Mall and be used on the Internet without installation.

German: www.siemens.de/dt-konfigurator

English: www.siemens.com/dt-configurator

Offline access in the Interactive Catalog CA 01

The DT Configurator is also integrated on the DVD of the Interactive Catalog CA 01, the offline version of the Siemens Industry Mall. You can order the CA 01 with your respective Siemens sales person or in the Internet:

www.siemens.com/automation/ca01

The following information is provided for the individual products:

- 2D/3D-model generator for motors and converters
- Data sheet generator
- Start-up calculation for motors
- Comprehensive product-specific documentation

Price Groups

Motors	Standard program acc. to catalog with standard delivery time								Accessories/ Spare parts
Type	Preferred and Express Motors		1LE1	1LA7	1LG4	1MA7	1MJ6	1LA8	1XP8 2CW2
	1LA9	1LA7	1PC1	1LA5	1LG6	1MA6	1MJ7	1PQ8	
	1LE1001	1LE1011		1LA9	1LA6			1LL8	
	1LG6	1LE1012		1PP7	1PP4			1LH8	
	1LE1501			1PP5	1PP6				
				1LP7	1LP4				
				1LP5					
Price group	3Z0	3Z0	3Z1	3Z1	3Z1	3Z4	3Z5	6ZZ	3Z6

Surcharges for Freight and Packaging

Additional surcharges for freight and packaging will be calculated in addition to orders.

Order Value in EUR	Quote in %
Up to 500.-	7.5
Up to 2.500.-	5
Above 2.500.-	3

Definition of Delivery Time

The total delivery time (motor + supplements) is determined by the longer delivery time of the associated components.

Delivery times apply to clarified orders from the supplying factory.

Currently in stock and available for delivery:

Standard delivery times:

Express	10 working days	20 working days	On request
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Changes or Cancellation

Costs will be charged according to expenses occurred through changes or cancellation.

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

www.siemens.com/motors/printmaterial

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

CU surcharge

The prices provided in this price list are valid for copper quotations (German electrolytic copper quotations) up to 225.- per 100 kg. The surcharges stated below are added to the respective net price for quotations above 225.-. The copper surcharge is based on the quotation (lower German electrolytic quotation +1 %) of the previous day of the order placed.

The copper surcharges for quotations of EUR 925.- and higher per 100 kg are additionally increased in steps of EUR 50.- by 1 %. For further information about "Metal surcharges", see the Appendix.

Copper quotation	Cu surcharge acc. to metal factor	
	N - W - - - (for motors 1LA, 1LG, 1LE1, 1PC1, 1PP, 1LP, 1MA, 1PQ, 1LL)	N - V - - - (only for motors 1MJ)
EUR per 100 kg	%	%
225.- up to just below 275.-	1.2	1
275.- up to just below 325.-	2.5	1.5
325.- up to just below 375.-	3.5	2
375.- up to just below 425.-	4.5	3
425.- up to just below 475.-	5.5	4
475.- up to just below 525.-	6.5	5
525.- up to just below 575.-	7.5	6
575.- up to just below 625.-	8.5	7
625.- up to just below 675.-	9.5	8
675.- up to just below 725.-	10.5	9
725.- up to just below 775.-	11.5	10
775.- up to just below 825.-	12.5	11
825.- up to just below 875.-	13.5	12
875.- up to just below 925.-	14.5	13

Motors

SIMOTICS Low-Voltage Motors Frame sizes 63 to 450 Power range 0.09 to 1250 kW

Catalog D 81.1 · January 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-000357 QM). The certificate is recognized by all IQNet countries.

Supersedes:

Catalog D 81.1 · 2008 Parts 1 to 11
Catalog News D 81.1 N · October 2009
Supplement to Catalog D 81.1 · 2008
Price List D 81.1 P · October 2010

Refer to the Industry Mall for current updates of this catalog:

www.siemens.com/industrymall

The products contained in this catalog can also be found in the Interactive Catalog CA 01.

Order No.:

E86060-D4001-A510-D1-7600

Please contact your local Siemens branch

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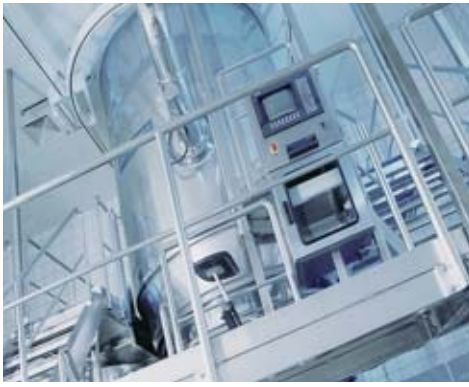
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PEFC/04-31-1267

www.pefc.org

Introduction		0.1	SIMOTICS XP Explosion-Proof Motors	Orientation	4.0	
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SIMOTICS GP/SD Standard Motors	1LE1/1PC1	1.0	2.0		4.2	
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		1.3	2.3		4.5	
		1.4	2.4			
		1.5	2.5			
		1.6	2.6			
		1.7*	2.7			
		1.8	2.8			
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SIMOTICS N-compact Non-Standard Motors	Orientation		3.0	SIMOTICS DP Application-specific Motors	Orientation	5.0
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* Available soon for 1LE1 motors.



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.

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

Introduction



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General technical specifications –

Section is in preparation –

Refer to Part 0, Catalog D 81.1 · 2008 in the meantime

Introduction

General information regarding efficiency in accordance with International Efficiency

0.1

Overview

Efficiency classes and efficiencies according to IEC 60034-30:2008

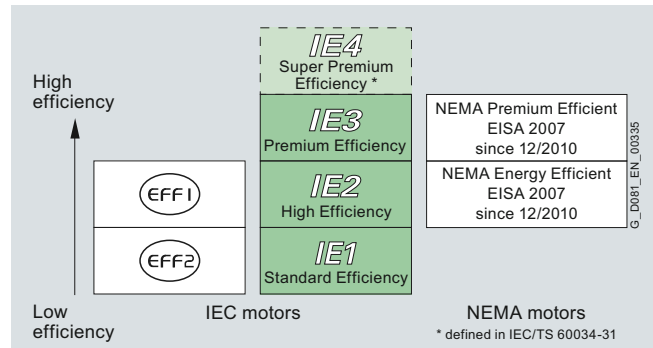
Harmonization of the efficiency classes

Different 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 created. This groups low-voltage asynchronous motors into 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 60034-2-1:1996 since November 2010. The supplementary losses are now measured and no longer added as a percentage.

IE efficiency classes

The efficiency classes are grouped according to the following nomenclature (IE = International Efficiency):

- IE1 (Standard Efficiency)
- IE2 (High Efficiency)
- IE3 (Premium Efficiency)
- IE4 (Super Premium Efficiency)

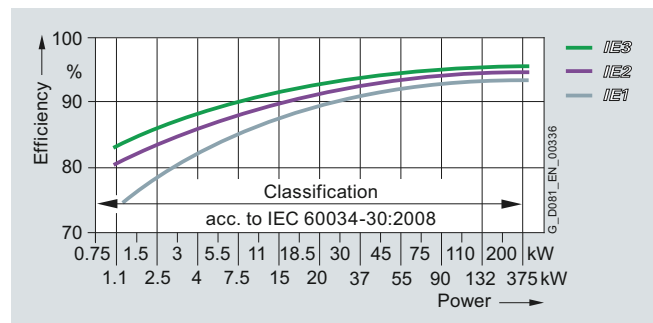


IE efficiency classes in accordance with the output

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, but instead they are determined with measurements (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: $P_{LL} = 0.5 \% \text{ of } P \text{ added}$
 Now: $P_{LL} = \text{Individual measurement}$
 $P_{LL} = \text{Load-dependent supplementary losses}$



IE1 to IE3 efficiencies 4-pole 50 Hz

The following table shows examples of the efficiency values according to the current and previous loss calculating methods.

	EFF measuring method (incl. percentage losses) EN/IEC 60034-2:1996 50 Hz	Losses determined according to IEC 60034-2-1:2007 50 Hz	Losses determined according to IEC 60034-2-1:2007 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 CO₂ 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

General information regarding efficiency in accordance with International Efficiency

0.1

Overview (continued)The most important changes at a glance:

Description	CEMEP voluntary EU agreement	EU Directive No. 640/2009 adopted on July 22, 2009 based on the IEC 60034-30 standard
	Voluntary agreement between the EU commission and the European sector committee of manufacturers of electrical machines (CEMEP)	The EU Directive is in force in every country of the EU. Losses are determined and therefore the efficiency is determined in accordance with IEC 60034-2-1:2007
Number of poles	2, 4	2, 4, 6
Power range	1.1 ... 90 kW	0.75 ... 375 kW
Level	EFF3 – Standard – EFF3 EFF2 – Enhanced efficiency EFF1 – Highly efficient	IE1 – Standard Efficiency IE2 – High Efficiency IE3 – Premium Efficiency
Voltage	400 V, 50 Hz	< 1000 V, 50/60 Hz
Degree of protection	IP5X	All
Motors equipped with a brake	NO	In agreement
Geared motors	NO	YES
Ex motors	NO	EU Directive – NO IEC 60034-30 – YES (but explosion protection always has a higher priority)
Validity	Voluntary agreement; will be replaced on implementation of the national measures	IEC 60034-30 standard, valid since October 2008; the EU Directive will come into force on June 16, 2011. This means that as of this date, manufacturers are no longer permitted to place IE1 motors on the market in the European economic area.

Exceptions to the EU Directive

- Motors that are designed to be operated totally submerged in a liquid;
- Motors fully integrated into a product (e.g. a gear unit, 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 1000 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 converter-fed operation in accordance with IEC 60034-25

The changes will come into effect on the following dates:**June 16, 2011:**

Compliance with the legally required minimum efficiency class IE2 for induction motors in S1 operation in accordance with EU Directive

January 1, 2015:

Compliance with the legally required minimum efficiency class IE3 for outputs from 7.5 to 375 kW or, as an alternative, IE2 motor plus frequency converter

January 1, 2017:

Compliance with the legally required minimum efficiency class IE3 for outputs from 0.75 to 375 kW or, as an alternative, IE2 motor plus frequency converter

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-pole, 4-pole 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-pole, 4-pole, 6-pole 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)

For details, see NEMA MG1, Table 12-11 and Table 12-12.

Abbreviations

NEMA: National Electrical Manufacturers Association
IEC: International Electrotechnical Commission

Introduction

General information regarding efficiency in accordance with International Efficiency

0.1

Overview (continued)

What will change?

The rating plates of the motors will be adapted to the new technical data and their clarity and readability will be enhanced (for examples, see Page 0/5).

For motors up to frame size 315 L, this means:

- The efficiency class "IE1", "IE2" or "IE3" is specified in the top right-hand corner of the rating plate (not defined as standard, but a Siemens IE logo).
- The rated currents have been adapted in accordance with the new efficiencies.
- There is no need for a voltage range to be specified on the new rating plates. The rated voltages only are specified. Unless specified otherwise, a voltage tolerance of up to $\pm 10\%$ acc. to EN 60034-1 Range B applies.

Note:

The transition phase for harmonization of line voltages with increased tolerance within the EU expired on January 1, 2008. Since then the permissible mains tolerances are 230/400 V $\pm 10\%$, 50 Hz and 400/690 V $\pm 10\%$, 50 Hz.

- In general, the country of manufacture only is specified (Made in ...). An exception applies to explosion-proof motors, in which case the address of manufacture must be specified as before.

IE2 motors as Express motors

Many IE2 motors are available as Express motors with short delivery times.

The range of Express motors for IE2 will be expanded with diverse motor types.

Changes to the ordering media and configurators

SIZER for Siemens Drives, SinaSave and the DT Configurator have already been adapted to the new IE nomenclature. The DT Configurator assists with conversion of EFF2/IE1 motors to the legally required motors with minimum efficiency class IE2.

Summary

The standard motor series 1LA, 1LG, 1PP and 1LE1 will be converted to the new efficiency designations "IE1", "IE2" and "IE3" in accordance with IEC 60034-30:2008. The order numbers will remain unchanged.

A detailed presentation of the affected motors, including their frame sizes, can be found in the overview tables in the separate catalog sections under "Orientation" and under "Selection and ordering data". The changed technical data is also listed here.

General information regarding efficiency in accordance with International Efficiency

Overview (continued)

Examples of rating plates

Due to IE changeover, the affected motors have been equipped with new rating plates complete with the new technical data.

The technical data on the rating plate has changed as follows:

- Efficiency
The efficiency is specified as required by the standard.
- Current
Change in rated current data due to the reduced efficiency value.
- Nominal voltage
The voltage range of 380 to 420 V is no longer specified, but instead 400 V.

IE2/NEMA Energy Efficient

Double rating plates including 60 Hz data

SIEMENS 3-Mot. 1LA9166-2KA60		IE2 (H)	
E 0107/471101 01 002 IEC/EN 60034			
102 kg IM B3 160 L IP55 Th.CI.155 (F) Tamb. 40 °C		CE	
50 Hz 400 V Δ	18,5 kW 32,0/18,5 A	60 Hz 460 V Δ	27,7 A
cos φ 0,91 2940/min		18,5 kW 27,7 A	3550 RPM
IE2-90,9%		NEMA NOM.EFF 91,0% 25,0HP	
		DESIGN A CODE J CC 032 A	
		MG 1-12 SF1,15 CONT	

50 Hz data | 60 Hz data

- Country of origin
- Rated voltage at 50 Hz
- Rated current at 50 Hz
- IE efficiency class and nominal efficiency 100 %-load at 50 Hz
- Efficiency class logo
- Rated voltage at 60 Hz
- Rated current at 60 Hz
- Specified according to EISA – not affected by changeover to IE efficiency classes

Example: Rating plate IE2, aluminum motor 1LA9, 18.5 kW

IE3/NEMA Premium Efficient

Double rating plates including 60 Hz data

SIEMENS 3-MOT. 1LG6 318-4MA60-Z		IE3 CE	
Made In Czech Rep. UC 1009/000001201			
1290 kg IMB3 315L IP 55 Th.CI.155(F) AMB 40°C			
50 Hz 400/690 V Δ/Y		60 Hz 460 V Δ	
250 kW 430/250 A		288 kW 425 A	
cos φ 0,87 1488 /min		PF 0,88 1788 RPM	
IE3-96,0%		IE3-96,2%	
		IEC/EN 60034	

Example: Rating plate IE3, cast-iron motor 1LG6 with order code D25, 250 kW

SIEMENS 3-MOT. 1LG6 318-4MA60		IE2 CE	
Made In Czech Rep. UC 1009/000001101			
1290 kg IMB3 315L IP 55 Th.CI.155(F) AMB 40°C			
50 Hz 400/690 V Δ/Y		60 Hz 460 V Δ	
250 kW 435/255 A		288 kW 430 A	
cos φ 0,87 1488 /min		PF 0,88 1788 RPM	
IE2-95,1%		IE2-95,4%	
		IEC/EN 60034	

Example: Rating plate IE2, cast-iron motor 1LG6, 250 kW

SIEMENS 3-MOT. 1LG6 318-4MA60-Z		IE3 CE	
Made In Czech Rep. UC 1009/000001301			
1290 kg IMB3 315L IP 55 Th.CI.155(F) AMB 40°C			
50 Hz 400 V Δ		60 Hz 460 V Δ	
250 kW 430/250 A		224 kW 345 A	
cos φ 0,87 1488 /min		PF 0,85 1792 RPM	
IE3-96,0%		NEMA NOM.EFF.96,2% 300 HP	
		DESIGN A CODE M	
		MG1-12 SF 1.15 CONT	

Example: Rating plate NEMA Premium Efficient with UL and CSA, cast-iron motor 1LG6 with order code D41, 300 hp

SIEMENS 3-MOT. 1LG6 318-4MA60-Z		IE2 CE	
Made In Czech Rep. UC 1009/000001401			
1290 kg IMB3 315L IP 55 Th.CI.155(F) AMB 40°C			
50 Hz 400 V Δ		60 Hz 460 V Δ	
250 kW 435/255 A		224 kW 345 A	
cos φ 0,87 1488 /min		PF 0,85 1792 RPM	
IE2-95,1%		NEMA NOM.EFF.95,4% 300 HP	
		DESIGN A CODE M	
		MG1-12 SF 1.15 CONT	

Example: Rating plate NEMA Energy Efficient with UL and CSA, cast-iron motor 1LG6 with order code D42, 300 hp

Introduction

Guide to selecting and ordering the motors

Catalog orientation and drive selection

0.1

Overview

Steps for drive selection

Step 1		Orientation and general technical information	
Technical requirements for the motor	Rated frequency and rated voltage	3 AC 50/60 Hz, 400, 500 or 690 V	
	Operating mode	Standard duty (continuous duty S1 according to DIN EN 60034-1)	
	Degree of protection or type of explosion protection required	IP..	
	Rated speed (No. of poles)	$n = \dots\dots\dots$ rpm	
	Rated output	$P = \dots\dots\dots$ kW	
	Rated torque	$M = P \cdot 9550/n = \dots\dots\dots$ Nm	
	Type of construction	IM..	
Step 2		Preselection in accordance with the application	
Determination of the installation conditions and definition of the application, if necessary	Ambient temperature	≤ 40 °C	> 40 °C
	Installation altitude	≤ 1000 m	> 1000 m
	Factors for derating	None	Determining the factors for derating (for reduction factor, see "Coolant temperature and installation altitude" in Catalog D 81.1 · 2008, Part 0)
Cross reference to other motors	These can be Loher motors for special requirements in the area of explosion protection and applications or motors to the NEMA standard		
Step 3		Preliminary selection of the motor	
Determination of the range of possible motors	Select the frame size and therefore the possible motors on the basis of the following parameters: cooling method, degree of protection, rated output, rated speed and rated torque range. Note: The standard temperature range of the motors is from -20 to +40 °C.		

Layout of the selection and ordering tables and description of the columns of the table headers

Output, frame size, temperature class		Operating values at rated output														Order No., add. data									
Table header – Meaning																									
$P_{rated, 50 Hz}$	Tem- pera- ture class	$P_{rated, 60 Hz}$	$P_{rated, 60 Hz}$	Frame size	$n_{rated, 50 Hz}$	$M_{rated, 50 Hz}$	IE class	CC No. CC032A	$\eta_{rated, 50 Hz, 4/4}$	$\eta_{rated, 50 Hz, 3/4}$	$\eta_{rated, 50 Hz, 2/4}$	COS- $\varphi_{rated, 50 Hz, 4/4}$	$I_{rated, 50 Hz, 400 V}$	$I_{rated, 50 Hz, 690 V}$	I_{LR}/I_{rated}	I_{FR}/I_{rated}	I_B/I_{rated}	$L_{pFA, 50 Hz}$	$L_{WA, 50 Hz}$	$t_E, 50 Hz, T1/T2$	$t_E, 50 Hz, T3$	Or- der No.	m IM B3	J	Torque class
kW		kW	hp	FS	rpm	Nm			%	%	%		A	A							s	s	kg	kgm ²	CL
Rated output at 50 Hz	Temperature class	Rated output at 60 Hz	Rated output at 60 Hz	Frame size	Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to IEC 60034-30 standard	CC No. CC032A	Efficiency at 50 Hz, 4/4-load	Efficiency at 50 Hz, 3/4-load	Efficiency at 50 Hz, 2/4-load	Power factor at 50 Hz, 4/4-load	Rated current at 400 V, 50 Hz	Rated current at 690 V, 50 Hz	Locked-rotor torque on direct switch on as a multiple of the rated torque	Locked-rotor current on direct switch on as a multiple of the rated current	Breakdown torque on direct switch on as a multiple of the rated torque	Measuring-surface sound pressure level at 50 Hz	Sound power level at 50 Hz	t_E time for temperature class T1/T2, 50 Hz	t_E time for temperature class T3, 50 Hz	Order number	Weight for IMB3 type of construction, approx.	Moment of inertia	Torque class

Legend:

Primary key
Standard values for all motors
Specially for NEMA Energy Efficient MG1 motors, Table 12-11 or NEMA Premium Efficient MG1 motors, Table 12-12
Specially for explosion-proof motors for Zone 1 in type of protection Ex e
Specially for versions for converter-fed operation

Note on pole-changing motors:

The operating values are specified here for the rated output for the two or three different pole numbers.

Step 4		Detailed selection of the motors in the selection and ordering data tables	
Determination of the basic Order No. of the motor	Determine the motor Order No. according to the following parameters: rated output, rated speed, rated torque and rated current from the "Selection and ordering data" for the motors that have already been identified as possibilities.		
Step 5		Selection of the special versions or options	
Completing the motor Order No.	Determine special versions and the associated order codes (e.g. special voltages and types of construction, motor protection and degrees of protection, windings and insulation, colors and paint finish, mountings and mounting technology, etc.).		
Step 6		Additional information for motor selection	
Check the required measurements	The dimensions are specified in each catalog section under the heading of "Dimensions"		
Selection of the frequency converter, if required	Order No. of the converter as well as its selection, see Catalogs D 11, D 11.1 and DA 51.2.		

Overview (continued)*Steps for drive selection in the catalog*

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Introduction

Guide to selecting and ordering the motors

Catalog orientation and drive selection

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Overview (continued)

Aluminum series spectrum – Standard degree of protection IP55; optionally IP56 or IP65

Catalog section	Motor version	Motor type (aluminum)	Motor type – Frame size – Rated output at 50 Hz (values in kW) or 60 Hz (values in hp)									
			63	71	80	90	100	112	132	160	180	200
0.2 Preferred and Express motors ¹⁾												
	IE2 High Efficiency	1LE1001				1LE1001					0.55 ... 18.5 kW	
		1LA9				1LA9		0.75 ... 1.1 kW				
	Standard Efficiency	1LA7	1LA7	0.12 ... 0.55 kW								
		1LE1011					1LE1011		0.5 ... 14 kW			
		1LE1012					1LE1012		0.6 ... 12 kW			
Pole-changing	1LA7				1LA7		0.1 ... 14 kW					
1 SIMOTICS GP 1LE1/1PC1 Standard Motors												
1.1	IE2 High Efficiency	1LE1001				1LE1001					0.55 ... 22 kW	
		1PC1001					1PC1001		0.37 ... 9 kW			
1.3	IE1 Standard Efficiency	1LE1002						1LE1002		0.75 ... 22 kW		
		1PC1002					1PC1002		0.3 ... 7.4 kW			
1.4	NEMA Energy Efficient	1LE1021						1LE1021		1.5 ... 18.5 kW	2 ... 25 hp	
1.5	NEMA Premium Efficient	1LE1023						1LE1023		2.2 ... 18.5 kW	3 ... 25 hp	
								1LE1011		0.55 ... 16 kW		
1.6	Pole-changing	1LE1011						1LE1011		0.55 ... 16 kW		
		1LE1012						1LE1012		0.5 ... 16 kW		
2 SIMOTICS GP 1LA/1LP/1PP Standard Motors												
2.1	IE2 High Efficiency	1LA9	1LA9								0.12 ... 37 kW	
2.3	IE1 Standard Efficiency	1LA7/1LA5	1LA7						0.09 ... 18.5 kW	1LA5	11 ... 45 kW	
		1LA9	1LA9 with increased output								0.21 ... 53 kW	
		1PP7/1PP5	1PP7					0.09 ... 18.5 kW	1PP5	11 ... 37 kW		
2.4	NEMA Energy Efficient	1LA9	1LA9								0.12 ... 37 kW	0.16 ... 50 hp
										1LA5	3 ... 31 kW	
2.6	Pole-changing	1LA7/1LA5	1LA7						0.1 ... 17 kW	1LA5	3 ... 31 kW	
2.7	For converter-fed operation only	1LA7/1LA5					1LA7		1.5 ... 11 kW	1LA5	15 ... 45 kW	
4 SIMOTICS XP 1MA/1LA Explosion-Proof Motors												
4.2	Zone 1 Ex e II	1MA7	1MA7						0.12 ... 16 kW			
4.4	Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7						0.09 ... 18.5 kW	1LA5 ²⁾	11 ... 45 kW	
		1LA9	1LA9 ³⁾								0.12 ... 37 kW	
		1LA9	1LA9 ³⁾								0.12 ... 37 kW	0.16 ... 50 hp
		1LA9	1LA9 ³⁾								0.12 ... 37 kW	0.16 ... 50 hp
5.6 SIMOTICS DP Application-specific Motors – Marine motors												
	IE2 / NEMA Energy Efficient	1LA9	1LA9								0.12 ... 37 kW	0.16 ... 50 hp
		1LA7/1LA5	1LA7					0.09 ... 18.5 kW	1LA5	11 ... 45 kW		
	IE1	1LA9	1LA9 with increased output								0.21 ... 53 kW	
		1PP7/1PP5	1PP7					0.09 ... 18.5 kW	1PP5	11 ... 37 kW		
		1LP7/1LP5	1LP7					0.045 ... 7 kW	1LP5	5.5 ... 16.5 kW		
	Pole-changing	1LA7/1LA5	1LA7						0.1 ... 17 kW	1LA5	3 ... 31 kW	
	For converter-fed operation only	1LA7/1LA5					1LA7		1.5 ... 11 kW	1LA5	15 ... 45 kW	
	Zone 1 Ex e II	1MA7	1MA7						0.12 ... 16 kW			
	Zone 2 Ex nA II, Zone 21/22 Ex tD IE1	1LA7	1LA7						0.09 ... 18.5 kW	1LA5 ²⁾	11 ... 45 kW	
		1LA9	1LA9 ³⁾								0.12 ... 37 kW	0.16 ... 50 hp
	Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 / NEMA Energy Efficient	1LA9	1LA9 ³⁾								0.12 ... 37 kW	0.16 ... 50 hp

¹⁾ The "Preferred motors" and "Express motors" present a defined order number selection available under special terms. The exact assignment of "Preferred" and "Express" on the level of the order numbers can be found in Catalog Section 0.2.

²⁾ Zone 2 Ex nA II is not possible for 1LA5 motors; for Zone 2 Ex nA II, 1LG4 motors are available.

³⁾ Zone 2 Ex nA II is not possible for 1LA9 motors in frame sizes 180 and 200.

Introduction

Guide to selecting and ordering the motors

Catalog orientation and drive selection

0.1

Overview (continued)**Cast-iron series spectrum – Standard degree of protection IP55 (exception: 1LL8 motors with IP23); optionally IP56 or IP65**

Catalog section	Motor version	Motor type (cast-iron)	Motor type – Frame size – Rated output at 50 Hz (values in kW) or 60 Hz (values in hp)																	
			71	80	90	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾	315	355	400	450
0.2 Preferred and Express motors²⁾																				
	IE2 High Efficiency	1LE1501														1LE1501 Basic Line	15 ... 200 kW			
		1LG6														1LG6	15 ... 200 kW			
1 SIMOTICS SD 1LE1 Standard Motors																				
1.1	IE2 High Efficiency	1LE1501														1LE1501 Basic Line	0.75 ... 200 kW			
		1LE1601														1LE1601 Performance Line	0.75 ... 200 kW			
1.2	IE3 Premium Efficiency	1LE1503														1LE1503 Basic Line	15 ... 200 kW			
		1LE1603														1LE1603 Perform. Line	15 ... 200 kW			
1.4	NEMA Energy Efficient	1LE1521														1LE1521 Eagle Line Basic	1.5 ... 200 kW 2 ... 250 hp			
		1LE1621														1LE1621 Eagle Line Performance	1.5 ... 200 kW 2 ... 250 hp			
1.5	NEMA Premium Efficient	1LE1523														1LE1523 Eagle Line Basic	2.2 ... 200 kW 3 ... 250 hp			
		1LE1623														1LE1623 Eagle Line Performance	2.2 ... 200 kW 3 ... 250 hp			
2 SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors																				
2.1	IE2 High Efficiency	1LG6														1LG6 ¹⁾	11 ... 315 kW			
2.2	IE3 Premium Efficiency	1LG6														1LG6 ¹⁾	75 ... 315 kW			
2.3	IE1 Standard Efficiency	1LA6/1LG4														1LA6	0.75 ... 18.5 kW	1LG4	11 ... 200 kW	
		1PP4														1PP4	11 ... 200 kW			
		1LP4														1LP4	3.7 ... 67 kW			
2.4	NEMA Energy Efficient	1LG6														1LG6	15 ... 315 kW 20 ... 400 hp			
2.5	NEMA Premium Efficient	1LG6														1LG6 ¹⁾	200 ... 315 kW 250 ... 400 hp			
2.6	Pole-changing	1LG4														1LG4	4.5 ... 175 kW			
2.7	For converter-fed operation only	1LG6														1LG6	11 ... 200 kW			
3 SIMOTICS N-compact Non-Standard Motors																				
3.1	Mains-fed operation	1LA8															1LA8 160 ... 1000 kW			
		1LL8															1LL8 200 ... 1250 kW			
3.2	Converter-fed operation	1LA8															1LA8 145 ... 1000 kW			
		1LL8															1LL8 180 ... 1250 kW			
		1PQ8															1PQ8 145 ... 1000 kW			
4 SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors																				
4.2	Zone 1 Ex e II	1MA6														1MA6	1.3 ... 165 kW			
4.3	Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6													0.25 ... 15 kW	1MJ7	18.5 ... 132 kW		
4.4	Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4														1LA6 ³⁾	0.75 ... 18.5 kW	1LG4	11 ... 200 kW	
	Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6														1LG6 ¹⁾	11 ... 250 kW			
	Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6														1LG6 ¹⁾	15 ... 250 kW 20 ... 300 hp			
5.6 SIMOTICS DP Application-specific Motors – Marine motors																				
	IE2 / NEMA Energy Efficient	1LG6														1LG6 ¹⁾	11 ... 250 kW 20 ... 300 hp			
	IE3	1LG6														1LG6 ¹⁾	75 ... 200 kW			
	IE1	1LA6/1LG4														1LA6	0.75 ... 18.5 kW	1LG4	11 ... 200 kW	
		1PP4														1PP4	11 ... 200 kW			
		1LP4														1LP4	3.7 ... 67 kW			
	Pole-changing	1LG4														1LG4	4.5 ... 175 kW			
	For converter-fed operation only	1LG6														1LG6	11 ... 200 kW			
	Zone 1 Ex e II	1MA6														1MA6	1.3 ... 165 kW			
	Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6													0.25 ... 15 kW	1MJ7	18.5 ... 132 kW		
	Zone 2 Ex nA II, Zone 21/22 Ex tD IE1	1LA6/1LG4														1LA6 ³⁾	0.75 ... 18.5 kW	1LG4	11 ... 200 kW	
	Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 / NEMA Energy Efficient	1LG6														1LG6 ¹⁾	11 ... 250 kW 20 ... 300 hp			
	Mains-fed operation	1LA8															1LA8 160 ... 1000 kW			
		1LL8															1LL8 200 ... 1250 kW			
	Converter-fed operation	1LA8															1LA8 145 ... 1000 kW			
		1LL8															1LL8 180 ... 1250 kW			
		1PQ8															1PQ8 145 ... 1000 kW			
	Zone 2 Ex nA II, Zone 22 Ex tD	1LA8															1LA8 145 ... 1000 kW			

¹⁾ Order identically priced predecessor type for 1LG6...2AA../ 1LG6...2AB.. 2-pole motors or 1LG6...4AA.. 4-pole motors using the options for country certificates, marine certificates, explosion-proof version and IE3 version. For 1LG6318-M.. and 1LG6312-M.. motors, it is not possible to use the options for country certificates, marine certificates, explosion-proof version, brakes, low-noise version and separately driven fan.

²⁾ The "Preferred motors" and "Express motors" present a defined order number selection available under special terms. The exact assignment of "Preferred" and "Express" on the level of the order numbers can be found in Catalog Section 0.2.

³⁾ Zone 21 Ex tD is not possible for 1LA6 motors.

Introduction

Guide to selecting and ordering the motors

Order number code

0.1

Overview

12-character order numbers for 1LA, 1LG, 1LL, 1LP, 1MA, 1MJ, 1PP and 1PQ motors

The Order No. consists of a combination of digits and letters and is divided into two hyphenated blocks to provide a better overview, e.g.:

1LA9163-4KA19-Z
M1F + A11

The first block (positions 1 to 7) identifies the motor type; further characteristics of the version are encoded in the second (positions 8 to 12).

For deviations in the second block from the catalog codes, either -Z or 9 should be used as appropriate.

Ordering data:

- Complete Order No. and order code(s) or plain text.
- If a quotation has been requested, please specify the quotation number in addition to the Order No.
- When ordering a complete motor as a spare part, please specify the works serial No. for the previously supplied motor as well as the Order No.

Structure of the Order No.:		Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	
SIMOTICS Low-Voltage Motors, surface-cooled																
Positions 1 to 3: Digit, letter, letter	<ul style="list-style-type: none"> • Self-ventilated by fan mounted on and driven by rotor, aluminum or cast-iron housing • Self-ventilated by fan mounted on and driven by rotor, cast-iron housing • Self-ventilated by fan mounted on and driven by rotor, increased safety, type of protection Ex e II • Self-ventilated by fan mounted on and driven by rotor, explosion-proof enclosure, type of protection Ex de IIC • Self-ventilated with through-ventilation, cast-iron housing • Naturally cooled without external fan, aluminum and cast-iron housing • Forced-air cooled by air flow from the fan to be driven, aluminum or cast-iron housing • Forced-air cooled by separately driven fan, cast-iron housing 		1	L	A											
Position 4: Digit	Series 3 Series 4 Series 5 Series 6 Series 7 Series 8 Series 9						3 4 5 6 7 8 9									
Positions 5 to 7: 3 digits	Motor frame size (frame size comprising shaft height and construction length, codes from 050 to 457)							050 ... 457								
Position 8: Digit	Number of poles 0: Pole-changing, with one winding connected in Dahlander circuit 1: Pole-changing, with two windings 2: 2-pole, 4: 4-pole, 6: 6-pole, 8: 8-pole										0 ... 8					
Positions 9 and 10: 2 letters	Version										A	A				
Position 11: Digit	Voltage, circuit and frequency (encoded with 0 ... 9, 9 requires order code L.. (e.g. L1Y))												0 ... 9			
Position 12: Digit	Type of construction (encoded with 0 ... 9, 9 requires order code M.. (e.g. M1F))													0 ... 9		
	Special order versions: encoded – additional order code required not encoded – additional plain text required															- Z

Ordering example

Selection criteria	Requirement	Structure of the Order No.
Motor type 1LA9	Standard motor with High Efficiency IE2, IP55 degree of protection, aluminum housing	1LA9■■■■-■■■■■
Motor frame size/No. of poles/Speed	160 M/4-pole/1500 rpm	1LA9163-4KA■■■
Rated output	11 kW	
Voltage and frequency	230 VΔ/400 VY, 50 Hz	1LA9163-4KA1■
Type of construction	IM V5 with protective cover	1LA9163-4KA19 M1F
Special version: Motor protection	Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping	1LA9163-4KA19-Z M1F+A11

The assignment of the order number supplements and order codes to the order numbers of the individual motor series is shown in the section "Order number supplements and special versions" in Catalog Sections 2 to 5.

Overview (continued)

16-character order numbers for 1LE1 and 1PC1 motors

The Order No. consists of a combination of digits and letters and is divided into three hyphenated blocks to provide a better overview, e.g.:

**1LE1001-1DB22-2CB5-Z
H00**

The first block (positions 1 to 7) identifies the motor type; the second block (positions 8 to 12) defines the motor frame size and length, the number of poles and in some cases the frequency/output; and in the third block (positions 13 to 16), the frequency/output, type of construction and further characteristics of the version are encoded.

For deviations in the second and third block from the catalog codes, either -Z or 9 should be used as appropriate.

Ordering data:

- Complete Order No. and order code(s) or plain text.
- If a quotation has been requested, please specify the quotation number in addition to the Order No.
- When ordering a complete motor as a spare part, please specify the works serial No. for the previously supplied motor as well as the Order No.

Structure of the Order No.:	Position:	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	
SIMOTICS Low-Voltage Motors, surface-cooled																				
Positions 1 to 4: Digit, letter, letter, digit	• Self-ventilated by fan mounted on and driven by rotor • Forced-air cooled by air flow from the fan to be driven with option extension F90 • Naturally cooled without external fan and fan cover	1	L	E	1															
Position 5: Digit	Aluminum housing Cast-iron housing Basic Line Cast-iron housing Performance Line					0 5 6														
Positions 6 to 7: 2 digits	Motors with High Efficiency IE2 Motors with Standard Efficiency IE1 Motors with Premium Efficiency IE3 Pole-changing motors with one winding connected in Dahlander circuit Pole-changing motors with two windings NEMA Energy Efficient MG1 motors, Table 12-11 – Eagle Line NEMA Premium Efficient MG1 motors, Table 12-12 – Eagle Line						0 1 0 2 0 3 1 1 1 2 2 1 2 3													
Positions 8, 9 and 11: Digit, letter, digit	Motor frame size (frame size comprising shaft height and construction length, encoded)									0 A ... E 3				0 ... 6						
Position 10: Letter	Number of poles A: 2-pole, B: 4-pole, C: 6-pole, D: 8-pole, J: 4/2-pole const. load torque, L: 8/4-pole const. load torque, P: 4/2-pole square-law load torque, Q: 6/4-pole square-law load torque, R: 8/4-pole square-law load torque											A ... D								
Positions 12 and 13: 2 digits	Voltage, circuit and frequency (encoded with 2 digits, 9-0 requires order code M.. (e.g. M1Y))													0 ... 9		0 ... 8				
Position 14: Letter	Type of construction (encoded with A ... V)																A ... V			
Position 15: Letter	Motor protection (encoded with A ... Z; Z requires order code Q.. (e.g. Q2A))																	A ... Z		
Position 16: Digit	Connection box position 4: Connection box top, 5: Connection box right, 6: Connection box left, 7: Connection box below																		4 ... 7	
	Special order versions: encoded – additional order code required not encoded – additional plain text required																			- Z

Ordering example

Selection criteria	Requirement	Structure of the Order No.
Motor type 1LE1	Standard motor with High Efficiency IE2, IP55 degree of protection, aluminum housing	1LE1001-■■■■■■-■■■■■
Motor frame size/No. of poles/Speed	160 M/4-pole/1500 rpm	1LE1001-1DB2■-■■■■■
Rated output	11 kW	
Voltage and frequency	230 VΔ/400 VY, 50 Hz	1LE1001-1DB22-2■■■■■
Type of construction with special version	IM V5 with protective cover ¹⁾	1LE1001-1DB22-2C■■■-Z H00
Motor protection	Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ²⁾	1LE1001-1DB22-2CB■-Z H00
Connection box position	Connection box on right (viewed from DE)	1LE1001-1DB22-2CB5-Z H00

The assignment of the order number supplements and order codes to the order numbers of the individual motor series is shown in the section "Order number supplements and special versions" in Catalog Section 1.

¹⁾ Standard without protective cover – the protective cover is defined with Option H00 and must be ordered in addition with this option.

²⁾ No additional option must be specified in the order.

Introduction

Guide to selecting and ordering the motors

Supplements to order numbers and special versions

0.1

Overview

Special versions

The following table contains a listing of all available special versions according to category and availability in the individual catalog sections. The order codes are listed here according to the function.

The technical design of the order codes may be different in detail. An alphanumerical listing of all special versions can be found in the Appendix in the Index of order codes.

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section – Page									
		1.8 Standard		2.8 Standard		3.3 Non-standard	4.5 Ex e			Ex de	Ex n/Ex tD
		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Standardline (for 1LA8 motors only)										3/34	
Standardline version	B20									3/34	
Motor protection				2/87	2/94	3/34	4/76	4/79	4/82	4/86	4/91
Without motor protection	15th position of the Order No. Letter A	1/56	1/57								
With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22	A10									4/86	4/91
Motor protection with PTC thermistors with 1 (for motors 1LE10 FS 80 and 90) or 3 embedded temperature sensors for tripping	15th position of the Order No. Letter B	1/56	1/57								
	A11			2/87	2/94		4/76	4/79	4/82	4/86	4/91
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping	15th position of the Order No. Letter C	1/56	1/57								
	A12			2/87	2/94	3/34	4/76	4/79	4/82	4/86	4/91
Motor protection with PTC thermistors for converter-fed operation with 4 embedded temperature sensors for tripping	A15								4/82		
Motor protection with PTC thermistors for converter-fed operation with 8 embedded temperature sensors for alarm and tripping	A16								4/82		
Motor temperature detection with embedded temperature sensor KTY 84-130	15th position of the Order No. Letter F	1/56	1/57								
	A23			2/87	2/94	3/34				4/86	4/91
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130	15th position of the Order No. Letter G	<i>New!</i> 1/56	1/57								
	A25			2/87	2/94					4/86	4/91
Temperature detectors for tripping	15th position of the Order No. Letter Z	1/56	1/57								
	Q3A										
	A31			2/87	2/94						
Installation of 3 PT100 resistance thermometers	15th position of the Order No. Letter H	<i>New!</i> 1/56	1/57								
	A60			2/87	2/94					4/86	4/91
Installation of 6 PT100 resistance thermometers in stator winding	15th position of the Order No. Letter J	<i>New!</i>	1/57								
	A61			2/94	3/34						4/91
NTC thermistors for tripping	15th position of the Order No. Letter Z	1/56	1/57								
	Q2A										

Introduction

Guide to selecting and ordering the motors

Supplements to order numbers and special versions

0.1

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section – Page									
		1.8 Standard		2.8 Standard		3.3 Non-standard	4.5 Ex e		Ex de	Ex n/Ex tD	
		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Motor protection (continued)				2/87	2/94	3/34	4/76	4/79	4/82	4/86	4/91
Installation of 6 PT100 resistance thermometers in stator winding, 3-wire circuit from auxiliary terminal box (Option M50 or M88)	A64					3/34					
Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings	Q72 <i>New!</i>		1/65								
	A72			2/94	3/34		4/79	4/82			4/92
Installation of 2 PT100 screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings	A78			2/94	3/34		4/79	4/82			4/92
Installation of 2 PT100 double screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings	A80 <i>New!</i>			2/94							4/92
6x PT100 Smart transmitter –40 to +140 °C Rosemount	M62					3/34					
Motor connection and connection box		1/60	1/65	2/87	2/94	3/34	4/76	4/79	4/82	4/87	4/92
ECOFAST motor connector Han-Drive 10e for 230 VΔ/400 VY	G55			2/87							
ECOFAST motor connector EMC Han-Drive 10e for 230 VΔ/400 VY	G56			2/87							
Two-part plate on connection box	K06			2/94	3/34						
Undrilled entry plate	L01			2/94	3/34						
Connection box top		16th position of the Order No. Digit 4	1/58	1/59							
Connection box on RHS		16th position of the Order No. Digit 5	1/58	1/59							
	K09			2/87	2/94	3/34	4/76	4/79	4/82	4/87	4/92
Connection box on LHS		16th position of the Order No. Digit 6	1/58	1/59							
	K10			2/87	2/94	3/34	4/76	4/79	4/82	4/87	4/92
Connection box bottom		16th position of the Order No. Digit 7	1/58	1/59							
Cable entry in direction of NDE with rotation of the terminal box console through 180°	N81 <i>New!</i>					3/34					
Cable entry in direction of DE with rotation of the terminal box console through 180°	N82 <i>New!</i>					3/34					
Cable entry from the top	N83 <i>New!</i>					3/34					
Rotation of the terminal box console through 180°	N84 <i>New!</i>					3/34					
Connection box on NDE	N85 <i>New!</i>					3/34					
Connection box on top, feet screwed on	K11			2/95							4/92
Connection box on top (1XB1634 connection box)	K11					3/34					
DIN 89280 cable gland, maximum configuration	K57					3/34					
Connection box in cast-iron version	K15			2/95			4/79	4/82			4/92
Explosion-proof connection box, Ex d IIC type of protection	K53							4/82			
One metal cable gland	R15	1/60	1/65								
	K54			2/87	2/95					4/87	4/92
One metal cable gland, certified according to ATEX	J04 <i>New!</i>									4/87	4/92
Cable gland, max. configuration	R18 <i>New!</i>		1/65								
	K55			2/87	2/95						
Cable gland, max. configuration, certified according to ATEX	K55									4/87	4/92
Rotation of the connection box through 90°, entry from DE	R10	1/60	1/65								
	K83			2/87	2/95	3/34	4/76	4/79	4/82	4/87	4/92
Rotation of the connection box through 90°, entry from NDE	R11	1/60	1/65								
	K84			2/87	2/95	3/34	4/76	4/79	4/82	4/87	4/92
Rotation of the connection box through 180°	R12	1/60	1/65								
	K85			2/87	2/95	3/34	4/76	4/79	4/82	4/87	4/92
Larger connection box (1XB1621 connection box)	M58					3/34					
PE connection without cable lug	Q00 <i>New!</i>					3/34					
Larger connection box	R50	1/60	1/65								
Next larger connection box	L00			2/87	2/95		4/79		4/87	4/92	
Larger connection box (1XB1631 connection box)	L00					3/34					
Larger connection box (1XB9600 connection box)	M63 <i>New!</i>					3/35					
Subsequently rotatable main connection box	J12 <i>New!</i>					3/35					
Reduction piece for M cable gland in accordance with British Standard, both cable entries mounted	R30	1/60									
External grounding	H04	1/60	1/65								
	L13			2/87	2/95					4/87	4/92

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		1.8 Standard		2.8 Standard		3.3 Non-standard	4.5 Ex e		Ex de	Ex n/Ex tD	
		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Motor connection and connection box (continued)											
3 cables protruding, 0.5 m long	R20	1/60									
	L44			2/87							
3 cables protruding, 1.5 m long	R21	1/60									
	L45			2/87							
6 cables protruding, 0.5 m long	R22	1/60									
	L47			2/87							
6 cables protruding, 1.5 m long	R23	1/60									
	L48			2/87	2/95	3/35					
6 cables protruding, 3 m long	R24	1/60									
	L49			2/87	2/95	3/35					
Auxiliary connection box 1XB9016 (cast-iron)	M50					3/35					
Auxiliary connection box 1XB9015 (stainless steel)	M51					3/35					
Flange version A660 instead of standard version	M61					3/35					
Protruding cable ends – right side	L51				2/95						
Protruding cable ends – left side	L52				2/95						
Auxiliary connection box 1XB3020	L97				2/95	3/35	4/79	4/82		4/92	
Auxiliary connection box 1XB9014 (aluminum)	M88					3/35					
Stud terminal for cable connection, accessories pack	R17	<i>New!</i>	1/65								
	M46				2/95						
Connection box on NDE	H08	1/60									
	M64			2/88		3/35					
Terminal strip for main and auxiliary terminals	M69			2/88							
Saddle terminal for connection without cable lug, accessories pack	M47				2/95			4/82		4/92	
Silicone-free version	R74	<i>New!</i>	1/65								
Windings and insulation											
Temperature class 155 (F), used acc. to 155 (F), with service factor	N01	1/60									
	C11			2/88	2/95	3/35					
Temperature class 155 (F), used acc. to 155 (F), with increased output	N02	1/60									
	C12			2/88	2/95	3/35					
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	N03	1/60	1/65								
	C13			2/88	2/95	3/35					
Temperature class 180 (H), used acc. to 155 (F), with service factor (SF 1.1)	C14					3/35					
Temperature class 180 (H) at rated output and max. CT 60 °C	N11	1/60	1/65								
	C18			2/88	2/96						
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	N20	1/60	1/65								
	C19			2/88	2/96		4/76	4/79	4/82	4/87	4/92
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	N05	1/60									
	C22			2/88	2/96		4/76	4/79	4/82	4/87	4/92
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	N06	1/60	1/65								
	C23			2/88	2/96		4/76	4/79	4/82	4/87	4/92
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	N07	1/60									
	C24			2/88	2/96		4/76	4/79	4/83	4/87	4/92
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	N08	1/60									
	C25			2/88	2/96		4/76	4/79	4/83	4/87	4/92
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	N21	1/60	1/65								
	C26			2/88	2/96		4/76	4/79	4/83	4/87	4/93
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA m above sea level	1/60		2/88	2/96				4/83	4/87	4/93
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT ... °C or SA m above sea level	1/60		2/88	2/96						

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		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Colors and paint finish		1/61	1/65	2/89	2/97	3/35	4/76	4/79	4/83	4/87	4/93
Standard finish in RAL 7030 stone gray	–		1/65		2/97	3/35		4/79	4/83		4/93
Standard finish in other standard RAL colors	Y53 • and standard finish RAL	<i>New!</i>	1/65		2/97			4/79	4/83		4/93
Standard paint finish in other colors	Y53 • and standard finish RAL					3/35					
Special finish in RAL 7030 stone gray	–	1/61		2/89			4/76			4/87	
	S10 <i>New!</i>		1/65								
	K26				2/97	3/35		4/79	4/83		4/93
Special finish in other colors	Y54 • and special finish RAL					3/35					
Special finish in other standard RAL colors	Y54 • and special finish RAL	1/61	1/66	2/89	2/97		4/76	4/79	4/83	4/87	4/93
Special finish in special RAL colors	Y51 • and special finish RAL	1/61	1/66	2/89	2/97		4/76	4/80	4/83	4/87	4/93
Special paint for use offshore	S04 <i>New!</i>	1/61									
	M91				2/97		4/76	4/80	4/83		4/93
Special finish sea air resistant	S03	1/61									
	M94			2/89	2/97			4/80	4/83	4/88	4/93
Unpainted (only cast-iron parts primed)	S00	1/61	1/66								
	K23			2/89	2/97	3/35	4/76	4/80	4/83	4/88	4/93
Unpainted, only primed	S01	1/61	1/66								
	K24			2/89	2/97		4/76	4/80	4/83	4/88	4/93
Modular technology – Basic versions		1/61	1/66	2/89	2/97						
Mounting of separately driven fan	F70	1/61	1/66								
	G17			2/89	2/97						
Mounting of brake	F01	1/61	1/66								
	G26			2/89	2/97						
Mounting of 1XP8012-10 (HTL) rotary pulse encoder	G01	1/61	1/66								
Mounting of 1XP8001-1 (HTL) rotary pulse encoder	H57			2/89	2/97						
Mounting of 1XP8012-20 (TTL) rotary pulse encoder	G02	1/61	1/66								
Mounting of 1XP8001-2 (TTL) rotary pulse encoder	H58			2/89	2/97						
Modular technology – Combinations of basic versions				2/89	2/98						
Mounting of separately driven fan and 1XP8001-1 rotary pulse encoder	H61			2/89	2/98						
Mounting of brake and 1XP8001-1 rotary pulse encoder	H62			2/89	2/98						
Mounting of brake and separately driven fan	H63			2/89	2/98						
Mounting of brake, separately driven fan and 1XP8001-1 rotary pulse encoder	H64			2/89	2/98						
Mounting of separately driven fan and 1XP8001-2 rotary pulse encoder	H97			2/89	2/98						
Mounting of brake and 1XP8001-2 rotary pulse encoder	H98			2/89	2/98						
Mounting of brake, separately driven fan and 1XP8001-2 rotary pulse encoder	H99			2/89	2/98						
Modular technology – Additional versions		1/61	1/66	2/90	2/98						
Brake supply voltage 24 V DC	F10	1/61	1/66								
	C00			2/90	2/98						
Brake supply voltage 230 V AC	F11	1/61	1/66								
Brake supply voltage 400 V AC	F12	1/61	1/66								
	C01			2/90	2/98						
Brake supply voltage 180 V DC, for operation on MICROMASTER 411- ECOFAST	C02			2/90							
Mechanical manual brake release with lever (no locking)	F50	1/61	1/66								
	K82			2/90	2/98						

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		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Special technology		1/61	1/66	2/90	2/98	3/35			4/83	4/88	4/93
Mounting of brake (incl. the brake from Stromag)	H47					3/35					
Mounting of the holding brake SFB 160, 1600 Nm, 230 V, Pintsch-Bubbenzer	J48 <i>New!</i>					3/35					
Mounting of the holding brake SFB 160 SH, 2100 Nm, 230 V, Pintsch-Bubbenzer	J49 <i>New!</i>					3/36					
Mounting of the holding brake SFB 160 H, 2500 Nm, 230 V, Pintsch-Bubbenzer	J56 <i>New!</i>					3/36					
Mounting of the holding brake SFB 250 SH, 3300 Nm, 230 V, Pintsch-Bubbenzer	J57 <i>New!</i>					3/36					
Mounting of the holding brake SFB 250 H, 4000 Nm, 230 V, Pintsch-Bubbenzer	J58 <i>New!</i>					3/36					
Mounting of the holding brake SFB 250 H, 4000 Nm, 400 V, Pintsch-Bubbenzer	J59 <i>New!</i>					3/36					
Mounting of the holding brake SFB 400 SH, 5200 Nm, 400 V, Pintsch-Bubbenzer	J66 <i>New!</i>					3/36					
Mounting of the holding brake SFB 400 H, 6300 Nm, 400 V, Pintsch-Bubbenzer	J67 <i>New!</i>					3/36					
Mounting of the holding brake SFB 630 SH, 8000 Nm, 400 V, Pintsch-Bubbenzer	J68 <i>New!</i>					3/36					
Mounting of the holding brake SFB 630 H, 10000 Nm, 400 V, Pintsch-Bubbenzer	J69 <i>New!</i>					3/36					
Prepared for mounting of the holding brake SFB for shaft height 315	J06 <i>New!</i>					3/36					
Prepared for mounting of the holding brake SFB for shaft height 355	J07 <i>New!</i>					3/36					
Prepared for mounting of the holding brake SFB for shaft height 400	J08 <i>New!</i>					3/37					
Prepared for mounting of the holding brake SFB for shaft height 450	J09 <i>New!</i>					3/37					
Prepared for mounting of MMI	H15			2/90							
Mounting of LL 861 900 220 rotary pulse encoder	G04	1/61	1/66								
	H70			2/90	2/98	3/37					
Mounting of HOG 9 D 1024 I rotary pulse encoder	G05	1/61	1/66								
	H72			2/90	2/98						
Mounting of HOG 10 D 1024 I rotary pulse encoder	G06	1/61	1/66								
	H73			2/90	2/98	3/37					
Prepared for mounting of LL 861 900 220	H78			2/90	2/98	3/37					
Prepared for mounting of HOG 9 D 1024 I	H79			2/90	2/98						
Prepared for mounting of HOG 10 D 1024 I	H80			2/90	2/98	3/37					
Mounting of HOG10 DN 2048 incremental encoder	H83 <i>New!</i>					3/37					
Mounting of HOG11 DN 2048 incremental encoder	H84 <i>New!</i>					3/37					
Mounting of LL861 incremental encoder (2048 pulses)	H85 <i>New!</i>					3/37					
Mounting of LL861900 222 rotary pulse encoder with Advanced Diagnostic System	H16 <i>New!</i>					3/37					
HOG 11 DN 1024 I rotary pulse encoder (16 mm) with special anti-corrosion protection	H88 <i>New!</i>					3/37					
Mounting of HOG 10 DN 1024 I rotary pulse encoder, terminal box protection against humidity	J15				2/98						
Mounting of HOG 10 DN 1024 I rotary pulse encoder, terminal box protection against dust	J16				2/99						
Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against humidity	Y74 • and required speed rpm <i>New!</i>				2/99						
						3/38					
Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against dust	Y76 • and required speed rpm <i>New!</i>				2/99						
						3/38					
Mounting of HOG 10 DN 1024 I rotary pulse encoder + ESL 93, (speed rpm), terminal box protection against dust	Y79 • and required speed rpm				2/99						
Mounting of HOG 10 D 1024 I with terminal box/protection against dust	N05 <i>New!</i>					3/38					
Mounting of HOG 10 DN 1024 I with terminal box/protection against dust (zero signal)	N06 <i>New!</i>					3/38					
Mounting of HOG 10 DN 1024 I with terminal box/protection against humidity (zero signal)	N08 <i>New!</i>					3/38					

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		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Special technology (continued)		1/61	1/66	2/90	2/98	3/35			4/83	4/88	4/93
Mounting a special type of rotary pulse encoder	Y70 • and encoder designation					3/38					
Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22	H86									4/88	4/93
Mounting of explosion-proof rotary pulse encoder for use on motors Ex d/de in Zone 1	H87							4/83			
Mounting of explosion-proof separately driven fan Ex nA for use in Zone 2	M95										4/93
Mounting of explosion-proof separately driven fan II 2D for use in Zone 21	M96										4/93
Mounting of explosion-proof separately driven fan II 3D for use in Zone 22	M97									4/88	4/93
Mounting of explosion-proof separately driven fan Ex de for use in Zone 1	M98								4/83		
Mechanical design and degrees of protection		1/61	1/66	2/90	2/99	3/38	4/76	4/80	4/83	4/88	4/93
Protective cover	H00	1/61	1/66								
Next larger standard flange	P01	1/61	1/66								
Screwed-on (instead of cast) feet	H01	1/61	1/66								
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar	H23	1/61	1/66								
	K17			2/90	2/99		4/76	4/80	4/83	4/88	4/93
With two additional eyebolts for IM V1/IM V3	K32			2/90						4/88	
Low-noise version for 2-pole motors with clockwise direction of rotation	F77	1/61									
	K37			2/90	2/99	3/38	4/76	4/80	4/83	4/88	4/94
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	F78	1/61									
	K38			2/90	2/99	3/38	4/76	4/80	4/84	4/88	4/94
IP65 degree of protection	H20	1/61	1/66								
	K50			2/90	2/99	3/38	4/76	4/80	4/84	4/88	4/94
IP56 degree of protection	H22	1/61	1/66								
	K52			2/90	2/99		4/76	4/80	4/84	4/88	4/94
IP56 degree of protection (non-heavy-sea)	K52					3/38					
Vibration-proof version	H02	1/61									
	L03			2/90	2/99		4/76	4/80	4/84	4/88	4/94
Condensation drainage holes	H03	1/61	1/66								
	L12			2/90	2/99		4/76	4/80		4/88	4/94
Rust-resistant screws (externally)	H07	1/62	1/66								
	M27			2/90	2/99	3/38	4/76	4/80		4/88	4/94
Prepared for mountings, center hole only	G40	1/62									
Prepared for mountings with shaft D12	G41	1/62									
Prepared for mountings with shaft D16	G42	1/62									
Protective cover for encoder (supplied loose – only for mountings with order codes G40, G41 and G42)	G43	1/62									
Grounding brush for converter-fed operation	M44				2/99						
Mechanical protection for encoder	M68			2/90	2/99				4/84	4/88	4/94
Coolant temperature and site altitude		1/62	1/67	2/90	2/100	3/39	4/77	4/80		4/88	4/94
Coolant temperature -50 to +40 °C	D02				2/100						
	<i>New!</i>					3/39					
Coolant temperature -40 to +40 °C	D03	1/62	1/66	2/90	2/100	3/39					
Coolant temperature -30 to +40 °C	D04	1/62		2/90	2/100	3/39					
Coolant temperature 45 °C, derating 4 %	D11					3/39					
Coolant temperature 50 °C, derating 8 %	D12					3/39					
Coolant temperature 55 °C, derating 13 %	D13					3/39					
Coolant temperature 60 °C, derating 18 %	D14					3/39					
Coolant temperature -40 to +40 °C for Ex motor	D19						4/77	4/80		4/88	4/94
Designs in accordance with standards and specifications		1/62	1/67	2/91	2/100	3/39	4/77	4/80	4/84	4/88	4/94
CCC China Compulsory Certification	D01			2/91			4/77		4/84	4/88	
	<i>New!</i>		1/62								
IE1 motor without CE marking for export outside EEA (see EU Directive 640/2009)	D22	<i>New!</i>	1/62		2/91	2/100					
Premium Efficiency IE3	D25					2/100					
Electrical according to NEMA MG1-12	D30	1/62	1/67	2/91	2/100	3/39				4/88	4/94
Design according to UL with "Recognition Mark"	D31	1/62	1/67	2/91	2/100	3/39					
Ex certification for China	D32								4/84	4/88	4/94
Certified for Korea according to KS C4202	D33			2/91	2/100						

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		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Designs in accordance with standards and specifications (continued)											
China Energy Efficiency Label	D34 <i>New!</i>	1/62	1/67	2/91	2/100	3/39	4/77	4/80	4/84	4/88	4/94
Ex certification for Russia	D35 <i>New!</i>	1/62		2/91	2/100	3/39	4/77	4/80	4/84	4/88	4/94
Conformity statement in accordance with 94/9/EC (ATEX) of an independent body for Zone 2 motors (Ex nA)	D36 <i>New!</i>					3/39					
IEC Ex certificate – only in combination with order codes M72 and M73	D37 <i>New!</i>					3/39					
Canadian regulations (CSA)	D40	1/62	1/67	2/91	2/100	3/39					
NEMA Premium Efficient, North America version acc. to NEMA MG1, Table 12-12, incl. UL and CSA	D41 <i>New!</i>				2/100						
NEMA Energy Efficient, North America version acc. to NEMA MG1, Table 12-11, incl. UL and CSA (for Ex motors without UL and CSA)	D42 <i>New!</i>			2/91	2/100					4/88	4/94
PSE mark for Japan	D46			2/91	2/100						
VIK version	K30			2/91	2/100		4/77	4/80	4/84		
Ex nA II on VIK rating plate	C27			2/91	2/100						
Pump drives for sea water desalination plants											
Commissioning of the classification society by Siemens	E88 <i>New!</i>					3/39					
Commissioning of the classification society by third party	E89 <i>New!</i>					3/39					
Pump drive for sea water desalination plants certified according to Lloyd's Register	E90 <i>New!</i>					3/39					
Design for Zones according to ATEX											
Design for Zone 2 for mains-fed operation Ex nA II T3 according to IEC/EN 60079-15	M72					3/40	4/76	4/79	4/82	4/86	4/91
Design for Zone 2 for converter-fed operation, with derating Ex nA II T3 according to IEC/EN 60079-15	M73					3/40				4/86	4/91
Design (IP55) for Zone 2 and 22, for non-conductive dust, for mains-fed operation	M74									4/86	4/91
Design (IP55) for Zone 2 and 22, for non-conductive dust, for converter-fed operation, with derating	M75									4/86	4/91
Design (IP65) for Zone 1 and 21, as well as Zone 22 for conductive dust, for mains-fed operation	M76								4/82		
Design (IP65) for Zone 1 and 21, as well as Zone 22 for conductive dust, for converter-fed operation – with derating	M77								4/82		
Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for mains-fed operation	M34									4/86	4/91
Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for converter-fed operation, with derating	M38									4/86	4/91
Design for Zone 22 for non-conductive dust (IP55) for mains-fed operation	M35					3/40				4/86	4/91
Design for Zone 22 for non-conductive dust (IP55) for converter-fed operation, with derating	M39					3/40				4/86	4/91
VIK version	K30					3/40				4/86	4/91
Ex nA II on VIK rating plate	C27					3/40				4/86	4/91
T1/T2 on rating plate	C30						4/76	4/79			
Alternative converter (SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS G120 (for 1LA motors up to FS 225), SINAMICS S120 or ET 200S FC)	V68 • and converter type									4/86	4/91
Bearings and lubrication											
Measuring nipple for SPM shock pulse measurement for bearing inspection	Q01	1/62	1/67			3/40	4/77	4/80	4/84	4/88	4/94
Shock pulse measurement, fixed sensor and distributor box	G50			2/91	2/101	3/40		4/80	4/84	4/88	4/94
Shock pulse measurement, complete alarm box	H05 <i>New!</i>					3/40					
Shock pulse measurement, complete alarm box	H07 <i>New!</i>					3/40					
Automatic re-lubricating device EasyMatic	N30 <i>New!</i>					3/40					
Automatic re-lubricating device STAR CONTROL TIME M120	N31 <i>New!</i>					3/40					
Automatic re-lubricating device STAR CONTROL IMPULSE L250	N32 <i>New!</i>					3/40					
Bearing design for increased cantilever forces	L22	1/62	1/67								
	K20			2/91	2/101	3/40	4/77	4/80	4/84	4/88	4/94
Special bearing for DE and NDE, bearing size 63	L25	1/62	1/67								
	K36				2/101						4/94
Regreasing device	L23	1/62	1/67								
	K40			2/91	2/101		4/77	4/80	4/84	4/88	4/94
Located bearing DE	L20	1/62	1/67								
	K94			2/91	2/101		4/77	4/80		4/88	4/94
Located bearing NDE	L21	1/62									
	L04			2/91	2/101		4/77	4/80		4/88	4/94
Bearing insulation DE	L50 <i>New!</i>		1/67								
Bearing insulation NDE	L51 <i>New!</i>		1/67								

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Special versions	Additional identification code -Z with order code and plain text if required	Catalog section – Page									
		1.8 Standard		2.8 Standard		3.3 Non-standard	4.5 Ex e		Ex de	Ex n/Ex tD	
		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Bearings and lubrication (continued)		1/62	1/67	2/91	2/101	3/40	4/77	4/80	4/84	4/88	4/94
Insulated bearing cartridge	L27				2/101				4/84		4/94
Balance and vibration quantity		1/62	1/67	2/91	2/101	3/41	4/77	4/80	4/84	4/88	4/94
Vibration quantity level A	–	1/62	1/67	2/91	2/101		4/77	4/80	4/84	4/88	4/94
Vibration quantity level B	L00	1/62	1/67								
	K02			2/91	2/101	3/41	4/77	4/80	4/84	4/88	4/94
Half-key balancing (standard)	–	1/62	1/67								
Full-key balancing	L02	1/62									
	L68			2/91	2/101	3/41	4/77	4/80	4/84	4/88	4/94
Balancing without key	L01	1/62									
	M37			2/91	2/101		4/77	4/80	4/84	4/88	4/94
Shaft and rotor		1/62	1/67	2/91	2/101	3/41	4/77	4/80	4/84	4/89	4/94
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors	L08	1/62	1/67								
	K04			2/91	2/101		4/77	4/80	4/84	4/89	4/94
Second standard shaft extension	L05	1/62	1/67								
	K16			2/91	2/101	3/41	4/77	4/80	4/84	4/89	4/94
Shaft extension with standard dimensions, without feather keyway	L04	1/62									
	K42			2/91	2/101	3/41	4/77	4/80		4/89	4/94
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L07	1/62	1/67								
	L39			2/91	2/101		4/77	4/80	4/84	4/89	4/94
Standard shaft made of stainless steel	L06	1/62	1/67								
	M65			2/92	2/101					4/89	4/95
Non-standard cylindrical shaft extension	Y55 • and identification code	1/62	1/67	2/92	2/101	3/41	4/77	4/80	4/84	4/89	4/95
Non-standard shaft extension, DE	Y58 • <i>New!</i> and identification code	1/63									
Non-standard shaft extension, NDE	Y59 • <i>New!</i> and identification code	1/63									
Heating and ventilation		1/63	1/67	2/92	2/101	3/41	4/77	4/80	4/84	4/89	4/95
Fan cover for textile industry	F75	1/63									
	H17			2/92	2/101					4/89	4/95
Metal external fan	F76	1/63	1/67								
	K35			2/92	2/101	3/41	4/77	4/80	4/84	4/89	4/95
Without external fan and without fan cover	F90	1/63									
Anti-condensation heating for 230 V	Q02	1/63	1/67								
	K45			2/92	2/101	3/41		4/80	4/84		
Anti-condensation heating for 115 V	Q03	1/63	1/67								
	K46			2/92	2/101	3/41		4/80	4/84		
Anti-condensation heating for 400 V	L08	<i>New!</i>				3/41					
Anti-condensation heating for 500 V	L09	<i>New!</i>				3/41					
Sheet metal fan cover	F74	1/63	1/67								
	L36				2/101	3/41					
Anti-condensation heating, Ex. 115 V	M14									4/89	4/95
Anti-condensation heating, Ex. 230 V	M15									4/89	4/95
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code				2/101	3/41			4/84		4/95
Rating plate and extra rating plates		1/63	1/67	2/92	2/102	3/41	4/77	4/80	4/84	4/89	4/95
Second lubrication plate, loose	B06			2/92	2/102		4/77	4/80	4/84	4/89	4/95
Extra rating plate for voltage tolerance	B07	<i>New!</i>	1/67	2/92	2/102						
Second rating plate, loose	M10	1/63	1/67								
	K31			2/92	2/102	3/41	4/77	4/80	4/84	4/89	4/95
Rating plate, stainless steel	M11	1/63	1/67								
	M40	<i>New!</i>		2/92	2/102					4/89	4/95
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	1/63	1/67	2/92	2/102	3/41	4/77	4/81	4/84	4/89	4/95
Extra rating plate with identification codes	Y82 • and identification code	1/63	1/68	2/92	2/102	3/41	4/77	4/81	4/84	4/89	4/95
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	1/63	1/68	2/92	2/102		4/77	4/81	4/84	4/89	4/95

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Special versions	Additional identification code -Z with order code and plain text if required	Catalog section – Page									
		1.8 Standard		2.8 Standard		3.3 Non-standard	4.5 Ex e			Ex de	Ex n/Ex tD
		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Alum. series	Cast-iron series
Rating plate and extra rating plates (continued)		1/63	1/67	2/92	2/102	3/41	4/77	4/80	4/84	4/89	4/95
Adhesive label, supplied loose	Y85 • <i>New!</i> and identification code	1/63									
Extension of liability for defects						3/41					
Extension of liability for defects by 12 to 24 months	Q80 <i>New!</i>					3/41					
Extension of liability for defects by 18 to 30 months	Q81 <i>New!</i>					3/41					
Extension of liability for defects by 24 to 36 months	Q82 <i>New!</i>					3/41					
Extension of liability for defects by 30 to 42 months	Q83 <i>New!</i>					3/41					
Extension of liability for defects by 36 to 48 months	Q84 <i>New!</i>					3/41					
Extension of liability for defects by 48 to 60 months	Q85 <i>New!</i>					3/41					
Packaging, safety notes, documentation and test certificates		1/63	1/68	2/92	2/102	3/42	4/77	4/81	4/85	4/89	4/95
With one safety and start-up guide per box pallet	B01	1/63		2/92	2/102						
Acceptance test certificate 3.1 in accordance with EN 10204	B02	1/63	1/68	2/92	2/102		4/77	4/81	4/85	4/89	4/95
Printed German/English Operating Instructions (Compact) enclosed	–	1/63	1/68	2/92	2/102						
Printed German/English Operating Instructions enclosed	B04	1/63									
	B23			2/92	2/102		4/77	4/81	4/85	4/89	4/95
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in English and German	– <i>New!</i>						4/77	4/81	4/85	4/89	4/95
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in French, Spanish, Italian and Czech	B25 <i>New!</i>						4/77	4/81	4/85	4/89	4/95
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in Swedish, Danish, Dutch and Finnish	B26 <i>New!</i>						4/77	4/81	4/85	4/89	4/95
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in other official EU languages	Y98 • <i>New!</i> and identification code						4/77	4/81	4/85	4/89	4/95
Document – Electrical data sheet	B31					3/42					
Document – Order dimension drawing	B32					3/42					
Document – Standard test schedule	B34 <i>New!</i>					3/42					
Document – Load characteristics	B37					3/42					
Document – Production schedule: Generated once	B43 <i>New!</i>					3/42					
Document – Production schedule: Updated every two weeks	B44 <i>New!</i>					3/42					
Document – Production schedule: Updated monthly	B45 <i>New!</i>					3/42					
Standard test (routine test) with acceptance	F01					3/42					
Visual acceptance and report handover with acceptance	F03					3/42					
Temperature-rise test, without acceptance	F04					3/42					
Temperature-rise test with acceptance	F05					3/42					
Noise measurement in no-load operation, no noise analysis, without acceptance	F28					3/42					
Noise measurement in no-load operation, no noise analysis, with acceptance	F29					3/42					
Noise measurement in no-load operation, with noise analysis, without acceptance	F62					3/42					
Noise measurement in no-load operation, with noise analysis, with acceptance	F63					3/42					
Recording of current and torque curves with torque metering shaft during starting, without acceptance	F34					3/42					
Recording of current and torque curves with torque metering shaft during starting, with acceptance	F35					3/42					
Measurement of locked-rotor torque and current, without acceptance	F52					3/42					
Measurement of locked-rotor torque and current, with acceptance	F53					3/42					
Type test with heat run for horizontal motors, without acceptance	F82					3/42					
Type test with heat run for horizontal motors, with acceptance	B83	1/63									
	F83			2/92	2/102	3/42				4/89	4/95
Type test with heat run for vertical motors, without acceptance	F92					3/42					
Type test with heat run for vertical motors, with acceptance	F93					3/42					
Wire-lattice pallet	B99	1/63									
	L99			2/92	2/102		4/77	4/81	4/85	4/89	4/95
Connected in star for dispatch	M01	1/63									
	M32			2/92	2/102					4/89	4/95
Connected in delta for dispatch	M02	1/63									
	M33			2/92	2/102					4/89	4/95

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Special versions	Additional identification code -Z with order code and plain text if required	Catalog section – Page							
		5.6 – Marine motors							
		Standard		Ex e		Ex de	Ex n/Ex tD		Non-standard
		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Cast-iron series
Marine version – Basic version		5/8	5/9	5/10	5/12	5/12	5/11	5/13	
Without type test certificate according to ABS 50 °C/CCS 45 °C/ RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02)	E00	5/8	5/9	5/10	5/12	5/12	5/11	5/13	
With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E11	5/8	5/9	5/10	5/12	5/12	5/11	5/13	
With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E21	5/8	5/9	5/10	5/12	5/12	5/11	5/13	
With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E31	5/8	5/9	5/10	5/12	5/12	5/11	5/13	
With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E46 <i>New!</i>	5/8	5/9	5/10	5/12	5/12	5/11	5/13	
With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E51	5/8	5/9	5/10	5/12	5/12	5/11	5/13	
Marine version – Acceptance/certification		5/8	5/9	5/10	5/12	5/12	5/11	5/13	
Individual acceptance by marine classification society	E10	5/8	5/9				5/11	5/13	
Individual acceptance by marine classification society	Plain text data		5/9	5/10	5/12	5/12		5/13	
Type test with warm run for horizontal motors, with acceptance	F83	5/8	5/9				5/11	5/13	
Type test with warm run for horizontal motors, with acceptance	Plain text data			5/10	5/12	5/12			
Type test with warm run for vertical motors, with acceptance	Plain text data	5/8	5/9	5/10	5/12	5/12	5/11	5/13	
Marine version – Non-Essential Service									5/14
Technical design									5/14
Designed in accordance with ABS (American Bureau of Shipping), USA, Non-Essential Service	X00 <i>New!</i>								5/14
Designed in accordance with BV (Bureau Veritas), France, Non-Essential Service	X01 <i>New!</i>								5/14
Designed in accordance with CCS (Chinese Classification Society), China, Non-Essential Service Note: Non-Essential Service must be handled by CCS as an Essential Service.	–								5/14
Designed in accordance with DNV (Det Norske Veritas), Norway, Non-Essential Service	X03 <i>New!</i>								5/14
Designed in accordance with GL (Germanischer Lloyd), Germany, Non-Essential Service	X04 <i>New!</i>								5/14
Designed in accordance with KR (Korean Register of Shipping), Korea, Non-Essential Service	X05 <i>New!</i>								5/14
Designed in accordance with LR (Lloyds Register), Great Britain, Non-Essential Service	X06 <i>New!</i>								5/14
Marine version – Essential Service									5/15
Technical design									5/15
Designed in accordance with ABS (American Bureau of Shipping), USA, Essential Service	X10 <i>New!</i>								5/15
Designed in accordance with BV (Bureau Veritas), France, Essential Service	X11 <i>New!</i>								5/15
Designed in accordance with CCS (Chinese Classification Society), China, Essential Service	X12 <i>New!</i>								5/15
Designed in accordance with DNV (Det Norske Veritas), Norway, Essential Service	X13 <i>New!</i>								5/15
Designed in accordance with GL (Germanischer Lloyd), Germany, Essential Service	X14 <i>New!</i>								5/15
Designed in accordance with KR (Korean Register of Shipping), Korea, Essential Service	X15 <i>New!</i>								5/15
Designed in accordance with LR (Lloyds Register), Great Britain, Essential Service	X16 <i>New!</i>								5/15
Certification									5/15
Certification for first motor according to ABS (American Bureau of Shipping), USA, Essential Service	J70 <i>New!</i>								5/15
Certification for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service	J71 <i>New!</i>								5/15
Certification for first motor according to BV (Bureau Veritas), France, Essential Service	J72 <i>New!</i>								5/15
Certification for additional motors according to BV (Bureau Veritas), France, Essential Service	J73 <i>New!</i>								5/15
Certification for first motor according to CCS (Chinese Classification Society), China, Essential Service	J74 <i>New!</i>								5/15
Certification for additional motors according to CCS (Chinese Classification Society), China, Essential Service	J75 <i>New!</i>								5/16
Certification for first motor according to DNV (Det Norske Veritas), Norway, Essential Service	J76 <i>New!</i>								5/16

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Special versions	Additional identification code -Z with order code and plain text if required	Catalog section – Page						
		5.6 – Marine motors						
		Standard		Ex e		Ex de	Ex n/Ex tD	
		Alum. series	Cast-iron series	Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series
Certification (continued)								
Certification for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service	J77	<i>New!</i>						5/15
Certification for first motor according to GL (Germanischer Lloyd), Germany, Essential Service	J78	<i>New!</i>						5/16
Certification for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service	J79	<i>New!</i>						5/16
Certification for first motor according to KR (Korean Register of Shipping), Korea, Essential Service	J80	<i>New!</i>						5/16
Certification for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service	J81	<i>New!</i>						5/16
Certification for first motor according to LR (Lloyds Register), Great Britain, Essential Service	J82	<i>New!</i>						5/16
Certification for additional motors according to LR (Lloyds Register), Great Britain, Essential Service	J83	<i>New!</i>						5/16
Tests								
Tests for first motor according to ABS (American Bureau of Shipping), USA, Essential Service	X30	<i>New!</i>						5/16
Tests for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service	X31	<i>New!</i>						5/16
Tests for first motor according to BV (Bureau Veritas), France, Essential Service	X32	<i>New!</i>						5/16
Tests for additional motors according to BV (Bureau Veritas), France, Essential Service	X33	<i>New!</i>						5/16
Tests for first motor according to CCS (Chinese Classification Society), China, Essential Service	X34	<i>New!</i>						5/16
Tests for additional motors according to CCS (Chinese Classification Society), China, Essential Service	X35	<i>New!</i>						5/16
Tests for first motor according to DNV (Det Norske Veritas), Norway, Essential Service	X36	<i>New!</i>						5/16
Tests for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service	X37	<i>New!</i>						5/16
Tests for first motor according to GL (Germanischer Lloyd), Germany, Essential Service	X38	<i>New!</i>						5/16
Tests for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service	X39	<i>New!</i>						5/16
Tests for first motor according to KR (Korean Register of Shipping), Korea, Essential Service	X40	<i>New!</i>						5/16
Tests for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service	X41	<i>New!</i>						5/16
Tests for first motor according to LR (Lloyds Register), Great Britain, Essential Service	X42	<i>New!</i>						5/16
Tests for additional motors according to LR (Lloyds Register), Great Britain, Essential Service	X43	<i>New!</i>						5/16
Marine version – Essential Service for Propulsion								
Technical design								
Designed in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	X20	<i>New!</i>						5/16
Designed in accordance with BV (Bureau Veritas), France, Essential Service for Propulsion	X21	<i>New!</i>						5/16
Designed in accordance with CCS (Chinese Classification Society), China, Essential Service for Propulsion	X22	<i>New!</i>						5/17
Designed in accordance with DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	X23	<i>New!</i>						5/17
Designed in accordance with GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	X24	<i>New!</i>						5/17
Designed in accordance with KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	X25	<i>New!</i>						5/17
Designed in accordance with LR (Lloyds Register), Great Britain, Essential Service for Propulsion	X26	<i>New!</i>						5/17
Certification								
Certification for first motor according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	N40	<i>New!</i>						5/17
Certification for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	N41	<i>New!</i>						5/17
Certification for first motor according to BV (Bureau Veritas), France, Essential Service for Propulsion	N42	<i>New!</i>						5/17
Certification for additional motors according to BV (Bureau Veritas), France, Essential Service for Propulsion	N43	<i>New!</i>						5/17
Certification for first motor according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	N44	<i>New!</i>						5/18

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Special versions	Additional identification code -Z with order code and plain text if required	Catalog section – Page						
		5.6 – Marine motors						
		Standard		Ex e		Ex de	Ex n/Ex tD	
Alum. series	Cast-iron series	Alum. series	Cast-iron series	Alum. series	Cast-iron series	Cast-iron series	Cast-iron series	
Certification (continued)								
Certification for additional motors according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	N45	<i>New!</i>						5/17
Certification for first motor according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	N46	<i>New!</i>						5/18
Certification for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	N47	<i>New!</i>						5/18
Certification for first motor according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	N48	<i>New!</i>						5/18
Certification for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	N49	<i>New!</i>						5/18
Certification for first motor according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	N50	<i>New!</i>						5/18
Certification for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	N51	<i>New!</i>						5/18
Certification for first motor according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	N52	<i>New!</i>						5/18
Certification for additional motors according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	N53	<i>New!</i>						5/18
Tests								
Tests for first motor according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	X60	<i>New!</i>						5/19
Tests for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	X61	<i>New!</i>						5/19
Tests for first motor according to BV (Bureau Veritas), France, Essential Service for Propulsion	X62	<i>New!</i>						5/19
Tests for additional motors according to BV (Bureau Veritas), France, Essential Service for Propulsion	X63	<i>New!</i>						5/19
Tests for first motor according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	X64	<i>New!</i>						5/19
Tests for additional motors according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	X65	<i>New!</i>						5/19
Tests for first motor according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	X66	<i>New!</i>						5/19
Tests for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	X67	<i>New!</i>						5/19
Tests for first motor according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	X68	<i>New!</i>						5/19
Tests for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	X69	<i>New!</i>						5/19
Tests for first motor according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	X70	<i>New!</i>						5/19
Tests for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	X71	<i>New!</i>						5/19
Tests for first motor according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	X72	<i>New!</i>						5/19
Tests for additional motors according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	X73	<i>New!</i>						5/19
Marine version – Additional options for Essential Service and Essential Service for Propulsion								
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99	<i>New!</i>						5/19
Motor for use in shipping, higher ambient temperature and/or use of temperature class 155 (F) according to 130 (B)	E80 • and identification code							5/19

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Notes

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Preferred and Express motors

0.2



Definition for "Preferred motors"

The most popular basic versions of motor series 1LA7, 1LA9, 1LG6, 1LE1001 and 1LE1501 are available under special terms as so-called "Preferred motors".

- This concerns a defined selection from the complete spectrum of motors
- The delivery times are in accordance with the details in the Catalog
- The motors are in price group 3Z0

Definition for "Express motors"

Most of the Preferred motors are also available with a shorter delivery time as so-called "Express motors".

- This comprises a subset of the Preferred motors and they are ordered using the order code B19
- The standard delivery time for Express motors is 1 to 2 days from the time of clarification of the order at the factory until dispatch from the factory. To determine the time of arrival at the customer site, the appropriate shipping time must be added.
- An express surcharge will be applied for this faster delivery

0/26	Motors with High Efficiency IE2
0/26	SIMOTICS GP – Aluminum series 1LA9 and 1LE1001 SIMOTICS SD – Cast-iron series 1LG6 and 1LE1501
0/32	Motors with Standard Efficiency
0/32	SIMOTICS GP – Aluminum series 1LA7
0/33	SIMOTICS GP – Aluminum series 1LA7 and 1LE1 Pole-changing versions

Preferred and Express motors

Motors with High Efficiency IE2

Standard delivery times:

Express

10
working
days20
working
days

SIMOTICS GP – Aluminum series 1LA9 and 1LE1001
SIMOTICS SD – Cast-iron series 1LG6 and 1LE1501

IE2

Selection and ordering data

0.2

Basic type 1LE1

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

P _{rated} , 50 Hz kW	Frame size FS	Order No.	Voltage →		Type →		Motor protection →		Preferred/Express →	
			50 Hz, 400 VY 60 Hz, 460 VY		Without flange IM B3	With flange IM B5, IM V1 without protective cover, IM V3	Without motor protection	With standard flange IM B14	Preferred	Express
		1LE1001-.....	0-2AA4	0-2AA4-Z B19	0-2FA4	0-2FA4-Z B19	0-2KA4			
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz										
0.75	80 M	1LE1001-0DA2-.....	✓	✓	✓	✓	✓			
1.1	80 M	1LE1001-0DA3-.....	✓	✓	✓	✓	✓			
1.5	90 S	1LE1001-0EA0-.....	✓	✓	✓	✓	✓			
2.2	90 L	1LE1001-0EA4-.....	✓	✓	✓	✓	✓			

Basic types 1LE1, 1LG6

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

P _{rated} , 50 Hz kW	Frame size FS	Order No.	Voltage →		Type →		Motor protection →		Preferred/Express →	
			50 Hz, 230 VΔ/400 VY 60 Hz, 460 VY		Without flange IM B3	With flange IM B5, IM V1 without protective cover, IM V3	Without motor protection	With standard flange IM B14	Preferred	Express
		1LE1001-.....	2-2AA4	2-2AB4	2-2AB4-Z B19	2-2FA4	2-2FB4	2-2FB4-Z B19	2-2KA4	
		1LG6.....	10	10-Z A11	10-Z A11+B19	11	11-Z A11	11-Z A11+B19	12	
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz										
0.75	80 M	1LE1001-0DA2-.....	-	✓	✓	-	✓	✓	-	
1.1	80 M	1LE1001-0DA3-.....	-	✓	✓	-	✓	✓	-	
1.5	90 S	1LE1001-0EA0-.....	-	✓	✓	-	✓	✓	-	
2.2	90 L	1LE1001-0EA4-.....	-	✓	✓	-	✓	✓	-	
3	100 L	1LE1001-1AA4-.....	✓	✓	✓	✓	✓	✓	-	
4	112 M	1LE1001-1BA2-.....	✓	✓	✓	✓	✓	✓	-	
5.5	132 S	1LE1001-1CA0-.....	✓	✓	✓	✓	✓	✓	-	
7.5	132 S	1LE1001-1CA1-.....	✓	✓	✓	✓	✓	✓	-	
11	160 M	1LE1001-1DA2-.....	-	-	-	-	-	-	-	
15	160 M	1LE1001-1DA3-.....	-	-	-	-	-	-	-	
18.5	160 L	1LE1001-1DA4-.....	-	-	-	-	-	-	-	
22	180 M	1LG6183-2MA..	-	-	-	-	-	-	-	
22	180 M	1LE1501-1EA2-.....	-	-	-	-	-	-	-	
30	200 L	1LG6206-2MA..	-	-	-	-	-	-	-	
30	200 L	1LE1501-2AA4-.....	-	-	-	-	-	-	-	
37	200 L	1LG6207-2MA..	-	-	-	-	-	-	-	
37	200 L	1LE1501-2AA5-.....	-	-	-	-	-	-	-	
45	225 M	1LG6223-2MA..	-	-	-	-	-	-	-	
45	225 M	1LE1501-2BA2-.....	-	-	-	-	-	-	-	
55	250 M	1LG6253-2MB..	-	-	-	-	-	-	-	
55	250 M	1LE1501-2CA2-.....	-	-	-	-	-	-	-	
75	280 S	1LG6280-2MB..	-	-	-	-	-	-	-	
75	280 S	1LE1501-2DA0-.....	-	-	-	-	-	-	-	
90	280 M	1LG6283-2MB..	-	-	-	-	-	-	-	
90	280 M	1LE1501-2DA2-.....	-	-	-	-	-	-	-	

Preferred and Express motors

Motors with High Efficiency IE2

Standard delivery times:

Express	10 working days	20 working days
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SIMOTICS GP – Aluminum series 1LA9 and 1LE1001
SIMOTICS SD – Cast-iron series 1LG6 and 1LE1501

0.2

Selection and ordering data (continued)

Basic type 1LE1

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

P _{rated} , 50 Hz kW	Frame size FS	Order No.	Voltage →		Type →		Motor protection →		Preferred/Express →	
			50 Hz, 400 VY	60 Hz, 460 VY	Without flange IM B3	With flange IM B5, IM V1 without protective cover, IM V3	Without motor protection	With standard flange IM B14	Preferred	Express
			0-2AA4	0-2AA4-Z B19	0-2FA4	0-2FA4-Z B19	0-2KA4			
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz										
0.55	80 M	1LE1001-0DB2-..... ¹⁾	✓	✓	✓	✓	✓			
0.75	80 M	1LE1001-0DB3-.....	✓	✓	✓	✓	✓			
1.1	90 S	1LE1001-0EB0-.....	✓	✓	✓	✓	✓			
1.5	90 L	1LE1001-0EB4-.....	✓	✓	✓	✓	✓			

Basic types 1LE1, 1LG6

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

P _{rated} , 50 Hz kW	Frame size FS	Order No.	Voltage →		Type →		Motor protection →		Preferred/Express →	
			50 Hz, 400 VΔ/690 VY	60 Hz, 460 VΔ	Without flange IM B3	With flange IM B5, IM V1 without protective cover, IM V3	Without motor protection	With flange IM B35	Without motor protection	Without motor protection
			3-4AA4	3-4AB4	3-4AB4-Z B19	3-4FA4	3-4FB4	3-4FB4-Z B19	3-4JA4	
			60	60-Z A11	60-Z A11+B19	61	61-Z A11	61-Z A11+B19	66	
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz										
0.75	80 M	1LE1001-0DA2-.....	-	-	-	-	-	-	-	-
1.1	80 M	1LE1001-0DA3-.....	-	-	-	-	-	-	-	-
1.5	90 S	1LE1001-0EA0-.....	-	-	-	-	-	-	-	-
2.2	90 L	1LE1001-0EA4-.....	-	-	-	-	-	-	-	-
3	100 L	1LE1001-1AA4-.....	✓	✓	✓	✓	✓	✓	✓	-
4	112 M	1LE1001-1BA2-.....	✓	✓	✓	✓	✓	✓	✓	-
5.5	132 S	1LE1001-1CA0-.....	✓	✓	✓	✓	✓	✓	✓	-
7.5	132 S	1LE1001-1CA1-.....	✓	✓	✓	✓	✓	✓	✓	-
11	160 M	1LE1001-1DA2-.....	✓	✓	✓	✓	✓	✓	✓	-
15	160 M	1LE1001-1DA3-.....	✓	✓	✓	✓	✓	✓	✓	-
18.5	160 L	1LE1001-1DA4-.....	✓	✓	✓	✓	✓	✓	✓	-
22	180 M	1LG6183-2MA..	✓	✓	-	-	✓	-	-	-
22	180 M	1LE1501-1EA2-.....	✓	✓	✓	-	✓	-	-	-
30	200 L	1LG6206-2MA..	✓	✓	-	-	✓	-	-	-
30	200 L	1LE1501-2AA4-.....	✓	✓	✓	-	✓	-	-	-
37	200 L	1LG6207-2MA..	✓	✓	-	-	✓	-	-	-
37	200 L	1LE1501-2AA5-.....	✓	✓	✓	-	✓	-	-	-
45	225 M	1LG6223-2MA..	✓	✓	-	-	-	-	-	-
45	225 M	1LE1501-2BA2-.....	✓	✓	-	-	-	-	-	-
55	250 M	1LG6253-2MB..	✓	✓	-	-	-	-	-	-
55	250 M	1LE1501-2CA2-.....	✓	✓	-	-	-	-	-	-
75	280 S	1LG6280-2MB..	✓	✓	-	-	-	-	-	-
75	280 S	1LE1501-2DA0-.....	✓	✓	-	-	-	-	-	-
90	280 M	1LG6283-2MB..	✓	✓	-	-	-	-	-	-
90	280 M	1LE1501-2DA2-.....	✓	✓	-	-	-	-	-	-

¹⁾ High Efficiency IE2 is not stamped because the motor is not in the IE2 output range from 0.75 to 375 kW.

Preferred and Express motors

Motors with High Efficiency IE2

SIMOTICS GP – Aluminum series 1LA9 and 1LE1001
SIMOTICS SD – Cast-iron series 1LG6 and 1LE1501



Standard delivery times:

Express	10 working days	20 working days
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Selection and ordering data (continued)

Basic types 1LE1, 1LG6

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

P _{rated} , 50 Hz	Frame size	Order No.	50 Hz, 230 VΔ/400 VY			60 Hz, 460 VY			
			Without flange IM B3	With flange IM B5, IM V1 without protective cover, IM V3	Without motor protection	With standard flange IM B14			
kW	FS	Preferred/Express →	Without motor protection	PTC thermistor with 1 or 3 embedded temperature sensors for tripping	Without motor protection	PTC thermistor with 1 or 3 embedded temperature sensors for tripping	Without motor protection		
			Preferred	Preferred	Express	Preferred	Preferred	Express	Preferred
			2-2AA4	2-2AB4	2-2AB4-Z B19	2-2FA4	2-2FB4	2-2FB4-Z B19	2-2KA4
			10	10-Z A11	10-Z A11+B19	11	11-Z A11	11-Z A11+B19	12
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz									
0.55	80 M	1LE1001-0DB2-..... ¹⁾	-	✓	✓	-	✓	✓	-
0.75	80 M	1LE1001-0DB3-.....	-	✓	✓	-	✓	✓	-
1.1	90 S	1LE1001-0EB0-.....	-	✓	✓	-	✓	✓	-
1.5	90 L	1LE1001-0EB4-.....	-	✓	✓	-	✓	✓	-
2.2	100 L	1LE1001-1AB4-.....	✓	✓	✓	✓	✓	✓	✓
3	100 L	1LE1001-1AB5-.....	✓	✓	✓	✓	✓	✓	✓
4	112 M	1LE1001-1BB2-.....	✓	✓	✓	✓	✓	✓	✓
5.5	132 S	1LE1001-1CB0-.....	✓	✓	✓	✓	✓	✓	-
7.5	132 M	1LE1001-1CB2-.....	✓	✓	✓	✓	✓	✓	-
11	160 M	1LE1001-1DB2-.....	✓	✓	✓	✓	✓	✓	-
15	160 L	1LE1001-1DB4-.....	✓	✓	✓	✓	✓	✓	-
18.5	180 M	1LG6183-4MA..	-	-	-	-	-	-	-
18.5	180 M	1LE1501-1EB2-.....	-	-	-	-	-	-	-
22	180 L	1LG6186-4MA..	-	-	-	-	-	-	-
22	180 L	1LE1501-1EB4-.....	-	-	-	-	-	-	-
30	200 L	1LG6207-4MA..	-	-	-	-	-	-	-
30	200 L	1LE1501-2AB5-.....	-	-	-	-	-	-	-
37	225 S	1LG6220-4MA..	-	-	-	-	-	-	-
37	225 S	1LE1501-2BB0-.....	-	-	-	-	-	-	-
45	225 M	1LG6223-4MA..	-	-	-	-	-	-	-
45	225 M	1LE1501-2BB2-.....	-	-	-	-	-	-	-
55	250 M	1LG6253-4MA..	-	-	-	-	-	-	-
55	250 M	1LE1501-2CB2-.....	-	-	-	-	-	-	-
75	280 S	1LG6280-4MA..	-	-	-	-	-	-	-
75	280 S	1LE1501-2DB0-.....	-	-	-	-	-	-	-
90	280 M	1LG6283-4MA..	-	-	-	-	-	-	-
90	280 M	1LE1501-2DB2-.....	-	-	-	-	-	-	-
110	315 S	1LG6310-4MA..	-	-	-	-	-	-	-
110	315 S	1LE1501-3AB0-.....	-	-	-	-	-	-	-
132	315 M	1LG6313-4MA..	-	-	-	-	-	-	-
132	315 M	1LE1501-3AB2-.....	-	-	-	-	-	-	-
160	315 L	1LG6316-4MA..	-	-	-	-	-	-	-
160	315 L	1LE1501-3AB4-.....	-	-	-	-	-	-	-
200	315 L	1LG6317-4MA..	-	-	-	-	-	-	-
200	315 L	1LE1501-3AB5-.....	-	-	-	-	-	-	-

¹⁾ High Efficiency IE2 is not stamped because the motor is not in the IE2 output range from 0.75 to 375 kW.

Preferred and Express motors Motors with High Efficiency IE2

Standard delivery times:

Express	10 working days	20 working days
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SIMOTICS GP – Aluminum series 1LA9 and 1LE1001
SIMOTICS SD – Cast-iron series 1LG6 and 1LE1501

0.2

Selection and ordering data (continued)

- Basic types 1LE1, 1LG6
- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

P _{rated} , 50 Hz	Frame size	Order No.	Voltage →			Type →			Motor protection →			Preferred/Express →
			50 Hz, 400 VΔ/690 VY	60 Hz, 460 VΔ		Without flange IM B3	With flange IM B5, IM V1 without protective cover, IM V3	Without motor protection	PTC thermistor with 1 or 3 embedded temperature sensors for tripping	Without motor protection	PTC thermistor with 1 or 3 embedded temperature sensors for tripping	
KW	FS		Preferred	Preferred	Express	Preferred	Preferred	Express	Preferred	Preferred	Express	Preferred
		1LE1001-1LE1501-1LG6	3-4AAA4 60	3-4AB4 60-Z A11	3-4AB4-Z B19 60-Z A11+B19	3-4FA4 61	3-4FB4 61-Z A11	3-4FB4-Z B19 61-Z A11+B19	3-4JA4 66			
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz												
0.55	80 M	1LE1001-0DB2-..... ¹⁾	-	-	-	-	-	-	-	-	-	-
0.75	80 M	1LE1001-0DB3-.....	-	-	-	-	-	-	-	-	-	-
1.1	90 S	1LE1001-0EB0-.....	-	-	-	-	-	-	-	-	-	-
1.5	90 L	1LE1001-0EB4-.....	-	-	-	-	-	-	-	-	-	-
2.2	100 L	1LE1001-1AB4-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
3	100 L	1LE1001-1AB5-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
4	112 M	1LE1001-1BB2-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
5.5	132 S	1LE1001-1CB0-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7.5	132 M	1LE1001-1CB2-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	160 M	1LE1001-1DB2-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	160 L	1LE1001-1DB4-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18.5	180 M	1LG6183-4MA..	✓	✓	-	✓	✓	✓	✓	✓	✓	✓
18.5	180 M	1LE1501-1EB2-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
22	180 L	1LG6186-4MA..	✓	✓	-	✓	✓	✓	✓	✓	✓	✓
22	180 L	1LE1501-1EB4-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
30	200 L	1LG6207-4MA..	✓	✓	-	✓	✓	✓	✓	✓	✓	✓
30	200 L	1LE1501-2AB5-.....	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
37	225 S	1LG6220-4MA..	✓	✓	-	-	-	-	-	-	-	-
37	225 S	1LE1501-2BB0-.....	✓	✓	✓	-	-	-	-	-	-	-
45	225 M	1LG6223-4MA..	✓	✓	-	-	-	-	-	-	-	-
45	225 M	1LE1501-2BB2-.....	✓	✓	✓	-	-	-	-	-	-	-
55	250 M	1LG6253-4MA..	✓	✓	-	-	-	-	-	-	-	-
55	250 M	1LE1501-2CB2-.....	✓	✓	✓	-	-	-	-	-	-	-
75	280 S	1LG6280-4MA..	✓	✓	-	-	-	-	-	-	-	-
75	280 S	1LE1501-2DB0-.....	✓	✓	✓	-	-	-	-	-	-	-
90	280 M	1LG6283-4MA..	✓	✓	-	-	-	-	-	-	-	-
90	280 M	1LE1501-2DB2-.....	✓	✓	-	-	-	-	-	-	-	-
110	315 S	1LG6310-4MA..	✓	✓	-	-	-	-	-	-	-	-
110	315 S	1LE1501-3AB0-.....	✓	✓	-	-	-	-	-	-	-	-
132	315 M	1LG6313-4MA..	✓	✓	-	-	-	-	-	-	-	-
132	315 M	1LE1501-3AB2-.....	✓	✓	-	-	-	-	-	-	-	-
160	315 L	1LG6316-4MA..	✓	✓	-	-	-	-	-	-	-	-
160	315 L	1LE1501-3AB4-.....	✓	✓	-	-	-	-	-	-	-	-
200	315 L	1LG6317-4MA..	✓	✓	-	-	-	-	-	-	-	-
200	315 L	1LE1501-3AB5-.....	✓	✓	-	-	-	-	-	-	-	-

¹⁾ High Efficiency IE2 is not stamped because the motor is not in the IE2 output range from 0.75 to 375 kW.

Preferred and Express motors

Motors with High Efficiency IE2

SIMOTICS GP – Aluminum series 1LA9 and 1LE1001
SIMOTICS SD – Cast-iron series 1LG6 and 1LE1501

IE2

Standard delivery times:

Express

10
working
days

20
working
days

Selection and ordering data (continued)

Basic types 1LA9, 1LE1, 1LG6

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

P _{rated} , 50 Hz	Frame size	Order No.	Voltage →			Type →			Motor protection →			Preferred/Express →					
			50 Hz, 230 VΔ/400 VY	60 Hz, 460 VY		Without flange IM B3	With flange IM B5, IM V1 without protective cover, IM V3	With standard flange IM B14	Without motor protection	PTC thermistor with 3 embedded temperature sensors for tripping	Without motor protection	PTC thermistor with 3 embedded temperature sensors for tripping	Without motor protection	Preferred	Preferred	Express	Preferred
			2-2AA4	2-2AB4	2-2AB4-Z B19	2-2FA4	2-2FB4	2-2FB4-Z B19	2-2KA4								
			10	10-Z A11	10-Z A11+B19	11	11-Z A11	11-Z A11+B19	12								
kW	FS	1LA9	10	10-Z A11	10-Z A11+B19	11	11-Z A11	11-Z A11+B19	12								

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz

0.75	90 S	1LA9090-6KA..	✓	-	-	✓	✓	-	-
1.1	90 L	1LA9096-6KA..	✓	-	-	✓	✓	-	-
1.5	100 L	1LE1001-1AC4-.....	✓	-	-	✓	✓	-	✓
2.2	112 M	1LE1001-1BC2-.....	✓	-	-	✓	✓	-	✓
3	132 S	1LE1001-1CC0-.....	✓	-	-	✓	✓	-	-
4	132 M	1LE1001-1CC2-.....	✓	-	-	✓	-	-	-
5.5	132 M	1LE1001-1CC3-.....	✓	-	-	-	-	-	-
7.5	160 M	1LE1001-1DC2-.....	-	-	-	-	-	-	-
11	160 L	1LE1001-1DC4-.....	-	-	-	-	-	-	-
15	180 L	1LG6186-6AA..	-	-	-	-	-	-	-
15	180 L	1LE1501-1EC4-.....	-	-	-	-	-	-	-
18.5	200 L	1LG6206-6AA..	-	-	-	-	-	-	-
18.5	200 L	1LE1501-2AC4-.....	-	-	-	-	-	-	-
22	200 L	1LG6207-6AA..	-	-	-	-	-	-	-
22	200 L	1LE1501-2AC5-.....	-	-	-	-	-	-	-

Preferred and Express motors

Motors with High Efficiency IE2

Standard delivery times:		
Express	10 working days	20 working days

IE2

SIMOTICS GP – Aluminum series 1LA9 and 1LE1001
SIMOTICS SD – Cast-iron series 1LG6 and 1LE1501

Selection and ordering data (continued)

- Basic types 1LA9, 1LE1, 1LG6
- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

0.2

P_{rated} , 50 Hz	Frame size	Order No.	50 Hz, 400 V Δ /690 VY			60 Hz, 460 V Δ			
			Without flange IM B3	Without motor protection	PTC thermistor with 3 embedded temperature sensors for tripping	Without flange IM B5, IM V1 without protective cover, IM V3	Without motor protection	PTC thermistor with 3 embedded temperature sensors for tripping	Without motor protection
Voltage →		Preferred		Express	Preferred		Express	Preferred	
kW	FS	1LA9090-6KA..	3-4AAA4	3-4AB4	3-4AB4-Z B19	3-4FA4	3-4FB4	3-4FB4-Z B19	3-4JA4
		1LA9096-6KA..	60	60-Z A11	60-Z A11+B19	61	61-Z A11	61-Z A11+B19	66
		1LA9100-1AC4-.....	60	60-Z A11	60-Z A11+B19	61	61-Z A11	61-Z A11+B19	66
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz									
0.75	90 S	1LA9090-6KA..	-	-	-	-	-	-	-
1.1	90 L	1LA9096-6KA..	-	-	-	-	-	-	-
1.5	100 L	1LE1001-1AC4-.....	-	-	-	-	-	-	-
2.2	112 M	1LE1001-1BC2-.....	-	-	-	-	-	-	-
3	132 S	1LE1001-1CC0-.....	✓	✓	-	✓	-	-	-
4	132 M	1LE1001-1CC2-.....	✓	✓	-	✓	✓	-	-
5.5	132 M	1LE1001-1CC3-.....	✓	✓	-	✓	✓	-	-
7.5	160 M	1LE1001-1DC2-.....	✓	✓	-	✓	✓	-	-
11	160 L	1LE1001-1DC4-.....	✓	✓	-	✓	✓	-	-
15	180 L	1LG6186-6AA..	✓	✓	-	-	-	-	-
15	180 L	1LE1501-1EC4-.....	✓	✓	-	-	-	-	-
18.5	200 L	1LG6206-6AA..	✓	✓	-	-	-	-	-
18.5	200 L	1LE1501-2AC4-.....	✓	✓	-	-	-	-	-
22	200 L	1LG6207-6AA..	✓	✓	-	-	-	-	-
22	200 L	1LE1501-2AC5-.....	✓	✓	-	-	-	-	-

Preferred and Express motors

Motors with Standard Efficiency

Standard delivery times:

Express

10
working
days20
working
days

SIMOTICS GP – Aluminum series 1LA7

Selection and ordering data

Basic type 1LA7

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

Voltage →		50 Hz, 230 VΔ/400 VY 60 Hz, 460 VY					
Type →		Without flange IM B3			With flange IM B5, IM V1 without protective cover, IM V3		With standard flange IM B14
Motor protection →		Without motor protection	PTC thermistor with 3 embed- ded temperature sensors for tripping	Without motor protection	PTC thermistor with 3 embed- ded temperature sensors for tripping	Pump version	Without motor protection
Preferred/Express →		Preferred	Preferred	Preferred	Preferred	Preferred	Preferred
P_{rated} , 50 Hz kW	Frame size FS	CCC	Order No.	10	11	12	13
			1LA7■■■■-■■■■..	10-Z A11	11-Z A11	11-Z X66	12
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz							
0.18	63 M	■	1LA7060-2AA..	✓	-	✓	✓
0.25	63 M	■	1LA7063-2AA..	✓	-	✓	✓
0.37	71 M	■	1LA7070-2AA..	✓	-	✓	✓
0.55	71 M	■	1LA7073-2AA..	✓	✓	✓	✓
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz							
0.12	63 M	■	1LA7060-4AB..	✓	-	✓	✓
0.18	63 M	■	1LA7063-4AB..	✓	-	✓	✓
0.25	71 M	■	1LA7070-4AB..	✓	✓	✓	✓
0.37	71 M	■	1LA7073-4AB..	✓	✓	✓	✓
0.55	80 M	■	1LA7080-4AA..	✓	✓	✓	✓
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz							
0.18	71 M	■	1LA7070-6AA..	✓	-	✓	✓
0.25	71 M	■	1LA7073-6AA..	✓	-	✓	✓
0.37	80 M	■	1LA7080-6AA..	✓	-	✓	✓
0.55	80 M	■	1LA7083-6AA..	✓	-	✓	✓

■ With "CCC" (China Compulsory Certification) for export to China.

Preferred and Express motors

Motors with Standard Efficiency

SIMOTICS GP – Aluminum series 1LA7 and 1LE1
Pole-changing versions

Standard delivery times:

Express

10
working
days

20
working
days

Selection and ordering data

Basic types 1LA7 and 1LE1

- Cooling: Self-ventilated (IC 411)
- Pole-changing version: double pole-changing for square-law load torque, e.g. for driving fans
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- Metal factor for metal surcharges (MS): N - W - - -
- Price group: 3Z0

				Voltage →	50 Hz, 400 V
				Type →	Without flange IM B3
				Motor protection →	PTC thermistor with 3 or 6 embedded temperature sensors for tripping
				Preferred/Express →	Preferred
P_{rated1} , 50 Hz	P_{rated2} , 50 Hz	Frame size	CCC	Order No.	
kW	kW	FS	1LA7	1LE1	3-4AB4 60-Z A11

4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit

1500 rpm	3000 rpm				
0.25	0.95	80 M	■	1LA7083-0BA..	✓
0.33	1.4	90 S	■	1LA7090-0BA..	✓
0.5	2	90 L	■	1LA7096-0BA..	✓
0.65	2.5	100 L	■	1LA7106-0BA..	✓
0.8	3.1	100 L	■	1LE1011-1AP5-.....	✓
1.1	4.4	112 M	■	1LE1011-1BP2-.....	✓

6/4-pole: 1000/1500 rpm at 50 Hz with two windings

1000 rpm	1500 rpm				
0.12	0.4	80 M	■	1LA7080-1BD..	✓
0.18	0.55	80 M	■	1LA7083-1BD..	✓
0.29	0.8	90 S	■	1LA7090-1BD..	✓
0.38	1.1	90 L	■	1LA7096-1BD..	✓
0.6	1.7	100 L	■	1LE1012-1AQ4-.....	✓
0.75	2.1	100 L	■	1LA7107-1BD..	✓
0.9	3	112 M	■	1LA7113-1BD..	✓
1.2	3.9	132 S	■	1LE1012-1CQ0-.....	✓
1.7	5.4	132 M	■	1LE1012-1CQ2-.....	✓
2.5	7.2	160 M	■	1LE1012-1DQ2-.....	✓
3.7	12	160 L	■	1LE1012-1DQ4-.....	✓

8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit

750 rpm	1500 rpm				
0.1	0.5	80 M	■	1LA7080-0BB..	✓
0.15	0.7	80 M	■	1LA7083-0BB..	✓
0.22	1	90 S	■	1LA7090-0BB..	✓
0.33	1.5	90 L	■	1LA7096-0BB..	✓
0.5	2	100 L	■	1LE1011-1AR4-.....	✓
0.65	2.5	100 L	■	1LE1011-1AR5-.....	✓
0.9	3.6	112 M	■	1LE1011-1BR2-.....	✓
1.1	4.7	132 S	■	1LE1011-1CR0-.....	✓
1.4	6.4	132 M	■	1LE1011-1CR2-.....	✓
2.2	9.5	160 M	■	1LE1011-1DR2-.....	✓
3.3	14	160 L	■	1LE1011-1DR4-.....	✓

- With "CCC" (China Compulsory Certification) for export to China.

0.2

Preferred and Express motors

Motors with Standard Efficiency

Notes

0.2

SIMOTICS GP/SD

1LE1/1PC1 Standard Motors



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SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

Orientation

Overview

1.0



Increasing energy costs have resulted in greater emphasis on the power consumption of drive systems. It is extremely important to utilize the full potential for minimizing energy consumption here to secure competitiveness today and in the future. The environment will also profit from reduced energy consumption.

This is the reason that already today we are developing a new generation of low-voltage motors. Innovative rotors create the perfect conditions for motors with a high degree of efficiency. IE1 and IE2 motors with the same output have the same dimensions. The new motors for IE2 (High Efficiency) offer considerable energy savings and protect our environment. We also consider environmental sustainability during production to preserve resources. Potting compounds and coatings are, for example, solvent-free.

The modular mounting concept provides total flexibility: Each motor is based on a uniform concept for all markets worldwide. Our motors are manufactured in accordance with the latest ecological concepts and are launched on the market step by step.

The new 1LE1 motor family is therefore one of the most compact in the world, because it is manufactured using innovative technology. For an optimized design, a compound of highly conductive materials is used in the rotor. This results in minimum rotor losses and an excellent starting and switching response.

The design of the 1LE1 motors ensures maximum flexibility and minimum installation costs. Users benefit from integral eyebolts, screw-on feet, reinforced bearing plates with optimum mechanical properties and easily accessible connection boxes. Encoders, brakes and separately driven fans can also be added without any problems. Smaller inventories make stockkeeping easier, so motor suppliers can respond to customer requirements more quickly.

The 1LE1/1PC1 motor family comprises two main series:

- For SIMOTICS GP general purpose applications: Motors with an aluminum housing

SIMOTICS GP 1LE1/1PC1 motors with an aluminum housing are suitable for a wide range of standard drive tasks in the industrial environment. Thanks to their particular low weight, they are predestined for applications in pumps, fans and compressors. But they also reliably fulfill their tasks in conveyor systems and lifting gear.

Brief overview	
Output and voltage range:	0.55 ... 22 kW for all commonly used voltages
Frame sizes and types of construction:	80 ... 160 in all common types of construction
Rated speed:	750 ... 3600 rpm
Number of poles:	2, 4, 6, 8
Efficiency classes:	<ul style="list-style-type: none"> • IE1 (Standard Efficiency) • IE2 (High Efficiency) • IE3 (Premium Efficiency) • NEE (NEMA Energy Efficient, according to NEMA MG, Table 12-11) • NPE (NEMA Premium Efficient, according to NEMA MG, Table 12-12)

- For SIMOTICS SD severe duty applications: Motors with cast-iron housing

SIMOTICS SD 1LE1 motors with a cast-iron housing are extremely rugged and are therefore the first choice for applications under harsh environmental conditions. They master dust or vibration in mills and mixers as well as the corrosive atmosphere in the petrochemical industry. Their design supports optimized heat dissipation and offers the same handling as the general purpose variants.

Brief overview	
Output and voltage range:	0.75 ... 200 kW for all commonly used voltages
Frame sizes and types of construction:	100 ... 315 in all common types of construction
Rated speed:	750 ... 3600 rpm
Number of poles:	2, 4, 6, 8
Efficiency classes:	<ul style="list-style-type: none"> • IE1 (Standard Efficiency) • IE2 (High Efficiency) • IE3 (Premium Efficiency) • NEE (NEMA Energy Efficient, according to NEMA MG, Table 12-11) • NPE (NEMA Premium Efficient, according to NEMA MG, Table 12-12)

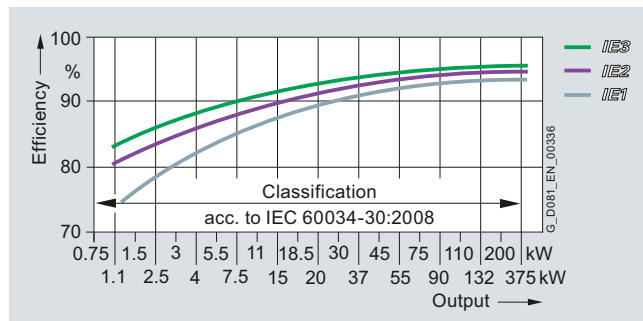
Overview (continued)**High efficiency energy-saving motors for a positive energy balance**

Depending on requirements, energy-saving motors for a positive energy balance are available that are compliant with the legal requirements applicable in the European economic area in accordance with EU Directive 640/2009 as well as for the North American market in accordance with US federal law EISA (Energy Independence Security Act).

Minimum efficiency according to EU Directive 640/2009:

The EU Directive defines the minimum efficiency for 2, 4 and 6-pole motors in the output range from 0.75 to 375 kW. The efficiency levels are grouped into three efficiency classes (IE = International Efficiency):

- IE1 (Standard Efficiency)
- IE2 (High Efficiency)
- IE3 (Premium Efficiency)



IE1 to IE3 efficiencies, 4-pole 50 Hz

At a glance: EU Directive No. 640/2009 based on IEC 60034-30

- The EU Directive is in force in all countries of the European Union. Losses are determined and therefore the efficiency is determined in accordance with IEC 60034-2-1:2007
- The following are specified: 2, 4, 6-pole motors, 50/60 Hz squirrel-cage motors from 0.75 to 375 kW, for all voltages below 1000 V

For further information, see:

www.siemens.de/international-efficiency

Efficiency requirements according to EISA

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

With effect from December 2010, EISA has extended the legal minimum efficiency requirements.

Motors with the following parameters must satisfy the NEMA Premium Efficient Level (NEMA MG Table 12-12):

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

Exception/expansion: Motors with the following parameters must comply with the NEMA Energy Efficient Level (NEMA MG Table 12-11):

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

For details, see NEMA MG1, Table 12-11.

The EISA act lays down that the nominal efficiency at full load and a "CC" number (Compliance Certification) must be included on the rating plate. The "CC" number is issued by the US Department of Energy (DOE). The following information is stamped on the rating plate of EISA motors which must be marked by law:

- Nominal efficiency
- Design letter
- Code letter
- CONT
- CC No. CC 032A (Siemens) and NEMA MG1-12

Motors with increased output and compact construction (1LE1)

Motors with increased output and compact construction can be used to advantage in confined spaces. For a slightly longer overall length, the output is at least as high as that of the next largest shaft height. These compact motors are also optimized for efficiency. They are offered in IE1 and IE2 and therefore reduce the operating costs.

Motors without fan cover and without external fan (1LE1 with order code F90)

Forced-air cooled motors with surface cooling without fan cover and without external fan are mainly used for driving fans.

Motors with reduced output without fan cover and without external fan (1PC1)

Naturally cooled motors with surface cooling without fan cover and without external fan are suitable for the following operating conditions:

- Types of duty with adequate cooling times (e.g. temporary duty for positioning drives)
- Environmental conditions that demand compact installation space (e.g. in motors with a stopping function)

Requirements which make an external fan disadvantageous, e.g. simple cleaning in the food industry, textile industry.

Preferred and Express motors

The most popular basic versions of motor series 1LE1 are available under special terms as so-called "Preferred motors". Most of the "Preferred motors" are also available with a shorter delivery time as so-called "Express motors".

The standard delivery time for "Express motors" is 1 to 2 days from the time of clarification of the order at the factory until dispatch from the factory. To determine the delivery date at the customer site, the appropriate shipping time must be added.

For further information and the complete range, see catalog section 0.2 "Preferred and Express motors".

SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

Orientation

Benefits

There is considerable potential in the new 1LE1/1PC1 series of low-voltage motors. As a consistent further development of existing motors, the 1LE1/1PC1 motors offer numerous advantages.

Greater efficiency

Innovative rotor technology and manufacturing technology has been implemented for the IE1, IE2 and IE3 high efficiency motor variants. The energy-efficient motors are therefore considerably more compact.

The energy saving potential and lifecycle costs of the new motors can be calculated with the SinaSave software. The SinaSave program can be downloaded from the Internet using the following link:

www.siemens.com/sinasave

The 1LE1 motors also impress customers with their extremely long life and their weight-optimized design has a positive effect on the stability of the equipment unit.

A wider range of applications

The motors are certified for worldwide use and satisfy high standards of quality (confirmed, for example, by CSA ¹⁾, UL ²⁾, CQC ³⁾).

Improved design

The optimized housing in modern EMC design has an attractive appearance and enhances functionality. The rotatable, accessible connection boxes, integral eyebolts, screw-on feet and reinforced bearing plates ensure this.

Greater output

For the same shaft height, the high-performance motors offer one complete rated output level more. We are also consistently implementing energy efficiency improvements here too. The motors are offered (based on the categories of IEC 60034-30) in various efficiency classes.

More flexibility

The optimized design of the motors makes installation easier in general. Encoders, brakes and separately driven fans can be retrofitted easily. Connection boxes and feet for flexible mounting can be selected. Smaller inventories make stockkeeping easier and motor suppliers can respond to customer requirements more quickly. Optimized manufacturing processes support fast availability. All motors up to 460 V can be operated either directly on the line or converter-fed – without the need for any additional measures.

For SIMOTICS GP general purpose applications: Motors with an aluminum housing

Particularly user friendly

The terminal box introduced for frame sizes 100 to 160 has proved its worth and will be consistently implemented throughout the motor series. For 2 and 4-pole motors of frame sizes 80 and 90, the terminal box is only fixed with one screw and can be rotated steplessly by up to 360°. The terminal box is also preconfigured with a terminal board. This makes installation quicker and easier in confined spaces, because the motor connection cables can be fed in from any direction.

Special export line

For exporting to NAFTA, the Eagle Line is available. The motors are supplied with the electrical values stamped on the rating plate in accordance with EISA requirements.

Greater output

If the motor has to be extremely compact because there is insufficient space for a standard motor, a motor with increased output could be the solution. In efficiency class IE2, these motors allow the outputs of a standard motor to be achieved in the next smallest frame size.

1) Canadian Standard Association

2) Underwriters Laboratories Inc.

3) China Quality Certification

Benefits (continued)**For SIMOTICS SD severe duty applications:
Motors with cast-iron housing**The right motor for various challenges

The following lines are available for severe duty applications:

- **Basic Line:** Rugged, reliable motors for machine construction
- **Performance Line:** Motors for the process industry with reinforced bearings and a rugged coating – for requirements that extend beyond the Basic Line
- **"Eagle Line":** Motors for exporting to NAFTA; they fulfill the requirements of ULR and CSA and are supplied with the electrical values stamped on the rating plate in accordance with EISA requirements

Comparison: Basic Line versus Performance Line

Function	Basic Line	Performance Line
Bearing size	62 (63 from shaft height 280 upwards)	63
Relubrication	Optional (standard from shaft height 280 upwards)	Standard from shaft height 160 upwards (optional for shaft height 100 to 132)
Paint system	Standard coating, corrosion class C2 ¹⁾	Special coating, corrosion class C3 ¹⁾
Drainage	Drain plugs	T drains
Rating plate	Plastic	Steel
Motor protection	Optional	PTC
Fan cover	Plastic	Steel
Warranty	12 months	36 months

Compact design

The size of a motor is often an important aspect in the case of machines. For this reason, the 1LE1 motors in IE2 and IE3 are no longer than their predecessors in the 1LG series in IE2.

Another highlight: Some of the IE3 motors fit in the same housing as the IE2 motors. The efficiency classes naturally do not differ with regard to shaft height, so that the mechanical interface to the equipment unit remains the same. This also supports a largely problem-free efficiency upgrade to IE3 – without the need to adapt the mechanical design of a machine.

Greater output

In severe duty applications, increased output motors can also be the right solution if sufficient space is not available for a standard motor. Because these motors offer the same output in the next smallest frame size.

Application

As soon as the range of motors and options is complete, it will be possible to use the 1LE1/1PC1 motors from Siemens in all areas and sectors of industry due to their numerous options. They are suitable both for special environmental conditions such as those that predominate in the chemical or petrochemical industry as well as for most climatic requirements such as those of offshore applications.

Their large range of line voltages enables them to be used all over the world.

The wide field of implementation includes the following applications:

- Pumps
- Fans
- Compressors
- Conveyor systems such as cranes, belts and lifting gear
- High-bay warehouses
- Packaging machines
- Automation and drives
- Manufacturing industry
- General machine construction

Motors with a cast-iron housing are particularly suitable for the following severe duty applications:

- Petrochemical industry
- Pharmaceuticals
- Chemical industry
- Printing industry
- Process industry

¹⁾ C2 and C3 are corrosion classes according to DIN EN ISO 12944. The corrosion protection must be selected in accordance with the expected corrosiveness of the environment at the installation location as well as the required service life. Five corrosion classes are defined in the above-mentioned standard, ranging from a non-corrosive indoor atmosphere (C1) to a highly corrosive industrial or marine environment (C5 I and C5 M).

SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

Orientation

Technical specifications

Overview of technical specifications

This table lists the most important technical data. For more information and details, see Catalog D 81.1 · 2008 Part 0 "Introduction".

Type of motor	SIMOTICS GP/SD 1LE1/1PC1 IEC Low-Voltage Motors
Connection types	Star connection/delta connection You can establish the connection type to be used from the Order No. supplements for the required motor.
Number of poles	2, 4, 6, 8, pole-changing for constant and square-law load torque
Frame sizes	80 M ... 315 L
Rated output	0.55 ... 200 kW (1LE1 motor series)/0.3 ... 9 kW (1PC1 motor series)
Frequencies	50 Hz and 60 Hz
Versions	Self-ventilated 1LE1 energy-saving motors with: <ul style="list-style-type: none"> • IE1 (Standard Efficiency) • IE2 (High Efficiency) • IE3 (Premium Efficiency) • NEE (NEMA Energy Efficient, according to NEMA MG, Table 12-11) • NPE (NEMA Premium Efficient, according to NEMA MG, Table 12-12) Self-ventilated 1LE1 motors with increased output and: <ul style="list-style-type: none"> • IE1 (Standard Efficiency) • IE2 (High Efficiency) Forced-air cooled 1LE1 motors without external fan and fan cover with: <ul style="list-style-type: none"> • IE1 (Standard Efficiency) • IE2 (High Efficiency) Naturally cooled 1PC1 motors without external fan and fan cover with: <ul style="list-style-type: none"> • IE1 (Standard Efficiency) • IE2 (High Efficiency)
Marking	IEC 60034-30 IE1, IE2, IE3: 2, 4 and 6-pole US Energy Independence Security Act EISA: 2, 4, 6 and 8-pole
Rated speed (synchronous speed)	750 ... 3000 rpm
Rated torque	9.9 ... 1546 Nm (1LE1 motor series)/on request – following calculation when an order is placed (1PC1 motor series)
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	Temperature class 155 (F), used acc. to temperature class 130 (B) (also for motors with increased output) DURIGNIT IR 2000 insulation system
Degree of protection according to EN 60034-5 (IEC 60034-5)	IP55 as standard
Cooling according to EN 60034-6 (IEC 60034-6)	<ul style="list-style-type: none"> • Self-ventilated (1LE1 motor series) frame size 80 M to 315 L (IC 411) • Forced-air cooled (1LE1 motor series with order code F90) frame size 80 M to 160 L (IC 416) • Naturally cooled (1PC1 motor series) frame size 100 L to 160 L (IC 410)
Admissible coolant temperature and site altitude	–20 ... +40 °C as standard, site altitude up to 1000 m above sea level. See "Coolant temperature and site altitude" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Standard voltages according to EN 60038 (IEC 60038)	50 Hz: 230 V, 400 V, 500 V, 690 V The voltage to be used can be found in the "Selection and ordering data" for the required motor.
Type of construction according to EN 60034-7 (IEC 60034-7)	<ul style="list-style-type: none"> • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6, IM V5 with protective cover • With flange: IM B5, IM V1 without protective cover, IM V1 with protective cover, IM V3, IM B35 • With standard flange and special flange (next larger flange): IM B14, IM V19, IM V18 without protective cover, IM V18 with protective cover, IM B34
Paint finish Suitability of paint finish for climate group according to IEC 60721, Part 2-1	Standard: Color RAL 7030 stone gray See under "Paint finish" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Vibration severity level according to EN 60034-14 (IEC 60034-14)	Level A (normal – without special vibration requirements) Optionally: Level B (with special vibration requirements) See "Balance and vibration quantity" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Shaft extension according to DIN 748 (IEC 60072)	Balance type: Half-key balancing as standard See "Balance and vibration quantity" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Sound pressure level according to DIN EN ISO 1680 (tolerance +3 dB)	The sound pressure level is listed in the selection and ordering data for the required motor.
Weights	The weight is listed in the selection and ordering data for the required motor.
Modular mounting concept	Rotary pulse encoder, brake, separately driven fan or prepared for mountings
Consistent series concept	<ul style="list-style-type: none"> • Cast housing feet, screw-mounted feet available as an option and retrofittable • Connection box obliquely partitioned and rotatable through 4 x 90° • Bearings at DE and NDE are of identical design, reinforced bearings available as an option
Options	See "Supplements to order numbers and special versions"

1.0

Technical specifications (continued)**General note**

All the data listed in the catalog is applicable for a 50 Hz line supply. With converter-fed operation, the reduction factors for constant torque and drives for fans, pumps and compressors must be observed. Noise values for motors operating with a converter at frequencies other than 50 Hz are available on request.

Mechanical limit speeds

When the motor is operated at its rated frequency, it is important to note that the maximum speeds are limited by the limits for the roller bearings, critical rotor speed and rigidity of the rotating parts.

Ventilation/noise generation (converter-fed operation)

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated motors. To increase motor utilization at low speeds it is recommended that forced-ventilated motors are used.

Mechanical stress and grease lifetime (converter-fed operation)

High speeds that exceed the rated speed and the resulting increased vibrations alter the mechanical running smoothness and the bearings are subjected to increased mechanical stress. This reduces the grease lifetime and the bearing lifetime. More detailed information on request.

More information

For further information, please get in touch with your local Siemens contact.

At:

www.siemens.com/automation/partner

to find out about certain technologies through Siemens contact partners worldwide.

Wherever possible, you will find a local contact partner for:

- Technical support
- Spare parts/repairs
- Service
- Training
- Marketing & Sales
- Technical consultation/engineering

You start by selecting a:

- country
- product or
- sector.

By further specifying the remaining criteria you will find exactly the right contact partner with his/her respective expertise.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Standard delivery times:

10 working days	20 working days	On request
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Orientation

Overview of selection and ordering data
with base prices and standard delivery times

Overview

Category	1.1 – Motors with High Efficiency IE2		
Series version	Aluminum series 1LE1001	Aluminum series 1LE1001 With increased output	Aluminum series 1PC1001
Cooling	Self-ventilated (IC 411) or with order code F90 forced-air cooled without external fan and fan cover (IC 416)	Self-ventilated (IC 411)	Naturally cooled without external fan (IC 410)
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)	Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6, 8	2, 4, 6	2, 4, 6, 8
Frame sizes (FS)	80 M ... 160 L	100 L ... 160 L	100 L ... 160 L
Rated output at 50 Hz	0.55 ... 18.5 kW	2.2 ... 22 kW	0.37 ... 9 kW
Synchronous speed	750 ... 3600 rpm	1000 ... 3600 rpm	750 ... 3600 rpm
Rated torque at 50 Hz	2.6 ... 108 Nm	13 ... 147 Nm	On request ¹⁾
Efficiency	High Efficiency IE2	High Efficiency IE2	On request ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -	N - W - - -
Price group (PG)	3Z1	3Z1	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top (for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	IE class	Order No.	P_{rated} , 50 Hz kW	IE class	Order No.	P_{rated} , 50 Hz kW	IE class	Order No.
FS			▲ New						

2-pole: 3000 rpm at 50 Hz

80 M	0.75	IE2	▲ 1LE1001-0DA2.-....						
80 M	1.1	IE2	▲ 1LE1001-0DA3.-....						
90 S	1.5	IE2	▲ 1LE1001-0EA0.-....						
90 L	2.2	IE2	▲ 1LE1001-0EA4.-....						
100 L	3	IE2	1LE1001-1AA4.-....	4	IE2	1LE1001-1AA6.-....	1.4	On req.	1PC1001-1AA4.-....
112 M	4	IE2	1LE1001-1BA2.-....	5.5	IE2	1LE1001-1BA6.-....	1.6	On req.	1PC1001-1BA2.-....
132 S	5.5	IE2	1LE1001-1CA0.-....				3.1	On req.	1PC1001-1CA0.-....
132 S	7.5	IE2	1LE1001-1CA1.-....				4.3	On req.	1PC1001-1CA1.-....
132 M				11	IE2	1LE1001-1CA6.-....			
160 M	11	IE2	1LE1001-1DA2.-....				6.3	On req.	1PC1001-1DA2.-....
160 M	15	IE2	1LE1001-1DA3.-....				6.5	On req.	1PC1001-1DA3.-....
160 L	18.5	IE2	1LE1001-1DA4.-....	22	IE2	1LE1001-1DA6.-....	9	On req.	1PC1001-1DA4.-....

4-pole: 1500 rpm at 50 Hz

80 M	0.55	-	▲ 1LE1001-0DB2.-....						
80 M	0.75	IE2	▲ 1LE1001-0DB3.-....						
90 S	1.1	IE2	▲ 1LE1001-0EB0.-....						
90 L	1.5	IE2	▲ 1LE1001-0EB4.-....						
100 L	2.2	IE2	1LE1001-1AB4.-....	4	IE2	1LE1001-1AB6.-....	1.1	On req.	1PC1001-1AB4.-....
100 L	3	IE2	1LE1001-1AB5.-....				1.5	On req.	1PC1001-1AB5.-....
112 M	4	IE2	1LE1001-1BB2.-....	5.5	IE2	1LE1001-1BB6.-....	2	On req.	1PC1001-1BB2.-....
132 S	5.5	IE2	1LE1001-1CB0.-....				2.6	On req.	1PC1001-1CB0.-....
132 M	7.5	IE2	1LE1001-1CB2.-....	11	IE2	1LE1001-1CB6.-....	4	On req.	1PC1001-1CB2.-....
160 M	11	IE2	1LE1001-1DB2.-....				6	On req.	1PC1001-1DB2.-....
160 L	15	IE2	1LE1001-1DB4.-....	18.5	IE2	1LE1001-1DB6.-....	6.2	On req.	1PC1001-1DB4.-....

6-pole: 1000 rpm at 50 Hz

80 M	0.37	-	▲ 1LE1001-0DC2.-....						
80 M	0.55	-	▲ 1LE1001-0DC3.-....						
90 S	0.75	IE2	▲ 1LE1001-0EC0.-....						
90 L	1.1	IE2	▲ 1LE1001-0EC4.-....						
100 L	1.5	IE2	1LE1001-1AC4.-....	2.2	IE2	1LE1001-1AC6.-....	0.85	On req.	1PC1001-1AC4.-....
112 M	2.2	IE2	1LE1001-1BC2.-....	3	IE2	1LE1001-1BC6.-....	1.2	On req.	1PC1001-1BC2.-....
132 S	3	IE2	1LE1001-1CC0.-....				1.5	On req.	1PC1001-1CC0.-....
132 M	4	IE2	1LE1001-1CC2.-....	7.5	IE2	1LE1001-1CC6.-....	2.5	On req.	1PC1001-1CC2.-....
132 M	5.5	IE2	1LE1001-1CC3.-....				2.7	On req.	1PC1001-1CC3.-....
160 M	7.5	IE2	1LE1001-1DC2.-....				5	On req.	1PC1001-1DC2.-....
160 L	11	IE2	1LE1001-1DC4.-....	15	IE2	1LE1001-1DC6.-....	6.5	On req.	1PC1001-1DC4.-....

8-pole: 750 rpm at 50 Hz

100 L	0.75	-	1LE1001-1AD4.-....				0.37	-	1PC1001-1AD4.-....
100 L	1.1	-	1LE1001-1AD5.-....				0.55	-	1PC1001-1AD5.-....
112 M	1.5	-	1LE1001-1BD2.-....				0.75	-	1PC1001-1BD2.-....
132 S	2.2	-	1LE1001-1CD0.-....				1.1	-	1PC1001-1CD0.-....
132 M	3	-	1LE1001-1CD2.-....				1.5	-	1PC1001-1CD2.-....
160 M	4	-	1LE1001-1DD2.-....				2.4	-	1PC1001-1DD2.-....
160 M	5.5	-	1LE1001-1DD3.-....				3.3	-	1PC1001-1DD3.-....
160 L	7.5	-	1LE1001-1DD4.-....				4.6	-	1PC1001-1DD4.-....

¹⁾ The rated output and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.1 – Motors with High Efficiency IE2 (continued)
Series version	Cast-iron series 1LE1501/1LE1601 Basic/Performance Line (continued on the next page)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	100 L ... 315 L
Rated output at 50 Hz	0.75 ... 200 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	9.9 ... 1546 Nm
Efficiency	High Efficiency IE2
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	IE class	Order No. Basic Line ▲ New	Order No. Performance Line ▲ New
2-pole: 3000 rpm at 50 Hz				
100 L	3	IE2	▲ 1LE1501-1AA4-.....	▲ 1LE1601-1AA4-.....
112 M	4	IE2	▲ 1LE1501-1BA2-.....	▲ 1LE1601-1BA2-.....
132 S	5.5	IE2	▲ 1LE1501-1CA0-.....	▲ 1LE1601-1CA0-.....
132 S	7.5	IE2	▲ 1LE1501-1CA1-.....	▲ 1LE1601-1CA1-.....
160 M	11	IE2	▲ 1LE1501-1DA2-.....	▲ 1LE1601-1DA2-.....
160 M	15	IE2	▲ 1LE1501-1DA3-.....	▲ 1LE1601-1DA3-.....
160 L	18.5	IE2	▲ 1LE1501-1DA4-.....	▲ 1LE1601-1DA4-.....
180 M	22	IE2	▲ 1LE1501-1EA2-.....	▲ 1LE1601-1EA2-.....
200 L	30	IE2	▲ 1LE1501-2AA4-.....	▲ 1LE1601-2AA4-.....
200 L	37	IE2	▲ 1LE1501-2AA5-.....	▲ 1LE1601-2AA5-.....
225 M	45	IE2	▲ 1LE1501-2BA2-.....	▲ 1LE1601-2BA2-.....
250 M	55	IE2	▲ 1LE1501-2CA2-.....	▲ 1LE1601-2CA2-.....
280 S	75	IE2	▲ 1LE1501-2DA0-.....	▲ 1LE1601-2DA0-.....
280 M	90	IE2	▲ 1LE1501-2DA2-.....	▲ 1LE1601-2DA2-.....
315 S	110	IE2	▲ 1LE1501-3AA0-.....	▲ 1LE1601-3AA0-.....
315 M	132	IE2	▲ 1LE1501-3AA2-.....	▲ 1LE1601-3AA2-.....
315 L	160	IE2	▲ 1LE1501-3AA4-.....	▲ 1LE1601-3AA4-.....
315 L	200	IE2	▲ 1LE1501-3AA5-.....	▲ 1LE1601-3AA5-.....
4-pole: 1500 rpm at 50 Hz				
100 L	2.2	IE2	▲ 1LE1501-1AB4-.....	▲ 1LE1601-1AB4-.....
100 L	3	IE2	▲ 1LE1501-1AB5-.....	▲ 1LE1601-1AB5-.....
112 M	4	IE2	▲ 1LE1501-1BB2-.....	▲ 1LE1601-1BB2-.....
132 S	5.5	IE2	▲ 1LE1501-1CB0-.....	▲ 1LE1601-1CB0-.....
132 M	7.5	IE2	▲ 1LE1501-1CB2-.....	▲ 1LE1601-1CB2-.....
160 M	11	IE2	▲ 1LE1501-1DB2-.....	▲ 1LE1601-1DB2-.....
160 L	15	IE2	▲ 1LE1501-1DB4-.....	▲ 1LE1601-1DB4-.....
180 M	18.5	IE2	▲ 1LE1501-1EB2-.....	▲ 1LE1601-1EB2-.....
180 L	22	IE2	▲ 1LE1501-1EB4-.....	▲ 1LE1601-1EB4-.....
200 L	30	IE2	▲ 1LE1501-2AB5-.....	▲ 1LE1601-2AB5-.....
225 S	37	IE2	▲ 1LE1501-2BB0-.....	▲ 1LE1601-2BB0-.....
225 M	45	IE2	▲ 1LE1501-2BB2-.....	▲ 1LE1601-2BB2-.....
250 M	55	IE2	▲ 1LE1501-2CB2-.....	▲ 1LE1601-2CB2-.....
280 S	75	IE2	▲ 1LE1501-2DB0-.....	▲ 1LE1601-2DB0-.....
280 M	90	IE2	▲ 1LE1501-2DB2-.....	▲ 1LE1601-2DB2-.....
315 S	110	IE2	▲ 1LE1501-3AB0-.....	▲ 1LE1601-3AB0-.....
315 M	132	IE2	▲ 1LE1501-3AB2-.....	▲ 1LE1601-3AB2-.....
315 L	160	IE2	▲ 1LE1501-3AB4-.....	▲ 1LE1601-3AB4-.....
315 L	200	IE2	▲ 1LE1501-3AB5-.....	▲ 1LE1601-3AB5-.....

1.0

SIMOTICS SD 1LE1 Standard Motors

Orientation

Overview of selection and ordering data
with base prices and standard delivery times

Standard delivery times:

10
working
days

20
working
days

On
request

Overview (continued)

Category	1.1 – Motors with High Efficiency IE2 (continued)				
Series version	Cast-iron series 1LE1501/1LE1601 Basic/Performance Line (continued)				
Cooling	Self-ventilated (IC 411)				
Degree of protection	IP55, optionally IP56 or IP65				
Insulation	Thermal class 155 (F)				
Utilization	Thermal class 130 (B)				
Number of poles	2, 4, 6, 8				
Frame sizes (FS)	100 L ... 315 L				
Rated output at 50 Hz	0.75 ... 200 kW				
Synchronous speed	750 ... 3600 rpm				
Rated torque at 50 Hz	9.9 ... 1546 Nm				
Efficiency	High Efficiency IE2				
Metal factor for metal surcharges (MS)	N - W - - -				
Price group (PG)	3Z1				
Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top (for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)					
Frame size	P_{rated} , 50 Hz kW	IE class	Order No. Basic Line	Order No. Performance Line	
FS			▲ New	▲ New	
6-pole: 1000 rpm at 50 Hz					
100 L	1.5	IE2	▲ 1LE1501-1AC4-.....	▲ 1LE1601-1AC4-.....	
112 M	2.2	IE2	▲ 1LE1501-1BC2-.....	▲ 1LE1601-1BC2-.....	
132 S	3	IE2	▲ 1LE1501-1CC0-.....	▲ 1LE1601-1CC0-.....	
132 M	4	IE2	▲ 1LE1501-1CC2-.....	▲ 1LE1601-1CC2-.....	
132 M	5.5	IE2	▲ 1LE1501-1CC3-.....	▲ 1LE1601-1CC3-.....	
160 M	7.5	IE2	▲ 1LE1501-1DC2-.....	▲ 1LE1601-1DC2-.....	
160 L	11	IE2	▲ 1LE1501-1DC4-.....	▲ 1LE1601-1DC4-.....	
180 L	15	IE2	▲ 1LE1501-1EC4-.....	▲ 1LE1601-1EC4-.....	
200 L	18.5	IE2	▲ 1LE1501-2AC4-.....	▲ 1LE1601-2AC4-.....	
200 L	22	IE2	▲ 1LE1501-2AC5-.....	▲ 1LE1601-2AC5-.....	
225 M	30	IE2	▲ 1LE1501-2BC2-.....	▲ 1LE1601-2BC2-.....	
250 M	37	IE2	▲ 1LE1501-2CC2-.....	▲ 1LE1601-2CC2-.....	
280 S	45	IE2	▲ 1LE1501-2DC0-.....	▲ 1LE1601-2DC0-.....	
280 M	55	IE2	▲ 1LE1501-2DC2-.....	▲ 1LE1601-2DC2-.....	
315 S	75	IE2	▲ 1LE1501-3AC0-.....	▲ 1LE1601-3AC0-.....	
315 M	90	IE2	▲ 1LE1501-3AC2-.....	▲ 1LE1601-3AC2-.....	
315 L	110	IE2	▲ 1LE1501-3AC4-.....	▲ 1LE1601-3AC4-.....	
315 L	132	IE2	▲ 1LE1501-3AC5-.....	▲ 1LE1601-3AC5-.....	
315 L	160	IE2	▲ 1LE1501-3AC6-.....	▲ 1LE1601-3AC6-.....	
8-pole: 750 rpm at 50 Hz					
100 L	0.75	-	▲ 1LE1501-1AD4-.....	▲ 1LE1601-1AD4-.....	
100 L	1.1	-	▲ 1LE1501-1AD5-.....	▲ 1LE1601-1AD5-.....	
112 M	1.5	-	▲ 1LE1501-1BD2-.....	▲ 1LE1601-1BD2-.....	
132 M	2.2	-	▲ 1LE1501-1CD0-.....	▲ 1LE1601-1CD0-.....	
132 M	3	-	▲ 1LE1501-1CD2-.....	▲ 1LE1601-1CD2-.....	
160 M	4	-	▲ 1LE1501-1DD2-.....	▲ 1LE1601-1DD2-.....	
160 M	5.5	-	▲ 1LE1501-1DD3-.....	▲ 1LE1601-1DD3-.....	
160 L	7.5	-	▲ 1LE1501-1DD4-.....	▲ 1LE1601-1DD4-.....	

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.1 – Motors with High Efficiency IE2 (continued)
Series version	Cast-iron series 1LE1501/1LE1601
	Basic/Performance Line
	With increased output
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 160 L
Rated output at 50 Hz	2.2 ... 22 kW
Synchronous speed	1000 ... 3600 rpm
Rated torque at 50 Hz	13 ... 147 Nm
Efficiency	High Efficiency IE2
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	$P_{\text{rated, 50 Hz}}$ kW	IE class	Order No. Basic Line	Order No. Performance Line
FS			▲ New	▲ New
2-pole: 3000 rpm at 50 Hz				
100 L	4	IE2	▲ 1LE1501-1AA6-.....	▲ 1LE1601-1AA6-.....
112 M	5.5	IE2	▲ 1LE1501-1BA6-.....	▲ 1LE1601-1BA6-.....
132 M	11	IE2	▲ 1LE1501-1CA6-.....	▲ 1LE1601-1CA6-.....
160 L	22	IE2	▲ 1LE1501-1DA6-.....	▲ 1LE1601-1DA6-.....
4-pole: 1500 rpm at 50 Hz				
100 L	4	IE2	▲ 1LE1501-1AB6-.....	▲ 1LE1601-1AB6-.....
112 M	5.5	IE2	▲ 1LE1501-1BB6-.....	▲ 1LE1601-1BB6-.....
132 M	11	IE2	▲ 1LE1501-1CB6-.....	▲ 1LE1601-1CB6-.....
160 L	18.5	IE2	▲ 1LE1501-1DB6-.....	▲ 1LE1601-1DB6-.....
6-pole: 1000 rpm at 50 Hz				
100 L	2.2	IE2	▲ 1LE1501-1AC6-.....	▲ 1LE1601-1AC6-.....
112 M	3	IE2	▲ 1LE1501-1BC6-.....	▲ 1LE1601-1BC6-.....
132 M	7.5	IE2	▲ 1LE1501-1CC6-.....	▲ 1LE1601-1CC6-.....
160 L	15	IE2	▲ 1LE1501-1DC6-.....	▲ 1LE1601-1DC6-.....

1.0

SIMOTICS SD 1LE1 Standard Motors

Orientation

Overview of selection and ordering data
with base prices and standard delivery times

Standard delivery times:

10
working
days

20
working
days

On
request

Overview (continued)

Category	1.2 – Motors with Premium Efficiency IE3
Series version	Cast-iron series 1LE1503/1LE1603 Basic/Performance Line (continued on the next page)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	180 M ... 315 L
Rated output at 50 Hz	15 ... 200 kW
Synchronous speed	1000 ... 3600 rpm
Rated torque at 50 Hz	71 ... 1542 Nm
Efficiency	Premium Efficiency IE3
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	IE class	Order No. Basic Line ▲ New	Order No. Performance Line ▲ New
2-pole: 3000 rpm at 50 Hz				
180 M	22	IE3	▲ 1LE1503-1EA2-.....	▲ 1LE1603-1EA2-.....
200 L	30	IE3	▲ 1LE1503-2AA4-.....	▲ 1LE1603-2AA4-.....
200 L	37	IE3	▲ 1LE1503-2AA5-.....	▲ 1LE1603-2AA5-.....
225 M	45	IE3	▲ 1LE1503-2BA2-.....	▲ 1LE1603-2BA2-.....
250 M	55	IE3	▲ 1LE1503-2CA2-.....	▲ 1LE1603-2CA2-.....
280 S	75	IE3	▲ 1LE1503-2DA0-.....	▲ 1LE1603-2DA0-.....
280 M	90	IE3	▲ 1LE1503-2DA2-.....	▲ 1LE1603-2DA2-.....
315 S	110	IE3	▲ 1LE1503-3AA0-.....	▲ 1LE1603-3AA0-.....
315 M	132	IE3	▲ 1LE1503-3AA2-.....	▲ 1LE1603-3AA2-.....
315 L	160	IE3	▲ 1LE1503-3AA4-.....	▲ 1LE1603-3AA4-.....
315 L	200	IE3	▲ 1LE1503-3AA5-.....	▲ 1LE1603-3AA5-.....
4-pole: 1500 rpm at 50 Hz				
180 M	18.5	IE3	▲ 1LE1503-1EB2-.....	▲ 1LE1603-1EB2-.....
180 L	22	IE3	▲ 1LE1503-1EB4-.....	▲ 1LE1603-1EB4-.....
200 L	30	IE3	▲ 1LE1503-2AB5-.....	▲ 1LE1603-2AB5-.....
225 S	37	IE3	▲ 1LE1503-2BB0-.....	▲ 1LE1603-2BB0-.....
225 M	45	IE3	▲ 1LE1503-2BB2-.....	▲ 1LE1603-2BB2-.....
250 M	55	IE3	▲ 1LE1503-2CB2-.....	▲ 1LE1603-2CB2-.....
280 S	75	IE3	▲ 1LE1503-2DB0-.....	▲ 1LE1603-2DB0-.....
280 M	90	IE3	▲ 1LE1503-2DB2-.....	▲ 1LE1603-2DB2-.....
315 S	110	IE3	▲ 1LE1503-3AB0-.....	▲ 1LE1603-3AB0-.....
315 M	132	IE3	▲ 1LE1503-3AB2-.....	▲ 1LE1603-3AB2-.....
315 L	160	IE3	▲ 1LE1503-3AB4-.....	▲ 1LE1603-3AB4-.....
315 L	200	IE3	▲ 1LE1503-3AB5-.....	▲ 1LE1603-3AB5-.....

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.2 – Motors with Premium Efficiency IE3 (continued)
Series version	Cast-iron series 1LE1503/1LE1603 Basic/Performance Line (continued)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	180 M ... 315 L
Rated output at 50 Hz	15 ... 200 kW
Synchronous speed	1000 ... 3600 rpm
Rated torque at 50 Hz	71 ... 1542 Nm
Efficiency	Premium Efficiency IE3
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	IE class	Order No. Basic Line	Order No. Performance Line
FS			▲ New	▲ New
6-pole: 1000 rpm at 50 Hz				
180 L	15	IE3	▲ 1LE1503-1EC4-.....	▲ 1LE1603-1EC4-.....
200 L	18.5	IE3	▲ 1LE1503-2AC4-.....	▲ 1LE1603-2AC4-.....
200 L	22	IE3	▲ 1LE1503-2AC5-.....	▲ 1LE1603-2AC5-.....
225 M	30	IE3	▲ 1LE1503-2BC2-.....	▲ 1LE1603-2BC2-.....
250 M	37	IE3	▲ 1LE1503-2CC2-.....	▲ 1LE1603-2CC2-.....
280 S	45	IE3	▲ 1LE1503-2DC0-.....	▲ 1LE1603-2DC0-.....
280 M	55	IE3	▲ 1LE1503-2DC2-.....	▲ 1LE1603-2DC2-.....
315 S	75	IE3	▲ 1LE1503-3AC0-.....	▲ 1LE1603-3AC0-.....
315 M	90	IE3	▲ 1LE1503-3AC2-.....	▲ 1LE1603-3AC2-.....
315 L	110	IE3	▲ 1LE1503-3AC4-.....	▲ 1LE1603-3AC4-.....
315 L	132	IE3	▲ 1LE1503-3AC5-.....	▲ 1LE1603-3AC5-.....
315 L	160	IE3	▲ 1LE1503-3AC6-.....	▲ 1LE1603-3AC6-.....

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SIMOTICS GP 1LE1/1PC1 Standard Motors

Standard delivery times:

10 working days	20 working days	On request
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Orientation

Overview of selection and ordering data with base prices and standard delivery times

Overview (continued)

Category	1.3 – Motors with Standard Efficiency IE1		
Series version	Aluminum series 1LE1002	Aluminum series 1LE1002 With increased output	Aluminum series 1PC1002
Cooling	Self-ventilated (IC 411) or with order code F90 forced-air cooled without external fan and fan cover (IC 416)	Self-ventilated (IC 411)	Naturally cooled without external fan (IC 410)
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)	Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6, 8	2, 4, 6	2, 4, 6, 8
Frame sizes (FS)	100 L ... 160 L	100 L ... 160 L	
Rated output at 50 Hz	0.75 ... 18.5 kW	2.2 ... 22 kW	0.3 ... 7.4 kW
Synchronous speed	750 ... 3600 rpm	1000 ... 3600 rpm	750 ... 3600 rpm
Rated torque at 50 Hz	10 ... 109 Nm	13 ... 148 Nm	On request ¹⁾
Efficiency	Standard Efficiency IE1	Standard Efficiency IE1	On request ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -	N - W - - -
Price group (PG)	3Z1	3Z1	3Z1

Please observe legal minimum efficiencies in the EEA!

Please observe legal minimum efficiencies in the EEA!

Please observe legal minimum efficiencies in the EEA!

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top (for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	IE class	Order No.	P_{rated} , 50 Hz kW	IE class	Order No.	P_{rated} , 50 Hz kW	IE class	Order No.
2-pole: 3000 rpm at 50 Hz									
100 L	3	IE1	1LE1002-1AA4.-....	4	IE1	1LE1002-1AA6.-....	1.2	On req.	1PC1002-1AA4.-....
112 M	4	IE1	1LE1002-1BA2.-....	5.5	IE1	1LE1002-1BA6.-....	1.6	On req.	1PC1002-1BA2.-....
132 S	5.5	IE1	1LE1002-1CA0.-....				2.2	On req.	1PC1002-1CA0.-....
132 S	7.5	IE1	1LE1002-1CA1.-....				3	On req.	1PC1002-1CA1.-....
132 M				11	IE1	1LE1002-1CA6.-....			
160 M	11	IE1	1LE1002-1DA2.-....				4.4	On req.	1PC1002-1DA2.-....
160 M	15	IE1	1LE1002-1DA3.-....				6	On req.	1PC1002-1DA3.-....
160 L	18.5	IE1	1LE1002-1DA4.-....	22	IE1	1LE1002-1DA6.-....	7.4	On req.	1PC1002-1DA4.-....
4-pole: 1500 rpm at 50 Hz									
100 L	2.2	IE1	1LE1002-1AB4.-....	4	IE1	1LE1002-1AB6.-....	0.88	On req.	1PC1002-1AB4.-....
100 L	3	IE1	1LE1002-1AB5.-....				1.2	On req.	1PC1002-1AB5.-....
112 M	4	IE1	1LE1002-1BB2.-....	5.5	IE1	1LE1002-1BB6.-....	1.6	On req.	1PC1002-1BB2.-....
132 S	5.5	IE1	1LE1002-1CB0.-....				2.2	On req.	1PC1002-1CB0.-....
132 M	7.5	IE1	1LE1002-1CB2.-....	11	IE1	1LE1002-1CB6.-....	3	On req.	1PC1002-1CB2.-....
160 M	11	IE1	1LE1002-1DB2.-....				4.4	On req.	1PC1002-1DB2.-....
160 L	15	IE1	1LE1002-1DB4.-....	18.5	IE1	1LE1002-1DB6.-....	6	On req.	1PC1002-1DB4.-....
6-pole: 1000 rpm at 50 Hz									
100 L	1.5	IE1	1LE1002-1AC4.-....	2.2	IE1	1LE1002-1AC6.-....	0.6	On req.	1PC1002-1AC4.-....
112 M	2.2	IE1	1LE1002-1BC2.-....	3	IE1	1LE1002-1BC6.-....	0.88	On req.	1PC1002-1BC2.-....
132 S	3	IE1	1LE1002-1CC0.-....				1.2	On req.	1PC1002-1CC0.-....
132 M	4	IE1	1LE1002-1CC2.-....	7.5	IE1	1LE1002-1CC6.-....	1.6	On req.	1PC1002-1CC2.-....
132 M	5.5	IE1	1LE1002-1CC3.-....				2.2	On req.	1PC1002-1CC3.-....
160 M	7.5	IE1	1LE1002-1DC2.-....				3	On req.	1PC1002-1DC2.-....
160 L	11	IE1	1LE1002-1DC4.-....	15	IE1	1LE1002-1DC6.-....	4.4	On req.	1PC1002-1DC4.-....
8-pole: 750 rpm at 50 Hz									
100 L	0.75	-	1LE1002-1AD4.-....				0.3	-	1PC1002-1AD4.-....
100 L	1.1	-	1LE1002-1AD5.-....				0.44	-	1PC1002-1AD5.-....
112 M	1.5	-	1LE1002-1BD2.-....				0.6	-	1PC1002-1BD2.-....
132 S	2.2	-	1LE1002-1CD0.-....				0.88	-	1PC1002-1CD0.-....
132 M	3	-	1LE1002-1CD2.-....				1.2	-	1PC1002-1CD2.-....
160 M	4	-	1LE1002-1DD2.-....				1.6	-	1PC1002-1DD2.-....
160 M	5.5	-	1LE1002-1DD3.-....				2.2	-	1PC1002-1DD3.-....
160 L	7.5	-	1LE1002-1DD4.-....				3	-	1PC1002-1DD4.-....

¹⁾ The rated output and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

Standard delivery times:

10 working days	20 working days	On request
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Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.4 – NEMA Energy Efficient MG1 motors, Table 12-11
Series version	Aluminum series 1LE1021¹⁾
Cooling	Self-ventilated (IC 411) or with order code F90 Forced-air cooled without external fan and fan cover (IC 416)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 160 L
Rated output	1.5 ... 18.5 kW at 50 Hz 2 ... 25 hp at 60 Hz
Synchronous speed	1000 ... 3600 rpm
Rated torque	8.1 ... 89 Nm at 60 Hz
Efficiency	NEMA Energy Efficient MG1 Table 12-11 ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	$P_{rated, 50 Hz}$ kW	$P_{rated, 60 Hz}$ hp	Order No.
FS			▲ New
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz			
100 L	3	4	▲ 1LE1021-1AA4-.....
112 M	4	5	▲ 1LE1021-1BA2-.....
132 S	5.5	7.5	▲ 1LE1021-1CA0-.....
132 S	7.5	10	▲ 1LE1021-1CA1-.....
160 M	11	15	▲ 1LE1021-1DA2-.....
160 M	15	20	▲ 1LE1021-1DA3-.....
160 L	18.5	25	▲ 1LE1021-1DA4-.....
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz			
100 L	2.2	3	▲ 1LE1021-1AB4-.....
100 L	3	4	▲ 1LE1021-1AB5-.....
112 M	4	5	▲ 1LE1021-1BB2-.....
132 S	5.5	7.5	▲ 1LE1021-1CB0-.....
132 M	7.5	10	▲ 1LE1021-1CB2-.....
160 M	11	15	▲ 1LE1021-1DB2-.....
160 L	15	20	▲ 1LE1021-1DB4-.....
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz			
100 L	1.5	2	▲ 1LE1021-1AC4-.....
112 M	2.2	3	▲ 1LE1021-1BC2-.....
132 S	3	4	▲ 1LE1021-1CC0-.....
132 M	4	5	▲ 1LE1021-1CC2-.....
132 M	5.5	7.5	▲ 1LE1021-1CC3-.....
160 M	7.5	10	▲ 1LE1021-1DC2-.....
160 L	11	15	▲ 1LE1021-1DC4-.....

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¹⁾ Notes on motors 1LE1021 NEMA Energy Efficient:
- Comprises CSA, UL and CC No.
- Only valid for voltages ≤ 600 V
- For ≤ 200 hp only flange types are admissible

SIMOTICS SD 1LE1 Standard Motors – Eagle Line

Standard delivery times:

Orientation

10
working
days20
working
daysOn
request

Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.4 – NEMA Energy Efficient MG1 motors, Table 12-11 (continued)
Series version	Cast-iron series 1LE1521/1LE1621 ¹⁾ Basic/Performance Line (continued on the next page)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 315 L
Rated output	1.5 ... 200 kW at 50 Hz 2 ... 250 hp at 60 Hz
Synchronous speed	1000 ... 3600 rpm
Rated torque	8.1 ... 1195 Nm at 60 Hz
Efficiency	NEMA Energy Efficient MG1 Table 12-11 ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	P_{rated} , 60 Hz hp	Order No. Basic Line	Order No. Performance Line
FS			▲ New	▲ New
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz				
100 L	3	4	▲ 1LE1521-1AA4-....	▲ 1LE1621-1AA4-....
112 M	4	5	▲ 1LE1521-1BA2-....	▲ 1LE1621-1BA2-....
132 S	5.5	7.5	▲ 1LE1521-1CA0-....	▲ 1LE1621-1CA0-....
132 S	7.5	10	▲ 1LE1521-1CA1-....	▲ 1LE1621-1CA1-....
160 M	11	15	▲ 1LE1521-1DA2-....	▲ 1LE1621-1DA2-....
160 M	15	20	▲ 1LE1521-1DA3-....	▲ 1LE1621-1DA3-....
160 L	18.5	25	▲ 1LE1521-1DA4-....	▲ 1LE1621-1DA4-....
180 M	22	30	▲ 1LE1521-1EA2-....	▲ 1LE1621-1EA2-....
200 L	30	40	▲ 1LE1521-2AA4-....	▲ 1LE1621-2AA4-....
200 L	37	50	▲ 1LE1521-2AA5-....	▲ 1LE1621-2AA5-....
225 M	45	60	▲ 1LE1521-2BA2-....	▲ 1LE1621-2BA2-....
250 M	55	75	▲ 1LE1521-2CA2-....	▲ 1LE1621-2CA2-....
280 S	75	100	▲ 1LE1521-2DA0-....	▲ 1LE1621-2DA0-....
280 M	90	125	▲ 1LE1521-2DA2-....	▲ 1LE1621-2DA2-....
315 S	110	150	▲ 1LE1521-3AA0-....	▲ 1LE1621-3AA0-....
315 M	132	175	▲ 1LE1521-3AA2-....	▲ 1LE1621-3AA2-....
315 L	160	200	▲ 1LE1521-3AA4-....	▲ 1LE1621-3AA4-....
315 L	200	250	▲ 1LE1521-3AA5-....	▲ 1LE1621-3AA5-....
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz				
100 L	2.2	3	▲ 1LE1521-1AB4-....	▲ 1LE1621-1AB4-....
100 L	3	4	▲ 1LE1521-1AB5-....	▲ 1LE1621-1AB5-....
112 M	4	5	▲ 1LE1521-1BB2-....	▲ 1LE1621-1BB2-....
132 S	5.5	7.5	▲ 1LE1521-1CB0-....	▲ 1LE1621-1CB0-....
132 M	7.5	10	▲ 1LE1521-1CB2-....	▲ 1LE1621-1CB2-....
160 M	11	15	▲ 1LE1521-1DB2-....	▲ 1LE1621-1DB2-....
160 L	15	20	▲ 1LE1521-1DB4-....	▲ 1LE1621-1DB4-....
180 M	18.5	25	▲ 1LE1521-1EB2-....	▲ 1LE1621-1EB2-....
180 L	22	30	▲ 1LE1521-1EB4-....	▲ 1LE1621-1EB4-....
200 L	30	40	▲ 1LE1521-2AB5-....	▲ 1LE1621-2AB5-....
225 S	37	50	▲ 1LE1521-2BB0-....	▲ 1LE1621-2BB0-....
225 M	45	60	▲ 1LE1521-2BB2-....	▲ 1LE1621-2BB2-....
250 M	55	75	▲ 1LE1521-2CB2-....	▲ 1LE1621-2CB2-....
280 S	75	100	▲ 1LE1521-2DB0-....	▲ 1LE1621-2DB0-....
280 M	90	125	▲ 1LE1521-2DB2-....	▲ 1LE1621-2DB2-....
315 S	110	150	▲ 1LE1521-3AB0-....	▲ 1LE1621-3AB0-....
315 M	132	175	▲ 1LE1521-3AB2-....	▲ 1LE1621-3AB2-....
315 L	160	200	▲ 1LE1521-3AB4-....	▲ 1LE1621-3AB4-....
315 L	200	250	▲ 1LE1521-3AB5-....	▲ 1LE1621-3AB5-....

¹⁾ Notes on motors 1LE1521/1LE1621 NEMA Energy Efficient:
- Comprises CSA, UL and CC No.
- Only valid for voltages ≤ 600 V
- For ≤ 200 hp only flange types are admissible

Standard delivery times:

10 working days	20 working days	On request
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Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.4 – NEMA Energy Efficient MG1 motors, Table 12-11 (continued)
Series version	Cast-iron series 1LE1521/1LE1621 ¹⁾ Basic/Performance Line (continued)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 315 L
Rated output	1.5 ... 200 kW at 50 Hz 2 ... 250 hp at 60 Hz
Synchronous speed	1000 ... 3600 rpm
Rated torque	8.1 ... 1195 Nm at 60 Hz
Efficiency	NEMA Energy Efficient MG1 Table 12-11 ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	P_{rated} , 60 Hz hp	Order No.	
			Basic Line	Performance Line
FS			▲ New	▲ New
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz				
100 L	1.5	2	▲ 1LE1521-1AC4-.....	▲ 1LE1621-1AC4-.....
112 M	2.2	3	▲ 1LE1521-1BC2-.....	▲ 1LE1621-1BC2-.....
132 S	3	4	▲ 1LE1521-1CC0-.....	▲ 1LE1621-1CC0-.....
132 M	4	5	▲ 1LE1521-1CC2-.....	▲ 1LE1621-1CC2-.....
132 M	5.5	7.5	▲ 1LE1521-1CC3-.....	▲ 1LE1621-1CC3-.....
160 M	7.5	10	▲ 1LE1521-1DC2-.....	▲ 1LE1621-1DC2-.....
160 L	11	15	▲ 1LE1521-1DC4-.....	▲ 1LE1621-1DC4-.....
180 L	15	20	▲ 1LE1521-1EC4-.....	▲ 1LE1621-1EC4-.....
200 L	18.5	25	▲ 1LE1521-2AC4-.....	▲ 1LE1621-2AC4-.....
200 L	22	30	▲ 1LE1521-2AC5-.....	▲ 1LE1621-2AC5-.....
225 M	30	40	▲ 1LE1521-2BC2-.....	▲ 1LE1621-2BC2-.....
250 M	37	50	▲ 1LE1521-2CC2-.....	▲ 1LE1621-2CC2-.....
280 S	45	60	▲ 1LE1521-2DC0-.....	▲ 1LE1621-2DC0-.....
280 M	55	75	▲ 1LE1521-2DC2-.....	▲ 1LE1621-2DC2-.....
315 S	75	100	▲ 1LE1521-3AC0-.....	▲ 1LE1621-3AC0-.....
315 M	90	125	▲ 1LE1521-3AC2-.....	▲ 1LE1621-3AC2-.....
315 L	110	150	▲ 1LE1521-3AC4-.....	▲ 1LE1621-3AC4-.....
315 L	132	175	▲ 1LE1521-3AC5-.....	▲ 1LE1621-3AC5-.....
315 L	160	200	▲ 1LE1521-3AC6-.....	▲ 1LE1621-3AC6-.....

¹⁾ Notes on motors 1LE1521/1LE1621 NEMA Energy Efficient:
- Comprises CSA, UL and CC No.
- Only valid for voltages ≤ 600 V
- For ≤ 200 hp only flange types are admissible

SIMOTICS GP 1LE1 Standard Motors – Eagle Line

Standard delivery times:

Orientation

10
working
days20
working
daysOn
request

Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.5 – NEMA Premium Efficient MG1 motors, Table 12-12		
Series version	Aluminum series 1LE1023 ¹⁾		
Cooling	Self-ventilated (IC 411) or with order code F90 Forced-air cooled without external fan and fan cover (IC 416)		
Degree of protection	IP55, optionally IP56 or IP65		
Insulation	Thermal class 155 (F)		
Utilization	Thermal class 130 (B)		
Number of poles	2, 4, 6		
Frame sizes (FS)	100 L ... 160 L		
Rated output	2.2 ... 18.5 kW at 50 Hz 3 ... 25 hp at 60 Hz		
Synchronous speed	1000 ... 3600 rpm		
Rated torque	8.1 ... 89 Nm at 60 Hz		
Efficiency	NEMA Premium Efficient MG1 Table 12-12 ¹⁾		
Metal factor for metal surcharges (MS)	N - W - - -		
Price group (PG)	3Z1		
Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top (for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)			
Frame size	$P_{rated, 50 Hz}$ kW	$P_{rated, 60 Hz}$ hp	Order No. ▲ New
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz			
100 L	3	4	▲ 1LE1023-1AA4-.....
112 M	4	5	▲ 1LE1023-1BA2-.....
132 S	5.5	7.5	▲ 1LE1023-1CA0-.....
132 S	7.5	10	▲ 1LE1023-1CA1-.....
160 M	11	15	▲ 1LE1023-1DA2-.....
160 M	15	20	▲ 1LE1023-1DA3-.....
160 L	18.5	25	▲ 1LE1023-1DA4-.....
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz			
100 L	2.2	3	▲ 1LE1023-1AB4-.....
100 L	3	4	▲ 1LE1023-1AB5-.....
112 M	4	5	▲ 1LE1023-1BB2-.....
132 S	5.5	7.5	▲ 1LE1023-1CB0-.....
132 M	7.5	10	▲ 1LE1023-1CB2-.....
160 M	11	15	▲ 1LE1023-1DB2-.....
160 L	15	20	▲ 1LE1023-1DB4-.....
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz			
132 S	3	4	▲ 1LE1023-1CC0-.....
132 M	4	5	▲ 1LE1023-1CC2-.....
132 M	5.5	7.5	▲ 1LE1023-1CC3-.....
160 M	7.5	10	▲ 1LE1023-1DC2-.....
160 L	11	15	▲ 1LE1023-1DC4-.....

¹⁾ Notes on motors 1LE1023 NEMA Premium Efficient:
- Comprises CSA, UL and CC No.
- Only valid for voltages ≤ 600 V
- All types are admissible

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.5 – NEMA Premium Efficient MG1 motors, Table 12-12 (continued)
Series version	Cast-iron series 1LE1523/1LE1623 ¹⁾ Basic/Performance Line (continued on the next page)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 315 L
Rated output	2.2 ... 200 kW at 50 Hz 3 ... 250 hp at 60 Hz
Synchronous speed	1000 ... 3600 rpm
Rated torque	8.1 ... 1195 Nm at 60 Hz
Efficiency	NEMA Premium Efficient MG1 Table 12-12 ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top (for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	P_{rated} , 60 Hz hp	Order No. Basic Line	Order No. Performance Line
FS	kW	hp	▲ New	▲ New
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz				
100 L	3	4	▲ 1LE1523-1AA4-.....	▲ 1LE1623-1AA4-.....
112 M	4	5	▲ 1LE1523-1BA2-.....	▲ 1LE1623-1BA2-.....
132 S	5.5	7.5	▲ 1LE1523-1CA0-.....	▲ 1LE1623-1CA0-.....
132 S	7.5	10	▲ 1LE1523-1CA1-.....	▲ 1LE1623-1CA1-.....
160 M	11	15	▲ 1LE1523-1DA2-.....	▲ 1LE1623-1DA2-.....
160 M	15	20	▲ 1LE1523-1DA3-.....	▲ 1LE1623-1DA3-.....
160 L	18.5	25	▲ 1LE1523-1DA4-.....	▲ 1LE1623-1DA4-.....
180 M	22	30	▲ 1LE1523-1EA2-.....	▲ 1LE1623-1EA2-.....
200 L	30	40	▲ 1LE1523-2AA4-.....	▲ 1LE1623-2AA4-.....
200 L	37	50	▲ 1LE1523-2AA5-.....	▲ 1LE1623-2AA5-.....
225 M	45	60	▲ 1LE1523-2BA2-.....	▲ 1LE1623-2BA2-.....
250 M	55	75	▲ 1LE1523-2CA2-.....	▲ 1LE1623-2CA2-.....
280 S	75	100	▲ 1LE1523-2DA0-.....	▲ 1LE1623-2DA0-.....
280 M	90	125	▲ 1LE1523-2DA2-.....	▲ 1LE1623-2DA2-.....
315 S	110	150	▲ 1LE1523-3AA0-.....	▲ 1LE1623-3AA0-.....
315 M	132	175	▲ 1LE1523-3AA2-.....	▲ 1LE1623-3AA2-.....
315 L	160	200	▲ 1LE1523-3AA4-.....	▲ 1LE1623-3AA4-.....
315 L	200	250	▲ 1LE1523-3AA5-.....	▲ 1LE1623-3AA5-.....
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz				
100 L	2.2	3	▲ 1LE1523-1AB4-.....	▲ 1LE1623-1AB4-.....
100 L	3	4	▲ 1LE1523-1AB5-.....	▲ 1LE1623-1AB5-.....
112 M	4	5	▲ 1LE1523-1BB2-.....	▲ 1LE1623-1BB2-.....
132 S	5.5	7.5	▲ 1LE1523-1CB0-.....	▲ 1LE1623-1CB0-.....
132 M	7.5	10	▲ 1LE1523-1CB2-.....	▲ 1LE1623-1CB2-.....
160 M	11	15	▲ 1LE1523-1DB2-.....	▲ 1LE1623-1DB2-.....
160 L	15	20	▲ 1LE1523-1DB4-.....	▲ 1LE1623-1DB4-.....
180 M	18.5	25	▲ 1LE1523-1EB2-.....	▲ 1LE1623-1EB2-.....
180 L	22	30	▲ 1LE1523-1EB4-.....	▲ 1LE1623-1EB4-.....
200 L	30	40	▲ 1LE1523-2AB5-.....	▲ 1LE1623-2AB5-.....
225 S	37	50	▲ 1LE1523-2BB0-.....	▲ 1LE1623-2BB0-.....
225 M	45	60	▲ 1LE1523-2BB2-.....	▲ 1LE1623-2BB2-.....
250 M	55	75	▲ 1LE1523-2CB2-.....	▲ 1LE1623-2CB2-.....
280 S	75	100	▲ 1LE1523-2DB0-.....	▲ 1LE1623-2DB0-.....
280 M	90	125	▲ 1LE1523-2DB2-.....	▲ 1LE1623-2DB2-.....
315 S	110	150	▲ 1LE1523-3AB0-.....	▲ 1LE1623-3AB0-.....
315 M	132	175	▲ 1LE1523-3AB2-.....	▲ 1LE1623-3AB2-.....
315 L	160	200	▲ 1LE1523-3AB4-.....	▲ 1LE1623-3AB4-.....
315 L	200	250	▲ 1LE1523-3AB5-.....	▲ 1LE1623-3AB5-.....

¹⁾ Notes on motors 1LE1523/1LE1623 NEMA Premium Efficient:
- Comprises CSA, UL and CC No.
- Only valid for voltages ≤ 600 V
- All types are admissible

SIMOTICS SD 1LE1 Standard Motors – Eagle Line

Standard delivery times:

Orientation

10
working
days20
working
daysOn
request

Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.5 – NEMA Premium Efficient MG1 motors, Table 12-12 (continued)
Series version	Cast-iron series 1LE1523/1LE1623 ¹⁾ Basic/Performance Line (continued)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 315 L
Rated output	2.2 ... 200 kW at 50 Hz 3 ... 250 hp at 60 Hz
Synchronous speed	1000 ... 3600 rpm
Rated torque	8.1 ... 1195 Nm at 60 Hz
Efficiency	NEMA Premium Efficient MG1 Table 12-12 ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top
(for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	P_{rated} , 60 Hz hp	Order No.	
			Basic Line	Performance Line
FS			▲ New	▲ New
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz				
132 S	3	4	▲ 1LE1523-1CC0-.....	▲ 1LE1623-1CC0-.....
132 M	4	5	▲ 1LE1523-1CC2-.....	▲ 1LE1623-1CC2-.....
132 M	5.5	7.5	▲ 1LE1523-1CC3-.....	▲ 1LE1623-1CC3-.....
160 M	7.5	10	▲ 1LE1523-1DC2-.....	▲ 1LE1623-1DC2-.....
160 L	11	15	▲ 1LE1523-1DC4-.....	▲ 1LE1623-1DC4-.....
180 L	15	20	▲ 1LE1523-1EC4-.....	▲ 1LE1623-1EC4-.....
200 L	18.5	25	▲ 1LE1523-2AC4-.....	▲ 1LE1623-2AC4-.....
200 L	22	30	▲ 1LE1523-2AC5-.....	▲ 1LE1623-2AC5-.....
225 M	30	40	▲ 1LE1523-2BC2-.....	▲ 1LE1623-2BC2-.....
250 M	37	50	▲ 1LE1523-2CC2-.....	▲ 1LE1623-2CC2-.....
280 S	45	60	▲ 1LE1523-2DC0-.....	▲ 1LE1623-2DC0-.....
280 M	55	75	▲ 1LE1523-2DC2-.....	▲ 1LE1623-2DC2-.....
315 S	75	100	▲ 1LE1523-3AC0-.....	▲ 1LE1623-3AC0-.....
315 M	90	125	▲ 1LE1523-3AC2-.....	▲ 1LE1623-3AC2-.....
315 L	110	150	▲ 1LE1523-3AC4-.....	▲ 1LE1623-3AC4-.....
315 L	132	175	▲ 1LE1523-3AC5-.....	▲ 1LE1623-3AC5-.....
315 L	160	200	▲ 1LE1523-3AC6-.....	▲ 1LE1623-3AC6-.....

¹⁾ Notes on motors 1LE1523/1LE1623 NEMA Premium Efficient:
- Comprises CSA, UL and CC No.
- Only valid for voltages ≤ 600 V
- All types are admissible

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	1.6 – Pole-changing motors					
Series version	Aluminum series 1LE1011 For a constant load torque	Aluminum series 1LE1012 For square-law load torque (e.g. for driving fans)				
Cooling	Self-ventilated (IC 411)	Self-ventilated (IC 411)				
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65				
Insulation	Thermal class 155 (F)	Thermal class 155 (F)				
Utilization	Thermal class 130 (B)	Thermal class 130 (B)				
Number of poles	4/2, 8/4	4/2, 6/4, 8/4				
Frame sizes (FS)	100 L ... 160 L	100 L ... 160 L				
Rated output at 50 Hz	0.55 ... 16 kW	0.5 ... 16 kW				
Synchronous speed	750 ... 3600 rpm	750 ... 3600 rpm				
Rated torque at 50 Hz	7.3 ... 86 Nm	4.4 ... 91 Nm				
Efficiency	–	–				
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -				
Price group (PG)	3Z1	3Z1				
Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 and connection box on top (for order number supplements and special versions see Catalog Section 1.8, for delivery times refer to colored background following the Order No.)						
Frame size	P_{rated1} 50 Hz kW	P_{rated2} 50 Hz kW	Order No.	P_{rated1} 50 Hz kW	P_{rated2} 50 Hz kW	Order No.
FS						
4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit						
	1500 rpm	3000 rpm		1500 rpm	3000 rpm	
100 L	1.9	2.4	1LE1011-1AJ4-....	0.65	2.4	1LE1011-1AP4-....
100 L	2.5	3.1	1LE1011-1AJ5-....	0.8	3.1	1LE1011-1AP5-....
112 M	3.7	4.4	1LE1011-1BJ2-....	1.1	4.4	1LE1011-1BP2-....
132 S	4.7	5.9	1LE1011-1CJ0-....	1.45	5.9	1LE1011-1CP0-....
132 M	6.5	8	1LE1011-1CJ2-....	2	8	1LE1011-1CP2-....
160 M	9.3	11.5	1LE1011-1DJ2-....	2.9	11.5	1LE1011-1DP2-....
160 L	13	16	1LE1011-1DJ6-....	4.3	16	1LE1011-1DP6-....
6/4-pole: 1000/1500 rpm at 50 Hz with two windings						
				1000 rpm	1500 rpm	
100 L				0.6	1.7	1LE1012-1AQ4-....
100 L				0.8	2.1	1LE1012-1AQ5-....
112 M				0.9	3	1LE1012-1BQ2-....
132 S				1.2	3.9	1LE1012-1CQ0-....
132 M				1.7	5.4	1LE1012-1CQ2-....
160 M				2.5	7.2	1LE1012-1DQ2-....
160 L				3.7	12	1LE1012-1DQ4-....
8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit						
	750 rpm	1500 rpm		750 rpm	1500 rpm	
100 L	0.55	1.1	1LE1011-1AL4-....	0.5	2	1LE1011-1AR4-....
100 L	0.9	1.5	1LE1011-1AL5-....	0.65	2.5	1LE1011-1AR5-....
112 M	1.1	1.9	1LE1011-1BL2-....	0.9	3.6	1LE1011-1BR2-....
132 S	1.6	3.2	1LE1011-1CL0-....	1.1	4.7	1LE1011-1CR0-....
132 M	2.2	4.4	1LE1011-1CL2-....	1.4	6.4	1LE1011-1CR2-....
160 M	3.5	7	1LE1011-1DL2-....	2.2	9.5	1LE1011-1DR2-....
160 L	5.6	11	1LE1011-1DL4-....	3.3	14	1LE1011-1DR4-....

1.0

SIMOTICS GP 1LE1 Standard Motors

Motors with High Efficiency IE2

Self-ventilated or forced-air cooled motors
Aluminum series 1LE1001



Selection and ordering data

Operating values at rated output														Aluminum series		m _{IM B3} J		Torque class										
P _{Rated} , 50 Hz	P _{Rated} , 60 Hz	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /I _{ra} -ted	I _{LR} /I _{ra} -ted	T _p /I _{ra} -ted	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	Order No.	kg	kgm ²	CL									
kW	kW	FS	rpm	Nm		%	%	%	A							▲ New												
* Cooling: Self-ventilated (IC 411) or with order code F90 forced-air cooled without external fan and fan cover (IC 416) * Efficiency: High Efficiency IE2, service factor (SF) 1.15 * Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																												
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																												
0.75	0.86	80 M	2805	2.6	IE2	77.4	79.5	78.8	0.84	1.67	1.9	4.9	2.3	60	71	▲ 1LE1001-0DA2	9.0	0.0080	16									
1.1	1.27	80 M	2835	3.7	IE2	79.6	81.3	80.8	0.83	2.40	2.7	6.0	3.1	60	71	▲ 1LE1001-0DA3	11	0.011	16									
1.5	1.75	90 S	2885	5.0	IE2	81.3	82.3	80.8	0.84	3.15	2.7	6.9	3.6	65	77	▲ 1LE1001-0EA0	13	0.017	16									
2.2	2.55	90 L	2890	7.3	IE2	83.2	83.9	82.3	0.85	4.5	2.5	7.1	3.7	65	77	▲ 1LE1001-0EA4	15	0.021	16									
3	3.45	100 L	2905	9.9	IE2	84.6	85.2	84.7	0.84	6.1	2.3	7.0	3.3	67	79	1LE1001-1AA4	21	0.044	16									
4	4.55	112 M	2950	13	IE2	85.8	86.7	86.1	0.86	7.8	2.4	7.4	3.3	69	81	1LE1001-1BA2	27	0.092	16									
5.5	6.3	132 S	2950	18	IE2	87.0	88.0	87.4	0.87	10.5	1.8	6.6	2.9	68	80	1LE1001-1CA0	39	0.020	16									
7.5	8.6	132 S	2950	24	IE2	88.1	88.7	88.6	0.87	14.1	2.2	7.5	3.1	68	80	1LE1001-1CA1	43	0.024	16									
11	12.6	160 M	2955	36	IE2	89.4	90.0	89.1	0.87	20.5	2.1	7.4	3.2	70	82	1LE1001-1DA2	67	0.045	16									
15	17.3	160 M	2955	48	IE2	90.3	90.9	90.3	0.88	27	2.4	7.6	3.4	70	82	1LE1001-1DA3	75	0.053	16									
18.5	21.3	160 L	2955	60	IE2	90.9	91.2	90.4	0.88	33.5	2.9	7.9	3.6	70	82	1LE1001-1DA4	84	0.061	16									
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																												
0.55	0.63	80 M	1440	3.7	-	78.1	78.9	76.1	0.74	1.37	2.2	5.3	3.1	53	64	▲ 1LE1001-0DB2	10	0.0017	16									
0.75	0.86	80 M	1440	5.0	IE2	79.6	80.2	78.0	0.76	1.79	2.2	5.6	3.1	53	64	▲ 1LE1001-0DB3	11	0.0021	16									
1.1	1.27	90 S	1425	7.4	IE2	81.4	81.7	79.9	0.78	2.5	2.3	5.6	2.9	56	68	▲ 1LE1001-0EB0	13	0.0028	16									
1.5	1.75	90 L	1435	10	IE2	82.8	83.5	82.0	0.79	3.3	2.6	6.4	3.4	56	68	▲ 1LE1001-1AA4	16	0.0036	16									
2.2	2.55	100 L	1455	14	IE2	84.3	85.1	84.3	0.81	4.65	2.1	6.9	3.3	60	72	1LE1001-1AB4	21	0.0086	16									
3	3.45	100 L	1455	20	IE2	85.5	86.7	86.0	0.82	6.2	2.0	6.9	3.1	60	72	1LE1001-1AB5	25	0.011	16									
4	4.55	112 M	1460	26	IE2	86.6	87.3	86.5	0.81	8.2	2.5	7.1	3.2	58	70	1LE1001-1BB2	29	0.014	16									
5.5	6.3	132 S	1465	36	IE2	87.7	89.0	87.7	0.80	11.3	2.3	6.9	2.9	64	76	1LE1001-1CB0	42	0.027	16									
7.5	8.6	132 M	1465	49	IE2	88.7	90.3	88.8	0.83	14.7	2.3	6.9	2.9	64	76	1LE1001-1CB2	49	0.034	16									
11	12.6	160 M	1470	71	IE2	89.8	90.9	90.8	0.85	21	2.1	6.7	2.8	65	77	1LE1001-1DB2	71	0.065	16									
15	17.3	160 L	1475	97	IE2	90.6	91.3	91.0	0.85	28	2.3	7.3	3.0	65	77	1LE1001-1DB4	83	0.083	16									
Voltages			Motor protection		No. of poles	Frame size	Motor type	Version												Order code(s)								
Frame sizes 80 M to 90 L: Use of the 360° freely rotatable connection box for 2 and 4-pole motors ²⁾																												
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	PTC thermistor with 1 temp. sensor	2, 4	80 M ... 90 L	1LE1001-0D ... -0E	Standard	2	2	B												-					
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	Without	2, 4	80 M ... 90 L	1LE1001-0D ... -0E	Standard	3	4	B												-					
50 Hz	400 VY	60 Hz ¹⁾	460 VY	Without	2, 4	80 M ... 90 L	1LE1001-0D ... -0E	Standard	0	2	A												-					
Frame sizes 100 L to 160 L: Use of the 4 x 90° rotatable connection box																												
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	Any	2, 4	100 L ... 160 L	1LE1001-1A ... -1D	Standard	2	2													-					
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	Any	2, 4	100 L ... 160 L	1LE1001-1A ... -1D	Standard	3	4													-					
50 Hz	500 VY		Any	Any	2, 4	100 L ... 160 L	1LE1001-1A ... -1D	Without add. charge	2	7													-					
50 Hz	500 VΔ		Any	Any	2, 4	100 L ... 160 L	1LE1001-1A ... -1D	Without add. charge	4	0													-					
Further voltages ¹⁾														9	0													...
Types of construction			Motor protection		No. of poles	Frame size	Motor type	Version												Order code(s)								
Without flange			IM B3 ³⁾		2, 4	80 M ... 160 L	1LE1001-0D ... -1D	Standard	A												-							
With flange			IM B5 ³⁾		2, 4	80 M ... 160 L	1LE1001-0D ... -1D	With additional charge	F												-							
With standard flange			IM B14 ³⁾		2, 4	80 M ... 160 L	1LE1001-0D ... -1D	With additional charge	K												-							
Further types of construction																												...
Motor protection			Motor protection		No. of poles	Frame size	Motor type	Version												Order code(s)								
Without			PTC thermistor with 3 temperature sensors		2, 4	100 L ... 160 L	1LE1001-1A ... -1D	Standard	A												-							
With			PTC thermistor with 3 temperature sensors		2, 4	100 L ... 160 L	1LE1001-1A ... -1D	With additional charge	B												-							
Further motor protection																												...
Connection box position			Motor protection		No. of poles	Frame size	Motor type	Version												Order code(s)								
Connection box at top			PTC thermistor with 3 temperature sensors		2, 4	80 M ... 160 L	1LE1001-0D ... -1D	Standard	4												-							
Further connection box positions																												...
Special versions			Motor protection		No. of poles	Frame size	Motor type	Version												Order code(s)								
Forced-air cooled without ext. fan/fan cover (IC 416)			PTC thermistor with 3 temperature sensors		2, 4	80 M ... 160 L	1LE1001-0D ... -1D	1LE1001-...-Z	F90	+	+	+	+	+	+	+	+	+	+	+								
Options																												...

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For converter-fed operation of shaft heights 80 and 90, ordering with PTC thermistors and their connection to the converter is recommended.

³⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS GP 1LE1 Standard Motors

Motors with High Efficiency IE2



Self-ventilated or forced-air cooled motors
Aluminum series 1LE1001

Selection and ordering data (continued)

Operating values at rated output															Aluminum series		m _{IM B3} J		Torque class	
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / I _{ra} - ted	I _{LR} / I _{ra} - ted	T _B / T _{ra} - ted	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	Order No.	▲ New	kg	kgm ²	CL
kW	kW	FS	rpm	Nm	%	%	%	%	A					dB(A)	dB(A)					
• Cooling: Self-ventilated (IC 411) or with order code F90 forced-air cooled without external fan and fan cover (IC 416) • Efficiency: High Efficiency IE2, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																				
0.37	0.43	80 M	925	3.85	-	71.4	71.5	66.5	0.69	1.08	2.1	4.0	2.4	42	53	▲ 1LE1001-0DC2	9	0.0017	16	
0.55	0.63	80 M	935	5.6	-	74.0	74.0	70.5	0.66	1.63	2.5	4.4	2.9	42	53	▲ 1LE1001-0DC3	12	0.0025	16	
0.75	0.86	90 S	925	7.7	IE2	75.9	76.0	73.0	0.70	2.05	2.0	4.1	2.5	43	55	▲ 1LE1001-0EC0	13	0.0030	16	
1.1	1.27	90 L	935	11.2	IE2	78.1	78.5	75.0	0.70	2.90	2.2	4.4	2.6	43	55	▲ 1LE1001-0EC4	16	0.0040	16	
1.5	1.75	100 L	970	15	IE2	79.8	80.2	79.0	0.73	3.7	2.0	6.2	2.9	59	71	1LE1001-1AC4	25	0.011	16	
2.2	2.55	112 M	965	22	IE2	81.8	82.5	81.3	0.75	5.2	2.1	6.0	3.1	57	69	1LE1001-1BC2	29	0.014	16	
3	3.45	132 S	970	30	IE2	83.3	84.0	82.8	0.74	7.0	1.6	5.6	2.6	63	75	1LE1001-1CC0	38	0.024	13	
4	4.55	132 M	970	39	IE2	84.6	85.8	85.0	0.78	8.7	1.6	5.6	2.5	63	75	1LE1001-1CC2	43	0.029	13	
5.5	6.3	132 M	970	54	IE2	86.0	87.4	87.0	0.77	12	1.9	6.1	2.8	63	75	1LE1001-1CC3	52	0.037	16	
7.5	8.6	160 M	975	73	IE2	87.2	87.7	86.9	0.77	16.1	1.8	6.3	2.8	67	79	1LE1001-1DC2	77	0.075	16	
11	12.6	160 L	975	108	IE2	88.7	89.5	89.4	0.80	22.5	1.7	6.2	2.7	67	79	1LE1001-1DC4	93	0.098	16	
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																				
0.75	0.86	100 L	725	9.9	-	68.3	65.8	59.3	0.58	2.75	1.6	4.0	2.8	60	72	1LE1001-1AD4	21	0.0086	13	
1.1	1.27	100 L	725	14	-	68.3	65.4	58.9	0.58	4.0	1.8	4.1	2.8	60	72	1LE1001-1AD5	25	0.011	13	
1.5	1.75	112 M	720	20	-	75.8	76.0	73.0	0.67	4.25	1.4	4.2	2.4	63	75	1LE1001-1BD2	29	0.014	13	
2.2	2.55	132 S	725	29	-	78.8	79.3	77.2	0.65	6.2	1.4	4.3	2.1	63	75	1LE1001-1CD0	41	0.027	10	
3	3.45	132 M	730	39	-	82.7	83.0	80.9	0.65	8.1	1.4	5.0	2.4	63	75	1LE1001-1CD2	49	0.035	10	
4	4.55	160 M	730	52	-	86.2	86.9	86.0	0.69	9.7	1.8	4.3	2.0	63	75	1LE1001-1DD2	69	0.065	13	
5.5	6.3	160 M	730	72	-	86.7	87.5	86.5	0.69	13.3	2.1	4.4	2.1	63	75	1LE1001-1DD3	82	0.083	13	
7.5	8.6	160 L	730	98	-	86.9	88.2	88.1	0.72	17.3	1.9	4.5	2.1	63	75	1LE1001-1DD4	94	0.098	13	
Voltages			No. of poles	Frame size	Motor type	Version	Order code(s)													
Frame sizes 80 M to 90 L: Use of the 360° freely rotatable connection box for 6-pole motors ²⁾																				
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	PTC thermistor	6	80 M ... 90 L	1LE1001-0D ... -0E	Standard	2	2	B									
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	with 1 temperature sensor	6	80 M ... 90 L	1LE1001-0D ... -0E	Standard	3	4	B									
50 Hz	400 VY	60 Hz ¹⁾	460 VY	Without	6	80 M ... 90 L	1LE1001-0D ... -0E	Standard	0	2	A									
Frame sizes 100 L to 160 L: Use of the 4 x 90° rotatable connection box																				
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY		6, 8	100 L ... 160 L	1LE1001-1A ... -1D	Standard	2	2										
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ		6, 8	100 L ... 160 L	1LE1001-1A ... -1D	Standard	3	4										
50 Hz	500 VY				6, 8	100 L ... 160 L	1LE1001-1A ... -1D	Without additional charge	2	7										
50 Hz	500 VΔ				6, 8	100 L ... 160 L	1LE1001-1A ... -1D	Without additional charge	4	0										
Further voltages ¹⁾ For additional charges, code numbers, order codes and descriptions, see from Page 1/47 9 0 ...																				
Types of construction			No. of poles	Frame size	Motor type	Version	Order code(s)													
Without flange			IM B3 ³⁾	6, 8	80 M ... 160 L	1LE1001-0D ... -1D	Standard	A												
With flange			IM B5 ³⁾	6, 8	80 M ... 160 L	1LE1001-0D ... -1D	With additional charge	F												
With standard flange			IM B14 ³⁾	6, 8	80 M ... 160 L	1LE1001-0D ... -1D	With additional charge	K												
Further types of construction For additional charges, code letters and descriptions, see from Page 1/50 ...																				
Motor protection			No. of poles	Frame size	Motor type	Version	Order code(s)													
Frame sizes 100 L to 160 L: Use of the 4 x 90° rotatable connection box																				
Without				6, 8	100 L ... 160 L	1LE1001-1A ... -1D	Standard	A												
PTC thermistor with 3 temperature sensors				6, 8	100 L ... 160 L	1LE1001-1A ... -1D	With additional charge	B												
Further motor protection For additional charges, code letters and descriptions, see from Page 1/56 ...																				
Connection box position			No. of poles	Frame size	Motor type	Version	Order code(s)													
Connection box at top				6, 8	80 M ... 160 L	1LE1001-0D ... -1D	Standard	4												
Further connection box positions For additional charges, code numbers and descriptions, see from Page 1/58 ...																				
Special versions			No. of poles	Frame size	Motor type	Version											Order code(s)			
Forced-air cooled without external fan/fan cover (IC 416)			6, 8	80 M ... 160 L	1LE1001-0D ... -1D	1LE1001-...-Z F90+...+...+...														
Options For additional charges, orer codes and descriptions, see from Page 1/60 1LE1001-...-Z+...+...+...+...																				

1.1

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ For converter-fed operation of shaft heights 80 and 90, ordering with PTC thermistors and their connection to the converter is recommended.
³⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS GP 1LE1 Standard Motors

Motors with High Efficiency IE2



Self-ventilated motors
Aluminum series 1LE1001 with increased output

Selection and ordering data

Operating values at rated output															Aluminum series				
$P_{rated, 50 Hz}$	$P_{rated, 60 Hz}$	Frame size	$n_{rated, 50 Hz}$	$T_{rated, 50 Hz}$	IE class	$\eta_{rated, 50 Hz, 4/4}$	$\eta_{rated, 50 Hz, 3/4}$	$\eta_{rated, 50 Hz, 2/4}$	$\cos\phi_{rated, 50 Hz, 4/4}$	$I_{rated, 50 Hz, 400 V}$	$T_{LR, rated}$	$L_{LR, rated}$	$T_{PB, rated}$	$L_{pFA, 50 Hz}$	$L_{WA, 50 Hz}$	1LE1001 – IE2 version in accordance with IEC 60034-30 with increased output Order No.	$m_{IM B3}$	J	Torque class
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)		kg	kgm ²	CL
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Efficiency: High Efficiency IE2, service factor (SF) 1.15 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																			
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																			
4	4.55	100 L	2905	13	IE2	85.8	87.2	87.0	0.86	7.8	2.5	7.6	3.5	67	79	1LE1001-1AA6	26	0.0054	16
5.5	6.3	112 M	2950	18	IE2	87.0	87.5	87.2	0.89	10.3	2.2	7.7	3.3	69	81	1LE1001-1BA6	34	0.012	16
11	12.6	132 M	2950	36	IE2	89.4	90.2	90.3	0.89	20	2.3	7.9	3.2	68	80	1LE1001-1CA6	57	0.031	16
22	25.3	160 L	2955	71	IE2	91.3	91.7	91.3	0.89	39	3.1	8.4	3.7	70	82	1LE1001-1DA6	94	0.068	16
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
4	4.55	100 L	1460	26	IE2	86.6	87.4	86.7	0.80	8.3	2.2	7.5	3.5	60	72	1LE1001-1AB6	30	0.014	16
5.5	6.3	112 M	1460	36	IE2	87.7	88.1	87.4	0.81	11.2	2.5	7.1	3.2	58	70	1LE1001-1BB6	34	0.017	16
11	12.6	132 M	1465	72	IE2	89.8	90.6	90.4	0.84	21	2.6	7.7	3.1	64	76	1LE1001-1CB6	64	0.046	16
18.5	21.3	160 L	1475	120	IE2	91.2	91.7	91.6	0.85	34.5	2.5	7.7	3.3	65	77	1LE1001-1DB6	100	0.099	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
2	2.55	100 L	965	22	IE2	81.8	82.5	81.5	0.76	5.1	1.9	5.7	2.9	59	71	1LE1001-1AC6	30	0.014	16
3	3.45	112 M	960	30	IE2	83.3	84.1	83.6	0.79	6.6	2.1	6.0	3.1	57	69	1LE1001-1BC6	34	0.017	16
7.5	8.6	132 M	970	74	IE2	87.2	87.8	87.3	0.77	16.1	2.1	6.5	3.0	63	75	1LE1001-1CC6	64	0.046	16
15	17.3	160 L	975	147	IE2	89.7	90.6	90.5	0.81	30	1.9	6.5	2.9	67	79	1LE1001-1DC6	115	0.12	16
Voltagess				No. of poles	Frame size	Motor type		Version								Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		Standard		2 2						-			
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		Standard		3 4						-			
50 Hz	500 VY			2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		Without additional charge		2 7						-			
50 Hz	500 VΔ			2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		Without additional charge		4 0						-			
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 1/47																	
Types of construction				No. of poles	Frame size	Motor type		Version								Order code(s)			
Without flange		IM B3 ²⁾		2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		Standard		A						-			
With flange		IM B5 ²⁾		2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		With additional charge		F						-			
With standard flange		IM B14 ²⁾		2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		With additional charge		K						-			
Further types of construction		For additional charges, code letters and descriptions, see from Page 1/50																	
Motor protection				No. of poles	Frame size	Motor type		Version								Order code(s)			
Without				2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		Standard		A						-			
PTC thermistor with 3 temperature sensors				2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		With additional charge		B						-			
Further motor protection		For additional charges, code letters and descriptions, see from Page 1/56																	
Connection box position				No. of poles	Frame size	Motor type		Version								Order code(s)			
Connection box at top				2, 4, 6	100 L ... 160 L	1LE1001-1A ... -1D		Standard		4						-			
Further connection box positions		For additional charges, code numbers and descriptions, see from Page 1/58																	
Special versions				No. of poles	Frame size	Motor type										Order code(s)			
Options		For additional charges, order codes and descriptions, see from Page 1/60 1LE1001-... -Z ...+...+...+...																	

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS GP 1PC1 Standard Motors

Motors with High Efficiency IE2



Naturally cooled motors without external fan
Aluminum series 1PC1001

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size	Operating values at rated output										Aluminum series		m _M B3 J	Torque class							
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	COS- φ _{rated} 4/4	I _{rated} 50 Hz, 400 V	T _{FR} / T _{ra} ted	I _{FR} / I _{rated} ted	T _B / T _{ra} ted	L _{pFA} 50 Hz dB(A)			L _{WA} 50 Hz dB(A)	Order No.	kg	kgm ²	CL		
<ul style="list-style-type: none"> • Cooling: Naturally cooled without external fan (IC 410) • Efficiency: High Efficiency IE2, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																							
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																							
1.4	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1AA4	21	0.0044	13
1.6	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1BA2	27	0.0092	16
3.1	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CA0	39	0.020	13
4.3	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CA1	43	0.024	13
6.3	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DA2	67	0.045	10
6.5	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DA3	75	0.053	13
9	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DA4	84	0.061	16
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																							
1.1	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1AB4	21	0.0086	13
1.5	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1AB5	25	0.011	13
2	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1BB2	29	0.014	13
2.6	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CB0	42	0.027	13
4	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CB2	49	0.034	13
6	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DB2	71	0.065	10
6.2	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DB4	83	0.083	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																							
0.85	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1AC4	25	0.011	10
1.2	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1BC2	29	0.014	10
1.5	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CC0	38	0.024	7
2.5	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CC2	43	0.029	7
2.7	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CC3	52	0.037	13
5	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DC2	77	0.075	10
6.5	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DC4	93	0.098	10
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																							
0.37	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1AD4	21	0.0086	10
0.55	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1AD5	25	0.011	10
0.75	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1BD2	29	0.014	7
1.1	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CD0	41	0.027	7
1.5	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1CD2	49	0.035	7
2.4	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DD2	69	0.065	10
3.3	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DD3	82	0.083	10
4.6	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1001-1DD4	94	0.098	10
Voltages																							
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	No. of poles	Frame size	Motor type	Version													Order code(s)			
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	Standard	2	2											-			
50 Hz	500 VY			2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	Standard	3	4											-			
50 Hz	500 VΔ			2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	Without add. charge	2	7											-			
50 Hz	500 VΔ			2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	Without add. charge	4	0											-			
Further voltages ¹⁾ For add. charges, code numbers, order codes and descriptions, see from Page 1/47																							
Types of construction																							
Without flange	IM B3 ²⁾	No. of poles	Frame size	Motor type	Version													Order code(s)					
With flange	IM B5 ²⁾	2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	Standard													-					
With standard flange	IM B14 ²⁾	2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	With add. charge													-					
Further types of construction For additional charges, code letters and descriptions, see from Page 1/50																							
Motor protection																							
Without	No. of poles	Frame size	Motor type	Version													Order code(s)						
PTC thermistor with 3 temperature sensors	2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	Standard													-						
Further motor protection	2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	With add. charge													-						
Further motor protection For additional charges, code letters and descriptions, see from Page 1/56																							
Connection box position																							
Connection box at top	No. of poles	Frame size	Motor type	Version													Order code(s)						
Further connection box positions	2, 4, 6, 8	100 L ... 160 L	1PC1001-1A ... -1D	Standard													-						
Further connection box positions For additional charges, code numbers and descriptions, see from Page 1/58																							
Special versions																							
Options	No. of poles	Frame size	Motor type															Order code(s)					
For add. charges, order codes and descriptions, see from Page 1/60 1LE1001- ... -Z ...+...+...+																							

Note: The rated outputs and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and

stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS SD 1LE1 Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors
Cast-iron series 1LE1501/1LE1601 Basic/Performance Line



Selection and ordering data

P _{rated} , 50 Hz kW	P _{rated} , 60 Hz kW 1)	Frame size	Operating values at rated output										Cast-iron series 1LE1501 – Basic Line 1LE1601 – Performance Line IE2 version in accordance with IEC 60034-30 Order No.	m _{IM B3 J} kg	Torque class kgm ² CL
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}			

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2, service factor (SF) 1.15
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz¹⁾

3	3.45	100 L	2905	9.9	IE2	84.6	85.2	84.7	0.84	6.1	2.3	7.0	3.3	67	79	▲ 1LE1 01-1AA4	32	0.0044	16
4	4.55	112 M	2950	13	IE2	85.8	86.7	86.1	0.86	7.8	2.4	7.4	3.3	69	81	▲ 1LE1 01-1BA2	39	0.0092	16
5.5	6.3	132 S	2950	18	IE2	87.0	88.0	87.4	0.87	10.5	1.8	6.6	2.9	68	80	▲ 1LE1 01-1CA0	57	0.020	16
7.5	8.6	132 S	2950	24	IE2	88.1	88.7	88.6	0.87	14.1	2.2	7.5	3.1	68	80	▲ 1LE1 01-1CA1	61	0.024	16
11	12.6	160 M	2955	36	IE2	89.4	90.0	89.1	0.87	20.5	2.1	7.4	3.2	70	82	▲ 1LE1 01-1DA2	96	0.045	16
15	17.3	160 M	2955	48	IE2	90.3	90.9	90.3	0.88	27	2.4	7.6	3.4	70	82	▲ 1LE1 01-1DA3	104	0.053	16
18.5	21.3	160 L	2955	60	IE2	90.9	91.2	90.4	0.88	33.5	2.9	7.9	3.6	70	82	▲ 1LE1 01-1DA4	113	0.061	16
22	24.5	180 M	2940	71	IE2	91.3	91.8	91.4	0.87	40.5	2.7	7.4	3.6	68	81	▲ 1LE1 01-1EA2	145	0.069	16
30	33.5	200 L	2955	97	IE2	92.0	92.3	91.7	0.87	54	2.5	6.9	3.3	71	84	▲ 1LE1 01-2AA4	200	0.13	16
37	41.5	200 L	2960	119	IE2	92.5	92.8	92.3	0.88	66	2.7	7.4	3.5	71	84	▲ 1LE1 01-2AA5	225	0.15	16
45	51	225 M	2965	145	IE2	92.9	93.1	92.5	0.88	79	2.7	7.8	3.7	71	84	▲ 1LE1 01-2BA2	295	0.23	16
55	62	250 M	2970	177	IE2	93.2	93.3	92.4	0.89	96	2.3	6.8	3.1	74	88	▲ 1LE1 01-2CA2	360	0.40	13
75	84	280 S	2978	240	IE2	93.8	93.6	92.4	0.87	133	2.5	7.2	3.2	74	88	▲ 1LE1 01-2DA0	490	0.71	13
90	101	280 M	2975	289	IE2	94.1	94.2	93.5	0.88	157	2.5	7.1	3.1	74	88	▲ 1LE1 01-2DA2	530	0.83	13
110	123	315 S	2982	352	IE2	94.3	94.2	93.3	0.90	187	2.4	7.3	3.0	76	90	▲ 1LE1 01-3AA0	720	1.3	13
132	148	315 M	2982	423	IE2	94.6	94.7	94.1	0.91	220	2.4	7.2	3.1	76	90	▲ 1LE1 01-3AA2	880	1.6	13
160	180	315 L	2982	512	IE2	94.8	94.9	94.3	0.92	265	2.3	7.0	3.1	78	93	▲ 1LE1 01-3AA4	930	1.8	13
200	224	315 L	2982	640	IE2	95.0	95.2	94.8	0.92	330	2.4	7.1	3.0	78	93	▲ 1LE1 01-3AA5	1130	2.2	13

Relubrication	Motor prot.	Fan cover	Bearing size	Converter-fed operat.	Warranty	Version	Order code(s)
Optional (standard from FS 280 upwards)	Optional	Plastic	62 (63 from FS 280 upwards)	Up to 460 V	12 months	5	
Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	63	Up to 460 V	36 months	6	
Voltages		No. of poles	Frame size	Motor type	Version	Order code(s)	
50 Hz	230 VΔ/400 VY 60 Hz ¹⁾	460 VY	2	100 L ... 315 L	1LE1 01-1A ... -3A	Standard	2 2
50 Hz	400 VΔ/690 VY 60 Hz ¹⁾	460 VΔ	2	100 L ... 315 L	1LE1 01-1A ... -3A	Standard	3 4
50 Hz	500 VY		2	100 L ... 315 L	1LE1 01-1A ... -3A	Without additional charge	2 7
50 Hz	500 VΔ		2	100 L ... 315 L	1LE1 01-1A ... -3A	Without additional charge	4 0
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 1/49				9 0	...
Types of construction		No. of poles	Frame size	Motor type	Version	Order code(s)	
Without flange	IM B3 ²⁾	2	100 L ... 315 L	1LE1 01-1A ... -3A	Standard	A	
With flange	IM B5 ²⁾	2	100 L ... 315 M	1LE1 01-1A ... -3A	With additional charge	F	
With standard flange	IM B14 ²⁾	2	100 L ... 160 L	1LE1 01-1A ... -1D	With additional charge	K	
Further types of construction		For additional charges, code letters and descriptions, see from Page 1/53					...
Motor protection		Line	No. of poles	Frame size	Motor type	Version	Order code(s)
Without	Only possible for Basic Line		2	100 L ... 315 L	1LE1501-1A ... -3A	Standard	A
PTC thermistor with 3 temperature sensors	Basic Line		2	100 L ... 315 L	1LE1501-1A ... -3A	With additional charge	B
	Performance Line		2	100 L ... 315 L	1LE1601-1A ... -3A	Standard	B
Further motor protection		For additional charges, code letters and descriptions, see from Page 1/57					...
Connection box position		No. of poles	Frame size	Motor type	Version	Order code(s)	
Connection box at top		2	100 L ... 315 L	1LE1 01-1A ... -3A	Standard	4	
Further connection box positions		For additional charges, code numbers and descriptions, see from Page 1/59					
Special versions		No. of poles	Frame size	Motor type	Version	Order code(s)	
Options		For additional charges, order codes and descriptions, see from Page 1/65				1LE1 01- ... -Z	...+...+...+...

1) Operating values at rated output for 60 Hz are available on request.
 2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

SIMOTICS SD 1LE1 Standard Motors

Motors with High Efficiency IE2



Self-ventilated motors
Cast-iron series 1LE1501/1LE1601 Basic/Performance Line

Selection and ordering data (continued)

Operating values at rated output														Cast-iron series		m _{IM B3} J		Torque class				
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pFA} , 50 Hz	L _{WA} , 50 Hz	1LE1501 – Basic Line	1LE1601 – Performance Line	IE2 version in accordance with IEC 60034-30	Order No.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)	▲ New						
2.2	2.55	100 L	1455	14	IE2	84.3	85.1	84.3	0.81	4.65	2.1	6.9	3.3	60	72	▲ 1LE1	01-1AB4	32	0.0086	16		
3	3.45	100 L	1455	20	IE2	85.5	86.7	86.0	0.82	6.2	2.0	6.9	3.1	60	72	▲ 1LE1	01-1AB5	37	0.011	16		
4	4.55	112 M	1460	26	IE2	86.6	87.3	86.5	0.81	8.2	2.5	7.1	3.2	58	70	▲ 1LE1	01-1BB2	46	0.014	16		
5.5	6.3	132 S	1465	36	IE2	87.7	89.0	87.7	0.80	11.3	2.3	6.9	2.9	64	76	▲ 1LE1	01-1CB0	61	0.027	16		
7.5	8.6	132 M	1465	49	IE2	88.7	90.3	88.8	0.83	14.7	2.3	6.9	2.9	64	76	▲ 1LE1	01-1CB2	75	0.034	16		
11	12.6	160 M	1470	71	IE2	89.8	90.9	90.8	0.85	21	2.1	6.7	2.8	65	77	▲ 1LE1	01-1DB2	96	0.065	16		
15	17.3	160 L	1475	97	IE2	90.6	91.3	91.0	0.85	28	2.3	7.3	3.0	65	77	▲ 1LE1	01-1DB4	104	0.083	16		
18.5	21.3	180 M	1465	121	IE2	91.2	92.0	91.9	0.84	35	2.5	7.2	3.4	58	71	▲ 1LE1	01-1EB2	160	0.12	16		
22	25.3	180 L	1465	143	IE2	91.6	92.2	91.9	0.84	41.5	2.6	7.3	3.5	58	71	▲ 1LE1	01-1EB4	170	0.13	16		
30	34.5	200 L	1470	195	IE2	92.3	92.8	92.6	0.84	56	2.5	6.7	3.3	62	75	▲ 1LE1	01-2AB5	230	0.20	16		
37	42.5	225 S	1470	240	IE2	92.7	93.5	93.5	0.88	65	2.3	6.6	2.9	62	75	▲ 1LE1	01-2BB0	280	0.42	16		
45	52	225 M	1475	291	IE2	93.1	93.8	93.7	0.87	80	2.5	6.9	3.1	63	76	▲ 1LE1	01-2BB2	305	0.46	16		
55	63	250 M	1480	355	IE2	93.5	93.9	93.5	0.85	100	2.7	6.8	3.0	62	75	▲ 1LE1	01-2CB2	385	0.75	16		
75	86	280 S	1485	482	IE2	94.0	94.2	93.8	0.87	132	2.5	6.8	3.0	69	83	▲ 1LE1	01-2DB0	550	1.3	16		
90	104	280 M	1486	578	IE2	94.2	94.3	93.6	0.87	159	2.6	7.3	3.1	68	82	▲ 1LE1	01-2DB2	570	1.4	16		
110	127	315 S	1490	705	IE2	94.5	94.6	94.0	0.86	195	2.7	7.4	3.0	69	83	▲ 1LE1	01-3AB0	740	2.0	16		
132	152	315 M	1490	847	IE2	94.7	94.9	94.6	0.87	230	2.7	7.1	2.9	68	83	▲ 1LE1	01-3AB2	870	2.3	16		
160	184	315 L	1490	1025	IE2	94.9	95.0	94.5	0.87	280	2.8	7.2	3.1	72	86	▲ 1LE1	01-3AB4	940	2.8	16		
200	230	315 L	1490	1282	IE2	95.1	95.3	94.7	0.87	350	3.1	7.5	3.2	72	87	▲ 1LE1	01-3AB5	1140	3.5	16		
Basic Line		Optional (standard from FS 280 upwards)	Motor prot. Optional	Fan cover Plastic	Bearing size 62 (63 from FS 280 upwards)	Converter-fed operat. Up to 460 V	Warranty 12 months	5														
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	Bearing size 63	Converter-fed operat. Up to 460 V	Warranty 36 months	6														
Voltages				No. of poles	Frame size	Motor type	Version	Order code(s)														
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	4	100 L ... 315 L	1LE1■01-1A ... -3A	Standard	2 2	-													
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	4	100 L ... 315 L	1LE1■01-1A ... -3A	Standard	3 4	-													
50 Hz	500 VY			4	100 L ... 315 L	1LE1■01-1A ... -3A	Without additional charge	2 7	-													
50 Hz	500 VΔ			4	100 L ... 315 L	1LE1■01-1A ... -3A	Without additional charge	4 0	-													
Further voltages ¹⁾								9 0	...													
Types of construction				No. of poles	Frame size	Motor type	Version	Order code(s)														
Without flange	IM B3 ²⁾			4	100 L ... 315 L	1LE1■01-1A ... -3A	Standard	A	-													
With flange	IM B5 ²⁾			4	100 L ... 315 M	1LE1■01-1A ... -3A	With additional charge	F	-													
With standard flange	IM B14 ²⁾			4	100 L ... 160 L	1LE1■01-1A ... -1D	With additional charge	K	-													
Further types of construction								For additional charges, code letters and descriptions, see from Page 1/53														
Motor protection				Line	No. of poles	Frame size	Motor type	Version	Order code(s)													
Without	Only possible for Basic Line			4	100 L ... 315 L	1LE1501-1A ... -3A	Standard	A	-													
PTC thermistor with 3 temperature sensors	Basic Line			4	100 L ... 315 L	1LE1501-1A ... -3A	With additional charge	B	-													
	Performance Line			4	100 L ... 315 L	1LE1601-1A ... -3A	Standard	B	-													
Further motor protection								For additional charges, code letters and descriptions, see from Page 1/57														
Connection box position				No. of poles	Frame size	Motor type	Version	Order code(s)														
Connection box at top				4	100 L ... 315 L	1LE1■01-1A ... -3A	Standard	4	-													
Further connection box positions								For additional charges, code numbers and descriptions, see from Page 1/59														
Special versions				No. of poles	Frame size	Motor type	Order code(s)															
Options								For additional charges, order codes and descriptions, see from Page 1/65 1LE1■01-...■-Z ...+...+...+...														

1) Operating values at rated output for 60 Hz are available on request.
 2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

1.1

SIMOTICS SD 1LE1 Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors
Cast-iron series 1LE1501/1LE1601 Basic/Performance Line



Selection and ordering data (continued)

Operating values at rated output														Cast-iron series		m _{IM B3} J		Torque class			
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /I _{ra}	I _{LR} /I _{ra}	T _B /T _{ra}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	Order No.	kg	kgm ²	CL		
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)	▲ New					
• Cooling: Self-ventilated (IC 411) • Efficiency: High Efficiency IE2, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																					
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																					
1.5	1.75	100 L	970	15	IE2	79.8	80.2	79.0	0.73	3.7	2.0	6.2	2.9	59	71	▲ 1LE1 01-1AC4	36	0.011	16		
2.2	2.55	112 M	965	22	IE2	81.8	82.5	81.3	0.75	5.2	2.1	6.0	3.1	57	69	▲ 1LE1 01-1BC2	41	0.014	16		
3	3.45	132 S	970	30	IE2	83.3	84.0	82.8	0.74	7.0	1.6	5.6	2.6	63	75	▲ 1LE1 01-1CC0	56	0.024	13		
4	4.55	132 M	970	39	IE2	84.6	85.8	85.0	0.78	8.7	1.6	5.6	2.5	63	75	▲ 1LE1 01-1CC2	61	0.029	13		
5.5	6.3	132 M	970	54	IE2	86.0	87.4	87.0	0.77	12	1.9	6.1	2.8	63	75	▲ 1LE1 01-1CC3	70	0.037	16		
7.5	8.6	160 M	975	73	IE2	87.2	87.7	86.9	0.77	16.1	1.8	6.3	2.8	67	79	▲ 1LE1 01-1DC2	106	0.075	16		
11	12.6	160 L	975	108	IE2	88.7	89.5	89.4	0.80	22.5	1.7	6.2	2.7	67	79	▲ 1LE1 01-1DC4	122	0.098	16		
15	18	180 L	975	147	IE2	89.7	90.1	90.2	0.78	31	2.5	6.0	3.1	56	70	▲ 1LE1 01-1EC4	155	0.17	16		
18.5	22	200 L	978	181	IE2	90.4	91.3	91.2	0.82	36	2.4	5.8	2.6	58	72	▲ 1LE1 01-2AC4	200	0.25	16		
22	26.5	200 L	978	215	IE2	90.9	91.6	91.2	0.82	42.5	2.5	6.2	2.6	58	72	▲ 1LE1 01-2AC5	220	0.30	16		
30	36	225 M	980	292	IE2	91.7	92.5	92.3	0.83	57	2.5	6.1	2.8	56	70	▲ 1LE1 01-2BC2	285	0.58	16		
37	44.5	250 M	982	360	IE2	92.2	93.1	93.1	0.83	70	2.8	6.0	2.5	57	71	▲ 1LE1 01-2CC2	370	0.86	16		
45	54	280 S	985	436	IE2	92.7	93.4	93.2	0.84	83	2.7	6.3	2.6	61	75	▲ 1LE1 01-2DC0	460	1.1	16		
55	66	280 M	985	533	IE2	93.1	93.9	94.0	0.86	99	2.5	6.4	2.6	61	75	▲ 1LE1 01-2DC2	510	1.4	16		
75	90	315 S	988	725	IE2	93.7	94.0	93.6	0.84	138	2.5	6.7	2.8	62	76	▲ 1LE1 01-3AC0	660	2.1	16		
90	108	315 M	988	870	IE2	94.0	94.3	93.6	0.84	165	2.6	6.9	2.8	64	78	▲ 1LE1 01-3AC2	730	2.5	16		
110	132	315 L	988	1063	IE2	94.3	94.6	94.5	0.86	196	2.7	7.0	2.8	62	76	▲ 1LE1 01-3AC4	920	3.6	16		
132	158	315 L	988	1276	IE2	94.6	94.9	94.7	0.86	235	3.0	7.5	2.9	64	78	▲ 1LE1 01-3AC5	990	4.0	16		
160	192	315 L	988	1546	IE2	94.8	94.7	94.4	0.86	285	3.1	7.7	3.3	65	80	▲ 1LE1 01-3AC6	1160	4.7	16		
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																					
0.75	0.86	100 L	725	9.9	-	68.3	65.8	59.3	0.58	2.8	1.6	4.0	2.8	60	72	▲ 1LE1 01-1AD4	32	0.0086	13		
1.1	1.3	100 L	725	14	-	68.3	65.4	58.9	0.58	4.0	1.8	4.1	2.8	60	72	▲ 1LE1 01-1AD5	36	0.011	13		
1.5	1.75	112 M	720	20	-	75.8	76.0	73.0	0.67	4.25	1.4	4.2	2.4	63	75	▲ 1LE1 01-1BD2	51	0.014	13		
2.2	2.55	132 M	725	29	-	78.8	79.3	77.2	0.65	6.2	1.4	4.3	2.1	63	75	▲ 1LE1 01-1CD0	59	0.027	10		
3	3.45	132 M	730	39	-	82.7	83.0	80.9	0.65	8.1	1.4	5.0	2.4	63	75	▲ 1LE1 01-1CD2	67	0.035	10		
4	4.55	160 M	730	52	-	86.2	86.9	86.0	0.69	9.7	1.8	4.3	2.0	63	75	▲ 1LE1 01-1DD2	98	0.065	13		
5.5	6.3	160 M	730	72	-	86.7	87.5	86.5	0.69	13.3	2.1	4.4	2.1	63	75	▲ 1LE1 01-1DD3	111	0.083	13		
7.5	8.6	160 L	730	98	-	86.9	88.2	88.1	0.72	17.3	1.9	4.5	2.1	63	75	▲ 1LE1 01-1DD4	123	0.098	13		
Relubrication		Motor prot.		Fan cover		Bearing size		Converter-fed operat.		Warranty											
Basic Line		Optional (standard from FS 280 upwards)		Optional		Plastic		62 (63 from FS 280 upwards)		Up to 460 V 12 months		5									
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)		Standard PTC		Steel		63		Up to 460 V 36 months		6									
Voltages		No. poles		Frame size		Motor type		Version													
50 Hz		230 VΔ/400 VY		60 Hz ¹⁾		460 VY		6, 8		100 L ... 315 L		1LE1 01-1A ... -3A		Standard		2 2		-			
50 Hz		400 VΔ/690 VY		60 Hz ¹⁾		460 VA		6, 8		100 L ... 315 L		1LE1 01-1A ... -3A		Standard		3 4		-			
50 Hz		500 VY						6, 8		100 L ... 315 L		1LE1 01-1A ... -3A		Without add. charge		2 7		-			
50 Hz		500 VA						6, 8		100 L ... 315 L		1LE1 01-1A ... -3A		Without add. charge		4 0		-			
Further voltages ¹⁾		For add. charges, code numbers, order codes and descriptions, see from Page 1/49																			
Types of construction		No. poles		Frame size		Motor type		Version													
Without flange		IM B3 ²⁾		6, 8		100 L ... 315 L		1LE1 01-1A ... -3A		Standard		A		-							
With flange		IM B5 ²⁾		6, 8		100 L ... 315 M		1LE1 01-1A ... -3A		With additional charge		F		-							
With standard flange		IM B14 ²⁾		6, 8		100 L ... 160 L		1LE1 01-1A ... -1D		With additional charge		K		-							
Further types of construction		For additional charges, code letters and descriptions, see from Page 1/53																			
Motor protection		Line		No. poles		Frame size		Motor type		Version											
Without		Only possible for Basic Line		6, 8		100 L ... 315 L		1LE1501-1A ... -3A		Standard		A		-							
PTC thermistor with 3 temperature sensors		Basic Line		6, 8		100 L ... 315 L		1LE1501-1A ... -3A		With additional charge		B		-							
		Performance Line		6, 8		100 L ... 315 L		1LE1601-1A ... -3A		Standard		B		-							
Further motor protection		For additional charges, code letters and descriptions, see from Page 1/57																			
Connection box position		No. poles		Frame size		Motor type		Version													
Connection box at top		6, 8		100 L ... 315 L		1LE1 01-1A ... -3A		Standard		4											
Further conn. box positions		For additional charges, code numbers and descriptions, see from Page 1/59																			
Special versions		No. poles		Frame size		Motor type														Order code(s)	
Options		For additional charges, order codes and descriptions, see from Page 1/65																			

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The

basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

SIMOTICS SD 1LE1 Standard Motors

Motors with High Efficiency IE2



Self-ventilated motors
Cast-iron series 1LE1501/1LE1601 with increased output

Selection and ordering data

Operating values at rated output															Cast-iron series		m _{IM B3} J		Torque class																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /T _{ra}	I _{LR} /I _{ra}	T _B /T _{ra}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	1LE1501 – Basic Line	1LE1601 – Performance Line	IE2 version in accordance with IEC 60034-30 with increased output	Order No.	kg	kgm ²	CL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
kW	kW	FS	rpm	Nm		%	%	%	A							▲ New																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Efficiency: High Efficiency IE2, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
4	4.55	100 L	2905	13	IE2	85.8	87.2	87.0	0.86	7.8	2.5	7.6	3.5	67	79	▲ 1LE1	01-1AA6	■	45	0.0054	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
5.5	6.3	112 M	2950	18	IE2	87.0	87.5	87.2	0.89	10.3	2.2	7.7	3.3	69	81	▲ 1LE1	01-1BA6	■	53	0.012	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
11	12.6	132 M	2950	36	IE2	89.4	90.2	90.3	0.89	20	2.3	7.9	3.2	68	80	▲ 1LE1	01-1CA6	■	80	0.031	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
22	25.3	160 L	2955	71	IE2	91.3	91.7	91.3	0.89	39	3.1	8.4	3.7	70	82	▲ 1LE1	01-1DA6	■	126	0.068	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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4	4.55	100 L	1460	26	IE2	86.6	87.4	86.7	0.80	8.3	2.2	7.5	3.5	60	72	▲ 1LE1	01-1AB6	■	46	0.014	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
5.5	6.3	112 M	1460	36	IE2	87.7	88.1	87.4	0.81	11.2	2.5	7.1	3.2	58	70	▲ 1LE1	01-1BB6	■	58	0.017	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
11	12.6	132 M	1465	72	IE2	89.8	90.6	90.4	0.84	21	2.6	7.7	3.1	64	76	▲ 1LE1	01-1CB6	■	80	0.046	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
18.5	21.3	160 L	1475	120	IE2	91.2	91.7	91.6	0.85	34.5	2.5	7.7	3.3	65	77	▲ 1LE1	01-1DB6	■	116	0.099	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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2.2	2.55	100 L	965	22	IE2	81.8	82.5	81.5	0.76	5.1	1.9	5.7	2.9	59	71	▲ 1LE1	01-1AC6	■	49	0.014	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
3	3.45	112 M	960	30	IE2	83.3	84.1	83.6	0.79	6.6	2.1	6.0	3.1	57	69	▲ 1LE1	01-1BC6	■	53	0.017	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
7.5	8.6	132 M	970	74	IE2	87.2	87.8	87.3	0.77	16.1	2.1	6.5	3.0	63	75	▲ 1LE1	01-1CC6	■	87	0.046	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
15	17.3	160 L	975	147	IE2	89.7	90.6	90.5	0.81	30	1.9	6.5	2.9	67	79	▲ 1LE1	01-1DC6	■	147	0.12	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

SIMOTICS SD 1LE1 Standard Motors

Motors with Premium Efficiency IE3

Self-ventilated motors
Cast-iron series 1LE1503/1LE1603 Basic/Performance Line



Selection and ordering data

P _{rated} , 50 Hz kW	P _{rated} , 60 Hz kW	Frame size	Operating values at rated output										Cast-iron series 1LE1503 – Basic Line 1LE1603 – Performance Line IE3 version in accordance with IEC 60034-30 Order No.	m _{IM B3} J	Torque class				
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _L /I _{rated}	I _L /I _{rated}				T _B /I _{rated}	L _{pfA} , 50 Hz dB(A)	L _{WA} , 50 Hz dB(A)	▲ New
22	24.5	180 M	2950	71	IE3	92.7	93.0	92.4	0.89	38.5	2.5	7.5	3.5	67	80	▲ 1LE1 03-1EA2	160	0.080	16
30	33.5	200 L	2955	97	IE3	93.3	93.7	93.3	0.87	53	2.5	6.6	3.3	67	80	▲ 1LE1 03-2AA4	225	0.13	16
37	41.5	200 L	2955	120	IE3	93.7	94.1	93.8	0.88	65	2.5	6.6	3.2	67	80	▲ 1LE1 03-2AA5	250	0.16	16
45	51	225 M	2960	145	IE3	94.0	94.5	94.4	0.89	78	2.4	6.9	3.3	67	80	▲ 1LE1 03-2BA2	315	0.26	16
55	62	250 M	2975	177	IE3	94.3	94.5	93.9	0.89	95	2.3	6.7	3.1	71	84	▲ 1LE1 03-2CA2	385	0.46	13
75	84	280 S	2975	241	IE3	94.7	94.8	94.1	0.89	128	2.4	6.8	3.0	73	87	▲ 1LE1 03-2DA0	510	0.77	13
90	101	280 M	2975	289	IE3	95.0	95.1	94.6	0.90	152	2.4	7.2	3.1	73	86	▲ 1LE1 03-2DA2	590	0.94	13
110	123	315 S	2982	352	IE3	95.2	95.4	94.9	0.91	183	2.4	7.1	3.1	73	87	▲ 1LE1 03-3AA0	750	1.4	13
132	148	315 M	2982	423	IE3	95.4	95.5	95.2	0.91	220	2.5	7.2	3.1	73	87	▲ 1LE1 03-3AA2	880	1.6	13
160	180	315 L	2982	512	IE3	95.6	95.7	95.2	0.92	265	2.8	7.8	3.3	76	90	▲ 1LE1 03-3AA4	980	1.9	13
200	224	315 L	2982	640	IE3	95.8	95.9	95.5	0.92	330	2.5	7.2	3.0	76	90	▲ 1LE1 03-3AA5	1150	2.3	13
Basic Line			Relubrication Optional (standard from FS 280 upwards)		Motor protection Optional	Fan cover Plastic	Bearing size 62 (63 from FS 280 upwards)		Converter- fed operation Up to 460 V	Warranty 12 months	5								
Performance Line			Standard from FS 160 (optional for FS 100 ... 132)		Standard PTC	Steel	63		Up to 460 V	36 months	6								
Voltagess						No. of poles	Frame size	Motor type	Version										Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	2 2											–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	3 4											–
50 Hz	500 VY			2	180 M ... 315 L	1LE1 03-1E ... -3A	Without additional charge	2 7											–
50 Hz	500 VΔ			2	180 M ... 315 L	1LE1 03-1E ... -3A	Without additional charge	4 0											–
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 1/49																
Types of construction						No. of poles	Frame size	Motor type	Version										Order code(s)
Without flange	IM B3 ²⁾			2	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	A											–
With flange	IM B5 ²⁾			2	180 M ... 315 M	1LE1 03-1E ... -3A	With additional charge	F											–
Further types of construction			For additional charges, code letters and descriptions, see from Page 1/53																
Motor protection						No. of poles	Frame size	Motor type	Version										Order code(s)
Without	Only possible for Basic Line			2	180 M ... 315 L	1LE1503-1E ... -3A	Standard	A											–
PTC thermistor with 3 temperature sensors	Basic Line			2	180 M ... 315 L	1LE1503-1E ... -3A	With additional charge	B											–
	Performance Line			2	180 M ... 315 L	1LE1603-1E ... -3A	Standard	B											–
Further motor protection			For additional charges, code letters and descriptions, see from Page 1/57																
Connection box position						No. of poles	Frame size	Motor type	Version										Order code(s)
Connection box at top				2	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	4											–
Further connection box positions			For additional charges, code numbers and descriptions, see from Page 1/59																
Special versions						No. of poles	Frame size	Motor type											Order code(s)
Options			For additional charges, order codes and descriptions, see from Page 1/65																

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

SIMOTICS SD 1LE1 Standard Motors

Motors with Premium Efficiency IE3



Self-ventilated motors
Cast-iron series 1LE1503/1LE1603 Basic/Performance Line

Selection and ordering data (continued)

Operating values at rated output															Cast-iron series		m _{IM B3} J		Torque class			
P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /T _{ra}	I _{LR} /I _{ra}	T _B /T _{ra}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	1LE1503 – Basic Line	1LE1603 – Performance Line	IE3 version in accordance with IEC 60034-30	Order No.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm		%	%	%	A							▲ New						
18.5	21.3	180 M	1470	120	IE3	92.6	93.2	93.2	0.82	35	2.5	6.9	3.3	57	70	▲ 1LE1	03-1EB2	-	165	0.13	16	
22	25.3	180 L	1470	143	IE3	93.0	93.7	93.7	0.83	41	2.5	6.8	3.3	57	70	▲ 1LE1	03-1EB4	-	170	0.14	16	
30	34.5	200 L	1470	195	IE3	93.6	94.3	94.4	0.84	55	2.6	6.9	3.1	57	70	▲ 1LE1	03-2AB5	-	240	0.22	16	
37	42.5	225 S	1478	239	IE3	93.9	94.5	94.4	0.86	66	2.5	6.4	2.7	57	70	▲ 1LE1	03-2BB0	-	285	0.42	16	
45	52	225 M	1478	291	IE3	94.2	94.9	95.1	0.86	80	2.6	6.4	2.7	57	70	▲ 1LE1	03-2BB2	-	320	0.47	16	
55	63	250 M	1482	354	IE3	94.6	95.1	95.0	0.87	96	2.5	6.8	2.9	57	70	▲ 1LE1	03-2CB2	-	420	0.85	16	
75	86	280 S	1485	482	IE3	95.0	95.3	95.0	0.86	133	2.5	6.9	3.0	65	79	▲ 1LE1	03-2DB0	-	570	1.4	16	
90	104	280 M	1485	579	IE3	95.2	95.5	95.3	0.87	157	2.6	7.2	3.0	65	79	▲ 1LE1	03-2DB2	-	670	1.7	16	
110	127	315 S	1488	706	IE3	95.4	95.8	95.5	0.87	191	2.6	6.8	2.9	65	79	▲ 1LE1	03-3AB0	-	760	2.2	16	
132	152	315 M	1490	846	IE3	95.6	95.9	95.9	0.87	230	2.8	7.3	3.0	65	79	▲ 1LE1	03-3AB2	-	960	2.9	16	
160	184	315 L	1490	1025	IE3	95.8	96.1	96.1	0.87	275	2.9	7.3	3.1	65	79	▲ 1LE1	03-3AB4	-	990	3.1	16	
200	230	315 L	1490	1284	IE3	96.0	96.3	96.1	0.88	340	3.2	7.4	3.0	65	79	▲ 1LE1	03-3AB5	-	1190	3.7	16	
Basic Line			Optional (standard from FS 280 upwards)	Optional	Plastic	62 (63 from FS 280 upwards)	Up to 460 V	12 months	5													
Performance Line			Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	63	Up to 460 V	36 months	6													
Voltagess					No. of poles	Frame size	Motor type	Version														
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	4	180 M ... 315 L	1LE1003-1E ... -3A	Standard	2 2														
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	4	180 M ... 315 L	1LE1003-1E ... -3A	Standard	3 4														
50 Hz	500 VY			4	180 M ... 315 L	1LE1003-1E ... -3A	Without additional charge	2 7														
50 Hz	500 VΔ			4	180 M ... 315 L	1LE1003-1E ... -3A	Without additional charge	4 0														
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 1/49																			
Types of construction					No. of poles	Frame size	Motor type	Version														
Without flange	IM B3 ²⁾			4	180 M ... 315 L	1LE1003-1E ... -3A	Standard	A														
With flange	IM B5 ²⁾			4	180 M ... 315 M	1LE1003-1E ... -3A	With additional charge	F														
Further types of construction			For additional charges, code letters and descriptions, see from Page 1/53																			
Motor protection			Line		No. of poles	Frame size	Motor type	Version														
Without	Only possible for Basic Line			4	180 M ... 315 L	1LE1503-1E ... -3A	Standard	A														
PTC thermistor with 3 temperature sensors	Basic Line			4	180 M ... 315 L	1LE1503-1E ... -3A	With additional charge	B														
	Performance Line			4	180 M ... 315 L	1LE1603-1E ... -3A	Standard	B														
Further motor protection			For additional charges, code letters and descriptions, see from Page 1/57																			
Connection box position					No. of poles	Frame size	Motor type	Version														
Connection box at top				4	180 M ... 315 L	1LE1003-1E ... -3A	Standard	4														
Further connection box positions			For additional charges, code numbers and descriptions, see from Page 1/59																			
Special versions					No. of poles	Frame size	Motor type															
Options			For additional charges, order codes and descriptions, see from Page 1/65																			

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1) Operating values at rated output for 60 Hz are available on request.
 2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

SIMOTICS SD 1LE1 Standard Motors

Motors with Premium Efficiency IE3

Self-ventilated motors
Cast-iron series 1LE1503/1LE1603 Basic/Performance Line



Selection and ordering data (continued)

Operating values at rated output															Cast-iron series		m _{IM B3} J		Torque class			
P _{rated} , 50 Hz	P _{rated} , 60 Hz ¹⁾	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _L /I _{rated}	I _L /I _{rated}	T _B /I _{rated}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	1LE1503 – Basic Line	1LE1603 – Performance Line	IE3 version in accordance with IEC 60034-30	Order No.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm	%	%	%		A							▲ New						
15	18	180 L	975	147	IE3	91.2	92.4	92.6	0.80	29.5	2.3	5.9	2.8	56	69	▲ 1LE1 03-1EC4	■	180	0.19	16		
18.5	22	200 L	978	181	IE3	91.7	92.5	92.5	0.79	37	2.5	5.6	2.6	57	70	▲ 1LE1 03-2AC4	■	215	0.28	16		
22	26.5	200 L	978	215	IE3	92.2	93.1	93.3	0.79	43.5	2.5	5.6	2.6	57	70	▲ 1LE1 03-2AC5	■	230	0.32	16		
30	36	225 M	982	292	IE3	92.9	93.6	93.5	0.83	56	2.6	6.6	3.0	57	70	▲ 1LE1 03-2BC2	■	325	0.67	16		
37	44.5	250 M	985	359	IE3	93.3	94.0	94.0	0.85	67	2.7	7.0	2.9	57	70	▲ 1LE1 03-2CC2	■	405	1.0	16		
45	54	280 S	988	435	IE3	93.7	94.3	94.2	0.85	82	3.0	6.8	2.8	58	71	▲ 1LE1 03-2DC0	■	510	1.4	16		
55	66	280 M	988	532	IE3	94.1	94.5	94.2	0.85	99	3.2	7.2	3.0	58	71	▲ 1LE1 03-2DC2	■	560	1.6	16		
75	90	315 S	990	723	IE3	94.6	94.7	94.1	0.84	136	2.6	7.3	3.1	59	73	▲ 1LE1 03-3AC0	■	750	2.6	16		
90	108	315 M	991	867	IE3	94.9	95.1	94.7	0.85	161	2.5	6.7	2.8	59	73	▲ 1LE1 03-3AC2	■	890	3.1	16		
110	132	315 L	991	1060	IE3	95.1	95.3	95.1	0.84	199	2.8	7.2	3.0	60	74	▲ 1LE1 03-3AC4	■	990	3.9	16		
132	158	315 L	991	1272	IE3	95.4	95.3	94.5	0.84	240	2.7	7.2	3.0	60	74	▲ 1LE1 03-3AC5	■	1110	4.4	16		
160	192	315 L	991	1542	IE3	95.6	95.8	95.4	0.83	290	3.3	7.7	3.5	63	77	▲ 1LE1 03-3AC6	■	1160	4.6	16		
Basic Line			Optional (standard from FS 280 upwards)	Optional	Plastic	62 (63 from FS 280 upwards)	Up to 460 V	12 months	5													
Performance Line			Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	63	Up to 460 V	36 months	6													
Voltagess						No. of poles	Frame size	Motor type	Version													
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	2 2														
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	3 4														
50 Hz	500 VY			6	180 M ... 315 L	1LE1 03-1E ... -3A	Without additional charge	2 7														
50 Hz	500 VΔ			6	180 M ... 315 L	1LE1 03-1E ... -3A	Without additional charge	4 0														
Further voltages ¹⁾						For additional charges, code numbers, order codes and descriptions, see from Page 1/49																
Types of construction						No. of poles	Frame size	Motor type	Version													
Without flange			IM B3 ²⁾	6	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	A														
With flange			IM B5 ²⁾	6	180 M ... 315 M	1LE1 03-1E ... -3A	With additional charge	F														
Further types of construction						For additional charges, code letters and descriptions, see from Page 1/53																
Motor protection						Line	No. of poles	Frame size	Motor type	Version												
Without			Only possible for Basic Line			6	180 M ... 315 L	1LE1503-1E ... -3A	Standard	A												
PTC thermistor with 3 temperature sensors			Basic Line			6	180 M ... 315 L	1LE1503-1E ... -3A	With additional charge	B												
			Performance Line			6	180 M ... 315 L	1LE1603-1E ... -3A	Standard	B												
Further motor protection						For additional charges, code letters and descriptions, see from Page 1/57																
Connection box position						No. of poles	Frame size	Motor type	Version													
Connection box at top			6	180 M ... 315 L	1LE1 03-1E ... -3A	Standard	4															
Further conn. box positions						For additional charges, code numbers and descriptions, see from Page 1/59																
Special versions						No. of poles	Frame size	Motor type														
Options						For additional charges, order codes and descriptions, see from Page 1/65																

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.



IE1

SIMOTICS GP 1LE1 Standard Motors

Motors with Standard Efficiency IE1

Self-ventilated or forced-air cooled motors
Aluminum series 1LE1002

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size	Operating values at rated output											Aluminum series		m _{IM B3}	J	Torque class	
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz %	η _{rated} 50 Hz %	η _{rated} 50 Hz %	cos- φ _{rated} 50 Hz %	I _{rated} 50 Hz A	T _{LR} / T _{ra}	I _{LR} / I _{ra}	T _B / T _{ra}	L _{pfA} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)				Order No.
• Cooling: Self-ventilated (IC 411) or with order code F90 forced-air cooled without external fan and fan cover (IC 416) • Efficiency: Standard Efficiency IE1, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																			
3	3.45	100 L	2835	10	IE1	81.5	82.8	82.1	0.87	6.1	3.2	6.2	2.9	67	79	1LE1002-1AA4	20	0.0034	16
4	4.55	112 M	2930	13	IE1	83.1	83.8	82.2	0.86	8.1	2.7	7.3	3.7	69	81	1LE1002-1BA2	25	0.0067	16
5.5	6.3	132 S	2905	18	IE1	84.7	85.7	85.0	0.89	10.5	1.9	5.6	2.5	68	80	1LE1002-1CA0	35	0.013	16
7.5	8.6	132 S	2925	24	IE1	86.0	86.9	85.8	0.87	14.5	2.1	6.3	3.2	68	80	1LE1002-1CA1	40	0.016	16
11	12.6	160 M	2925	36	IE1	87.6	87.6	86.1	0.85	21.5	2.0	5.8	2.6	70	82	1LE1002-1DA2	60	0.030	16
15	17.3	160 M	2930	49	IE1	88.7	89.0	88.0	0.84	29	2.5	6.1	3.1	70	82	1LE1002-1DA3	68	0.036	16
18.5	21.3	160 L	2935	60	IE1	89.3	90.0	89.7	0.86	35	2.5	7.0	3.2	70	82	1LE1002-1DA4	78	0.044	16
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
2.2	2.55	100 L	1425	15	IE1	79.7	80.5	78.5	0.81	4.9	2.2	5.1	2.3	60	72	1LE1002-1AB4	18	0.0059	16
3	3.45	100 L	1425	20	IE1	81.5	83.0	82.3	0.85	6.3	2.4	5.4	2.6	60	72	1LE1002-1AB5	22	0.0078	16
4	4.55	112 M	1435	27	IE1	83.1	84.5	84.0	0.85	8.2	2.2	5.3	2.6	58	70	1LE1002-1BB2	27	0.010	16
5.5	6.3	132 S	1450	36	IE1	84.7	85.7	84.9	0.82	11.2	2.3	5.7	2.7	64	76	1LE1002-1CB0	38	0.019	16
7.5	8.6	132 M	1450	49	IE1	86.0	86.9	86.3	0.82	15.2	2.6	6.6	3.1	64	76	1LE1002-1CB2	44	0.024	16
11	12.6	160 M	1460	72	IE1	87.6	88.0	86.6	0.82	22	2.3	6.4	3.1	65	77	1LE1002-1DB2	62	0.044	16
15	17.3	160 L	1460	98	IE1	88.7	89.3	88.3	0.82	30	2.5	7.0	3.4	65	77	1LE1002-1DB4	73	0.056	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
1.5	1.75	100 L	940	15	IE1	75.2	76.0	72.4	0.74	3.9	2.0	4.0	2.2	59	71	1LE1002-1AC4	19	0.0065	16
2.2	2.55	112 M	930	23	IE1	77.7	78.8	76.9	0.75	5.4	2.3	4.1	2.5	57	69	1LE1002-1BC2	25	0.0092	16
3	3.45	132 S	955	30	IE1	79.7	80.2	77.7	0.74	7.3	2.0	4.6	2.6	63	75	1LE1002-1CC0	34	0.017	16
4	4.55	132 M	950	40	IE1	81.4	82.9	82.1	0.76	9.3	2.1	4.7	2.5	63	75	1LE1002-1CC2	39	0.021	16
5.5	6.3	132 M	950	55	IE1	83.1	84.6	84.0	0.75	12.7	2.5	5.2	2.8	63	75	1LE1002-1CC3	48	0.027	16
7.5	8.6	160 M	970	74	IE1	84.7	85.4	85.0	0.73	17.5	2.1	5.5	2.9	67	79	1LE1002-1DC2	72	0.056	16
11	12.6	160 L	965	109	IE1	86.4	86.4	85.4	0.77	24	1.9	5.9	2.7	67	79	1LE1002-1DC4	92	0.078	16
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
0.75	0.86	100 L	705	10	-	62.6	60.8	53.9	0.62	3.0	1.9	3.0	2.2	60	72	1LE1002-1AD4	17	0.0056	16
1.1	1.27	100 L	705	15	-	65.5	64.2	60.0	0.63	3.9	2.0	3.2	2.3	60	72	1LE1002-1AD5	22	0.0078	16
1.5	1.75	112 M	700	20	-	71.6	72.2	68.5	0.65	4.7	1.6	3.3	1.9	63	75	1LE1002-1BD2	29	0.0094	16
2.2	2.55	132 S	715	29	-	76.8	77.4	75.2	0.66	6.3	1.7	3.9	2.4	63	75	1LE1002-1CD0	37	0.019	16
3	3.45	132 M	715	40	-	76.6	77.8	75.8	0.66	8.6	1.8	3.9	2.2	63	75	1LE1002-1CD2	44	0.024	16
4	4.55	160 M	720	53	-	78.3	78.5	75.6	0.69	10.7	1.7	3.8	2.3	63	75	1LE1002-1DD2	60	0.044	16
5.5	6.3	160 M	720	73	-	81.7	82.5	81.4	0.70	13.9	1.6	4.0	2.2	63	75	1LE1002-1DD3	72	0.056	16
7.5	8.6	160 L	715	100	-	83.5	84.5	83.6	0.70	18.5	1.7	3.8	2.2	63	75	1LE1002-1DD4	91	0.077	16
Voltages																			
50 Hz		230 VΔ/400 VY	60 Hz ¹⁾	460 VY	No. of poles	Frame size	Motor type	Version											Order code(s)
50 Hz		400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	Standard											-
50 Hz		500 VY			2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	Without additional charge											2 7
50 Hz		500 VΔ			2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	Without additional charge											4 0
Further voltages ¹⁾ For add. charges, code numbers, order codes and descriptions, see from Page 1/47 9 0 ...																			
Types of construction																			
		Without flange	IM B3 ²⁾		2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	Standard											A
		With flange	IM B5 ²⁾		2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	With additional charge											F
		With standard flange	IM B14 ²⁾		2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	With additional charge											K
Further types of construction For additional charges, code letters and descriptions, see from Page 1/50 ...																			
Motor protection																			
		Without			2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	Standard											A
		PTC thermistor with 3 temperature sensors			2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	With additional charge											B
Further motor protection For additional charges, code letters and descriptions, see from Page 1/56 ...																			
Connection box position																			
		Connection box at top			2, 4, 6, 8	100 L ... 160 L	1LE1002-1A ... -1D	Standard											4
Further connection box positions For additional code numbers, codes and descriptions, see from Page 1/58																			
Special versions																			
		Forced-air cooled without ext. fan/ fan cover (IC 416)				100 L ... 160 L	1LE1002-1A ... -1D	1LE1002- ... -Z	F90 + . . . + . . .										
Options For add. charges, order codes and descrip., see from Page 1/60 1LE1002- ... -Z . . . + . . . + . . .																			

1.3

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and

stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS GP 1LE1 Standard Motors

Motors with Standard Efficiency IE1



IE1

Self-ventilated motors Aluminum series 1LE1002 with increased output

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size	Operating values at rated output													Aluminum series 1LE1002 – IE1 version in accordance with IEC 60034-30 with increased output Order No.	m _{IM B3} kg	J	Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos- φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}	L _{pfA} 50 Hz	L _{WA} 50 Hz				
4	4.55	100 L	2850	13	IE1	83.1	84.8	84.5	0.85	8.2	4.5	7.0	4.1	67	79	1LE1002-1AA6	25	0.0044	16
5.5	6.3	112 M	2935	18	IE1	84.7	85.5	84.7	0.86	10.9	2.9	7.5	3.8	69	81	1LE1002-1BA6	31	0.0085	16
11	12.6	132 M	2920	36	IE1	87.6	89.0	88.8	0.90	20	2.8	7.5	3.7	68	80	1LE1002-1CA6	53	0.022	16
22	24.5	160 L	2935	72	IE1	89.9	90.6	90.3	0.90	39	2.8	7.5	3.2	70	82	1LE1002-1DA6	85	0.049	16
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																			
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
4	4.55	100 L	1435	27	IE1	83.1	83.8	82.8	0.81	8.6	3.2	6.5	3.1	60	72	1LE1002-1AB6	27	0.010	16
5.5	6.3	112 M	1420	37	IE1	84.7	86.5	86.4	0.81	11.6	3.0	5.8	3.1	58	70	1LE1002-1BB6	33	0.012	16
11	12.6	132 M	1450	72	IE1	87.6	88.8	88.7	0.84	21.5	2.5	7.2	3.0	64	76	1LE1002-1CB6	58	0.033	16
18.5	21.3	160 L	1460	121	IE1	89.3	90.4	89.9	0.85	35	2.7	7.2	3.2	65	77	1LE1002-1DB6	85	0.068	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
2.2	2.55	100 L	930	22	IE1	77.7	78.5	77.5	0.78	5.2	2.0	4.0	2.2	59	71	1LE1002-1AC6	24	0.0084	16
3	3.45	112 M	945	30	IE1	79.7	79.7	76.6	0.72	7.5	2.5	4.6	2.6	57	69	1LE1002-1BC6	32	0.013	16
7.5	8.6	132 M	950	75	IE1	84.7	84.2	82.6	0.74	17.3	2.8	5.3	3.0	63	75	1LE1002-1CC6	54	0.032	16
15	17.3	160 L	965	148	IE1	87.7	88.2	86.8	0.75	33	2.9	6.0	3.4	67	79	1LE1002-1DC6	109	0.094	16
Voltagess																			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	Standard											
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	Standard											
50 Hz	500 VY			2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	Without additional charge											
50 Hz	500 VΔ			2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	Without additional charge											
Further voltages ¹⁾ For additional charges, code numbers, order codes and descriptions, see from Page 1/47																			
Types of construction																			
Without flange		IM B3 ²⁾		2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	Standard											
With flange		IM B5 ²⁾		2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	With additional charge											
With standard flange		IM B14 ²⁾		2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	With additional charge											
Further types of construction For additional charges, code letters and descriptions, see from Page 1/50																			
Motor protection																			
Without				2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	Standard											
PTC thermistor with 3 temperature sensors				2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	With additional charge											
Further motor protection For additional charges, code letters and descriptions, see from Page 1/56																			
Connection box position																			
Connection box at top				2, 4, 6		100 L ... 160 L	1LE1002-1A ... -1D	Standard											
Further connection box positions For additional charges, code numbers and descriptions, see from Page 1/58																			
Special versions																			
Options																			
For additional charges, order codes and descriptions, see from Page 1/60 1LE1002-....-Z																			

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.



IE1

SIMOTICS GP 1PC1 Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Aluminum series 1PC1002

Selection and ordering data

Operating values at rated output														Aluminum series		m _{IM B3} J		Torque class		
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /T _{rated}	I _{LR} /I _{rated}	T _B /T _{rated}	L _{pFA} , 50 Hz	L _{WA} , 50 Hz	Order No.	kg	kgm ²	CL	
<ul style="list-style-type: none"> • Cooling: Naturally cooled without external fan (IC 410) • Efficiency: Standard Efficiency IE1, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																				
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																				
1.2	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1AA4	20	0.0034	16	
1.6	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1BA2	25	0.0067	13	
2.2	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CA0	35	0.013	10	
3	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CA1	40	0.016	13	
4.4	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DA2	60	0.030	13	
6	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DA3	68	0.036	16	
7.4	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DA4	78	0.044	16	
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																				
0.88	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1AB4	18	0.0059	13	
1.2	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1AB5	22	0.0078	13	
1.6	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1BB2	27	0.010	13	
2.2	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CB0	38	0.019	13	
3	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CB2	44	0.024	16	
4.4	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DB2	62	0.044	13	
6	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DB4	73	0.056	16	
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																				
0.6	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1AC4	19	0.0065	10	
0.88	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1BC2	25	0.0092	13	
1.2	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CC0	34	0.017	10	
1.6	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CC2	39	0.021	13	
2.2	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CC3	48	0.027	13	
3	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DC2	72	0.056	13	
4.4	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DC4	92	0.078	13	
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																				
0.3	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1AD4	17	0.0056	10	
0.44	-	100 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1AD5	22	0.0078	10	
0.6	-	112 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1BD2	25	0.0094	10	
0.88	-	132 S	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CD0	37	0.019	10	
1.2	-	132 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1CD2	44	0.024	10	
1.6	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DD2	60	0.044	10	
2.2	-	160 M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DD3	72	0.056	10	
3	-	160 L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	1PC1002-1DD4	91	0.077	10	
Voltages																				
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	No. of poles	Frame size	Motor type	Version											Order code(s)		
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	Standard	2	2											-
50 Hz	500 VY			2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	Standard	3	4											-
50 Hz	500 VΔ			2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	Without add. charge	2	7											-
50 Hz	500 VΔ			2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	Without add. charge	4	0											-
Further voltages ¹⁾ For add. charges, code numbers, order codes and descriptions, see from Page 1/47 9 0 ...																				
Types of construction																				
				No. of poles	Frame size	Motor type	Version											Order code(s)		
Without flange				IM B3 ²⁾	2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	Standard	A											-
With flange				IM B5 ²⁾	2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	With additional charge	F											-
With standard flange				IM B14 ²⁾	2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	With additional charge	K											-
Further types of construction For additional charges, code letters and descriptions, see from Page 1/50 ...																				
Motor protection																				
				No. of poles	Frame size	Motor type	Version											Order code(s)		
Without				2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	Standard	A											-	
PTC thermistor with 3 temperature sensors				2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	With additional charge	B											-	
Further motor protection For additional charges, code letters and descriptions, see from Page 1/56 ...																				
Connection box position																				
				No. of poles	Frame size	Motor type	Version											Order code(s)		
Connection box at top				2, 4, 6, 8	100 L ... 160 L	1PC1002-1A ... -1D	Standard	4											-	
Further connection box positions For additional charges, code numbers and descriptions, see from Page 1/58 ...																				
Special versions																				
				No. of poles	Frame size	Motor type													Order code(s)	
Options				For add. charges, order codes and descrip., see from Page 1/60 1PC1002-.... ■-■■■■■-Z ...+...+...+...																

1.3

Note: The rated outputs and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS GP 1LE1 Standard Motors – Eagle Line

NEMA Energy Efficient MG1 motors, Table 12-11

Self-ventilated or forced-air cooled motors
Aluminum series 1LE1021



Selection and ordering data

Operating values at 60 Hz rated output														Aluminum series		m _{IM B3} J		Torque class	
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{rated} , 60 Hz, 4/4	η _{rated} , 60 Hz, 3/4	η _{rated} , 60 Hz, 2/4	COS-φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{LR} /I _{ra} , ted	I _{FR} /I _{ra} , ted	T _B /I _{ra} , ted	L _{pFA} , 60 Hz	L _{WA} , 60 Hz	Order No.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%		A						▲ New			
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz																			
3	4	100 L	3520	8.1	-	87.5	87.3	86.2	0.83	5.2	2.6	8.1	3.8	71	83	▲ 1LE1021-1AA4	21	0.0044	16
4	5	112 M	3565	9.9	✓	87.5	87.4	85.8	0.84	6.3	2.9	9.3	4.0	73	85	▲ 1LE1021-1BA2	27	0.0092	16
5.5	7.5	132 S	3555	15	✓	88.5	88.3	88.1	0.86	9.1	2.0	7.6	3.3	72	84	▲ 1LE1021-1CA0	39	0.020	16
7.5	10	132 S	3560	20	✓	89.5	89.6	89.6	0.87	12.1	2.3	8.2	3.6	72	84	▲ 1LE1021-1CA1	43	0.024	16
11	15	160 M	3560	30	✓	90.2	89.6	87.8	0.86	17.8	2.4	8.2	3.6	77	89	▲ 1LE1021-1DA2	67	0.045	16
15	20	160 M	3565	40	✓	90.2	89.9	88.0	0.87	24	2.8	8.4	3.9	77	89	▲ 1LE1021-1DA3	75	0.053	16
18.5	25	160 L	3565	50	✓	91.0	90.5	89.4	0.87	29.5	3.3	8.9	4.1	77	89	▲ 1LE1021-1DA4	84	0.061	16
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz																			
2.2	3	100 L	1760	12	-	87.5	87.5	86.5	0.78	4.05	2.5	8.1	3.9	62	74	▲ 1LE1021-1AB4	21	0.0086	16
3	4	100 L	1765	16	-	87.5	88.3	87.1	0.79	5.4	2.4	8.3	3.7	62	74	▲ 1LE1021-1AB5	25	0.011	16
4	5	112 M	1770	20	✓	87.5	87.0	86.0	0.77	6.9	3.0	8.7	4.0	62	74	▲ 1LE1021-1BB2	29	0.014	16
5.5	7.5	132 S	1770	30	✓	89.5	89.6	88.3	0.78	9.9	2.6	8.0	3.3	68	80	▲ 1LE1021-1CB0	42	0.027	16
7.5	10	132 M	1770	40	✓	89.5	90.3	89.5	0.82	12.8	2.7	8.0	3.4	68	80	▲ 1LE1021-1CB2	49	0.034	16
11	15	160 M	1775	59	✓	91.0	91.3	90.5	0.84	18.1	2.5	7.7	3.2	69	81	▲ 1LE1021-1DB2	71	0.065	16
15	20	160 L	1780	80	✓	91.0	90.7	89.9	0.84	24.5	2.6	8.5	3.4	69	81	▲ 1LE1021-1DB4	83	0.083	16
Voltages (≤ 600 V)¹⁾																			
50 Hz		230 VΔ/400 VY		60 Hz		460 VY		No. of poles		Frame size		Motor type		Version				Order code(s)	
50 Hz		400 VΔ		60 Hz		460 VΔ		2, 4		100 L ... 160 L		1LE1021-1A ... -1D		Standard		2 2		-	
50 Hz		500 VY						2, 4		100 L ... 160 L		1LE1021-1A ... -1D		Without additional charge		2 7		-	
50 Hz		500 VΔ						2, 4		100 L ... 160 L		1LE1021-1A ... -1D		Without additional charge		4 0		-	
Further voltages																9 0		...	
Types of construction²⁾																			
With flange		IM B5 ³⁾		2, 4		100 L ... 160 L		1LE1021-1A ... -1D		With additional charge		F						-	
With standard flange		IM B14 ³⁾		2, 4		100 L ... 160 L		1LE1021-1A ... -1D		With additional charge		K						-	
Further types of construction																		...	
Motor protection																			
Without				2, 4		100 L ... 160 L		1LE1021-1A ... -1D		Standard		A						-	
PTC thermistor with 3 temperature sensors				2, 4		100 L ... 160 L		1LE1021-1A ... -1D		With additional charge		B						-	
Further motor protection																		...	
Connection box position																			
Connection box at top				2, 4		100 L ... 160 L		1LE1021-1A ... -1D		Standard		4						-	
Further connection box positions																		...	
Special versions																			
Forced-air cooled without ext. fan/ fan cover (IC 416)				2, 4		100 L ... 160 L		1LE1021-1A ... -1D		1LE1021- ...		-Z		F90 + ... + ... + ...					
Options										1LE1021- ...		-Z		... + ... + ... + ...					

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.
2) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

3) Types derived from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS GP 1LE1 Standard Motors – Eagle Line

NEMA Energy Efficient MG1 motors, Table 12-11



Self-ventilated or forced-air cooled motors
Aluminum series 1LE1021

Selection and ordering data (continued)

Operating values at 60 Hz rated output															Aluminum series		m _{IM B3} J		Torque class		
P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	n _{rated} 60 Hz	T _{rated} 60 Hz	EISA CC No. CC032A	η _{rated} 60 Hz, 4/4	η _{rated} 60 Hz, 3/4	η _{rated} 60 Hz, 2/4	COS- φ _{rated} 60 Hz, 4/4	I _{rated} 60 Hz, 460 V	T _{LR} / T _{ra}	L _{FR} / L _{ra}	T _B / T _{ra}	L _{pFA} 60 Hz	L _{WA} 60 Hz	Order No.	kg	kgm ²	CL		
kW	hp	FS	rpm	Nm		%	%	%		A						▲ New					
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz																					
1.5	2	100 L	1175	12	-	86.5	86.0	84.4	0.69	3.15	2.3	7.0	3.4	62	74	▲ 1LE1021-1AC4	25	0.011	16		
2.2	3	112 M	1170	18	✓	87.5	87.4	85.9	0.73	4.3	2.3	7.3	3.4	60	72	▲ 1LE1021-1BC2	29	0.014	16		
3	4	132 S	1175	24	-	87.5	87.6	85.9	0.70	6.1	1.8	6.5	3.0	67	79	▲ 1LE1021-1CC0	38	0.024	13		
4	5	132 M	1180	30	✓	87.5	88.3	87.0	0.73	7.3	2.1	6.6	3.2	67	79	▲ 1LE1021-1CC2	43	0.029	13		
5.5	7.5	132 M	1175	45	✓	89.5	89.7	88.7	0.74	10.4	2.0	7.1	3.2	67	79	▲ 1LE1021-1CC3	52	0.037	16		
7.5	10	160 M	1180	61	✓	89.5	90.0	89.0	0.74	14.2	2.0	7.1	3.2	70	82	▲ 1LE1021-1DC2	77	0.075	16		
11	15	160 L	1180	89	✓	90.2	90.0	89.1	0.78	19.6	1.8	6.8	3.0	70	82	▲ 1LE1021-1DC4	93	0.098	16		
Voltages (≤ 600 V) ¹⁾			No. of poles	Frame size	Motor type	Version														Order code(s)	
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	6	100 L ... 160 L	1LE1021-1A ... -1D	Standard														2 2
50 Hz	400 VΔ	60 Hz	460 VΔ	6	100 L ... 160 L	1LE1021-1A ... -1D	Standard														3 4
50 Hz	500 VY			6	100 L ... 160 L	1LE1021-1A ... -1D	Without additional charge														2 7
50 Hz	500 VΔ			6	100 L ... 160 L	1LE1021-1A ... -1D	Without additional charge														4 0
Further voltages			For additional charges, code numbers, order codes and descriptions, see from Page 1/47													9 0					
Types of construction ²⁾			No. of poles	Frame size	Motor type	Version														Order code(s)	
With flange			IM B5 ³⁾	6	100 L ... 160 L	1LE1021-1A ... -1D	With additional charge														F
With standard flange			IM B14 ³⁾	6	100 L ... 160 L	1LE1021-1A ... -1D	With additional charge														K
Further types of construction			For additional charges, code letters and descriptions, see from Page 1/50													...					
Motor protection			No. of poles	Frame size	Motor type	Version														Order code(s)	
Without			6	100 L ... 160 L	1LE1021-1A ... -1D	Standard														A	
PTC thermistor with 3 temperature sensors			6	100 L ... 160 L	1LE1021-1A ... -1D	With additional charge														B	
Further motor protection			For additional charges, code letters and descriptions, see from Page 1/56													...					
Connection box position			No. of poles	Frame size	Motor type	Version														Order code(s)	
Connection box at top			6	100 L ... 160 L	1LE1021-1A ... -1D	Standard														4	
Further connection box positions			For additional charges, code numbers and descriptions, see from Page 1/58													...					
Special versions			No. of poles	Frame size	Motor type											Order code(s)					
Forced-air cooled without external fan/ fan cover (IC 416)			6	100 L ... 160 L	1LE1021-1A ... -1D	1LE1021- ... -Z										F90 + . . . + . . .					
Options			For additional charges, order codes and descriptions, see from Page 1/60													1LE1021- ... -Z	. . . + . . . + . . .				

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¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.
²⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

³⁾ Types derived from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS SD 1LE1 Standard Motors – Eagle Line

NEMA Energy Efficient MG1 motors, Table 12-11

Self-ventilated motors
Cast-iron series 1LE1521/1LE1621 Basic/Performance Line



Selection and ordering data

Operating values at 60 Hz rated output														Cast-iron series		m _{IM B3} J		Torque class	
P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	n _{rated} 60 Hz	T _{rated} 60 Hz	EISA CC No. CC032A	η _{ra} ted, 60 Hz, 4/4	η _{ra} ted, 60 Hz, 3/4	η _{ra} ted, 60 Hz, 2/4	COS- φ _{rated} 60 Hz, 4/4	I _{rated} 60 Hz, 460 V	T _{LR} / I _{ra} ted	I _{LR} / I _{ra} ted	T _p / I _{ra} ted	L _{pfA} 60 Hz	L _{WA} 60 Hz	Order No.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%	A					dB(A)	dB(A)	▲ New			
3	4	100 L	3520	8.1	–	87.5	87.3	86.2	0.83	5.2	2.6	8.1	3.8	71	83	▲ 1LE1 21-1AA4	32	0.0044	16
4	5	112 M	3565	9.9	✓	87.5	87.4	85.8	0.84	6.3	2.9	9.3	4.0	73	85	▲ 1LE1 21-1BA2	39	0.0092	16
5.5	7.5	132 S	3555	15	✓	88.5	88.3	88.1	0.86	9.1	2.0	7.6	3.3	72	84	▲ 1LE1 21-1CA0	57	0.020	16
7.5	10	132 S	3560	20	✓	89.5	89.6	89.6	0.87	12.1	2.3	8.2	3.6	72	84	▲ 1LE1 21-1CA1	61	0.024	16
11	15	160 M	3560	30	✓	90.2	89.6	87.8	0.86	17.8	2.4	8.2	3.6	77	89	▲ 1LE1 21-1DA2	96	0.045	16
15	20	160 M	3565	40	✓	90.2	89.9	88.0	0.87	24	2.8	8.4	3.9	77	89	▲ 1LE1 21-1DA3	104	0.053	16
18.5	25	160 L	3555	50	✓	91.0	90.5	89.4	0.87	29.5	3.3	8.9	4.1	77	89	▲ 1LE1 21-1DA4	113	0.061	16
22	30	180 M	3550	60	✓	91.0	91.0	89.6	0.86	36	3.0	8.4	4.1	71	85	▲ 1LE1 21-1EA2	145	0.069	16
30	40	200 L	3565	80	✓	91.7	91.2	89.6	0.86	44.5	2.9	7.7	3.8	75	89	▲ 1LE1 21-2AA4	200	0.13	16
37	50	200 L	3565	100	✓	92.4	92.1	91.0	0.87	58	3.3	8.1	3.8	75	89	▲ 1LE1 21-2AA5	225	0.15	16
45	60	225 M	3570	120	✓	93.0	92.7	91.3	0.88	69	3.1	8.7	3.8	75	89	▲ 1LE1 21-2BA2	295	0.23	16
55	75	250 M	3575	149	–	93.0	92.5	91.0	0.89	85	2.4	7.4	3.5	79	92	▲ 1LE1 21-2CA2	355	0.40	13
75	100	280 S	3580	199	–	93.6	92.9	91.1	0.87	115	2.8	7.7	3.5	79	93	▲ 1LE1 21-2DA0	490	0.71	13
90	125	280 M	3578	249	✓	94.5	94.2	93.1	0.88	141	2.7	7.6	3.4	79	93	▲ 1LE1 21-2DA2	530	0.83	13
110	150	315 S	3585	298	✓	94.5	94.0	92.5	0.90	165	2.6	7.7	3.3	81	95	▲ 1LE1 21-3AA0	720	1.3	13
132	175	315 M	3585	348	–	95.0	94.7	93.6	0.91	190	2.7	8.1	3.4	81	95	▲ 1LE1 21-3AA2	880	1.6	13
160	200	315 L	3585	397	✓	95.0	94.6	93.3	0.92	215	2.6	8.2	3.6	83	98	▲ 1LE1 21-3AA4	930	1.8	13
200	250	315 L	3585	497	✓	95.4	95.2	94.2	0.91	270	3.5	8.9	3.4	83	98	▲ 1LE1 21-3AA5	1130	2.2	13

Relubrication	Motor protection	Fan cover	Bearing size	Converter-fed operation	Warranty	Version	Order code(s)
Basic Line Optional (standard from FS 280 upwards)	Optional	Plastic	62 (63 from FS 280 upwards)	Up to 460 V	12 months	5	
Performance Line Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	63	Up to 460 V	36 months	6	

Voltages (≤ 600 V) ¹⁾		No. of poles	Frame size	Motor type	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	2	100 L ... 315 L	1LE1 21-1A ... -3A	Standard	2 2	–
50 Hz	400 VΔ	60 Hz	460 VΔ	2	100 L ... 315 L	1LE1 21-1A ... -3A	Standard	3 4	–
50 Hz	500 VY			2	100 L ... 315 L	1LE1 21-1A ... -3A	Without additional charge	2 7	–
50 Hz	500 VΔ			2	100 L ... 315 L	1LE1 21-1A ... -3A	Without additional charge	4 0	–
Further voltages	For add. charges, code numbers, order codes and descrip., see from Page 1/49						9 0	...	

Types of construction ²⁾		No. of poles	Frame size	Motor type	Version	Order code(s)	
Without flange	IM B3 ³⁾	2	315 L > 200 hp	1LE1 21-3AA5	Standard	A	
With flange	IM B5 ³⁾	2	100 L ... 315 M	1LE1 21-1A ... -3A	With additional charge	F	
With standard flange	IM B14 ³⁾	2	100 L ... 160 L	1LE1 21-1A ... -1D	With additional charge	K	
Further types of construction	For additional charges, code letters and descriptions, see from Page 1/53						...

Motor protection	Line	No. of poles	Frame size	Motor type	Version	Order code(s)	
Without	Only possible for Basic Line	2	100 L ... 315 L	1LE1521-1A ... -3A	Standard	A	
PTC thermistor with 3 temperature sensors	Basic Line	2	100 L ... 315 L	1LE1521-1A ... -3A	With additional charge	B	
	Performance Line	2	100 L ... 315 L	1LE1621-1A ... -3A	Standard	B	
Further motor protection	For additional charges, code letters and descriptions, see from Page 1/57						...

Connection box position	No. of poles	Frame size	Motor type	Version	Order code(s)
Connection box at top	2	100 L ... 315 L	1LE1 21-1A ... -3A	Standard	4
Further conn. box positions	For additional charges, code numbers and descriptions, see from Page 1/59				

Special versions	No. of poles	Frame size	Motor type	Order code(s)
Options	For additional charges, order codes and descriptions, see from Page 1/65			

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.
2) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

3) Types derived from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

SIMOTICS SD 1LE1 Standard Motors – Eagle Line

NEMA Energy Efficient MG1 motors, Table 12-11



Self-ventilated motors
Cast-iron series 1LE1521/1LE1621 Basic/Performance Line

Selection and ordering data (continued)

Operating values at 60 Hz rated output														Cast-iron series		m _{IM B3} J		Torque class				
P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	n _{rated} 60 Hz	T _{rated} 60 Hz	EISA CC No. CC032A	η _{ra} - ted, 60 Hz, 4/4	η _{ra} - ted, 60 Hz, 3/4	η _{ra} - ted, 60 Hz, 2/4	COS- φ _{rated} 60 Hz, 4/4	I _{rated} 60 Hz, 460 V	T _{LR} / I _{ra} - ted	L _{LR} / I _{ra} - ted	T _B / I _{ra} - ted	L _{pfA} 60 Hz	L _{WA} 60 Hz	1LE1521 – Basic Line	1LE1621 – Performance Line	NEMA Energy Efficient version	Order No.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%	A							▲ New						
2.2	3	100 L	1760	12	–	87.5	87.5	86.5	0.78	4.05	2.5	8.1	3.9	62	74	▲ 1LE1	▲ 21-1AB4	–	32	0.0086	16	
3	4	100 L	1765	16	–	87.5	88.3	87.1	0.79	5.4	2.4	8.3	3.7	62	74	▲ 1LE1	▲ 21-1AB5	–	37	0.011	16	
4	5	112 M	1770	20	✓	87.5	87.0	86.0	0.77	6.9	3.0	8.7	4.0	62	74	▲ 1LE1	▲ 21-1BB2	–	46	0.014	16	
5.5	7.5	132 S	1770	30	✓	89.5	89.6	88.3	0.78	9.9	2.6	8.0	3.3	68	80	▲ 1LE1	▲ 21-1CB0	–	61	0.027	16	
7.5	10	132 M	1770	40	✓	89.5	90.3	89.5	0.82	12.8	2.7	8.0	3.4	68	80	▲ 1LE1	▲ 21-1CB2	–	75	0.034	16	
11	15	160 M	1775	59	✓	91.0	91.3	90.5	0.84	18.1	2.5	7.7	3.2	69	81	▲ 1LE1	▲ 21-1DB2	–	96	0.065	16	
15	20	160 L	1780	80	✓	91.0	90.7	89.9	0.84	24.5	2.6	8.5	3.4	69	81	▲ 1LE1	▲ 21-1DB4	–	104	0.083	16	
18.5	25	180 M	1770	101	✓	92.4	92.6	91.8	0.83	31	2.8	7.7	3.9	61	74	▲ 1LE1	▲ 21-1EB2	–	160	0.12	16	
22	30	180 L	1770	121	✓	92.4	92.5	91.8	0.83	36.5	3.0	8.4	3.9	62	74	▲ 1LE1	▲ 21-1EB4	–	170	0.13	16	
30	40	200 L	1778	160	✓	93.0	92.9	92.2	0.84	48	3.2	8.2	3.7	67	80	▲ 1LE1	▲ 21-2AB5	–	230	0.20	16	
37	50	225 S	1778	200	–	93.0	93.2	92.5	0.87	58	2.7	7.2	3.3	66	80	▲ 1LE1	▲ 21-2BB0	–	280	0.42	16	
45	60	225 M	1778	240	✓	93.6	93.8	93.1	0.86	70	3.0	7.6	3.5	67	80	▲ 1LE1	▲ 21-2BB2	–	305	0.46	16	
55	75	250 M	1785	299	–	94.1	94.1	93.3	0.84	89	3.1	7.3	3.3	66	80	▲ 1LE1	▲ 21-2CB2	–	385	0.75	16	
75	100	280 S	1788	398	–	94.5	94.3	93.2	0.87	114	2.7	7.6	3.2	73	87	▲ 1LE1	▲ 21-2DB0	–	550	1.3	16	
90	125	280 M	1788	498	✓	94.5	94.3	93.3	0.87	142	2.8	7.8	3.4	73	87	▲ 1LE1	▲ 21-2DB2	–	570	1.4	16	
110	150	315 S	1790	597	✓	95.0	94.8	93.8	0.86	172	3.1	7.6	3.2	74	88	▲ 1LE1	▲ 21-3AB0	–	740	2.0	16	
132	175	315 M	1790	697	–	95.0	94.8	94.0	0.86	200	3.1	7.8	3.2	74	88	▲ 1LE1	▲ 21-3AB2	–	870	2.3	16	
160	200	315 L	1790	796	✓	95.0	94.7	93.5	0.87	225	3.5	8.6	3.6	77	92	▲ 1LE1	▲ 21-3AB4	–	940	2.8	16	
200	250	315 L	1792	994	✓	95.0	94.7	93.6	0.86	285	4.3	9.3	3.9	78	92	▲ 1LE1	▲ 21-3AB5	–	1140	3.5	16	
Basic Line		Optional (standard from FS 280 upwards)	Motor protection	Fan cover	Bearing size	Converter-fed operation	Warranty									5						
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	63	Up to 460 V	36 months									6						
Voltages (≤ 600 V) ¹⁾				No. of poles	Frame size	Motor type	Version															Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	4	100 L ... 315 L	1LE1▲21-1A ... -3A	Standard	2	2													–
50 Hz	400 VΔ	60 Hz	460 VΔ	4	100 L ... 315 L	1LE1▲21-1A ... -3A	Standard	3	4													–
50 Hz	500 VY			4	100 L ... 315 L	1LE1▲21-1A ... -3A	Without additional charge	2	7													–
50 Hz	500 VΔ			4	100 L ... 315 L	1LE1▲21-1A ... -3A	Without additional charge	4	0													–
Further voltages				For additional charges, code numbers, order codes and descriptions, see from Page 1/49																		
Types of construction ²⁾				No. of poles	Frame size	Motor type	Version															Order code(s)
Without flange		IM B3 ³⁾		4	315 L > 200 hp	1LE1▲21-3AB5	Standard	A														–
With flange		IM B5 ³⁾		4	100 L ... 315 M	1LE1▲21-1A ... -3A	With additional charge	F														–
With standard flange		IM B14 ³⁾		4	100 L ... 160 L	1LE1▲21-1A ... -1D	With additional charge	K														–
Further types of construction				For additional charges, code letters and descriptions, see from Page 1/53																		
Motor protection				Line	No. of poles	Frame size	Motor type	Version														Order code(s)
Without		Only possible for Basic Line		4	100 L ... 315 L	1LE1521-1A ... -3A	Standard	A														–
PTC thermistor with 3 temperature sensors		Basic Line		4	100 L ... 315 L	1LE1521-1A ... -3A	With additional charge	B														–
		Performance Line		4	100 L ... 315 L	1LE1621-1A ... -3A	Standard	B														–
Further motor protection				For additional charges, code letters and descriptions, see from Page 1/57																		
Connection box position				No. of poles	Frame size	Motor type	Version															Order code(s)
Connection box at top				4	100 L ... 315 L	1LE1▲21-1A ... -3A	Standard	4														–
Further connection box positions				For additional charges, code numbers and descriptions, see from Page 1/59																		
Special versions				No. of poles	Frame size	Motor type																Order code(s)
Options				For additional charges, order codes and descriptions, see from Page 1/65 1LE1▲21-...▲-Z ...+...+...+...																		

¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.
²⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

³⁾ Types derived from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

1.4

SIMOTICS SD 1LE1 Standard Motors – Eagle Line

NEMA Energy Efficient MG1 motors, Table 12-11

Self-ventilated motors
Cast-iron series 1LE1521/1LE1621 Basic/Performance Line



Selection and ordering data (continued)

P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	Operating values at 60 Hz rated output										Cast-iron series 1LE1521 – Basic Line 1LE1621 – Performance Line NEMA Energy Efficient version Order No.	m _{IM B3}	J	Torque class
			n _{rated} 60 Hz	T _{rated} 60 Hz	EISA CC No. CC032A	η _{ra} ted, 60 Hz, 4/4	η _{ra} ted, 60 Hz, 3/4	η _{ra} ted, 60 Hz, 2/4	COS- φ _{rated} 60 Hz, 4/4	I _{rated} 60 Hz, 460 V	T _{LR} / I _{ra} ted	I _{LR} / I _{ra} ted				

• Cooling: Self-ventilated (IC 411)
 • Efficiency: NEMA Energy Efficient, UL, CSA and service factor (SF) 1.15 – for operation in the USA and Canada, not admissible for exporting to Mexico
 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

kW	hp	FS	rpm	Nm	%	%	%	A	dB(A)	dB(A)	▲ New	kg	kgm ²	CL					
1.5	2	100 L	1175	12	–	86.5	86.0	84.4	0.69	3.15	2.3	7.0	3.4	62	74	▲ 1LE1 21-1AC4	36	0.011	16
2.2	3	112 M	1170	18	✓	87.5	87.4	85.9	0.73	4.3	2.3	7.3	3.4	60	72	▲ 1LE1 21-1BC2	41	0.014	16
3	4	132 S	1175	24	–	87.5	87.6	85.9	0.70	6.1	1.8	6.5	3.0	67	79	▲ 1LE1 21-1CC0	56	0.024	13
4	5	132 M	1180	30	✓	87.5	88.3	87.0	0.73	7.3	2.1	6.6	3.2	67	79	▲ 1LE1 21-1CC2	61	0.029	13
5.5	7.5	132 M	1175	45	✓	89.5	89.7	88.7	0.74	10.4	2.0	7.1	3.2	67	79	▲ 1LE1 21-1CC3	70	0.037	16
7.5	10	160 M	1180	61	✓	89.5	90.0	89.0	0.74	14.2	2.0	7.1	3.2	70	82	▲ 1LE1 21-1DC2	106	0.075	16
11	15	160 L	1180	89	✓	90.2	90.0	89.1	0.78	19.6	1.8	6.8	3.0	70	82	▲ 1LE1 21-1DC4	122	0.098	16
15	20	180 L	1178	121	✓	90.2	90.2	89.0	0.77	27	2.8	6.9	3.4	60	74	▲ 1LE1 21-1EC4	155	0.17	16
18.5	25	200 L	1182	151	✓	91.7	92.1	91.5	0.81	31.5	2.6	6.7	3.0	62	76	▲ 1LE1 21-2AC4	200	0.25	16
22	30	200 L	1182	181	✓	91.7	92.1	91.5	0.81	38	3.0	7.4	3.0	62	76	▲ 1LE1 21-2AC5	220	0.30	16
30	40	225 M	1182	241	✓	93.0	93.3	92.6	0.83	48.5	2.9	7.0	3.1	60	73	▲ 1LE1 21-2BC2	285	0.58	16
37	50	250 M	1185	301	–	93.0	93.3	92.6	0.83	61	3.3	7.3	2.8	63	77	▲ 1LE1 21-2CC2	370	0.86	16
45	60	280 S	1188	360	–	93.6	93.8	93.1	0.84	71	3.1	7.4	3.0	66	80	▲ 1LE1 21-2DC0	460	1.1	16
55	75	280 M	1188	450	–	93.6	93.9	93.4	0.85	88	3.1	7.2	2.9	66	80	▲ 1LE1 21-2DC2	510	1.4	16
75	100	315 S	1190	599	✓	94.1	94.1	93.2	0.84	118	2.8	7.5	3.0	66	80	▲ 1LE1 21-3AC0	660	2.1	16
90	125	315 M	1190	748	✓	94.1	94.4	93.5	0.84	148	2.9	7.6	3.1	66	80	▲ 1LE1 21-3AC2	730	2.5	16
110	150	315 L	1190	898	✓	95.0	95.0	94.6	0.85	174	3.0	7.6	3.1	66	80	▲ 1LE1 21-3AC4	920	3.6	16
132	175	315 L	1190	1048	–	95.0	95.0	94.4	0.85	205	3.7	9.2	3.6	66	81	▲ 1LE1 21-3AC5	990	4.0	16
160	200	315 L	1192	1195	✓	95.0	94.9	94.2	0.84	235	4.3	9.6	3.8	68	82	▲ 1LE1 21-3AC6	1160	4.7	16

Relubrication	Motor protection	Fan cover	Bearing size	Converter-fed operation	Warranty	5	6	Order code(s)					
Optional (standard from FS 280 upwards)	Optional	Plastic	62 (63 from FS 280 upwards)	Up to 460 V	12 months	5	6	–					
Standard from FS 160 (optional for FS 100 ... 132)	Standard PTC	Steel	63	Up to 460 V	36 months	6	–	–					
Voltages (≤ 600 V) ¹⁾		No. of poles	Frame size	Motor type	Version	2	3	4	7	0	Order code(s)		
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	6	100 L ... 315 L	1LE1 21-1A ... -3A	Standard	2	2	–	–		
50 Hz	400 VΔ	60 Hz	460 VΔ	6	100 L ... 315 L	1LE1 21-1A ... -3A	Standard	3	4	–	–		
50 Hz	500 VY	6	100 L ... 315 L	1LE1 21-1A ... -3A	Without additional charge	2	7	–	–	–			
50 Hz	500 VΔ	6	100 L ... 315 L	1LE1 21-1A ... -3A	Without additional charge	4	0	–	–	–			
Further voltages	For additional charges, code numbers, order codes and descriptions, see from Page 1/49										9	0	...
Types of construction ²⁾		No. of poles	Frame size	Motor type	Version	F	K	Z	Order code(s)				
With flange	IM B5 ³⁾	6	100 L ... 315 M	1LE1 21-1A ... -3A	With additional charge	F	–	–	–				
With standard flange	IM B14 ³⁾	6	100 L ... 160 L	1LE1 21-1A ... -1D	With additional charge	K	–	–	–				
Further types of construction	For additional charges, code letters and descriptions, see from Page 1/53										Z	–	...
Motor protection		Line	No. of poles	Frame size	Motor type	Version	A	B	B	Z	Order code(s)		
Without	Only possible for Basic Line	Basic Line	6	100 L ... 315 L	1LE1521-1A ... -3A	Standard	A	–	–	–	–		
PTC thermistor with 3 temperature sensors	Basic Line	Performance Line	6	100 L ... 315 L	1LE1521-1A ... -3A	With additional charge	B	–	–	–	–		
6	100 L ... 315 L	1LE1621-1A ... -3A	Standard	B	–	–	–	–	–				
Further motor protection	For additional charges, code letters and descriptions, see from Page 1/57										Z	–	...
Connection box position		No. of poles	Frame size	Motor type	Version	4	Order code(s)						
Connection box at top	6	100 L ... 315 L	1LE1 21-1A ... -3A	Standard	4	–							
Further connection box positions	For additional charges, code numbers and descriptions, see from Page 1/59												
Special versions		No. of poles	Frame size	Motor type	Order code(s)								
Options	For additional charges, order codes and descriptions, see from Page 1/65										1LE1 21- ... -Z	...+...+...+...	

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.
 2) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.
 3) Types derived from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.



SIMOTICS GP 1LE1 Standard Motors – Eagle Line

NEMA Premium Efficient MG1 motors, Table 12-12

Self-ventilated or forced-air cooled motors
Aluminum series 1LE1023

Selection and ordering data

Operating values at 60 Hz rated output														Aluminum series		m _{IM B3} J		Torque class	
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{ra} -ted, 60 Hz, 4/4	η _{ra} -ted, 60 Hz, 3/4	η _{ra} -ted, 60 Hz, 2/4	COS-φ _{rated} , 60 Hz, 4/4	I _r rated, 60 Hz, 460 V	T _{LR} /I _r ted	I _{LR} /I _r ted	T _B /I _r ted	L _{pfA} , 60 Hz	L _{WA} , 60 Hz	1LE1023 – NEMA Premium Efficient version Order No.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%		A						▲ New			
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz																			
3	4	100 L	3525	8.1	–	88.5	88.5	87.5	0.87	4.90	3.8	9.7	5.5	71	83	▲ 1LE1023-1AA4	26	0.0054	16
4	5	112 M	3565	9.9	✓	88.5	88.5	87.5	0.87	6.0	3.8	10.0	5.6	73	85	▲ 1LE1023-1BA2	34	0.012	16
5.5	7.5	132 S	3555	15	✓	89.5	89.5	88.5	0.90	8.6	2.1	8.6	4.4	72	84	▲ 1LE1023-1CA0	43	0.024	16
7.5	10	132 S	3555	20	✓	90.2	90.2	89.2	0.91	11.5	2.4	9.5	4.7	72	84	▲ 1LE1023-1CA1	57	0.031	16
11	15	160 M	3560	30	✓	91.0	91.0	90.0	0.88	17.2	2.8	8.5	4.3	77	89	▲ 1LE1023-1DA2	75	0.053	16
15	20	160 M	3565	40	✓	91.0	91.0	90.0	0.86	24	3.1	9.7	4.8	77	89	▲ 1LE1023-1DA3	84	0.061	16
18.5	25	160 L	3560	50	✓	91.7	91.7	90.7	0.90	28	3.1	9.4	4.4	77	89	▲ 1LE1023-1DA4	94	0.068	16
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz																			
2.2	3	100 L	1770	12	–	89.5	89.5	88.5	0.81	3.80	3.5	9.6	5.1	62	74	▲ 1LE1023-1AB4	30	0.014	16
3	4	100 L	1760	16	–	89.5	89.5	88.5	0.82	5.1	3.1	9.5	4.6	62	74	▲ 1LE1023-1AB5	30	0.014	16
4	5	112 M	1770	20	✓	89.5	89.5	88.5	0.80	6.5	2.9	8.2	4.3	62	74	▲ 1LE1023-1BB2	34	0.017	16
5.5	7.5	132 S	1780	30	✓	91.7	91.7	90.7	0.83	9.1	2.9	9.5	4.4	68	80	▲ 1LE1023-1CB0	64	0.046	16
7.5	10	132 M	1770	40	✓	91.7	91.7	90.7	0.83	12.4	2.7	9.6	4.2	68	80	▲ 1LE1023-1CB2	64	0.046	16
11	15	160 M	1775	59	✓	92.4	92.4	91.4	0.83	18	3.0	8.9	3.8	69	81	▲ 1LE1023-1DB2	83	0.083	16
15	20	160 L	1780	80	✓	93.0	93.0	91.5	0.81	25	2.9	9.5	4.3	69	81	▲ 1LE1023-1DB4	100	0.099	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz																			
3	4	132 S	1175	24	✓	89.5	89.5	88.5	0.76	5.5	1.9	7.6	3.4	67	79	▲ 1LE1023-1CC0	52	0.037	13
4	5	132 M	1175	30	✓	89.5	89.5	88.5	0.76	6.8	2.2	7.9	3.7	67	79	▲ 1LE1023-1CC2	52	0.037	13
5.5	7.5	132 M	1175	45	✓	91.0	91.0	90.0	0.76	10	2.2	7.5	3.5	67	79	▲ 1LE1023-1CC3	52	0.037	13
7.5	10	160 M	1180	61	✓	91.0	91.0	90.0	0.79	13.1	1.8	7.1	3.2	70	82	▲ 1LE1023-1DC2	93	0.098	13
11	15	160 L	1180	89	✓	91.7	91.7	90.7	0.79	19.1	1.9	7.4	3.4	70	82	▲ 1LE1023-1DC4	115	0.12	13
Voltages (≤ 600 V)¹⁾																			
50 Hz		230 VΔ/400 VY		60 Hz		460 VY		2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		Standard		2 2		–	
50 Hz		400 VΔ		60 Hz		460 VΔ		2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		Standard		3 4		–	
50 Hz		500 VY						2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		Without additional charge		2 7		–	
50 Hz		500 VΔ						2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		Without additional charge		4 0		–	
Further voltages For code numbers, order codes and descriptions, see from Page 1/47 9 0 ...																			
Types of construction																			
		Without flange		IM B3 ²⁾		2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		Standard		A		–		–	
		With flange		IM B5 ²⁾		2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		With additional charge		F		–		–	
		With standard flange		IM B14 ²⁾		2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		With additional charge		K		–		–	
Further types of construction For code letters and descriptions, see from Page 1/50																			
Motor protection																			
		Without				2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		Standard		A		–		–	
		PTC thermistor with 3 temperature sensors				2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		With additional charge		B		–		–	
Further motor protection For code letters and descriptions, see from Page 1/56																			
Connection box position																			
		Connection box at top				2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		Standard		4		–		–	
Further connection box positions For code numbers and descriptions, see from Page 1/58																			
Special versions																			
		Forced-air cooled without external fan/fan cover (IC 416)				2, 4, 6		100 L ... 160 L		1LE1023-1A ... -1D		1LE1023- ... -Z		F90 + . . . + . . .		–		–	
Options For order codes and descriptions, see from Page 1/60 1LE1023- ... -Z . . . + . . . + . . .																			

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¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-12.

²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS SD 1LE1 Standard Motors – Eagle Line

NEMA Premium Efficient MG1 motors, Table 12-12



Self-ventilated motors
Cast-iron series 1LE1523/1LE1623 Basic/Performance Line



Selection and ordering data

Operating values at 60 Hz rated output													Cast-iron series		m _{IM} B3 J		Torque class					
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{ra} , ted, 4/4	η _{ra} , ted, 3/4	η _{ra} , ted, 2/4	COS-φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{L/R} , ted	I _{L/R} , ted	T _p , ted	L _{pfA} , 60 Hz	L _{WA} , 60 Hz	1LE1523 – Basic Line	1LE1623 – Performance Line	NEMA Premium Efficient version	Order No.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%	A							▲ New						
3	4	100 L	3525	8.1	–	88.5	88.5	87.5	0.87	4.90	3.8	9.7	5.5	71	83	▲ 1LE1 23-1AA4	–	–	–	36	0.0054	16
4	5	112 M	3565	9.9	✓	88.5	88.5	87.5	0.87	6.0	3.8	10.0	5.6	73	85	▲ 1LE1 23-1BA2	–	–	–	45	0.012	16
5.5	7.5	132 S	3555	15	✓	89.5	89.5	88.5	0.90	8.6	2.1	8.6	4.4	72	84	▲ 1LE1 23-1CA0	–	–	–	58	0.024	16
7.5	10	132 S	3555	20	✓	90.2	90.2	89.2	0.91	11.5	2.4	9.5	4.7	72	84	▲ 1LE1 23-1CA1	–	–	–	73	0.031	16
11	15	160 M	3560	30	✓	91.0	91.0	90.0	0.88	17.2	2.8	8.5	4.3	77	89	▲ 1LE1 23-1DA2	–	–	–	100	0.053	16
15	20	160 M	3565	40	✓	91.0	91.0	90.0	0.86	24	3.1	9.7	4.8	77	89	▲ 1LE1 23-1DA3	–	–	–	110	0.061	16
18.5	25	160 L	3560	50	✓	91.7	91.7	90.7	0.90	28	3.1	9.4	4.4	77	89	▲ 1LE1 23-1DA4	–	–	–	127	0.068	16
22	30	180 M	3560	60	✓	91.7	91.4	90.0	0.89	34.5	2.8	8.3	3.9	72	85	▲ 1LE1 23-1EA2	–	–	–	160	0.080	16
30	40	200 L	3560	80	✓	92.4	92.2	91.4	0.87	46.5	2.9	7.6	3.6	72	85	▲ 1LE1 23-2AA4	–	–	–	225	0.13	16
37	50	200 L	3560	100	✓	93.0	92.8	91.6	0.88	57	2.8	7.5	3.6	72	85	▲ 1LE1 23-2AA5	–	–	–	250	0.16	16
45	60	225 M	3570	120	✓	93.6	93.7	93.1	0.88	68	2.7	7.6	3.5	72	85	▲ 1LE1 23-2BA2	–	–	–	315	0.26	16
55	75	250 M	3578	149	–	93.6	93.4	92.3	0.89	84	2.5	7.3	3.3	75	89	▲ 1LE1 23-2CA2	–	–	–	385	0.46	13
75	100	280 S	3578	199	–	94.1	93.9	92.7	0.89	112	2.7	7.4	3.2	77	91	▲ 1LE1 23-2DA0	–	–	–	510	0.77	13
90	125	280 M	3578	249	✓	95.0	94.8	93.8	0.90	137	2.7	7.8	3.3	77	91	▲ 1LE1 23-2DA2	–	–	–	590	0.94	13
110	150	315 S	3585	298	✓	95.0	94.8	93.8	0.91	162	2.7	7.8	3.4	77	91	▲ 1LE1 23-3AA0	–	–	–	750	1.4	13
132	175	315 M	3585	348	–	95.4	95.1	94.0	0.91	189	3.0	8.0	3.4	77	91	▲ 1LE1 23-3AA2	–	–	–	880	1.6	13
160	200	315 L	3588	397	✓	95.4	95.1	93.9	0.91	215	3.3	9.1	3.7	81	95	▲ 1LE1 23-3AA4	–	–	–	980	1.9	13
200	250	315 L	3586	497	✓	95.8	95.7	94.8	0.92	265	3.5	8.5	3.5	81	95	▲ 1LE1 23-3AA5	–	–	–	1150	2.3	13
Basic Line		Optional (standard from FS 280 upwards)		Motor prot.	Fan cover	Bearing size	Converter-fed operation		Warranty		5											
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)		Standard PTC	Steel	63	Up to 460 V		36 months		6											
Voltagess (≤ 600 V) 1)					No. poles	Frame size	Motor type	Version		Order code(s)												
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	2	100 L ... 315 L	1LE1 23-1A ... -3A	Standard		2 2		–											
50 Hz	400 VΔ	60 Hz	460 VΔ	2	100 L ... 315 L	1LE1 23-1A ... -3A	Standard		3 4		–											
50 Hz	500 VY			2	100 L ... 315 L	1LE1 23-1A ... -3A	Without additional charge		2 7		–											
50 Hz	500 VΔ			2	100 L ... 315 L	1LE1 23-1A ... -3A	Without additional charge		4 0		–											
Further voltagess					For add. charges, code numbers, order codes and descriptions, see from Page 1/49																	
Types of construction					No. poles	Frame size	Motor type	Version		Order code(s)												
Without flange		IM B3 2)		2	100 L ... 315 L	1LE1 23-1A ... -3A	Standard		A		–											
With flange		IM B5 2)		2	100 L ... 315 M	1LE1 23-1A ... -3A	With additional charge		F		–											
With standard flange		IM B14 2)		2	100 L ... 160 L	1LE1 23-1A ... -1D	With additional charge		K		–											
Further types of construction					For additional charges, code letters and descriptions, see from Page 1/53																	
Motor protection					Line	No. poles	Frame size	Motor type	Version		Order code(s)											
Without		Only possible for Basic Line			2	100 L ... 315 L	1LE1523-1A ... -3A	Standard		A		–										
PTC thermistor with 3 temperature sensors		Basic Line			2	100 L ... 315 L	1LE1523-1A ... -3A	With additional charge		B		–										
		Performance Line			2	100 L ... 315 L	1LE1623-1A ... -3A	Standard		B		–										
Further motor protection					For additional charges, code letters and descriptions, see from Page 1/57																	
Connection box position					No. poles	Frame size	Motor type	Version		Order code(s)												
Connection box at top				2	100 L ... 315 L	1LE1 23-1A ... -3A	Standard		4		–											
Further connection box positions					For additional charges, code numbers and descriptions, see from Page 1/59																	
Special versions					No. poles	Frame size	Motor type	Order code(s)														
Options					For additional charges, order codes and descriptions, see from Page 1/65 1LE1 23-...-Z ...+...+...+...																	

1) Operating voltagess only ≤ 600 V admissible in accordance with MG1 Table 12-12.

2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.



SIMOTICS SD 1LE1 Standard Motors – Eagle Line

NEMA Premium Efficient MG1 motors, Table 12-12

Self-ventilated motors
Cast-iron series 1LE1523/1LE1623 Basic/Performance Line

Selection and ordering data (continued)

Operating values at 60 Hz rated output														Cast-iron series		m _{IM B3} J		Torque class				
P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	n _{rated} 60 Hz	T _{rated} 60 Hz	EISA CC No. CC032A	η _{ra} ted, 60 Hz, 4/4	η _{ra} ted, 60 Hz, 3/4	η _{ra} ted, 60 Hz, 2/4	COS- φ _{rated} 60 Hz, 4/4	I _{rated} 60 Hz, 460 V	T _{L/R} T _{ra} ted	I _{L/R} I _{ra} ted	T _B T _{ra} ted	L _{pfA} 60 Hz	L _{WA} 60 Hz	1LE1523 – Basic Line	1LE1623 – Performance Line	NEMA Premium Efficient version	Order No.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%	A					dB(A)	dB(A)	▲ New						
2.2	3	100 L	1770	12	–	89.5	89.5	88.5	0.81	3.80	3.5	9.6	5.1	62	74	▲ 1LE1	23-1AB4	–	40	0.014	16	
3	4	100 L	1760	16	–	89.5	89.5	88.5	0.82	5.1	3.1	9.5	4.6	62	74	▲ 1LE1	23-1AB5	–	40	0.014	16	
4	5	112 M	1770	20	✓	89.5	89.5	88.5	0.80	6.5	2.9	8.2	4.3	62	74	▲ 1LE1	23-1B2	–	46	0.017	16	
5.5	7.5	132 S	1780	30	✓	91.7	91.7	90.7	0.83	9.1	2.9	9.5	4.4	68	80	▲ 1LE1	23-1CB0	–	80	0.046	16	
7.5	10	132 M	1770	40	✓	91.7	91.7	90.7	0.83	12.4	2.7	9.6	4.2	68	80	▲ 1LE1	23-1CB2	–	80	0.046	16	
11	15	160 M	1775	59	✓	92.4	92.4	91.4	0.83	18	3.0	8.9	3.8	69	81	▲ 1LE1	23-1DB2	–	109	0.083	16	
15	20	160 L	1780	80	✓	93.0	93.0	91.5	0.81	25	2.9	9.5	4.3	69	81	▲ 1LE1	23-1DB4	–	127	0.099	16	
18.5	25	180 M	1775	100	✓	93.6	93.7	93.1	0.81	31	2.7	7.8	3.6	60	73	▲ 1LE1	23-1EB2	–	165	0.13	16	
22	30	180 L	1775	120	✓	93.6	93.8	93.3	0.81	37	2.8	7.7	3.7	60	73	▲ 1LE1	23-1EB4	–	170	0.14	16	
30	40	200 L	1778	160	✓	94.1	94.3	93.8	0.83	48	3.0	8.1	3.5	60	73	▲ 1LE1	23-2AB5	–	240	0.22	16	
37	50	225 S	1782	200	–	94.5	94.7	94.2	0.85	58	2.8	7.5	3.0	60	73	▲ 1LE1	23-2BB0	–	285	0.42	16	
45	60	225 M	1782	240	✓	95.0	95.3	94.9	0.85	70	2.9	7.2	3.0	60	73	▲ 1LE1	23-2BB2	–	320	0.47	16	
55	75	250 M	1786	299	–	95.4	95.6	95.1	0.86	86	2.8	7.6	3.2	60	74	▲ 1LE1	23-2CB2	–	420	0.85	16	
75	100	280 S	1788	398	–	95.4	95.3	94.5	0.85	115	2.8	7.7	3.3	70	84	▲ 1LE1	23-2DB0	–	570	1.4	16	
90	125	280 M	1788	498	✓	95.4	95.5	94.9	0.87	141	2.9	8.0	3.3	73	87	▲ 1LE1	23-2DB2	–	670	1.7	16	
110	150	315 S	1790	597	✓	95.8	95.9	95.4	0.86	170	3.0	7.5	3.1	69	83	▲ 1LE1	23-3AB0	–	760	2.2	16	
132	175	315 M	1790	696	–	96.2	96.3	95.8	0.87	196	3.4	8.2	3.3	70	84	▲ 1LE1	23-3AB2	–	960	2.9	16	
160	200	315 L	1791	796	✓	96.2	96.2	95.7	0.87	225	3.5	8.5	3.6	70	84	▲ 1LE1	23-3AB4	–	990	3.1	16	
200	250	315 L	1791	994	✓	96.2	96.2	95.5	0.87	280	3.9	9.0	3.6	70	83	▲ 1LE1	23-3AB5	–	1190	3.7	16	
Basic Line		Optional (standard from FS 280 upwards)		Motor prot.	Fan cover	Bearing size	Converter-fed operation		Warranty													
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)		Standard PTC	Steel	63	Up to 460 V		36 months													
Voltages (≤ 600 V) ¹⁾				No.poles	Frame size	Motor type	Version	Order code(s)														
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	4	100 L ... 315 L	1LE1■23-1A ... -3A	Standard	2 2 –														
50 Hz	400 VΔ	60 Hz	460 VΔ	4	100 L ... 315 L	1LE1■23-1A ... -3A	Standard	3 4 –														
50 Hz	500 VY			4	100 L ... 315 L	1LE1■23-1A ... -3A	Without additional charge	2 7 –														
50 Hz	500 VΔ			4	100 L ... 315 L	1LE1■23-1A ... -3A	Without additional charge	4 0 –														
Further voltages				For additional charges, code numbers, order codes and descriptions, see from Page 1/49																		
Types of construction				No.poles	Frame size	Motor type	Version	Order code(s)														
Without flange		IM B3 ²⁾		4	100 L ... 315 L	1LE1■23-1A ... -3A	Standard	A –														
With flange		IM B5 ²⁾		4	100 L ... 315 M	1LE1■23-1A ... -3A	With additional charge	F –														
With standard flange		IM B14 ²⁾		4	100 L ... 160 L	1LE1■23-1A ... -1D	With additional charge	K –														
Further types of construction				For additional charges, code letters and descriptions, see from Page 1/53																		
Motor protection				Line	No.poles	Frame size	Motor type	Version	Order code(s)													
Without		Only possible for Basic Line		4	100 L ... 315 L	1LE1523-1A ... -3A	Standard	A –														
PTC thermistor with 3 temperature sensors		Basic Line		4	100 L ... 315 L	1LE1523-1A ... -3A	With additional charge	B –														
		Performance Line		4	100 L ... 315 L	1LE1623-1A ... -3A	Standard	B –														
Further motor protection				For additional charges, code letters and descriptions, see from Page 1/57																		
Connection box position				No.poles	Frame size	Motor type	Version	Order code(s)														
Connection box at top				4	100 L ... 315 L	1LE1■23-1A ... -3A	Standard	4 –														
Further conn. box positions				For additional charges, code numbers and descriptions, see from Page 1/59																		
Special versions				No.poles	Frame size	Motor type	Order code(s)															
Options				For additional charges, order codes and descriptions, see from Page 1/65																		

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-12.

2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

1.5

SIMOTICS SD 1LE1 Standard Motors – Eagle Line

NEMA Premium Efficient MG1 motors, Table 12-12



Self-ventilated motors
Cast-iron series 1LE1523/1LE1623 Basic/Performance Line



Selection and ordering data (continued)

Operating values at 60 Hz rated output														Cast-iron series		m _{IM B3} J		Torque class				
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{ra} , 60 Hz, 4/4	η _{ra} , 60 Hz, 3/4	η _{ra} , 60 Hz, 2/4	cos φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{LR} /T _{ra} , ted	I _{LR} /I _{ra} , ted	T _B /T _{ra} , ted	L _{pfA} , 60 Hz	L _{WA} , 60 Hz	1LE1523 – Basic Line	1LE1623 – Performance Line	NEMA Premium Efficient version	Order No.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%	A					dB(A)	dB(A)	▲ New						
• Cooling: Self-ventilated (IC 411) • Efficiency: NEMA Premium Efficient, UL, CSA and service factor (SF) 1.15 – for operation in the USA, Canada and Mexico • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																						
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz																						
3	4	132 S	1175	24	✓	89.5	89.5	88.5	0.76	5.5	1.9	7.6	3.4	67	79	▲ 1LE1	23-1CC0	31	0.037	13		
4	5	132 M	1175	30	✓	89.5	89.5	88.5	0.76	6.8	2.2	7.9	3.7	67	79	▲ 1LE1	23-1CC2	68	0.037	13		
5.5	7.5	132 M	1175	45	✓	91.0	91.0	90.0	0.76	10	2.2	7.5	3.5	67	79	▲ 1LE1	23-1CC3	81	0.037	13		
7.5	10	160 M	1180	61	✓	91.0	91.0	90.0	0.79	13.1	1.8	7.1	3.2	70	82	▲ 1LE1	23-1DC2	128	0.098	13		
11	15	160 L	1180	89	✓	91.7	91.7	90.7	0.79	19.1	1.9	7.4	3.4	70	82	▲ 1LE1	23-1DC4	149	0.12	13		
15	20	180 L	1178	121	✓	91.7	92.0	91.5	0.79	26	2.5	6.8	3.0	58	71	▲ 1LE1	23-1EC4	180	0.19	16		
18.5	25	200 L	1180	151	✓	93.0	93.2	92.6	0.78	32.5	2.8	6.5	3.0	59	72	▲ 1LE1	23-2AC4	215	0.28	16		
22	30	200 L	1180	181	✓	93.0	93.6	93.5	0.79	38	2.6	6.3	2.8	59	72	▲ 1LE1	23-2AC5	230	0.32	16		
30	40	225 M	1185	240	✓	94.1	94.4	94.1	0.82	48.5	2.9	7.4	3.3	59	72	▲ 1LE1	23-2BC2	325	0.67	16		
37	50	250 M	1188	300	–	94.1	94.4	93.9	0.83	60	3.1	7.8	3.2	61	75	▲ 1LE1	23-2CC2	405	1.0	16		
45	60	280 S	1190	359	–	94.5	94.6	94.1	0.83	72	3.3	7.7	3.1	64	77	▲ 1LE1	23-2DC0	510	1.4	16		
55	75	280 M	1190	449	–	94.5	94.6	94.0	0.83	90	3.6	7.9	3.3	64	77	▲ 1LE1	23-2DC2	560	1.6	16		
75	100	315 S	1192	599	✓	95.0	94.9	94.1	0.82	120	3.1	8.4	3.3	63	76	▲ 1LE1	23-3AC0	750	2.6	16		
90	125	315 M	1192	747	✓	95.0	95.1	94.4	0.84	147	2.7	7.7	3.0	63	76	▲ 1LE1	23-3AC2	890	3.1	16		
110	150	315 L	1192	896	✓	95.8	96.0	95.5	0.83	177	3.2	8.2	3.4	62	76	▲ 1LE1	23-3AC4	990	3.9	16		
132	175	315 L	1192	1046	–	95.8	96.0	95.6	0.84	205	3.1	8.1	3.3	62	76	▲ 1LE1	23-3AC5	1110	4.4	16		
160	200	315 L	1192	1195	✓	95.8	95.7	95.0	0.82	240	3.6	9.4	4.2	66	81	▲ 1LE1	23-3AC6	1160	4.6	16		
Relubrication		Motor prot.		Fan cover		Bearing size		Converter-fed operation		Warranty												
Basic Line		Optional (standard from FS 280 upwards)		Optional		Plastic 62 (63 from FS 280 upwards)		Up to 460 V		12 months		5										
Performance Line		Standard from FS 160 (optional for FS 100 ... 132)		Standard PTC		Steel 63		Up to 460 V		36 months		6										
Voltages (≤ 600 V) ¹⁾		No. poles		Frame size		Motor type		Version												Order code(s)		
50 Hz		230 VΔ/400 VY		60 Hz		460 VY		6		100 L ... 315 L		1LE1■23-1A ... -3A		Standard		2 2				–		
50 Hz		400 VΔ		60 Hz		460 VΔ		6		100 L ... 315 L		1LE1■23-1A ... -3A		Standard		3 4				–		
50 Hz		500 VY						6		100 L ... 315 L		1LE1■23-1A ... -3A		Without additional charge		2 7				–		
50 Hz		500 VΔ						6		100 L ... 315 L		1LE1■23-1A ... -3A		Without additional charge		4 0				–		
Further voltages		For additional charges, code numbers, order codes and descriptions, see from Page 1/49																				
Types of construction		No. poles		Frame size		Motor type		Version												Order code(s)		
Without flange		IM B3 ²⁾		6		100 L ... 315 L		1LE1■23-1A ... -3A		Standard		A								–		
With flange		IM B5 ²⁾		6		100 L ... 315 M		1LE1■23-1A ... -3A		With additional charge		F								–		
With standard flange		IM B14 ²⁾		6		100 L ... 160 L		1LE1■23-1A ... -1D		With additional charge		K								–		
Further types of construction		For additional charges, code letters and descriptions, see from Page 1/53																				
Motor protection		Line		No. poles		Frame size		Motor type		Version										Order code(s)		
Without		Only possible for Basic Line		6		100 L ... 315 L		1LE1523-1A ... -3A		Standard		A								–		
PTC thermistor with 3 temperature sensors		Basic Line		6		100 L ... 315 L		1LE1523-1A ... -3A		With additional charge		B								–		
		Performance Line		6		100 L ... 315 L		1LE1623-1A ... -3A		Standard		B								–		
Further motor protection		For additional charges, code letters and descriptions, see from Page 1/57																				
Connection box position		No. poles		Frame size		Motor type		Version												Order code(s)		
Connection box at top		6		100 L ... 315 L		1LE1■23-1A ... -3A		Standard		4										–		
Further conn. box positions		For additional charges, code numbers and descriptions, see from Page 1/59																				
Special versions		No. poles		Frame size		Motor type														Order code(s)		
Options		For additional charges, order codes and descriptions, see from Page 1/65																				

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-12.

2) Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirement exists for stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

SIMOTICS GP 1LE1 Standard Motors

Pole-changing motors

Self-ventilated motors
Aluminum series 1LE1011 for constant load torque

Selection and ordering data

P _{ra-} ted1, 50 Hz		P _{ra-} ted2, 50 Hz		Frame size		Operating values at rated output for N1							Operating values at rated output for N2							Aluminum series		m J		Torque class			
kW		kW		FS		rpm		Nm		%		A		rpm		Nm		%		A		kg		kgm ²		CL	
50 Hz		50 Hz		50 Hz		50 Hz		50 Hz		50 Hz		50 Hz		50 Hz		50 Hz		50 Hz		50 Hz		IM B3					
1.9		2.5		100 L		1390 13		72.0 0.87		4.40 1.7		4.1 1.8		2800 8.2		70.0 0.88		5.6 1.8		4.2 1.8		1LE1011-1AJ4		18		0.0059 13	
2.5		3.1		100 L		1400 17		76.3 0.87		5.4 1.9		5.2 2.8		2840 10.0		77.3 0.90		6.4 2.1		5.2 2.9		1LE1011-1AJ5		22		0.0078 13	
3.7		4.4		112 M		1420 25		79.4 0.86		7.8 1.8		4.9 2.3		2885 15.0		80.8 0.92		8.5 2.1		6.4 2.6		1LE1011-1BJ2		27		0.010 13	
4.7		5.9		132 S		1440 31		82.0 0.84		9.8 1.6		5.6 2.7		2875 20.0		80.0 0.89		12.0 1.8		5.6 2.8		1LE1011-1CJ0		38		0.019 13	
6.5		8.0		132 M		1435 43		82.0 0.86		13.3 1.7		5.4 2.6		2880 27.0		82.0 0.92		15.3 1.8		6.3 2.8		1LE1011-1CJ2		44		0.024 13	
9.3		11.5		160 M		1440 62		84.5 0.87		18.3 1.7		5.7 2.8		2870 38.0		82.0 0.92		22.0 1.8		6.0 2.9		1LE1011-1DJ2		62		0.044 13	
13.0		16		160 L		1450 86		87.0 0.85		25.5 1.6		6.0 2.3		2920 52.0		86.0 0.94		28.5 1.9		7.1 2.8		1LE1011-1DJ6		85		0.068 13	
8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit																											
0.55		1.1		100 L		715 7.3		57.0 0.53		2.65 2.0		3.0 2.7		1425 7.4		77.7 0.87		2.35 1.7		4.6 2.1		1LE1011-1AL4		18		0.0059 10	
0.9		1.5		100 L		700 12		64.2 0.64		3.15 1.5		2.9 2.0		1415 10.0		77.7 0.89		3.15 1.5		4.5 1.9		1LE1011-1AL5		22		0.0078 10	
1.1		1.9		112 M		715 15		66.5 0.60		4.00 1.6		3.2 2.3		1440 13.0		80.9 0.87		3.90 1.6		5.4 2.3		1LE1011-1BL2		27		0.010 10	
1.6		3.2		132 S		730 21		61.5 0.53		7.1 1.6		3.3 2.6		1450 21.0		82.3 0.87		6.5 1.4		5.0 2.1		1LE1011-1CL0		38		0.019 10	
2.2		4.4		132 M		730 29		68.0 0.52		9.0 2.0		3.8 3.0		1450 29.0		84.5 0.88		8.5 1.5		5.5 2.3		1LE1011-1CL2		44		0.024 10	
3.5		7		160 M		730 46		77.5 0.57		11.4 2.0		4.2 2.8		1450 46.0		84.0 0.90		13.4 1.6		5.2 2.2		1LE1011-1DL2		62		0.044 10	
5.6		11		160 L		725 74		80.2 0.60		16.8 1.9		4.0 2.7		1445 73.0		84.4 0.90		21.0 1.5		5.1 2.2		1LE1011-1DL4		73		0.056 10	
Voltages						No. of poles		Frame size		Motor type		Version										Order code(s)					
50 Hz 230 V						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		Standard		2 2								-					
50 Hz 400 V						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		Standard		3 4								-					
50 Hz 500 V						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		Without additional charge		4 0								-					
50 Hz 690 V						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		Without additional charge		4 7								-					
Further voltages ¹⁾												For additional charges, code numbers, order codes and descriptions, see from Page 1/48		9 0								...					
Types of construction						No. of poles		Frame size		Motor type		Version										Order code(s)					
Without flange						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		Standard		A								-					
With flange						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		With additional charge		F								-					
With standard flange						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		With additional charge		K								-					
Further types of construction												For additional charges, code letters and descriptions, see from Page 1/50										...					
Motor protection						No. of poles		Frame size		Motor type		Version										Order code(s)					
Without						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		Standard		A								-					
PTC thermistor with 3 temperature sensors						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		With additional charge		B								-					
Further motor protection												For additional charges, code letters and descriptions, see from Page 1/56										...					
Connection box position						No. of poles		Frame size		Motor type		Version										Order code(s)					
Connection box at top						4/2, 8/4		100 L ... 160 L		1LE1011-1A ... -1D		Standard		4								-					
Further connection box positions												For additional charges, code numbers and descriptions, see from Page 1/58										...					
Special versions																						Order code(s)					
Options																						1LE1011- ... -Z		...+...+...+...			

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¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ Types derived from IM B3 (IM B6/7/8, IM V6 and IM V5), from IM B5 (IM V3 and IM V1) and from IM B14 (IM V19 and IM V18) are possible, provided that no requirements exist for condensation drainage holes (H03) and stamping of the type on the rating plate. The basic type IM B3, IM B5 or IM B14 is stamped as standard on the rating plate. When ordering with condensation drainage holes (H03), the type must be specified.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Voltages
Aluminum series 1LE10, 1PC10

Selection and ordering data

Voltages	Voltage code 12th and 13th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)													
			Motor version	Motor type (alum.)	Motor type – Frame size													
					63	71	80	90	100	112	132	160	180	200	225			
1LE1.....	-	-	IE2 High Efficiency	1LE1001				1LE1001 ①										
				1PC1001					1PC1001 ②									
			IE1 Standard Efficiency	1LE1002						1LE1002 ③								
				1PC1002							1PC1002 ④							
			NEMA Energy Efficient	1LE1021							1LE1021 Eagle Line ⑤							
			NEMA Premium Efficient	1LE1023									1LE1023 Eagle Line ⑥					
1PC1.....	-	-	Motor version	Motor type	Frame size													
					63	71	80	90	100	112	132	160	180	200	225			
Voltage at 50 Hz or 60 Hz																		
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY ①	2	2	-	All	All		□	□	□	□	□	□						
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ ① ②	3	4	-	All except ⑤ and ⑥			□	□	□	□	□	□						
50 Hz 400 VΔ, 60 Hz 460 VΔ ① ②				Only applicable for ⑤ and ⑥			□	□	□	□	□	□						
50 Hz 400 VY, 60 Hz 460 VY ①	0	2	New!	All	All		□	□	-	-	-	-						
50 Hz 500 VY ①	2	7	-	All	All		○	○	○	○	○	○						
50 Hz 500 VΔ	4	0	-	All	All			-	○	○	○	○						
50 Hz 220 VΔ/380 VY ①	2	1	-	All	All		✓	✓	✓	✓	✓	✓						
50 Hz 380 VΔ/660 VY ②	3	3	-	All except ⑤ and ⑥			✓	✓	✓	✓	✓	✓						
50 Hz 380 VΔ ②				Only applicable for ⑤ and ⑥			-	-	✓	✓	✓	✓						
50 Hz 240 VΔ/415 VY, 60 Hz 480 VY ①	2	3	-	All	All		✓	✓	✓	✓	✓	✓						
50 Hz 415 VΔ, 60 Hz 480 VΔ	3	5	-	All	All		-	-	✓	✓	✓	✓						
Voltage at 60 Hz and required output at 60 Hz																		
220 VΔ/380 VY; 50 Hz output ①	9	0	M2A	All	All		✓	✓	✓	✓	✓	✓						
220 VΔ/380 VY; 60 Hz output ① ③	9	0	M1A	All except ⑤ and ⑥			✓	✓	✓	✓	✓	✓						
380 VΔ/660 VY; 50 Hz output ②	9	0	M2B	All except ⑤ and ⑥			-	-	✓	✓	✓	✓						
380 VΔ; 50 Hz output ②				Only applicable for ⑤ and ⑥			-	-	✓	✓	✓	✓						
380 VΔ/660 VY; 60 Hz output ② ③	9	0	M1B	All except ⑤ and ⑥			-	-	✓	✓	✓	✓						
440 VY; 50 Hz output	9	0	M2C	All	All		-	-	✓	✓	✓	✓						
440 VY; 60 Hz output ③	9	0	M1C	All except ⑤ and ⑥			-	-	✓	✓	✓	✓						
440 VΔ; 50 Hz output	9	0	M2D	All	All		-	-	✓	✓	✓	✓						
440 VΔ; 60 Hz output ③	9	0	M1D	All except ⑤ and ⑥			-	-	✓	✓	✓	✓						
460 VY; 50 Hz output	9	0	M2E	All	All		-	-	✓	✓	✓	✓						
460 VY; 60 Hz output ③	9	0	M1E	All except ⑤ and ⑥			-	-	○	○	○	○						
460 VΔ; 50 Hz output	9	0	M2F	All	All		-	-	✓	✓	✓	✓						
460 VΔ; 60 Hz output ③	9	0	M1F	All except ⑤ and ⑥			-	-	○	○	○	○						
575 VY; 50 Hz output	9	0	M2G	All	All		-	-	✓	✓	✓	✓						
575 VY; 60 Hz output ③	9	0	M1G	All except ⑤ and ⑥			-	-	✓	✓	✓	✓						
575 VΔ; 50 Hz output	9	0	M2H	All	All		-	-	✓	✓	✓	✓						
575 VΔ; 60 Hz output ③	9	0	M1H	All except ⑤ and ⑥			-	-	✓	✓	✓	✓						
Voltage at 87 Hz and 87 Hz output																		
400 VΔ ④	9	0	New! M3A	All	All		✓	✓	✓	✓	✓	✓						
Non-standard voltage and/or frequencies																		
Non-standard winding ⑤	9	0	M1Y • and identification code	All	All		-	-	✓	✓	✓	✓						

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

① For shaft heights 80 and 90, depending on the selected voltage, motor protection is either not possible (motor protection code A), or only with PTC thermistors with one embedded temperature sensor for tripping (motor protection code B).

② For North America export versions Eagle Line 1LE1021 NEMA Energy Efficient and 1LE1023 NEMA Premium Efficient, voltages above 600 V will not be stamped.

③ Not admissible for North America export versions Eagle Line 1LE1021 NEMA Energy Efficient and 1LE1023 NEMA Premium Efficient.

④ Only possible for 4-pole, 6-pole and 8-pole motors. The operating data for converter-fed operation is also provided in a table on the rating plate.

⑤ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated output in kW.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Voltages
Aluminum series 1LE1011, 1LE1012 – pole-changing

Selection and ordering data (continued)

Voltages	Voltage code 12th and 13th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)											
			Motor version	Motor type (alum.)	Motor type – Frame size											
			Pole-changing	1LE1011 1LE1012	63	71	80	90	100	112	132	160	180	200	225	
			Motor version	Motor type	Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
Voltage at 50 Hz and 50 Hz output																
230 V	2 2	–	All	All					□	□	□	□				
400 V	3 4	–	All	All					□	□	□	□				
500 V	4 0	–	All	All					○	○	○	○				
690 V	4 7	–	All	All					○	○	○	○				
Voltage at 60 Hz and required output at 60 Hz																
220 V; 50 Hz output	9 0	M5K	All	All					✓	✓	✓	✓				
220 V; 60 Hz output	9 0	M5C	All	All					✓	✓	✓	✓				
380 V; 50 Hz output	9 0	M5L	All	All					✓	✓	✓	✓				
380 V; 60 Hz output	9 0	M5D	All	All					✓	✓	✓	✓				
440 V; 50 Hz output	9 0	M5M	All	All					✓	✓	✓	✓				
440 V; 60 Hz output	9 0	M5E	All	All					✓	✓	✓	✓				
460 V; 50 Hz output	9 0	M5N	All	All					✓	✓	✓	✓				
460 V; 60 Hz output	9 0	M5F	All	All					✓	✓	✓	✓				
575 V; 50 Hz output	9 0	M5P	All	All					✓	✓	✓	✓				
575 V; 60 Hz output	9 0	M5G	All	All					✓	✓	✓	✓				
Non-standard voltage and/or frequencies																
Non-standard winding ¹⁾	9 0	M1Y • and identification code	All	All					✓	✓	✓	✓				

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge

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¹⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated output in kW.

SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Voltages

Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Standard delivery times:

10 working days	20 working days	On request
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Selection and ordering data

Voltages	Voltage code 12th and 13th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)									
			Motor version	Motor type (cast-iron)	Motor type – Frame size									
					100	112	132	160	180	200	225	250	280	315
1LE1...-...-...-...-...-...			IE2 High Efficiency	1LE1501	1LE1501 Basic Line ①									
				1LE1601	1LE1601 Performance Line ②									
			IE3 Premium Efficiency	1LE1503						1LE1503 Basic Line ③				
				1LE1603						1LE1603 Performance Line ④				
			NEMA Energy Efficient	1LE1521	1LE1521 Eagle Line Basic ⑤									
				1LE1621	1LE1621 Eagle Line Performance ⑥									
			NEMA Premium Efficient	1LE1523	1LE1523 Eagle Line Basic ⑦									
				1LE1623	1LE1623 Eagle Line Performance ⑧									
			Motor version	Motor type	Frame size									
					100	112	132	160	180	200	225	250	280	315
Voltage at 50 Hz or 60 Hz														
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	2	2	-	All	All	□	□	□	□	□	□	□	□	□
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ ¹⁾	3	4	-	All except ⑤, ⑥, ⑦ and ⑧		□	□	□	□	□	□	□	□	□
50 Hz 400 VΔ, 60 Hz 460 VΔ ¹⁾				Only applicable for ⑤, ⑥, ⑦ and ⑧		□	□	□	□	□	□	□	□	□
50 Hz 500 VY	2	7	-	All	All	○	○	○	○	○	○	○	○	○
50 Hz 500 VΔ	4	0	-	All	All	○	○	○	○	○	○	○	○	○
50 Hz 220 VΔ/380 VY	2	1	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 380 VΔ/660 VY ¹⁾	3	3	-	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 380 VΔ ¹⁾				Only applicable for ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 240 VΔ/415 VY, 60 Hz 480 VY	2	3	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
50 Hz 415 VΔ, 60 Hz 480 VΔ	3	5	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage at 60 Hz and required output at 60 Hz														
220 VΔ/380 VY; 50 Hz output	9	0	M2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz output ²⁾	9	0	M1A	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz output ¹⁾	9	0	M2B	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ; 50 Hz output ¹⁾				Only applicable for ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output ^{1) 2)}	9	0	M1B	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	0	M2C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz output ²⁾	9	0	M1C	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz output	9	0	M2D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output ²⁾	9	0	M1D	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	0	M2E	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz output ²⁾	9	0	M1E	All except ⑤, ⑥, ⑦ and ⑧		○	○	○	○	○	○	○	○	○
460 VΔ; 50 Hz output	9	0	M2F	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output ²⁾	9	0	M1F	All except ⑤, ⑥, ⑦ and ⑧		○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	0	M2G	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz output ²⁾	9	0	M1G	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz output	9	0	M2H	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output ²⁾	9	0	M1H	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage at 87 Hz and 87 Hz output														
400 VΔ ³⁾	9	0	New! M3A	All	All	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.	O. R.
Non-standard voltage and/or frequencies														
Non-standard winding ⁴⁾	9	0	M1Y •	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge

¹⁾ For North America export versions Eagle Line 1LE1521/1LE1621 NEMA Energy Efficient and 1LE1523/1LE1623 NEMA Premium Efficient, voltages above 600 V will not be stamped.
²⁾ Not admissible for North America export versions Eagle Line 1LE1521/1LE1621 NEMA Energy Efficient and 1LE1523/1LE1623 NEMA Premium Efficient.

³⁾ Only possible for 4-pole, 6-pole and 8-pole motors. The operating data for converter-fed operation is also provided in a table on the rating plate.
⁴⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated output in kW.

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SIMOTICS GP 1LE1/1PC1 Standard Motors








Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Aluminum series 1LE10, 1PC10

Selection and ordering data

Types of construction	Type of construc. code 14th pos. of the Order No.	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)																	
			Motor version	Motor type (alum.)	Motor type – Frame size																	
					63	71	80	90	100	112	132	160	180	200	225							
			IE2 High Efficiency	1LE1001 1PC1001				1LE1001 ①														
			IE1 Standard Efficiency	1LE1002 1PC1002										1PC1001 ②								
			NEMA Energy Efficient	1LE1021										1LE1021 Eagle Line ⑤								
			NEMA Premium Efficient	1LE1023										1LE1023 Eagle Line ⑥								
			Pole-changing	1LE1011 1LE1012										1LE1011 ⑦								
														1LE1012 ⑧								
			1LE1.....																			
			1PC1.....																			
Without flange																						
IM B3 1) 2) 3)		A	–	All except ⑤					□	□	□	□	□	□	□	□	□	□	□	□	□	
IM B6 2) 3)		T	–	All except ⑤					□	□	□	□	□	□	□	□	□	□	□	□	□	
IM B7 2) 3)		U	–	All except ⑤					□	□	□	□	□	□	□	□	□	□	□	□	□	
IM B8 2) 3)		V	–	All except ⑤					□	□	□	□	□	□	□	□	□	□	□	□	□	
IM V6 2) 3)		D	–	All except ⑤					□	□	□	□	□	□	□	□	□	□	□	□	□	
IM V5 without protective cover 2) 3)		C	–	All except ⑤					□	□	□	□	□	□	□	□	□	□	□	□	□	
IM V5 with protective cover 2) 3) 4) 5) 6)		C	-Z H00	All except ②, ④, ⑤ and in combination with order code F90					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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For legends, notes and footnotes, see Page 1/52.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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**Types of construction
Aluminum series 1LE10, 1PC10**

Types of construction	Type of construc. code 14th pos. of the Order No.	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (alum.)	Motor type – Frame size										
					63	71	80	90	100	112	132	160	180	200	225
1LE1.....			Motor version	Motor type	Frame size										
1PC1.....					63	71	80	90	100	112	132	160	180	200	225
With flange		acc. to DIN EN 50347 acc. to DIN 42948					FF165 A 200	FF165 A 200	FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350			
IM B5 ^{2) 7)}		F	-	All	All		✓	✓	✓	✓	✓	✓			
IM V1 without protective cover ²⁾		G	-	All	All		✓	✓	✓	✓	✓	✓			
IM V1 with protective cover ^{2) 4) 5) 6)}		G	-Z H00	All except ②, ④ and in combination with order code F90			✓	✓	✓	✓	✓	✓			
IM V3 ⁴⁾		H	-	All	All		✓	✓	✓	✓	✓	✓			
IM B35 ³⁾		J	-	All except ⑤			✓	✓	✓	✓	✓	✓			
With standard flange		acc. to DIN EN 50347 acc. to DIN 42948					✓	✓	✓	✓	✓	✓			
IM B14 ^{2) 8)}		K	-	All	All		✓	✓	✓	✓	✓	✓			
IM V19 ²⁾		L	-	All	All		✓	✓	✓	✓	✓	✓			
IM V18 without protective cover ²⁾		M	-	All	All		✓	✓	✓	✓	✓	✓			
IM V18 with protective cover ^{2) 4) 5) 6)}		M	-Z H00	All except ②, ④ and in combination with order code F90			✓	✓	✓	✓	✓	✓			
IM B34 ³⁾		N	-	All except ⑤			✓	✓	✓	✓	✓	✓			

1.8

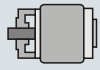


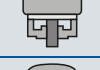
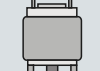
SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction Aluminum series 1LE10, 1PC10

Types of construction	Type of construc. code 14th pos. of the Order No.	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)													
			Motor version	Motor type (alum.)	Motor type – Frame size													
					63	71	80	90	100	112	132	160	180	200	225			
			IE2 High Efficiency	1LE1001 1PC1001						1LE1001 ①								
			IE1 Standard Efficiency	1LE1002 1PC1002						1LE1002 ③								
			NEMA Energy Efficient	1LE1021						1LE1021 Eagle Line ⑤								
			NEMA Premium Efficient	1LE1023						1LE1023 Eagle Line ⑥								
			Pole-changing	1LE1011						1LE1011 ⑦								
				1LE1012							1LE1012 ⑧							
			Motor version	Motor type	Frame size													
					63	71	80	90	100	112	132	160	180	200	225			
			With special flange		acc. to DIN EN 50347		FT130		FT130		FT165		FT165		FT215		FT265	
			acc. to DIN 42948		C 160		C 160		C 200		C 200		C 250		C 300			
IM B14 ^{2) 8)}		K	-Z P01	All	All													
IM V19 ²⁾		L	-Z P01	All	All													
IM V18 without protective cover ²⁾		M	-Z P01	All	All													
IM V18 with protective cover ^{2) 4) 5) 6)}		M	-Z P01+H00	All except ②, ④ and in combination with order code F90														
IM B34 ³⁾		N	-Z P01	All except ⑤														

- Standard version
- ✓ With additional charge
- Not possible

- 1) The types of construction IM B6/7/8, IM V6 and IM V5 with/without protective cover are also possible as long as no condensation drainage holes (order code H03) and no stamping of these types of construction on the rating plate are required. As standard the type of construction IM B3 is then stamped on the rating plate. With type of construction IM V5 with protective cover, the protective cover has to be additionally ordered with order code H00. The protective cover is not stamped on the rating plate.
- 2) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code H03), if mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.
- 3) For North America export version Eagle Line 1LE1021 NEMA Energy Efficient, types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with NEMA MG1 Table 12-11.
- 4) The "Second shaft extension" option (order code L05) is not possible.
- 5) In combination with an encoder it is not necessary to order the protective cover (order code H00), as this is delivered as a protection for the encoder as standard. In this case the protective cover is standard version (without additional charge).
- 6) Not possible for 1PC1 naturally cooled motors and 1LE1 forced-air cooled motors with order code F90 without external fan and fan cover.
- 7) The types of construction IM V3 and IM V1 with/without protective cover are also possible as long as no condensation drainage holes (order code H03) and no stamping of these types of construction on the rating plate are required. As standard the type of construction IM B5 is then stamped on the rating plate. With type of construction IM V1 with protective cover, the protective cover has to be additionally ordered with order code H00. The protective cover is not stamped on the rating plate.
- 8) The types of construction IM V19 and IM V18 with/without protective cover are also possible as long as no condensation drainage holes (order code H03) and no stamping of these types of construction on the rating plate are required. As standard the type of construction IM B14 is then stamped on the rating plate. With type of construction IM V18 with protective cover, the protective cover has to be additionally ordered with order code H00. The protective cover is not stamped on the rating plate.

SIMOTICS SD 1LE1 Standard Motors








Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Selection and ordering data

Types of construction	Type of construc. code 14th pos. of the Order No.	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
			Motor version	Motor type (cast-iron)	Motor type – Frame size											
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole
			IE2 High Efficiency	1LE1501	1LE1501 Basic Line ①											
				1LE1601	1LE1601 Performance Line ②											
			IE3 Premium Efficiency	1LE1503						1LE1503 Basic Line ③						
				1LE1603						1LE1603 Performance Line ④						
			NEMA Energy Efficient	1LE1521	1LE1521 Eagle Line Basic ⑤											
				1LE1621	1LE1621 Eagle Line Performance ⑥											
			NEMA Premium Efficient	1LE1523	1LE1523 Eagle Line Basic ⑦											
				1LE1623	1LE1623 Eagle Line Performance ⑧											
			Motor version	Motor type	Frame size											
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole
1LE1.....																
Without flange																
IM B3 1) 2) 3)		A	-	All except ⑤/⑥ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	□	□
IM B6 2) 3)		T	-	All except ⑤/⑥ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	□	□
IM B7 2) 3)		U	-	All except ⑤/⑥ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	□	□
IM B8 2) 3)		V	-	All except ⑤/⑥ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	□	□
IM V6 2) 3)		D	-	All except ⑤/⑥ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	✓	□
IM V5 without protective cover 2) 3)		C	-	All except ⑤/⑥ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	✓	□
IM V5 with protective cover 2) 3) 4) 5)		C	-Z H00	All except ⑤/⑥ ≤ 200 hp	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

1.8

For legends, notes and footnotes, see Page 1/55.











SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Types of construction	Type of construc. code 14th pos. of the Order No.	Additional identification code -Z with order code and plain text if re-quired	Motor category		Standard delivery time (colored area)														
			Motor version	Motor type (cast-iron)	Motor type – Frame size														
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole			
			IE2 High Efficiency	1LE1501 1LE1601	1LE1501 Basic Line ① 1LE1601 Performance Line ②														
			IE3 Premium Efficiency	1LE1503 1LE1603	1LE1503 Basic Line ③ 1LE1603 Performance Line ④														
			NEMA Energy Efficient	1LE1521 1LE1621	1LE1521 Eagle Line Basic ⑤ 1LE1621 Eagle Line Performance ⑥														
			NEMA Premium Efficient	1LE1523 1LE1623	1LE1523 Eagle Line Basic ⑦ 1LE1623 Eagle Line Performance ⑧														
			Motor version	Motor type	Frame size														
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole			
1LE1.....																			
With flange			acc. to DIN EN 50347 acc. to DIN 42948		FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350	FF300 A 350	FF350 A 400	FF400 A 450	FF500 A 550	FF500 A 550	FF600 A 660	- A 660	- A 660			
IM B5 2) 6)		F	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IM V1 without protective cover 2)		G	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IM V1 with protective cover 2) 4) 5)		G	-Z H00	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
IM V3 5)		H	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-			
IM B35 3)		J	-	All except ⑤/⑥ ≤ 200 hp		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
With standard flange			acc. to DIN EN 50347 acc. to DIN 42948		FT130 C 160	FT130 C 160	FT165 C 200	FT215 C 250											
IM B14 2) 7)		K	-	All	All	✓	✓	✓	✓										
IM V19 2)		L	-	All	All	✓	✓	✓	✓										
IM V18 without protective cover 2)		M	-	All	All	✓	✓	✓	✓										
IM V18 with protective cover 2) 4) 5)		M	-Z H00	All	All	✓	✓	✓	✓										
IM B34 3)		N	-	All except ⑤/⑥ ≤ 200 hp		✓	✓	✓	✓										

1.8

For legends, notes and footnotes, see Page 1/55.






SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Types of construction	Type of construc. code 14th pos. of the Order No.	Additional identification code -Z with order code and plain text if re-quired	Motor category		Standard delivery time (colored area)													
			Motor version	Motor type (cast-iron)	Motor type – Frame size													
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole		
			IE2 High Efficiency	1LE1501 1LE1601	1LE1501 Basic Line ① 1LE1601 Performance Line ②													
			IE3 Premium Efficient	1LE1503 1LE1603	1LE1503 Basic Line ③ 1LE1603 Performance Line ④													
			NEMA Energy Efficient	1LE1521 1LE1621	1LE1521 Eagle Line Basic ⑤ 1LE1621 Eagle Line Performance ⑥													
			NEMA Premium Efficient	1LE1523 1LE1623	1LE1523 Eagle Line Basic ⑦ 1LE1623 Eagle Line Performance ⑧													
			Motor version	Motor type	Frame size													
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole		
1LE1.....-...-...																		
With special flange			acc. to DIN EN 50347 acc. to DIN 42948		FT165 FT165 FT215 FT265 C 200 C 200 C 250 C 300													
IM B14 2) 7)		K	-Z P01	All	All	✓	✓	✓	-	-	-	-	-	-	-	-		
IM V19 2)		L	-Z P01	All	All	✓	✓	✓	-	-	-	-	-	-	-	-		
IM V18 without protective cover 2)		M	-Z P01	All	All	✓	✓	✓	-	-	-	-	-	-	-	-		
IM V18 with protective cover 2) 4) 5)		M	-Z P01 + H00	All	All	✓	✓	✓	-	-	-	-	-	-	-	-		
IM B34 3)		N	-Z P01	All except ⑤/⑥ ≤ 200 hp		✓	✓	✓	-	-	-	-	-	-	-	-		

- Standard version
- ✓ With additional charge
- Not possible

1.8

1) The types of construction IM B6/7/8, IM V6 and IM V5 with/without protective cover are also possible as long as no stamping of these types of construction on the rating plate is required. As standard the type of construction IM B3 is then stamped on the rating plate. With type of construction IM V5 with protective cover, the protective cover has to be additionally ordered with order code H00. The protective cover is not stamped on the rating plate.

2) The type of construction is stamped on the rating plate. If mounted in a different position, the position must be specified to ensure that the condensation drainage holes are positioned correctly.

3) For North America export version Eagle Line 1LE1521/1LE1621 NEMA Energy Efficient, types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with NEMA MG1 Table 12-11.

4) In combination with an encoder it is not necessary to order the protective cover (order code H00), as this is delivered as a protection for the encoder as standard. In this case the protective cover is standard version (without additional charge).

5) The "Second shaft extension" option (order code L05) is not possible.

6) The types of construction IM V3 and IM V1 with/without protective cover are also possible as long as no stamping of these types of construction on the rating plate is required. As standard the type of construction IM B5 is then stamped on the rating plate. With type of construction IM V1 with protective cover, the protective cover has to be additionally ordered with order code H00. The protective cover is not stamped on the rating plate.

7) The types of construction IM V19 and IM V18 with/without protective cover are also possible as long as no stamping of these types of construction on the rating plate is required. As standard the type of construction IM B14 is then stamped on the rating plate. With type of construction IM V18 with protective cover, the protective cover has to be additionally ordered with order code H00. The protective cover is not stamped on the rating plate.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
request
Motor protection
Aluminum series 1LE10, 1PC10
Selection and ordering data

Motor protection	Motor protection code 15th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)																	
			Motor version	Motor type (alum.)	Motor type – Frame size																	
					63	71	80	90	100	112	132	160	180	200	225							
			IE2 High Efficiency	1LE1001 1PC1001				1LE1001														
			IE1 Standard Efficiency	1LE1002 1PC1002						1LE1002												
			NEMA Energy Efficient	1LE1021																	1LE1021 Eagle Line	
			NEMA Premium Efficient	1LE1023																	1LE1023 Eagle Line	
			Pole-changing	1LE1011																	1LE1011	
				1LE1012																		1LE1012
			Motor version	Motor type	Frame size																	
					63	71	80	90	100	112	132	160	180	200	225							
Motor protection (winding protection)																						
Without motor protection ¹⁾	A	–	All	All				☐	☐	☐	☐	☐	☐									
Motor protection with PTC thermistors with 1 or 3 embedded temperature sensors for tripping ^{1) 2)}	B	–	All	All				✓	✓	✓	✓	✓	✓									
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ²⁾	C	–	All	All				–	–	✓	✓	✓	✓									
Motor temperature detection with embedded temperature sensor KTY 84-130 ²⁾	F	–	All	All				–	–	✓	✓	✓	✓									
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ²⁾	G <i>New!</i>	–	All	All				–	–	✓	✓	✓	✓									
Installation of 3 PT100 resistance thermometers ²⁾	H <i>New!</i>	–	All	All				–	–	✓	✓	✓	✓									
NTC thermistors for tripping	Z	Q2A	All	All				–	–	✓	✓	✓	✓									
Temperature detectors for tripping ²⁾	Z	Q3A	All	All				–	–	✓	✓	✓	✓									

- ☐ Standard version
- ✓ With additional charge
- Not possible

¹⁾ For shaft heights 80 and 90, depending on the selected voltage, motor protection is either not possible (motor protection code A), or only with PTC thermistors with one embedded temperature sensor for tripping (motor protection code B).

²⁾ Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended. For pole-changing motors with separate windings, double the number of temperature sensors or temperature detectors is required and will be installed at the factory. This also results in a double additional charge.

SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Motor protection
Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Selection and ordering data

Motor protection	Motor protection code 15th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)									
			Motor version	Motor type (cast-iron)	Motor type – Frame size									
					100	112	132	160	180	200	225	250	280	315
			IE2 High Efficiency	1LE 1501	1LE1501 Basic Line ①									
				1LE 1601	1LE1601 Performance Line ②									
			IE3 Premium Efficiency	1LE 1503						1LE1503 Basic Line ③				
				1LE 1603						1LE1603 Performance Line ④				
			NEMA Energy Efficient	1LE 1521	1LE1521 Eagle Line Basic ⑤									
				1LE 1621	1LE1621 Eagle Line Performance ⑥									
NEMA Premium Efficient	1LE 1523	1LE1523 Eagle Line Basic ⑦												
	1LE 1623	1LE1623 Eagle Line Performance ⑧												
1LE1.....			Motor version	Motor type	Frame size									
Motor protection (winding protection)														
Without motor protection ①	A	–	All except Performance Line ②, ④, ⑥ and ⑧	All	□	□	□	□	□	□	□	□	□	□
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ① ②	B	–	Standard version for Performance Line ②, ④, ⑥ and ⑧	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ②	C	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ②	F	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ②	G New!	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT100 resistance thermometers	H New!	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 6 PT100 resistance thermometers ②	J New!	–	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓
NTC thermistors for tripping	Z	Q2A	All	All	✓	✓	✓	✓	–	–	–	–	–	–
Temperature detectors for tripping ②	Z	Q3A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Standard version
- ✓ With additional charge
- Not possible

Note:

Options are available specifically for bearing protection – For order codes and descriptions, see from Page 1/65.

① For the Performance Line, motor protection by means of PTC thermistors with 3 embedded temperature sensors for tripping (motor protection code B) is already included in the base price. For the Performance Line, the option "without motor protection" (motor protection code A) is not possible.

② Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended.

SIMOTICS GP 1LE1/1PC1 Standard Motors

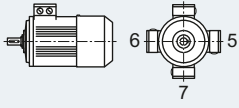
Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Connection box position
Aluminum series 1LE10, 1PC10

Selection and ordering data

Connection box position		Con- nection box position code 16th position of the Order No.	Addi- tional identi- fication code with order code and plain text if required	Motor category		Standard delivery time (colored area)									
	Motor version			Motor type (alum.)	Motor type – Frame size										
					63	71	80	90	100	112	132	160	180	200	225
1LE1 1PC1	IE2 High Efficiency	1LE1001 1PC1001			1LE1001										
	IE1 Standard Efficiency	1LE1002					1LE1002								
		1PC1002					1PC1002								
	NEMA Energy Efficient	1LE1021					1LE1021 Eagle Line								
	NEMA Premium Efficient	1LE1023					1LE1023 Eagle Line								
	Pole-changing	1LE1011					1LE1011								
1LE1012						1LE1012									
Connection box position		Motor version	Motor type	Frame size											
Connection box position				63	71	80	90	100	112	132	160	180	200	225	
Connection box top ¹⁾	4	–	All	All			☐	☐	☐	☐	☐	☐			
Connection box on RHS ²⁾	5	–	All	All			–	–	✓	✓	✓	✓			
Connection box on LHS ²⁾	6	–	All	All			–	–	✓	✓	✓	✓			
Connection box bottom ^{2) 3)}	7	–	All	All			–	–	✓	✓	✓	✓			

- ☐ Standard version
- ✓ With additional charge
- Not possible

¹⁾ For types of construction with feet, cast feet are standard. Screwed-on feet are available with order code H01.

²⁾ For types of construction with feet, screwed-on feet are standard.

³⁾ Not generally possible for motors with feet.

SIMOTICS SD 1LE1 Standard Motors

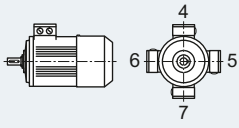
Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Connection box position
Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Selection and ordering data

Connection box position	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size	100	112	132	160	180	200	225	250	280	315
 <p>4 5 6 7</p>		IE2 High Efficiency	1LE1501 1LE1601	1LE1501 Basic Line 1LE1601 Performance Line										
		IE3 Premium Efficiency	1LE1503 1LE1603	1LE1503 Basic Line 1LE1603 Performance Line										
		NEMA Energy Efficient	1LE1521 1LE1621	1LE1521 Eagle Line Basic 1LE1621 Eagle Line Performance										
		NEMA Premium Efficient	1LE1523 1LE1623	1LE1523 Eagle Line Basic 1LE1623 Eagle Line Performance										
		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315	
		1LE1...-.....-5												
		Connection box position												
Connection box top ¹⁾	4	–	All	All	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Connection box on RHS ²⁾	5	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS ²⁾	6	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box bottom ^{2) 3)}	7	–	All	All	✓	✓	✓	✓	–	–	–	–	–	–

- ☐ Standard version
- ✓ With additional charge
- Not possible

¹⁾ For types of construction with feet, cast feet are standard. Screwed-on feet are available with order code H01.

²⁾ For types of construction with feet, screwed-on feet are standard.
³⁾ Not generally possible for motors with feet.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options Aluminum series 1LE10, 1PC10

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)														
		Motor version	Motor type (alum.)	Motor type – Frame size														
				63	71	80	90	100	112	132	160	180	200	225				
		IE2 High Efficiency	1LE1001					1LE1001 ①										
			1PC1001															1PC1001 ②
		IE1 Standard Efficiency	1LE1002															1LE1002 ③
			1PC1002															1PC1002 ④
		NEMA Energy Efficient	1LE1021															1LE1021 Eagle Line ⑤
		NEMA Premium Efficient	1LE1023															1LE1023 Eagle Line ⑥
		Pole-changing	1LE1011														1LE1011 ⑦	
			1LE1012														1LE1012 ⑧	
1LE1.....-Z		Motor version	Motor type	Frame size														
1PC1.....-Z				63	71	80	90	100	112	132	160	180	200	225				
Motor connection and connection box																		
One metal cable gland	R15	All	All			✓	✓	✓	✓	✓	✓							
Rotation of the connection box through 90°, entry from DE	R10	All	All			○	○	○	○	○	○							
Rotation of the connection box through 90°, entry from NDE	R11	All	All			○	○	○	○	○	○							
Rotation of the connection box through 180°	R12	All	All			○	○	○	○	○	○							
Larger connection box	R50	All	All			–	–	✓	✓	✓	✓							
Reduction piece for M cable gland in accordance with British Standard, both cable entries mounted 1)	R30	All	All			–	–	✓	✓	✓	✓							
External grounding	H04	All	All			✓	✓	✓	✓	✓	✓							
3 cables protruding, 0.5 m long 2) 3)	R20	All	All			–	–	✓	✓	✓	✓							
3 cables protruding, 1.5 m long 2) 3)	R21	All	All			–	–	✓	✓	✓	✓							
6 cables protruding, 0.5 m long 2)	R22	All	All			–	–	✓	✓	✓	✓							
6 cables protruding, 1.5 m long 2)	R23	All	All			–	–	✓	✓	✓	✓							
6 cables protruding, 3 m long 2)	R24	All	All			–	–	✓	✓	✓	✓							
Connection box on NDE 4)	H08	All	All			–	–	✓	✓	✓	✓							
Windings and insulation																		
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	N01	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 155 (F), with increased output	N02	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	N03	All	All			✓	✓	✓	✓	✓	✓							
Temperature class 180 (H) at rated output and max. CT 60 °C 5)	N11	All	All			–	–	✓	✓	✓	✓							
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	N20	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	N05	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	N06	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	N07	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	N08	All	All			–	–	✓	✓	✓	✓							
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	N21	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA ... m above sea level	All	All			–	–	✓	✓	✓	✓							
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT ... °C or SA ... m above sea level	All	All			✓	✓	✓	✓	✓	✓							

For legends and notes, see Page 1/63, for footnotes, see Page 1/64.

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SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Options

Aluminum series 1LE10, 1PC10

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)																			
		Motor version	Motor type (alum.)	Motor type – Frame size																			
				63	71	80	90	100	112	132	160	180	200	225									
		IE2 High Efficiency	1LE1001 1PC1001							1LE1001 ①													
		IE1 Standard Efficiency	1LE1002 1PC1002												1PC1001 ②	1LE1002 ③	1PC1002 ④						
		NEMA Energy Efficient	1LE1021												1LE1021 Eagle Line ⑤								
		NEMA Premium Efficient	1LE1023												1LE1023 Eagle Line ⑥								
		Pole-changing	1LE1011												1LE1011 ⑦								
			1LE1012												1LE1012 ⑧								
		1LE1.....-Z 1PC1.....-Z	Motor version	Motor type	Frame size																		
					63	71	80	90	100	112	132	160	180	200	225								
Colors and paint finish																							
Special finish in RAL 7030 stone gray		All	All			□	□	□	□	□	□	□	□	□									
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All			✓	✓	✓	✓	✓	✓	✓	✓	✓									
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y51 • and special finish RAL	All	All			✓	✓	✓	✓	✓	✓	✓	✓	✓									
Special paint for use offshore	S04 <i>New!</i>	All	All			–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.									
Special finish sea air resistant	S03	All	All			–	–	✓	✓	✓	✓	✓	✓	✓									
Unpainted (only cast-iron parts primed)	S00	All	All			○	○	○	○	○	○	○	○	○									
Unpainted, only primed	S01	All	All			✓	✓	✓	✓	✓	✓	✓	✓	✓									
Modular technology – Basic versions 6)																							
Mounting of separately driven fan	F70	All except ②, ④ and in combination with order code F90				✓	✓	✓	✓	✓	✓	✓	✓	✓									
Mounting of brake 7)	F01	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Mounting of 1XP8012-10 (HTL) rotary pulse encoder 8) 9)	G01	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Mounting of 1XP8012-20 (TTL) rotary pulse encoder 8) 9)	G02	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Modular technology – Additional versions																							
Brake supply voltage 24 V DC	F10	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Brake supply voltage 230 V AC	F11	All except ②, ④ and in combination with order code F90				–	–	○	○	○	○	○	○	○									
Brake supply voltage 400 V AC	F12	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Mechanical manual brake release with lever (no locking)	F50	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Special technology 6)																							
Mounting of LL 861 900 220 rotary pulse encoder 8)	G04	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Mounting of HOG 9 D 1024 I rotary pulse encoder 8)	G05	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Mounting of HOG 10 D 1024 I rotary pulse encoder 8)	G06	All except ②, ④ and in combination with order code F90				–	–	✓	✓	✓	✓	✓	✓	✓									
Mechanical design and degrees of protection																							
Protective cover 8) 10)	H00	All except ②, ④ and in combination with order code F90				✓	✓	✓	✓	✓	✓	✓	✓	✓									
Next larger standard flange	P01	All	All			–	–	✓	✓	✓	✓	✓	✓	–									
Screwed-on (instead of cast) feet	H01	All	All			–	–	✓	✓	✓	✓	✓	✓	✓									
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar 11)	H23	All	All			✓	✓	✓	✓	✓	✓	✓	✓	✓									
Low-noise version for 2-pole motors with clockwise direction of rotation	F77	All except ②, ④ and in combination with order code F90				–	–	–	–	–	–	–	–	✓	✓								
Low-noise version for 2-pole motors with counter-clockwise direct. of rotation	F78	All except ②, ④ and in combination with order code F90				–	–	–	–	–	–	–	–	✓	✓								
IP65 degree of protection 12)	H20	All	All			✓	✓	✓	✓	✓	✓	✓	✓	✓									
IP56 degree of protection 13)	H22	All	All			✓	✓	✓	✓	✓	✓	✓	✓	✓									
Vibration-proof version	H02	All	All			–	–	✓	✓	✓	✓	✓	✓	✓									
Condensation drainage holes 14)	H03	All	All			–	–	✓	✓	✓	✓	✓	✓	✓									

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SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options Aluminum series 1LE10, 1PC10

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)																		
		Motor version	Motor type (alum.)	Motor type – Frame size																		
				63	71	80	90	100	112	132	160	180	200	225								
		IE2 High Efficiency	1LE1001 1PC1001							1LE1001 ①												
		IE1 Standard Efficiency	1LE1002 1PC1002								1PC1001 ②											
		NEMA Energy Efficient	1LE1021								1LE1002 ③											
		NEMA Premium Efficient	1LE1023								1PC1002 ④											
		Pole-changing	1LE1011								1LE1021 Eagle Line ⑤											
			1LE1012									1LE1023 Eagle Line ⑥										
		1LE1...-Z 1PC1...-Z	Motor version	Motor type	Frame size																	
					63	71	80	90	100	112	132	160	180	200	225							
Mechanical design and degrees of protection (continued)																						
Rust-resistant screws (externally)	H07	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Prepared for mountings, center hole only 15)	G40	All except ②, ④ and in combination with order code F90			-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Prepared for mountings with shaft D12 15)	G41	All except ②, ④ and in combination with order code F90			-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Prepared for mountings with shaft D16 15)	G42	All except ②, ④ and in combination with order code F90			-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Protective cover for encoder (supplied loose – only for mountings with order codes G40, G41 and G42)	G43	All except ②, ④ and in combination with order code F90			-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Coolant temperature and site altitude																						
Coolant temperature -40 to +40 °C 16)	D03	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Coolant temperature -30 to +40 °C 16)	D04	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Designs in accordance with standards and specifications																						
CCC China Compulsory Certification 17)	D01	<i>New!</i> All	All		-	-	✓	✓	-	-												
IE1 motor without CE marking for export outside EEA (see EU Directive 640/2009)	D22	<i>New!</i> Only possible for ③ and ④			-	-	○	○	○	○												
Electrical according to NEMA MG1-12 18)	D30	All; for Eagle Line ⑤ and ⑥ standard version			-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Design according to UL with "Recognition Mark" 18)	D31	All; for Eagle Line ⑤ and ⑥ standard version			-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
China Energy Efficiency Label	D34	<i>New!</i> Only possible for ①, ②, ⑤ and ⑥			-	-	○	○	○	○	○	○	○	○	○							
Canadian regulations (CSA) 19)	D40	All; for Eagle Line ⑤ and ⑥ standard version			-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Bearings and lubrication																						
Measuring nipple for SPM shock pulse measurement for bearing inspection 20)	Q01	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Bearing design for increased cantilever forces	L22	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Special bearing for DE and NDE, bearing size 63	L25	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Regreasing device 20)	L23	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Located bearing DE	L20	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Located bearing NDE	L21	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Balance and vibration quantity																						
Vibration quantity level A		All	All		□	□	□	□	□	□	□	□	□	□	□							
Vibration quantity level B	L00	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Half-key balancing (standard)		All	All		□	□	□	□	□	□	□	□	□	□	□							
Full-key balancing	L02	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Balancing without key	L01	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Shaft and rotor																						
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors	L08	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Second standard shaft extension	L05	All except ②, ④ and in combination with order code F90			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Shaft extension with standard dimensions, without feather keyway	L04	All	All		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L07	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Standard shaft made of stainless steel	L06	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Non-standard cylindrical shaft extension 21)	Y55 • and identification code	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							

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For legends and notes, see Page 1/63, for footnotes, see Page 1/64.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Aluminum series 1LE10, 1PC10

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)													
		Motor version	Motor type (alum.)	Motor type – Frame size													
				63	71	80	90	100	112	132	160	180	200	225			
		IE2 High Efficiency	1LE1001 1PC1001					1LE1001 ①									
		IE1 Standard Efficiency	1LE1002 1PC1002						1PC1001 ②	1LE1002 ③	1PC1002 ④						
		NEMA Energy Efficient	1LE1021						1LE1021 Eagle Line ⑤								
		NEMA Premium Efficient	1LE1023						1LE1023 Eagle Line ⑥								
		Pole-changing	1LE1011						1LE1011 ⑦								
			1LE1012						1LE1012 ⑧								
			Motor version	Motor type	Frame size												
					63	71	80	90	100	112	132	160	180	200	225		
Shaft and rotor (continued)																	
Non-standard shaft extension, DE	Y58 • <i>New!</i> and identification code	All	All														
Non-standard shaft extension, NDE	Y59 • <i>New!</i> and identification code	All	All														
Heating and ventilation																	
Fan cover for textile industry ²²⁾	F75	All except ②, ④ and in combination with order code F90															
Metal external fan ²³⁾	F76	All except ②, ④ and in combination with order code F90															
Without external fan and without fan cover	F90	All except ②, ④, ⑦ and ⑧															
Anti-condensation heating for 230 V	Q02	All	All														
Anti-condensation heating for 115 V	Q03	All	All														
Sheet metal fan cover	F74	All except ②, ④ and in combination with order code F90															
Rating plate and extra rating plates																	
Extra rating plate for voltage tolerance ²⁴⁾	B07 <i>New!</i>	All except ②, ④, ⑦, ⑧ and 8-pole motors															
Second rating plate, loose ²⁵⁾	M10	All	All														
Rating plate, stainless steel	M11	All	All														
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All														
Extra rating plate with identification codes	Y82 • and identification code	All	All														
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All														
Adhesive label, supplied loose	Y85 • <i>New!</i> and identification code	All	All														
Packaging, safety notes, documentation and test certificates																	
With one safety and start-up guide per box pallet	B01	All	All														
Acceptance test certificate 3.1 in accordance with EN 10204 ²⁶⁾	B02	All	All														
Printed German/English Operating Instructions (Compact) enclosed ²⁷⁾		All	All														
Printed German/English Operating Instructions enclosed	B04	All	All														
Type test with heat run for horizontal motors, with acceptance	B83	All	All														
Wire-lattice pallet	B99	All	All														
Connected in star for dispatch	M01	All	All														
Connected in delta for dispatch	M02	All	All														

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

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For footnotes, see Page 1/64.

SIMOTICS GP 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Options Aluminum series 1LE10, 1PC10

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- 1) Not possible in combination with order code R15 "One metal cable gland".
- 2) In combination with motor protection (15th position of the Order No.) or anti-condensation heating option, please inquire before ordering.
- 3) Not possible for pole-changing motors and/or in combination with voltage code 22 or 34.
- 4) Not possible in combination with the following order codes: N01, N02, N03, N05, N06, N07, N08, N11. Use is only possible according to temperature class 155 (F).
- 5) Cannot be used for motors in UL version (order code D31). The grease lifetime specified in Catalog D 81.1 · 2008 in Part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease service lifetime or relubrication interval is halved.
- 6) A second shaft extension is not possible. Please inquire for mounted brakes.
- 7) For order codes F10, F11 and F12, the brake supply voltage must be specified or ordered.
- 8) All encoders are supplied with a protective cover as standard. The protective cover is omitted at the factory when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.
- 9) In combination with a separately driven fan (order code F70) the 1XP8032-10 rotary pulse encoder is used instead of 1XP8012-10 or 1XP8032-20 is used instead of 1XP8012-20.
- 10) Order code H00 provides mechanical protection for encoders.
- 11) Not possible for type of construction IM V3.
- 12) Not possible in combination with rotary pulse encoder HOG 9 D 1024 I (order code G05) and/or brake 2LM8 (order code F01).
- 13) Not possible in combination with brake 2LM8 – order code F01.
- 14) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If the condensation drainage holes are required for motors of the IM B6, IM B7 or IM B8 type of construction (feet on side or top), the motors must be ordered in the respective type of construction and with order code H03, so that the condensation drainage holes will be placed in the correct position.
- 15) Motors that are prepared for additional mountings (order codes G40, G41, G42) are supplied without a protective cover as standard. If a protective cover is requested as a cover or mechanical protection for mountings provided by the customer, this can be ordered using order code G43. Not possible in combination with order code L00 vibration quantity level B.
- 16) In connection with mountings, the respective technical data must be observed, please inquire before ordering.
- 17) CCC certification is required for
 - 2-pole motors ≤ 2.2 kW
 - 4-pole motors ≤ 1.1 kW
 - 6-pole motors ≤ 0.75 kW
 - 8-pole motors ≤ 0.55 kW
- 18) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range. Order codes D30 and D31 do not authorize importing into USA and Mexico. The North America export versions Eagle Line 1LE1021 NEMA Energy Efficient and 1LE1023 NEMA Premium Efficient are available for this purpose.
- 19) The rated voltage is indicated on the rating plate without voltage range. Order code D40 does not authorize importing into Canada. The North America export versions Eagle Line 1LE1021 NEMA Energy Efficient and 1LE1023 NEMA Premium Efficient are available for this purpose.
- 20) Not possible when brake is mounted.
- 21) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and L05:
 - Dimensions D and DA ≤ internal diameter of roller bearing (see dimension tables under "Dimensions")
 - Dimensions E and EA ≤ 2 x length E (normal) of the shaft extension. For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".
- 22) The special requirements of the textile industry regarding the sheet metal cover open up the possibility that a finger may be inserted between the cover and enclosure. The customer must implement appropriate measures to ensure that the installed system is "finger-safe".
- 23) Converter-fed operation is permitted for 1LE1 motors with metal external fans. The metal external fan is not possible in combination with the low-noise version – order code F77 or F78.
- 24) Can be ordered for 230VΔ/400VY or 400VΔ/690VY (voltage code "22" or "34"). Not possible for pole-changing motors, naturally cooled 1PC1 motors, 8-pole motors and in combination with order code D34.
- 25) As adhesive label for frame sizes 80 and 90.
- 26) The delivery time for the factory test certificate may differ from the delivery time for the motor.
- 27) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>

SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Options

Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Standard delivery times:

10 working days	20 working days	On request
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Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315	
		IE2 High Efficiency	1LE1501 1LE1601	1LE1501 Basic Line ① 1LE1601 Performance Line ②										
		IE3 Premium Efficiency	1LE1503 1LE1603	1LE1503 Basic Line ③ 1LE1603 Performance Line ④										
		NEMA Energy Efficient	1LE1521 1LE1621	1LE1521 Eagle Line Basic ⑤ 1LE1621 Eagle Line Performance ⑥										
		NEMA Premium Efficient	1LE1523 1LE1623	1LE1523 Eagle Line Basic ⑦ 1LE1623 Eagle Line Performance ⑧										
1LE1.....-Z		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315	
Motor protection (bearing protection)														
Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings 1)	Q72 <i>New!</i>	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	
Motor connection and connection box														
One metal cable gland	R15	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cable gland, max. configuration	R18 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 90°, entry from DE	R10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 90°, entry from NDE	R11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 180°	R12	All	All	○	○	○	○	✓	✓	✓	✓	✓	✓	
Larger connection box	R50	All	All	✓	✓	✓	-	-	-	-	-	-	-	
External grounding	H04	All	All	✓	✓	✓	✓	□	□	□	□	□	□	
Stud terminal for cable connection, accessories pack (3 items)	R17 <i>New!</i>	All	All	-	-	-	-	-	-	✓	✓	✓	✓	
Silicone-free version	R74 <i>New!</i>	All	All	-	-	-	-	-	-	-	✓	✓	✓	
Windings and insulation														
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	N03	All	All	✓	✓	✓	✓	-	-	-	-	-	-	
Temperature class 180 (H) at rated output and max. CT 60 °C 2)	N11	All	All	✓	✓	✓	✓	-	-	-	-	-	-	
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	N20	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	N06	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	N21	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	
Colors and paint finish														
Standard finish in RAL 7030 stone gray			Only possible for Basic Line ①, ③, ⑤ and ⑦	□	□	□	□	□	□	□	□	□	□	
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y53 • <i>New!</i>	All	Only possible for Basic Line ①, ③, ⑤ and ⑦	-	-	-	-	✓	✓	✓	✓	✓	✓	
Special finish in RAL 7030 stone gray	S10 <i>New!</i>	All	All; standard version for Performance Line ②, ④, ⑥ and ⑧	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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For legends, notes and footnotes, see Page 1/68.

SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
request

Options

Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315	
		IE2 High Efficiency	1LE1501	1LE1501 Basic Line ①										
			1LE1601	1LE1601 Performance Line ②										
		IE3 Premium Efficiency	1LE1503	1LE1503 Basic Line ③										
			1LE1603	1LE1603 Performance Line ④										
		NEMA Energy Efficient	1LE1521	1LE1521 Eagle Line Basic ⑤										
			1LE1621	1LE1621 Eagle Line Performance ⑥										
		NEMA Premium Efficient	1LE1523	1LE1523 Eagle Line Basic ⑦										
			1LE1623	1LE1623 Eagle Line Performance ⑧										
		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315	
1LE1.....-Z														
Colors and paint finish (continued)														
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y51 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Unpainted (only cast-iron parts primed)	S00	All	All	○	○	○	○	○	○	○	○	○	○	
Unpainted, only primed	S01	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Modular technology – Basic versions ③)														
Mounting of separat. driven fan	F70	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of brake ④)	F01	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of 1XP8012-10 (HTL) rotary pulse encoder ⑤) ⑥)	G01	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of 1XP8012-20 (TTL) rotary pulse encoder ⑤) ⑥)	G02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Modular technology – Additional versions														
Brake supply voltage 24 V DC	F10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Brake supply voltage 230 V AC	F11	All	All	○	○	○	○	○	○	○	○	○	○	
Brake supply voltage 400 V AC	F12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mechanical manual brake release with lever (no locking)	F50	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special technology ③)														
Mounting of LL 861 900 220 rotary pulse encoder ⑦)	G04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of HOG 9 D 1024 I rotary pulse encoder ⑦)	G05	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of HOG 10 D 1024 I rotary pulse encoder ⑦)	G06	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mechanical design and degrees of protection														
Protective cover ⑤) ⑦) ⑧)	H00	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Next larger standard flange	P01	All	All	✓	✓	✓	–	–	–	–	–	–	–	
Screwed-on (inst. of cast) feet	H01	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar ⑨)	H23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IP65 degree of protection ⑩)	H20	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IP56 degree of protection ⑪)	H22	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Condensation drainage holes	H03	All	All	□	□	□	□	□	□	□	□	□	□	
Rust-resistant screws (externally)	H07	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Coolant temperature and site altitude														
Coolant temperature –40 to +40 °C ⑫)	D03	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

For legends, notes and footnotes, see Page 1/68.

SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315	
		IE2 High Efficiency	1LE1501 1LE1601	1LE1501 Basic Line ① 1LE1601 Performance Line ②										
		IE3 Premium Efficiency	1LE1503 1LE1603	1LE1503 Basic Line ③ 1LE1603 Performance Line ④										
		NEMA Energy Efficient	1LE1521 1LE1621	1LE1521 Eagle Line Basic ⑤ 1LE1621 Eagle Line Performance ⑥										
		NEMA Premium Efficient	1LE1523 1LE1623	1LE1523 Eagle Line Basic ⑦ 1LE1623 Eagle Line Performance ⑧										
		Motor version	Motor type	Frame size	100	112	132	160	180	200	225	250	280	315
1LE1.....-Z														
Designs in accordance with standards and specifications														
Electrical according to NEMA MG1-12 ¹³⁾	D30	All; for Eagle Line ⑤, ⑥, ⑦ and ⑧ standard version							✓	✓	✓	✓	✓	✓
Design according to UL with "Recognition Mark" ¹³⁾	D31	All; for Eagle Line ⑤, ⑥, ⑦ and ⑧ standard version	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ¹⁴⁾	D40	All; for Eagle Line ⑤, ⑥, ⑦ and ⑧ standard version	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication														
Measuring nipple for SPM shock pulse measurement for bearing inspection ¹⁵⁾	Q01	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces	L22	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size 63 ¹⁶⁾	L25	All; standard version for Performance Line ②, ④, ⑥ and ⑧	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□
Regreasing device ¹⁵⁾	L23	All; standard version for Performance Line from FS 160 ②, ④, ⑥ and ⑧	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□
Located bearing DE	L20	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing insulation DE	L50	<i>New!</i> All	All	–	–	–	–	–	–	✓	✓	✓	✓	✓
Bearing insulation NDE	L51	<i>New!</i> All	All	–	–	–	–	–	–	✓	✓	✓	✓	✓
Balance and vibration quantity														
Vibration quantity level A		All	All	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B	L00	All	All	✓	✓	✓	✓	✓	–	–	–	–	–	–
Half-key balancing (standard)		All	All	□	□	□	□	□	□	□	□	□	□	□
Shaft and rotor														
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors	L08	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension	L05	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L07	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard shaft made of stainless steel	L06	All	All	–	–	–	–	–	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ¹⁷⁾	Y55 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation														
Metal external fan ¹⁸⁾	F76	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-conden. heating for 230 V	Q02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 115 V	Q03	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sheet metal fan cover	F74	All; standard version for Performance Line ②, ④, ⑥ and ⑧	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates														
Extra rating plate for voltage tolerance ¹⁹⁾	B07	<i>New!</i> All, with the exception of 8-pole motors	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	M10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate, stainless steel	M11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends, notes and footnotes, see Page 1/68.

SIMOTICS SD 1LE1 Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LE15 Basic Line, 1LE16 Performance Line

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)									
		Motor version	Motor type (cast-iron)	Motor type – Frame size									
				100	112	132	160	180	200	225	250	280	315
		IE2 High Efficiency	1LE1501 1LE1601	1LE1501 Basic Line ① 1LE1601 Performance Line ②									
		IE3 Premium Efficiency	1LE1503 1LE1603	1LE1503 Basic Line ③ 1LE1603 Performance Line ④									
		NEMA Energy Efficient	1LE1521 1LE1621	1LE1521 Eagle Line Basic ⑤ 1LE1621 Eagle Line Performance ⑥									
		NEMA Premium Efficient	1LE1523 1LE1623	1LE1523 Eagle Line Basic ⑦ 1LE1623 Eagle Line Performance ⑧									

1LE1.....-Z	Motor version	Motor type	Frame size									
			100	112	132	160	180	200	225	250	280	315

Rating plate and extra rating plates (continued)													
Extra rating plate with identification codes	Y82 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates													
Acceptance test certificate 3.1 in accordance with EN 10204 (20)	B02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed German/English Operating Instructions (Compact) enclosed 21)		All	All	□	□	□	□	□	□	□	□	□	□

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- R. Possible on request
- ✓ With additional charge
- Not possible

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1) Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended.

2) Cannot be used for motors in UL version (order code D31). The grease lifetime specified in Catalog D 81.1 · 2008 in Part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease service lifetime or relubrication interval is halved.

3) A second shaft extension is not possible. Please inquire for mounted brakes.

4) For order codes F10, F11 and F12, the brake supply voltage must be specified or ordered.

5) The 1XP8 rotary pulse encoders are fitted with a protective cover as standard. The protective cover is omitted at the factory when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.

6) In combination with a separately driven fan (order code F70) the 1XP8032-10 rotary pulse encoder is used instead of 1XP8012-10 or 1XP8032-20 is used instead of 1XP8012-20.

7) The LL and HOG rotary pulse encoders up to frame size 160 are fitted with a protective cover as standard. The protective cover is omitted at the factory when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.

8) Order code H00 provides mechanical protection for encoders.

9) Not possible for type of construction IM V3.

10) Not possible in combination with rotary pulse encoder HOG 9 D 1024 I (order code G05) and/or brake 2LM8 (order code F01).

11) Not possible in combination with brake 2LM8 – order code F01.

12) In connection with mountings, the respective technical data must be observed, please inquire before ordering.

13) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range. Order codes D30 and D31 do not authorize importing into USA and Mexico. The North America export versions Eagle Line 1LE1521/1LE1621 NEMA Energy Efficient and 1LE1523/1LE1623 NEMA Premium Efficient are available for this purpose.

14) The rated voltage is indicated on the rating plate without voltage range. Order code D40 does not authorize importing into Canada. The North America export versions Eagle Line 1LE1521/1LE1621 NEMA Energy Efficient and 1LE1523/1LE1623 NEMA Premium Efficient are available for this purpose.

15) Up to frame size 160 not possible when brake is mounted.

16) For Performance Line motors (all frame sizes) and Basic Line motors (from frame size 280) in the standard version.

17) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and L05:
 – Dimensions D and DA ≤ inner diameter of roller bearing (see dimension tables under "Dimensions")
 – Dimensions E and EA ≤ 2 x length E (normal) of the shaft extension. For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".

18) Converter-fed operation is permitted for 1LE1 motors with metal external fans.

19) Can be ordered for 230VΔ/400VY or 400VΔ/690VY (voltage code "22" or "34"). Not possible for pole-changing motors, naturally cooled 1PC1 motors, 8-pole motors and in combination with order code D34.

20) The delivery time for the factory test certificate may differ from the delivery time for the motor.

21) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>.

SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Accessories

Overview

Slide rails with fixing bolts and tensioning screws according to DIN 42923

Slide rails are used to tension the belt of a machine easily and conveniently when a belt tightener is not available. They are fixed to the base using stone bolts or foundation blocks.

The assignment of slide rails to motor size can be found in DIN 42923. For motors of frame sizes 355 to 450, there are no standardized slide rails (please inquire).

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Foundation block according to DIN 799

The foundation blocks are inserted into the stone foundation and embedded in concrete. They are used for fixing machines of medium size, slide rails, pedestal bearings, baseframes, etc. After the fixing bolts have been unscrewed, the machine can be dragged without it having to be lifted.

When the machine is initially installed, the foundation block that is bolted to the machine (without washers) and fitted with tapered pins is not embedded with concrete until the machine has been fully aligned. The machine is set 2 to 3 mm deeper in this case. The difference in shaft height is compensated by inserting shims on final installation. The tapered pins safeguard the exact position of the machine when it is repeatedly removed and replaced without the need for realignment.

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Taper pins to DIN 258 with threaded ends and constant taper lengths

Taper pins are used for components that are repeatedly removed. The drilled hole is ground conical using a conical reamer until the pin can be pushed in by hand until the cone shoulder lies approx. 3 to 4 mm above the rim of the hole.

It can then be driven in using a hammer until it is correctly seated. The pin is removed from the drilled hole by screwing on the nut and tightening it.

Standardized taper pins are available from general engineering suppliers.

Source of supply, for example:

Otto Roth GmbH & Co. KG
Rutesheimer Straße 22
70499 Stuttgart, Germany
Tel. +49 (0)711-13 88-0
Fax. +49 (0)711-13 88-233

www.ottoroth.de
E-mail: info@ottoroth.de

Couplings

The motor from Siemens is connected to the machine or gear unit through a coupling. Siemens is an important coupling manufacturer with a wide range of products.

For standard applications, Siemens recommends that elastic couplings of types N-EUPEX and RUPEX or torsionally rigid couplings of types ARPEX and ZAPEX are used. For special applications, FLUDEX and ELPEX-S couplings are recommended.

Source of supply:

Siemens contact partner - ordering from Catalog
Siemens MD 10.1 "FLENDER Standard Couplings"

or

SIEMENS AG
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Tel. +49 (0)2871-92 21 85
Fax +49 (0)2871-92 25 79

www.siemens.com
E-mail: flendercouplings@siemens.com

1.8

SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

Supplements to order numbers and special versions

Accessories

More information

Spare motors and repair parts

- Supply commitment for spare motors and repair parts following delivery of the motor:
 - For up to 5 years, in the event of total motor failure, Siemens will supply a comparable motor with regard to the mounting dimensions and functions.
 - Spare parts will generally be available for up to 5 years.
 - After 5 years and up to 10 years, Siemens will provide information about spare parts and will, if necessary, supply documentation for acquiring spare parts.
- When repair parts are ordered, the following details must be provided:
 - Designation and part number
 - Order No. and factory number of the motor.

Example for ordering a fan cover 1LE1002, frame size 112 M, 4-pole:

**Fan cover No. 7.40,
1LE1002-1BB23-4AA4-Z, factory No.
E1001/5236197_01_001**

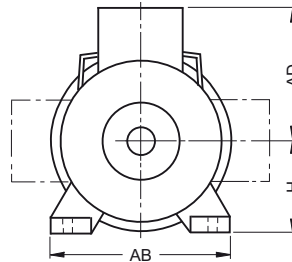
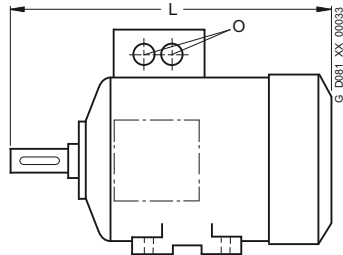
- For bearing assignment, see Catalog D 81.1 · 2008, Part "Introduction".
- Repair parts for 1MJ6, 1MJ7, 1MJ8, 1MJ1, 1ME8, 1ML8 motors are available on request.
- For standard components, a supply commitment does not apply.
- Support – Hotline
In Germany
Tel. +49 (0)1 80/5 05 04 48

You will find telephone numbers for other countries on our Internet site:

www.siemens.com/automation/service&support

Overview

Overall dimensions



Frame size	Type	Dimension L	Dimension				
			AD	H	AB	O	
80 M	Aluminum series 1LE1001						
	Self-ventilated	292	121	80	150	1 x M25 x 1.5	
	Forced-air cooled or naturally cooled	253	121	80	150	1 x M25 x 1.5	
90 S/ 90 L	Aluminum series 1LE1001						
	Self-ventilated	347	126	90	165	1 x M25 x 1.5	
	Forced-air cooled or naturally cooled	295	126	90	165	1 x M25 x 1.5	
100 L	Aluminum series 1LE1001, 1LE1002, 1LE1011, 1LE1012, 1LE1021, self-ventilated	395.5 ¹⁾	166	100	196	2 x M32 x 1.5	
	Aluminum series 1LE1001, 1LE1002, self-ventilated, with increased output	430.5 ¹⁾	166	100	196	2 x M32 x 1.5	
	Aluminum series 1LE1001, 1PC1001, 1LE1002, 1PC1002, forced-air cooled or naturally cooled	321.5	166	100	196	2 x M32 x 1.5	
	Aluminum series 1LE1023						
	Self-ventilated	430.5	166	100	196	2 x M32 x 1.5	
	Forced-air cooled	356.5	166	100	196	2 x M32 x 1.5	
	Cast-iron series 1LE15..., 1LE16..	388.5	193	100	196	2 x M32 x 1.5	
	Cast-iron series 1LE1523, 1LE1623, self-ventilated	425	193	100	196	2 x M32 x 1.5	
	112 M	Aluminum series 1LE1001, 1LE1002, 1LE1011, 1LE1012, 1LE1021, self-ventilated	389 ¹⁾	177	112	226	2 x M32 x 1.5
		Aluminum series 1LE1001, 1LE1002, self-ventilated, with increased output	414 ¹⁾	177	112	226	2 x M32 x 1.5
Aluminum series 1LE1001, 1PC1001, 1LE1002, 1PC1002, forced-air cooled or naturally cooled		311	177	112	226	2 x M32 x 1.5	
Aluminum series 1LE1023							
Self-ventilated		414	177	112	226	2 x M32 x 1.5	
Forced-air cooled		336	177	112	226	2 x M32 x 1.5	
Cast-iron series 1LE15..., 1LE16..		382	195	112	226	2 x M32 x 1.5	
Cast-iron series 1LE1523, 1LE1623, self-ventilated	408.5	195	112	226	2 x M32 x 1.5		

Frame size	Type	Dimension L	Dimension			
			AD	H	AB	O
132 S/ 132 M	Aluminum series 1LE1001, 1LE1002, 1LE1011, 1LE1012, 1LE1021, self-ventilated	465 ¹⁾	202	132	256	2 x M32 x 1.5
	Aluminum series 1LE1001, 1LE1002, self-ventilated, with increased output	515 ¹⁾	202	132	256	2 x M32 x 1.5
	Aluminum series 1LE1001, 1PC1001, 1LE1002, 1PC1002, forced-air cooled or naturally cooled	380.5	202	132	256	2 x M32 x 1.5
	Aluminum series self-ventilated 1LE1023-					
	1CA0, 1CC0, 1CC2	465	202	132	256	2 x M32 x 1.5
	1CA1, 1CB0, 1CB2, 1CC3	515	202	132	256	2 x M32 x 1.5
	Aluminum series forced-air cooled 1LE1023-					
	1CA0, 1CC0, 1CC2	380.5	202	132	256	2 x M32 x 1.5
	1CA1, 1CB0, 1CB2, 1CC3	430.5	202	132	256	2 x M32 x 1.5
	Cast-iron series 1LE15..., 1LE16..	456.5	214.5	132	256	2 x M32 x 1.5
	Cast-iron series self-ventilated 1LE1523-, 1LE1623-					
	1CA0, 1CC0, 1CC2	458	214.5	132	256	2 x M32 x 1.5
	1CA1, 1CB0, 1CB2, 1CC3	508	214.5	132	256	2 x M32 x 1.5
160 M/ 160 L	Aluminum series 1LE1001, 1LE1002, 1LE1011, 1LE1012, 1LE1021, self-ventilated	604 ²⁾	236.5	160	300	2 x M40 x 1.5
	Aluminum series 1LE1001, 1LE1002, self-ventilated, with increased output	664 ¹⁾	236.5	160	300	2 x M40 x 1.5
	Aluminum series 1LE1001, 1PC1001, 1LE1002, 1PC1002, forced-air cooled or naturally cooled	510	236.5	160	300	2 x M40 x 1.5
	Cast-iron series 1LE15..., 1LE16..	594	261	160	300	2 x M40 x 1.5
160 M	Aluminum series 1LE1023					
	Self-ventilated	604	236.5	160	300	2 x M40 x 1.5
	Forced-air cooled	510	236.5	160	300	2 x M40 x 1.5
	Cast-iron series 1LE1523, 1LE1623, self-ventilated	596	261	160	300	2 x M40 x 1.5

¹⁾ The length is specified as far as the tip of the fan cover.

²⁾ Only for pole-changing types 1LE1011-1DP6 and 1LE1012-1DQ6, dimension L is 664 mm.

SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

Dimensions

Overall dimensions Notes on the dimensions

Overview (continued)

Frame size	Type	Dimension L	AD	H	AB	O
160 L	Aluminum series 1LE1023					
	Self-ventilated	664	236.5	160	300	2 x M40 x 1.5
	Forced-air cooled	570	236.5	160	300	2 x M40 x 1.5
180 M	Cast-iron series 1LE1523, 1LE1623, self-ventilated	656	261	160	300	2 x M40 x 1.5
	Cast-iron series 1LE15.1-, 1LE16.1- 1EA2, 1EB2 1EA6	668 698	286	180	339	2 x M40 x 1.5
	1LE15.3-, 1LE16.3- 1EB2 1EA2	668 698	286	180	339	2 x M40 x 1.5
180 L	Cast-iron series 1LE15.1-, 1LE16.1- 1EB4, 1EC4, 1EC6 1EB6	668 698	286	180	339	2 x M40 x 1.5
	1LE15.3-, 1LE16.3- 1EC4 1EB4	668 698	286	180	339	2 x M40 x 1.5
	Cast-iron series 1LE15.1-, 1LE16.1- 2AA4, 2AA5, 2AB5, 2AC4, 2AC5 2AA6	721 746	315	200	378	2 x M50 x 1.5
200 L	1LE15.3-, 1LE16.3- 2AA4, 2AC4 2AA5, 2AB5, 2AC5	721 746	315	200	378	2 x M50 x 1.5
	Cast-iron series 1LE15.1-, 1LE16.1- 2BB0	788	338	225	436	2 x M50 x 1.5
	1LE15.3-, 1LE16.3- 2BB0	788	338	225	436	2 x M50 x 1.5
225 M	Cast-iron series 1LE15.1-, 1LE16.1- 2BA2, 2BA6 2BB2, 2BB6, 2BC2, 2BC6	818 848	338	225	436	2 x M50 x 1.5
	1LE15.3-, 1LE16.3- 2BA2 2BB2, 2BC2	818 848	338	225	436	2 x M50 x 1.5
	Cast-iron series 1LE15.1-, 1LE16.1- 2CA2, 2CA6, 2CB2, 2CB6, 2CC2, 2CC6	887	410	250	490	2 x M63 x 1.5
250 M	1LE15.3-, 1LE16.3- 2CA2, 2CB2, 2CC2	887	410	250	490	2 x M63 x 1.5

Frame size	Type	Dimension L	AD	H	AB	O
280 S	Cast-iron series 1LE15.1-, 1LE16.1- 2DA0, 2DB0, 2DC0	960	433	280	540	2 x M63 x 1.5
	1LE15.3-, 1LE16.3- 2DA0, 2DB0, 2DC0	960	433	280	540	2 x M63 x 1.5
280 M	Cast-iron series 1LE15.1-, 1LE16.1- 2DA2, 2DB2, 2DC2, 2DC6 2DA6, 2DB6	960	433	280	540	2 x M63 x 1.5
	1LE15.3-, 1LE16.3- 2DC2	960	433	280	540	2 x M63 x 1.5
	2DA2, 2DB2	1070				
315 S	Cast-iron series 1LE15.1-, 1LE16.1- 3AA0 3AB0, 3AC0	1052 1082	515	315	610	2 x M63 x 1.5
	1LE15.3-, 1LE16.3- 3AA0 3AB0, 3AC0	1052 1082	515	315	610	2 x M63 x 1.5
	Cast-iron series 1LE15.1-, 1LE16.1- 3AC2 3AA2 3AB2	1082 1217 1247	515	315	610	2 x M63 x 1.5
315 M	1LE15.3-, 1LE16.3- 3AA2 3AB2, 3AC2	1217 1247	515	315	610	2 x M63 x 1.5
	Cast-iron series 1LE15.1-, 1LE16.1- 3AA4 3AB4, 3AC4, 3AC5 3AA5, 3AA6 3AB5, 3AB6, 3AC6	1217 1247 1372 1402	515	315	610	2 x M63 x 1.5
	1LE15.3-, 1LE16.3- 3AA4 3AB4, 3AC4 3AA5 3AB5, 3AC5, 3AC6	1217 1247 1372 1402	515	315	610	2 x M63 x 1.5
315 L	Cast-iron series 1LE15.1-, 1LE16.1- 3AA4 3AB4, 3AC4, 3AC5 3AA5, 3AA6 3AB5, 3AB6, 3AC6	1217 1247 1372 1402	515	315	610	2 x M63 x 1.5
	1LE15.3-, 1LE16.3- 3AA4 3AB4, 3AC4 3AA5 3AB5, 3AC5, 3AC6	1217 1247 1372 1402	515	315	610	2 x M63 x 1.5

Notes on the dimensions

- Dimension designations according to DIN EN 50347 and IEC 60072.
- Fits
The shaft extensions specified in the dimension tables (DIN 748) and centering spigot diameters (DIN EN 50347) are machined with the following fits:

Dimension designation	ISO fit DIN ISO 286-2	
D, DA	to 30	j6
	over 30 to 50	k6
	over 50	m6
N	to 250	j6
	over 250	h6
F, FA		h9
K		H17
S	flange (FF)	H17

The drilled holes of couplings and belt pulleys should have an ISO fit of at least H7.

- Dimension tolerances
For the following dimension designations, the admissible deviations are given below:

Dimension designation	Dimension	Admissible deviation
H	to 250	- 0.5
	over 250	- 1.0
E, EA		- 0.5

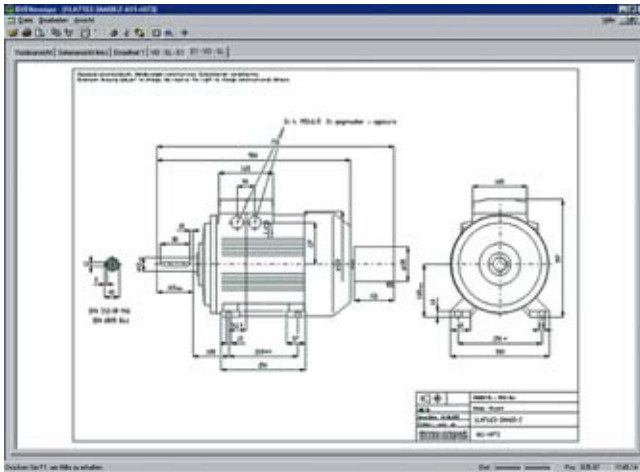
Keyways and feather keyways (dimensions GA, GC, F and FA) are made in compliance with DIN 6885 Part 1.

- All dimensions are specified in mm.

Overview (continued)**Dimension sheet generator**

(part of the DT Configurator)

A dimension drawing can be created in the DT Configurator for every configurable motor. A dimension drawing can be requested for every other motor.



When a complete Order No. is entered with or without order codes, a dimension drawing can be called up under the "Documentation" tab.

These dimension drawings can be presented in different views and sections and printed.

The corresponding dimension sheets can be exported, saved and processed further in DXF format (interchange/import format for CAD systems) or as bitmap graphics.

Online access in the Siemens Industry Mall

The DT Configurator is integrated into the Siemens Industry Mall and can be used on the Internet without installation.

German: www.siemens.de/dt-konfigurator

English: www.siemens.com/dt-configurator

Offline access in the Interactive Catalog CA 01

The DT Configurator is also integrated on the DVD of the Interactive Catalog CA 01, the offline version of the Siemens Industry Mall. You can order the CA 01 with your respective Siemens sales person or in the Internet:

www.siemens.com/automation/ca01

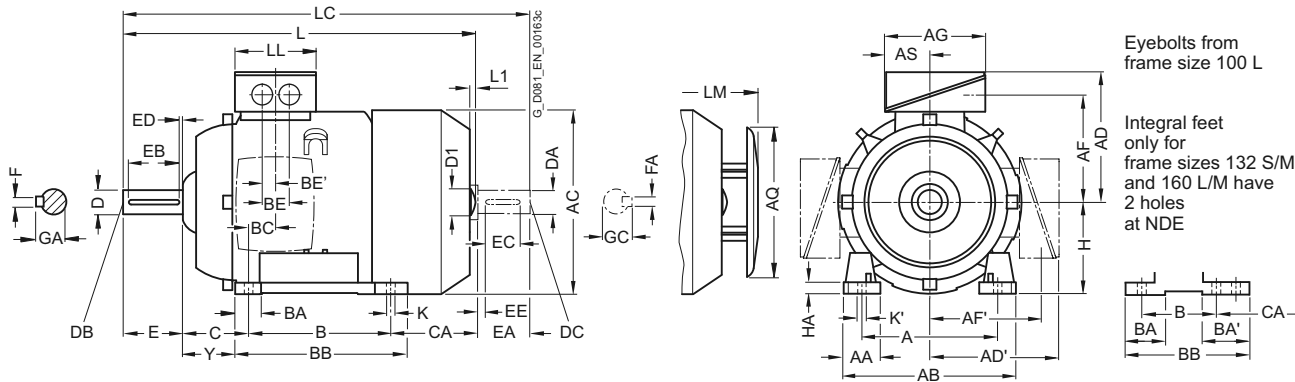
SIMOTICS GP 1LE1 Standard Motors

Dimensions

Aluminum series 1LE1001, 1LE1002, 1LE1011, 1LE1012, 1LE1021
Self-ventilated, frame sizes 100 L (80 M) to 160 L

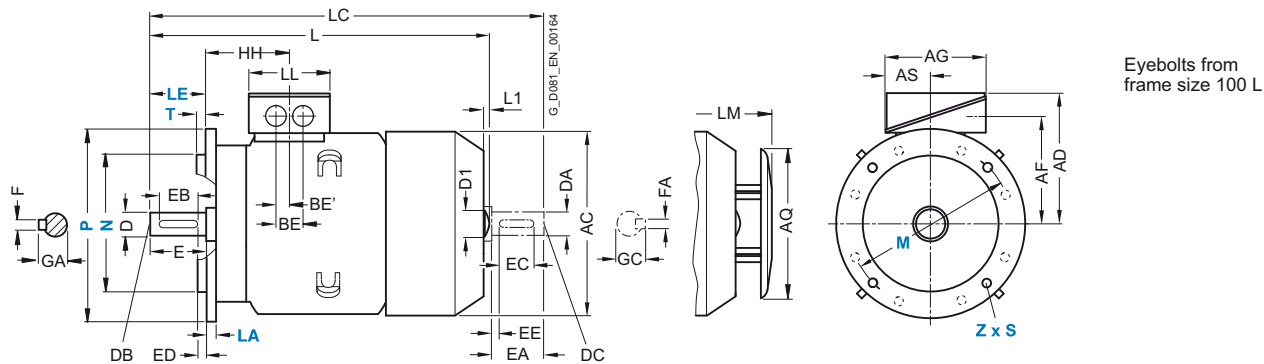
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																							
Frame size	Number of poles	Motor type	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*	H	HA	Y ¹⁾
80 M	2, 4, 6		125	30.5	150	159	121	-	96.5	-	93	-	43	100	32	-	118	23	-	18 ²⁾	50	-	80	8	41
90 S	2, 4, 6	1LE1001	140	30.5	165	178	126	-	101.5	-	93	-	43	100	33	-	143	22.5	-	18 ²⁾	56	-	90	10	47
90 L	2, 4, 6		140	30.5	165	178	126	-	101.5	-	93	-	43	125	33	-	143	22.5	-	18 ²⁾	56	-	90	10	47
100 L	2, 4, 6, 8	All	160	42	196	198	166	166	125.5	125.5	135	195	63.5	140	37.5	-	176	33.5	50	25	63	141	100	12	45
112 M	2, 4, 6, 8	All	190	46	226	222	177	177	136.5	136.5	135	195	63.5	140	35.4	-	176	26	50	25	70	129.7	112	12	52
132 S	2, 4, 6, 8	All	216	53	256	262	202	202	159.5	159.5	155	260	70.5	140	38	76 ³⁾	218 ⁴⁾	26.5	48	24	89	128.5 ⁵⁾	132	15	69
132 M	2, 4, 6, 8	All	216	53	256	262	202	202	159.5	159.5	155	260	70.5	178	38	76	218	26.5	48	24	89	128.5 ⁵⁾	132	15	69
160 M	2, 4, 6, 8	All	254	60	300	314	236.5	236.5	190	190	175	260	77.5	210	44	89 ⁶⁾	300 ⁷⁾	47	57	28.5	108	148 ⁸⁾	160	18	85
160 L	2, 4, 6, 8	All	254	60	300	314	236.5	236.5	190	190	175	260	77.5	254	44	89	300	47	57	28.5	108	148 ⁸⁾⁹⁾	160	18	85

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Additional information – not a standard dimension according to DIN EN 50347.

2) Connecting hole for terminal box is on the side at the rear of the terminal box.

3) With screwed-on feet, dimension BA' is 38 mm.

4) With screwed-on feet, dimension BB is 180 mm.

5) With screwed-on feet, dimension CA is 166.5 mm.

6) With screwed-on feet, dimension BA' is 44 mm.

7) With screwed-on feet, dimension BB is 256 mm.

8) With screwed-on feet, dimension CA is 192 mm.

9) Only for pole-changing types 1LE1011-1DP6 and 1LE1012-1DQ6, dimension CA* is 208 mm.

SIMOTICS GP 1LE1 Standard Motors

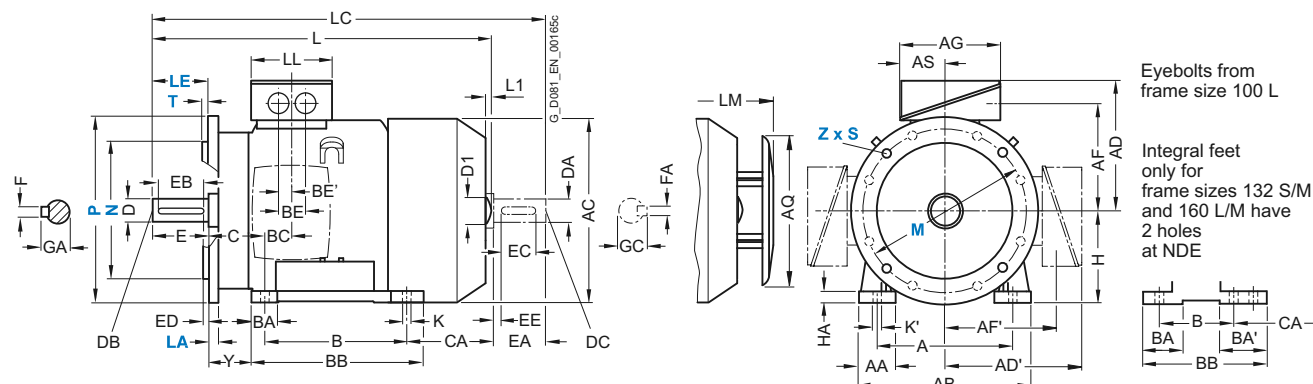
Dimensions

Aluminum series 1LE1001, 1LE1002, 1LE1011, 1LE1012, 1LE1021
Self-ventilated, frame sizes 100 L (80 M) to 160 L

Dimensional drawings (continued)

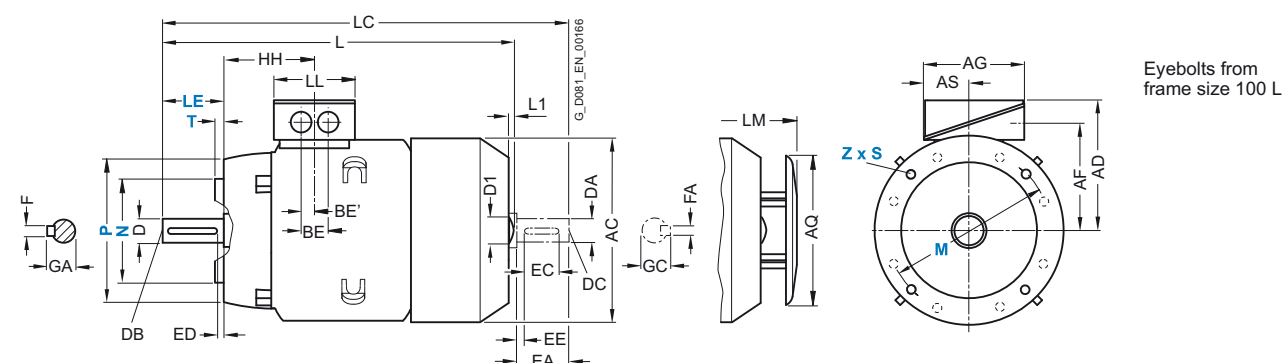
Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC										DE shaft extension					NDE shaft extension								
Frame size	Number of poles	Motor type	HH	K	K'	L	L1	D1	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
80 M	2, 4, 6		73	9.5	13.5	292	-	-	-	79	-	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S	2, 4, 6	1LE1001	78.5	10	14	347	-	-	-	79	-	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
90 L	2, 4, 6		78.5	10	14	347	-	-	-	79	-	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	2, 4, 6, 8	All	96.5	12	16	395.5 ¹⁾	7	32	454	112	428.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	2, 4, 6, 8	All	96	12	16	389 ¹⁾	7	32	450	112	422	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	2, 4, 6, 8	All	115.5	12	16	465 ¹⁾	8.5	39	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
132 M	2, 4, 6, 8	All	115.5	12	16	465 ¹⁾	8.5	39	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
160 M	2, 4, 6, 8	All	155	15	19	604 ¹⁾	10	45	730	145	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	2, 4, 6, 8	All	155	15	19	604 ¹⁾²⁾	10	45	730 ³⁾	145	654 ⁴⁾	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

¹⁾ The length is specified as far as the tip of the fan cover.

²⁾ Only for pole-changing types 1LE1011-1DP6 and 1LE1012-1DQ6, dimension L is 664 mm.

³⁾ Only for pole-changing types 1LE1011-1DP6 and 1LE1012-1DQ6, dimension LC is 790 mm.

⁴⁾ Only for pole-changing types 1LE1011-1DP6 and 1LE1012-1DQ6, dimension LM is 714 mm.

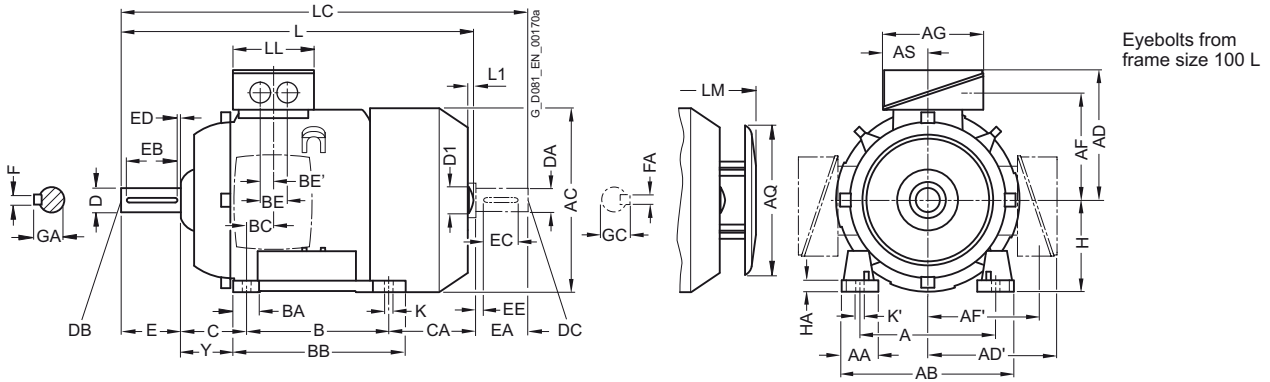
SIMOTICS GP 1LE1 Standard Motors

Dimensions

**Aluminum series 1LE1001, 1LE1002
Self-ventilated, with increased output, frame sizes 100 L to 160 L**

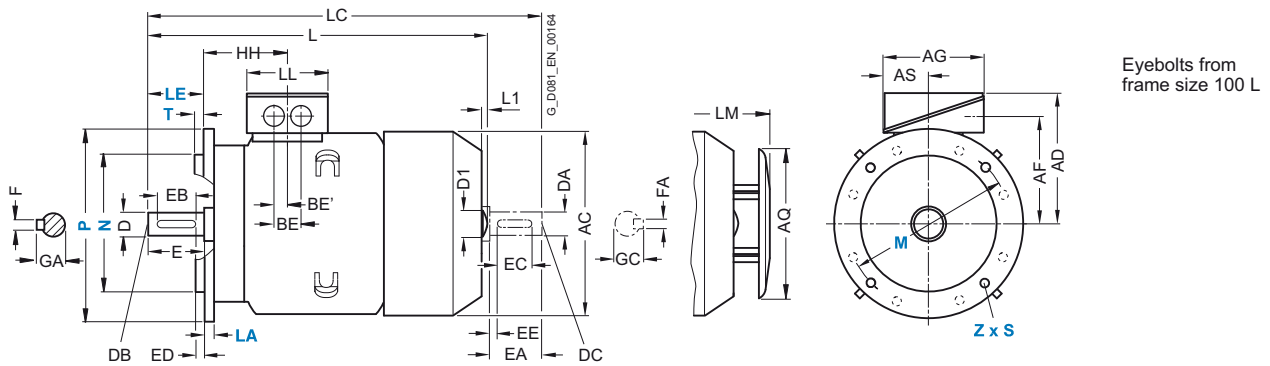
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



1.9

For motor		Dimension designation acc. to IEC																						
Frame size	Number of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*	H	HA	Y ¹⁾
100 L	2, 4, 6, 8	160	42	196	198	166	166	125.5	125.5	135	195	63.5	140	37.5	-	176	33.5	50	25	63	176	100	12	45
112 M	2, 4, 6, 8	190	46	226	222	177	177	136.5	136.5	135	195	63.5	140	35.4	-	176	26	50	25	70	155	112	12	52
132 M	2, 4, 6, 8	216	53	256	262	202	202	159.5	159.5	155	260	70.5	178	38	-	218	26.5	48	24	89	178.5	132	15	69
160 L	2, 4, 6, 8	254	60	300	314	236.5	236.5	190	190	175	260	77.5	254	44	-	300	47	57	28.5	108	208	160	18	85

* This dimension is assigned in DIN EN 50347 to the frame size listed.

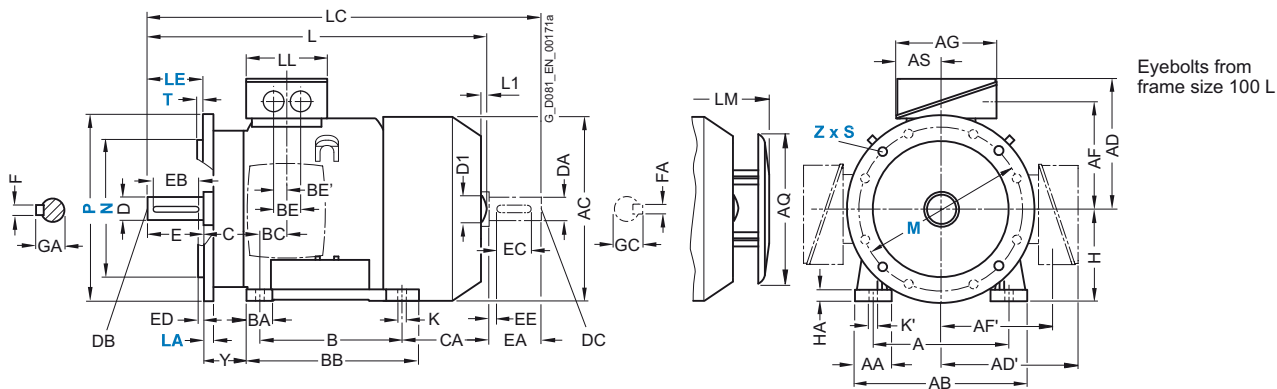
¹⁾ Additional information – not a standard dimension according to DIN EN 50347.

Aluminum series 1LE1001, 1LE1002
Self-ventilated, with increased output, frame sizes 100 L to 160 L

Dimensional drawings (continued)

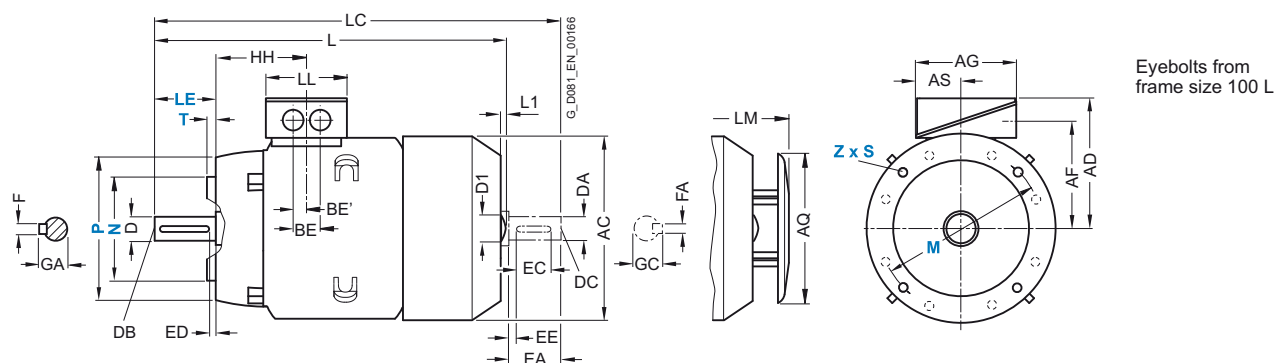
Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC									DE shaft extension					NDE shaft extension								
Frame size	Number of poles	HH	K	K'	L ¹⁾	L1	D1	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	2, 4, 6, 8	96.5	12	16	430.5	7	32	489	112	463.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	2, 4, 6, 8	96	12	16	414	7	32	475	112	447	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 M	2, 4, 6, 8	115.5	12	16	515	8.5	39	585.5	130	566.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
160 L	2, 4, 6, 8	155	15	19	664	10	45	790	145	714	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

¹⁾ The length is specified as far as the tip of the fan cover.

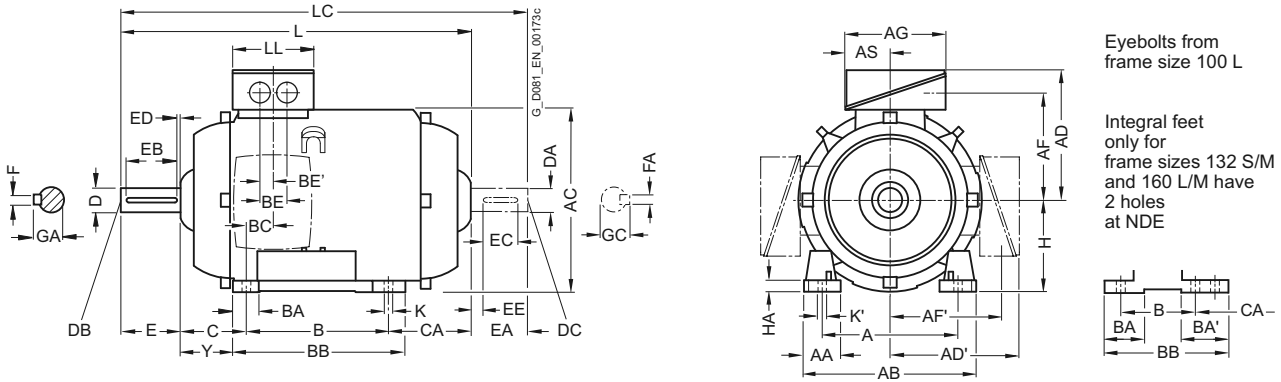
SIMOTICS GP 1LE1/1PC1 Standard Motors

Dimensions

Aluminum series 1LE1001, 1PC1001, 1LE1002, 1PC1002, 1LE1021
 Forced-air cooled or naturally cooled, frame sizes 100 L (80 M) to 160 L

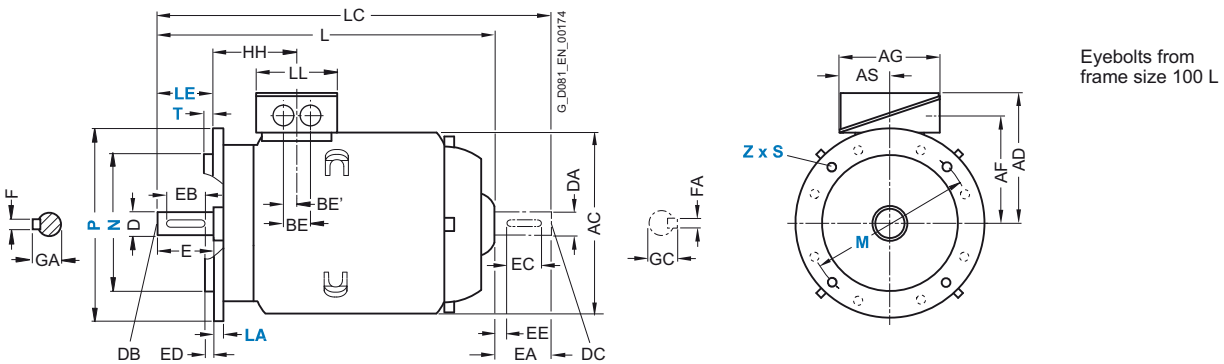
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



1.9

For motor		Dimension designation acc. to IEC																						
Frame size	Number of poles	Motor type	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*	H	HA	Y ¹⁾
80 M	2, 4, 6	1LE1001	125	30.5	150	159	121	-	96.5	-	93	43	100	32	-	118	23	-	18 ²⁾	50	-	80	8	41
90 S	2, 4, 6	1LE1001	140	30.5	165	178	126	-	101.5	-	93	43	100	33	-	143	22.5	-	18 ²⁾	56	-	90	10	47
90 L	2, 4, 6	1LE1001	140	30.5	165	178	126	-	101.5	-	93	43	125	33	-	143	22.5	-	18 ²⁾	56	-	90	10	47
100 L	2, 4, 6, 8	All	160	42	196	197	166	166	125.5	125.5	135	63.5	140	37.5	-	176	33.5	50	25	63	-	100	12	45
112 M	2, 4, 6, 8	All	190	46	226	221	177	177	136.5	136.5	135	63.5	140	35.4	-	176	26	50	25	70	-	112	12	52
132 S	2, 4, 6, 8	All	216	53	256	261	202	202	159.5	159.5	155	70.5	140	38	76 ²⁾	218 ³⁾	26.5	48	24	89	-	132	15	69
132 M	2, 4, 6, 8	All	216	53	256	261	202	202	159.5	159.5	155	70.5	178	38	76	218	26.5	48	24	89	-	132	15	69
160 M	2, 4, 6, 8	All	254	60	300	314	236.5	236.5	190	190	175	77.5	210	44	89 ⁴⁾	300 ⁵⁾	47	57	28.5	108	-	160	18	85
160 L	2, 4, 6, 8	All	254	60	300	314	236.5	236.5	190	190	175	77.5	254	44	89	300	47	57	28.5	108	-	160	18	85

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Additional information – not a standard dimension according to DIN EN 50347.

2) With screwed-on feet, dimension BA' is 38 mm.

3) With screwed-on feet, dimension BB is 180 mm.

4) With screwed-on feet, dimension BA' is 44 mm.

5) With screwed-on feet, dimension BB is 256 mm.

SIMOTICS GP 1LE1/1PC1 Standard Motors

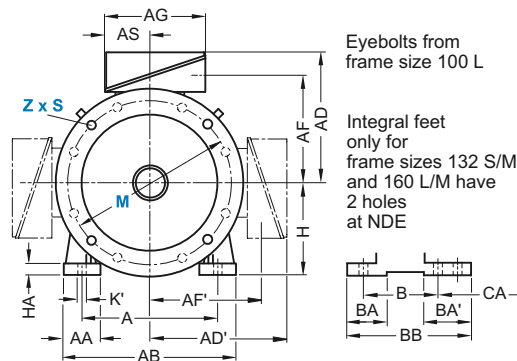
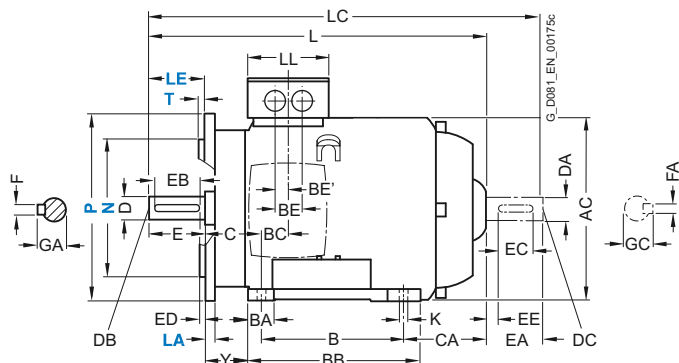
Dimensions

Aluminum series 1LE1001, 1PC1001, 1LE1002, 1PC1002, 1LE1021
Forced-air cooled or naturally cooled, frame sizes 100 L (80 M) to 160 L

Dimensional drawings (continued)

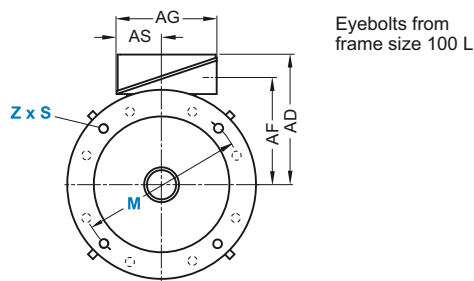
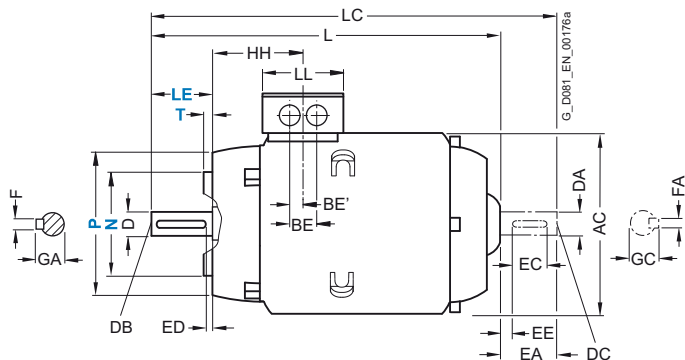
Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension								
Frame size	Number of poles	Motor type	HH	K	K'	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
80 M	2, 4, 6		73	9.5	13.5	253	-	79	19	M6	40	32	4	6	21.5	-	-	-	-	-	-	-
90 S	2, 4, 6	1LE1001	78.5	10	14	295	-	79	24	M8	50	40	5	8	27	-	-	-	-	-	-	-
90 L	2, 4, 6		78.5	10	14	295	-	79	24	M8	50	40	5	8	27	-	-	-	-	-	-	-
100 L	2, 4, 6, 8	All	96.5	12	16	321.5	-	112	28	M10	60	50	5	8	31	-	-	-	-	-	-	-
112 M	2, 4, 6, 8	All	96	12	16	311	-	112	28	M10	60	50	5	8	31	-	-	-	-	-	-	-
132 S	2, 4, 6, 8	All	115.5	12	16	380.5	-	130	38	M12	80	70	5	10	41	-	-	-	-	-	-	-
132 M	2, 4, 6, 8	All	115.5	12	16	380.5	-	130	38	M12	80	70	5	10	41	-	-	-	-	-	-	-
160 M	2, 4, 6, 8	All	155	15	19	510	-	145	42	M16	110	90	10	12	45	-	-	-	-	-	-	-
160 L	2, 4, 6, 8	All	155	15	19	510	-	145	42	M16	110	90	10	12	45	-	-	-	-	-	-	-

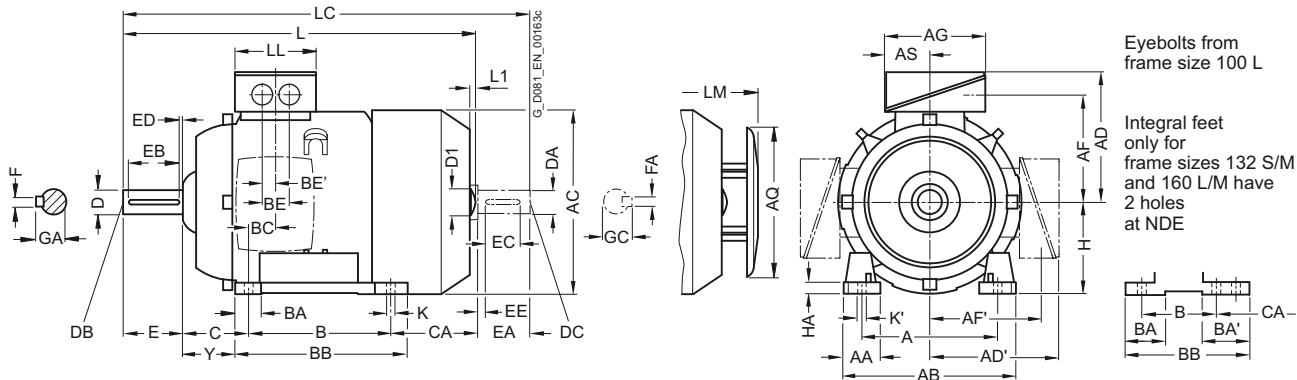
SIMOTICS GP 1LE1/1PC1 Standard Motors

Dimensions

Aluminum series 1LE1023
Self-ventilated, frame sizes 100 L to 160 L

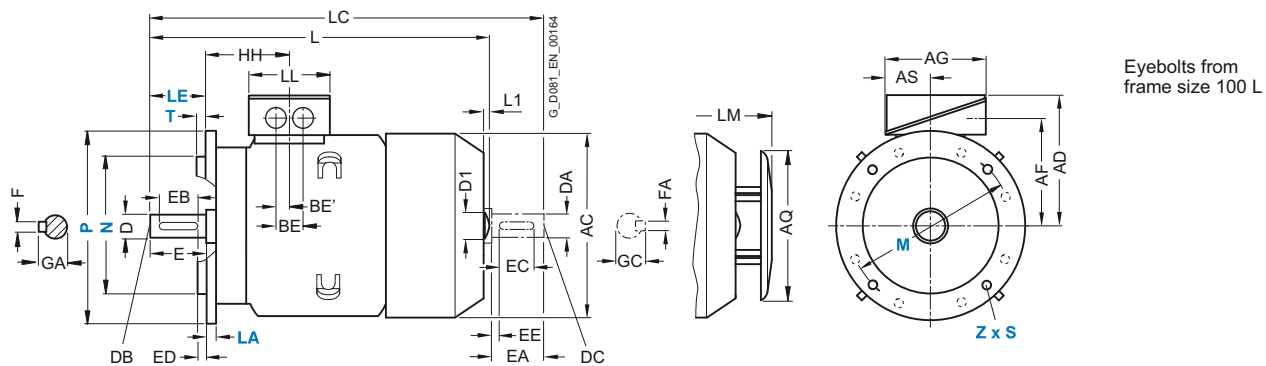
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



1.9

For motor		Dimension designation acc. to IEC																							
Frame size	Number of poles	Motor type	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*	H	HA	Y ¹⁾
100 L	2, 4	1AA4, 1AB4, 1AB5	160	42	196	198	166	166	125.5	125.5	135	195	63.5	140	37.5	-	176	33.5	50	25	63	176	100	12	45
112 M	2, 4	1BA2, 1BB2	190	46	226	222	177	177	136.5	136.5	135	195	63.5	140	35.4	-	176	26	50	25	70	155	112	12	52
132 S	2, 6	1CA0, 1CC0	216	53	256	262	202	202	159.5	159.5	155	260	70.5	140	38	76 ²⁾	218 ³⁾	26.5	48	24	89	128.5 ⁴⁾	132	15	69
	2, 4	1CA1, 1CB0														-					178.5				
132 M	6	1CC2	216	53	256	262	202	202	159.5	159.5	155	260	70.5	178	38	76	218	26.5	48	24	89	128.5 ⁴⁾	132	15	69
	4, 6, 8	1CB2, 1CC3														-					178.5				
160 M	2, 4, 6	1DA2, 1DA3, 1DB2, 1DC2	254	60	300	314	236.5	236.5	190	190	175	260	77.5	210	44	89 ⁵⁾	300 ⁶⁾	47	57	28.5	108	148 ⁷⁾	160	18	85
160 L	2, 4, 6	1DA4, 1DB4, 1DC4	254	60	300	314	236.5	236.5	190	190	175	260	77.5	254	44	-	300	47	57	28.5	108	208	160	18	85

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Additional information – not a standard dimension according to DIN EN 50347.

2) With screwed-on feet, dimension BA' is 38 mm.

3) With screwed-on feet, dimension BB is 180 mm.

4) With screwed-on feet, dimension CA is 166.5 mm.

5) With screwed-on feet, dimension BA' is 44 mm.

6) With screwed-on feet, dimension BB is 256 mm.

7) With screwed-on feet, dimension CA is 192 mm.

SIMOTICS GP 1LE1/1PC1 Standard Motors

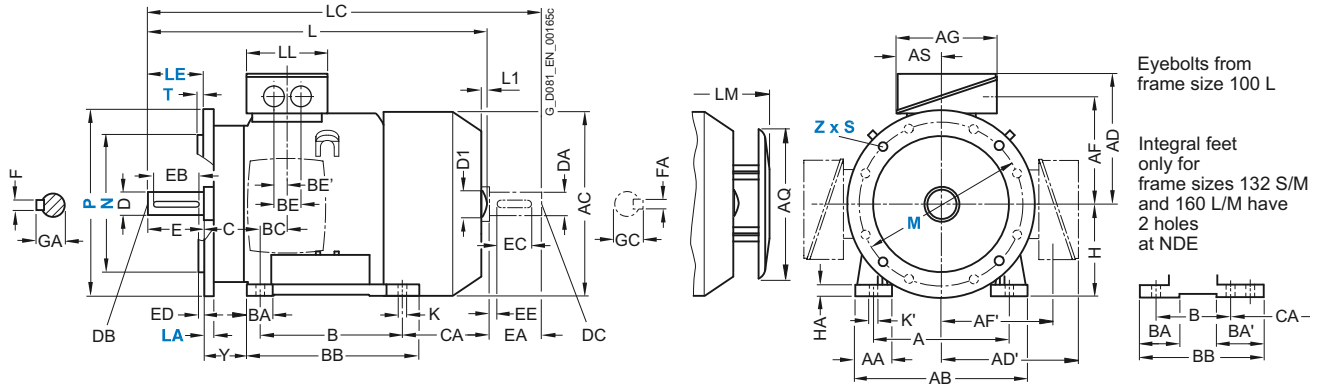
Dimensions

Aluminum series 1LE1023
Self-ventilated, frame sizes 100 L to 160 L

Dimensional drawings (continued)

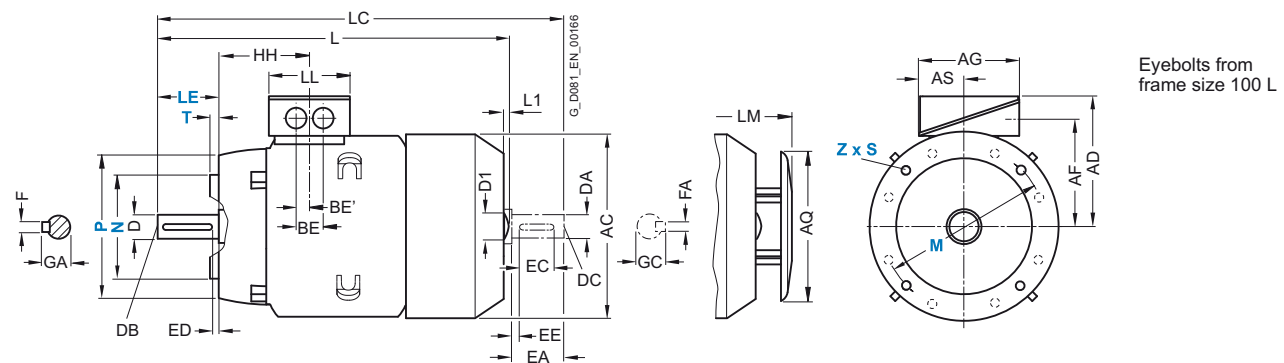
Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC										DE shaft extension					NDE shaft extension								
Frame size	Number of poles	Motor type 1LE1023	HH	K	K'	L ¹⁾	L1	D1	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	2, 4	1AA4, 1AB4, 1AB5	96.5	12	16	430.5	7	32	489	112	463.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	2, 4	1BA2, 1BB2	96	12	16	414	7	32	475	112	447	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	2, 6	1CA0, 1CC0	115.5	12	16	465	8.5	39	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	2, 4	1CA1, 1CB0				515			585.5		550.5														
132 M	6	1CC2	115.5	12	16	465	8.5	39	535.5	130	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	4, 6	1CB2, 1CC3				515			585.5		550.5														
160 M	2, 4, 6	1DA2, 1DA3, 1DB2, 1DC2	155	15	19	604	10	45	730	145	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	2, 4, 6	1DA4, 1DB4, 1DC4	155	15	19	664	10	45	790	145	714	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

¹⁾ The length is specified as far as the tip of the fan cover.

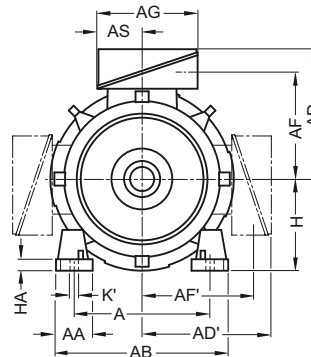
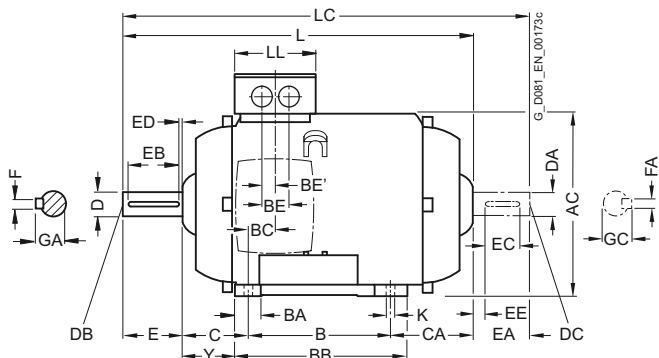
SIMOTICS GP 1LE1/1PC1 Standard Motors

Dimensions

Aluminum series 1LE1023
Forced-air cooled, frame sizes 100 L to 160 L

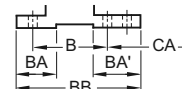
Dimensional drawings

Type of construction IM B3



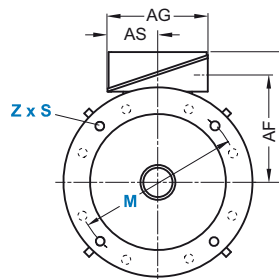
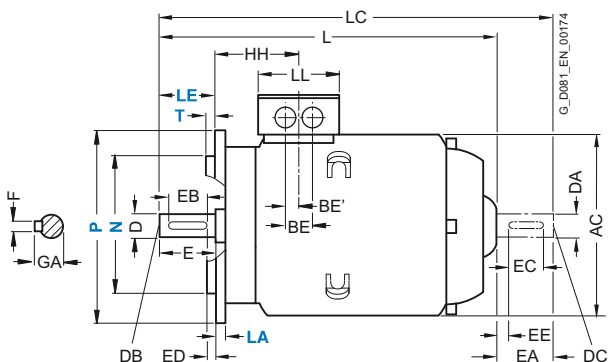
Eyebolts from frame size 100 L

Integral feet only for frame sizes 132 S/M and 160 L/M have 2 holes at NDE



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Eyebolts from frame size 100 L

1.9

For motor			Dimension designation acc. to IEC																						
Frame size	Number of poles	Motor type 1LE1023	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*	H	HA	Y ¹⁾
100 L	2, 4	1AA4, 1AB4, 1AB5	160	42	196	198	166	166	125.5	125.5	135	195	63.5	140	37.5	-	176	33.5	50	25	63	-	100	12	45
112 M	2, 4	1BA2, 1BB2	190	46	226	222	177	177	136.5	136.5	135	195	63.5	140	35.4	-	176	26	50	25	70	-	112	12	52
132 S	2, 6	1CA0, 1CC0	216	53	256	262	202	202	159.5	159.5	155	260	70.5	140	38	76 ²⁾	218 ³⁾	26.5	48	24	89	-	132	15	69
	2, 4	1CA1, 1CB0														-									
132 M	6	1CC2	216	53	256	262	202	202	159.5	159.5	155	260	70.5	178	38	76	218	26.5	48	24	89	-	132	15	69
	4, 6, 8	1CB2, 1CC3														-									
160 M	2, 4, 6	1DA2, 1DA3, 1DB2, 1DC2	254	60	300	314	236.5	236.5	190	190	175	260	77.5	210	44	89 ⁴⁾	300 ⁵⁾	47	57	28.5	108	-	160	18	85
160 L	2, 4, 6	1DA4, 1DB4, 1DC4	254	60	300	314	236.5	236.5	190	190	175	260	77.5	254	44	-	300	47	57	28.5	108	-	160	18	85

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Additional information – not a standard dimension according to DIN EN 50347.

2) With screwed-on feet, dimension BA' is 38 mm.

3) With screwed-on feet, dimension BB is 180 mm.

4) With screwed-on feet, dimension BA' is 44 mm.

5) With screwed-on feet, dimension BB is 256 mm.

SIMOTICS GP 1LE1/1PC1 Standard Motors

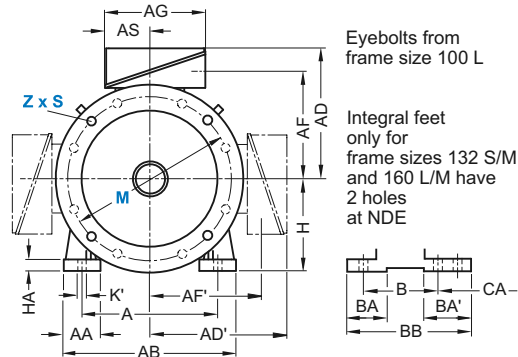
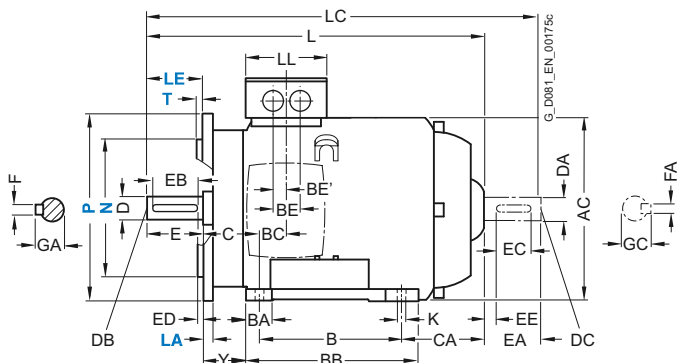
Dimensions

Aluminum series 1LE1023
Forced-air cooled, frame sizes 100 L to 160 L

Dimensional drawings (continued)

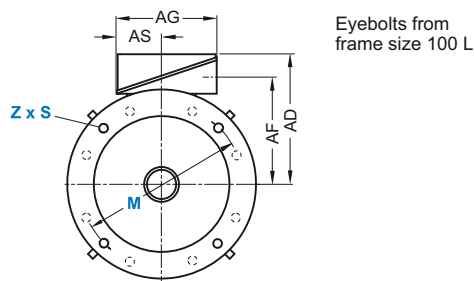
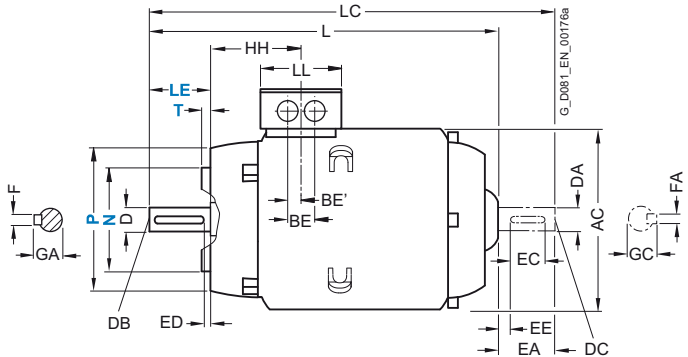
Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension								
Frame size	Number of poles	Motor type 1LE1023	HH	K	K'	L ¹⁾	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	2, 4	1AA4, 1AB4, 1AB5	96.5	12	16	356.5	-	112	28	M10	60	50	5	8	31	-	-	-	-	-	-	-
112 M	2, 4	1BA2, 1BB2	96	12	16	336	-	112	28	M10	60	50	5	8	31	-	-	-	-	-	-	-
132 S	2, 6	1CA0, 1CC0	115.5	12	16	380.5	-	130	38	M12	80	70	5	10	41	-	-	-	-	-	-	-
	2, 4	1CA1, 1CB0				430.5	-									-	-	-	-	-	-	-
132 M	6	1CC2	115.5	12	16	380.5	-	130	38	M12	80	70	5	10	41	-	-	-	-	-	-	-
	4, 6	1CB2, 1CC3				430.5	-									-	-	-	-	-	-	-
160 M	2, 4, 6	1DA2, 1DA3, 1DB2, 1DC2	155	15	19	510	-	145	42	M16	110	90	10	12	45	-	-	-	-	-	-	-
160 L	2, 4, 6	1DA4, 1DB4, 1DC4	155	15	19	570	-	145	42	M16	110	90	10	12	45	-	-	-	-	-	-	-

¹⁾ The length is specified as far as the tip of the fan cover.

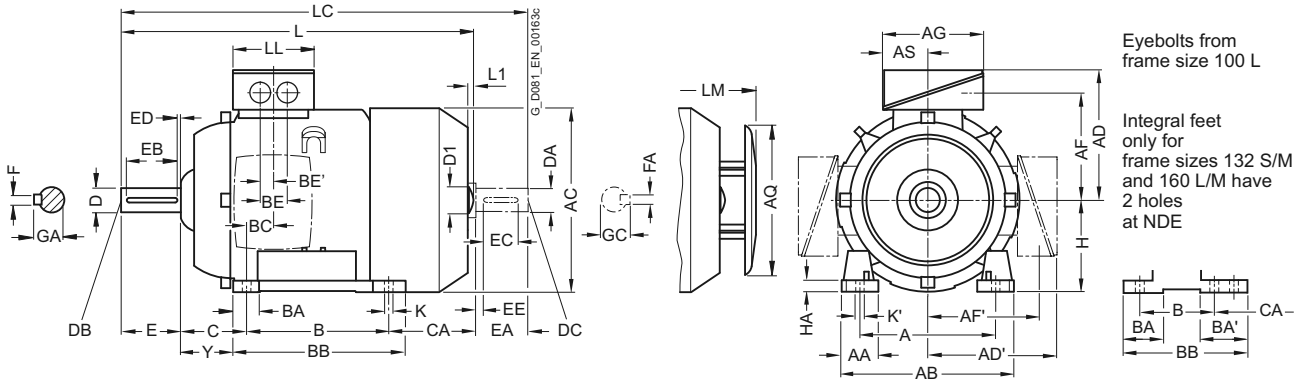
SIMOTICS SD 1LE1 Standard Motors

Dimensions

Cast-iron series 1LE1501, 1LE1521, 1LE1601, 1LE1621
Self-ventilated, frame sizes 100 L to 160 L

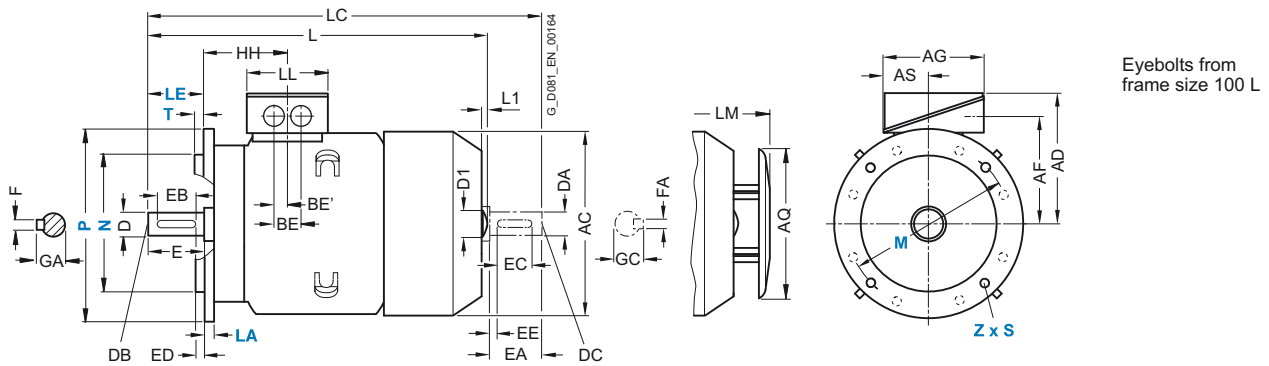
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



1.9

For motor		Dimension designation acc. to IEC																						
Frame size	Number of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*	H	HA	Y ¹⁾
100 L	2, 4, 6, 8	160	42	196	198	193	193	147	147	163	195	80.5	140	40	-	176	37.5	48	24	63	141	100	12	45
112 M	2, 4, 6, 8	190	46	226	222	195	195	150	150	163	195	80.5	140	40	-	176	30	48	24	70	129.7	112	12	52
132 S	2, 4, 6, 8	216	53	256	262	214.5	214.5	169	169	163	260	80.5	140	44	81 ²⁾	218 ⁴⁾	26.5	48	24	89	-	132	15	69
132 M	2, 4, 6, 8	216	53	256	262	214.5	214.5	169	169	163	260	80.5	178	44	81 ²⁾	218	26.5	48	24	89	-	132	15	69
160 M	2, 4, 6, 8	254	60	300	314	261	261	213	213	190	260	92	210	51	95 ³⁾	300 ⁵⁾	37	60	30	108	-	160	18	85
160 L	2, 4, 6, 8	254	60	300	314	261	261	213	213	190	260	92	254	51	95 ³⁾	300	37	60	30	108	-	160	18	85

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Additional information – not a standard dimension according to DIN EN 50347.

2) With screwed-on feet, dimension BA' is 43 mm.

3) With screwed-on feet, dimension BA' is 51 mm.

4) With screwed-on feet, dimension BB is 180 mm.

5) With screwed-on feet, dimension BB is 256 mm.

SIMOTICS SD 1LE1 Standard Motors

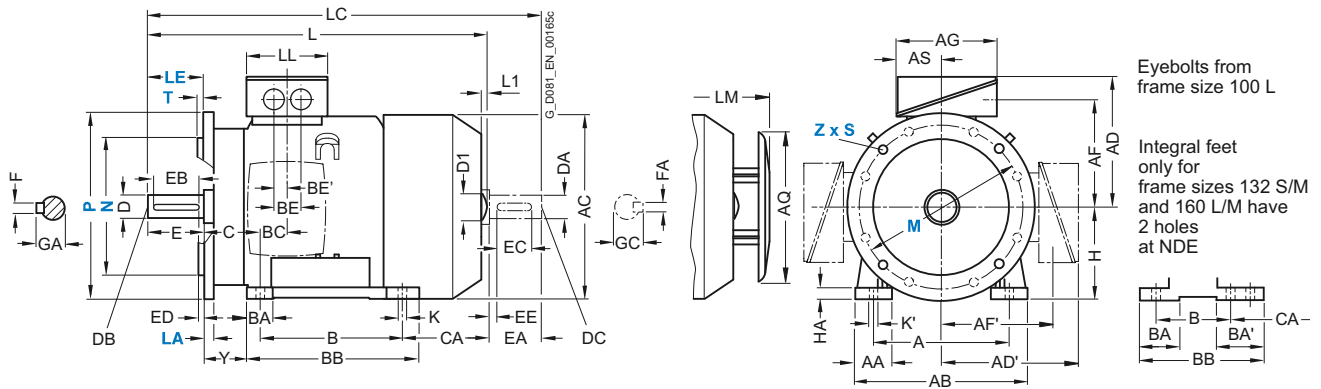
Dimensions

Cast-iron series 1LE1501, 1LE1521, 1LE1601, 1LE1621
Self-ventilated, frame sizes 100 L to 160 L

Dimensional drawings (continued)

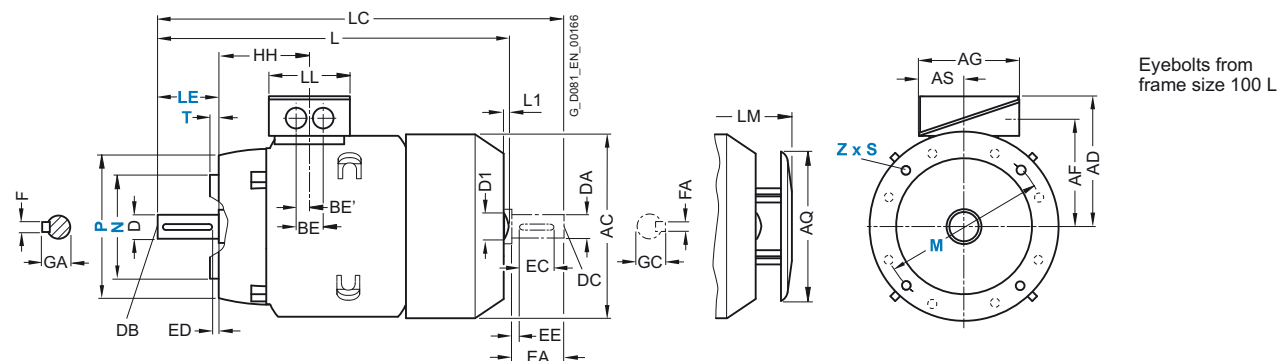
Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC						DE shaft extension						NDE shaft extension										
Frame size	Number of poles	HH	K	K'	L ¹⁾	L1 ²⁾	D1	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	2, 4, 6, 8	100.5	12	16	388.5	7	-	454	134	428.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	2, 4, 6, 8	100.5	12	16	382	7	-	450	134	422	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	2, 4, 6, 8	115.5	12	16	456.5	8.5	-	535.5	134	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
132 M	2, 4, 6, 8	115.5	12	16	456.5	8.5	-	535.5	134	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
160 M	2, 4, 6, 8	145	15	19	594	10	-	730	165	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	2, 4, 6, 8	145	15	19	594	10	-	730	165	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

1) For 1LE15 motors, plus dimension L1.

2) Only for 1LE15 motors.

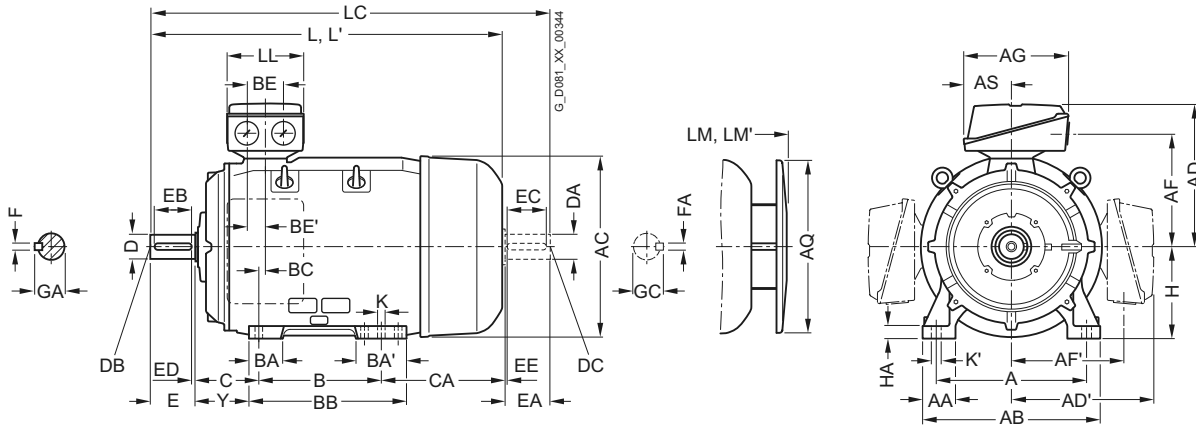
SIMOTICS SD 1LE1 Standard Motors

Dimensions

Cast-iron series 1LE1501, 1LE1521, 1LE1601, 1LE1621
Self-ventilated, frame sizes 180 M to 315 L

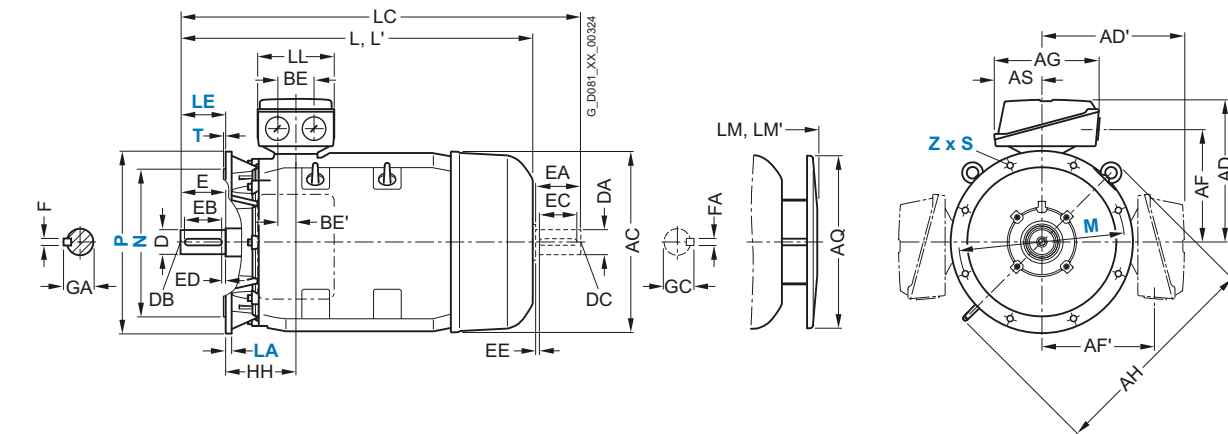
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



1.9

For motor	Type	No. of poles	Dimension designation acc. to IEC																				
Frame size	1LE1501, 1LE1521 1LE1601, 1LE1621		A	AA	AB	AC	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*
180 M/ 180 L	1EA2, 1EB2, 1EB4, 1EC4, 1EC6 1EA6, 1EB6	2, 4, 6 2, 4	279	65	339	356	286	286	234	234	189	468	340	91	241	85	120	328	34	60	30	121	202
200 L	2AA4, 2AA5, 2AB5, 2AC4, 2AC5 2AA6	2, 4, 6 2	318	60	378	396	315	315	259	259	265	533	340	112	305	104	104	355	31	85	43	133	177
225 S	2BB0	4	356	80	436	449	338	338	282	282	266	556	425	112	286	92	117	361	15	85	43	149	218
225 M	2BA2, 2BA6 2BB2, 2BC2, 2BB6, 2BC6	2 4, 6	356	80	436	449	338	338	282	282	266	556	425	112	311	92	117	361	15	85	43	149	193
250 M	2CA2, 2CA6 2CB2, 2CC2, 2CB6, 2CC6	2 4, 6	406	100	490	497	410	410	322	322	319	620	470	145	349	102	102	409	24	110	55	168	235
280 S	2DA0 2DB0, 2DC0	2 4, 6	457	100	540	551	433	433	345	345	319	672	525	145	368	101	152	479	20	110	55	190	267
280 M	2DA2 2DB2, 2DC2, 2DC6 2DA6 2DB6	2 4, 6 2 4	457	100	540	551	433	433	345	345	319	672	525	145	419	101	152	479	20	110	55	190	216
																							326
315 S	3AA0 3AB0, 3AC0	2 4, 6	508	120	610	616	515	515	404	404	374	780	590	164	406	113	170	527	22	110	55	216	295
315 M	3AA2 3AB2 3AC2	2 4 6	508	120	610	616	515	515	404	404	374	780	590	164	457	113	170	578	22	110	55	216	409
315 L	3AA4 3AB4, 3AC4, 3AC5 3AA5, 3AA6 3AB5, 3AB6, 3AC6	2 4, 6 2 4, 6	508	120	610	616	515	515	404	404	374	780	590	164	508	113	170	578	22	110	55	216	358
																176	227	648					513

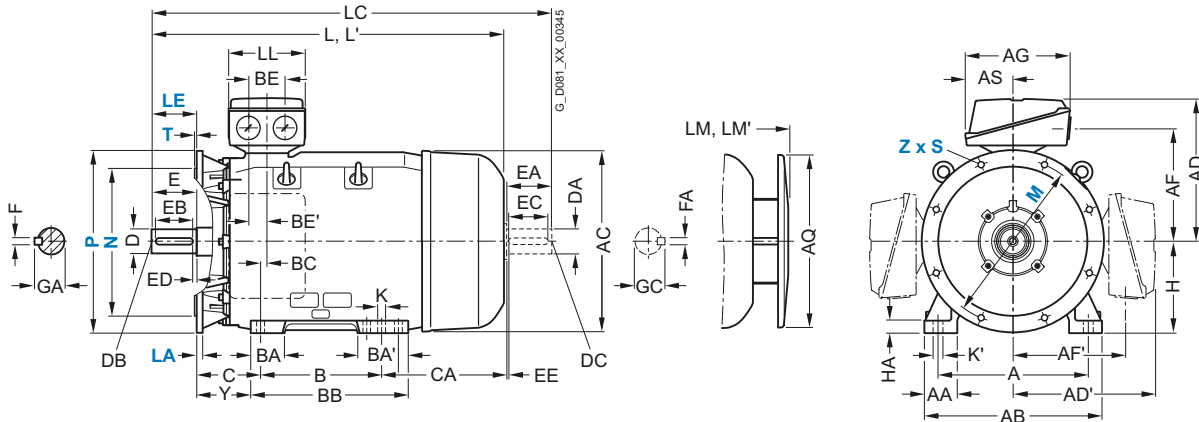
* This dimension is assigned in DIN EN 50347 to the frame size listed.
1) Additional information – not a standard dimension according to DIN EN 50347.

**Cast-iron series 1LE1501, 1LE1521, 1LE1601, 1LE1621
Self-ventilated, frame sizes 180 M to 315 L**

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type	H	HA	Y ¹⁾	HH	K	K'	L	L ²⁾	LC ³⁾	LL	LM	LM ²⁾	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
1LE1501, 1LE1521																										
1LE1601, 1LE1621																										
1EA2, 1EB2, 1EB4, 1EC4, 1EC6	180	20	95	155	15	19	668	668	784	164	758	758	48	M16	110	100	5	14	52	48	M16	110	100	5	14	52
1EA6, 1EB6							698	698	814		788	788														
2AA4, 2AA5, 2AB5, 2AC4, 2AC5	200	25	108	164	19	25	721	755	835	197	811	845	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
2AA6							746	780	860		836	870														
2BB0	225	34	124	164	19	25	788	–	903	197	888	–	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
2BA2, 2BA6	225	34	124	164	19	25	818	852	933	197	918	952	55	M20	110	100	5	16	59	48	M16	110	100	5	14	52
2BB2, 2BC2, 2BB6, 2BC6							848	–	963		948	–	60		140	125	10	18	64	55	M20				16	59
2CA2, 2CA6	250	40	138	192	24	30	887	924	1002	233	987	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
2CB2, 2CC2, 2CB6, 2CC6							–	1032	–	–	–	65							69	60		140	125	10	18	64
2DA0	280	40	160	210	24	30	960	998	1105	233	1070	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
2DB0, 2DC0							–	–	–	–	–	75							20	80	65				69	
2DA2	280	40	160	210	24	30	960	998	1105	233	1070	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
2DB2, 2DC2, 2DC6							–	–	–	–	–	75							20	80	65				69	
2DA6							1070	1108	1215		1180	1218	65						18	69	60				64	
2DB6							–	–	–	–	–	75							20	80	65				69	
3AA0	315	50	181	238	28	35	1052	1122	1197	299	1162	1232	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
3AB0, 3AC0							1082	–	1227		1192	–	80		170	140	25	22	85	70					20	75
3AA2	315	50	181	238	28	35	1217	1287	1362	299	1327	1397	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
3AB2							1247	–	1392		1357	–	80		170	140	25	22	85	70					20	75
3AC2							1082	–	1227		1192	–														
3AA4	315	50	181	238	28	35	1217	1287	1362	299	1327	1397	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
3AB4, 3AC4, 3AC5							1247	–	1392		1357	–	80		170	140	25	22	85	70					20	75
3AA5, 3AA6			146				1372	1442	1517		1482	1552	65		140	125	10	18	69	60					18	64
3AB5, 3AB6, 3AC6							1402	–	1547		1512	–	80		170	140	25	22	85	70					20	75

¹⁾ Additional information – not a standard dimension according to DIN EN 50347.

²⁾ For version with low-noise fan for 2-pole motors.

³⁾ In the low-noise version, a second shaft extension and/or mounted encoder is not possible.

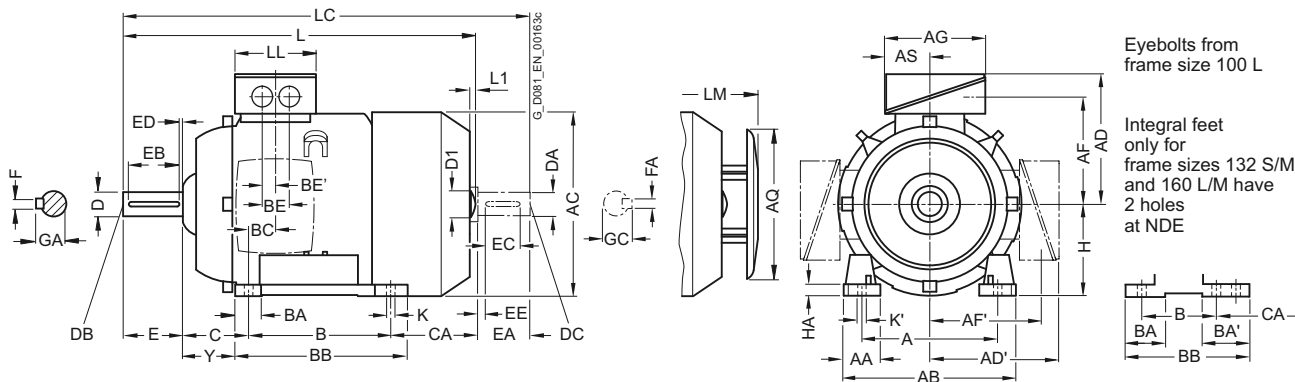
SIMOTICS SD 1LE1 Standard Motors

Dimensions

Cast-iron series 1LE1523, 1LE1623
Self-ventilated, frame sizes 100 L to 160 L

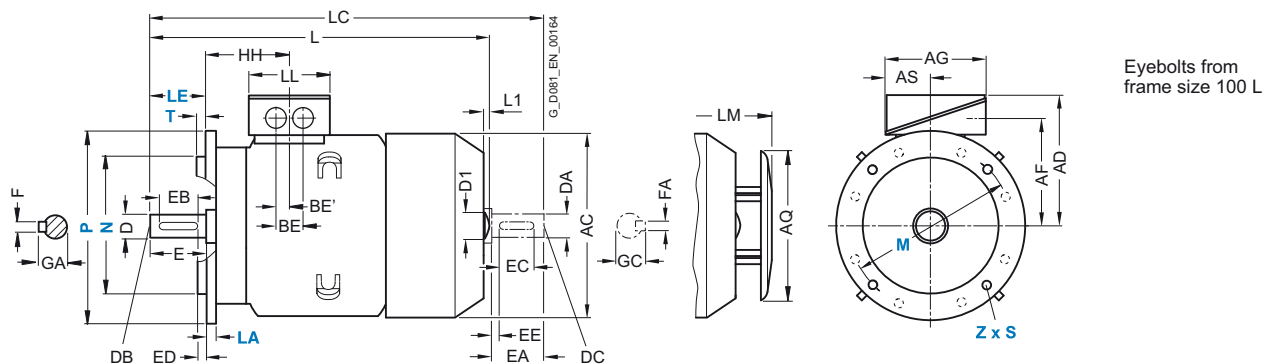
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																							
Frame size	Number of poles	Motor type	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C ¹⁾	CA*	H	HA	Y ¹⁾
100 L	2, 4	1AA4, 1AB4, 1AB5	160	42	196	198	193	193	147	147	163	195	80.5	140	40	-	176	37.5	48	24	63	176	100	12	45
112 M	2, 4	1BA2, 1BB2	190	46	226	222	195	195	150	150	163	195	80.5	140	40	-	176	30	48	24	70	155	112	12	52
132 S	2, 6	1CA0, 1CC0	216	53	256	262	214.5	214.5	169	169	163	260	80.5	140	44	81 ²⁾	218 ³⁾	26.5	48	24	89	128.5	132	15	69
	2, 4	1CA1, 1CB0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178.5	-	-	-	
132 M	6	1CC2	216	53	256	262	214.5	214.5	169	169	163	260	80.5	178	44	81 ²⁾	218	26.5	48	24	89	128.5	132	15	69
	4, 6, 8	1CB2, 1CC3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178.5	-	-	-	
		6	1CC3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	178.5	-	-	-
160 M	2, 4, 6	1DA2, 1DA3, 1DB2, 1DC2	254	60	300	314	261	261	213	213	190	260	92	210	51	95 ⁴⁾	300 ⁵⁾	37	60	30	108	148	160	18	85
160 L	2, 4, 6	1DA4, 1DB4, 1DC4	254	60	300	314	261	261	213	213	190	260	92	254	51	95 ⁴⁾	300	37	60	30	108	208	160	18	85

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Additional information – not a standard dimension according to DIN EN 50347.

2) With screwed-on feet, dimension BA' is 43 mm.

3) With screwed-on feet, dimension BB is 180 mm.

4) With screwed-on feet, dimension BA' is 51 mm.

5) With screwed-on feet, dimension BB is 256 mm.

SIMOTICS SD 1LE1 Standard Motors

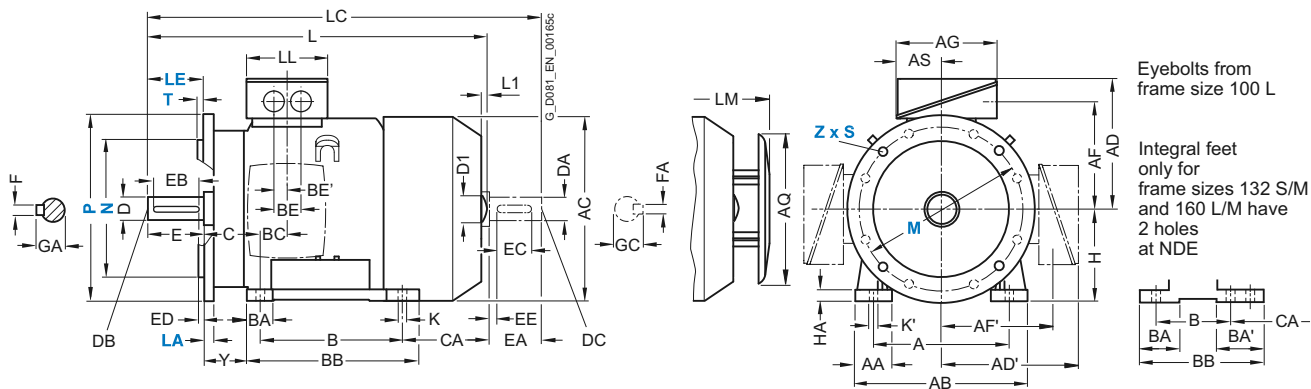
Dimensions

**Cast-iron series 1LE1523, 1LE1623
Self-ventilated, frame sizes 100 L to 160 L**

Dimensional drawings (continued)

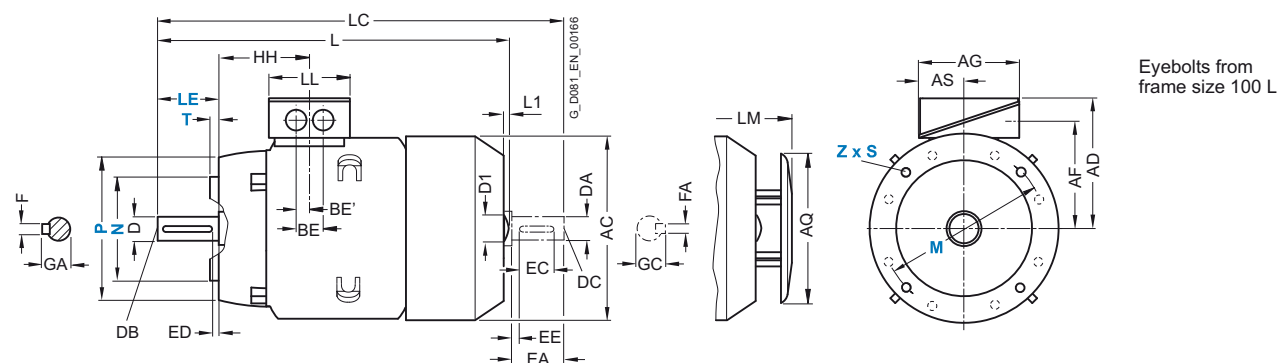
Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



For motor Frame size	Number of poles	Motor type	Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension										
			HH	K	K'	L ¹⁾	L ²⁾	D1	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	2, 4	1AA4, 1AB4, 1AB5	100.5	12	16	425	7	32	489	134	463.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	2, 4	1BA2, 1BB2	100.5	12	16	408.5	7	32	475	134	447	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	2, 6	1CA0, 1CC0	115.5	12	16	458	8.5	39	535.5	134	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	2, 4	1CA1, 1CB0				508			585.5		566.5														
132 M	6	1CC2	115.5	12	16	458	8.5	39	535.5	134	516.5	38	M12	80	70	5	10	41	28	M10	60	50	5	8	31
	4, 6	1CB2, 1CC3				508			585.5		566.5														
160 M	2, 4, 6	1DA2, 1DA3, 1DB2, 1DC2	145	15	19	596	10	45	730	165	654	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	2, 4, 6	1DA4, 1DB4, 1DC4	145	15	19	656	10	45	790	165	714	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

¹⁾ For 1LE15 motors, plus dimension L1.

²⁾ Only for 1LE15 motors.

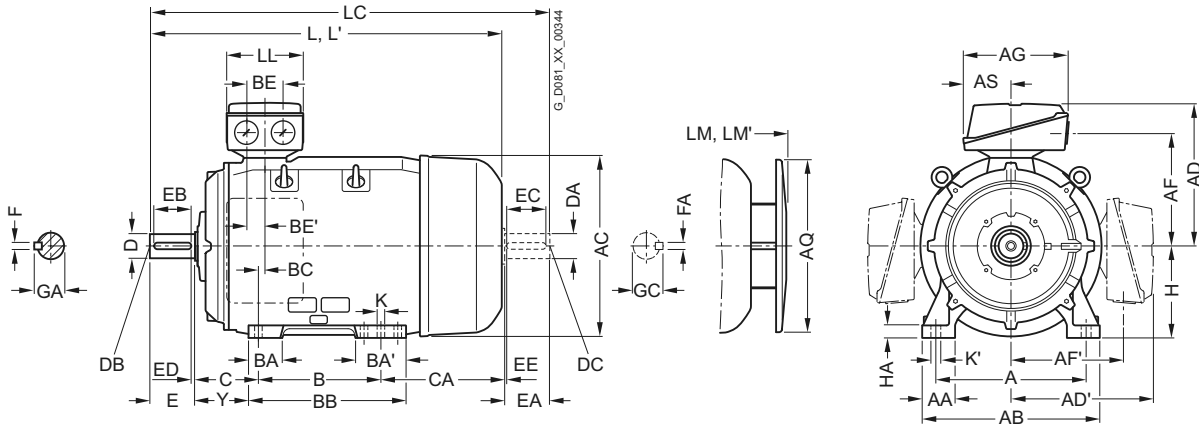
SIMOTICS SD 1LE1 Standard Motors

Dimensions

Cast-iron series 1LE1503, 1LE1523, 1LE1603, 1LE1623
Self-ventilated, frame sizes 180 M to 315 L

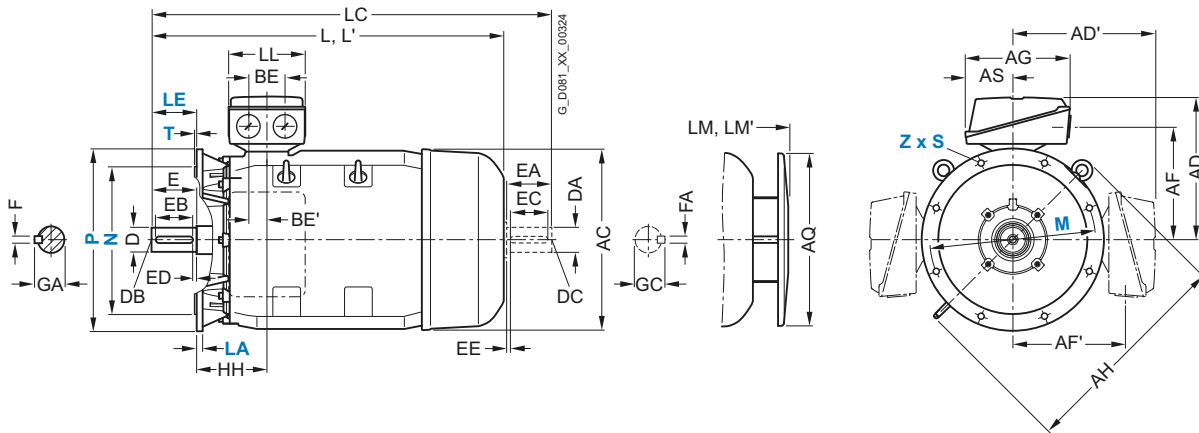
Dimensional drawings

Type of construction IM B3



Types of construction IM B5, IM V1

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



1.9

For motor	Type	Dimension designation acc. to IEC	
Frame size	1LE1503, 1LE1523 1LE1603, 1LE1623	No. of poles A AA AB AC AD AD' AF AF' AG AH AQ AS B* BA BA' BB BC BE BE' C ¹⁾ CA*	
180 M/180 L	1EB2, 1EC4 1EA2, 1EB4	4, 6 2, 4	279 65 339 356 286 286 234 234 189 468 340 91 241 85 120 328 34 60 30 121 202
200 L	2AA4, 2AC4 2AA5, 2AB55, 2AC5	2, 6 2, 4, 6	318 60 378 396 315 315 259 259 265 533 340 112 305 104 104 355 31 85 43 133 177
225 S	2BB0	4	356 80 436 449 338 338 282 282 266 556 425 112 286 92 117 361 15 85 43 149 218
225 M	2BA2 2BB2, 2BC2	2 4, 6	356 80 436 449 338 338 282 282 266 556 425 112 311 92 117 361 15 85 43 149 193
250 M	2CA2 2CB2, 2CC2	2 4, 6	406 100 490 497 410 410 322 322 319 620 470 145 349 102 102 409 24 110 55 168 235
280 S	2DA0	2	457 100 540 551 433 433 345 345 319 672 525 145 368 101 152 479 20 110 55 190 267
280 M	2DB0, 2DC0 2DC2 2DA2 2DB2	4, 6 6 2 4	457 100 540 551 433 433 345 345 319 672 525 145 419 101 152 479 20 110 55 190 216 326
315 S	3AA0 3AB0, 3AC0	2 4, 6	508 120 610 616 515 515 404 404 374 780 590 164 406 113 170 527 22 110 55 216 295
315 M	3AA2 3AB2, 3AC2	2 4, 6	508 120 610 616 515 515 404 404 374 780 590 164 457 113 170 578 22 110 55 216 409
315 L	3AA4 3AB4, 3AC4 3AA5 3AB5, 3AC5, 3AC6	2 4, 6 2 4, 6	508 120 610 616 515 515 404 404 374 780 590 164 508 113 170 578 22 110 55 216 358 176 227 648 513

* This dimension is assigned in DIN EN 50347 to the frame size listed.

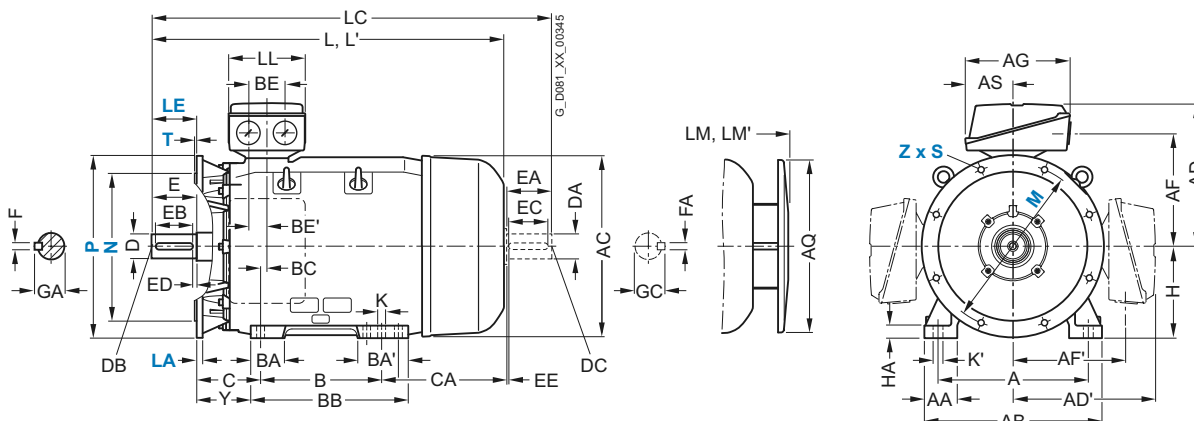
1) Additional information – not a standard dimension according to DIN EN 50347.

Cast-iron series 1LE1503, 1LE1523, 1LE1603, 1LE1623
Self-ventilated, frame sizes 180 M to 315 L

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 1/92 (Z = the number of retaining holes)



1.9

Type	H	HA	Y ¹⁾	HH	K	K'	L	L' ²⁾	LC ³⁾	LL	LM	LM ²⁾	DE shaft extension				NDE shaft extension										
													D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC	
1LE1503, 1LE1523																											
1LE1603, 1LE1623																											
1EB2, 1EC4	180	20	95	155	15	19	668	668	784	164	758	758	48	M16	110	100	5	14	52	48	M16	110	100	5	14	52	
1EA2, 1EB4							698	698	814		788	788															
2AA4, 2AC4	200	25	108	164	19	25	721	755	835	197	811	845	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59	
2AA5, 2AB55, 2AC5							746	780	860		836	870															
2BB0	225	34	124	164	19	25	788	-	903	197	888	-	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59	
2BA2	225	34	124	164	19	25	818	852	933	197	918	952	55	M20	110	100	5	16	59	48	M16	110	100	5	14	52	
2BB2, 2BC2							848	-	963		948	-	60		140	125	10	18	64	55	M20					16	59
2CA2	250	40	138	192	24	30	887	924	1002	233	987	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59	
2CB2, 2CC2							-	-	1032		-	-	65						69	60		140	125	10	18	64	
2DA0	280	40	160	210	24	30	960	998	1105	233	1070	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
2DB0, 2DC0							-	-	-		-	-	75					20	80	65						69	
2DC2	280	40	160	210	24	30	960	-	1105	233	1070	-	75	M20	140	125	10	20	80	65	M20	140	125	10	18	69	
2DA2							1070	1108	1215		1180	1218	65					18	69	60						64	
2DB2							-	-	-		-	-	75					20	80	65						69	
3AA0	315	50	181	238	28	35	1052	1122	1197	299	1162	1232	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
3AB0, 3AC0							1082	-	1227		1192	-	80		170	140	25	22	85	70						20	75
3AA2	315	50	181	238	28	35	1217	1287	1362	299	1327	1397	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
3AB2, 3AC2							1247	-	1392		1357	-	80		170	140	25	22	85	70						20	75
3AA4	315	50	181	238	28	35	1217	1287	1362	299	1327	1397	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
3AB4, 3AC4							1247	-	1392		1357	-	80		170	140	25	22	85	70						20	75
3AA5			146				1372	1442	1517		1482	1552	65		140	125	10	18	69	60						18	64
3AB5, 3AC5, 3AC6							1402	-	1547		1512	-	80		170	140	25	22	85	70						20	75

¹⁾ Additional information – not a standard dimension according to DIN EN 50347.

²⁾ For version with low-noise fan for 2-pole motors.

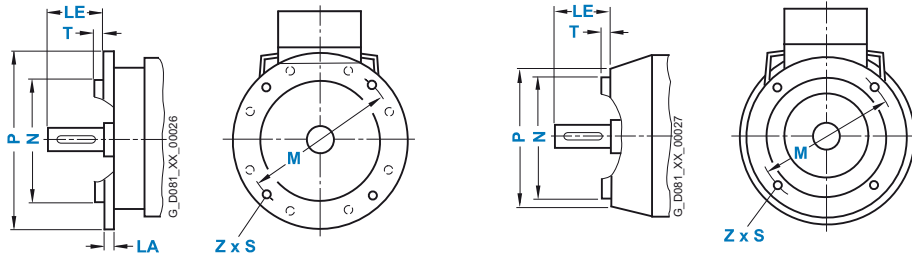
³⁾ In the low-noise version, a second shaft extension and/or mounted encoder is not possible.

SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

Dimensions

Flange dimensions

Dimensional drawings



In DIN EN 50347, the frame sizes are allocated flange FF with through holes and flange FT with tapped holes. The designation of flange A and C according to DIN 42948 (invalid since September 2003) are also listed for information purposes. See the table below. (Z = the number of retaining holes)

Frame size	Type of construction	Flange type	Flange with through holes (FF/A) / tapped holes (FT/C)		Dimension designation acc. to IEC							
			acc. to DIN EN 50347	acc. to DIN 42948	LA	LE	M	N	P	S	T	Z
80 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 165	A 200	10	40	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 100	C 120	–	40	100	80	120	M6	3	4
90 S, 90 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 165	A 200	10	50	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 115	C 140	–	50	115	95	140	M8	3	4
100 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange (next larger standard flange)	FT 165	C 200	–	60	165	130	200	M10	3.5	4
112 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange (next larger standard flange)	FT 165	C 200	–	60	165	130	200	M10	3.5	4
132 S, 132 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 265	A 300	12	80	265	230	300	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 165	C 200	–	80	165	130	200	M10	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange (next larger standard flange)	FT 215	C 250	–	80	215	180	250	M12	4	4
160 M, 160 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 300	A 350	13	110	300	250	350	18.5	5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 215	C 250	–	110	215	180	250	M12	4	4
180 M, 180 L	IM B5, IM B35, IM V1, IM V3	Flange	FF300	A 350	13	110	300	250	350	18.5	5	4
200 L	IM B5, IM B35, IM V1, IM V3	Flange	FF350	A 400	15	110	350	300	400	18.5	5	4
225 S, 225 M 2-pole 4-pole to 8-pole	IM B5, IM B35, IM V1, IM V3	Flange	FF400	A 450	16	110 140	400	350	450	18.5	5	8
250 M	IM B5, IM B35, IM V1, IM V3	Flange	FF500	A 550	18	140	500	450	550	18.5	5	8
280 S, 280 M	IM B5, IM B35, IM V1, IM V3	Flange	FF500	A 550	18	140	500	450	550	18.5	5	8
315 S, 315 M, 315 L 2-pole 4-pole to 8-pole	IM B5, IM B35, IM V1, IM V3	Flange	FF600	A 660	22	140 170	600	550	660	24	6	8

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

2



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SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Orientation

Overview

2.0



Standard motors from Siemens are characterized by their flexibility, ruggedness and energy efficiency. In general, all motors are suitable for converter-fed operation with line voltages of up to 460 V +10 %. The motors are designed to fulfill the requirements of the European and international markets with an output range from 0.09 to 315 kW.

Standard motors for use worldwide

IEC motors for the European and international market

The standard motors comply both electrically and mechanically with the applicable IEC/EN standards. For exporting to China, CCC certified motors (China Compulsory Certification) can be supplied.

IEC motors specially for the North American market

Motors are also available to the NEMA specification (National Electrical Manufacturers Association), with UL approval (Underwriters Laboratories Inc.) and CSA certification (Canadian Standard Association) for exporting to NAFTA states (USA, Canada and Mexico). The mechanical design of all motors is compliant only to IEC/EN, not to NEMA dimensions.

NEMA motors for the North American market

For further information about NEMA motors according to NEMA standard MG1:

www.sea.siemens.com/motors

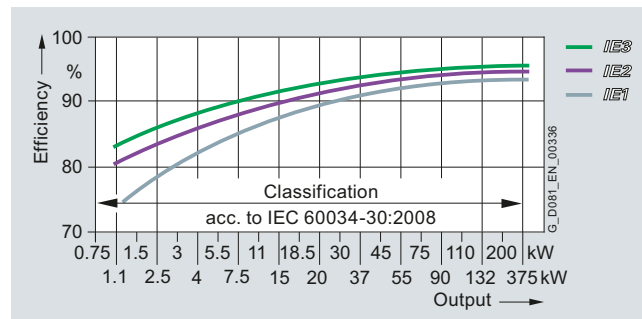
High efficiency energy-saving motors for a positive energy balance

Depending on requirements, energy-saving motors for a positive energy balance are available that are compliant with the legal requirements applicable in the European economic area in accordance with EU Directive 640/2009 as well as for the North American market in accordance with US federal law EISA (Energy Independence Security Act).

Minimum efficiency according to EU Directive 640/2009

The EU Directive defines the minimum efficiency for 2, 4 and 6-pole motors in the output range from 0.75 to 375 kW. The efficiency levels are grouped into 3 efficiency classes (IE = International Efficiency):

- IE1 (Standard Efficiency)
- IE2 (High Efficiency)
- IE3 (Premium Efficiency)



IE1, IE2 and IE3 efficiencies, 4-pole 50 Hz

At a glance: EU Directive No. 640/2009 based on IEC 60034-30

- The EU Directive is in force in all countries of the European Union. Losses are determined and therefore the efficiency is determined in accordance with IEC 60034-2-1:2007
- The following are specified: 2, 4, 6-pole 50/60 Hz squirrel-cage motors from 0.75 to 375 kW, for all voltages < 1000 V

Further information at: www.siemens.com/international-efficiency

Efficiency requirements according to EISA

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

Since then, EISA has extended the legal minimum efficiency requirements.

The following motors must satisfy the NEMA Premium Efficient Level (NEMA MG Table 12-12):

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

Exception/expansion – The following motors must comply with the NEMA Energy Efficient Level (NEMA MG Table 12-11):

- 201 to 500 hp
- 2-pole, 4-pole, 6-pole 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)

For details, see NEMA MG1, Table 12-11 and Table 12-12.

The EISA act lays down that the nominal efficiency at full load and a "CC" number (Compliance Certification) must be included on the rating plate. The "CC" number is issued by the US Department of Energy (DOE). The following information is stamped on the rating plate of EISA motors which must be marked by law:

- Nominal efficiency
- Design letter
- Code letter
- CONT
- CC No. CC 032A (Siemens) and NEMA MG1-12

Overview (continued)**Energy-saving motors from Siemens in accordance with IEC 60034-30 or EISA**

The product range of energy-saving motors exclusively comprises motors in the EU efficiency classes IE1 "Standard Efficiency", IE2 "High Efficiency", and IE3 "Premium Efficiency". The procedure for determining the efficiency is based on IEC 60034-2-1:2007. With these energy-saving motors, a significant reduction in energy costs can be achieved.

IEC motors from Siemens for the North American market are CC certified and stamped with the number CC032A on the rating plate. Motors are offered with the CSA Energy Efficiency Verification Mark specially for the Canadian market.

Example of a rating plate

SIEMENS 3-MOT. 1LG6 318-4MA60-Z		IE3 CE	
Made In Czech Rep.	UC 1009/000001201		
1290 kg	IMB3 315L	IP 55	Th.Cl.155(F) AMB 40°C
50 Hz	400/690 V Δ/Y	60 Hz	460 V Δ
250 kW	430/250 A	288 kW	425 A
cos φ 0,87	1488 /min	PF 0,88	1788 RPM
IE3-96,0%		IE3-96,2%	
IEC/EN 60034			

IE3 double rating plate

For further examples, see Part 0.1 of this catalog.

Standard motors with increased output and compact construction

Standard motors with increased output and compact construction can be used to advantage in confined spaces. For a slightly longer overall length, the output is at least as high as that of the next largest shaft height. These compact motors are also optimized for efficiency and therefore reduce the operating costs.

Standard motors with reduced output without external fan

Naturally cooled motors with surface cooling without external fan are suitable for the following operating conditions:

- Types of duty with adequate cooling times (e.g. temporary duty for positioning drives)
- Environmental conditions that demand compact installation space (e.g. in motors with a stopping function)
- Conditions which make an external fan disadvantageous (e.g. simple cleaning in the food industry, textile industry).

Preferred and Express motors

The most popular basic versions of motor series 1LA9 and 1LG6, and the corresponding successor types 1LE1001 and 1LE1501 are available under special terms as so-called "Preferred motors". Most of the "Preferred motors" are also available with a shorter delivery time as so-called "Express motors".

The standard delivery time for Express motors is 1 to 2 days from the time of clarification of the order at the factory until dispatch from the factory. To determine the delivery date at the customer site, the appropriate shipping time must be added.

For further information and the complete range, see catalog section 0.2 "Preferred and Express motors".

Benefits

Standard motors from Siemens offer the user numerous advantages:

- The motors are approved and certified for worldwide use and meet high quality standards (confirmed, for example, by CSA¹⁾, UL²⁾, EXAM³⁾, PTB⁴⁾, CQC⁵⁾)
- The ruggedness and lack of complexity of the components guarantee an extremely long service life
- Complete product spectrum for energy-saving motors in accordance with IEC 60034-30
- Extremely easy selection of energy-saving motors due to the efficiency classification (IE1/IE2/IE3)
- Reduction in operating costs thanks to high degrees of efficiency with IE2/IE3
- Higher motor service life thanks to lower winding temperature in IE2/IE3 motors with rated load and supply
- Reduced environmental impact due to CO₂ reduction
- High overload reserves under continuous duty (SF 1.15 for motor series 1LA9/1LG6)
- Suitable for universal applications worldwide
- Standard motors with increased output and extremely compact construction
- Shorter delivery times with Express motors
- The module mounting concept supports rapid modification by the customer
- A fast and comprehensive service is provided by factories and modification partners distributed throughout the world

Application

The numerous available options enable standard motors from Siemens to be used in every area of industry and every sector. They are suitable both for special environmental conditions such as those that predominate in the chemical or petrochemical industry as well as for most climatic requirements such as those of offshore applications. Their large range of line voltages enables them to be used all over the world.

The wide field of implementation includes the following applications:

- Pumps
- Fans
- Compressors
- Conveyor systems such as cranes, belts and lifting gear
- High-bay warehouses
- Packaging machines
- Automation and drives

1) Canadian Standard Association

2) Underwriters Laboratories Inc.

3) EXAM BBG Prüf und Zertifizier GmbH (previously BVS = Bergbau Versuchsstrecke)

4) Physikalisch-Technische Bundesanstalt

5) China Quality Certification

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Orientation

Technical specifications

Overview of technical specifications

This table lists the most important technical data. For more information and details, see Catalog D 81.1 · 2008 Part 0 "Introduction".

Type of motor	SIMOTICS GP/SD 1LA/1LG/1LP/1PP IEC Low-Voltage Motors
Connection types	Star connection/delta connection You can establish the connection type to be used from the Order No. supplements for the required motor.
Number of poles	2, 4, 6, 8, pole-changing for constant and square-law load torque
Rated speed (synchronous speed)	750 ... 3000 rpm
Rated output	0.09 ... 315 kW
Rated torque	0.25 ... 1700 Nm
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	Temperature class 155 (F), used according to temperature class 130 (B) DURIGNIT IR 2000 insulation system
Degree of protection according to EN 60034-5 (IEC 60034-5)	IP55 as standard
Cooling according to EN 60034-6 (IEC 60034-6)	<ul style="list-style-type: none"> • Self-ventilated (1LA, 1LG motor series) frame sizes 63 to 315 (IC 411) • Naturally cooled (motor series 1LP) frame sizes 63 to 315 (IC 410)
Admissible coolant temperature and site altitude	-20 ... +40 °C as standard, site altitude up to 1000 m above sea level See "Coolant temperature and site altitude" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Standard voltages according to EN 60038 (IEC 60038)	50 Hz: 230 V, 400 V, 500 V, 690 V The voltage to be used can be found in the "Selection and ordering data" for the required motor.
Type of construction according to EN 60034-7 (IEC 60034-7)	<ul style="list-style-type: none"> • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6, IM V5 with protective cover • With flange: IM B5, IM V1 without protective cover, IM V1 with protective cover, IM V3, IM B35 • With standard flange: IM B14, IM V19, IM V18 without protective cover, IM V18 with protective cover, IM B34 • With special flange: IM B14, IM V19, IM V18 without protective cover, IM V18 with protective cover, IM B34
Paint finish Suitability of paint finish for climate group according to IEC 60721, Part 2-1	Standard: Color RAL 7030 stone gray Climate group "worldwide" with special finish Climate group "moderate" with standard finish See "Paint finish" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Vibration severity level according to EN 60034-14 (IEC 60034-14)	Level A (normal, without special vibration requirements) Level B (with special vibration requirements) See "Balance and vibration quantity" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Shaft extension according to DIN 748 (IEC 60072)	Balance type: Half-key balancing See "Balance and vibration quantity" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Sound pressure level according to DIN EN ISO 1680 (tolerance +3 dB)	The corresponding sound pressure level is listed in the selection and ordering data for the required motor.
Weights	The corresponding weight is listed in the selection and ordering data for the required motor.
Mechanical limit speeds	The corresponding limit speed for the required motor is listed in the table, see Page 2/6.
Packaging weights and dimensions	See "Packaging weights and packaging dimensions" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Rating plates	Fixed to the motor See "Examples of rating plate" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Connection and connection box	See "Connection, circuit and connection boxes" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Bearing designs	See "Bearings" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Cantilever forces	See "Admissible cantilever forces" in Catalog D 81.1 · 2008 Part 0 "Introduction".
Options	See "Supplements to order numbers and special versions".

General note

All the data listed in the catalog is applicable for a 50 Hz line supply. With converter-fed operation, the reduction factors for constant torque and drives for fans, pumps and compressors must be observed. Noise values for motors operating with a converter at frequencies other than 50 Hz are available on request.

Mechanical limit speeds

When the motor is operated at its rated frequency, it is important to note that the maximum speeds are limited by the limits for the roller bearings, critical rotor speed and rigidity of the rotating parts.

Ventilation/noise generation (converter-fed operation)

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated motors. To increase motor utilization at low speeds it is recommended that forced-ventilated motors are used.

Mechanical stress and grease lifetime (converter-fed operation)

High speeds that exceed the rated speed and the resulting increased vibrations alter the mechanical running smoothness and the bearings are subjected to increased mechanical stress. This reduces the grease lifetime and the bearing lifetime. More detailed information on request.

Overview**Converter-fed operation up to 500 V +10 % line voltage**

The standard insulation of the 1LA and 1LG motors is designed such that operation on the converter is possible at line voltages up to 500 V +10 % in motorized operation (for motor series 1LA8, up to 500 V +10 % generally). This also applies for operation with a pulse-controlled AC converter with voltage rise times of $t_s > 0.1 \mu\text{s}$ at the motor terminals (IGBT transistors). At higher voltages, the motors require increased insulation resistance. Please inquire in the case of converter-fed operation with motors with protruding connection cables (order codes L44, L45, L47, L48, L49, L51 and L52).

The 1LA8 non-standard motors of the types specially identified for converter-fed operation (the 9th and 10th position of the Order No. is filled with "PB", "PC" or "PE") have an insulated motor bearing as standard at the non-drive end NDE. The motors are equipped with standard insulation and standard rotors and are suitable for mains-fed and converter-fed operation. For further information, see Part 3 of this catalog "SIMOTICS N-compact Non-Standard Motors".

Converter-fed operation up to 690 V +10 % line voltage

1LA5, 1LA7 and 1LG6 standard motors as well as 1LA8 and 1PQ8 non-standard motors are also available with a higher insulation resistance of the winding system for operation on the converter with supply voltages from 500 to 690 V (+10 %), and do not usually require a filter. These motors are identified by an "M" in the 10th digit of the Order No. (e.g. 1LA83152PM).

With the reinforced insulating system, there is less space in the grooves in motor series 1LA8 and 1PQ8 for the same number of windings compared to the normal version, which slightly reduces the rated output of these motors. For further information, see Part 3 of this catalog "SIMOTICS N-compact Non-Standard Motors".

Note:

The configuration tool SIZER for Siemens Drives is available for configuring converter-fed motors. For further information, see the appendix.

Benefits

Motors operating with frequency converters offer the user numerous advantages:

- The motors feature the future-oriented insulation system DURIGNIT IR 2000 (IR = Inverter Resistant). The DURIGNIT IR 2000 insulation system consists of high-quality enamel wires and insulating sheeting in conjunction with solvent-free resin impregnation.

The motors specially developed for operation on a frequency converter with special insulation are converter-compatible from 500 to 690 V (+10 %).

Application

The motors can be used in numerous drive applications with variable-speed drives when they are combined with converters from the MICROMASTER and SINAMICS spectrum.

The wide field of implementation includes the following applications:

- Conveyor systems such as cranes, belts and lifting gear
- High-bay warehouses
- Packaging machines
- Automation and drives

Their large range of line voltages enables them to be used all over the world.

Technical specifications**General note**

All the data listed in the catalog is applicable for a 50 Hz line supply. With converter-fed operation, the torque reduction factors for constant torque and drives for fans, pumps and compressors must be configured using SIZER for Siemens Drives. Higher noise levels must be expected at frequencies other than 50 Hz for motors operating with converters due to the harmonic content of the supply.

Rated voltage

The tolerance of the motors specially developed for converter-fed operation with special insulation up to 690 V (the 9th and 10th position of the Order No. are marked with "PM") is generally in accordance with DIN EN 60034-1 – a rated voltage range is not specified on the rating plate.

Mechanical limit speeds

When the motor is operated at its rated frequency, it is important to note that the maximum speeds are limited by the limits for the roller bearings, critical rotor speed and rigidity of the rotating parts.

Motor protection

A motor protection function can be implemented using the R_t sensing circuit implemented in the converter software.

If required, more precise motor protection can be afforded by direct temperature measurement using KTY-84 sensors or PTC thermistors in the motor winding. Some converters from Siemens determine the motor temperature using the resistance of the temperature sensor. They can be set to a required temperature for alarm and tripping.

Insulation

The insulation of the 1LA and 1LG motors is designed such that operation on the converter is possible at voltages up to 500 V +10 % in motorized operation (for motor series 1LA8, up to 500 V +10 % generally). This also applies for operation with a pulse-controlled AC converter with voltage rise times $t_s > 0.1 \mu\text{s}$ at the motor terminals.

All motors with voltage codes 1 and 6 (400 V motors Δ connection) operating with a converter must be operated under these conditions. This does not apply to motors with voltages from 500 to 690 V (+10 %), that must have special insulation for operation on a pulse-controlled AC converter (e.g. SIMOVERT MASTER-DRIVES and MICROMASTER 440 for voltages in the range from 500 to 600 V), i.e. when 10th position of the Order No. = "M". For converter-fed operation with the outputs specified in the catalog, the motors are used according to temperature class 155 (F), i.e. in this case neither a service factor > 1 nor an increased coolant temperature is possible (order codes C11, C12 and C13 cannot be ordered).

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Orientation

Converter-fed operation

Technical specifications (continued)

Motor connection

When connecting the motors, it is important to consider the restrictions for mains-fed machines as well as the maximum admissible conductor cross-sections for the converter.

Ventilation and noise generation

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated motors. To increase motor utilization at low speeds it is recommended that forced-ventilated motors are used.

Mechanical limit speeds n_{\max} at maximum supply frequency f_{\max}

Standard values

The values in the following table are valid for all areas of application with the exception of Part 4 of this catalog "SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors".

Mechanical stress and grease lifetime

High speeds that exceed the rated speed and the resulting increased vibrations alter the mechanical running smoothness and the bearings are subjected to increased mechanical stress. This reduces the grease lifetime and the bearing lifetime. More detailed information on request.

The values for motor series 1LA8, 1PQ8 and 1LL8 are listed in the selection and ordering data in Part 3 of this catalog "SIMOTICS N-compact Non-Standard Motors".

Motor frame size	Motor type		2-pole ¹⁾		4-pole		6-pole		8-pole	
			n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz
1LA5, 1LA6, 1LA7, 1LA9, 1LP5, 1LP7, 1PP5, 1PP7										
63 M	1LA7/1LA9 1LP7/1PP7	06.	6000	100	4200	140	3600	180	3000	200
71 M	1LA7/1LA9 1LP7/1PP7	07.	6000	100	4200	140	3600	180	3000	200
80 M	1LA7/1LA9 1LP7/1PP7	08.	6000	100	4200	140	3600	180	3000	200
90 L	1LA7/1LA9 1LP7/1PP7	09.	6000	100	4200	140	3600	180	3000	200
100 L	1LA6/1LA7/1LA9 1LP7/1PP7/1PP6	10.	6000	100	4200	140	3600	180	3000	200
112 M	1LA6/1LA7/1LA9 1LP7/1PP7/1PP6	11.	6000	100	4200	140	3600	180	3000	200
132 S/M	1LA6/1LA7/1LA9 1LP7/1PP7/1PP6	13.	5600	90	4200	140	3600	180	3000	200
160 M/L	1LA6/1LA7/1LA9 1LP7/1PP7/1PP6	16.	4800	80	4200	140	3600	180	3000	200
180 M/L	1LA5/1LA9 1LP5/1PP5	18.	5100	85	4200	140	3600	180	3000	200
200 L	1LA5/1LA9 1LP5/1PP5	20.	5100	85	4200	140	3600	180	3000	200
225 S/M	1LA5	22.	5100	85	4200	140	3600	180	3000	200
1LG4, 1LG6, 1LP4, 1PP4, 1PP6										
180 M/L	1LG4/1LG6 1LP4/1PP4/1PP6	18.	4600	76	4200	140	3600	180	3000	200
200 L	1LG4/1LG6 1LP4/1PP4/1PP6	20.	4500	75	4200	140	3600	180	3000	200
225 S/M	1LG4/1LG6 1LP4/1PP4/1PP6	22.	4500	75	4500	150	4400	220	4400	293
250 M	1LG4/1LG6 1LP4/1PP4/1PP6	25.	3900	65	3700	123	3700	185	3700	247
280 S/M	1LG4/1LG6 1LP4/1PP4/1PP6	28.	3600	60	3000	100	3000	150	3000	200
315 S	1LG4/1LG6 1LP4/1PP4/1PP6	310	3600	60	2600	87	2600	130	2600	176
315 M	1LG4/1LG6 1LP4/1PP4/1PP6	313	3600	60	2600	87	2600	130	2600	173
315 L	1LG4/1LG6 1LP4/1PP4/1PP6	316 317 318 312	3600	60	2600	87	2600	130	2600	173

Note:

For 1LE1 motors, see Catalog D 81.1 · 2008.

¹⁾ Request required for continuous duty in the f_{\max} (n_{\max}) range.

Technical specifications (continued)

Bearings and bearing currents

When operating multiphase induction machines on a converter, an electrical bearing stress results from a capacitive induced voltage via the bearing lubricating film, depending on the principle being used. The physical cause of this is the common-mode voltage at the converter output. The sum of the three phase voltages is not zero at all times, unlike with direct on-line operation. The high-frequency, pulse-shaped common-mode voltage brings about a residual current, which closes back to the converter's DC link via the machine's internal capacitances, the machine housing and the grounding circuit. The machine's internal capacitances include the main insulation winding capacitance, the geometric capacitance between the rotor and stator, the lubricating film capacitance, and the capacitance of any bearing insulation that may be present. The current level via the internal capacitances is proportional to the common-mode voltage regulation ($i_{(t)} = C \cdot du/dt$).

In order to apply currents to the motor which are sinusoidal as far as possible (smooth running, oscillation torques, stray losses), a high pulse frequency is required for the converter's output voltage. The related (very steep) switching edges of the converter output voltage (and also, therefore, of the common-mode voltage) cause correspondingly high capacitive currents and voltages on the machine's internal capacitances.

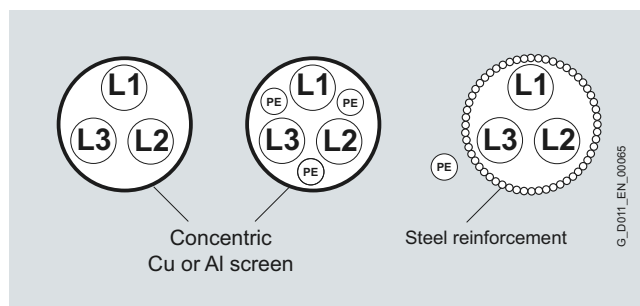
In the worst-case scenario, the capacitive voltage induced via the bearing can lead to random punctures of the bearing lubricating film, thus damaging the bearing/causing premature wear. The current pulses caused by the puncture in the lubricating film are referred to as EDM (Electrostatic Discharge Machining) currents, although this is not primarily a question of an electrostatic effect, but more of (partial) punctures of insulating material, i.e., of partial discharges.

This physical effect, which occurs in isolated cases, has mostly been observed in connection with larger motors.

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

The most important measures for reducing bearing currents:

- Insulated motor bearings at the non-drive end NDE
The insulated bearing is standard for all non-standard 1LA8 motors designated for converter operation. Furthermore it is recommended that an insulated bearing is ordered for NDE as special version for motor series 1LG, 1PP4, 1LP4 and 1MJ7 frame size 225 and above (order code L27)
- Hybrid bearings with ceramic bearing elements at the drive end DE and non-drive-end NDE
- Grounding brush for converter-fed operation for 1LG motors (order code M44)
- Use of cables with a symmetrical cable cross-section:



- Use of motor reactors
- Use of grounding cables with low impedance in a large frequency range (0 Hz up to approximately 70 MHz): for example, plaited copper ribbon cables, HF litz wires
- Separate HF equipotential-bonding cable between motor housing and driven machine
- Separate HF equipotential-bonding cable between motor housing and converter PE busbar
- 360° HF contacting of the cable shield on the motor housing and the converter PE busbar. This can be achieved using EMC screwed glands on the motor end and EMC shield clips on the converter end, for example.
- Common-mode filters at the converter output (e.g. nanoperm rings)

These measures may be necessary depending on the application in converter-fed operation for motor series 1LA5 frame size 225 and 1LG frame size 225 and above, and are therefore recommended.

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Orientation

Converter-fed operation

Technical specifications (continued)

Motor protection

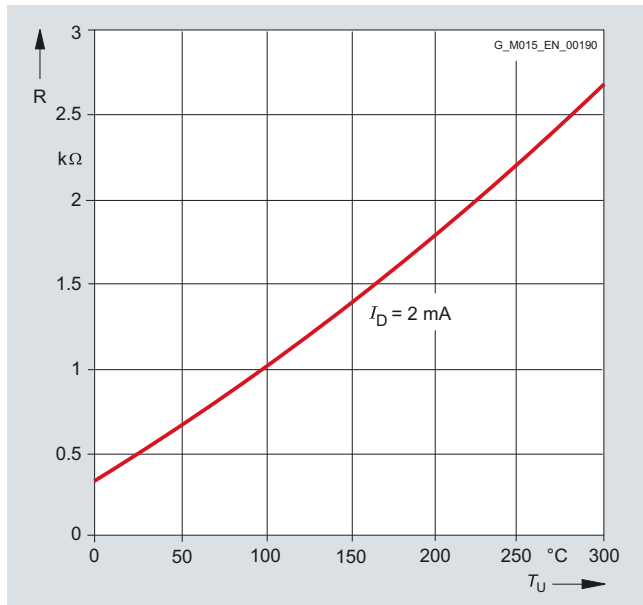
KTY 84-130 temperature sensor

Order codes

A23: 1 x KTY 84-130

A25: 2 x KTY 84-130

This semiconductor sensor changes its resistance as a function of the temperature in accordance with a defined curve.



KTY 84-130 temperature sensor

For 1LA8 motors, the PTC thermistors supplied as standard are omitted when ordering with order code A23.

For mains-fed operation, the temperature monitoring device 3RS10 that is part of the protection equipment can be ordered separately. For further details, see Catalog IC 10.

Bearings

For converter-fed operation with frame size 225 and above, it is recommended that an "Insulated bearing cartridge" - Order code L27 is used.

Ventilation/noise generation

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated motors.

To increase motor utilization at low speeds, it is recommended that forced-ventilated motors are used, in particular motor series 1LA5, 1LA7, 1LG4 and 1LG6 with order code G17 or motor series 1PQ8.

Insulation

For converter-fed operation with the outputs specified in the catalog, the motors are used according to temperature class 155 (F), i.e. in this case neither a service factor > 1 nor an increased coolant temperature is possible, i.e. order codes C11, C12 and C13 cannot be ordered. Explosion-proof motors for Zones 2, 21 and 22 are used in accordance with temperature class 130 (B).

Supply frequencies higher than 60 Hz

For converter-fed operation with frequencies higher than 60 Hz, special balancing is required for compliance with the specified limit values (plain text: Max. speed).

ECOFAST motor connectors

In combination with the ECOFAST versions for distributed drive solutions, the following motor connectors can be ordered separately:

- ECOFAST motor connector, standard (unshielded connection): Order code G55
- ECOFAST motor connector, EMC (shielded connection): Order code G56
Shielded motor connection cables must be used for frequency converters and soft starters.

Maximum admissible line voltage on motor connector: ≤ 500 V

Ordering example:

Selection criteria	Requirement	Structure of the Order No.
Motor type	Standard motor with high efficiency (IE2), IP55 degree of protection, aluminum housing	1LA9 ■■■■-■■■■■
No. of poles/speed	4-pole/1500 rpm	1LA9090-4KA90 L1U
Rated output	1.1 kW	
Special voltage and frequency	Star-delta starting for a line voltage 400 VΔ, 50 Hz ¹⁾	
Type of construction	IM B3	
ECOFAST connector	Shielded connection	1LA9090-4KA90-Z L1U + G56

Grounding brushes for converter-fed operation

Grounding brushes are available for converter-fed operation for 1LG4 and 1LG6 motors with order code M44. Please contact your local Siemens office for advice.

¹⁾ Note: Voltage code 9 with order code L1U must be selected due to the 400 V voltage. With voltage code 6 (= 400 VΔ/690 VY, 50 Hz), temporary voltage peaks of 690 V can arise which can cause faults on the ECOFAST connectors.

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

2.0

Overview

Category	2.1 – Motors with High Efficiency IE2
Series version	Aluminum series 1LA9
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	63 M ... 200 L
Rated output at 50 Hz	0.12 ... 37 kW
Synchronous speed	1000 ... 3600 rpm
Rated torque at 50 Hz	0.6 ... 215 Nm
Efficiency	High Efficiency IE2
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{\text{rated, 50 Hz}}$ kW	IE class	Frame size FS	Order No.		
2-pole: 3000 rpm at 50 Hz					
0.18	-	63 M	1LA9060-2KA..		
0.25	-	63 M	1LA9063-2KA..		
0.37	-	71 M	1LA9070-2KA..		
0.55	-	71 M	1LA9073-2KA..		
0.75	IE2	80 M	▶ 1LA9080-2KA..		
1.1	IE2	80 M	▶ 1LA9083-2KA..		
1.5	IE2	90 S	▶ 1LA9090-2KA..		
2.2	IE2	90 L	▶ 1LA9096-2KA..		
3	IE2	100 L	▶ 1LA9106-2KA..		
4	IE2	112 M	▶ 1LA9113-2KA..		
5.5	IE2	132 S	▶ 1LA9130-2KA..		
7.5	IE2	132 S	▶ 1LA9131-2KA..		
11	IE2	160 M	▶ 1LA9163-2KA..		
15	IE2	160 M	▶ 1LA9164-2KA..		
18.5	IE2	160 L	▶ 1LA9166-2KA..		
22	IE2	180 M	▶ 1LA9183-2WA..		
30	IE2	200 L	▶ 1LA9206-2WA..		
37	IE2	200 L	▶ 1LA9207-2WA..		
4-pole: 1500 rpm at 50 Hz					
0.12	-	63 M	1LA9060-4KA..		
0.18	-	63 M	1LA9063-4KA..		
0.25	-	71 M	1LA9070-4KA..		
0.37	-	71 M	1LA9073-4KA..		
0.55	-	80 M	▶ 1LA9080-4KA..		
0.75	IE2	80 M	▶ 1LA9083-4KA..		
1.1	IE2	90 S	▶ 1LA9090-4KA..		
1.5	IE2	90 L	▶ 1LA9096-4KA..		
2.2	IE2	100 L	▶ 1LA9106-4KA..		
3	IE2	100 L	▶ 1LA9107-4KA..		
4	IE2	112 M	▶ 1LA9113-4KA..		
5.5	IE2	132 S	▶ 1LA9130-4KA..		
7.5	IE2	132 M	▶ 1LA9133-4KA..		
11	IE2	160 M	▶ 1LA9163-4KA..		
15	IE2	160 L	▶ 1LA9166-4KA..		
18.5	IE2	180 M	▶ 1LA9183-4WA..		
22	IE2	180 L	▶ 1LA9186-4WA..		
30	IE2	200 L	▶ 1LA9207-4WA..		
6-pole: 1000 rpm at 50 Hz					
0.75	IE2	90 S	▶ 1LA9090-6KA..		
1.1	IE2	90 L	▶ 1LA9096-6KA..		
1.5	IE2	100 L	▶ 1LA9106-6KA..		
2.2	IE2	112 M	▶ 1LA9113-6KA..		
4	IE2	132 M	▶ 1LA9133-6KA..		
5.5	IE2	132 M	▶ 1LA9134-6KA..		
7.5	IE2	160 M	▶ 1LA9163-6KA..		
11	IE2	160 L	▶ 1LA9166-6KA..		
15	IE2	180 L	▶ 1LA9186-6WA..		
18.5	IE2	200 L	▶ 1LA9206-6WA..		
22	IE2	200 L	▶ 1LA9207-6WA..		

SIMOTICS SD 1LG Standard Motors

Standard delivery times:

Orientation

10
working
days20
working
daysOn
request

Overview of selection and ordering data
with base prices and standard delivery times

Overview

Category	2.1 – Motors with High Efficiency IE2 (continued)
Series version	Cast-iron series 1LG6
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	180 M ... 315 L
Rated output at 50 Hz	11 ... 315 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	71 ... 2070 Nm
Efficiency	High Efficiency IE2
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No. ▲ New	$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No. ▲ New
2-pole: 3000 rpm at 50 Hz				8-pole: 750 rpm at 50 Hz			
22	IE2	180 M	▲ 1LG6183-2MA..	11	-	180 L	1LG6186-8AB..
30	IE2	200 L	▲ 1LG6206-2MA..	15	-	200 L	1LG6207-8AB..
37	IE2	200 L	▲ 1LG6207-2MA..	18.5	-	225 S	1LG6220-8AB..
45	IE2	225 M	▲ 1LG6223-2MA..	22	-	225 M	1LG6223-8AB..
55	IE2	250 M	▲ 1LG6253-2MB..	30	-	250 M	1LG6253-8AB..
75	IE2	280 S	▲ 1LG6280-2MB..	37	-	280 S	1LG6280-8AB..
90	IE2	280 M	▲ 1LG6283-2MB..	45	-	280 M	1LG6283-8AB..
110	IE2	315 S	▲ 1LG6310-2MB..	55	-	315 S	1LG6310-8AB..
132	IE2	315 M	▲ 1LG6313-2MB..	75	-	315 M	1LG6313-8AB..
160	IE2	315 L	▲ 1LG6316-2MB..	90	-	315 L	1LG6316-8AB..
200	IE2	315 L	▲ 1LG6317-2MB..	110	-	315 L	1LG6317-8AB..
250	IE2	315 L	▲ 1LG6318-2MB..	132	-	315 L	1LG6318-8AB..
315	IE2	315 L	▲ 1LG6312-2MA..	160	-	315 L	▲ 1LG6312-8MB..
4-pole: 1500 rpm at 50 Hz							
18.5	IE2	180 M	▲ 1LG6183-4MA..				
22	IE2	180 L	▲ 1LG6186-4MA..				
30	IE2	200 L	▲ 1LG6207-4MA..				
37	IE2	225 S	▲ 1LG6220-4MA..				
45	IE2	225 M	▲ 1LG6223-4MA..				
55	IE2	250 M	▲ 1LG6253-4MA..				
75	IE2	280 S	▲ 1LG6280-4MA..				
90	IE2	280 M	▲ 1LG6283-4MA..				
110	IE2	315 S	▲ 1LG6310-4MA..				
132	IE2	315 M	▲ 1LG6313-4MA..				
160	IE2	315 L	▲ 1LG6316-4MA..				
200	IE2	315 L	▲ 1LG6317-4MA..				
250	IE2	315 L	▲ 1LG6318-4MA..				
315	IE2	315 L	▲ 1LG6312-4MA..				
6-pole: 1000 rpm at 50 Hz							
15	IE2	180 L	1LG6186-6AA..				
18.5	IE2	200 L	1LG6206-6AA..				
22	IE2	200 L	1LG6207-6AA..				
30	IE2	225 M	1LG6223-6AA..				
37	IE2	250 M	1LG6253-6AA..				
45	IE2	280 S	1LG6280-6AA..				
55	IE2	280 M	1LG6283-6AA..				
75	IE2	315 S	1LG6310-6AA..				
90	IE2	315 M	1LG6313-6AA..				
110	IE2	315 L	1LG6316-6AA..				
132	IE2	315 L	1LG6317-6AA..				
160	IE2	315 L	1LG6318-6AA..				
200	IE2	315 L	▲ 1LG6312-6MA..				

Standard delivery times:

10 working days	20 working days	On request
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Overview of selection and ordering data
with base prices and standard delivery times

2.0

Overview

Category	2.1 – Motors with High Efficiency IE2 (continued)	2.2 – Motors with Premium Efficiency IE3
Series version	Cast-iron series 1LG6 with increased output	Cast-iron series 1LG6 with order code D25
Cooling	Self-ventilated (IC 411)	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6	2, 4, 6
Frame sizes (FS)	200 L ... 280 M	315 S ... 315 L
Rated output at 50 Hz	37 ... 110 kW	75 ... 315 kW
Synchronous speed	1000 ... 3600 rpm	1000 ... 3600 rpm
Rated torque at 50 Hz	145 ... 725 Nm	352 ... 2022 Nm
Efficiency	High Efficiency IE2	Premium Efficiency IE3 with order code D25
Metal factor for metal surcharges (MS)	N - W - -	N - W - -
Price group (PG)	3Z1	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No. ▲ New	$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No. ▲ New
2-pole: 3000 rpm at 50 Hz				2-pole: 3000 rpm at 50 Hz			
45	IE2	200 L	▲ 1LG6208-2AA..	110	IE3	315 S	1LG6310-2AB...-Z D25
55	IE2	225 M	1LG6228-2AA..	132	IE3	315 M	1LG6313-2AB...-Z D25
75	IE2	250 M	1LG6258-2AA..	160	IE3	315 L	1LG6316-2AB...-Z D25
110	IE2	280 M	1LG6288-2AA..	200	IE3	315 L	1LG6317-2AB...-Z D25
4-pole: 1500 rpm at 50 Hz				4-pole: 1500 rpm at 50 Hz			
55	IE2	225 M	1LG6228-4AA..	250	IE3	315 L	▲ 1LG6318-2MB...-Z D25
75	IE2	250 M	1LG6258-4AA..	315	IE3	315 L	▲ 1LG6312-2MA...-Z D25
110	IE2	280 M	1LG6288-4AA..	4-pole: 1500 rpm at 50 Hz			
6-pole: 1000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
37	IE2	225 M	1LG6228-6AA..	110	IE3	315 S	1LG6310-4AA...-Z D25
45	IE2	250 M	1LG6258-6AA..	132	IE3	315 M	1LG6313-4AA...-Z D25
75	IE2	280 M	1LG6288-6AA..	160	IE3	315 L	1LG6316-4AA...-Z D25
				200	IE3	315 L	1LG6317-4AA...-Z D25
				250	IE3	315 L	▲ 1LG6318-4MA...-Z D25
				315	IE3	315 L	▲ 1LG6312-4MA...-Z D25
				6-pole: 1000 rpm at 50 Hz			
				75	IE3	315 S	1LG6310-6AA...-Z D25
				90	IE3	315 M	1LG6313-6AA...-Z D25
				110	IE3	315 L	1LG6316-6AA...-Z D25
				132	IE3	315 L	1LG6317-6AA...-Z D25
				160	IE3	315 L	1LG6318-6AA...-Z D25
				200	IE3	315 L	▲ 1LG6312-6MA...-Z D25

SIMOTICS GP 1LA Standard Motors

Standard delivery times:

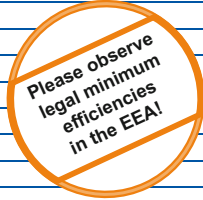
Orientation

10 working days	20 working days	On request
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Overview of selection and ordering data with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1
Series version	Aluminum series 1LA7 and 1LA5
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	63 M ... 225 M
Rated output at 50 Hz	0.09 ... 45 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	0.6 ... 293 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1



Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 (for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

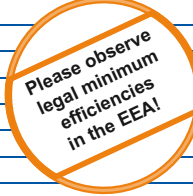
$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.	$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
0.18	-	63 M	1LA7060-2AA..	0.09	-	63 M	1LA7063-6AB..
0.25	-	63 M	1LA7063-2AA..	0.18	-	71 M	1LA7070-6AA..
0.37	-	71 M	1LA7070-2AA..	0.25	-	71 M	1LA7073-6AA..
0.55	-	71 M	1LA7073-2AA..	0.37	-	80 M	1LA7080-6AA..
0.75	IE1	80 M	1LA7080-2AA..	0.55	-	80 M	1LA7083-6AA..
1.1	IE1	80 M	1LA7083-2AA..	0.75	IE1	90 S	1LA7090-6AA..
1.5	IE1	90 S	1LA7090-2AA..	1.1	IE1	90 L	1LA7096-6AA..
2.2	IE1	90 L	1LA7096-2AA..	1.5	IE1	100 L	1LA7106-6AA..
3	IE1	100 L	1LA7106-2AA..	2.2	IE1	112 M	1LA7113-6AA..
4	IE1	112 M	1LA7113-2AA..	3	IE1	132 S	1LA7130-6AA..
5.5	IE1	132 S	1LA7130-2AA..	4	IE1	132 M	1LA7133-6AA..
7.5	IE1	132 S	1LA7131-2AA..	5.5	IE1	132 M	1LA7134-6AA..
11	IE1	160 M	1LA7163-2AA..	7.5	IE1	160 M	1LA7163-6AA..
15	IE1	160 M	1LA7164-2AA..	11	IE1	160 L	1LA7166-6AA..
18.5	IE1	160 L	1LA7166-2AA..	15	IE1	180 L	1LA5186-6AA..
22	IE1	180 M	1LA5183-2AA..	18.5	IE1	200 L	1LA5206-6AA..
30	IE1	200 L	1LA5206-2AA..	22	IE1	200 L	1LA5207-6AA..
37	IE1	200 L	1LA5207-2AA..	30	IE1	225 M	1LA5223-6AA..
45	IE1	225 M	1LA5223-2AA..	8-pole: 750 rpm at 50 Hz			
4-pole: 1500 rpm at 50 Hz				0.09	-	71 M	1LA7070-8AB..
0.12	-	63 M	1LA7060-4AB..	0.12	-	71 M	1LA7073-8AB..
0.18	-	63 M	1LA7063-4AB..	0.18	-	80 M	1LA7080-8AB..
0.25	-	71 M	1LA7070-4AB..	0.25	-	80 M	1LA7083-8AB..
0.37	-	71 M	1LA7073-4AB..	0.37	-	90 S	1LA7090-8AB..
0.55	-	80 M	1LA7080-4AA..	0.55	-	90 L	1LA7096-8AB..
0.75	IE1	80 M	1LA7083-4AA..	0.75	-	100 L	1LA7106-8AB..
1.1	IE1	90 S	1LA7090-4AA..	1.1	-	100 L	1LA7107-8AB..
1.5	IE1	90 L	1LA7096-4AA..	1.5	-	112 M	1LA7113-8AB..
2.2	IE1	100 L	1LA7106-4AA..	2.2	-	132 S	1LA7130-8AB..
3	IE1	100 L	1LA7107-4AA..	3	-	132 M	1LA7133-8AB..
4	IE1	112 M	1LA7113-4AA..	4	-	160 M	1LA7163-8AB..
5.5	IE1	132 S	1LA7130-4AA..	5.5	-	160 M	1LA7164-8AB..
7.5	IE1	132 M	1LA7133-4AA..	7.5	-	160 L	1LA7166-8AB..
11	IE1	160 M	1LA7163-4AA..	11	-	180 L	1LA5186-8AB..
15	IE1	160 L	1LA7166-4AA..	15	-	200 L	1LA5207-8AB..
18.5	IE1	180 M	1LA5183-4AA..	18.5	-	225 S	1LA5220-8AB..
22	IE1	180 L	1LA5186-4AA..	22	-	225 M	1LA5223-8AB..
30	IE1	200 L	1LA5207-4AA..				
37	IE1	225 S	1LA5220-4AA..				
45	IE1	225 M	1LA5223-4AA..				

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1 (continued)
Series version	Aluminum series 1LA9 with increased output
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4
Frame sizes (FS)	63 M ... 200 L
Rated output at 50 Hz	0.21 ... 53 kW
Synchronous speed	1500 ... 3600 rpm
Rated torque at 50 Hz	1.1 ... 280 Nm
Efficiency	Standard Efficiency
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1



Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz kW	IE class	Frame size FS	Order No.
			► For successor 1LE1001 see Page 1/18

2-pole: 3000 rpm at 50 Hz

0.33	–	63 M	1LA9060-2LA..	
0.45	–	63 M	1LA9063-2LA..	
0.65	–	71 M	1LA9070-2LA..	
0.94	–	71 M	1LA9073-2LA..	
1.5	–	80 M	1LA9080-2LA..	
1.75	–	80 M	1LA9083-2LA..	
3	–	90 S	1LA9090-2LA..	
3.8	–	90 L	1LA9096-2LA..	
4.4	–	100 L	► 1LA9106-2LA..	
6.5	–	112 M	► 1LA9113-2LA..	
9	–	132 S	► 1LA9130-2LA..	
12	–	132 S	► 1LA9131-2LA..	
18	–	160 M	► 1LA9163-2LA..	
21	–	160 M	► 1LA9164-2LA..	
26	–	160 L	► 1LA9166-2LA..	
33	–	180 M	1LA9183-2AA..	
44	–	200 L	1LA9206-2AA..	
53	–	200 L	1LA9207-2AA..	

4-pole: 1500 rpm at 50 Hz

0.21	–	63 M	1LA9060-4LA..	
0.29	–	63 M	1LA9063-4LA..	
0.45	–	71 M	1LA9070-4LA..	
0.6	–	71 M	1LA9073-4LA..	
0.9	–	80 M	1LA9080-4LA..	
1.25	–	80 M	1LA9083-4LA..	
1.8	–	90 S	1LA9090-4LA..	
2.5	–	90 L	1LA9096-4LA..	
4	–	100 L	► 1LA9107-4LA..	
5.5	–	112 M	► 1LA9113-4LA..	
8.6	–	132 S	► 1LA9130-4LA..	
11	–	132 M	► 1LA9133-4LA..	
17	–	160 M	► 1LA9163-4LA..	
22	–	160 L	► 1LA9166-4LA..	
26	–	180 M	1LA9183-4AA..	
32	–	180 L	1LA9186-4AA..	
43	–	200 L	1LA9207-4AA..	

2.0

SIMOTICS GP 1PP Standard Motors

Standard delivery times:

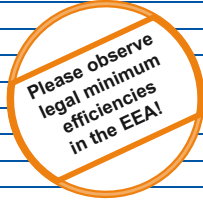
Orientation

10 working days	20 working days	On request
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Overview of selection and ordering data with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1 (continued)
Series version	Aluminum series 1PP7 and 1PP5
Cooling	Forced-air cooled without external fan and fan cover (IC 416)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	63 M ... 200 L
Rated output at 50 Hz	0.09 ... 37 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	0.6 ... 215 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1



Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 (for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.	$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.
▶ For successor 1LE1002 with order code F90 see Page 1/14				▶ For successor 1LE1002 with order code F90 see Page 1/14			
2-pole: 3000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
0.18	-	63 M	1PP7060-2AA..	0.09	-	63 M	1PP7063-6AA..
0.25	-	63 M	1PP7063-2AA..	0.18	-	71 M	1PP7070-6AA..
0.37	-	71 M	1PP7070-2AA..	0.25	-	71 M	1PP7073-6AA..
0.55	-	71 M	1PP7073-2AA..	0.37	-	80 M	1PP7080-6AA..
0.75	IE1	80 M	1PP7080-2AA..	0.55	-	80 M	1PP7083-6AA..
1.1	IE1	80 M	1PP7083-2AA..	0.75	IE1	90 S	1PP7090-6AA..
1.5	IE1	90 S	1PP7090-2AA..	1.1	IE1	90 L	1PP7096-6AA..
2.2	IE1	90 L	1PP7096-2AA..	1.5	IE1	100 L	▶ 1PP7106-6AA..
3	IE1	100 L	▶ 1PP7106-2AA..	2.2	IE1	112 M	▶ 1PP7113-6AA..
4	IE1	112 M	▶ 1PP7113-2AA..	3	IE1	132 S	▶ 1PP7130-6AA..
5.5	IE1	132 S	▶ 1PP7130-2AA..	4	IE1	132 M	▶ 1PP7133-6AA..
7.5	IE1	132 S	▶ 1PP7131-2AA..	5.5	IE1	132 M	▶ 1PP7134-6AA..
11	IE1	160 M	▶ 1PP7163-2AA..	7.5	IE1	160 M	▶ 1PP7163-6AA..
15	IE1	160 M	▶ 1PP7164-2AA..	11	IE1	160 L	▶ 1PP7166-6AA..
18.5	IE1	160 L	▶ 1PP7166-2AA..	15	IE1	180 L	1PP5186-6AA..
22	IE1	180 M	1PP5183-2AA..	18.5	IE1	200 L	1PP5206-6AA..
30	IE1	200 L	1PP5206-2AA..	22	IE1	200 L	1PP5207-6AA..
37	IE1	200 L	1PP5207-2AA..	8-pole: 750 rpm at 50 Hz			
4-pole: 1500 rpm at 50 Hz				0.09	-	71 M	1PP7070-8AB..
0.12	-	63 M	1PP7060-4AB..	0.12	-	71 M	1PP7073-8AB..
0.18	-	63 M	1PP7063-4AB..	0.18	-	80 M	1PP7080-8AB..
0.25	-	71 M	1PP7070-4AB..	0.25	-	80 M	1PP7083-8AB..
0.37	-	71 M	1PP7073-4AB..	0.37	-	90 S	1PP7090-8AB..
0.55	-	80 M	1PP7080-4AA..	0.55	-	90 L	1PP7096-8AB..
0.75	IE1	80 M	1PP7083-4AA..	0.75	-	100 L	▶ 1PP7106-8AB..
1.1	IE1	90 S	1PP7090-4AA..	1.1	-	100 L	▶ 1PP7107-8AB..
1.5	IE1	90 L	1PP7096-4AA..	1.5	-	112 M	▶ 1PP7113-8AB..
2.2	IE1	100 L	▶ 1PP7106-4AA..	2.2	-	132 S	▶ 1PP7130-8AB..
3	IE1	100 L	▶ 1PP7107-4AA..	3	-	132 M	▶ 1PP7133-8AB..
4	IE1	112 M	▶ 1PP7113-4AA..	4	-	160 M	▶ 1PP7163-8AB..
5.5	IE1	132 S	▶ 1PP7130-4AA..	5.5	-	160 M	▶ 1PP7164-8AB..
7.5	IE1	132 M	▶ 1PP7133-4AA..	7.5	-	160 L	▶ 1PP7166-8AB..
11	IE1	160 M	▶ 1PP7163-4AA..	11	-	180 L	1PP5186-8AB..
15	IE1	160 L	▶ 1PP7166-4AA..	15	-	200 L	1PP5207-8AB..
18.5	IE1	180 M	1PP5183-4AA..				
22	IE1	180 L	1PP5186-4AA..				
30	IE1	200 L	1PP5207-4AA..				

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1 (continued)
Series version	Aluminum series 1LP7 and 1LP5 ¹⁾
Cooling	Naturally cooled without external fan (IC 410)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	63 M ... 200 L
Rated output at 50 Hz	0.045 ... 16.5 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	On request ¹⁾
Efficiency	On request ¹⁾
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1

Please observe
legal minimum
efficiencies
in the EEA!

2.0

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.	$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.
			▶ For successor 1PC1002 see Page 1/14				▶ For successor 1PC1002 see Page 1/14
2-pole: 3000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
0.12	On req.	63 M	1LP7060-2AA..	0.045	On req.	63 M	1LP7063-6AA..
0.16	On req.	63 M	1LP7063-2AA..	0.09	On req.	71 M	1LP7070-6AA..
0.19	On req.	71 M	1LP7070-2AA..	0.13	On req.	71 M	1LP7073-6AA..
0.27	On req.	71 M	1LP7073-2AA..	0.18	On req.	80 M	1LP7080-6AA..
0.35	On req.	80 M	1LP7080-2AA..	0.27	On req.	80 M	1LP7083-6AA..
0.55	On req.	80 M	1LP7083-2AA..	0.37	On req.	90 S	1LP7090-6AA..
0.82	On req.	90 S	1LP7090-2AA..	0.5	On req.	90 L	1LP7096-6AA..
1.1	On req.	90 L	1LP7096-2AA..	0.7	On req.	100 L	▶ 1LP7106-6AA..
1.3	On req.	100 L	▶ 1LP7106-2AA..	1	On req.	112 M	▶ 1LP7113-6AA..
1.8	On req.	112 M	▶ 1LP7113-2AA..	1.7	On req.	132 S	▶ 1LP7130-6AA..
2.5	On req.	132 S	▶ 1LP7130-2AA..	2	On req.	132 M	▶ 1LP7133-6AA..
3.4	On req.	132 S	▶ 1LP7131-2AA..	2.3	On req.	132 M	▶ 1LP7134-6AA..
5	On req.	160 M	▶ 1LP7163-2AA..	3.3	On req.	160 M	▶ 1LP7163-6AA..
6	On req.	160 M	▶ 1LP7164-2AA..	4	On req.	160 L	▶ 1LP7166-6AA..
7	On req.	160 L	▶ 1LP7166-2AA..	6.5	On req.	180 L	▶ 1LP5186-6AA..
10	On req.	180 M	▶ 1LP5183-2AA..	8.5	On req.	200 L	▶ 1LP5207-6AA..
13.5	On req.	200 L	▶ 1LP5206-2AA..	8-pole: 750 rpm at 50 Hz			
16.5	On req.	200 L	▶ 1LP5207-2AA..	0.045	On req.	71 M	1LP7070-8AB..
4-pole: 1500 rpm at 50 Hz				0.06	On req.	71 M	1LP7073-8AB..
0.07	On req.	63 M	1LP7060-4AB..	0.09	On req.	80 M	1LP7080-8AB..
0.12	On req.	63 M	1LP7063-4AB..	0.13	On req.	80 M	1LP7083-8AB..
0.13	On req.	71 M	1LP7070-4AB..	0.25	On req.	90 S	1LP7090-8AB..
0.19	On req.	71 M	1LP7073-4AB..	0.35	On req.	90 L	1LP7096-8AB..
0.22	On req.	80 M	1LP7080-4AA..	0.45	On req.	100 L	▶ 1LP7106-8AB..
0.38	On req.	80 M	1LP7083-4AA..	0.65	On req.	100 L	▶ 1LP7107-8AB..
0.55	On req.	90 S	1LP7090-4AA..	0.8	On req.	112 M	▶ 1LP7113-8AB..
0.65	On req.	90 L	1LP7096-4AA..	1.2	On req.	132 S	▶ 1LP7130-8AB..
0.88	On req.	100 L	▶ 1LP7106-4AA..	1.45	On req.	132 M	▶ 1LP7133-8AB..
1.2	On req.	100 L	▶ 1LP7107-4AA..	1.8	On req.	160 M	▶ 1LP7163-8AB..
1.6	On req.	112 M	▶ 1LP7113-4AA..	2.4	On req.	160 M	▶ 1LP7164-8AB..
2.5	On req.	132 S	▶ 1LP7130-4AA..	3	On req.	160 L	▶ 1LP7166-8AB..
3.1	On req.	132 M	▶ 1LP7133-4AA..	5.5	On req.	180 L	▶ 1LP5186-8AB..
4.8	On req.	160 M	▶ 1LP7163-4AA..	7.5	On req.	200 L	▶ 1LP5207-8AB..
5.4	On req.	160 L	▶ 1LP7166-4AA..				
7.5	On req.	180 M	▶ 1LP5183-4AA..				
9	On req.	180 L	▶ 1LP5186-4AA..				
12	On req.	200 L	▶ 1LP5207-4AA..				

¹⁾ The rated outputs and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

SIMOTICS SD 1LA/1LG Standard Motors

Standard delivery times:

Orientation

10
working
days20
working
daysOn
request

Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1 (continued)
Series version	Cast-iron series 1LA6 and 1LG4
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	100 L ... 315 L
Rated output at 50 Hz	0.75 ... 200 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	9.9 ... 1708 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1

Please observe
legal minimum
efficiencies
in the EEA!

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz kW	IE class	Frame size FS	Order No.	P_{rated} , 50 Hz kW	IE class	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
3	IE1	100 L	1LA6106-2AA..	1.5	IE1	100 L	1LA6106-6AA..
4	IE1	112 M	1LA6113-2AA..	2.2	IE1	112 M	1LA6113-6AA..
5.5	IE1	132 S	1LA6130-2AA..	3	IE1	132 S	1LA6130-6AA..
7.5	IE1	132 S	1LA6131-2AA..	4	IE1	132 M	1LA6133-6AA..
11	IE1	160 M	1LA6163-2AA..	5.5	IE1	132 M	1LA6134-6AA..
15	IE1	160 M	1LA6164-2AA..	7.5	IE1	160 M	1LA6163-6AA..
18.5	IE1	160 L	1LA6166-2AA..	11	IE1	160 L	1LA6166-6AA..
22	IE1	180 M	1LG4183-2AA..	15	IE1	180 L	1LG4186-6AA..
30	IE1	200 L	1LG4206-2AA..	18.5	IE1	200 L	1LG4206-6AA..
37	IE1	200 L	1LG4207-2AA..	22	IE1	200 L	1LG4207-6AA..
45	IE1	225 M	1LG4223-2AA..	30	IE1	225 M	1LG4223-6AA..
55	IE1	250 M	1LG4253-2AB..	37	IE1	250 M	1LG4253-6AA..
75	IE1	280 S	1LG4280-2AB..	45	IE1	280 S	1LG4280-6AA..
90	IE1	280 M	1LG4283-2AB..	55	IE1	280 M	1LG4283-6AA..
110	IE1	315 S	1LG4310-2AB..	75	IE1	315 S	1LG4310-6AA..
132	IE1	315 M	1LG4313-2AB..	90	IE1	315 M	1LG4313-6AA..
160	IE1	315 L	1LG4316-2AB..	110	IE1	315 L	1LG4316-6AA..
200	IE1	315 L	1LG4317-2AB..	132	IE1	315 L	1LG4317-6AA..
4-pole: 1500 rpm at 50 Hz				8-pole: 750 rpm at 50 Hz			
2.2	IE1	100 L	1LA6106-4AA..	0.75	-	100 L	1LA6106-8AB..
3	IE1	100 L	1LA6107-4AA..	1.1	-	100 L	1LA6107-8AB..
4	IE1	112 M	1LA6113-4AA..	1.5	-	112 M	1LA6113-8AB..
5.5	IE1	132 S	1LA6130-4AA..	2.2	-	132 S	1LA6130-8AB..
7.5	IE1	132 M	1LA6133-4AA..	3	-	132 M	1LA6133-8AB..
11	IE1	160 M	1LA6163-4AA..	4	-	160 M	1LA6163-8AB..
15	IE1	160 L	1LA6166-4AA..	5.5	-	160 M	1LA6164-8AB..
18.5	IE1	180 M	1LG4183-4AA..	7.5	-	160 L	1LA6166-8AB..
22	IE1	180 L	1LG4186-4AA..	11	-	180 L	1LG4186-8AB..
30	IE1	200 L	1LG4207-4AA..	15	-	200 L	1LG4207-8AB..
37	IE1	225 S	1LG4220-4AA..	18.5	-	225 S	1LG4220-8AB..
45	IE1	225 M	1LG4223-4AA..	22	-	225 M	1LG4223-8AB..
55	IE1	250 M	1LG4253-4AA..	30	-	250 M	1LG4253-8AB..
75	IE1	280 S	1LG4280-4AA..	37	-	280 S	1LG4280-8AB..
90	IE1	280 M	1LG4283-4AA..	45	-	280 M	1LG4283-8AB..
110	IE1	315 S	1LG4310-4AA..	55	-	315 S	1LG4310-8AB..
132	IE1	315 M	1LG4313-4AA..	75	-	315 M	1LG4313-8AB..
160	IE1	315 L	1LG4316-4AA..	90	-	315 L	1LG4316-8AB..
200	IE1	315 L	1LG4317-4AA..	110	-	315 L	1LG4317-8AB..
				132	-	315 L	1LG4318-8AB..

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1 (continued)
Series version	Cast-iron series 1LG4 with increased output
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	180 L ... 280 M
Rated output at 50 Hz	15 ... 110 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	97 ... 727 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1

Please observe
legal minimum
efficiencies
in the EEA!

2.0

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz			
30	IE1	180 L	1LG4188-2AA..
45	IE1	200 L	1LG4208-2AA..
55	IE1	225 M	1LG4228-2AA..
75	IE1	250 M	1LG4258-2AA..
110	IE1	280 M	1LG4288-2AB..
4-pole: 1500 rpm at 50 Hz			
30	IE1	180 L	1LG4188-4AA..
37	IE1	200 L	1LG4208-4AA..
55	IE1	225 M	1LG4228-4AA..
75	IE1	250 M	1LG4258-4AA..
110	IE1	280 M	1LG4288-4AA..
6-pole: 1000 rpm at 50 Hz			
18.5	IE1	180 L	1LG4188-6AA..
30	IE1	200 L	1LG4208-6AA..
37	IE1	225 M	1LG4228-6AA..
45	IE1	250 M	1LG4258-6AA..
75	IE1	280 M	1LG4288-6AA..
8-pole: 750 rpm at 50 Hz			
15	-	180 L	1LG4188-8AB..
18.5	-	200 L	1LG4208-8AB..
30	-	225 M	1LG4228-8AB..
37	-	250 M	1LG4258-8AB..
55	-	280 M	1LG4288-8AB..

SIMOTICS SD 1PP Standard Motors

Standard delivery times:

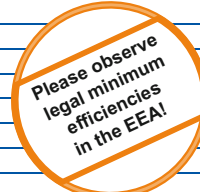
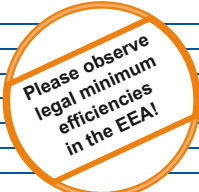
Orientation

10 working days	20 working days	On request
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Overview of selection and ordering data with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1 (continued)	
Series version	Cast-iron series 1PP4	Cast-iron series 1PP4 with increased output
Cooling	Forced-air cooled without external fan and fan cover (IC 416)	Forced-air cooled without external fan and fan cover (IC 416)
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6, 8	2, 4, 6, 8
Frame sizes (FS)	180 M ... 315 L	180 L ... 315 L
Rated output at 50 Hz	11 ... 200 kW	15 ... 160 kW
Synchronous speed	750 ... 3600 rpm	750 ... 3600 rpm
Rated torque at 50 Hz	71 ... 1423 Nm	97 ... 1708 Nm
Efficiency	Standard Efficiency IE1	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -
Price group (PG)	3Z1	3Z1



Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.	$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz				2-pole: 3000 rpm at 50 Hz			
22	IE1	180 M	1PP4183-2FA..	30	IE1	180 L	1PP4188-2FA..
30	IE1	200 L	1PP4206-2FA..	45	IE1	200 L	1PP4208-2FA..
37	IE1	200 L	1PP4207-2FA..	55	IE1	225 M	1PP4228-2FA..
45	IE1	225 M	1PP4223-2FA..	75	IE1	250 M	1PP4258-2FA..
55	IE1	250 M	1PP4253-2FB..	110	IE1	280 M	1PP4288-2FB..
75	IE1	280 S	1PP4280-2FB..	4-pole: 1500 rpm at 50 Hz			
90	IE1	280 M	1PP4283-2FB..	30	IE1	180 L	1PP4188-4FA..
110	IE1	315 S	1PP4310-2FB..	37	IE1	200 L	1PP4208-4FA..
132	IE1	315 M	1PP4313-2FB..	55	IE1	225 M	1PP4228-4FA..
160	IE1	315 L	1PP4316-2FB..	75	IE1	250 M	1PP4258-4FA..
200	IE1	315 L	1PP4317-2FB..	110	IE1	280 M	1PP4288-4FA..
4-pole: 1500 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
18.5	IE1	180 M	1PP4183-4FA..	18.5	IE1	180 L	1PP4188-6FA..
22	IE1	180 L	1PP4186-4FA..	30	IE1	200 L	1PP4208-6FA..
30	IE1	200 L	1PP4207-4FA..	37	IE1	225 M	1PP4228-6FA..
37	IE1	225 S	1PP4220-4FA..	45	IE1	250 M	1PP4258-6FA..
45	IE1	225 M	1PP4223-4FA..	75	IE1	280 M	1PP4288-6FA..
55	IE1	250 M	1PP4253-4FA..	160	IE1	315 L	1PP4318-6FA..
75	IE1	280 S	1PP4280-4FA..	8-pole: 750 rpm at 50 Hz			
90	IE1	280 M	1PP4283-4FA..	15	-	180 L	1PP4188-8FB..
110	IE1	315 S	1PP4310-4FA..	18.5	-	200 L	1PP4208-8FB..
132	IE1	315 M	1PP4313-4FA..	30	-	225 M	1PP4228-8FB..
160	IE1	315 L	1PP4316-4FA..	37	-	250 M	1PP4258-8FB..
200	IE1	315 L	1PP4317-4FA..	55	-	280 M	1PP4288-8FB..
6-pole: 1000 rpm at 50 Hz				132	-	315 L	1PP4318-8FB..
15	IE1	180 L	1PP4186-6FA..	8-pole: 750 rpm at 50 Hz			
18.5	IE1	200 L	1PP4206-6FA..	11	-	180 L	1PP4186-8FB..
22	IE1	200 L	1PP4207-6FA..	15	-	200 L	1PP4207-8FB..
30	IE1	225 M	1PP4223-6FA..	18.5	-	225 S	1PP4220-8FB..
37	IE1	250 M	1PP4253-6FA..	22	-	225 M	1PP4223-8FB..
45	IE1	280 S	1PP4280-6FA..	30	-	250 M	1PP4253-8FB..
55	IE1	280 M	1PP4283-6FA..	37	-	280 S	1PP4280-8FB..
75	IE1	315 S	1PP4310-6FA..	45	-	280 M	1PP4283-8FB..
90	IE1	315 M	1PP4313-6FA..	55	-	315 S	1PP4310-8FB..
110	IE1	315 L	1PP4316-6FA..	75	-	315 M	1PP4313-8FB..
132	IE1	315 L	1PP4317-6FA..	90	-	315 L	1PP4316-8FB..
8-pole: 750 rpm at 50 Hz				110	-	315 L	1PP4317-8FB..
11	-	180 L	1PP4186-8FB..				
15	-	200 L	1PP4207-8FB..				
18.5	-	225 S	1PP4220-8FB..				
22	-	225 M	1PP4223-8FB..				
30	-	250 M	1PP4253-8FB..				
37	-	280 S	1PP4280-8FB..				
45	-	280 M	1PP4283-8FB..				
55	-	315 S	1PP4310-8FB..				
75	-	315 M	1PP4313-8FB..				
90	-	315 L	1PP4316-8FB..				
110	-	315 L	1PP4317-8FB..				

Standard delivery times:

10 working days	20 working days	On request
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Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.3 – Motors with Standard Efficiency IE1 (continued)
Series version	Cast-iron series 1LP4
Cooling	Naturally cooled without external fan (IC 410)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	180 M ... 315 L
Rated output at 50 Hz	3.7 ... 67 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	24 ... 477 Nm
Efficiency	Standard Efficiency IE1 or High Efficiency IE2 or Premium Efficiency IE3
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1



2.0

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz			
7.3	IE2	180 M	1LP4183-2FA..
10	IE2	200 L	1LP4206-2FA..
12.5	IE2	200 L	1LP4207-2FA..
15	IE2	225 M	1LP4223-2FA..
18.5	IE2	250 M	1LP4253-2FB..
25	IE2	280 S	1LP4280-2FB..
30	IE2	280 M	1LP4283-2FB..
37	IE2	315 S	1LP4310-2FB..
44	IE2	315 M	1LP4313-2FB..
53	IE2	315 L	1LP4316-2FB..
67	IE2	315 L	1LP4317-2FB..
4-pole: 1500 rpm at 50 Hz			
6.2	IE2	180 M	1LP4183-4FA..
7.3	IE2	180 L	1LP4186-4FA..
10	IE2	200 L	1LP4207-4FA..
12.5	IE2	225 S	1LP4220-4FA..
15	IE2	225 M	1LP4223-4FA..
18.5	IE2	250 M	1LP4253-4FA..
25	IE2	280 S	1LP4280-4FA..
30	IE2	280 M	1LP4283-4FA..
37	IE2	315 S	1LP4310-4FA..
44	IE2	315 M	1LP4313-4FA..
53	IE2	315 L	1LP4316-4FA..
67	IE2	315 L	1LP4317-4FA..
6-pole: 1000 rpm at 50 Hz			
5	IE3	180 L	1LP4186-6FA..
6.2	IE3	200 L	1LP4206-6FA..
7.3	IE3	200 L	1LP4207-6FA..
10	IE3	225 M	1LP4223-6FA..
12.5	IE3	250 M	1LP4253-6FA..
15	IE3	280 S	1LP4280-6FA..
18.5	IE3	280 M	1LP4283-6FA..
25	IE3	315 S	1LP4310-6FA..
30	IE3	315 M	1LP4313-6FA..
37	IE3	315 L	1LP4316-6FA..
44	IE3	315 L	1LP4317-6FA..
8-pole: 750 rpm at 50 Hz			
3.7	-	180 L	1LP4186-8FB..
5	-	200 L	1LP4207-8FB..
6.2	-	225 S	1LP4220-8FB..
7.3	-	225 M	1LP4223-8FB..
10	-	250 M	1LP4253-8FB..
12.5	-	280 S	1LP4280-8FB..
15	-	280 M	1LP4283-8FB..
18.5	-	315 S	1LP4310-8FB..
25	-	315 M	1LP4313-8FB..
30	-	315 L	1LP4316-8FB..
37	-	315 L	1LP4317-8FB..

SIMOTICS GP/SD 1LA/1LG Standard Motors

Standard delivery times:

Orientation

10 working days	20 working days	On request
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Overview of selection and ordering data with base prices and standard delivery times

Overview (continued)

Category	2.4 – NEMA Energy Efficient MG1 motors, Table 12-11	
Series version	Aluminum series 1LA9 with order code D42 ¹⁾	Cast-iron series 1LG6 with order code D42 ¹⁾
Cooling	Self-ventilated (IC 411)	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6	2, 4, 6
Frame sizes (FS)	63 M ... 200 L	180 M ... 315 L
Rated output	0.12 ... 37 kW at 50 Hz 0.16 ... 50 hp at 60 Hz	15 ... 315 kW at 50 Hz 20 ... 400 hp at 60 Hz
Synchronous speed	1000 ... 3600 rpm	1000 ... 3600 rpm
Rated torque	0.5 ... 179 Nm at 60 Hz	60 ... 1590 Nm at 60 Hz
Efficiency	NEMA Energy Efficient MG1 Table 12-11 with order code D42 ¹⁾	NEMA Energy Efficient MG1 Table 12-11 with order code D42 ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -
Price group (PG)	3Z1	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction, IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	$P_{rated, 60 Hz}$ hp	Frame size FS	Order No. ▶ For successor 1LE1021 see from Page 1/15	$P_{rated, 50 Hz}$ kW	$P_{rated, 60 Hz}$ hp	Frame size FS	Order No. ▲ New
2-pole: 3600 rpm at 60 Hz				2-pole: 3600 rpm at 60 Hz			
0.18	0.25	63 M	1LA9060-2KA...-Z D42	22	30	180 M	▲ 1LG6183-2MA...-Z D42
0.25	0.33	63 M	1LA9063-2KA...-Z D42	30	40	180 L	▲ 1LG6206-2MA...-Z D42
0.37	0.5	71 M	1LA9070-2KA...-Z D42	37	50	200 L	▲ 1LG6207-2MA...-Z D42
0.55	0.75	71 M	1LA9073-2KA...-Z D42	45	60	225 M	▲ 1LG6223-2MA...-Z D42
0.75	1	80 M	▶ 1LA9080-2KA...-Z D42	55	75	250 M	▲ 1LG6253-2MB...-Z D42
1.1	1.5	80 M	▶ 1LA9083-2KA...-Z D42	75	100	280 S	▲ 1LG6280-2MB...-Z D42
1.5	2	90 S	▶ 1LA9090-2KA...-Z D42	90	125	280 M	▲ 1LG6283-2MB...-Z D42
2.2	3	90 L	▶ 1LA9096-2KA...-Z D42	110	150	315 S	▲ 1LG6310-2MB...-Z D42
3	4	100 L	▶ 1LA9106-2KA...-Z D42	132	175	315 M	▲ 1LG6313-2MB...-Z D42
4	5	112 M	▶ 1LA9113-2KA...-Z D42	160	200	315 L	▲ 1LG6316-2MB...-Z D42
5.5	7.5	132 S	▶ 1LA9130-2KA...-Z D42	200	250	315 L	▲ 1LG6317-2MB...-Z D42
7.5	10	132 S	▶ 1LA9131-2KA...-Z D42	250	300	315 L	▲ 1LG6318-2MB...-Z D42
11	15	160 M	▶ 1LA9163-2KA...-Z D42	315	400	315 L	▲ 1LG6312-2MA...-Z D42
15	20	160 M	▶ 1LA9164-2KA...-Z D42	4-pole: 1800 rpm at 60 Hz			
18.5	25	160 L	▶ 1LA9166-2KA...-Z D42	18.5	25	180 M	▲ 1LG6183-4MA...-Z D42
22	30	180 M	▶ 1LA9183-2WA...-Z D42	22	30	180 L	▲ 1LG6186-4MA...-Z D42
30	40	200 L	▶ 1LA9206-2WA...-Z D42	30	40	200 L	▲ 1LG6207-4MA...-Z D42
37	50	200 L	▶ 1LA9207-2WA...-Z D42	37	50	225 S	▲ 1LG6220-4MA...-Z D42
4-pole: 1800 rpm at 60 Hz				45	60	225 M	▲ 1LG6223-4MA...-Z D42
0.12	0.16	63 M	1LA9060-4KA...-Z D42	55	75	250 M	▲ 1LG6253-4MA...-Z D42
0.19	0.25	63 M	1LA9063-4KA...-Z D42	75	100	280 S	▲ 1LG6280-4MA...-Z D42
0.25	0.33	71 M	1LA9070-4KA...-Z D42	90	125	280 M	▲ 1LG6283-4MA...-Z D42
0.37	0.5	71 M	1LA9073-4KA...-Z D42	110	150	315 S	▲ 1LG6310-4MA...-Z D42
0.55	0.75	80 M	1LA9080-4KA...-Z D42	132	175	315 M	▲ 1LG6313-4MA...-Z D42
0.75	1	80 M	▶ 1LA9083-4KA...-Z D42	160	200	315 L	▲ 1LG6316-4MA...-Z D42
1.1	1.5	90 S	▶ 1LA9090-4KA...-Z D42	200	250	315 L	▲ 1LG6317-4MA...-Z D42
1.5	2	90 L	▶ 1LA9096-4KA...-Z D42	250	300	315 L	▲ 1LG6318-4MA...-Z D42
2.2	3	100 L	▶ 1LA9106-4KA...-Z D42	315	400	315 L	▲ 1LG6312-4MA...-Z D42
3	4	100 L	▶ 1LA9107-4KA...-Z D42	6-pole: 1200 rpm at 60 Hz			
4	5	112 M	▶ 1LA9113-4KA...-Z D42	15	20	180 L	1LG6186-6AA...-Z D42
5.5	7.5	132 S	▶ 1LA9130-4KA...-Z D42	18.5	25	200 L	1LG6206-6AA...-Z D42
7.5	10	132 M	▶ 1LA9133-4KA...-Z D42	22	30	200 L	1LG6207-6AA...-Z D42
11	15	160 M	▶ 1LA9163-4KA...-Z D42	30	40	225 M	1LG6223-6AA...-Z D42
15	20	160 L	▶ 1LA9166-4KA...-Z D42	37	50	250 M	1LG6253-6AA...-Z D42
18.5	25	180 M	▶ 1LA9183-4WA...-Z D42	45	60	280 S	1LG6280-6AA...-Z D42
22	30	180 L	▶ 1LA9186-4WA...-Z D42	55	75	280 M	1LG6283-6AA...-Z D42
30	40	200 L	▶ 1LA9207-4WA...-Z D42	75	100	315 S	1LG6310-6AA...-Z D42
6-pole: 1200 rpm at 60 Hz				90	125	315 M	1LG6313-6AA...-Z D42
0.75	1	90 S	▶ 1LA9090-6KA...-Z D42	110	150	315 L	1LG6316-6AA...-Z D42
1.1	1.5	90 L	▶ 1LA9096-6KA...-Z D42	132	175	315 L	1LG6317-6AA...-Z D42
1.5	2	100 L	▶ 1LA9106-6KA...-Z D42	160	200	315 L	1LG6318-6AA...-Z D42
2.2	3	112 M	▶ 1LA9113-6KA...-Z D42	200	250	315 L	▲ 1LG6312-6MA...-Z D42
4	5	132 M	▶ 1LA9133-6KA...-Z D42				
5.5	7.5	132 M	▶ 1LA9134-6KA...-Z D42				
7.5	10	160 M	▶ 1LA9163-6KA...-Z D42				
11	15	160 L	▶ 1LA9166-6KA...-Z D42				
15	20	180 L	▶ 1LA9186-6WA...-Z D42				
18.5	25	200 L	▶ 1LA9206-6WA...-Z D42				
22	30	200 L	▶ 1LA9207-6WA...-Z D42				

¹⁾ Notes on order code D42 NEMA Energy Efficient:
 - Comprises CSA, UL and CC No.
 - Only valid for voltages ≤ 600 V
 - For ≤ 200 hp only flange types are admissible

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.4 – NEMA Energy Efficient MG1 motors, Table 12-11 (continued)	2.5 – NEMA Premium Efficient MG1 motors, Table 12-12
Series version	Cast-iron series 1LG6 with increased output and order code D42 ¹⁾	Cast-iron series 1LG6 with order code D41 ²⁾
Cooling	Self-ventilated (IC 411)	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6	2, 4, 6
Frame sizes (FS)	200 L ... 280 M	315 L
Rated output	37 ... 110 kW at 50 Hz 50 ... 150 hp at 60 Hz	200 ... 315 kW at 50 Hz 250 ... 400 hp at 60 Hz
Synchronous speed	1000 ... 3600 rpm	1000 ... 3600 rpm
Rated torque	120 ... 599 Nm at 60 Hz	596 ... 1590 Nm at 60 Hz
Efficiency	NEMA Energy Efficient MG1 Table 12-11 with order code D42 ¹⁾	NEMA Premium Efficient MG1 Table 12-12 with order code D41 ²⁾
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -
Price group (PG)	3Z1	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3

(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

P_{rated} 50 Hz kW	P_{rated} 60 Hz hp	Frame size FS	Order No. ▲ New	P_{rated} 50 Hz kW	P_{rated} 60 Hz hp	Frame size FS	Order No. ▲ New
2-pole: 3600 rpm at 60 Hz				2-pole: 3600 rpm at 60 Hz			
45	60	200 L	▲ 1LG6208-2AA..-Z D42	250	300	315 L	▲ 1LG6318-2MB..-Z D41
55	75	225 M	▲ 1LG6228-2AA..-Z D42	315	400	315 L	▲ 1LG6312-2MA..-Z D41
75	100	250 M	▲ 1LG6258-2AA..-Z D42	4-pole: 1800 rpm at 60 Hz			
110	150	280 M	▲ 1LG6288-2AA..-Z D42	250	300	315 L	▲ 1LG6318-4MA..-Z D41
4-pole: 1800 rpm at 60 Hz				315	400	315 L	▲ 1LG6312-4MA..-Z D41
55	75	225 M	▲ 1LG6228-4AA..-Z D42	6-pole: 1200 rpm at 60 Hz			
75	100	250 M	▲ 1LG6258-4AA..-Z D42	200	250	315 L	▲ 1LG6312-6MA..-Z D41
110	150	280 M	▲ 1LG6288-4AA..-Z D42				
6-pole: 1200 rpm at 60 Hz							
37	50	225 M	▲ 1LG6228-6AA..-Z D42				
45	60	250 M	▲ 1LG6258-6AA..-Z D42				
75	100	280 M	▲ 1LG6288-6AA..-Z D42				

2.0

¹⁾ Notes on order code D42 NEMA Energy Efficient:
 - Comprises CSA, UL and CC No.
 - Only valid for voltages ≤ 600 V
 - For ≤ 200 hp only flange types are admissible

²⁾ Notes on order code D41 NEMA Premium Efficient:
 - Comprises CSA, UL and CC No.
 - Only valid for voltages ≤ 600 V
 - All types are admissible

SIMOTICS GP 1LA Standard Motors

Standard delivery times:

10
working
days20
working
daysOn
request

Orientation

Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.6 – Pole-changing motors
Series version	Aluminum series 1LA7 and 1LA5 for a constant load torque
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	4/2, 8/4
Frame sizes (FS)	63 M ... 200 L
Rated output at 50 Hz	0.1 ... 31 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	0.54 ... 222 Nm
Efficiency	–
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

P_{rated1} , 50 Hz kW	P_{rated2} , 50 Hz kW	Frame size FS	Order No.
			► For successor 1LE1011 see Page 1/21

**4/2-pole: 1500/3000 rpm at 50 Hz
with one winding connected in Dahlander circuit**

1500 rpm	3000 rpm		
0.1	0.15	63 M	1LA7060-0AA..
0.15	0.2	63 M	1LA7063-0AA..
0.21	0.28	71 M	1LA7070-0AA..
0.3	0.43	71 M	1LA7073-0AA..
0.48	0.6	80 M	1LA7080-0AA..
0.7	0.85	80 M	1LA7083-0AA..
1.1	1.4	90 S	1LA7090-0AA..
1.5	1.9	90 L	1LA7096-0AA..
2	2.4	100 L	► 1LA7106-0AA..
2.6	3.1	100 L	► 1LA7107-0AA..
3.7	4.4	112 M	► 1LA7113-0AA..
4.7	5.9	132 S	► 1LA7130-0AA..
6.5	8	132 M	► 1LA7133-0AA..
9.3	11.5	160 M	► 1LA7163-0AA..
13	17	160 L	► 1LA7166-0AA..
15	18	180 M	1LA5183-0AA..
18	21.5	180 L	1LA5186-0AA..
26	31	200 L	1LA5207-0AA..

0.1	0.15	63 M	1LA7060-0AA..	
0.15	0.2	63 M	1LA7063-0AA..	
0.21	0.28	71 M	1LA7070-0AA..	
0.3	0.43	71 M	1LA7073-0AA..	
0.48	0.6	80 M	1LA7080-0AA..	
0.7	0.85	80 M	1LA7083-0AA..	
1.1	1.4	90 S	1LA7090-0AA..	
1.5	1.9	90 L	1LA7096-0AA..	
2	2.4	100 L	► 1LA7106-0AA..	
2.6	3.1	100 L	► 1LA7107-0AA..	
3.7	4.4	112 M	► 1LA7113-0AA..	
4.7	5.9	132 S	► 1LA7130-0AA..	
6.5	8	132 M	► 1LA7133-0AA..	
9.3	11.5	160 M	► 1LA7163-0AA..	
13	17	160 L	► 1LA7166-0AA..	
15	18	180 M	1LA5183-0AA..	
18	21.5	180 L	1LA5186-0AA..	
26	31	200 L	1LA5207-0AA..	

**8/4-pole: 750/1500 rpm at 50 Hz
with one winding connected in Dahlander circuit**

750 rpm	1500 rpm		
0.35	0.5	90 S	1LA7090-0AB..
0.5	0.7	90 L	1LA7096-0AB..
0.75	1.1	100 L	► 1LA7106-0AB..
0.9	1.5	100 L	► 1LA7107-0AB..
1.4	1.9	112 M	► 1LA7113-0AB..
1.8	3.6	132 S	► 1LA7130-0AB..
2.2	5.5	132 M	► 1LA7133-0AB..
3	7	160 M	► 1LA7163-0AB..
5.6	11	160 L	► 1LA7166-0AB..
11	18	180 L	1LA5186-0AB..
17	27	200 L	1LA5207-0AB..

0.35	0.5	90 S	1LA7090-0AB..	
0.5	0.7	90 L	1LA7096-0AB..	
0.75	1.1	100 L	► 1LA7106-0AB..	
0.9	1.5	100 L	► 1LA7107-0AB..	
1.4	1.9	112 M	► 1LA7113-0AB..	
1.8	3.6	132 S	► 1LA7130-0AB..	
2.2	5.5	132 M	► 1LA7133-0AB..	
3	7	160 M	► 1LA7163-0AB..	
5.6	11	160 L	► 1LA7166-0AB..	
11	18	180 L	1LA5186-0AB..	
17	27	200 L	1LA5207-0AB..	

2.0

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.6 – Pole-changing motors (continued)
Series version	Aluminum series 1LA7 and 1LA5
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	4/2, 6/4, 8/4, 8/6/4
Frame sizes (FS)	80 M ... 200 L
Rated output at 50 Hz	0.1 ... 28 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	1 ... 182 Nm
Efficiency	–
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

P_{rated1} 50 Hz kW	P_{rated2} 50 Hz kW	Frame size FS	Order No.	P_{rated1} 50 Hz kW	P_{rated2} 50 Hz kW	P_{rated3} 50 Hz kW	Frame size FS	Order No.
▶ For successor 1LE101. see Page 1/21								
4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit				8/6/4-pole: 750/1000/1500 rpm at 50 Hz with two windings, with 750/1500 rpm connected in Dahlander circuit				
1500 rpm	3000 rpm			750 rpm	1000 rpm	1500 rpm		
0.15	0.7	80 M	1LA7080-0BA..	0.15	0.22	0.7	90 S	1LA7090-1BJ..
0.25	0.95	80 M	1LA7083-0BA..	0.22	0.3	0.95	90 L	1LA7096-1BJ..
0.33	1.4	90 S	1LA7090-0BA..	0.37	0.55	1.5	100 L	1LA7106-1BJ..
0.5	2	90 L	1LA7096-0BA..	0.45	0.7	1.8	100 L	1LA7107-1BJ..
0.65	2.5	100 L	▶ 1LA7106-0BA..	0.6	0.85	2.4	112 M	1LA7113-1BJ..
0.8	3.1	100 L	▶ 1LA7107-0BA..	0.75	1.1	3.1	132 S	1LA7130-1BJ..
1.1	4.4	112 M	▶ 1LA7113-0BA..	1	1.5	4.4	132 M	1LA7133-1BJ..
1.45	5.9	132 S	▶ 1LA7130-0BA..	1.6	2.2	6.6	160 M	1LA7163-1BJ..
2	8	132 M	▶ 1LA7133-0BA..	2.4	3.5	10	160 L	1LA7166-1BJ..
2.9	11.5	160 M	▶ 1LA7163-0BA..	3	4.5	13	180 M	1LA5183-1BJ..
4.3	17	160 L	▶ 1LA7166-0BA..	3.7	5.5	16	180 L	1LA5186-1BJ..
6/4-pole: 1000/1500 rpm at 50 Hz with two windings				5	8	22	200 L	1LA5207-1BJ..
1000 rpm	1500 rpm							
0.12	0.4	80 M	1LA7080-1BD..					
0.18	0.55	80 M	1LA7083-1BD..					
0.29	0.8	90 S	1LA7090-1BD..					
0.38	1.1	90 L	1LA7096-1BD..					
0.6	1.7	100 L	▶ 1LA7106-1BD..					
0.75	2.1	100 L	▶ 1LA7107-1BD..					
0.9	3	112 M	▶ 1LA7113-1BD..					
1.2	3.9	132 S	▶ 1LA7130-1BD..					
1.7	5.4	132 M	▶ 1LA7133-1BD..					
2.5	7.2	160 M	▶ 1LA7163-1BD..					
3.7	12	160 L	▶ 1LA7166-1BD..					
5.5	16	180 M	1LA5183-1BD..					
6.5	19	180 L	1LA5186-1BD..					
9.5	26	200 L	1LA5207-1BD..					
8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit								
750 rpm	1500 rpm							
0.1	0.5	80 M	1LA7080-0BB..					
0.15	0.7	80 M	1LA7083-0BB..					
0.22	1	90 S	1LA7090-0BB..					
0.33	1.5	90 L	1LA7096-0BB..					
0.5	2	100 L	▶ 1LA7106-0BB..					
0.65	2.5	100 L	▶ 1LA7107-0BB..					
0.9	3.6	112 M	▶ 1LA7113-0BB..					
1.1	4.7	132 S	▶ 1LA7130-0BB..					
1.4	6.4	132 M	▶ 1LA7133-0BB..					
2.2	9.5	160 M	▶ 1LA7163-0BB..					
3.3	14	160 L	▶ 1LA7166-0BB..					
4.5	16	180 M	1LA5183-0BB..					
5	18.5	180 L	1LA5186-0BB..					
7.5	28	200 L	1LA5207-0BB..					

2.0

SIMOTICS SD 1LG Standard Motors

Orientation

Overview of selection and ordering data
with base prices and standard delivery times

Standard delivery times:

10
working
days

20
working
days

On
request

Overview (continued)

Category	2.6 – Pole-changing motors (continued)
Series version	Cast-iron series 1LG4 for square-law load torque (e.g. for driving fans)
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	4/2, 6/4, 8/4
Frame sizes (FS)	180 M ... 315 L
Rated output at 50 Hz	4.5 ... 175 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	31 ... 1125 Nm
Efficiency	–
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

P_{rated1} 50 Hz kW	P_{rated2} 50 Hz kW	Frame size FS	Order No.		
4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit					
1500 rpm	3000 rpm				
4.8	18	180 M	1LG4183-OBA..		
5.8	21.5	180 L	1LG4186-OBA..		
8.4	31	200 L	1LG4207-OBA..		
10.5	38	225 S	1LG4220-OBA..		
13	45	225 M	1LG4223-OBA..		
15	55	250 M	1LG4253-OBA..		
18	67	280 S	1LG4280-OBA..		
22	80	280 M	1LG4283-OBA..		
26	90	315 S	1LG4310-OBA..		
32	110	315 M	1LG4313-OBA..		
35	140	315 L	1LG4316-OBA..		
45	170	315 L	1LG4317-OBA..		
6/4-pole: 1000/1500 rpm at 50 Hz with two windings					
1000 rpm	1500 rpm				
5.5	16	180 M	1LG4183-1BD..		
6.5	19	180 L	1LG4186-1BD..		
9.5	26	200 L	1LG4207-1BD..		
12	34	225 S	1LG4220-1BD..		
14.5	40	225 M	1LG4223-1BD..		
18	52	250 M	1LG4253-1BD..		
25	70	280 S	1LG4280-1BD..		
30	82	280 M	1LG4283-1BD..		
33	92	315 S	1LG4310-1BD..		
45	120	315 M	1LG4313-1BD..		
50	150	315 L	1LG4316-1BD..		
55	170	315 L	1LG4317-1BD..		
8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit					
750 rpm	1500 rpm				
4.5	16	180 M	1LG4183-0BB..		
5	18.5	180 L	1LG4186-0BB..		
7.5	28	200 L	1LG4207-0BB..		
9.5	35	225 S	1LG4220-0BB..		
11.5	42	225 M	1LG4223-0BB..		
14.5	52	250 M	1LG4253-0BB..		
19	70	280 S	1LG4280-0BB..		
23	83	280 M	1LG4283-0BB..		
26	95	315 S	1LG4310-0BB..		
30	115	315 M	1LG4313-0BB..		
35	140	315 L	1LG4316-0BB..		
45	175	315 L	1LG4317-0BB..		

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	2.7 – Motors for converter-fed operation only
Series version	Aluminum series 1LA7 and 1LA5 with special insulation up to 690 V
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 225 M
Rated output at 50 Hz	1.5 ... 45 kW
Synchronous speed	1000 ... 3600 rpm
Rated torque at 50 Hz	9.9 ... 293 Nm
Efficiency	Standard Efficiency
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3

(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{\text{rated, 50 Hz}}$ kW	IE class	Frame size FS	Order No.		
2-pole: 3000 rpm at 50 Hz					
3	–	100 L	1LA7106-2PM..		
4	–	112 M	1LA7113-2PM..		
5.5	–	132 S	1LA7130-2PM..		
7.5	–	132 S	1LA7131-2PM..		
11	–	160 M	1LA7163-2PM..		
15	–	160 M	1LA7164-2PM..		
18.5	–	160 L	1LA7166-2PM..		
22	–	180 M	1LA5183-2PM..		
30	–	200 L	1LA5206-2PM..		
37	–	200 L	1LA5207-2PM..		
45	–	225 M	1LA5223-2PM..		
4-pole: 1500 rpm at 50 Hz					
2.2	–	100 L	1LA7106-4PM..		
3	–	100 L	1LA7107-4PM..		
4	–	112 M	1LA7113-4PM..		
5.5	–	132 S	1LA7130-4PM..		
7.5	–	132 M	1LA7133-4PM..		
11	–	160 M	1LA7163-4PM..		
15	–	160 L	1LA7166-4PM..		
18.5	–	180 M	1LA5183-4PM..		
22	–	180 L	1LA5186-4PM..		
30	–	200 L	1LA5207-4PM..		
37	–	225 S	1LA5220-4PM..		
45	–	225 M	1LA5223-4PM..		
6-pole: 1000 rpm at 50 Hz					
1.5	–	100 L	1LA7106-6PM..		
2.2	–	112 M	1LA7113-6PM..		
3	–	132 S	1LA7130-6PM..		
4	–	132 M	1LA7133-6PM..		
5.5	–	132 M	1LA7134-6PM..		
7.5	–	160 M	1LA7163-6PM..		
11	–	160 L	1LA7166-6PM..		
15	–	180 L	1LA5186-6PM..		
18.5	–	200 L	1LA5206-6PM..		
22	–	200 L	1LA5207-6PM..		
30	–	225 M	1LA5223-6PM..		

2.0

SIMOTICS SD 1LG Standard Motors

Orientation

Overview of selection and ordering data
with base prices and standard delivery times

Standard delivery times:

10
working
days

20
working
days

On
request

Overview (continued)

Category	2.7 – Motors for converter-fed operation only (continued)
Series version	Cast-iron series 1LG6 with special insulation up to 690 V
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	180 M ... 315 L
Rated output at 50 Hz	11 ... 200 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	71 ... 1704 Nm
Efficiency	High Efficiency
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 2.8, for delivery times refer to colored background following the Order No.)

$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.	$P_{rated, 50 Hz}$ kW	IE class	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz				8-pole: 750 rpm at 50 Hz			
22	-	180 M	1LG6183-2PM..	11	-	180 L	1LG6186-8PM..
30	-	200 L	1LG6206-2PM..	15	-	200 L	1LG6207-8PM..
37	-	200 L	1LG6207-2PM..	18.5	-	225 S	1LG6220-8PM..
45	-	225 M	1LG6223-2PM..	22	-	225 M	1LG6223-8PM..
55	-	250 M	1LG6253-2PM..	30	-	250 M	1LG6253-8PM..
75	-	280 S	1LG6280-2PM..	37	-	280 S	1LG6280-8PM..
90	-	280 M	1LG6283-2PM..	45	-	280 M	1LG6283-8PM..
110	-	315 S	1LG6310-2PM..	55	-	315 S	1LG6310-8PM..
132	-	315 M	1LG6313-2PM..	75	-	315 M	1LG6313-8PM..
160	-	315 L	1LG6316-2PM..	90	-	315 L	1LG6316-8PM..
200	-	315 L	1LG6317-2PM..	110	-	315 L	1LG6317-8PM..
4-pole: 1500 rpm at 50 Hz				132	-	315 L	1LG6318-8PM..
18.5	-	180 M	1LG6183-4PM..				
22	-	180 L	1LG6186-4PM..				
30	-	200 L	1LG6207-4PM..				
37	-	225 S	1LG6220-4PM..				
45	-	225 M	1LG6223-4PM..				
55	-	250 M	1LG6253-4PM..				
75	-	280 S	1LG6280-4PM..				
90	-	280 M	1LG6283-4PM..				
110	-	315 S	1LG6310-4PM..				
132	-	315 M	1LG6313-4PM..				
160	-	315 L	1LG6316-4PM..				
200	-	315 L	1LG6317-4PM..				
6-pole: 1000 rpm at 50 Hz							
15	-	180 L	1LG6186-6PM..				
18.5	-	200 L	1LG6206-6PM..				
22	-	200 L	1LG6207-6PM..				
30	-	225 M	1LG6223-6PM..				
37	-	250 M	1LG6253-6PM..				
45	-	280 S	1LG6280-6PM..				
55	-	280 M	1LG6283-6PM..				
75	-	315 S	1LG6310-6PM..				
90	-	315 M	1LG6313-6PM..				
110	-	315 L	1LG6316-6PM..				
132	-	315 L	1LG6317-6PM..				
160	-	315 L	1LG6318-6PM..				

SIMOTICS GP 1LA Standard Motors

Motors with High Efficiency IE2

IE2

Self-ventilated motors
Aluminum series 1LA9

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output										Aluminum series		m _M B3 J	Torque class
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4 %	η _{rated} 50 Hz, 3/4 %	η _{rated} 50 Hz, 2/4 %	cos φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pFA} 50 Hz dB(A)		

- Cooling: Self-ventilated (IC 411)
 - Efficiency: High Efficiency IE2, service factor (SF) 1.15
 - Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- 2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾

0.18	0.21	63 M	2840	0.61	–	67.4	66.9	62.4	0.78	0.50	2.5	4.8	3.1	49	60	1LA9060-2KA	4.0	0.00022	16
0.25	0.29	63 M	2840	0.84	–	69.9	69.9	65.9	0.80	0.65	2.3	4.9	2.5	49	60	1LA9063-2KA	4.7	0.00026	16
0.37	0.43	71 M	2840	1.2	–	72.8	72.8	69.8	0.77	0.95	3.1	6.5	3.1	52	63	1LA9070-2KA	6.0	0.00041	16
0.55	0.63	71 M	2835	1.9	–	74.4	74.4	71.4	0.75	1.42	3.4	6.3	2.9	52	63	1LA9073-2KA	7.2	0.00050	16
0.75	0.86	80 M	2885	2.5	IE2	77.4	77.9	74.4	0.82	1.71	3.5	8.3	3.2	56	67	1LA9080-2KA	10.7	0.0010	16
1.1	1.27	80 M	2860	3.7	IE2	79.6	79.6	78.6	0.89	2.25	3.2	7.0	3.2	56	67	1LA9083-2KA	12.4	0.0013	16
1.5	1.75	90 S	2890	5.0	IE2	81.3	81.3	80.3	0.87	3.05	3.5	7.0	3.5	60	72	1LA9090-2KA	16.2	0.0018	16
2.2	2.55	90 L	2890	7.3	IE2	83.2	83.2	82.2	0.87	4.4	3.5	7.0	3.5	60	72	1LA9096-2KA	18.6	0.0022	16
3	3.45	100 L	2880	9.9	IE2	84.6	84.6	83.6	0.88	5.8	3.1	7.0	3.2	62	74	1LA9106-2KA	25	0.0044	16
4	4.55	112 M	2905	13	IE2	85.8	85.8	84.8	0.89	7.6	2.6	7.0	3.2	63	75	1LA9113-2KA	36.7	0.0077	16
5.5	6.3	132 S	2930	18	IE2	87.0	87.0	86.0	0.90	10.1	2.4	7.0	3.2	68	80	1LA9130-2KA	46.2	0.019	16
7.5	8.6	132 S	2930	24	IE2	88.1	88.1	87.1	0.92	13.4	2.5	7.0	3.1	68	80	1LA9131-2KA	58.1	0.024	16
11	12.6	160 M	2945	36	IE2	89.4	89.4	88.4	0.90	19.7	2.3	7.0	3.1	70	82	1LA9163-2KA	78.6	0.044	16
15	17.3	160 M	2945	49	IE2	90.3	90.3	89.3	0.90	26.5	2.3	7.0	3.1	70	82	1LA9164-2KA	87.6	0.051	16
18.5	21.3	160 L	2940	60	IE2	90.9	90.9	89.9	0.92	32	2.3	7.0	3.1	70	82	1LA9166-2KA	110.4	0.065	16
22	25.3	180 M	2945	71	IE2	91.3	91.3	90.3	0.89	39 ²⁾	2.5	7.2	3.3	70	83	1LA9183-2WA	131	0.090	16
30	34.5	200 L	2950	97	IE2	92.0	92.0	91.0	0.89	53	2.4	7.0	3.2	71	84	1LA9206-2WA	182	0.16	16
37	42.5	200 L	2950	120	IE2	92.5	92.5	91.0	0.89	65 ²⁾	2.4	7.0	3.3	71	84	1LA9207-2WA	211	0.20	16

Voltages		No. of poles	Motor type	Version	Order code(s)		
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	2	1LA9060 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	2	1LA9060 ... 207	Standard	6	–
50 Hz	500 VY		2	1LA9060 ... 207	Without additional charge	3	–
50 Hz	500 VΔ		2	1LA9106 ... 207	Without additional charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76				9	...
Types of construction		No. of poles	Motor type	Version	Order code(s)		
Without flange		IM B3/6/7/8, IM V6, IM V5 without protective cover	2	1LA9060 ... 207	Standard	0	–
With flange		IM B5, IM V1 without protective cover	2	1LA9060 ... 207	With additional charge	1	–
		IM V3	2	1LA9060 ... 166	With additional charge	1	–
		IM V1 with protective cover ³⁾	2	1LA9183 ... 207	With additional charge	9	M1G
		IM B35	2	1LA9060 ... 207	With additional charge	4	–
With standard flange		IM B14, IM V19, IM V18 without protective cover	2	1LA9060 ... 166	With additional charge	6	–
		IM B34	2	1LA9060 ... 166	With additional charge	2	–
With special flange		IM B14, IM V19, IM V18 without protective cover	2	1LA9060 ... 166	With additional charge	7	–
			2	1LA9060 ... 166	With additional charge	3	–
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80				9	...
Special versions							Order code(s)
Options		For additional charges, code numbers and descriptions, see from Page 2/87				1LA9 ... -Z	...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1LA Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors
Aluminum series 1LA9



Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output											Aluminum series 1LA9 – IE2 version in accordance with IEC 60034-30 Order No. For successor 1LE1001 see Page 1/22	m _M B3 J	Torque class
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}			

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2, service factor (SF) 1.15
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
0.12	0.14	63 M	1395	0.82	–	53.6	52.1	47.6	0.65	0.50	2.6	3.5	2.6	42	53	1LA9060-4KA	4.0	0.00037	16
0.18	0.21	63 M	1395	1.2	–	72.1	72.1	68.1	0.68	0.53	2.8	3.6	2.7	42	53	1LA9063-4KA	4.7	0.00045	16
0.25	0.29	71 M	1410	1.7	–	74.0	74.0	71.0	0.64	0.76	3.2	4.3	3.1	44	55	1LA9070-4KA	6.0	0.00076	16
0.37	0.43	71 M	1385	2.6	–	76.1	76.1	73.1	0.73	0.96	2.8	4.2	3.0	44	55	1LA9073-4KA	7.0	0.00095	16
0.55	0.63	80 M	1410	3.7	–	78.1	78.6	75.6	0.77	1.32	2.8	5.6	2.9	47	58	1LA9080-4KA	10.7	0.0017	16
0.75	0.86	80 M	1400	5.1	IE2	79.6	79.6	78.6	0.75	1.81	3.6	5.8	3.5	47	58	1LA9083-4KA	12.4	0.0024	16
1.1	1.27	90 S	1440	7.3	IE2	81.4	81.4	80.4	0.77	2.55	2.7	6.4	3.2	48	60	1LA9090-4KA	16.2	0.0033	16
1.5	1.75	90 L	1440	9.9	IE2	82.8	82.8	81.8	0.77	3.4	3.1	6.7	3.4	48	60	1LA9096-4KA	18.6	0.0040	16
2.2	2.55	100 L	1435	15	IE2	84.3	84.3	83.3	0.82	4.6	3.1	7.0	3.6	53	65	1LA9106-4KA	26	0.0052	16
3	3.45	100 L	1435	20	IE2	85.5	85.5	84.5	0.81	6.3	3.5	7.0	3.9	53	65	1LA9107-4KA	31	0.0077	16
4	4.55	112 M	1440	27	IE2	86.6	86.6	85.6	0.81	8.2	2.8	6.9	3.2	53	65	1LA9113-4KA	38.7	0.014	16
5.5	6.3	132 S	1455	36	IE2	87.7	87.7	86.7	0.84	10.8	2.9	7.0	3.6	62	74	1LA9130-4KA	49.2	0.023	16
7.5	8.6	132 M	1455	49	IE2	88.7	88.7	87.7	0.84	14.5	3.0	7.0	3.6	62	74	1LA9133-4KA	62.1	0.029	16
11	12.6	160 M	1460	72	IE2	89.8	89.8	88.8	0.85	21	2.7	6.9	3.2	66	78	1LA9163-4KA	86.6	0.055	16
15	17.3	160 L	1460	98	IE2	90.6	90.6	89.6	0.86	28	2.9	7.0	3.3	66	78	1LA9166-4KA	115.4	0.072	16
18.5	21.3	180 M	1465	121	IE2	91.2	91.2	90.2	0.84	35 ²⁾	2.5	7.0	3.2	63	76	1LA9183-4WA	126	0.15	16
22	25.3	180 L	1470	143	IE2	91.6	91.6	90.6	0.84	41.5 ²⁾	2.6	7.3	3.4	63	76	1LA9186-4WA	146	0.19	16
30	34.5	200 L	1465	196	IE2	92.3	92.3	91.3	0.87	54	2.6	7.0	3.2	65	78	1LA9207-4WA	196	0.32	16

Voltages		No. of poles	Motor type	Version	Order code(s)		
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	4	1LA9060 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	4	1LA9060 ... 207	Standard	6	–
50 Hz	500 VY		4	1LA9060 ... 207	Without additional charge	3	–
50 Hz	500 VΔ		4	1LA9106 ... 207	Without additional charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76				9	...
Types of construction		No. of poles	Motor type	Version	Order code(s)		
Without flange		IM B3/6/7/8, IM V6, IM V5 without protective cover	4	1LA9060 ... 207	Standard	0	–
With flange		IM B5, IM V1 without protective cover	4	1LA9060 ... 207	With additional charge	1	–
		IM V3	4	1LA9060 ... 166	With additional charge	1	–
With standard flange		IM V1 with protective cover ³⁾	4	1LA9183 ... 207	With additional charge	9	M1G
		IM B35	4	1LA9060 ... 207	With additional charge	4	–
		IM B14, IM V19, IM V18 without protective cover	4	1LA9060 ... 166	With additional charge	6	–
With special flange		IM B34	4	1LA9060 ... 166	With additional charge	2	–
		IM B14, IM V19, IM V18 without protective cover	4	1LA9060 ... 166	With additional charge	7	–
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80				3	–
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80				9	...
Special versions		Order code(s)					
Options		For additional charges, code numbers and descriptions, see from Page 2/87				1LA9 ... -Z	...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1LA Standard Motors

Motors with High Efficiency IE2

IE2

Self-ventilated motors
Aluminum series 1LA9

Selection and ordering data (continued)

P _{rated} , 50 Hz kW	P _{rated} , 60 Hz kW	Frame size	Operating values at rated output											Aluminum series 1LA9 – IE2 version in accordance with IEC 60034-30 Order No. For successor 1LE1001 see Page 1/23	m _M B3 J	Torque class			
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4 %	η _{rated} , 50 Hz, 3/4 %	η _{rated} , 50 Hz, 2/4 %	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V A	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}				L _{pFA} , 50 Hz dB(A)	L _{WA} , 50 Hz dB(A)	
0.75	0.86	90 S	925	7.7	IE2	75.9	75.9	72.9	0.72	1.98	2.5	4.4	2.5	43	55	▶ 1LA9090-6KA ■■	16.9	0.0033	16
1.1	1.27	90 L	940	11	IE2	78.1	78.6	75.6	0.70	2.9	3.2	5.7	3.2	43	55	▶ 1LA9096-6KA ■■	19.6	0.0050	16
1.5	1.75	100 L	935	15	IE2	79.8	79.8	78.8	0.73	3.7	3.4	6.2	3.4	47	59	▶ 1LA9106-6KA ■■	26	0.0055	16
2.2	2.55	112 M	955	22	IE2	81.8	81.8	80.8	0.70	5.5	2.7	6.2	3.0	52	64	▶ 1LA9113-6KA ■■	38.7	0.014	16
4	4.55	132 M	950	40	IE2	84.6	84.6	83.6	0.81	8.4	2.5	6.3	2.7	63	75	▶ 1LA9133-6KA ■■	53.2	0.025	16
5.5	6.3	132 M	960	55	IE2	86.0	86.0	85.0	0.77	12	3.3	7.3	3.6	63	75	▶ 1LA9134-6KA ■■	66.1	0.034	16
7.5	8.6	160 M	965	74	IE2	87.2	87.2	86.2	0.72	17.2	2.2	5.5	2.5	66	78	▶ 1LA9163-6KA ■■	103.6	0.063	16
11	12.6	160 L	960	109	IE2	88.7	88.7	87.7	0.78	23	2.9	6.9	3.2	66	78	▶ 1LA9166-6KA ■■	113.4	0.072	16
15	18	180 L	970	148	IE2	89.7	89.7	88.7	0.75	32	2.0	6.5	2.5	66	78	▶ 1LA9186-6WA ■■	144	0.19	16
18.5	22	200 L	975	181	IE2	90.4	90.4	89.4	0.77	38.5	2.5	6.2	2.5	66	78	▶ 1LA9206-6WA ■■	183	0.28	16
22	26.5	200 L	975	215	IE2	90.9	90.9	89.9	0.77	45.5	2.5	6.2	2.5	66	78	▶ 1LA9207-6WA ■■	214	0.36	16
Voltagess			No. of poles		Motor type		Version		Order code(s)										
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	6	1LA9090 ... 207	Standard	1	–												
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	6	1LA9090 ... 207	Standard	6	–												
50 Hz	500 VY		6	1LA9090 ... 207	Without additional charge	3	–												
50 Hz	500 VΔ		6	1LA9106 ... 207	Without additional charge	5	–												
Further voltagess ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/76			9	...												
Types of construction			No. of poles		Motor type		Version		Order code(s)										
Without flange			IM B3/6/7/8, IM V6, IM V5 without protective cover		1LA9090 ... 207		Standard		0										
With flange			IM B5, IM V1 without protective cover		1LA9090 ... 207		With additional charge		1										
			IM V3		1LA9090 ... 166		With additional charge		1										
			IM V1 with protective cover ²⁾		1LA9183 ... 207		With additional charge		9										
			IM B35		1LA9090 ... 207		With additional charge		4										
With standard flange			IM B14, IM V19, IM V18 without protective cover		1LA9090 ... 207		With additional charge		6										
			IM B34		1LA9090 ... 166		With additional charge		2										
With special flange			IM B14, IM V19, IM V18 without protective cover		1LA9090 ... 166		With additional charge		7										
					1LA9090 ... 166		With additional charge		3										
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/80						9										
Special versions									Order code(s)										
Options			For additional charges, code numbers and descriptions, see from Page 2/87		1LA9 ■■ -Z				. . . + . . . + . . .										

2.1

1) Operating values at rated output for 60 Hz are available on request.
2) The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LG Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors
Cast-iron series 1LG6

IE2

Selection and ordering data

P _{rated} , 50 Hz		P _{rated} , 60 Hz ¹⁾		Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /T _{rated}	I _{LR} /I _{rated}	T _B /T _{rated}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	Cast-iron series 1LG6 – IE2 version in accordance with IEC 60034-30 Order No.	m _{IM} B3 J	Torque class
kW	kW	FS	rpm	Nm	%	%	%	A	dB(A)		dB(A)	▲ New *	kg	kgm ²	CL					
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Efficiency: High Efficiency IE2, service factor (SF) 1.15 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																				
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																				
22	24.5	180 M	2955	71	IE2	91.3	92.0	90.4	0.88	39.5 ²⁾	2.4	7.4	3.3	67	80	▲ 1LG6183-2MA	170	0.086	16	
30	33.5	200 L	2960	97	IE2	92.0	92.1	90.7	0.88	53.5 ²⁾	2.4	7.0	3.0	71	84	▲ 1LG6206-2MA	220	0.15	16	
37	41.5	200 L	2960	119	IE2	92.5	92.7	91.4	0.89	65 ²⁾	2.5	7.2	3.3	71	84	▲ 1LG6207-2MA	250	0.18	16	
45	51	225 M	2965	145	IE2	92.9	92.9	92.1	0.88	79 ²⁾	2.7	7.6	3.5	70	83	▲ 1LG6223-2MA	300	0.23	16	
55	62	250 M	2970	177	IE2	93.2	93.3	92.4	0.89	96	2.4	7.1	3.1	74	87	▲ 1LG6253-2MB	380	0.40	13	
75	84	280 S	2978	240	IE2	93.8	93.5	92.1	0.87	133 ²⁾	2.5	7.2	3.2	74	87	▲ 1LG6280-2MB	500	0.72	13	
90	101	280 M	2975	289	IE2	94.1	94.0	93.2	0.88	157 ²⁾	2.5	7.1	3.1	74	87	▲ 1LG6283-2MB	570	0.84	13	
110	123	315 S	2982	352	IE2	94.3	94.2	93.3	0.90	187 ²⁾	2.4	7.3	3.0	75	88	▲ 1LG6310-2MB	750	1.3	13	
132	148	315 M	2982	423	IE2	94.6	94.5	93.9	0.91	220 ²⁾	2.6	7.1	2.9	76	89	▲ 1LG6313-2MB	915	1.6	13	
160	180	315 L	2982	512	IE2	94.8	94.9	94.4	0.92	265	2.5	7.0	3.0	78	91	▲ 1LG6316-2MB	960	1.8	13	
200	224	315 L	2982	640	IE2	95.0	95.2	94.9	0.92	330	2.4	7.1	3.0	78	91	▲ 1LG6317-2MB	1200	2.2	13	
250	280	315 L	2985	800	IE2	95.0	94.9	94.4	0.91	415	3.0	8.6	3.8	78	92	▲ 1LG6318-2MB	1270	2.6	16	
315	353	315 L	2990	1006	IE2	95.0	94.7	93.7	0.89	540	3.4	9.0	3.8	82	96	▲ 1LG6312-2MA	1355	2.8	16	
Voltages				No. of poles	Motor type		Version		Order code(s)											
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2	1LG6183 ... 310, 1LG6313		Standard		1	–										
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2	1LG6183 ... 318		Standard		6	–										
50 Hz	500 VY			2	1LG6183 ... 310, 1LG6313		Without additional charge		3	–										
50 Hz	500 VΔ			2	1LG6183 ... 318		Without additional charge		5	–										
Further voltages ¹⁾				For additional charges, code numbers and descriptions, see from Page 2/78				9		...										
Types of construction				No. of poles	Motor type		Version		Order code(s)											
Without flange	IM B3/6/7/8 ³⁾			2	1LG6183 ... 318		Standard		0	–										
	IM V6 ³⁾			2	1LG6183 ... 310, 1LG6313		Standard		0	–										
				2	1LG6316, 1LG6317		With additional charge		9	M1E										
				2	1LG6312, 1LG6318		On request		9	M1E										
	IM V5 without protective cover ³⁾			2	1LG6183 ... 310, 1LG6313		Standard		0	–										
With flange				2	1LG6316, 1LG6317		With additional charge		9	M1D										
				2	1LG6312, 1LG6318		On request		9	M1D										
	IM B5 ⁴⁾			2	1LG6183 ... 318		With additional charge		1	–										
	IM V1 without protective cover ^{4) 5)}			2	1LG6183 ... 310, 1LG6313		With additional charge		1	–										
				2	1LG6312, 1LG6316 ... 318		With additional charge		8	–										
			2	1LG6183 ... 310, 1LG6313		With additional charge		9	M1G											
			2	1LG6183 ... 318		With additional charge		4	–											
IM B35			2	1LG6183 ... 318		With additional charge		6	–											
Further types of construction				For additional charges, code numbers and descriptions, see from Page 2/83				9		...										
Special versions								Order code(s)												
Options				For additional charges, code numbers and descriptions, see from Page 2/94		1LG6 M .		-Z		...+...+...+...										

1) Operating values at rated output for 60 Hz are available on request.

2) For connection to 230 V, parallel feeders are necessary.

3) If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

4) 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

5) 2-pole motors 1LG6316... to 1LG6317... and 1LG6312... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.

6) The "Second shaft extension" option, order code K16 is not possible.

* Order identically priced predecessor type for 1LG6...2AA../1LG6...2AB.. 2-pole motors or 1LG6...4AA.. 4-pole motors using the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27) and IE3 version for SH 315 (D25). For 1LG6312-2MA..., 1LG6312-4MA..., 1LG6318-2MB.. and 1LG6318-4MA.. motors that do not have predecessor types, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

SIMOTICS SD 1LG Standard Motors

Motors with High Efficiency IE2

IE2

Self-ventilated motors
Cast-iron series 1LG6

Selection and ordering data (continued)

P _{rated} , P _{60 Hz}		Frame size	Operating values at rated output										Cast-iron series		m _{IM B3} J		Torque class		
50 Hz	60 Hz ¹⁾		n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /T _{rated}	I _{LR} /I _{rated}	T _B /T _{rated}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	1LG6 – IE2 version in accordance with IEC 60034-30 Order No.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm		%	%	%	A						▲ New *				
• Cooling: Self-ventilated (IC 411) • Efficiency: High Efficiency IE2, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
18.5	21.3	180 M	1470	120	IE2	91.2	91.5	91.0	0.83	35.5 ²⁾	2.5	6.8	3.0	60	73	▲ 1LG6183-4MA	160	0.12	16
22	25.3	180 L	1465	143	IE2	91.6	92.5	92.5	0.84	41.5 ²⁾	2.5	7.5	3.3	64	77	▲ 1LG6186-4MA	185	0.14	16
30	34.5	200 L	1475	195	IE2	92.3	92.8	92.1	0.85	55 ²⁾	2.4	6.7	3.1	63	76	▲ 1LG6207-4MA	225	0.23	16
37	42.5	225 S	1470	240	IE2	92.7	93.6	93.7	0.87	66 ²⁾	2.6	6.5	3.0	61	74	▲ 1LG6220-4MA	285	0.40	16
45	52	225 M	1475	291	IE2	93.1	93.6	93.5	0.87	80 ²⁾	2.6	7.0	3.1	62	75	▲ 1LG6223-4MA	315	0.53	16
55	63	250 M	1480	355	IE2	93.5	93.7	93.4	0.85	100	2.8	7.1	3.0	62	75	▲ 1LG6253-4MA	390	0.56	16
75	86	280 S	1485	482	IE2	94.0	94.3	94.0	0.87	132 ²⁾	2.5	7.0	2.9	67	80	▲ 1LG6280-4MA	560	1.3	16
90	104	280 M	1486	578	IE2	94.2	94.4	94.0	0.87	159 ²⁾	2.6	7.3	3.1	67	80	▲ 1LG6283-4MA	640	1.4	16
110	127	315 S	1490	705	IE2	94.5	94.6	94.0	0.86	195 ²⁾	2.7	7.4	3.0	68	81	▲ 1LG6310-4MA	750	2.0	16
132	152	315 M	1488	847	IE2	94.7	94.9	94.6	0.87	230 ²⁾	2.7	7.1	2.9	67	80	▲ 1LG6313-4MA	870	2.3	16
160	184	315 L	1488	1027	IE2	94.9	95.2	94.8	0.87	280 ³⁾	3.2	7.5	3.0	70	83	▲ 1LG6316-4MA	950	2.8	16
200	230	315 L	1490	1282	IE2	95.1	95.3	94.9	0.87	350 ³⁾	3.2	7.9	3.1	70	83	▲ 1LG6317-4MA	1120	3.4	16
250	288	315 L	1488	1605	IE2	95.1	95.2	94.7	0.87	435	3.1	7.7	3.2	73	87	▲ 1LG6318-4MA	1270	4.2	16
315	362	315 L	1488	2022	IE2	95.1	94.9	94.4	0.86	560	3.4	7.9	3.2	74	89	▲ 1LG6312-4MA	1480	5.0	16
Voltages			No. of poles	Motor type		Version		Order code(s)											
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	4	1LG6183 ... 310, 1LG6313		Standard		1	–										
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	4	1LG6183 ... 318		Standard		6	–										
50 Hz	500 VY		4	1LG6183 ... 310, 1LG6313		Without additional charge		3	–										
50 Hz	500 VΔ		4	1LG6183 ... 318		Without additional charge		5	–										
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/78						9	...									
Types of construction			No. of poles	Motor type		Version		Order code(s)											
Without flange			4	IM B3/6/7/8 ⁴⁾		Standard		0	–										
				IM V6 ⁴⁾		Standard		0	–										
			4	1LG6316, 1LG6317		Without additional charge		9	M1E										
				1LG6312, 1LG6318		On request		9	M1E										
				IM V5 without protective cover ⁴⁾		Standard		0	–										
				1LG6316, 1LG6317		Without additional charge		9	M1D										
With flange			4	1LG6312, 1LG6318		On request		9	M1D										
				IM B5 ⁵⁾		With additional charge		1	–										
				IM V1 without protective cover ^{5) 6)}		With additional charge		1	–										
				1LG6312, 1LG6316 ... 318		With additional charge		8	–										
				IM V3 ⁵⁾		With additional charge		9	M1G										
				IM V1 with protective cover ^{5) 6) 7)}		With additional charge		4	–										
IM B35			4	1LG6183 ... 318		With additional charge		6	–										
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83						9	...									
Special versions			Options													Order code(s)			
			For additional charges, code numbers and descriptions, see from Page 2/94													1LG6...-M...-Z ...+...+...+...			

1) Operating values at rated output for 60 Hz are available on request.

2) For connection to 230 V, parallel feeders are necessary.

3) For connection to 400 V, parallel feeders are necessary.

4) If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

5) 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

6) 2-pole motors 1LG6316... to 1LG6317... and 1LG6312... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.

7) The "Second shaft extension" option, order code K16 is not possible.

* Order identically priced predecessor type for 1LG6...2AA.../1LG6...2AB... 2-pole motors or 1LG6...4AA... 4-pole motors using the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27) and IE3 version for SH 315 (D25). For 1LG6312-2MA..., 1LG6312-4MA..., 1LG6318-2MB... and 1LG6318-4MA... motors that do not have predecessor types, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

2.1

SIMOTICS SD 1LG Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors
Cast-iron series 1LG6



Selection and ordering data (continued)

P _{rated} 50 Hz	P _{rated} 60 Hz ¹⁾	Frame size	Operating values at rated output													Cast-iron series 1LG6 – IE2 version in accordance with IEC 60034-30 Order No.	m _{IM} B3 J	Torque class	
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} /T _{rated}	I _{LR} /I _{rated}	T _B /T _{rated}	L _{pFA} 50 Hz	L _{WA} 50 Hz				
kW	kW	FS	rpm	Nm	%	%	%	A									kg	kgm ²	CL

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2, service factor (SF) 1.15
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz¹⁾

15	18	180 L	975	147	IE2	89.7	90.5	90.4	0.81	30	2.4	5.5	2.5	56	69	1LG6186-6AA	175	0.20	16
18.5	22	200 L	978	181	IE2	90.4	91.0	90.6	0.81	36.5	2.4	5.6	2.4	59	72	1LG6206-6AA	210	0.29	16
22	26.5	200 L	978	215	IE2	90.9	91.5	91.5	0.82	42.5	2.4	5.6	2.4	59	72	1LG6207-6AA	240	0.36	16
30	36	225 M	980	292	IE2	91.7	92.2	92.2	0.83	57 ²⁾	2.8	6.5	2.9	59	72	1LG6223-6AA	325	0.63	16
37	44.5	250 M	985	359	IE2	92.2	92.6	92.4	0.83	70	2.9	6.8	2.5	60	73	1LG6253-6AA	405	0.93	16
45	54	280 S	988	435	IE2	92.7	92.9	92.7	0.85	82	3	6.8	2.7	58	71	1LG6280-6AA	520	1.4	16
55	66	280 M	988	532	IE2	93.1	93.3	93.0	0.85	100	3.3	7.3	2.9	59	71	1LG6283-6AA	570	1.6	16
75	90	315 S	990	724	IE2	93.7	93.7	93.3	0.83	139	2.8	7.3	3	61	74	1LG6310-6AA	760	2.5	16
90	108	315 M	990	868	IE2	94.0	94.1	93.7	0.85	163 ²⁾	2.7	7.3	2.9	61	74	1LG6313-6AA	935	3.2	16
110	132	315 L	990	1061	IE2	94.3	94.4	94.2	0.85	198	2.9	7.4	2.9	61	74	1LG6316-6AA	1010	4.0	16
132	158	315 L	990	1273	IE2	94.6	94.6	94.2	0.85	235	3.1	7.8	3.1	61	74	1LG6317-6AA	1180	4.7	16
160	192	315 L	990	1543	IE2	94.6	94.6	94.3	0.86	285 ³⁾	3.2	7.8	3.1	64	77	1LG6318-6AA	1245	5.4	16
200	240	315 L	990	1929	IE2	95.0	95.1	94.6	0.83	365 ³⁾	2.8	7.5	3.3	67	81	1LG6312-6MA	1420	5.5	16

Voltages			No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	6	1LG6183 ... 310, 1LG6313	Standard	1 –
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	6	1LG6183 ... 318	Standard	6 –
50 Hz	500 VY		6	1LG6183 ... 310, 1LG6313	Without additional charge	3 –
50 Hz	500 VΔ		6	1LG6183 ... 318	Without additional charge	5 –
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/78			9 ...

Types of construction		No. of poles	Motor type	Version	Order code(s)
Without flange	IM B3/6/7/8 ⁴⁾	6	1LG6183 ... 318	Standard	0 –
	IM V6 ⁴⁾	6	1LG6183 ... 310, 1LG6313	Standard	0 –
		6	1LG6316, 1LG6317	Without additional charge	9 M1E
	IM V5 without protective cover ⁴⁾	6	1LG6312	On request	9 M1E
		6	1LG6183 ... 310, 1LG6313	Standard	0 –
		6	1LG6316, 1LG6317	Without additional charge	9 M1D
6		1LG6312	On request	9 M1D	
With flange	IM B5 ⁵⁾	6	1LG6183 ... 318	With additional charge	1 –
	IM V1 without protective cover ⁵⁾	6	1LG6183 ... 310, 1LG6313	With additional charge	1 –
		6	1LG6312, 1LG6316 ... 318	With additional charge	8 –
	IM V3 ⁵⁾	6	1LG6183 ... 310, 1LG6313	With additional charge	9 M1G
	IM V1 with protective cover ^{5) 6)}	6	1LG6183 ... 318	With additional charge	4 –
	IM B35	6	1LG6183 ... 318	With additional charge	6 –
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/83			9 ...

Special versions		Order code(s)
Options	For additional charges, code numbers and descriptions, see from Page 2/94	1LG6 ... - M . -Z ...+...+...+...

1) Operating values at rated output for 60 Hz are available on request.

2) For connection to 230 V, parallel feeders are necessary.

3) For connection to 400 V, parallel feeders are necessary.

4) If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

5) 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

6) The "Second shaft extension" option, order code K16 is not possible.

* For 1LG6312-6MA.. and 1LG6312-8MB.. motors, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).



Selection and ordering data (continued)

P _{rated} 50 Hz	P _{rated} 60 Hz ¹⁾	Frame size	Operating values at rated output											Cast-iron series 1LG6 – IE2 version in accordance with IEC 60034-30 Order No.	m _{IM} B3 J	Torque class			
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} /I _{rated}	L _{LR} /I _{rated}	T _B /I _{rated}				L _{pFA} 50 Hz	L _{WA} 50 Hz	
kW	kW	FS	rpm	Nm	%	%	%	A											
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Efficiency: High Efficiency IE2, service factor (SF) 1.15 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																			
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
11	13.2	180 L	725	145	–	87.9	88.8	88.7	0.76	24	1.9	4.6	2.2	66	79	1LG6186-8AB	165	0.21	13
15	18	200 L	725	198	–	89.0	89.5	89.5	0.80	30.5	2.3	5.3	2.6	66	79	1LG6207-8AB	235	0.37	13
18.5	22	225 S	730	242	–	89.8	90.5	90.5	0.81	36.5	2.3	5.6	2.6	54	67	1LG6220-8AB	295	0.55	13
22	26.5	225 M	730	288	–	90.3	90.8	90.8	0.81	43.5	2.4	5.8	2.8	58	71	1LG6223-8AB	335	0.66	13
30	36	250 M	735	390	–	91.2	91.7	91.6	0.82	58	2.5	6.0	2.8	57	70	1LG6253-8AB	435	1.1	13
37	44.5	280 S	738	479	–	91.8	92.0	91.7	0.81	72	2.3	5.7	2.3	58	71	1LG6280-8AB	510	1.4	13
45	54	280 M	738	582	–	92.3	92.5	92.2	0.81	87	2.6	6.1	2.5	58	71	1LG6283-8AB	560	1.6	13
55	66	315 S	740	710	–	92.8	92.9	92.4	0.82	104	2.5	6.3	2.9	64	77	1LG6310-8AB	750	2.5	13
75	90	315 M	740	968	–	93.4	93.6	93.2	0.83	140	2.5	6.7	2.9	64	77	1LG6313-8AB	840	3.1	13
90	108	315 L	740	1162	–	93.7	94.1	94.0	0.84	165	2.4	6.3	2.8	64	77	1LG6316-8AB	1005	4.0	13
110	132	315 L	740	1420	–	94.1	94.4	94.3	0.84	200	2.4	6.4	2.6	64	77	1LG6317-8AB	1100	4.5	13
132	158	315 L	740	1704	–	94.4	94.7	94.6	0.84	240	2.5	6.7	2.9	64	77	1LG6318-8AB	1270	5.3	13
160	192	315 L	738	2070	–	94.6	95.1	95.1	0.81	300	2.5	6.7	2.8	66	80	1LG6312-8MB	1380	5.5	13
Voltages			No. of poles	Motor type		Version		Order code(s)											
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	8	1LG6183 ... 310, 1LG6313		Standard		1	–										
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	8	1LG6183 ... 318		Standard		6	–										
50 Hz	500 VY		8	1LG6183 ... 310, 1LG6313		Without additional charge		3	–										
50 Hz	500 VΔ		8	1LG6183 ... 318		Without additional charge		5	–										
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/78						9	...									
Types of construction			No. of poles	Motor type		Version		Order code(s)											
Without flange	IM B3/6/7/8 ²⁾	IM V6 ²⁾	8	1LG6183 ... 318		Standard		0	–										
			8	1LG6183 ... 310, 1LG6313		Standard		0	–										
			8	1LG6316, 1LG6317		Without additional charge		9	M1E										
			8	1LG6312		On request		9	M1E										
			8	1LG6183 ... 310, 1LG6313		Standard		0	–										
With flange	IM V5 without protective cover ²⁾	IM V5 ³⁾	8	1LG6316, 1LG6317		Without additional charge		9	M1D										
			8	1LG6312		On request		9	M1D										
			8	1LG6183 ... 318		With additional charge		1	–										
			8	1LG6183 ... 310, 1LG6313		With additional charge		1	–										
			8	1LG6312, 1LG6316 ... 318		With additional charge		8	–										
Further types of construction	IM V3 ³⁾	IM V1 with protective cover ^{3) 4)}	8	1LG6183 ... 310, 1LG6313		With additional charge		9	M1G										
			8	1LG6183 ... 318		With additional charge		4	–										
			8	1LG6183 ... 318		With additional charge		6	–										
			8	1LG6183 ... 318		With additional charge		9	–										
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83						9	...									
Special versions			Options						Order code(s)										
			For additional charges, code numbers and descriptions, see from Page 2/94						1LG6 ... - M . -Z ...+...+...+...										

1) Operating values at rated output for 60 Hz are available on request.
 2) If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
 3) 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
 4) The "Second shaft extension" option, order code K16 is not possible.

* For 1LG6312-6MA.. and 1LG6312-8MB.. motors, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

SIMOTICS SD 1LG Standard Motors

Motors with High Efficiency IE2

Self-ventilated motors
Cast-iron series 1LG6 with increased output



Selection and ordering data

P _{rated} , 50 Hz		P _{rated} , 60 Hz		Frame size	Operating values at rated output										Cast-iron series 1LG6 – IE2 version in accordance with IEC 60034-30 with increased output Order No.	m _M B3 J	Torque class			
1)		1)			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /T _{rated}	I _{LR} /I _{rated}				T _B /T _{rated}	L _p fA, 50 Hz	L _{WA} , 50 Hz
KW	KW	FS	rpm	Nm	%	%	%	A										kg	kgm ²	CL
• Cooling: Self-ventilated (IC 411) • Efficiency: High Efficiency IE2, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																				
45	51	200 L	2960	145	IE2	92.9	92.9	92.3	0.89	79 ²⁾	2.6	7.3	3.3	71	84	▲ 1LG6208-2AA	300	0.22	16	
55	62	225 M	2965	177	IE2	93.2	93.3	92.9	0.89	96 ²⁾	3.0	7.9	3.3	70	83	1LG6228-2AA	390	0.32	16	
75	84	250 M	2975	241	IE2	93.8	94.0	93.4	0.89	130 ²⁾	2.5	7.6	3.1	76	89	1LG6258-2AA	470	0.57	16	
110	123	280 M	2978	353	IE2	94.3	94.6	94.3	0.90	187 ²⁾	2.8	7.8	3.3	73	86	1LG6288-2AA	660	1.2	16	
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																				
55	63	225 M	1482	354	IE2	93.1	93.9	93.7	0.86	99 ²⁾	2.8	7.0	3.0	60	73	1LG6228-4AA	355	0.66	16	
75	86	250 M	1485	482	IE2	94.0	94.4	94.1	0.87	132 ²⁾	2.6	7.3	2.9	65	78	1LG6258-4AA	495	0.99	16	
110	127	280 M	1486	707	IE2	94.5	94.6	94.0	0.86	195 ²⁾	2.7	7.5	3.1	68	81	1LG6288-4AA	710	1.9	16	
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																				
37	44.5	225 M	980	361	IE2	92.2	93.1	93.1	0.84	69 ²⁾	2.8	6.7	2.9	59	72	1LG6228-6AA	355	0.76	16	
45	54	250 M	985	436	IE2	92.7	93.6	93.8	0.83	84	2.9	6.9	2.5	60	73	1LG6258-6AA	435	1.1	16	
75	90	280 M	988	725	IE2	93.7	94.3	94.2	0.85	136 ²⁾	3.3	7.3	2.8	58	71	1LG6288-6AA	615	1.9	16	
Voltages										No. of poles	Motor type	Version	Order code(s)							
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY			2, 4, 6	1LG6208 ... 288	Standard	1 –											
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ			2, 4, 6	1LG6208 ... 288	Standard	6 –											
50 Hz	500 VY					2, 4, 6	1LG6208 ... 288	Without additional charge	3 –											
50 Hz	500 VΔ					2, 4, 6	1LG6208 ... 288	Without additional charge	5 –											
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/78																		
Types of construction										No. of poles	Motor type	Version	Order code(s)							
Without flange		IM B3/6/7/8, IM V6, IM V5 without protective cover ³⁾				2, 4, 6	1LG6208 ... 288	Standard	0 –											
With flange		IM B5, IM V1 without protective cover ⁴⁾				2, 4, 6	1LG6208 ... 288	With additional charge	1 –											
		IM V3 ⁴⁾				2, 4, 6	1LG6208 ... 288	With additional charge	9 M1G											
		IM V1 with protective cover ^{4) 5)}				2, 4, 6	1LG6208 ... 288	With additional charge	4 –											
IM B35						2, 4, 6	1LG6208 ... 288	With additional charge	6 –											
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/83																		
Special versions										Order code(s)										
Options		For additional charges, code numbers and descriptions, see from Page 2/94																		
										1LG6 -Z . . . + . . . + . . .										

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1LG6228 to 1LG6288 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LG Standard Motors

Motors with Premium Efficiency IE3



Self-ventilated motors
Cast-iron series 1LG6 with order code D25

Selection and ordering data

P _{Rated} , 50 Hz		P _{Rated} , 60 Hz		Frame size	Operating values at rated output										Cast-iron series		m _{IM B3} J		Torque class		
kW	kW	FS	rpm	Nm	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	1LG6 – IE3 version in accordance with IEC 60034-30 Order No.	kg	kgm ²	CL
• Cooling: Self-ventilated (IC 411) • Efficiency: Premium Efficiency IE3, service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																					
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																					
110	123	315 S	2982	352	IE3	95.2	95.1	94.2	0.91	184 ²⁾	2.4	6.9	2.8	80	94			1LG6310-2AB	790	1.4	13
132	148	315 M	2982	423	IE3	95.4	95.3	94.7	0.91	220 ²⁾	2.6	7.1	2.9	80	94			1LG6313-2AB	915	1.6	13
160	180	315 L	2982	512	IE3	95.6	95.6	95.2	0.92	265	2.5	7.1	2.9	80	94			1LG6316-2AB	1055	2.1	13
200	224	315 L	2982	641	IE3	95.8	95.8	95.5	0.93	325	2.5	6.9	2.8	80	94			1LG6317-2AB	1245	2.5	13
250	280	315 L	2985	800	IE3	95.8	95.9	95.3	0.92	410	3.1	8.8	3.4	78	92			1LG6318-2MB	1290	2.7	16
315	353	315 L	2990	1006	IE3	95.8	95.5	94.5	0.89	530	3.4	9.0	3.8	82	96			1LG6312-2MA	1355	2.8	16
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																					
110	127	315 S	1488	706	IE3	95.4	95.5	95.1	0.87	192 ²⁾	2.7	7.1	2.9	70	84			1LG6310-4AA	810	2.3	16
132	152	315 M	1488	847	IE3	95.6	95.7	95.4	0.88	225 ²⁾	2.7	7.3	2.9	71	85			1LG6313-4AA	965	2.9	16
160	184	315 L	1490	1026	IE3	95.8	95.9	95.6	0.88	275 ³⁾	3.0	7.4	3.0	71	85			1LG6316-4AA	1105	3.5	16
200	230	315 L	1490	1282	IE3	96.0	96.1	95.8	0.88	340 ³⁾	3.2	7.6	3.0	71	85			1LG6317-4AA	1305	4.2	16
250	288	315 L	1488	1605	IE3	96.0	96.1	95.6	0.87	430	3.1	7.7	3.2	73	87			1LG6318-4MA	1270	4.2	16
315	362	315 L	1488	2022	IE3	96.0	95.8	95.3	0.86	550	3.4	7.9	3.2	74	89			1LG6312-4MA	1480	5.0	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																					
75	90	315 S	990	724	IE3	94.6	94.6	94.2	0.83	138	2.8	7.3	3.0	63	77			1LG6310-6AA	760	2.5	16
90	108	315 M	990	868	IE3	94.9	95.0	94.6	0.85	162 ²⁾	2.7	7.3	2.9	63	77			1LG6313-6AA	935	3.2	16
110	132	315 L	990	1061	IE3	95.1	95.2	95.0	0.85	196	2.9	7.4	2.9	64	78			1LG6316-6AA	1010	4.0	16
132	158	315 L	990	1273	IE3	95.4	95.4	95.0	0.85	235	3.1	7.8	3.1	64	78			1LG6317-6AA	1180	4.7	16
160	192	315 L	990	1543	IE3	95.6	95.6	95.3	0.86	280 ³⁾	3.2	7.8	3.1	65	79			1LG6318-6AA	1245	5.4	16
200	240	315 L	990	1929	IE3	95.8	96.1	95.9	0.83	365 ³⁾	2.6	7.7	2.8	67	81			1LG6312-6MA	1545	6.1	16
Voltages				No. of poles	Motor type		Version		Order code(s)												
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2, 4, 6	1LG6310, 1LG6313		Standard		1	–											
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4, 6	1LG6310 ... 318		Standard		6	–											
50 Hz	500 VY			2, 4, 6	1LG6310, 1LG6313		Without additional charge		3	–											
50 Hz	500 VΔ			2, 4, 6	1LG6310 ... 318		Without additional charge		5	–											
Further voltages ¹⁾				For additional charges, code numbers and descriptions, see from Page 2/78							9	...									
Types of construction				No. of poles	Motor type		Version		Order code(s)												
Without flange				2, 4, 6	IM B3/6/7/8 ⁴⁾		1LG6310 ... 318		Standard		0	–									
					IM V6 ⁴⁾		1LG6310, 1LG6313		Standard		0	–									
				2	1LG6316, 1LG6317		With additional charge		9	M1E											
					1LG6316, 1LG6317		Without additional charge		9	M1E											
				2, 4, 6	1LG6312, 1LG6318		On request		9	M1E											
					1LG6310, 1LG6313		Standard		0	–											
				2	1LG6316, 1LG6317		With additional charge		9	M1D											
					1LG6316, 1LG6317		Without additional charge		9	M1D											
With flange				2, 4, 6	1LG6312, 1LG6318		On request		9	M1D											
					1LG6310 ... 318		With additional charge		1	–											
				2, 4, 6	1LG6310, 1LG6313		With additional charge		1	–											
					1LG6312, 1LG6316 ... 318		With additional charge		8	–											
				2, 4, 6	1LG6310, 1LG6313		With additional charge		1	M1G											
					1LG6310 ... 318		With additional charge		4	–											
IM B35				2, 4, 6	1LG6310 ... 318		With additional charge		6	–											
Further types of construction				For additional charges, code numbers and descriptions, see from Page 2/83							9	...									
Special versions				Order code(s)																	
Options				For additional charges, code numbers and descriptions, see from Page 2/94 1LG6 M . ■ -Z . . . + . . . + . . . + . . .																	

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ For connection to 400 V, parallel feeders are necessary.

⁴⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁵⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁶⁾ 2-pole motors 1LG6316-... to 1LG6317-... and 1LG6312-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.

⁷⁾ The "Second shaft extension" option, order code K16 is not possible.

* For 1LG6312-2MA.., 1LG6312-4MA.., 1LG6318-2MB.., 1LG6318-4MA.. and 1LG6312-6MA.. motors, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

2.2

SIMOTICS GP 1LA Standard Motors

Motors with Standard Efficiency IE1



IE1

Self-ventilated motors Aluminum series 1LA7 and 1LA5

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW ¹⁾	Frame size FS	Operating values at rated output										Aluminum series 1LA7/1LA5 – IE1 version in accordance with IEC 60034-30 Order No. For successor 1LE1002 see Page 1/33	m _{IM} B3 J kg	Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}			

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz¹⁾

0.18	0.21	63 M	2820	0.61	–	62.0	60.5	56.0	0.82	0.51	2.0	3.7	2.2	49	60	1LA7060-2AA	3.6	0.00018	16
0.25	0.29	63 M	2830	0.84	–	63.0	62.0	57.0	0.82	0.70	2.0	4.0	2.2	49	60	1LA7063-2AA	4.0	0.00022	16
0.37	0.43	71 M	2740	1.3	–	66.0	65.0	61.0	0.82	0.99	2.3	3.5	2.3	52	63	1LA7070-2AA	5.0	0.00029	16
0.55	0.63	71 M	2800	1.9	–	71.0	71.0	67.0	0.82	1.36	2.5	4.3	2.6	52	63	1LA7073-2AA	6.0	0.00041	16
0.75	0.86	80 M	2855	2.5	IE1	72.1	72.1	68.1	0.86	1.75	2.3	5.6	2.4	56	67	1LA7080-2AA	9.0	0.00079	16
1.1	1.27	80 M	2845	3.7	IE1	75.0	75.0	72.0	0.87	2.45	2.6	6.1	2.7	56	67	1LA7083-2AA	10.7	0.0010	16
1.5	1.75	90 S	2860	5.0	IE1	77.2	77.7	74.2	0.85	3.3	2.4	5.5	2.7	60	74	1LA7090-2AA	13	0.0014	16
2.2	2.55	90 L	2880	7.3	IE1	79.7	79.7	78.7	0.85	4.7	2.8	6.3	3.1	60	74	1LA7096-2AA	15.7	0.0018	16
3	3.45	100 L	2890	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	6.8	3.0	62	74	1LA7106-2AA	21.5	0.0035	16
4	4.55	112 M	2905	13	IE1	83.1	83.1	82.1	0.86	8.1	2.6	7.2	2.9	63	75	1LA7113-2AA	28.5	0.0059	16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	5.9	2.8	68	80	1LA7130-2AA	39	0.015	16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	3.0	68	80	1LA7131-2AA	48	0.019	16
11	12.6	160 M	2940	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.5	2.9	70	82	1LA7163-2AA	68	0.034	16
15	17.3	160 M	2940	49	IE1	88.7	88.7	87.7	0.90	27	2.2	6.6	3.0	70	82	1LA7164-2AA	77	0.043	16
18.5	21.3	160 L	2940	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.0	3.1	70	82	1LA7166-2AA	86	0.051	16
22	24.5	180 M	2940	71	IE1	89.9	89.9	88.9	0.88	40 ²⁾	2.5	6.9	3.2	70	83	1LA5183-2AA	113	0.077	16
30	33.5	200 L	2945	97	IE1	90.7	90.7	89.7	0.89	54	2.4	7.2	2.8	71	84	1LA5206-2AA	159	0.14	16
37	41.5	200 L	2945	120	IE1	91.2	91.2	90.2	0.89	66 ²⁾	2.4	7.7	2.8	71	84	1LA5207-2AA	179	0.16	16
45	51	225 M	2960	145	IE1	91.7	91.7	90.7	0.89	80 ²⁾	2.8	7.7	3.4	71	84	1LA5223-2AA	209	0.20	16

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
50 Hz	230 VΔ/400 VY 60 Hz ¹⁾ 460 VY	2	1LA7060 ... 166	1LA5183 ... 223	Standard	1 –
50 Hz	400 VΔ/690 VY 60 Hz ¹⁾ 460 VΔ	2	1LA7060 ... 166	1LA5183 ... 223	Standard	6 –
50 Hz	500 VY	2	1LA7060 ... 166	1LA5183 ... 223	Without add. charge	3 –
50 Hz	500 VΔ	2	1LA7106 ... 166	1LA5183 ... 223	Without add. charge	5 –
Further voltages ¹⁾ For additional charges, code numbers and descriptions, see from Page 2/76						9 ...
Types of construction		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	2	1LA7060 ... 166	1LA5183 ... 223	Standard	0 –
With flange	IM B5, IM V1 without protective cover ³⁾	2	1LA7060 ... 166	–	With add. charge	1 –
	IM V3 ³⁾	2	–	1LA5183 ... 223	With add. charge	9 M1G
With standard flange	IM V1 with protective cover ^{3) 4)}	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	4 –
	IM B35	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	6 –
	IM B14, IM V19, IM V18 without protective cover	2	1LA7060 ... 166	–	With add. charge	2 –
With special flange	IM B34	2	1LA7060 ... 166	–	With add. charge	7 –
	IM B14, IM V19, IM V18 without protective cover	2	1LA7060 ... 166	–	With add. charge	3 –
Further types of construction For additional charges, code numbers and descriptions, see from Page 2/80						9 ...
Special versions						Order code(s)
Options For additional charges, code numbers and descriptions, see from Page 2/87					1LA ... -Z	...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.



IE1

SIMOTICS GP 1LA Standard Motors

Motors with Standard Efficiency IE1

Self-ventilated motors
Aluminum series 1LA7 and 1LA5

Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output											Aluminum series 1LA7/1LA5 – IE1 version in accordance with IEC 60034-30 Order No. For successor 1LE1002 see Page 1/33	m _M B3 J kg kgm ²	Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz %	η _{rated} 50 Hz %	η _{rated} 50 Hz %	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}			

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
0.12	0.14	63 M	1350	0.85	–	53.6	52.1	47.6	0.75	0.43	1.9	2.8	2.0	42	53	1LA7060-4AB	3.6	0.00029	13
0.18	0.21	63 M	1350	1.3	–	58.3	56.8	52.3	0.77	0.58	1.9	3.0	1.9	42	53	1LA7063-4AB	4.0	0.00037	13
0.25	0.29	71 M	1350	1.8	–	61.9	60.4	55.9	0.78	0.75	1.9	3.0	1.9	44	55	1LA7070-4AB	4.8	0.00052	13
0.37	0.43	71 M	1370	2.6	–	65.8	64.8	60.8	0.78	1.04	1.9	3.3	2.1	44	55	1LA7073-4AB	6.3	0.00077	13
0.55	0.63	80 M	1395	3.8	–	69.4	69.4	65.4	0.81	1.41	2.2	3.9	2.2	47	58	1LA7080-4AA	8.8	0.0014	16
0.75	0.86	80 M	1395	5.1	IE1	72.1	72.1	68.1	0.80	1.88	2.3	4.2	2.3	47	58	1LA7083-4AA	10	0.0017	16
1.1	1.27	90 S	1415	7.4	IE1	75.0	75.0	72.0	0.81	2.6	2.3	4.6	2.4	48	60	1LA7090-4AA	12.9	0.0024	16
1.5	1.75	90 L	1420	10	IE1	77.2	77.7	74.2	0.81	3.45	2.4	5.3	2.6	48	60	1LA7096-4AA	15.5	0.0033	16
2.2	2.55	100 L	1420	15	IE1	79.7	79.7	78.7	0.82	4.85	2.5	5.6	2.8	53	65	1LA7106-4AA	21	0.0047	16
3	3.45	100 L	1420	20	IE1	81.5	81.5	80.5	0.82	6.5	2.7	5.6	3.0	53	65	1LA7107-4AA	24	0.0055	16
4	4.55	112 M	1440	27	IE1	83.1	83.1	82.1	0.83	8.4	2.7	6.0	3.0	53	65	1LA7113-4AA	30.5	0.012	16
5.5	6.3	132 S	1455	36	IE1	84.7	84.7	83.7	0.81	11.6	2.5	6.3	3.1	62	74	1LA7130-4AA	41	0.018	16
7.5	8.6	132 M	1455	49	IE1	86.0	86.0	85.0	0.82	15.4	2.7	6.7	3.2	62	74	1LA7133-4AA	49	0.023	16
11	12.6	160 M	1460	72	IE1	87.6	87.6	86.6	0.84	21.5	2.2	6.2	2.7	66	78	1LA7163-4AA	73	0.043	16
15	17.3	160 L	1460	98	IE1	88.7	88.7	87.7	0.84	29	2.6	6.5	3.8	66	78	1LA7166-4AA	85	0.055	16
18.5	21.3	180 M	1455	121	IE1	89.3	89.3	88.3	0.83	36 ²⁾	2.3	7.5	3.0	63	76	1LA5183-4AA	113	0.13	16
22	25.3	180 L	1455	144	IE1	89.9	89.9	88.9	0.84	42 ²⁾	2.3	7.5	3.0	63	76	1LA5186-4AA	123	0.15	16
30	34.5	200 L	1465	196	IE1	90.7	90.7	89.7	0.86	56	2.6	7.0	3.2	65	78	1LA5207-4AA	157	0.24	16
37	42.5	225 S	1470	240	IE1	91.2	91.2	90.2	0.87	67 ²⁾	2.8	7.0	3.2	65	78	1LA5220-4AA	206	0.32	16
45	52	225 M	1470	292	IE1	91.7	91.7	90.7	0.87	81 ²⁾	2.8	7.7	3.3	65	78	1LA5223-4AA	232	0.36	16

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	4	1LA7060 ... 166	1LA5183 ... 223	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	4	1LA7060 ... 166	1LA5183 ... 223	Standard	6	–
50 Hz	500 VY			4	1LA7060 ... 166	1LA5183 ... 223	Without add. charge	3	–
50 Hz	500 VΔ			4	1LA7106 ... 166	1LA5183 ... 223	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76					9	...	
Types of construction		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
Without flange		IM B3/6/7/8, IM V6, IM V5 without protective cover	4	1LA7060 ... 166	1LA5183 ... 223	Standard	0	–	
With flange		IM B5, IM V1 without protective cover ³⁾	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1	–	
		IM V3 ³⁾	4	1LA7060 ... 166	–	With add. charge	1	–	
			4	–	1LA5183 ... 223	With add. charge	9	M1G	
		IM V1 with protective cover ³⁾⁴⁾	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge	4	–	
		IM B35	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge	6	–	
With standard flange		IM B14, IM V19, IM V18 without protective cover	4	1LA7060 ... 166	–	With add. charge	2	–	
		IM B34	4	1LA7060 ... 166	–	With add. charge	7	–	
With special flange		IM B14, IM V19, IM V18 without protective cover	4	1LA7060 ... 166	–	With add. charge	3	–	
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80					9	...	
Special versions		Options					Order code(s)		
		For additional charges, code numbers and descriptions, see from Page 2/87					1LA ... -Z	...+...+...+...	

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.
⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1LA Standard Motors

Motors with Standard Efficiency IE1



IE1

Self-ventilated motors Aluminum series 1LA7 and 1LA5

Selection and ordering data (continued)

P _{rated} 50 Hz	P _{rated} 60 Hz 1)	Frame size	Operating values at rated output											Aluminum series 1LA7/1LA5 – IE1 version in accordance with IEC 60034-30 Order No.	m _M B3 J	Torque class	
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / I _{rated}	L _{LR} / I _{rated}	T _B / I _{rated}				L _{pFA} , 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A									

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾

0.09	0.10	63 M	850	1.0	–	50.2	48.7	44.2	0.66	0.39	1.8	2.0	1.9	39	50	1LA7063-6AB	4.0	0.00037	13
0.18	0.21	71 M	850	2.0	–	57.3	55.8	51.3	0.68	0.67	2.1	2.3	1.9	39	50	1LA7070-6AA	4.8	0.00055	16
0.25	0.29	71 M	860	2.8	–	61.9	60.4	55.9	0.76	0.77	2.2	2.7	2.0	39	50	1LA7073-6AA	5.8	0.00080	16
0.37	0.43	80 M	920	3.8	–	64.1	63.1	59.1	0.72	1.16	1.9	3.1	2.1	40	51	1LA7080-6AA	8.6	0.0014	16
0.55	0.63	80 M	910	5.8	–	67.5	67.0	63.5	0.74	1.59	2.1	3.4	2.2	40	51	1LA7083-6AA	9.8	0.0017	16
0.75	0.86	90 S	915	7.8	IE1	70.0	70.0	66.0	0.76	2.05	2.2	3.7	2.2	43	55	1LA7090-6AA	12.6	0.0024	16
1.1	1.27	90 L	915	11	IE1	72.9	72.9	69.9	0.77	2.85	2.3	3.8	2.3	43	55	1LA7096-6AA	15.7	0.0033	16
1.5	1.75	100 L	925	15	IE1	75.2	75.2	72.2	0.75	3.85	2.3	4.0	2.3	47	59	1LA7106-6AA	21	0.0047	16
2.2	2.55	112 M	940	22	IE1	77.7	78.2	75.2	0.78	5.2	2.2	4.6	2.5	52	64	1LA7113-6AA	26	0.0091	16
3	3.45	132 S	950	30	IE1	79.7	79.7	78.7	0.76	7.1	1.9	4.2	2.2	63	75	1LA7130-6AA	38	0.015	16
4	4.55	132 M	950	40	IE1	81.4	81.4	80.4	0.76	9.3	2.1	4.5	2.4	63	75	1LA7133-6AA	44	0.019	16
5.5	6.3	132 M	950	55	IE1	83.1	83.1	82.1	0.76	12.6	2.3	5.0	2.6	63	75	1LA7134-6AA	52	0.025	16
7.5	8.6	160 M	960	75	IE1	84.7	84.7	83.7	0.74	17.3	2.1	4.6	2.5	66	78	1LA7163-6AA	74	0.044	16
11	12.6	160 L	960	109	IE1	86.4	86.4	85.4	0.74	25	2.3	4.8	2.6	66	78	1LA7166-6AA	95	0.063	16
15	18	180 L	970	148	IE1	87.7	87.7	86.7	0.77	32	2.0	5.2	2.4	66	78	1LA5186-6AA	126	0.15	16
18.5	22	200 L	975	181	IE1	88.6	88.6	87.6	0.77	39	2.7	5.5	2.8	66	78	1LA5206-6AA	161	0.24	16
22	26.5	200 L	975	215	IE1	89.2	89.2	88.2	0.77	46	2.8	5.5	2.9	66	78	1LA5207-6AA	183	0.28	16
30	36	225 M	978	293	IE1	90.2	90.2	89.2	0.77	62 ²⁾	2.8	5.7	2.9	66	78	1LA5223-6AA	214	0.36	16

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6	1LA7063 ... 166	1LA5186 ... 223	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6	1LA7063 ... 166	1LA5186 ... 223	Standard	6	–
50 Hz	500 VY			6	1LA7063 ... 166	1LA5186 ... 223	Without add. charge	3	–
50 Hz	500 VΔ			6	1LA7106 ... 166	1LA5186 ... 223	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76					9	...	
Types of construction		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	6	1LA7063 ... 166	1LA5186 ... 223	Standard	0	–		
With flange	IM B5, IM V1 without protective cover ³⁾ IM V3 ³⁾	6	1LA7063 ... 166	1LA5186 ... 223	With add. charge	1	–		
		6	1LA7063 ... 166	–	With add. charge	1	–		
		6	–	1LA5186 ... 223	With add. charge	9	M1G		
With standard flange	IM V1 with protective cover ^{3) 4)} IM B35	6	1LA7063 ... 166	1LA5186 ... 223	With add. charge	4	–		
		6	1LA7063 ... 166	1LA5186 ... 223	With add. charge	6	–		
		6	1LA7063 ... 166	–	With add. charge	2	–		
With special flange	IM B14, IM V19, IM V18 without protective cover IM B34	6	1LA7063 ... 166	–	With add. charge	7	–		
		6	1LA7063 ... 166	–	With add. charge	3	–		
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80					9	...	
Special versions		Order code(s)							
Options		For additional charges, code numbers and descriptions, see from Page 2/87					1LA -Z	. . . + . . . + . . . + . . .	

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.



IE1

SIMOTICS GP 1LA Standard Motors

Motors with Standard Efficiency IE1

Self-ventilated motors
Aluminum series 1LA7 and 1LA5

Selection and ordering data (continued)

P _{rated} , 50 Hz	P _{rated} , 60 Hz ¹⁾	Frame size	Operating values at rated output											Aluminum series 1LA7/1LA5 – IE1 version in accordance with IEC 60034-30 Order No. For successor 1LE1002 see Page 1/33	m _{IM B3} J	Torque class			
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _r rated, 50 Hz, 400 V	T _{LR} /I _r rated	I _{LR} /I _r rated	T _B /I _r rated				L _p fA, 50 Hz	L _{WA} , 50 Hz	
kW	kW	FS	rpm	Nm	%	%	%	A									kg	kgm ²	CL

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
0.09	0.104	71 M	630	1.4	–	51.0	49.5	45.0	0.68	0.38	1.9	2.2	1.7	36	47	1LA7070-8AB	5.8	0.00080	13
0.12	0.14	71 M	645	1.8	–	51.0	49.5	45.0	0.64	0.53	2.2	2.2	2.0	36	47	1LA7073-8AB	5.8	0.00080	13
0.18	0.21	80 M	675	2.5	–	49.0	47.5	43.0	0.68	0.78	1.7	2.3	1.9	41	52	1LA7080-8AB	8.8	0.0014	13
0.25	0.29	80 M	685	3.5	–	53.0	51.5	47.0	0.64	1.06	2.0	2.6	2.2	41	52	1LA7083-8AB	9.9	0.0017	13
0.37	0.43	90 S	675	5.2	–	61.0	59.5	55.0	0.75	1.17	1.6	2.9	1.8	41	53	1LA7090-8AB	11	0.0023	13
0.55	0.63	90 L	675	7.8	–	64.0	63.0	59.0	0.76	1.63	1.7	3.0	1.9	41	53	1LA7096-8AB	12.6	0.0031	13
0.75	0.86	100 L	680	11	–	64.0	63.0	59.0	0.76	2.25	1.6	3.0	1.9	45	57	1LA7106-8AB	19	0.0051	13
1.1	1.27	100 L	680	15	–	70.0	70.0	66.0	0.76	3.0	1.8	3.3	2.1	45	57	1LA7107-8AB	21.5	0.0063	13
1.5	1.75	112 M	705	20	–	72.1	72.1	68.1	0.76	3.95	1.8	3.7	2.1	49	61	1LA7113-8AB	24	0.013	13
2.2	2.55	132 S	700	30	–	73.2	73.2	70.2	0.74	5.9	1.9	3.9	2.3	53	65	1LA7130-8AB	38	0.014	13
3	3.45	132 M	700	41	–	75.2	75.2	72.2	0.74	7.8	2.1	4.1	2.4	53	65	1LA7133-8AB	44	0.019	13
4	4.55	160 M	715	53	–	78.3	78.8	75.8	0.72	10.2	2.2	4.5	2.6	63	75	1LA7163-8AB	64	0.036	13
5.5	6.3	160 M	710	74	–	81.9	81.9	80.9	0.73	13.3	2.3	4.7	2.7	63	75	1LA7164-8AB	74	0.046	13
7.5	8.6	160 L	715	100	–	83.9	83.9	82.9	0.72	17.9	2.7	5.3	3.0	63	75	1LA7166-8AB	94	0.064	13
11	13.2	180 L	725	145	–	85.5	85.5	84.5	0.75	25	2.0	5.0	2.2	60	73	1LA5186-8AB	128	0.21	13
15	18	200 L	725	198	–	86.1	86.1	85.1	0.78	32	2.1	5.0	2.2	58	71	1LA5207-8AB	176	0.37	13
18.5	22	225 S	725	244	–	87.8	87.8	86.8	0.79	38.5	2.1	4.5	2.2	58	71	1LA5220-8AB	184	0.37	13
22	26.5	225 M	725	290	–	89.3	89.3	88.3	0.79	45	2.2	4.8	2.3	58	71	1LA5223-8AB	214	0.45	13

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version		Order code(s)	
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY		Standard	1	–	
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ		Standard	6	–	
50 Hz	500 VY				Without add. charge	3	–	
50 Hz	500 VΔ				Without add. charge	5	–	
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76					9	...
Types of construction		No. of poles	Motor type 1LA7	Motor type 1LA5	Version		Order code(s)	
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	8	1LA7063 ... 166	1LA5186 ... 223	Standard	0	–	
With flange	IM B5, IM V1 without protective cover ²⁾ IM V3 ²⁾	8	1LA7063 ... 166	1LA5186 ... 223	With add. charge	1	–	
		8	1LA7063 ... 166	–	With add. charge	1	–	
		8	–	1LA5186 ... 223	With add. charge	9	M1G	
With standard flange	IM V1 with protective cover ^{2) 3)} IM B35	8	1LA7063 ... 166	1LA5186 ... 223	With add. charge	4	–	
		8	1LA7063 ... 166	1LA5186 ... 223	With add. charge	6	–	
		8	1LA7063 ... 166	–	With add. charge	2	–	
With special flange	IM B14, IM V19, IM V18 without protective cover	8	1LA7063 ... 166	–	With add. charge	7	–	
		8	1LA7063 ... 166	–	With add. charge	3	–	
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80					9	...
Special versions								Order code(s)
Options		For additional charges, code numbers and descriptions, see from Page 2/87					1LA ... -Z	...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

²⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

2.3

SIMOTICS GP 1LA Standard Motors

Motors with Standard Efficiency IE1



Self-ventilated motors Aluminum series 1LA9 with increased output

Selection and ordering data

P _{Rated} 50 Hz kW	P _{Rated} 60 Hz 1) kW	Frame size FS	Operating values at rated output										Aluminum series 1LA9 – IE1 version in accordance with IEC 60034-30 with increased output Order No.	m _M B3 J	Torque class
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4 %	η _{rated} 50 Hz, 3/4 %	η _{rated} 50 Hz, 2/4 %	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} / I _{rated}	I _{LR} / I _{rated}			

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾

0.33	0.38	63 M	2775	1.1	–	67.0	66.5	62.0	0.80	0.89	2.3	4.4	2.2	49	60	1LA9060-2LA	4.0	0.00022	16
0.45	0.52	63 M	2720	1.6	–	67.6	67.1	63.6	0.84	1.14	2.2	4.2	2.3	49	60	1LA9063-2LA	4.7	0.00026	16
0.65	0.75	71 M	2720	2.3	–	70.9	70.9	66.9	0.83	1.59	2.4	4.5	2.5	52	63	1LA9070-2LA	6.0	0.00041	16
0.94	1.08	71 M	2735	3.3	–	73.8	73.8	70.8	0.82	2.25	2.5	4.8	2.4	52	63	1LA9073-2LA	7.2	0.00050	16
1.5	1.67	80 M	2820	5.1	–	77.2	77.7	74.2	0.83	3.40	3.1	6.7	3.1	56	67	1LA9080-2LA	10.7	0.0010	16
1.75	2.01	80 M	2840	5.9	–	78.3	78.8	75.8	0.82	3.95	3.7	7.4	3.5	56	67	1LA9083-2LA	12.4	0.0013	16
3	3.34	90 S	2825	10	–	81.5	81.5	80.5	0.82	6.5	3.2	6.5	3.0	60	72	1LA9090-2LA	16.2	0.0018	16
3.8	4.37	90 L	2810	13	–	80.2	80.2	79.2	0.85	8.0	3.1	6.5	2.7	60	72	1LA9096-2LA	18.6	0.0022	16
4.4	5.06	100 L	2880	15	–	81.0	81.0	80.0	0.83	9.4	3.0	7.8	3.2	62	74	1LA9106-2LA	25	0.0044	16
6.5	7.48	112 M	2900	21	–	85.4	85.4	84.4	0.83	13.2	3.0	8.6	3.8	63	75	1LA9113-2LA	36.7	0.0077	16
9	10.35	132 S	2915	29	–	86.8	86.8	85.8	0.90	16.6	2.0	6.4	2.6	68	80	1LA9130-2LA	47.2	0.019	16
12	13.8	132 S	2915	39	–	85.6	85.6	84.6	0.89	22.5	3.0	7.4	3.2	68	80	1LA9131-2LA	58.1	0.024	16
18	20.7	160 M	2920	59	–	89.3	89.3	88.3	0.87	33.5	2.2	7.0	3.1	70	82	1LA9163-2LA	78.6	0.044	16
21	24.15	160 M	2930	68	–	89.7	89.7	88.7	0.91	37	2.0	6.9	2.7	70	82	1LA9164-2LA	87.6	0.051	16
26	29.9	160 L	2935	85	–	90.3	90.3	89.3	0.91	45.5	2.2	7.7	3.2	70	82	1LA9166-2LA	110.4	0.065	16
33	37.95	180 M	2940	107	–	91.0	91.0	90.0	0.86	61	2.5	7.4	3.3	70	83	1LA9183-2AA	131	0.090	16
44	50.6	200 L	2945	143	–	91.6	91.6	90.6	0.86	81	2.4	7.8	3.2	71	84	1LA9206-2AA	182	0.16	16
53	60.95	200 L	2945	172	–	92.0	92.0	91.0	0.87	96	2.6	8.2	3.3	71	84	1LA9207-2AA	211	0.20	16

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾

0.21	0.24	63 M	1335	1.5	–	60.0	58.5	54.0	0.77	0.66	2.1	2.9	2.1	42	53	1LA9060-4LA	4.0	0.00037	16
0.29	0.33	63 M	1330	2.1	–	63.4	62.4	57.4	0.71	0.93	2.3	2.9	2.3	42	53	1LA9063-4LA	4.7	0.00045	16
0.45	0.52	71 M	1340	3.2	–	63.5	62.5	58.5	0.71	1.44	2.3	3.4	2.3	44	55	1LA9070-4LA	6.0	0.00076	16
0.6	0.69	71 M	1340	4.3	–	70.2	70.2	66.2	0.75	1.64	2.3	3.6	2.3	44	55	1LA9073-4LA	7.0	0.00095	16
0.9	1.04	80 M	1340	6.4	–	68.0	67.5	64.0	0.81	2.35	2.3	4.1	2.4	47	58	1LA9080-4LA	10.7	0.0017	16
1.25	1.44	80 M	1340	8.9	–	68.0	67.5	64.0	0.83	3.2	2.7	4.5	2.4	47	58	1LA9083-4LA	12.4	0.0024	16
1.8	2.07	90 S	1380	12	–	78.4	78.9	75.9	0.83	4.0	2.4	5.1	2.4	48	60	1LA9090-4LA	16.2	0.0033	16
2.5	2.88	90 L	1390	17	–	74.2	74.2	71.2	0.81	6.0	2.5	5.1	2.3	48	60	1LA9096-4LA	18.6	0.0040	16
4	4.6	100 L	1410	27	–	75.3	75.3	72.3	0.81	9.5	2.7	6.0	3.0	53	65	1LA9107-4LA	26	0.0062	16
5.5	6.33	112 M	1440	36	–	80.4	80.4	79.4	0.80	12.3	3.0	6.8	3.0	53	65	1LA9113-4LA	38.7	0.014	16
8.6	9.89	132 S	1440	57	–	82.5	82.5	81.5	0.83	18.1	2.3	6.8	2.7	62	74	1LA9130-4LA	49.2	0.023	16
11	12.65	132 M	1450	72	–	83.5	83.5	82.5	0.83	23	2.8	7.4	3.1	62	74	1LA9133-4LA	62.1	0.029	16
17	19.55	160 M	1455	112	–	86.6	86.6	85.6	0.84	33.5	2.9	7.5	2.8	66	78	1LA9163-4LA	86.6	0.055	16
22	25.3	160 L	1455	144	–	86.7	86.7	85.7	0.82	44.5	3.1	8.3	3.4	66	78	1LA9166-4LA	115.4	0.072	16
26	30	180 M	1460	170	–	90.3	90.3	89.3	0.83	50	2.4	7.5	3.2	63	76	1LA9183-4AA	126	0.15	16
32	38	180 L	1465	209	–	90.9	90.9	89.9	0.84	60	2.5	7.9	3.4	63	76	1LA9186-4AA	146	0.19	16
43	49.6	200 L	1465	280	–	91.6	91.6	90.6	0.85	80	2.7	7.8	3.5	65	78	1LA9207-4AA	196	0.32	16

Voltages		No. poles	Motor type	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2, 4	1LA9060 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4	1LA9060 ... 207	Standard	6	–
50 Hz	500 VY			2, 4	1LA9060 ... 207	Without add. charge	3	–
50 Hz	500 VΔ			2, 4	1LA9106 ... 207	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76				9	...	

Types of construction		No. poles	Motor type	Version	Order code(s)		
Without flange	IM B3/6/7/8, IM V6, IM V5 without prot. cover	2, 4	1LA9060 ... 207	Standard	0	–	
With flange	IM B5, IM V1 without protective cover	2, 4	1LA9060 ... 207	With add. charge	1	–	
	IM V3	2, 4	1LA9060 ... 166	With add. charge	1	–	
		2, 4	1LA9183 ... 207	With add. charge	9	M1G	
	IM V1 with protective cover ²⁾	2, 4	1LA9060 ... 207	With add. charge	4	–	
With standard flange	IM B35	2, 4	1LA9060 ... 207	With add. charge	6	–	
	IM B14, IM V19, IM V18 without prot. cover	2, 4	1LA9060 ... 166	With add. charge	2	–	
With special flange	IM B34	2, 4	1LA9060 ... 166	With add. charge	7	–	
	IM B14, IM V19, IM V18 without protective cover	2, 4	1LA9060 ... 166	With add. charge	3	–	
Further types of construct.		For additional charges, code numbers and descriptions, see from Page 2/80				9	...

Special versions		Order code(s)
Options	For additional charges, code numbers and descriptions, see from Page 2/87	1LA9 ... -Z ...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request. ²⁾ The "Second shaft extension" option, order code K16 is not possible.



IE1

SIMOTICS GP 1PP Standard Motors

Motors with Standard Efficiency IE1

Forced-air cooled motors without external fan and fan cover – Aluminum series 1PP7 and 1PP5

Selection and ordering data

P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	Operating values at rated output											Aluminum series 1PP7/1PP5 – IE1 version in accordance with IEC 60034-30 Order No.	m _M B3 J	Torque class	
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / I _{rated}	L _{LR} / I _{rated}	T _B / I _{rated}				L _{pFA} , 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A									

For successor
1LE1002 with order
code F90
see Page 1/33

- Cooling: Forced-air cooled without external fan and fan cover (IC 416)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																			
0.18	0.21	63 M	2820	0.61	–	62.0	60.5	56.0	0.82	0.51	2.0	3.7	2.2	–	–	1PP7060-2AA	3.6	0.00018	16
0.25	0.29	63 M	2830	0.84	–	63.0	62.0	57.0	0.82	0.70	2.0	4.0	2.2	–	–	1PP7063-2AA	4.0	0.00022	16
0.37	0.43	71 M	2740	1.3	–	66.0	65.0	61.0	0.82	0.99	2.3	3.5	2.3	–	–	1PP7070-2AA	5.0	0.00029	16
0.55	0.63	71 M	2800	1.9	–	71.0	71.0	67.0	0.82	1.36	2.5	4.3	2.6	–	–	1PP7073-2AA	6.0	0.00041	16
0.75	0.86	80 M	2855	2.5	IE1	72.1	72.1	68.1	0.86	1.75	2.3	5.6	2.4	–	–	1PP7080-2AA	9.0	0.00079	16
1.1	1.27	80 M	2845	3.7	IE1	75.0	75.0	72.0	0.87	2.45	2.6	6.1	2.7	–	–	1PP7083-2AA	10.7	0.0010	16
1.5	1.75	90 S	2860	5.0	IE1	77.2	77.7	74.2	0.85	3.3	2.4	5.5	2.7	–	–	1PP7090-2AA	13	0.0014	16
2.2	2.55	90 L	2880	7.3	IE1	79.7	79.7	78.7	0.85	4.7	2.8	6.3	3.1	–	–	1PP7096-2AA	15.7	0.0018	16
3	3.45	100 L	2890	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	6.8	3.0	–	–	1PP7106-2AA	21.5	0.0035	16
4	4.55	112 M	2905	13	IE1	83.1	83.1	82.1	0.86	8.1	2.6	7.2	2.9	–	–	1PP7113-2AA	28.5	0.0059	16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	5.9	2.8	–	–	1PP7130-2AA	39	0.015	16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	3.0	–	–	1PP7131-2AA	48	0.019	16
11	12.6	160 M	2940	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.5	2.9	–	–	1PP7163-2AA	68	0.034	16
15	17.3	160 M	2940	49	IE1	88.7	88.7	87.7	0.90	27	2.2	6.6	3.0	–	–	1PP7164-2AA	77	0.043	16
18.5	21.3	160 L	2940	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.0	3.1	–	–	1PP7166-2AA	86	0.051	16
22	24.5	180 M	2940	71	IE1	89.9	89.9	88.9	0.88	40 ²⁾	2.5	6.9	3.2	–	–	1PP5183-2AA	113	0.077	16
30	33.5	200 L	2945	97	IE1	90.7	90.7	89.7	0.89	54	2.4	7.2	2.8	–	–	1PP5206-2AA	159	0.14	16
37	41.5	200 L	2945	120	IE1	91.2	91.2	90.2	0.89	66 ²⁾	2.4	7.7	2.8	–	–	1PP5207-2AA	179	0.16	16

Voltages		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2	1PP7060 ... 166	1PP5183 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2	1PP7060 ... 166	1PP5183 ... 207	Standard	6	–
50 Hz	500 VY			2	1PP7060 ... 166	1PP5183 ... 207	Without add. charge	3	–
50 Hz	500 VΔ			2	1PP7106 ... 166	1PP5183 ... 207	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76					9	...	
Types of construction		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
Without flange		IM B3/6/7/8, IM V6, IM V5 without protective cover	2	1PP7060 ... 166	1PP5183 ... 207	Standard	0	–	
With flange		IM B5, IM V1 without protective cover ^{3) 4)}	2	1PP7060 ... 166	1PP5183 ... 207	With add. charge	1	–	
		IM V3 ³⁾	2	1PP7060 ... 166	–	With add. charge	1	–	
			2	–	1PP5183 ... 207	With add. charge	9	M1G	
With standard flange		IM B14, IM V19, IM V18 without protective cover	2	1PP7060 ... 166	–	With add. charge	2	–	
With special flange		IM B14, IM V19, IM V18 without protective cover	2	1PP7060 ... 166	–	With add. charge	3	–	
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80					9	...	
Special versions							Order code(s)		
Options		For additional charges, code numbers and descriptions, see from Page 2/87					1PP -Z	. . . + . . . + . . . + . . .	

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ 1PP5 motors can be supplied as an option with two additional eyebolts – specify order code K32.
⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

2.3

SIMOTICS GP 1PP Standard Motors

Motors with Standard Efficiency IE1

Forced-air cooled motors without external fan and fan cover – Aluminum series 1PP7 and 1PP5

IE1



Selection and ordering data (continued)

P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	Operating values at rated output											Aluminum series 1PP7/1PP5 – IE1 version in accordance with IEC 60034-30 Order No.	m _M B3 J	Torque class		
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pFA} , 50 Hz	L _{WA} , 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A										

For successor
1LE1002 with order
code F90
see Page 1/33

- Cooling: Forced-air cooled without external fan and fan cover (IC 416)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾

0.12	0.14	63 M	1350	0.85	–	53.6	52.1	47.6	0.75	0.43	1.9	2.8	2.0	–	–	1PP7060-4AB	3.6	0.00029	13
0.18	0.21	63 M	1350	1.3	–	58.3	56.8	52.3	0.77	0.58	1.9	3.0	1.9	–	–	1PP7063-4AB	4.0	0.00037	13
0.25	0.29	71 M	1350	1.8	–	61.9	60.4	55.9	0.78	0.75	1.9	3.0	1.9	–	–	1PP7070-4AB	4.8	0.00052	13
0.37	0.43	71 M	1370	2.6	–	65.8	64.8	60.8	0.78	1.04	1.9	3.3	2.1	–	–	1PP7073-4AB	6.3	0.00077	13
0.55	0.63	80 M	1395	3.8	–	69.4	69.4	65.4	0.81	1.41	2.2	3.9	2.2	–	–	1PP7080-4AA	8.8	0.0014	16
0.75	0.86	80 M	1395	5.1	IE1	72.1	72.1	68.1	0.80	1.88	2.3	4.2	2.3	–	–	1PP7083-4AA	10	0.0017	16
1.1	1.27	90 S	1415	7.4	IE1	75.0	75.0	72.0	0.81	2.6	2.3	4.6	2.4	–	–	1PP7090-4AA	12.9	0.0024	16
1.5	1.75	90 L	1420	10	IE1	77.2	77.7	74.2	0.81	3.45	2.4	5.3	2.6	–	–	1PP7096-4AA	15.5	0.0033	16
2.2	2.55	100 L	1420	15	IE1	79.7	79.7	78.7	0.82	4.85	2.5	5.6	2.8	–	–	1PP7106-4AA	21	0.0047	16
3	3.45	100 L	1420	20	IE1	81.5	81.5	80.5	0.82	6.5	2.7	5.6	3.0	–	–	1PP7107-4AA	24	0.0055	16
4	4.55	112 M	1440	27	IE1	83.1	83.1	82.1	0.83	8.4	2.7	6.0	3.0	–	–	1PP7113-4AA	30.5	0.012	16
5.5	6.3	132 S	1455	36	IE1	84.7	84.7	83.7	0.81	11.6	2.5	6.3	3.1	–	–	1PP7130-4AA	41	0.018	16
7.5	8.6	132 M	1455	49	IE1	86.0	86.0	85.0	0.82	15.4	2.7	6.7	3.2	–	–	1PP7133-4AA	49	0.023	16
11	12.6	160 M	1460	72	IE1	87.6	87.6	86.6	0.84	21.5	2.2	6.2	2.7	–	–	1PP7163-4AA	73	0.043	16
15	17.3	160 L	1460	98	IE1	88.7	88.7	87.7	0.84	29	2.6	6.5	3.8	–	–	1PP7166-4AA	85	0.055	16
18.5	21.3	180 M	1455	121	IE1	89.3	89.3	88.3	0.83	36 ²⁾	2.3	7.5	3.0	–	–	1PP5183-4AA	113	0.13	16
22	25.3	180 L	1455	144	IE1	89.9	89.9	88.9	0.84	42 ²⁾	2.3	7.5	3.0	–	–	1PP5186-4AA	123	0.15	16
30	34.5	200 L	1465	196	IE1	90.7	90.7	89.7	0.86	56	2.6	7.0	3.2	–	–	1PP5207-4AA	157	0.24	16

Voltages		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	4	1PP7060 ... 166	1PP5183 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	4	1PP7060 ... 166	1PP5183 ... 207	Standard	6	–
50 Hz	500 VY			4	1PP7060 ... 166	1PP5183 ... 207	Without add. charge	3	–
50 Hz	500 VΔ			4	1PP7106 ... 166	1PP5183 ... 207	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76				9	...		
Types of construction		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	4	1PP7060 ... 166	1PP5183 ... 207	Standard	0	–		
With flange	IM B5, IM V1 without protective cover ^{3) 4)}	4	1PP7060 ... 166	1PP5183 ... 207	With add. charge	1	–		
	IM V3 ³⁾	4	1PP7060 ... 166	–	With add. charge	1	–		
With standard flange	IM B14, IM V19, IM V18 without protective cover	–	–	1PP5183 ... 207	With add. charge	9	M1G		
		4	1PP7060 ... 166	–	With add. charge	2	–		
With special flange	IM B14, IM V19, IM V18 without protective cover	4	1PP7060 ... 166	–	With add. charge	3	–		
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80				9	...		
Special versions		Options					Order code(s)		
Options		For additional charges, code numbers and descriptions, see from Page 2/87				1PP ■■ -Z	. . . + . . + . . + . .		

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ 1PP5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.



IE1

SIMOTICS GP 1PP Standard Motors

Motors with Standard Efficiency IE1

Forced-air cooled motors without external fan and fan cover – Aluminum series 1PP7 and 1PP5

Selection and ordering data (continued)

P _{rated} , 50 Hz	P _{rated} , 60 Hz ¹⁾	Frame size	Operating values at rated output											Aluminum series 1PP7/1PP5 – IE1 version in accordance with IEC 60034-30 Order No.	m _M B3 J	Torque class		
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pFA} , 50 Hz	L _{WA} , 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A										

For successor
1LE1002 with order
code F90
see Page 1/33

- Cooling: Forced-air cooled without external fan and fan cover (IC 416)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz¹⁾

0.09	0.10	63 M	850	1.0	–	50.2	48.7	44.2	0.66	0.39	1.8	2.0	1.9	–	–	1PP7063-6AA	4.0	0.00037	13
0.18	0.21	71 M	850	2.0	–	57.3	55.8	51.3	0.68	0.67	2.1	2.3	1.9	–	–	1PP7070-6AA	4.8	0.00055	16
0.25	0.29	71 M	860	2.8	–	61.9	60.4	55.9	0.76	0.77	2.2	2.7	2.0	–	–	1PP7073-6AA	5.8	0.00080	16
0.37	0.43	80 M	920	3.8	–	64.1	63.1	59.1	0.72	1.16	1.9	3.1	2.1	–	–	1PP7080-6AA	8.6	0.0014	16
0.55	0.63	80 M	910	5.8	–	67.5	67.0	63.5	0.74	1.59	2.1	3.4	2.2	–	–	1PP7083-6AA	9.8	0.0017	16
0.75	0.86	90 S	915	7.8	IE1	70.0	70.0	66.0	0.76	2.05	2.2	3.7	2.2	–	–	1PP7090-6AA	12.6	0.0024	16
1.1	1.27	90 L	915	11	IE1	72.9	72.9	69.9	0.77	2.85	2.3	3.8	2.3	–	–	1PP7096-6AA	15.7	0.0033	16
1.5	1.75	100 L	925	15	IE1	75.2	75.2	72.2	0.75	3.85	2.3	4.0	2.3	–	–	1PP7106-6AA	21	0.0047	16
2.2	2.55	112 M	940	22	IE1	77.7	78.2	75.2	0.78	5.2	2.2	4.6	2.5	–	–	1PP7113-6AA	26	0.0091	16
3	3.45	132 S	950	30	IE1	79.7	79.7	78.7	0.76	7.1	1.9	4.2	2.2	–	–	1PP7130-6AA	38	0.015	16
4	4.55	132 M	950	40	IE1	81.4	81.4	80.4	0.76	9.3	2.1	4.5	2.4	–	–	1PP7133-6AA	44	0.019	16
5.5	6.3	132 M	950	55	IE1	83.1	83.1	82.1	0.76	12.6	2.3	5.0	2.6	–	–	1PP7134-6AA	52	0.025	16
7.5	8.6	160 M	960	75	IE1	84.7	84.7	83.7	0.74	17.3	2.1	4.6	2.5	–	–	1PP7163-6AA	74	0.044	16
11	12.6	160 L	960	109	IE1	86.4	86.4	85.4	0.74	25	2.3	4.8	2.6	–	–	1PP7166-6AA	95	0.063	16
15	18	180 L	970	148	IE1	87.7	87.7	86.7	0.77	32	2.0	5.2	2.4	–	–	1PP5186-6AA	126	0.15	16
18.5	22	200 L	975	181	IE1	88.6	88.6	87.6	0.77	39	2.7	5.5	2.8	–	–	1PP5206-6AA	161	0.24	16
22	26.5	200 L	975	215	IE1	89.2	89.2	88.2	0.77	46	2.8	5.5	2.9	–	–	1PP5207-6AA	183	0.28	16

Voltages		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6	1PP7063 ... 166	1PP5186 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6	1PP7063 ... 166	1PP5186 ... 207	Standard	6	–
50 Hz	500 VY			6	1PP7063 ... 166	1PP5186 ... 207	Without add. charge	3	–
50 Hz	500 VΔ			6	1PP7106 ... 166	1PP5186 ... 207	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76				9	...		
Types of construction		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
Without flange			IM B3/6/7/8, IM V6, IM V5 without protective cover	6	1PP7063 ... 166	1PP5186 ... 207	Standard	0	–
With flange			IM B5, IM V1 without protective cover ^{2) 3)}	6	1PP7063 ... 166	1PP5186 ... 207	With add. charge	1	–
			IM V3 ²⁾	6	1PP7063 ... 166	–	With add. charge	1	–
				6	–	1PP5186 ... 207	With add. charge	9	M1G
With standard flange			IM B14, IM V19, IM V18 without protective cover	6	1PP7063 ... 166	–	With add. charge	2	–
With special flange			IM B14, IM V19, IM V18 without protective cover	6	1PP7063 ... 166	–	With add. charge	3	–
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80				9	...		
Special versions						Order code(s)			
Options		For additional charges, code numbers and descriptions, see from Page 2/87				1PP	-Z . . . + . . . + . . . + . . .		

2.3

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ 1PP5 motors can be supplied as an option with two additional eyebolts – specify order code K32.
³⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1PP Standard Motors

Motors with Standard Efficiency IE1

Forced-air cooled motors without external fan and fan cover – Aluminum series 1PP7 and 1PP5

IE1



Selection and ordering data (continued)

P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	Operating values at rated output											Aluminum series 1PP7/1PP5 – IE1 version in accordance with IEC 60034-30 Order No.	m _M B3 J	Torque class	
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pfA} , 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A									

For successor
1LE1002 with order
code F90
see Page 1/33

- Cooling: Forced-air cooled without external fan and fan cover (IC 416)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
0.09	0.104	71 M	630	1.4	–	51.0	49.5	45.0	0.68	0.38	1.9	2.2	1.7	–	–	1PP7070-8AB	5.8	0.00080	13
0.12	0.14	71 M	645	1.8	–	51.0	49.5	45.0	0.64	0.53	2.2	2.2	2.0	–	–	1PP7073-8AB	5.8	0.00080	13
0.18	0.21	80 M	675	2.5	–	49.0	47.5	43.0	0.68	0.78	1.7	2.3	1.9	–	–	1PP7080-8AB	8.8	0.0014	13
0.25	0.29	80 M	685	3.5	–	53.0	51.5	47.0	0.64	1.06	2.0	2.6	2.2	–	–	1PP7083-8AB	9.9	0.0017	13
0.37	0.43	90 S	675	5.2	–	61.0	59.5	55.0	0.75	1.17	1.6	2.9	1.8	–	–	1PP7090-8AB	11	0.0023	13
0.55	0.63	90 L	675	7.8	–	64.0	63.0	59.0	0.76	1.63	1.7	3.0	1.9	–	–	1PP7096-8AB	12.6	0.0031	13
0.75	0.86	100 L	680	11	–	64.0	63.0	59.0	0.76	2.25	1.6	3.0	1.9	–	–	1PP7106-8AB	19	0.0051	13
1.1	1.27	100 L	680	15	–	70.0	70.0	66.0	0.76	3.0	1.8	3.3	2.1	–	–	1PP7107-8AB	21.5	0.0063	13
1.5	1.75	112 M	705	20	–	72.1	72.1	68.1	0.76	3.95	1.8	3.7	2.1	–	–	1PP7113-8AB	24	0.013	13
2.2	2.55	132 S	700	30	–	73.2	73.2	70.2	0.74	5.9	1.9	3.9	2.3	–	–	1PP7130-8AB	38	0.014	13
3	3.45	132 M	700	41	–	75.2	75.2	72.2	0.74	7.8	2.1	4.1	2.4	–	–	1PP7133-8AB	44	0.019	13
4	4.55	160 M	715	53	–	78.3	78.8	75.8	0.72	10.2	2.2	4.5	2.6	–	–	1PP7163-8AB	64	0.036	13
5.5	6.3	160 M	710	74	–	81.9	81.9	80.9	0.73	13.3	2.3	4.7	2.7	–	–	1PP7164-8AB	74	0.046	13
7.5	8.6	160 L	715	100	–	83.9	83.9	82.9	0.72	17.9	2.7	5.3	3.0	–	–	1PP7166-8AB	94	0.064	13
11	13.2	180 L	725	145	–	85.5	85.5	84.5	0.75	25	2.0	5.0	2.2	–	–	1PP5186-8AB	128	0.21	13
15	18	200 L	725	198	–	86.1	86.1	85.1	0.78	32	2.1	5.0	2.2	–	–	1PP5207-8AB	176	0.37	13

Voltages		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	8	1PP7063 ... 166	1PP5186 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	8	1PP7063 ... 166	1PP5186 ... 207	Standard	6	–
50 Hz	500 VY			8	1PP7063 ... 166	1PP5186 ... 207	Without add. charge	3	–
50 Hz	500 VΔ			8	1PP7106 ... 166	1PP5186 ... 207	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76					9	...	
Types of construction		No. of poles	Motor type 1PP7	Motor type 1PP5	Version	Order code(s)			
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	8	1PP7063 ... 166	1PP5186 ... 207	Standard	0	–		
With flange	IM B5, IM V1 without protective cover ^{2) 3)}	8	1PP7063 ... 166	1PP5186 ... 207	With add. charge	1	–		
	IM V3 ²⁾	8	1PP7063 ... 166	–	With add. charge	1	–		
		8	–	1PP5186 ... 207	With add. charge	9	M1G		
With standard flange	IM B14, IM V19, IM V18 without protective cover	8	1PP7063 ... 166	–	With add. charge	2	–		
With special flange	IM B14, IM V19, IM V18 without protective cover	8	1PP7063 ... 166	–	With add. charge	3	–		
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80					9	...	
Special versions		Options					Order code(s)		
Options		For additional charges, code numbers and descriptions, see from Page 2/87					1PP ... -Z	...+...+...+...	

¹⁾ Operating values at rated output for 60 Hz are available on request.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

²⁾ 1PP5 motors can be supplied as an option with two additional eyebolts – specify order code K32.



IE1

SIMOTICS GP 1LP Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Aluminum series 1LP7 and 1LP5

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output										Aluminum series 1LP7/1LP5 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM B3} kg	J kgm ²	Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / I _{rated}	L _{LR} / I _{rated}				

- Cooling: Naturally cooled without external fan (IC 410)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / I _{rated}	L _{LR} / I _{rated}	T _B / I _{rated}	L _{pFA} 50 Hz	L _{WA} 50 Hz	Aluminum series	m _{IM B3} kg	J kgm ²	Torque class CL
0.12	0.14	63 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7060-2AA	3.4	O. R.	O. R.
0.16	0.18	63 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7063-2AA	3.9	O. R.	O. R.
0.19	0.22	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7070-2AA	4.9	O. R.	O. R.
0.27	0.3	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7073-2AA	6.4	O. R.	O. R.
0.35	0.40	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7080-2AA	8.0	O. R.	O. R.
0.55	0.6	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7083-2AA	9.6	O. R.	O. R.
0.82	0.95	90 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7090-2AA	12.5	O. R.	O. R.
1.1	1.25	90 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP7096-2AA	15.2	O. R.	O. R.
1.3	1.5	100 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	▶ 1LP7106-2AA	22.3	O. R.	O. R.
1.8	2.1	112 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	▶ 1LP7113-2AA	29	O. R.	O. R.
2.5	2.9	132 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	▶ 1LP7130-2AA	42	O. R.	O. R.
3.4	3.9	132 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	▶ 1LP7131-2AA	51	O. R.	O. R.
5	5.7	160 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	▶ 1LP7163-2AA	70	O. R.	O. R.
6	6.9	160 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	▶ 1LP7164-2AA	82	O. R.	O. R.
7	8	160 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	▶ 1LP7166-2AA	99	O. R.	O. R.
10	11.5	180 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R. ²⁾	O. R.	O. R.	O. R.	–	–	1LP5183-2AA	112	O. R.	O. R.
13.5	15.5	200 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	1LP5206-2AA	160	O. R.	O. R.
16.5	19	200 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R. ²⁾	O. R.	O. R.	O. R.	–	–	1LP5207-2AA	182	O. R.	O. R.

Voltagess	No. of poles	Motor type 1LP7	Motor type 1LP5	Version	Order code(s)
50 Hz 230 VΔ/400 VY 60 Hz ¹⁾ 460 VY	2	1LP7060 ... 166	1LP5183 ... 207	Standard	1 –
50 Hz 400 VΔ/690 VY 60 Hz ¹⁾ 460 VΔ	2	1LP7060 ... 166	1LP5183 ... 207	Standard	6 –
50 Hz 500 VY	2	1LP7060 ... 166	1LP5183 ... 207	Without add. charge	3 –
50 Hz 500 VΔ	2	1LP7106 ... 166	1LP5183 ... 207	Without add. charge	5 –
Further voltages ¹⁾	For additional charges, code numbers and descriptions, see from Page 2/76				9 ...
Types of construction	No. of poles	Motor type 1LP7	Motor type 1LP5	Version	Order code(s)
Without flange	2	1LP7060 ... 166	1LP5183 ... 207	Standard	0 –
With flange	2	1LP7060 ... 166	1LP5183 ... 207	With add. charge	1 –
	2	1LP7060 ... 166	–	With add. charge	1 –
	2	–	1LP5183 ... 207	With add. charge	9 M1G
With standard flange	2	1LP7060 ... 166	1LP5183 ... 207	With add. charge	6 –
	2	1LP7060 ... 166	–	With add. charge	2 –
With special flange	2	1LP7060 ... 166	–	With add. charge	7 –
	2	1LP7060 ... 166	–	With add. charge	3 –
Further types of construction	For additional charges, code numbers and descriptions, see from Page 2/80				9 ...
Special versions	Options For additional charges, code numbers and descriptions, see from Page 2/87				Order code(s)
				1LP -Z	. . . + . . . + . . . + . . .

Note:
The rated outputs and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ 1LP5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

2.3

SIMOTICS GP 1LP Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Aluminum series 1LP7 and 1LP5

IE1



Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz 1) kW	Frame size FS	Operating values at rated output										Aluminum series 1LP7/1LP5 – IE1 version in accordance with IEC 60034-30 Order No. For successor 1PC1002 see Page 1/35	m _M B3 J kg	Torque class kgm ² CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz 4/4 %	η _{rated} 50 Hz 3/4 %	η _{rated} 50 Hz 2/4 %	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} / T _{rated}	I _{LR} / I _{rated}			

- Cooling: Naturally cooled without external fan (IC 410)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																		
0.07	0.08	63 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7060-4AB	3.4	O. R.	O. R.
0.12	0.14	63 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7063-4AB	3.9	O. R.	O. R.
0.13	0.15	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7070-4AB	4.7	O. R.	O. R.
0.19	0.22	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7073-4AB	5.8	O. R.	O. R.
0.22	0.25	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7080-4AA	7.8	O. R.	O. R.
0.38	0.45	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7083-4AA	9.1	O. R.	O. R.
0.55	0.63	90 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7090-4AA	11.9	O. R.	O. R.
0.65	0.75	90 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7096-4AA	15.1	O. R.	O. R.
0.88	1.00	100 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7106-4AA	23	O. R.	O. R.
1.2	1.4	100 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7107-4AA	25	O. R.	O. R.
1.6	1.85	112 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7113-4AA	30	O. R.	O. R.
2.5	2.9	132 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7130-4AA	44	O. R.	O. R.
3.1	3.6	132 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7133-4AA	54	O. R.	O. R.
4.8	5.5	160 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7163-4AA	74	O. R.	O. R.
5.4	6.2	160 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7166-4AA	90	O. R.	O. R.
7.5	8.5	180 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP5183-4AA	109	O. R.	O. R.
9	10.5	180 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP5186-4AA	122	O. R.	O. R.
12	14	200 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP5207-4AA	165	O. R.	O. R.

Voltages		No. of poles	Motor type 1LP7	Motor type 1LP5	Version	Order code(s)
50 Hz	230 VΔ/400 VY	4	1LP7060 ... 166	1LP5183 ... 207	Standard	1 -
50 Hz	400 VΔ/690 VY	4	1LP7060 ... 166	1LP5183 ... 207	Standard	6 -
50 Hz	500 VY	4	1LP7060 ... 166	1LP5183 ... 207	Without add. charge	3 -
50 Hz	500 VΔ	4	1LP7106 ... 166	1LP5183 ... 207	Without add. charge	5 -
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/76				9 ...
Types of construction		No. of poles	Motor type 1LP7	Motor type 1LP5	Version	Order code(s)
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	4	1LP7060 ... 166	1LP5183 ... 207	Standard	0 -
With flange	IM B5, IM V1 without protective cover ³⁾ IM V3 ³⁾	4	1LP7060 ... 166	1LP5183 ... 207	With add. charge	1 -
		4	1LP7060 ... 166	-	With add. charge	1 -
		4	-	1LP5183 ... 207	With add. charge	9 M1G
With standard flange	IM B35 IM B14, IM V19, IM V18 without protective cover	4	1LP7060 ... 166	1LP5183 ... 207	With add. charge	6 -
		4	1LP7060 ... 166	-	With add. charge	2 -
With special flange	IM B34 IM B14, IM V19, IM V18 without protective cover	4	1LP7060 ... 166	-	With add. charge	7 -
		4	1LP7060 ... 166	-	With add. charge	3 -
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/80				9 ...
Special versions		Order code(s)				
Options		For additional charges, code numbers and descriptions, see from Page 2/87			1LP ... -Z	...+...+...+...

Note:
The rated outputs and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ 1LP5 motors can be supplied as an option with two additional eyebolts – specify order code K32.



IE1

SIMOTICS GP 1LP Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Aluminum series 1LP7 and 1LP5

Selection and ordering data (continued)

Operating values at rated output														Aluminum series		m _M B3 J		Torque class	
P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}	L _p fA, 50 Hz	L _{WA} , 50 Hz	1LP7/1LP5 – IE1 version in accordance with IEC 60034-30 Order No.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm	%	%	%		A							For successor 1PC1002 see Page 1/35			
<ul style="list-style-type: none"> • Cooling: Naturally cooled without external fan (IC 410) • Efficiency: Standard Efficiency IE1, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																			
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
0.045	0.05	63 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7063-6AB	4.0	O. R.	O. R.
0.09	0.105	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7070-6AA	6.1	O. R.	O. R.
0.13	0.15	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7073-6AA	6.1	O. R.	O. R.
0.18	0.2	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7080-6AA	7.3	O. R.	O. R.
0.27	0.3	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7083-6AA	9.1	O. R.	O. R.
0.37	0.4	90 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7090-6AA	12.1	O. R.	O. R.
0.5	0.57	90 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7096-6AA	15.2	O. R.	O. R.
0.7	0.8	100 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7106-6AA	23.3	O. R.	O. R.
1.0	1.15	112 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7113-6AA	26	O. R.	O. R.
1.7	1.9	132 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7130-6AA	40	O. R.	O. R.
2	2.3	132 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7133-6AA	45	O. R.	O. R.
2.3	2.65	132 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7134-6AA	52	O. R.	O. R.
3.3	3.8	160 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7163-6AA	74	O. R.	O. R.
4	4.6	160 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7166-6AA	99	O. R.	O. R.
6.5	7.5	180 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP5186-6AA	122	O. R.	O. R.
8.5	10	200 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP5207-6AA	165	O. R.	O. R.
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
0.045	0.05	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7070-8AB	6.1	O. R.	O. R.
0.06	0.07	71 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7073-8AB	6.1	O. R.	O. R.
0.09	0.105	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7080-8AB	7.3	O. R.	O. R.
0.13	0.15	80 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7083-8AB	9.1	O. R.	O. R.
0.25	0.29	90 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7090-8AB	10.2	O. R.	O. R.
0.35	0.4	90 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7096-8AB	12.8	O. R.	O. R.
0.45	0.5	100 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7106-8AB	19.4	O. R.	O. R.
0.65	0.75	100 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7107-8AB	21.3	O. R.	O. R.
0.8	0.9	112 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7113-8AB	23.3	O. R.	O. R.
1.2	1.4	132 S	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7130-8AB	40	O. R.	O. R.
1.45	1.7	132 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7133-8AB	48	O. R.	O. R.
1.8	2.1	160 M	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7163-8AB	59	O. R.	O. R.
2.4	2.8	160 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7164-8AB	68	O. R.	O. R.
3.4	5	160 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP7166-8AB	88	O. R.	O. R.
5.5	6.5	180 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP5186-8AB	122	O. R.	O. R.
7.5	9	200 L	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	1LP5207-8AB	180	O. R.	O. R.
Voltages														No. poles	Motor type 1LP7	Motor type 1LP5	Version	Order code(s)	
50 Hz 230 VΔ/400 VY			60 Hz ¹⁾ 460 VY			6, 8	1LP7063 ... 166	1LP5186 ... 207	Standard	1	–								
50 Hz 400 VΔ/690 VY			60 Hz ¹⁾ 460 VΔ			6, 8	1LP7063 ... 166	1LP5186 ... 207	Standard	6	–								
50 Hz 500 VY						6, 8	1LP7063 ... 166	1LP5186 ... 207	Without add. charge	3	–								
50 Hz 500 VΔ						6, 8	1LP7106 ... 166	1LP5186 ... 207	Without add. charge	5	–								
Further voltages ¹⁾ For additional charges, code numbers and descriptions, see from Page 2/76														9	...				
Types of construction														No. poles	Motor type 1LP7	Motor type 1LP5	Version	Order code(s)	
Without flange		IM B3/6/7/8, IM V6, IM V5 without protective cover				6, 8	1LP7063 ... 166	1LP5186 ... 207	Standard	0	–								
With flange		IM B5, IM V1 without protective cover ²⁾				6, 8	1LP7063 ... 166	–	With add. charge	1	–								
		IM V3 ²⁾				6, 8	–	1LP5186 ... 207	With add. charge	9	M1G								
		IM B35				6, 8	1LP7063 ... 166	1LP5186 ... 207	With add. charge	6	–								
With standard flange		IM B14, IM V19, IM V18 without prot. cover				6, 8	1LP7063 ... 166	–	With add. charge	2	–								
		IM B34				6, 8	1LP7063 ... 166	–	With add. charge	7	–								
With special flange		IM B14, IM V19, IM V18 without prot. cover				6, 8	1LP7063 ... 166	–	With add. charge	3	–								
Further types of construction For additional charges, code numbers and descriptions, see from Page 2/80														9	...				
Special versions														Order code(s)					
Options For additional charges, code numbers and descriptions, see from Page 2/87														1LP	...-Z	...+...+...+...			

Note: The rated outputs and weights may change slightly after they have been checked. Further electrical data can be calculated and supplied on receipt of order.

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ 1LP5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

2.3

SIMOTICS SD 1LA/1LG Standard Motors

Motors with Standard Efficiency IE1

Self-ventilated motors
Cast-iron series 1LA6 and 1LG4

IE1



Selection and ordering data

P _{rated} 50 Hz	P _{rated} 60 Hz ¹⁾	Frame size	Operating values at rated output											Cast-iron series 1LA6/1LG4 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM} B3	J	Torque class	
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}					L _{pFA} 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A								kg	kgm ²	CL

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz¹⁾

3	3.45	100 L	2890	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	6.8	3.0	62	74	1LA6106-2AA	34	0.0035	16
4	4.55	112 M	2905	13	IE1	83.1	83.1	82.1	0.86	8.1	2.6	7.2	2.9	63	75	1LA6113-2AA	43	0.0059	16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	5.9	2.8	68	80	1LA6130-2AA	53	0.015	16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	3.0	68	80	1LA6131-2AA	58	0.019	16
11	12.6	160 M	2940	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.5	2.9	70	82	1LA6163-2AA	96	0.034	16
15	17.3	160 M	2940	49	IE1	88.7	88.7	87.7	0.90	27	2.2	6.6	3.0	70	82	1LA6164-2AA	105	0.043	16
18.5	21.3	160 L	2940	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.0	3.1	70	82	1LA6166-2AA	115	0.051	16
22	24.5	180 M	2945	71	IE1	89.9	90.0	89.6	0.86	41 ²⁾	2.5	6.4	3.4	69	82	1LG4183-2AA	145	0.068	16
30	33.5	200 L	2950	97	IE1	90.7	90.8	90.1	0.88	54 ²⁾	2.3	6.5	3.0	73	86	1LG4206-2AA	205	0.13	16
37	41.5	200 L	2955	120	IE1	91.2	91.5	90.8	0.89	66 ²⁾	2.5	7.2	3.3	73	86	1LG4207-2AA	225	0.15	16
45	51	225 M	2960	145	IE1	91.7	92.0	91.6	0.88	80 ²⁾	2.4	6.7	3.1	73	86	1LG4223-2AA	285	0.22	16
55	62	250 M	2970	177	IE1	92.1	92.2	91.4	0.88	98	2.1	6.7	3.1	75	88	1LG4253-2AB	375	0.40	13
75	84	280 S	2975	241	IE1	92.7	92.5	91.5	0.87	134 ²⁾	2.5	7.5	3.1	74	87	1LG4280-2AB	500	0.72	13
90	101	280 M	2975	289	IE1	93.0	93.1	92.5	0.89	157 ²⁾	2.6	7.2	3.1	74	87	1LG4283-2AB	540	0.83	13
110	123	315 S	2982	352	IE1	93.3	92.9	91.5	0.87	196 ²⁾	2.4	7.2	3.1	79	92	1LG4310-2AB	720	1.2	13
132	148	315 M	2982	423	IE1	93.5	93.2	92.5	0.90	225 ²⁾	2.4	6.9	3.0	79	92	1LG4313-2AB	775	1.4	13
160	180	315 L	2982	512	IE1	93.8	93.6	93.1	0.91	270 ³⁾	2.4	7.0	3.0	79	92	1LG4316-2AB	900	1.6	13
200	224	315 L	2982	641	IE1	94.0	93.9	93.5	0.92	335 ³⁾	2.3	6.7	2.9	79	92	1LG4317-2AB	1015	2.1	13

Voltages		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2	1LA6106 ... 166	1LG4183 ... 313	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2	1LA6106 ... 166	1LG4183 ... 317	Standard	6	–
50 Hz	500 VY			2	1LA6106 ... 166	1LG4183 ... 313	Without add. charge	3	–
50 Hz	500 VΔ			2	1LA6106 ... 166	1LG4183 ... 317	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/78				9	...		
Types of construction		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
Without flange	IM B3/6/7/8 ⁴⁾	2	1LA6106 ... 166	1LG4183 ... 317	Standard	0	–		
	IM V6 ⁴⁾	2	1LA6106 ... 166	1LG4183 ... 313	Standard	0	–		
With flange	IM V5 without protective cover ⁴⁾	2	–	1LG4316 ... 317	With add. charge	9	M1E		
	IM V5 without protective cover ⁴⁾	2	1LA6106 ... 166	1LG4183 ... 313	Standard	0	–		
	IM V5 without protective cover ⁴⁾	2	–	1LG4316 ... 317	With add. charge	9	M1D		
	IM V5 without protective cover ⁴⁾	2	–	1LG4316 ... 317	With add. charge	9	M1G		
With standard flange	IM B5 ⁵⁾	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1	–		
	IM V1 without protective cover ⁵⁾⁶⁾	2	1LA6106 ... 166	1LG4183 ... 313	With add. charge	1	–		
	IM V3 ⁵⁾	2	–	1LG4316 ... 317	With add. charge	8	–		
	IM V1 with protective cover ⁵⁾⁶⁾⁷⁾	2	1LA6106 ... 166	1LG4183 ... 313	With add. charge	1	–		
With special flange	IM B35	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	4	–		
	IM B14, IM V19, IM V18 without protective cover	2	1LA6106 ... 166	–	With add. charge	6	–		
With standard flange	IM B34	2	1LA6106 ... 166	–	With add. charge	2	–		
	IM B14, IM V19, IM V18 without protective cover	2	1LA6106 ... 166	–	With add. charge	7	–		
Further types of construction	For additional charges, code numbers and descriptions, see from Page 2/83				9	...			
Special versions		Options				Order code(s)			
		For additional charges, code numbers and descriptions, see from Page 2/94				1L -Z	...+...+...+...		

- Operating values at rated output for 60 Hz are available on request.
- For connection to 230 V, parallel feeders are necessary.
- For connection to 400 V, parallel feeders are necessary.
- If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
- 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- 2-pole motors 1LG4316-... and 1LG4317-... (motor series 1LG4 frame size 315 L) in 60 Hz version available on request.
- The "Second shaft extension" option, order code K16 is not possible.



SIMOTICS SD 1LA/1LG Standard Motors

Motors with Standard Efficiency IE1

IE1

Self-ventilated motors
Cast-iron series 1LA6 and 1LG4

Selection and ordering data (continued)

$P_{rated, 50 Hz}$		$P_{rated, 60 Hz}^1)$	Frame size	$n_{rated, 50 Hz}$	$T_{rated, 50 Hz}$	IE class	$\eta_{rated, 50 Hz, 4/4}$	$\eta_{rated, 50 Hz, 3/4}$	$\eta_{rated, 50 Hz, 2/4}$	$\cos\phi_{rated, 50 Hz, 4/4}$	$I_{rated, 50 Hz, 400 V}$	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	$L_{pFA, 50 Hz}$	$L_{WA, 50 Hz}$	Cast-iron series 1LA6/1LG4 – IE1 version in accordance with IEC 60034-30 Order No.	$m_{IM B3} J$	Torque class	
kW	kW	FS	rpm	Nm	%	%	%		A								kg	kgm ²	CL	
• Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																				
2.2	2.55	100 L	1420	15	IE1	79.7	79.7	78.7	0.82	4.85	2.5	5.6	2.8	53	68		1LA6106-4AA	33	0.0047	16
3	3.45	100 L	1420	20	IE1	81.5	81.5	80.5	0.82	6.5	2.7	5.6	3.0	53	68		1LA6107-4AA	36	0.0055	16
4	4.6	112 M	1440	27	IE1	83.1	83.1	82.1	0.83	8.4	2.7	6.0	3.0	53	65		1LA6113-4AA	45	0.012	16
5.5	6.3	132 S	1455	36	IE1	84.7	84.7	83.7	0.81	11.6	2.5	6.3	3.1	62	74		1LA6130-4AA	55	0.018	16
7.5	8.6	132 M	1455	49	IE1	86.0	86.0	85.0	0.82	15.4	2.7	6.7	3.2	62	74		1LA6133-4AA	62	0.023	16
11	12.6	160 M	1460	72	IE1	87.6	87.6	86.6	0.84	21.5	2.2	6.2	2.7	66	78		1LA6163-4AA	100	0.043	16
15	17.3	160 L	1460	98	IE1	88.7	88.7	87.7	0.84	29	2.6	6.5	3.8	66	78		1LA6166-4AA	114	0.055	16
18.5	21.3	180 M	1465	121	IE1	89.3	89.7	89.2	0.84	35.5 ²⁾	2.4	6.7	3.1	65	78		1LG4183-4AA	140	0.10	16
22	25.3	180 L	1465	143	IE1	89.9	90.4	90.0	0.84	42 ²⁾	2.5	6.9	3.2	65	78		1LG4186-4AA	155	0.12	16
30	34.5	200 L	1465	196	IE1	90.7	91.1	90.6	0.85	56 ²⁾	2.5	6.7	3.4	66	79		1LG4207-4AA	205	0.19	16
37	42.5	225 S	1475	240	IE1	91.2	91.6	91.0	0.85	69 ²⁾	2.3	6.7	3.1	66	79		1LG4220-4AA	265	0.37	16
45	52	225 M	1475	291	IE1	91.7	92.2	91.8	0.86	82 ²⁾	2.6	7.2	3.2	66	79		1LG4223-4AA	300	0.45	16
55	63	250 M	1480	355	IE1	92.1	92.4	92.0	0.85	101	2.4	6.1	2.8	67	80		1LG4253-4AA	390	0.69	16
75	86	280 S	1485	482	IE1	92.7	92.6	91.6	0.85	137 ²⁾	2.5	7.1	3.0	70	83		1LG4280-4AA	535	1.2	16
90	104	280 M	1485	579	IE1	93.0	92.9	92.0	0.86	162 ²⁾	2.5	7.4	3.0	70	83		1LG4283-4AA	580	1.4	16
110	127	315 S	1488	706	IE1	93.3	93.3	92.7	0.85	200 ²⁾	2.5	6.4	2.8	70	83		1LG4310-4AA	730	1.9	16
132	152	315 M	1488	847	IE1	93.5	93.5	92.9	0.85	240 ²⁾	2.7	6.8	2.9	70	83		1LG4313-4AA	810	2.3	16
160	184	315 L	1486	1028	IE1	93.8	93.9	93.5	0.86	285 ³⁾	2.7	6.8	2.8	70	83		1LG4316-4AA	955	2.9	16
200	230	315 L	1486	1285	IE1	94.0	94.2	94.0	0.88	350 ³⁾	2.6	6.5	2.8	70	83		1LG4317-4AA	1060	3.5	16
Voltagess				No. poles	Motor type 1LA6	Motor type 1LG4	Version													Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	4	1LA6106 ... 166	1LG4183 ... 313	Standard													1
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	4	1LA6106 ... 166	1LG4183 ... 317	Standard													6
50 Hz	500 VY			4	1LA6106 ... 166	1LG4183 ... 313	Without add. charge													3
50 Hz	500 VΔ			4	1LA6106 ... 166	1LG4183 ... 317	Without add. charge													5
Further voltages ¹⁾				For additional charges, code numbers and descriptions, see from Page 2/78												9				
Types of construction				No. poles	Motor type 1LA6	Motor type 1LG4	Version													Order code(s)
Without flange		IM B3/6/7/8 ⁴⁾		4	1LA6106 ... 166	1LG4183 ... 317	Standard													0
		IM V6 ⁴⁾		4	1LA6106 ... 166	1LG4183 ... 313	Standard													0
				4	–	1LG4316 ... 317	Without add. charge													9
		IM V5 without protective cover ⁴⁾		4	1LA6106 ... 166	1LG4183 ... 313	Standard													0
				4	–	1LG4316 ... 317	Without add. charge													9
With flange		IM B5 ⁵⁾		4	1LA6106 ... 166	1LG4183 ... 317	With add. charge													1
		IM V1 without protective cover ^{5) 6)}		4	1LA6106 ... 166	1LG4183 ... 313	With add. charge													1
				4	–	1LG4316 ... 317	With add. charge													8
		IM V3 ⁵⁾		4	1LA6106 ... 166	–	With add. charge													1
				4	–	1LG4183 ... 313	With add. charge													9
		IM V1 with protective cover ^{5) 6) 7)}		4	1LA6106 ... 166	1LG4183 ... 317	With add. charge													4
		IM B35		4	1LA6106 ... 166	1LG4183 ... 317	With add. charge													6
With standard flange		IM B14, IM V19, IM V18 without protective cover		4	1LA6106 ... 166	–	With add. charge													2
		IM B34		4	1LA6106 ... 166	–	With add. charge													7
With special flange		IM B14, IM V19, IM V18 without protective cover		4	1LA6106 ... 166	–	With add. charge													3
Further types of construction				For additional charges, code numbers and descriptions, see from Page 2/83												9				
Special versions																Order code(s)				
Options				For additional charges, code numbers and descriptions, see from Page 2/94												1L -Z				

2.3

1) Operating values at rated output for 60 Hz are available on request.
 2) For connection to 230 V, parallel feeders are necessary.
 3) For connection to 230 V, parallel feeders are necessary.
 4) If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
 5) 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
 6) 2-pole motors 1LG4316-... and 1LG4317-... (motor series 1LG4 frame size 315 L) in 60 Hz version available on request.
 7) The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LA/1LG Standard Motors

Motors with Standard Efficiency IE1



IE1

Self-ventilated motors Cast-iron series 1LA6 and 1LG4

Selection and ordering data (continued)

P _{rated} 50 Hz	P _{rated} 60 Hz ¹⁾	Frame size	Operating values at rated output											Cast-iron series 1LA6/1LG4 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM B3}	J	Torque class	
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}					L _{pfA} 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A								kg	kgm ²	CL

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
1.5	1.75	100 L	925	15	IE1	75.2	75.2	72.2	0.75	3.85	2.3	4.0	2.3	47	59	1LA6106-6AA	33	0.0047	16
2.2	2.55	112 M	940	22	IE1	77.7	78.2	75.2	0.78	5.2	2.2	4.6	2.5	52	64	1LA6113-6AA	40	0.0091	16
3	3.45	132 S	950	30	IE1	79.7	79.7	78.7	0.76	7.1	1.9	4.2	2.2	63	75	1LA6130-6AA	50	0.015	16
4	4.55	132 M	950	40	IE1	81.4	81.4	80.4	0.76	9.3	2.1	4.5	2.4	63	75	1LA6133-6AA	57	0.019	16
5.5	6.3	132 M	950	55	IE1	83.1	83.1	82.1	0.76	12.6	2.3	5.0	2.6	63	75	1LA6134-6AA	66	0.025	16
7.5	8.6	160 M	960	75	IE1	84.7	84.7	83.7	0.74	17.3	2.1	4.6	2.5	66	78	1LA6163-6AA	103	0.044	16
11	12.6	160 L	960	109	IE1	86.4	86.4	85.4	0.74	25	2.3	4.8	2.6	66	78	1LA6166-6AA	122	0.063	16
15	18	180 L	965	148	IE1	87.7	88.1	88.3	0.83	29.5	2.3	5.3	2.5	59	72	1LG4186-6AA	150	0.18	16
18.5	22	200 L	975	181	IE1	88.6	89.0	88.6	0.81	37	2.5	5.6	2.5	59	72	1LG4206-6AA	195	0.24	16
22	26.5	200 L	975	215	IE1	89.2	89.9	88.8	0.81	44	2.6	5.7	2.5	59	72	1LG4207-6AA	205	0.29	16
30	36	225 M	978	293	IE1	90.2	91.2	91.3	0.83	58 ²⁾	2.7	5.6	2.5	60	73	1LG4223-6AA	280	0.49	16
37	44.5	250 M	980	361	IE1	90.8	91.5	91.3	0.83	71	2.7	6.0	2.3	61	74	1LG4253-6AA	370	0.76	16
45	54	280 S	985	436	IE1	91.4	92.1	92.0	0.85	84	2.4	6.1	2.4	61	74	1LG4280-6AA	475	1.1	16
55	66	280 M	985	533	IE1	91.9	92.5	92.6	0.86	100	2.5	6.3	2.5	61	74	1LG4283-6AA	510	1.4	16
75	90	315 S	988	725	IE1	92.6	92.8	92.1	0.84	139	2.5	6.5	2.8	65	78	1LG4310-6AA	685	2.1	16
90	108	315 M	988	870	IE1	92.9	93.2	92.8	0.84	166 ²⁾	2.6	6.8	2.9	65	78	1LG4313-6AA	750	2.5	16
110	132	315 L	988	1063	IE1	93.3	93.6	93.4	0.86	198	2.5	6.8	2.9	65	78	1LG4316-6AA	890	3.2	16
132	158	315 L	988	1276	IE1	93.5	93.7	93.4	0.86	235	3.1	7.3	3.0	65	78	1LG4317-6AA	980	4.0	16
160	192	315 L	988	1547	IE1	93.8	93.9	93.6	0.86	285 ³⁾	3.0	7.5	3.0	65	78	1LG4318-6AA	1180	4.7	16

Voltages		No. poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6	1LA6106 ... 166	1LG4183 ... 313	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6	1LA6106 ... 166	1LG4183 ... 318	Standard	6	–
50 Hz	500 VY			6	1LA6106 ... 166	1LG4183 ... 313	Without add. charge	3	–
50 Hz	500 VΔ			6	1LA6106 ... 166	1LG4183 ... 318	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/78					9	...	
Types of construction		No. poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
Without flange	IM B3/6/7/8 ⁴⁾	6	1LA6106 ... 166	1LG4183 ... 318	Standard	0	–		
	IM V6 ⁴⁾	6	1LA6106 ... 166	1LG4183 ... 313	Standard	0	–		
		6	–	1LG4316 ... 318	Without add. charge	9	M1E		
	IM V5 without protective cover ⁴⁾	6	1LA6106 ... 166	1LG4183 ... 313	Standard	0	–		
With flange		6	–	1LG4316 ... 318	Without add. charge	9	M1D		
	IM B5 ⁵⁾	6	1LA6106 ... 166	1LG4183 ... 318	With add. charge	1	–		
	IM V1 without protective cover ⁵⁾	6	1LA6106 ... 166	1LG4183 ... 313	With add. charge	1	–		
		6	–	1LG4316 ... 318	With add. charge	8	–		
	IM V3 ⁵⁾	6	1LA6106 ... 166	–	With add. charge	1	–		
		6	–	1LG4183 ... 313	With add. charge	9	M1G		
With standard flange	IM V1 with protective cover ^{5) 6)}	6	1LA6106 ... 166	1LG4183 ... 318	With add. charge	4	–		
	IM B35	6	1LA6106 ... 166	1LG4183 ... 318	With add. charge	6	–		
	IM B14, IM V19, IM V18 without protective cover	6	1LA6106 ... 166	–	With add. charge	2	–		
With special flange	IM B34	6	1LA6106 ... 166	–	With add. charge	7	–		
	IM B14, IM V19, IM V18 without protective cover	6	1LA6106 ... 166	–	With add. charge	3	–		
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/83					9	...	
Special versions							Order code(s)		
Options		For additional charges, code numbers and descriptions, see from Page 2/94					1L -Z	...+...+...+...	

1) Operating values at rated output for 60 Hz are available on request.
 2) For connection to 230 V, parallel feeders are necessary.
 3) For connection to 400 V, parallel feeders are necessary.
 4) If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
 5) 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
 6) The "Second shaft extension" option, order code K16 is not possible.



SIMOTICS SD 1LA/1LG Standard Motors

Motors with Standard Efficiency IE1

IE1

Self-ventilated motors
Cast-iron series 1LA6 and 1LG4

Selection and ordering data (continued)

P _{rated} 50 Hz	P _{rated} 60 Hz ¹⁾	Frame size	Operating values at rated output											Cast-iron series 1LA6/1LG4 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM} B3 J	Torque class		
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pfA} 50 Hz	L _{WA} 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A								kg	kgm ²	CL

- Cooling: Self-ventilated (IC 411)
 - Efficiency: Standard Efficiency IE1, service factor (SF) 1.1
 - Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- 8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz¹⁾

0.75	0.86	100 L	680	11	–	64.0	63.0	59.0	0.76	2.25	1.6	3.0	1.9	45	57	1LA6106-8AB	29	0.0051	13
1.1	1.3	100 L	680	15	–	70.0	70.0	66.0	0.76	3.0	1.8	3.3	2.1	45	57	1LA6107-8AB	32	0.0063	13
1.5	1.75	112 M	705	20	–	72.1	72.1	68.1	0.76	3.95	1.8	3.7	2.1	49	61	1LA6113-8AB	39	0.013	13
2.2	2.55	132 S	700	30	–	73.2	73.2	70.2	0.74	5.9	1.9	3.9	2.3	53	65	1LA6130-8AB	50	0.014	13
3	3.45	132 M	700	41	–	75.2	75.2	72.2	0.74	7.8	2.1	4.1	2.4	53	65	1LA6133-8AB	57	0.019	13
4	4.55	160 M	715	53	–	78.3	78.8	75.8	0.72	10.2	2.2	4.5	2.6	63	75	1LA6163-8AB	91	0.036	13
5.5	6.3	160 M	710	74	–	81.9	81.9	80.9	0.73	13.3	2.3	4.7	2.7	63	75	1LA6164-8AB	102	0.046	13
7.5	8.6	160 L	715	100	–	83.9	83.9	82.9	0.72	17.9	2.7	5.3	3.0	63	75	1LA6166-8AB	122	0.064	13
11	13.2	180 L	725	145	–	85.6	86.4	86.1	0.73	25.5	1.7	4.2	2.1	67	80	1LG4186-8AB	150	0.17	13
15	18	200 L	725	198	–	87.0	87.7	87.3	0.76	32.5	2.2	4.9	2.6	57	70	1LG4207-8AB	205	0.29	13
18.5	22	225 S	730	242	–	88.0	88.9	88.7	0.78	39	2.3	5.5	2.7	57	70	1LG4220-8AB	270	0.48	13
22	26.5	225 M	730	288	–	88.6	89.4	89.3	0.79	45.5	2.3	5.6	2.8	61	74	1LG4223-8AB	290	0.55	13
30	36	250 M	730	392	–	89.7	90.3	90.3	0.81	60	2.3	5.5	2.6	55	68	1LG4253-8AB	385	0.84	13
37	44.5	280 S	735	481	–	90.4	91.3	91.3	0.81	73	2.2	5.0	2.1	58	71	1LG4280-8AB	475	1.1	13
45	54	280 M	735	585	–	91.0	91.8	91.8	0.81	88	2.2	5.1	2.1	58	71	1LG4283-8AB	515	1.4	13
55	66	315 S	740	710	–	91.6	92.0	91.6	0.81	107	2.2	5.8	2.6	64	77	1LG4310-8AB	680	2.1	13
75	90	315 M	738	971	–	92.3	93.0	92.8	0.83	141	2.2	5.7	2.6	64	77	1LG4313-8AB	745	2.5	13
90	108	315 L	738	1165	–	92.6	93.2	93.2	0.83	169	2.2	5.8	2.7	64	77	1LG4316-8AB	865	3.1	13
110	132	315 L	738	1423	–	93.1	93.5	93.2	0.83	205	2.4	6.1	2.8	64	77	1LG4317-8AB	1020	3.9	13
132	158	315 L	738	1708	–	93.3	93.7	93.5	0.83	245	2.5	6.5	2.9	64	77	1LG4318-8AB	1100	4.5	13

Voltages		No. poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	8	1LA6106 ... 166	1LG4183 ... 313	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz	460 VΔ	8	1LA6106 ... 166	1LG4183 ... 318	Standard	6	–
50 Hz	500 VY			8	1LA6106 ... 166	1LG4183 ... 313	Without add. charge	3	–
50 Hz	500 VΔ			8	1LA6106 ... 166	1LG4183 ... 318	Without add. charge	5	–
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/78					9	...	
Types of construction		No. poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
Without flange	IM B3/6/7/8 ²⁾	8	1LA6106 ... 166	1LG4183 ... 318	Standard	0	–		
	IM V6 ²⁾	8	1LA6106 ... 166	1LG4183 ... 313	Standard	0	–		
		8	–	1LG4316 ... 318	Without add. charge	9	M1E		
	IM V5 without protective cover ²⁾	8	1LA6106 ... 166	1LG4183 ... 313	Standard	0	–		
With flange		8	–	1LG4316 ... 318	Without add. charge	9	M1D		
	IM B5 ³⁾	8	1LA6106 ... 166	1LG4183 ... 318	With add. charge	1	–		
	IM V1 without protective cover ³⁾	8	1LA6106 ... 166	1LG4183 ... 313	With add. charge	1	–		
		8	–	1LG4316 ... 318	With add. charge	8	–		
	IM V3 ³⁾	8	1LA6106 ... 166	–	With add. charge	1	–		
		8	–	1LG4183 ... 313	With add. charge	9	M1G		
	IM V1 with protective cover ^{3) 4)}	8	1LA6106 ... 166	1LG4183 ... 318	With add. charge	4	–		
	IM B35	8	1LA6106 ... 166	1LG4183 ... 318	With add. charge	6	–		
With standard flange	IM B14, IM V19, IM V18 without protective cover	8	1LA6106 ... 166	–	With add. charge	2	–		
	IM B34	8	1LA6106 ... 166	–	With add. charge	7	–		
With special flange	IM B14, IM V19, IM V18 without protective cover	8	1LA6106 ... 166	–	With add. charge	3	–		
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/83					9	...	
Special versions							Order code(s)		
Options		For additional charges, code numbers and descriptions, see from Page 2/94					1L -Z	...+...+...+...	

1) Operating values at rated output for 60 Hz are available on request.
2) If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

3) 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
4) The "Second shaft extension" option, order code K16 is not possible.

2.3

SIMOTICS SD 1LG Standard Motors

Motors with Standard Efficiency IE1

Self-ventilated motors
Cast-iron series 1LG4 with increased output

IE1



Selection and ordering data

P _{rated} 50 Hz	P _{rated} 60 Hz ¹⁾	Frame size	Operating values at rated output											Cast-iron series 1LG4 – IE1 version in accordance with IEC 60034-30 with increased output Order No.	m _{IM} B3 J	Torque class		
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pfA} , 50 Hz	L _{WA} , 50 Hz
kW	kW	FS	rpm	Nm	%	%	%	A							kg	kgm ²	CL	
• Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																		
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																		
30	33.5	180 L	2950	97	IE1	90.7	90.8	90.2	0.86	56 ²⁾	2.4	7.1	3.4	71	84	175	0.086	16
45	51	200 L	2955	145	IE1	91.7	91.8	91.1	0.89	80 ²⁾	2.5	6.9	3.2	73	86	255	0.18	16
55	62	225 M	2960	177	IE1	92.1	92.3	92.2	0.89	97 ²⁾	2.6	7.3	3.2	73	86	335	0.27	16
75	84	250 M	2970	241	IE1	92.7	92.7	91.8	0.88	133 ²⁾	2.4	7.1	3.1	75	88	420	0.48	16
110	123	280 M	2975	353	IE1	93.3	93.3	92.8	0.90	189 ²⁾	2.5	7.0	3.0	74	87	630	1.0	13
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																		
30	34.5	180 L	1465	196	IE1	90.7	90.9	90.0	0.80	60	2.6	6.3	2.9	65	78	180	0.14	16
37	42.5	200 L	1465	241	IE1	91.2	91.5	91.0	0.83	71 ²⁾	2.6	6.5	3.0	66	79	230	0.23	16
55	63	225 M	1475	356	IE1	92.1	92.6	92.4	0.86	100 ²⁾	2.5	6.5	2.7	66	79	330	0.49	16
75	86	250 M	1482	483	IE1	92.7	92.8	92.2	0.85	137 ²⁾	2.5	7.0	3.0	67	80	460	0.86	16
110	127	280 M	1488	706	IE1	93.3	93.2	92.3	0.84	205 ²⁾	2.8	7.9	3.3	70	83	680	1.7	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																		
18.5	22	180 L	970	182	IE1	88.6	89.3	88.8	0.80	37.5 ²⁾	2.3	4.9	2.4	59	72	175	0.20	16
30	36	200 L	975	294	IE1	90.2	90.6	90.2	0.80	60 ²⁾	2.6	5.8	2.6	61	74	245	0.36	16
37	44.5	225 M	978	361	IE1	90.8	91.6	91.6	0.83	71 ²⁾	2.5	5.9	2.8	60	73	325	0.62	16
45	54	250 M	982	438	IE1	91.4	91.9	91.9	0.83	86	2.7	6.3	2.3	61	74	405	0.93	16
75	90	280 M	985	727	IE1	92.6	93.1	93.0	0.85	138 ²⁾	3.0	6.8	2.8	61	74	570	1.6	16
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																		
15	18	180 L	720	199	–	87.0	87.7	87.0	0.73	34 ²⁾	2.0	4.5	2.4	67	80	165	0.21	13
18.5	22	200 L	725	244	–	88.0	88.9	88.8	0.78	39	2.4	5.2	2.6	57	70	230	0.37	13
30	36	225 M	730	392	–	89.7	90.6	90.5	0.79	61 ²⁾	2.6	5.6	2.8	61	74	340	0.66	13
37	44.5	250 M	730	484	–	90.4	91.3	91.3	0.82	72	2.4	5.6	2.6	55	68	430	1.1	13
55	66	280 M	735	715	–	91.6	92.4	92.4	0.81	107	2.4	5.6	2.3	58	71	565	1.6	13
Voltages																		
			No. of poles		Motor type		Version		Order code(s)									
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2, 4, 6, 8	1LG4188 ... 288	Standard	1	–										
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4, 6, 8	1LG4188 ... 288	Standard	6	–										
50 Hz	500 VY			2, 4, 6, 8	1LG4188 ... 288	Without add. charge	3	–										
50 Hz	500 VΔ			2, 4, 6, 8	1LG4188 ... 288	Without add. charge	5	–										
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/78															
Types of construction			No. of poles		Motor type		Version		Order code(s)									
Without flange			2, 4, 6, 8		1LG4188 ... 288		Standard		0									
With flange			2, 4, 6, 8		1LG4188 ... 288		With add. charge		1									
			2, 4, 6, 8		1LG4188 ... 288		With add. charge		9									
			2, 4, 6, 8		1LG4188 ... 288		With add. charge		4									
			2, 4, 6, 8		1LG4188 ... 288		With add. charge		6									
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83															
Special versions									Order code(s)									
Options			For additional charges, code numbers and descriptions, see from Page 2/94															
							1LG4 ... -Z		...+...+...+...									

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1LG4220 to 1LG4288 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.



IE1

SIMOTICS SD 1PP Standard Motors

Motors with Standard Efficiency IE1

Forced-air cooled motors without external fan and fan cover – Cast-iron series 1PP4

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size	Operating values at rated output										Cast-iron series 1PP4 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM B3} kg	J kgm ²	Torque class CL			
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz %	η _{rated} 50 Hz %	η _{rated} 50 Hz %	cos φ _{rated} 50 Hz %	I _{rated} 50 Hz A	T _{LR} T _{rated}	I _{LR} I _{rated}					T _B T _{rated}	L _{pFA} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																			
22	24.5	180 M	2945	71	IE1	90.5	90.9	90.9	0.86	41 ²⁾	2.5	6.4	3.4	–	–	1PP4183-2FA	140	0.068	16
30	33.5	200 L	2950	97	IE1	91.5	91.9	91.7	0.88	54 ²⁾	2.3	6.5	3.0	–	–	1PP4206-2FA	195	0.13	16
37	41.5	200 L	2955	120	IE1	91.9	92.4	92.1	0.89	65 ²⁾	2.5	7.2	3.3	–	–	1PP4207-2FA	215	0.15	16
45	51	225 M	2960	145	IE1	92.1	92.6	92.4	0.88	80 ²⁾	2.4	6.7	3.1	–	–	1PP4223-2FA	275	0.22	16
55	62	250 M	2970	177	IE1	92.8	93.2	92.9	0.88	97	2.1	6.7	3.1	–	–	1PP4253-2FB	360	0.40	13
75	84	280 S	2975	241	IE1	93.2	93.2	92.5	0.87	134 ²⁾	2.5	7.5	3.1	–	–	1PP4280-2FB	480	0.72	13
90	101	280 M	2975	289	IE1	93.4	93.7	93.4	0.89	156 ²⁾	2.6	7.2	3.1	–	–	1PP4283-2FB	520	0.83	13
110	123	315 S	2982	352	IE1	94.2	94.1	93.2	0.87	194 ²⁾	2.4	7.2	3.1	–	–	1PP4310-2FB	700	1.2	13
132	148	315 M	2982	423	IE1	94.2	94.2	93.9	0.90	225 ²⁾	2.4	6.9	3.0	–	–	1PP4313-2FB	755	1.4	13
160	180	315 L	2982	512	IE1	94.4	94.4	94.3	0.91	270 ³⁾	2.4	7.0	3.0	–	–	1PP4316-2FB	880	1.6	13
200	224	315 L	2982	641	IE1	94.5	94.5	94.5	0.92	330 ³⁾	2.3	6.7	2.9	–	–	1PP4317-2FB	995	2.1	13
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
18.5	21.3	180 M	1465	121	IE1	89.6	90.2	89.9	0.84	35.5 ²⁾	2.4	6.7	3.1	–	–	1PP4183-4FA	135	0.099	16
22	25.3	180 L	1465	143	IE1	90.2	90.8	90.6	0.84	42 ²⁾	2.5	6.9	3.2	–	–	1PP4186-4FA	150	0.12	16
30	34.5	200 L	1465	196	IE1	91.0	91.5	91.2	0.85	56 ²⁾	2.5	6.7	3.4	–	–	1PP4207-4FA	195	0.19	16
37	42.5	225 S	1475	240	IE1	91.5	91.9	91.5	0.85	69 ²⁾	2.3	6.7	3.1	–	–	1PP4220-4FA	255	0.37	16
45	52	225 M	1475	291	IE1	91.9	92.5	92.2	0.86	82 ²⁾	2.6	7.2	3.2	–	–	1PP4223-4FA	290	0.45	16
55	63	250 M	1480	355	IE1	92.3	92.7	92.4	0.85	101	2.4	6.1	2.8	–	–	1PP4253-4FA	375	0.69	16
75	86	280 S	1485	482	IE1	93.0	93.1	92.3	0.85	137 ²⁾	2.5	7.1	3.0	–	–	1PP4280-4FA	515	1.2	16
90	104	280 M	1485	579	IE1	93.3	93.3	92.6	0.86	162 ²⁾	2.5	7.4	3.0	–	–	1PP4283-4FA	560	1.4	16
110	127	315 S	1488	706	IE1	93.6	93.7	93.3	0.85	199 ²⁾	2.5	6.4	2.8	–	–	1PP4310-4FA	710	1.9	16
132	152	315 M	1488	847	IE1	93.7	93.8	93.4	0.85	240 ²⁾	2.7	6.8	2.9	–	–	1PP4313-4FA	790	2.3	16
160	184	315 L	1486	1028	IE1	94.0	94.2	93.9	0.86	285 ³⁾	2.7	6.8	2.8	–	–	1PP4316-4FA	935	2.9	16
200	230	315 L	1486	1285	IE1	94.2	94.4	94.3	0.88	350 ³⁾	2.6	6.5	2.8	–	–	1PP4317-4FA	1040	3.5	16
Voltages																			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	No. of poles	Motor type	Version	Order code(s)												
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2, 4	1PP4183 ... 313	Standard	1												
50 Hz	500 VY			2, 4	1PP4183 ... 313	Without add. charge	3												
50 Hz	500 VΔ			2, 4	1PP4183 ... 317	Without add. charge	5												
Further voltages ¹⁾				For additional charges, code numbers and descriptions, see from Page 2/78															
Types of construction																			
Without flange				No. of poles	Motor type	Version	Order code(s)												
				2, 4	1PP4183 ... 317	Standard	0												
				2, 4	1PP4183 ... 313	Standard	0												
				2	1PP4316 ... 317	With add. charge	9	M1E											
				4	1PP4316 ... 317	Without add. charge	9	M1E											
				2, 4	1PP4183 ... 313	Standard	0												
				2	1PP4316 ... 317	With add. charge	9	M1D											
				4	1PP4316 ... 317	Without add. charge	9	M1D											
With flange				2, 4	1PP4183 ... 317	With add. charge	1												
				2, 4	1PP4183 ... 313	With add. charge	1												
				2, 4	1PP4316 ... 317	With add. charge	8												
				2, 4	1PP4183 ... 313	With add. charge	9	M1G											
				2, 4	1PP4183 ... 317	With add. charge	6												
Further types of construction				For additional charges, code numbers and descriptions, see from Page 2/83															
Special versions																			
Options				For additional charges, code numbers and descriptions, see from Page 2/94										1PP4 ... -Z	...+...+...+...				

2.3

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ For connection to 400 V, parallel feeders are necessary.

⁴⁾ If 1PP4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁵⁾ 1PP4220 to 1PP4317 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁶⁾ 2-pole motors 1PP4316-... and 1PP4317-... (motor series 1PP4 frame size 315 L) in 60 Hz version available on request.

SIMOTICS SD 1PP Standard Motors

Motors with Standard Efficiency IE1

Forced-air cooled motors without external fan and fan cover – Cast-iron series 1PP4

IE1



Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output											Cast-iron series 1PP4 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM B3} J kg	Torque class CL			
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz %	η _{rated} 50 Hz %	η _{rated} 50 Hz %	cos φ _{rated} 4/4	I _{rated} 50 Hz A	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pfA} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)	
• Cooling: Forced-air cooled without external fan and fan cover (IC 416) • Efficiency: Standard Efficiency IE1, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
15	18	180 L	965	148	IE1	87.8	88.2	88.5	0.83	29.5	2.3	5.3	2.5	–	–	1PP4186-6FA	145	0.18	16
18.5	22	200 L	975	181	IE1	88.8	89.2	88.9	0.81	37	2.5	5.6	2.5	–	–	1PP4206-6FA	185	0.24	16
22	26.5	200 L	975	216	IE1	89.3	90.1	89.1	0.81	44	2.6	5.7	2.5	–	–	1PP4207-6FA	195	0.29	16
30	36	225 M	978	293	IE1	90.3	91.3	91.4	0.83	58 ²⁾	2.7	5.6	2.5	–	–	1PP4223-6FA	270	0.49	16
37	44.5	250 M	980	361	IE1	91.0	91.7	91.6	0.83	71	2.7	6.0	2.3	–	–	1PP4253-6FA	355	0.76	16
45	54	280 S	985	436	IE1	91.5	92.3	92.3	0.85	83	2.4	6.1	2.4	–	–	1PP4280-6FA	455	1.1	16
55	66	280 M	985	533	IE1	92.0	92.7	92.8	0.86	100	2.5	6.3	2.5	–	–	1PP4283-6FA	490	1.4	16
75	90	315 S	988	725	IE1	92.7	93.0	92.4	0.84	139	2.5	6.5	2.8	–	–	1PP4310-6FA	665	2.1	16
90	108	315 M	988	870	IE1	93.0	93.4	93.0	0.84	166 ²⁾	2.6	6.8	2.9	–	–	1PP4313-6FA	730	2.5	16
110	132	315 L	988	1063	IE1	93.4	93.7	93.6	0.86	197	2.5	6.8	2.9	–	–	1PP4316-6FA	870	3.2	16
132	158	315 L	988	1276	IE1	93.6	93.8	93.6	0.86	235	3.1	7.3	3.0	–	–	1PP4317-6FA	960	4.0	16
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
11	13.2	180 L	725	145	–	85.7	86.5	86.3	0.73	25.5	1.7	4.2	2.1	–	–	1PP4186-8FB	145	0.17	13
15	18	200 L	725	198	–	87.1	87.8	87.5	0.76	32.5	2.2	4.9	2.6	–	–	1PP4207-8FB	195	0.29	13
18.5	22	225 S	730	242	–	88.1	89.0	88.8	0.78	39	2.3	5.5	2.7	–	–	1PP4220-8FB	260	0.48	13
22	26.5	225 M	730	288	–	88.6	89.5	89.4	0.79	45.5	2.3	5.6	2.8	–	–	1PP4223-8FB	280	0.55	13
30	36	250 M	730	393	–	89.8	90.4	90.5	0.81	59	2.3	5.5	2.6	–	–	1PP4253-8FB	370	0.84	13
37	44.5	280 S	735	481	–	90.5	91.4	91.5	0.81	73	2.2	5.0	2.1	–	–	1PP4280-8FB	455	1.1	13
45	54	280 M	735	585	–	91.1	91.9	91.9	0.81	88	2.2	5.1	2.1	–	–	1PP4283-8FB	495	1.4	13
55	66	315 S	740	710	–	91.7	92.1	91.8	0.81	107	2.2	5.8	2.6	–	–	1PP4310-8FB	660	2.1	13
75	90	315 M	738	971	–	92.4	93.1	92.9	0.83	141	2.2	5.7	2.6	–	–	1PP4313-8FB	725	2.5	13
90	108	315 L	738	1165	–	92.6	93.3	93.3	0.83	169	2.2	5.8	2.7	–	–	1PP4316-8FB	845	3.1	13
110	132	315 L	738	1423	–	93.1	93.6	93.3	0.83	205	2.4	6.1	2.8	–	–	1PP4317-8FB	1000	3.9	13
Voltages			No. of poles	Motor type	Version	Order code(s)													
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6, 8	1PP4186 ... 313	Standard	1	–											
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6, 8	1PP4186 ... 318	Standard	6	–											
50 Hz	500 VY			6, 8	1PP4186 ... 313	Without add. charge	3	–											
50 Hz	500 VΔ			6, 8	1PP4186 ... 318	Without add. charge	5	–											
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/78																
Further voltages ¹⁾			...																
Types of construction			No. of poles	Motor type	Version	Order code(s)													
Without flange	IM B3/6/7/8 ⁴⁾	IM V6 ⁴⁾	6, 8	1PP4186 ... 317	Standard	0	–												
			6, 8	1PP4186 ... 313	Standard	0	–												
			6, 8	1PP4316 ... 317	Without add. charge	9	M1E												
			6, 8	1PP4186 ... 313	Standard	0	–												
With flange	IM V5 without protective cover ⁴⁾	IM B5 ⁵⁾	6, 8	1PP4316 ... 317	Without add. charge	9	M1D												
			6, 8	1PP4186 ... 317	With add. charge	1	–												
			6, 8	1PP4186 ... 313	With add. charge	1	–												
			6, 8	1PP4316 ... 317	With add. charge	8	–												
	IM V3 ⁵⁾	IM B35	6, 8	1PP4186 ... 313	With add. charge	9	M1G												
			6, 8	1PP4186 ... 317	With add. charge	6	–												
			6, 8	1PP4186 ... 317	With add. charge	9	...												
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83																
Further types of construction			...																
Special versions			Order code(s)																
Options			For additional charges, code numbers and descriptions, see from Page 2/94																
Options			1PP4 ... -Z ...+...+...+...																

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ For connection to 400 V, parallel feeders are necessary.

⁴⁾ If 1PP4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁵⁾ 1PP4220 to 1PP4317 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.



IE1

SIMOTICS SD 1PP Standard Motors

Motors with Standard Efficiency IE1

Forced-air cooled motors without external fan and fan cover – Cast-iron series 1PP4 with increased output

Selection and ordering data

P _{rated} , 50 Hz	P _{rated} , 60 Hz ¹⁾	Frame size	Operating values at rated output											Cast-iron series 1PP4 – IE1 version in accordance with IEC 60034-30 with increased output Order No.	m _{IM B3} J	Torque class			
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pFA} , 50 Hz	L _{WA} , 50 Hz	kg
kW	kW	FS	rpm	Nm	%	%	%	A											
• Cooling: Forced-air cooled without external fan and fan cover (IC 416) • Efficiency: Standard Efficiency IE1, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																			
30	33.5	180 L	2950	97	IE1	91.2	91.4	91.2	0.86	55 ²⁾	2.4	7.1	3.4	–	–	1PP4188-2FA	170	0.090	16
45	51	200 L	2955	145	IE1	92.3	92.5	92.2	0.89	80 ²⁾	2.5	6.9	3.2	–	–	1PP4208-2FA	245	0.18	16
55	62	225 M	2960	177	IE1	92.4	92.8	92.9	0.89	97 ²⁾	2.6	7.3	3.2	–	–	1PP4228-2FA	325	0.27	16
75	84	250 M	2970	241	IE1	93.2	93.4	92.9	0.88	133 ²⁾	2.4	7.1	3.1	–	–	1PP4258-2FA	405	0.48	16
110	123	280 M	2975	353	IE1	93.7	93.8	93.5	0.90	189 ²⁾	2.5	7.0	3.0	–	–	1PP4288-2FB	610	1.0	13
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																			
30	34.5	180 L	1465	196	IE1	90.9	91.2	90.4	0.80	60 ²⁾	2.6	6.3	2.9	–	–	1PP4188-4FA	175	0.14	16
37	42.5	200 L	1465	241	IE1	91.4	91.8	91.5	0.83	71 ²⁾	2.6	6.5	3.0	–	–	1PP4208-4FA	220	0.23	16
55	63	225 M	1475	356	IE1	92.3	92.8	92.8	0.86	100 ²⁾	2.5	6.5	2.7	–	–	1PP4228-4FA	320	0.49	16
75	86	250 M	1482	483	IE1	92.9	93.0	92.5	0.85	137 ²⁾	2.5	7.0	3.0	–	–	1PP4258-4FA	445	0.86	16
110	127	280 M	1488	706	IE1	93.5	93.5	92.8	0.84	200 ²⁾	2.8	7.9	3.3	–	–	1PP4288-4FA	660	1.7	16
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
18.5	22	180 L	970	182	IE1	88.7	89.4	89.0	0.80	37.5 ²⁾	2.3	4.9	2.4	–	–	1PP4188-6FA	170	0.20	16
30	36	200 L	975	294	IE1	90.3	90.7	90.4	0.80	60 ²⁾	2.6	5.8	2.6	–	–	1PP4208-6FA	235	0.36	16
37	44.5	225 M	978	361	IE1	90.9	91.7	91.7	0.83	71 ²⁾	2.5	5.9	2.8	–	–	1PP4228-6FA	315	0.62	16
45	54	250 M	982	438	IE1	91.5	92.1	92.2	0.83	86	2.7	6.3	2.3	–	–	1PP4258-6FA	390	0.93	16
75	90	280 M	985	727	IE1	92.7	93.2	93.2	0.85	137 ²⁾	3.0	6.8	2.8	–	–	1PP4288-6FA	550	1.7	16
160	192	315 L	988	1547	IE1	93.9	94.0	93.7	0.86	285 ²⁾	3.0	7.5	3.0	–	–	1PP4318-6FA	1160	4.7	16
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
15	18	180 L	720	199	–	87.1	87.8	87.1	0.73	34 ²⁾	2.0	4.5	2.4	–	–	1PP4188-8FB	160	0.21	13
18.5	22	200 L	725	244	–	88.1	89.0	89.0	0.78	39	2.4	5.2	2.6	–	–	1PP4208-8FB	220	0.37	13
30	36	225 M	730	392	–	89.7	90.6	90.6	0.79	61 ²⁾	2.6	5.6	2.8	–	–	1PP4228-8FB	330	0.66	13
37	44.5	250 M	730	484	–	90.5	91.4	91.4	0.82	72	2.4	5.6	2.6	–	–	1PP4258-8FB	415	1.1	13
55	66	280 M	735	715	–	91.7	92.5	92.5	0.81	107	2.4	5.6	2.3	–	–	1PP4288-8FB	545	1.6	13
132	158	315 L	738	1708	–	93.3	93.7	93.6	0.83	245 ²⁾	2.5	6.5	2.9	–	–	1PP4318-8FB	1080	4.5	13
Voltagess					No. of poles	Motor type		Version		Order code(s)									
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY		2, 4, 6, 8	1PP4188 ... 288		Standard		1		–							
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ		2, 4, 6, 8	1PP4188 ... 318		Standard		6		–							
50 Hz	500 VY				2, 4, 6, 8	1PP4188 ... 288		Without add. charge		3		–							
50 Hz	500 VΔ				2, 4, 6, 8	1PP4188 ... 318		Without add. charge		5		–							
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/78																
Types of construction					No. of poles	Motor type		Version		Order code(s)									
Without flange			IM B3/6/7/8 ³⁾		2, 4, 6, 8	1PP4188 ... 318		Standard		0		–							
			IM V6 ³⁾		2, 4, 6, 8	1PP4188 ... 288		Standard		0		–							
					2, 4, 6, 8	1PP4318		With add. charge		9		M1E							
			IM V5 without protective cover ³⁾		2, 4, 6, 8	1PP4188 ... 288		Standard		0		–							
					2, 4, 6, 8	1PP4318		With add. charge		9		M1D							
With flange			IM B5 ⁴⁾		2, 4, 6, 8	1PP4188 ... 288		With add. charge		1		–							
			IM V1 without protective cover ⁴⁾		2, 4, 6, 8	1PP4188 ... 288		With add. charge		1		–							
					2, 4, 6, 8	1PP4318		With add. charge		8		–							
			IM V3 ⁴⁾		2, 4, 6, 8	1PP4188 ... 288		With add. charge		9		M1G							
			IM B35		2, 4, 6, 8	1PP4188 ... 318		With add. charge		6		–							
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83																
Special versions											Order code(s)								
Options			For additional charges, code numbers and descriptions, see from Page 2/94																
							1PP4		-Z							

2.3

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ If 1PP4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1PP4220 to 1PP4288 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

SIMOTICS SD 1LP Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Cast-iron series 1LP4

IE1



Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output											Cast-iron series 1LP4 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM B3} J		Torque class CL			
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz %	η _{rated} 50 Hz %	η _{rated} 50 Hz %	cos φ rated 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}		L _{pfA} , 50 Hz dB(A)	L _{WA} , 50 Hz dB(A)		kg	kgm ²	
• Cooling: Naturally cooled without external fan (IC 410) • Efficiency: Standard Efficiency IE1 or High Efficiency IE2 or Premium Efficiency IE3, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																				
7.3	–	180 M	2945	24	IE2	88.1	87.6	85.5	0.89	13.4	2.4	6.5	3.4	–	–	1LP4183-2FA	140	0.068	16	
10	–	200 L	2950	32	IE2	89.1	88.6	86.6	0.89	18.2	2.3	6.4	2.9	–	–	1LP4206-2FA	195	0.13	16	
12.5	–	200 L	2955	40	IE2	89.8	89.1	86.8	0.90	22.5	2.5	7.1	3.2	–	–	1LP4207-2FA	215	0.15	16	
15	–	225 M	2960	48	IE2	90.3	90.1	89.0	0.90	26.5	2.3	6.7	3.0	–	–	1LP4223-2FA	275	0.22	16	
18.5	–	250 M	2970	59	IE2	90.9	90.5	88.7	0.90	32.5	2.0	6.6	3.0	–	–	1LP4253-2FB	360	0.40	13	
25	–	280 S	2975	80	IE2	91.6	91.1	89.6	0.90	44	2.5	7.6	3.0	–	–	1LP4280-2FB	480	0.72	13	
30	–	280 M	2975	96	IE2	92.0	91.8	90.7	0.90	52	2.6	7.2	2.9	–	–	1LP4283-2FB	520	0.83	13	
37	–	315 S	2984	118	IE2	92.5	91.6	89.5	0.90	64	2.3	7.3	3.0	–	–	1LP4310-2FB	700	1.2	13	
44	–	315 M	2982	141	IE2	92.8	92.2	90.6	0.91	75	2.3	6.8	2.8	–	–	1LP4313-2FB	755	1.4	13	
53	–	315 L	2982	170	IE2	93.2	92.8	91.3	0.91	90	2.3	6.9	2.9	–	–	1LP4316-2FB	880	1.6	13	
67	–	315 L	2984	214	IE2	93.6	93.3	92.1	0.92	112	2.1	6.5	2.8	–	–	1LP4317-2FB	995	2.1	13	
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																				
6.2	–	180 M	1465	40	IE2	88.1	88.5	87.7	0.87	11.7	2.1	6.6	3.0	–	–	1LP4183-4FA	135	0.099	16	
7.3	–	180 L	1470	47	IE2	88.6	89.0	88.1	0.87	13.7	2.1	6.9	3.1	–	–	1LP4186-4FA	150	0.12	16	
10	–	200 L	1465	65	IE2	89.5	89.8	89.1	0.88	18.3	2.3	6.6	3.2	–	–	1LP4207-4FA	195	0.19	16	
12.5	–	225 S	1475	81	IE2	90.1	90.5	89.8	0.86	23	2.3	6.6	3.0	–	–	1LP4220-4FA	255	0.37	16	
15	–	225 M	1475	97	IE2	90.6	90.9	90.3	0.87	27.5	2.4	7.1	3.1	–	–	1LP4223-4FA	290	0.45	16	
18.5	–	250 M	1480	119	IE2	91.2	91.4	90.7	0.87	33.5	2.2	6.0	2.6	–	–	1LP4253-4FA	375	0.69	16	
25	–	280 S	1485	161	IE2	91.9	91.7	90.6	0.87	45	2.4	7.0	2.9	–	–	1LP4280-4FA	515	1.2	16	
30	–	280 M	1485	193	IE2	92.3	92.2	91.1	0.88	53	2.4	7.2	2.9	–	–	1LP4283-4FA	560	1.4	16	
37	–	315 S	1488	237	IE2	92.7	92.6	91.6	0.87	66	2.2	6.2	2.6	–	–	1LP4310-4FA	710	1.9	16	
44	–	315 M	1488	282	IE2	93.1	93.0	92.1	0.87	78	2.4	6.7	2.7	–	–	1LP4313-4FA	790	2.3	16	
53	–	315 L	1488	340	IE2	93.4	93.4	92.8	0.87	94	2.5	6.7	2.7	–	–	1LP4316-4FA	935	2.9	16	
67	–	315 L	1488	430	IE2	93.8	94.0	93.6	0.88	117	2.3	6.2	2.6	–	–	1LP4317-4FA	1040	3.5	16	
Voltages																				
50 Hz		230 VΔ/400 VY	60 Hz ¹⁾ 460 VY		No. of poles	Motor type		Version		Order code(s)										
50 Hz		400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ		2, 4	1LP4183 ... 313		Standard		1		–								
50 Hz		500 VY			2, 4	1LP4183 ... 313		Without add. charge		3		–								
50 Hz		500 VΔ			2, 4	1LP4183 ... 317		Without add. charge		5		–								
Further voltages ¹⁾		For additional charges, code numbers and descriptions, see from Page 2/78											9		...					
Types of construction																				
Without flange		IM B3/6/7/8 ²⁾		No. of poles		Motor type		Version		Order code(s)										
		IM V6 ²⁾		2, 4		1LP4183 ... 317		Standard		0		–								
				2, 4		1LP4183 ... 313		Standard		0		–								
				2		1LP4316 ... 317		With add. charge		9		M1E								
				4		1LP4316 ... 317		Without add. charge		9		M1E								
		IM V5 without protective cover ²⁾		2, 4		1LP4183 ... 313		Standard		0		–								
				2		1LP4316 ... 317		With add. charge		9		M1D								
				4		1LP4316 ... 317		Without add. charge		9		M1D								
With flange		IM B5 ³⁾		2, 4		1LP4183 ... 313		With add. charge		1		–								
		IM V1 without protective cover ^{3) 4)}		2, 4		1LP4183 ... 313		With add. charge		1		–								
				2, 4		1LP4316 ... 317		With add. charge		8		–								
		IM V3 ³⁾		2, 4		1LP4183 ... 313		With add. charge		9		M1G								
		IM B35		2, 4		1LP4183 ... 317		With add. charge		6		–								
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/83											9		...					
Special versions																				
Options		For additional charges, code numbers and descriptions, see from Page 2/94											1LP4 ... -Z		...+...+...+...					

¹⁾ Operating values at rated output for 60 Hz are available on request.

²⁾ If 1LP4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ 1LP4220 to 1LP4317 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁴⁾ 2-pole motors 1LP4316-... and 1LP4317-... (motor series 1LP4 frame size 315 L) in 60 Hz version available on request.



IE1

SIMOTICS SD 1LP Standard Motors

Motors with Standard Efficiency IE1

Naturally cooled motors without external fan
Cast-iron series 1LP4

Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW ¹⁾	Frame size FS	Operating values at rated output											Cast-iron series 1LP4 – IE1 version in accordance with IEC 60034-30 Order No.	m _{IM B3} J kg	Torque class CL			
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ _{rated} 50 Hz, 4/4	I _r 50 Hz, 400 V A	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}				L _{pFA} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)	
• Cooling: Naturally cooled without external fan (IC 410) • Efficiency: Standard Efficiency IE1 or High Efficiency IE2 or Premium Efficiency IE3, service factor (SF) 1.1 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																			
5	–	180 L	970	49	IE3	87.6	88.7	88.7	0.83	9.9	2.1	5.3	2.4	–	–	1LP4186-6FA	145	0.18	16
6.2	–	200 L	975	61	IE3	88.4	89.0	88.5	0.83	12.2	2.2	5.7	2.4	–	–	1LP4206-6FA	185	0.24	16
7.3	–	200 L	975	71	IE3	89.0	89.7	89.2	0.82	14.4	2.3	5.8	2.4	–	–	1LP4207-6FA	195	0.29	16
10	–	225 M	980	97	IE3	90.0	90.7	90.5	0.84	19.1	2.3	5.5	2.4	–	–	1LP4223-6FA	270	0.49	16
12.5	–	250 M	982	122	IE3	90.7	91.3	91.0	0.84	23.5	2.3	5.8	2.2	–	–	1LP4253-6FA	355	0.76	16
15	–	280 S	986	145	IE3	91.2	91.7	91.3	0.86	27.5	2.1	6.0	2.3	–	–	1LP4280-6FA	455	1.1	16
18.5	–	280 M	986	179	IE3	91.7	92.4	92.5	0.86	34	2.1	6.0	2.4	–	–	1LP4283-6FA	490	1.4	16
25	–	315 S	990	241	IE3	92.5	92.6	91.9	0.87	45.5	2.2	6.6	2.7	–	–	1LP4310-6FA	665	2.1	16
30	–	315 M	988	290	IE3	92.9	93.1	92.6	0.86	54	2.3	6.8	2.8	–	–	1LP4313-6FA	730	2.5	16
37	–	315 L	988	358	IE3	93.3	93.6	93.2	0.87	66	2.2	6.6	2.7	–	–	1LP4316-6FA	870	3.2	16
44	–	315 L	990	424	IE3	93.7	93.9	93.5	0.87	78	2.7	7.2	2.9	–	–	1LP4317-6FA	960	4.0	16
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
3.7	–	180 L	725	49	–	86.5	87.3	86.9	0.76	8.1	1.5	4.4	2.0	–	–	1LP4186-8FB	145	0.17	13
5	–	200 L	730	65	–	86.5	87.5	87.1	0.78	10.7	2.0	5.1	2.5	–	–	1LP4207-8FB	195	0.29	13
6.2	–	225 S	735	81	–	88.0	89.4	89.8	0.80	12.7	2.1	5.6	2.6	–	–	1LP4220-8FB	260	0.48	13
7.3	–	225 M	735	95	–	88.5	89.2	88.7	0.81	17.7	2.1	5.7	2.7	–	–	1LP4223-8FB	280	0.55	13
10	–	250 M	735	130	–	90.0	90.7	90.4	0.82	19.6	2.0	5.4	2.5	–	–	1LP4253-8FB	370	0.84	13
12.5	–	280 S	735	162	–	90.5	91.2	91.0	0.82	24.5	1.9	4.9	2.1	–	–	1LP4280-8FB	455	1.1	13
15	–	280 M	735	195	–	91.0	91.7	91.5	0.81	29.5	1.9	5.0	2.0	–	–	1LP4283-8FB	495	1.4	13
18.5	–	315 S	740	239	–	91.5	91.9	91.4	0.83	35	2.0	5.8	2.5	–	–	1LP4310-8FB	660	2.1	13
25	–	315 M	738	323	–	92.0	92.6	92.5	0.84	46.5	2.0	5.7	2.5	–	–	1LP4313-8FB	725	2.5	13
30	–	315 L	740	387	–	92.0	92.6	92.4	0.84	56	2.0	5.8	2.6	–	–	1LP4316-8FB	845	3.1	13
37	–	315 L	740	477	–	93.0	93.5	93.3	0.84	68	2.2	6.0	2.7	–	–	1LP4317-8FB	1000	3.9	13
Voltages					No. of poles	Motor type		Version		Order code(s)									
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6, 8	1LP4186 ... 313	Standard		1	–										
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6, 8	1LP4186 ... 317	Standard		6	–										
50 Hz	500 VY			6, 8	1LP4186 ... 313	Without add. charge		3	–										
50 Hz	500 VΔ			6, 8	1LP4186 ... 317	Without add. charge		5	–										
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/78					9	...										
Types of construction					No. of poles	Motor type		Version		Order code(s)									
Without flange			IM B3/6/7/8 ²⁾		6, 8	1LP4186 ... 317	Standard		0	–									
			IM V6 ²⁾		6, 8	1LP4186 ... 313	Standard		0	–									
					6, 8	1LP4316 ... 317	Without add. charge		9	M1E									
			IM V5 without protective cover ²⁾		6, 8	1LP4186 ... 313	Standard		0	–									
					6, 8	1LP4316 ... 317	Without add. charge		9	M1D									
With flange			IM B5 ³⁾		6, 8	1LP4186 ... 317	With add. charge		1	–									
			IM V1 without protective cover ³⁾		6, 8	1LP4186 ... 313	With add. charge		1	–									
					6, 8	1LP4316 ... 317	With add. charge		8	–									
			IM V3 ³⁾		6, 8	1LP4186 ... 313	With add. charge		9	M1G									
			IM B35		6, 8	1LP4186 ... 317	With add. charge		6	–									
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83					9	...										
Special versions									Order code(s)										
Options			For additional charges, code numbers and descriptions, see from Page 2/94		1LP4 ... -Z				...+...+...+...										

2.3

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ If 1LP4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ 1LP4220 to 1LP4317 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

SIMOTICS GP 1LA Standard Motors

NEMA Energy Efficient MG1 motors, Table 12-11

Self-ventilated motors
Aluminum series 1LA9 with order code D42



Selection and ordering data

P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	Operating values at 60 Hz rated output											Aluminum series 1LA9 – NEMA Energy Efficient version (NEMA MG1, Table 12-11) Order No.	m _{IM B3} J	Torque class	
			η _{rated} 60 Hz	T _{rated} 60 Hz	EISA CC No. CC032A	η _{ra-} ted, 60 Hz, 4/4	η _{ra-} ted, 60 Hz, 3/4	η _{ra-} ted, 60 Hz, 2/4	cos φ rated, 60 Hz, 4/4	I _{rated} 60 Hz, 460 V	T _{LR} / I _{LR} rated	T _B / I _B rated	L _{pfA} 60 Hz				L _{WA} 60 Hz
kW	hp	FS	rpm	Nm	%	%	%	A									

- Cooling: Self-ventilated (IC 411)
- Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11, UL, CSA and service factor (SF) 1.15 – for operation in the USA and Canada
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3600 rpm at 60 Hz

0.18	0.25	63 M	3460	0.5	–	69.5	69.5	65.5	0.78	0.42	2.8	4.9	3.3	53	64	1LA9060-2KA	■-Z D42	4.0	0.00022	16
0.25	0.33	63 M	3460	0.69	–	71.0	71.0	67.0	0.76	0.58	2.5	5.0	2.7	53	64	1LA9063-2KA	■-Z D42	4.7	0.00026	16
0.37	0.5	71 M	3445	1.0	–	71.0	71.0	67.0	0.75	0.87	3.3	7.5	3.4	56	67	1LA9070-2KA	■-Z D42	6.0	0.00041	16
0.56	0.75	71 M	3445	1.6	–	72.0	72.0	68.0	0.73	1.34	3.6	7.2	3.7	56	67	1LA9073-2KA	■-Z D42	7.2	0.00050	16
0.75	1	80 M	3485	2.1	–	75.5	75.5	72.5	0.82	1.52	4.4	9.6	4.4	60	71	1LA9080-2KA	■-Z D42	10.7	0.0010	16
1.1	1.5	80 M	3480	3.0	–	82.5	82.5	81.5	0.89	1.88	3.8	8.6	3.2	60	71	1LA9083-2KA	■-Z D42	12.4	0.0013	16
1.5	2	90 S	3510	4.1	✓	84.0	84.0	83.0	0.87	2.6	4.1	8.6	4.1	64	76	1LA9090-2KA	■-Z D42	16.2	0.0018	16
2.2	3	90 L	3500	6.0	✓	85.5	85.5	84.5	0.87	3.7	4.1	8.5	5.1	64	76	1LA9096-2KA	■-Z D42	18.6	0.0022	16
3	4	100 L	3510	8.2	–	87.5	87.5	86.5	0.87	4.95	3.4	8.6	3.7	66	78	1LA9106-2KA	■-Z D42	25	0.0044	16
4	5	112 M	3525	10	✓	88.5	88.5	87.5	0.88	6.0	2.8	9.2	4.0	67	79	1LA9113-2KA	■-Z D42	36.7	0.0077	16
5.5	7.5	132 S	3540	15	✓	88.5	88.5	87.5	0.90	8.7	2.7	8.5	3.8	72	84	1LA9130-2KA	■-Z D42	46.2	0.019	16
7.5	10	132 S	3540	20	✓	89.5	89.5	88.5	0.92	11.4	2.8	8.3	3.7	72	84	1LA9131-2KA	■-Z D42	58.1	0.024	16
11	15	160 M	3555	30	✓	90.2	90.2	89.2	0.90	17	2.5	8.5	3.7	74	86	1LA9163-2KA	■-Z D42	78.6	0.044	16
15	20	160 M	3555	40	✓	90.2	90.2	89.2	0.90	23	2.5	8.5	3.7	74	86	1LA9164-2KA	■-Z D42	87.6	0.051	16
18.5	25	160 L	3550	50	✓	91.0	91.0	90.0	0.92	27.5	2.4	8.5	3.5	74	86	1LA9166-2KA	■-Z D42	110.4	0.065	16
22	30	180 M	3545	59	✓	91.0	91.0	90.0	0.86	35.5	2.6	8.6	3.5	74	86	1LA9183-2WA	■-Z D42	131	0.090	16
30	40	200 L	3555	81	✓	91.7	91.7	90.7	0.88	46.5	2.5	8.4	3.6	75	88	1LA9206-2WA	■-Z D42	182	0.16	16
37	50	200 L	3555	99	✓	92.4	92.4	91.4	0.88	57	2.7	8.4	3.7	75	88	1LA9207-2WA	■-Z D42	211	0.20	16

Voltages (≤ 600 V) ¹⁾				No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	2	1LA9060 ... 207	Standard	1
50 Hz	400 VΔ	60 Hz	460 VΔ	2	1LA9060 ... 207	Standard	9
50 Hz	500 VY			2	1LA9060 ... 207	Without additional charge	3
50 Hz	500 VΔ			2	1LA9106 ... 207	Without additional charge	5
Further voltages							9
For additional charges, code numbers and descriptions, see from Page 2/76							...
Types of construction ²⁾				No. of poles	Motor type	Version	Order code(s)
With flange	IM B5, IM V1 without protective cover			2	1LA9060 ... 207	With additional charge	1
	IM V3			2	1LA9060 ... 166	With additional charge	1
	IM V1 with protective cover ³⁾			2	1LA9183 ... 207	With additional charge	9
With standard flange	IM B14, IM V19, IM V18 without protective cover			2	1LA9060 ... 166	With additional charge	4
	IM V1 with protective cover ³⁾			2	1LA9060 ... 207	With additional charge	2
With special flange	IM B14, IM V19, IM V18 without protective cover			2	1LA9060 ... 166	With additional charge	3
Further types of construction							9
For additional charges, code numbers and descriptions, see from Page 2/80							...
Special versions							Order code(s)
Options						1LA9 ... - ... ■-Z D42	+...+...+...+...

¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.
²⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.
³⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1LA Standard Motors

NEMA Energy Efficient MG1 motors, Table 12-11



Self-ventilated motors
Aluminum series 1LA9 with order code D42

Selection and ordering data (continued)

Operating values at 60 Hz rated output														Aluminum series					
P_{rated} , 50 Hz	P_{rated} , 60 Hz	Frame size	n_{rated} , 60 Hz	T_{rated} , 60 Hz	EISA CC No. CC032A	η_{ra-} ted, 60 Hz, 4/4	η_{ra-} ted, 60 Hz, 3/4	η_{ra-} ted, 60 Hz, 2/4	$\cos\phi$ rated, 60 Hz, 4/4	$I_{LR}/$ I_{rated} , 60 Hz, 460 V	$T_{LR}/$ T_{rated}	$I_{LR}/$ I_{rated}	$T_B/$ T_{rated}	L_{pfA} , 60 Hz	L_{WA} , 60 Hz	1LA9 – NEMA Energy Efficient version (NEMA MG1, Table 12-11) Order No.	$m_{IM B3}$ J	Torque class	
kW	hp	FS	rpm	Nm		%	%	%	A						For successor 1LE1021 see Page 1/36	kg	kgm ²	CL	

- Cooling: Self-ventilated (IC 411)
- Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11, UL, CSA and service factor (SF) 1.15 – for operation in the USA and Canada
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1800 rpm at 60 Hz

0.12	0.16	63 M	1710	0.67	–	68.0	67.5	64.0	0.60	0.37	2.7	3.9	2.8	46	57	1LA9060-4KA ■■-Z D42	4.0	0.00037	16
0.19	0.25	63 M	1705	1.1	–	64.0	63.0	59.0	0.67	0.59	3.0	3.6	3.1	46	57	1LA9063-4KA ■■-Z D42	4.7	0.00045	16
0.25	0.33	71 M	1730	1.4	–	68.5	68.5	64.5	0.60	0.76	3.6	4.9	3.4	48	59	1LA9070-4KA ■■-Z D42	6.0	0.00076	16
0.37	0.5	71 M	1725	2.0	–	69.0	69.0	65.0	0.68	0.99	3.3	4.9	3.4	48	59	1LA9073-4KA ■■-Z D42	7.0	0.00095	16
0.56	0.75	80 M	1725	3.1	–	74.3	74.3	71.3	0.71	1.33	3.4	6.8	3.6	51	62	1LA9080-4KA ■■-Z D42	10.7	0.0017	16
0.75	1	80 M	1720	4.2	–	82.5	82.5	81.5	0.72	1.58	4.0	7.3	3.9	51	62	▶ 1LA9083-4KA ■■-Z D42	12.4	0.0024	16
1.1	1.5	90 S	1755	6.0	✓	84.0	84.0	83.0	0.76	2.15	3.1	7.7	3.9	52	64	▶ 1LA9090-4KA ■■-Z D42	16.2	0.0033	16
1.5	2	90 L	1755	8.2	✓	84.0	84.0	83.0	0.76	2.95	3.6	8.1	4.2	52	64	▶ 1LA9096-4KA ■■-Z D42	18.6	0.0040	16
2.2	3	100 L	1750	12	–	87.5	87.5	86.5	0.79	4.0	3.4	8.4	4.3	57	69	▶ 1LA9106-4KA ■■-Z D42	26	0.0052	16
3	4	100 L	1750	16	–	87.5	87.5	86.5	0.79	5.4	3.8	8.7	4.6	57	69	▶ 1LA9107-4KA ■■-Z D42	31	0.0077	16
4	5	112 M	1755	20	✓	87.5	87.5	86.5	0.79	6.7	3.2	8.6	3.9	57	69	▶ 1LA9113-4KA ■■-Z D42	38.7	0.014	16
5.5	7.5	132 S	1760	30	✓	89.5	89.5	88.5	0.81	9.5	3.2	8.7	4.1	66	78	▶ 1LA9130-4KA ■■-Z D42	49.2	0.023	16
7.5	10	132 M	1760	41	✓	89.5	89.5	88.5	0.82	12.8	3.4	8.7	4.1	66	78	▶ 1LA9133-4KA ■■-Z D42	62.1	0.029	16
11	15	160 M	1765	60	✓	91.0	91.0	90.0	0.85	17.8	2.7	8.1	3.2	70	82	▶ 1LA9163-4KA ■■-Z D42	86.6	0.055	16
15	20	160 L	1765	81	✓	91.0	91.0	90.0	0.85	24.5	2.8	8.5	3.5	70	82	▶ 1LA9166-4KA ■■-Z D42	115.4	0.072	16
18.5	25	180 M	1770	100	✓	92.4	92.4	91.4	0.83	30.5	2.8	8.4	3.6	67	80	1LA9183-4WA ■■-Z D42	126	0.15	16
22	30	180 L	1775	118	✓	92.4	92.4	91.4	0.83	36	3.1	8.8	3.9	67	80	1LA9186-4WA ■■-Z D42	146	0.19	16
30	40	200 L	1770	162	✓	93.0	93.0	91.5	0.86	47	3.0	8.3	3.6	69	82	1LA9207-4WA ■■-Z D42	196	0.32	16

Voltages (≤ 600 V) ¹⁾				No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	4	1LA9060 ... 207	Standard	1
50 Hz	400 VΔ	60 Hz	460 VΔ	4	1LA9060 ... 207	Standard	9
50 Hz	500 VY			4	1LA9060 ... 207	Without additional charge	3
50 Hz	500 VΔ			4	1LA9106 ... 207	Without additional charge	5
Further voltages							9
For additional charges, code numbers and descriptions, see from Page 2/76							...
Types of construction ²⁾				No. of poles	Motor type	Version	Order code(s)
With flange	IM B5, IM V1 without protective cover			4	1LA9060 ... 207	With additional charge	1
	IM V3			4	1LA9060 ... 166	With additional charge	1
	IM V1 with protective cover ³⁾			4	1LA9183 ... 207	With additional charge	9
With standard flange	IM B14, IM V19, IM V18 without protective cover			4	1LA9060 ... 207	With additional charge	4
	IM B14, IM V19, IM V18 without protective cover			4	1LA9060 ... 166	With additional charge	2
With special flange	IM B14, IM V19, IM V18 without protective cover			4	1LA9060 ... 166	With additional charge	3
Further types of construction							9
For additional charges, code numbers and descriptions, see from Page 2/80							...
Special versions							Order code(s)
Options						1LA9 ... ■■-Z D42	+...+...+...+...

¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.

²⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

2.4

SIMOTICS GP 1LA Standard Motors

NEMA Energy Efficient MG1 motors, Table 12-11

Self-ventilated motors
Aluminum series 1LA9 with order code D42



Selection and ordering data (continued)

Operating values at 60 Hz rated output															Aluminum series		m _{IM B3} J		Torque class			
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{ra} -ted, 60 Hz, 4/4	η _{ra} -ted, 60 Hz, 3/4	η _{ra} -ted, 60 Hz, 2/4	η _{ra} -ted, 60 Hz, 4/4	cos φ _{rated}	I _{rated} , 60 Hz, 460 V	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pfA} , 60 Hz	L _{WA} , 60 Hz	1LA9 – NEMA Energy Efficient version (NEMA MG1, Table 12-11)	Order No.	For successor 1LE1021 see Page 1/37	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%	%	A												

- Cooling: Self-ventilated (IC 411)
- Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11, UL, CSA and service factor (SF) 1.15 – for operation in the USA and Canada
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1200 rpm at 60 Hz

0.75	1	90 S	1140	6.3	✓	80.0	80.0	79.0	0.66	1.78	3.0	5.6	3.0	47	59		1LA9090-6KA	■-Z D42	16.9	0.0033	16
1.1	1.5	90 L	1150	9.1	✓	85.5	85.5	84.5	0.64	2.5	3.7	6.4	3.7	47	59		1LA9096-6KA	■-Z D42	19.6	0.0050	16
1.5	2	100 L	1150	12	-	86.5	86.5	85.5	0.70	3.1	3.5	7.2	3.8	51	63	▶	1LA9106-6KA	■-Z D42	26	0.0055	16
2.2	3	112 M	1160	18	-	87.5	87.5	86.5	0.66	4.8	2.9	7.5	3.7	56	68	▶	1LA9113-6KA	■-Z D42	38.7	0.014	16
4	5	132 M	1160	30	✓	87.5	87.5	86.5	0.77	6.9	3.0	7.9	3.6	67	79	▶	1LA9133-6KA	■-Z D42	53.2	0.025	16
5.5	7.5	132 M	1160	45	✓	89.5	89.5	88.5	0.73	10.6	3.7	8.4	4.3	67	79	▶	1LA9134-6KA	■-Z D42	66.1	0.034	16
7.5	10	160 M	1165	61	✓	89.5	89.5	88.5	0.70	15	2.4	6.4	2.8	70	82	▶	1LA9163-6KA	■-Z D42	103.6	0.063	16
11	15	160 L	1165	90	✓	90.2	90.2	89.2	0.77	19.9	3.1	8.3	3.8	70	82	▶	1LA9166-6KA	■-Z D42	113.4	0.072	16
15	20	180 L	1175	122	✓	90.2	90.2	89.2	0.75	28	2.8	7.1	2.8	70	82	▶	1LA9186-6WA	■-Z D42	144	0.19	16
18.5	25	200 L	1175	150	✓	91.7	91.7	90.7	0.75	34	2.8	7.1	2.8	70	82	▶	1LA9206-6WA	■-Z D42	183	0.28	16
22	30	200 L	1175	179	✓	91.7	91.7	90.7	0.75	40	2.8	7.2	2.8	70	82	▶	1LA9207-6WA	■-Z D42	214	0.36	16

Voltages (≤ 600 V) ¹⁾				No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	6	1LA9090 ... 207	Standard	1 -
50 Hz	400 VΔ	60 Hz	460 VΔ	6	1LA9090 ... 207	Standard	9 L1U
50 Hz	500 VY			6	1LA9090 ... 207	Without additional charge	3 -
50 Hz	500 VΔ			6	1LA9106 ... 207	Without additional charge	5 -
Further voltages							9 ...
For additional charges, code numbers and descriptions, see from Page 2/76							
Types of construction ²⁾				No. of poles	Motor type	Version	Order code(s)
With flange	IM B5, IM V1 without protective cover			6	1LA9090 ... 207	With additional charge	1 -
	IM V3			6	1LA9090 ... 166	With additional charge	1 -
	IM V1 with protective cover ³⁾			6	1LA9183 ... 207	With additional charge	9 M1G
With standard flange	IM V1 with protective cover ³⁾			6	1LA9090 ... 207	With additional charge	4 -
	IM B14, IM V19, IM V18 without protective cover			6	1LA9090 ... 166	With additional charge	2 -
With special flange	IM B14, IM V19, IM V18 without protective cover			6	1LA9090 ... 166	With additional charge	3 -
Further types of construction							9 ...
For additional charges, code numbers and descriptions, see from Page 2/80							
Special versions							Order code(s)
Options				For additional charges, code numbers and descriptions, see from Page 2/87		1LA9 ... - ... ■-Z D42	+ . . . + . . . + . . .

¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.

²⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LG Standard Motors

NEMA Energy Efficient MG1 motors, Table 12-11



Self-ventilated motors
Cast-iron series 1LG6 with order code D42

Selection and ordering data

Operating values at 60 Hz rated output														Cast-iron series		m _{IM B3} J	Torque class				
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{ra-} , 60 Hz, 4/4	η _{ra-} , 60 Hz, 3/4	η _{ra-} , 60 Hz, 2/4	cos φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pfA} , 60 Hz	L _{WA} , 60 Hz			1LG6 – NEMA Energy Efficient version (NEMA MG1, Table 12-11)	Order No.	kg	kgm ²
kW	hp	FS	rpm	Nm		%	%	%		A						▲ New *					
2-pole: 3600 rpm at 60 Hz																					
22	30	180 M	3560	60	✓	91.0	91.0	89.5	0.88	35	2.7	8.0	3.7	71	84	▲ 1LG6183-2MA	■-Z D42	165	0.086	16	
30	40	180 L	3565	80	✓	91.7	91.7	89.7	0.88	45.5	2.7	7.8	3.5	75	88	▲ 1LG6206-2MA	■-Z D42	215	0.15	16	
37	50	200 L	3565	100	✓	92.4	92.4	90.7	0.88	58	3.4	8.0	3.7	75	88	▲ 1LG6207-2MA	■-Z D42	255	0.18	16	
45	60	225 M	3570	120	✓	93.0	92.7	91.3	0.88	69	3.1	8.7	3.8	74	87	▲ 1LG6223-2MA	■-Z D42	300	0.23	16	
55	75	250 M	3575	149	-	93.0	92.5	90.8	0.89	85	2.5	7.8	3.6	80	93	▲ 1LG6253-2MB	■-Z D42	380	0.40	13	
75	100	280 S	3580	199	-	93.6	92.9	91.0	0.87	115	2.8	7.5	3.5	80	93	▲ 1LG6280-2MB	■-Z D42	500	0.72	13	
90	125	280 M	3578	249	✓	94.5	94.0	92.5	0.88	141	2.7	7.2	3.4	80	93	▲ 1LG6283-2MB	■-Z D42	570	0.84	13	
110	150	315 S	3585	298	✓	94.5	94.0	92.5	0.90	165	2.6	7.7	3.3	81	94	▲ 1LG6310-2MB	■-Z D42	750	1.3	13	
132	175	315 M	3585	348	-	95.0	94.5	93.2	0.91	190	3.0	8.3	3.3	81	94	▲ 1LG6313-2MB	■-Z D42	915	1.6	13	
160	200	315 L	3585	397	✓	95.0	94.6	93.3	0.92	215	3.1	8.2	3.5	83	96	▲ 1LG6316-2MB	■-Z D42	960	1.9	13	
200	250	315 L	3585	497	✓	95.0	94.8	93.8	0.91	270	3.5	8.9	3.4	83	96	▲ 1LG6317-2MB	■-Z D42	1200	2.2	13	
250	300	315 L	3588	596	✓	95.4	94.9	93.6	0.91	325	4.3	10.7	4.5	83	97	▲ 1LG6318-2MB	■-Z D42	1270	2.7	16	
315	400	315 L	3588	794	✓	95.4	95.0	93.8	0.89	440	4.5	10.8	4.4	87	101	▲ 1LG6312-2MA	■-Z D42	1355	2.8	16	
Voltages (≤ 600 V) ¹⁾																					
50 Hz		230 VΔ/400 VY	60 Hz		460 VY	2		1LG6183 ... 310, 1LG6313		Standard		1		-							
50 Hz		400 VΔ	60 Hz		460 VΔ	2		1LG6183 ... 318		Standard		3		L1U							
50 Hz		500 VY				2		1LG6183 ... 310, 1LG6313		Without add. charge		9		-							
50 Hz		500 VΔ				2		1LG6183 ... 318		Without add. charge		5		-							
Further voltages		For additional charges, code numbers and descriptions, see from Page 2/78																			
Types of construction ²⁾																					
Without flange		IM B3/6/7/8 ³⁾		2		1LG6312, 1LG6317 ... 318		Standard		0		-									
		IM V6 ³⁾		2		1LG6317		With add. charge		9		M1E									
				2		1LG6312, 1LG6318		On request		9		M1E									
		IM V5 without protective cover ³⁾		2		1LG6317		With add. charge		9		M1D									
				2		1LG6312, 1LG6318		On request		9		M1D									
With flange		IM B5 ⁴⁾		2		1LG6183 ... 318		With add. charge		1		-									
		IM V1 without protective cover ^{4) 5)}		2		1LG6183 ... 310, 1LG6313		With add. charge		1		-									
				2		1LG6312, 1LG6316 ... 318		With add. charge		8		-									
				2		1LG6183 ... 310, 1LG6313		With add. charge		9		M1G									
		IM V1 with protective cover ^{4) 5) 6)}		2		1LG6183 ... 318		With add. charge		4		-									
		IM B35		2		1LG6317, 1LG6316 ... 318		With add. charge		6		-									
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/83																			
Special versions																					
Options		For additional charges, code numbers and descriptions, see from Page 2/94														1LG6 M. ■-Z D42		+ . . . + . . . + . . .			

2.4

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.

2) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

3) If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

4) 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

5) 2-pole motors 1LG6316-... to 1LG6317-... and 1LG6312-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.

6) The "Second shaft extension" option, order code K16 is not possible.

* Order identically priced predecessor type for 1LG6...2AA.../1LG6...2AB... 2-pole motors or 1LG6...4AA... 4-pole motors using the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27) and IE3 version for SH 315 (D25). For 1LG6312-2MA..., 1LG6312-4MA..., 1LG6318-2MB... and 1LG6318-4MA... motors that do not have predecessor types, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

SIMOTICS SD 1LG Standard Motors

NEMA Energy Efficient MG1 motors, Table 12-11

Self-ventilated motors
Cast-iron series 1LG6 with order code D42



Selection and ordering data (continued)

Operating values at 60 Hz rated output															Cast-iron series				
P_{rated} 50 Hz	P_{rated} 60 Hz	Frame size	n_{rated} 60 Hz	T_{rated} 60 Hz	EISA CC No. CC032A	η_{ra-} ted, 60 Hz, 4/4	η_{ra-} ted, 60 Hz, 3/4	η_{ra-} ted, 60 Hz, 2/4	$\cos \varphi$ rated, 60 Hz, 4/4	$I_{LR}/$ I_{rated}	$I_{FR}/$ I_{rated}	$T_B/$ T_{rated}	L_{pfa} 60 Hz	L_{WA} 60 Hz	1LG6 – NEMA Energy Efficient version (NEMA MG1, Table 12-11) Order No.	$m_{IM B3 J}$	Torque class		
kW	hp	FS	rpm	Nm		%	%	%	A						kg	kgm ²	CL		
4-pole: 1800 rpm at 60 Hz																			
18.5	25	180 M	1770	101	✓	92.4	92.6	91.5	0.82	31	3.0	8.0	3.8	66	79	▲ 1LG6183-4MA ■■-Z D42	160	0.12	16
22	30	180 L	1770	121	✓	92.4	92.6	92.0	0.83	36.5	2.8	7.9	3.8	70	83	▲ 1LG6186-4MA ■■-Z D42	185	0.14	16
30	40	200 L	1775	161	✓	93.0	92.9	91.7	0.84	48	2.7	7.7	3.5	69	82	▲ 1LG6207-4MA ■■-Z D42	225	0.23	16
37	50	225 S	1778	200	–	93.0	93.2	92.7	0.86	59	3.0	7.4	3.4	66	79	▲ 1LG6220-4MA ■■-Z D42	285	0.40	16
45	60	225 M	1778	240	✓	93.6	93.7	92.9	0.86	70	3.0	8.1	3.6	66	79	▲ 1LG6223-4MA ■■-Z D42	315	0.53	16
55	75	250 M	1785	299	–	94.1	94.1	93.2	0.84	89	3.2	8.1	3.4	66	79	▲ 1LG6253-4MA ■■-Z D42	390	0.56	16
75	100	280 S	1788	398	–	94.5	94.4	93.6	0.87	114	2.8	7.9	3.2	71	84	▲ 1LG6280-4MA ■■-Z D42	560	1.3	16
90	125	280 M	1788	498	✓	94.5	94.3	93.4	0.86	144	2.9	8.1	3.5	72	85	▲ 1LG6283-4MA ■■-Z D42	640	1.4	16
110	150	315 S	1790	597	✓	95.0	94.8	93.8	0.86	172	3.1	7.6	3.2	75	88	▲ 1LG6310-4MA ■■-Z D42	750	2.0	16
132	175	315 M	1790	697	–	95.0	94.8	94.3	0.86	200	3.1	7.8	3.4	75	88	▲ 1LG6313-4MA ■■-Z D42	870	2.3	16
160	200	315 L	1790	796	✓	95.0	94.9	93.8	0.87	225	3.7	8.8	3.2	77	90	▲ 1LG6316-4MA ■■-Z D42	950	2.8	16
200	250	315 L	1792	994	✓	95.0	95.0	93.8	0.86	285	4.2	9.8	3.8	77	90	▲ 1LG6317-4MA ■■-Z D42	1120	3.4	16
250	300	315 L	1792	1193	✓	95.4	95.2	94.5	0.85	345	3.8	9.6	3.8	78	92	▲ 1LG6318-4MA ■■-Z D42	1270	4.2	16
315	400	315 L	1792	1590	✓	95.4	95.2	94.3	0.84	465	4.4	9.9	3.8	78	92	▲ 1LG6312-4MA ■■-Z D42	1480	5.0	16

Voltages (≤ 600 V) ¹⁾				No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	4	1LG6183 ... 310, 1LG6313	Standard	1
50 Hz	400 VΔ	60 Hz	460 VΔ	4	1LG6183 ... 318	Standard	9
50 Hz	500 VY			4	1LG6183 ... 310, 1LG6313	Without add. charge	3
50 Hz	500 VΔ			4	1LG6183 ... 318	Without add. charge	5
Further voltages					For additional charges, code numbers and descriptions, see from Page 2/78		9
Types of construction ²⁾				No. of poles	Motor type	Version	Order code(s)
Without flange		IM B3/6/7/8 ³⁾		4	1LG6312, 1LG6317 ... 318	Standard	0
		IM V6 ³⁾		4	1LG6317	Without add. charge	9
				4	1LG6312, 1LG6318	On request	9
		IM V5 without protective cover ³⁾		4	1LG6317	Without add. charge	9
				4	1LG6312, 1LG6318	On request	9
With flange		IM B5 ⁴⁾		4	1LG6183 ... 318	With add. charge	1
		IM V1 without protective cover ^{4) 5)}		4	1LG6183 ... 310, 1LG6313	With add. charge	1
				4	1LG6312, 1LG6316 ... 318	With add. charge	8
		IM V3 ⁴⁾		4	1LG6183 ... 310, 1LG6313	With add. charge	9
		IM V1 with protective cover ^{4) 5) 6)}		4	1LG6183 ... 318	With add. charge	4
		IM B35		4	1LG6317, 1LG6316 ... 318	With add. charge	6
Further types of construction					For additional charges, code numbers and descriptions, see from Page 2/83		9
Special versions							Order code(s)
Options					For additional charges, code numbers and descriptions, see from Page 2/94		1LG6 M . ■■-Z D42 + . . . + . . . + . . .

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.
 2) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.
 3) If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
 4) 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
 5) 2-pole motors 1LG6316... to 1LG6317... and 1LG6312... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.
 6) The "Second shaft extension" option, order code K16 is not possible.

* Order identically priced predecessor type for 1LG6...2AA.../1LG6...2AB... 2-pole motors or 1LG6...4AA... 4-pole motors using the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27) and IE3 version for SH 315 (D25).
 For 1LG6312-2MA..., 1LG6312-4MA..., 1LG6318-2MB... and 1LG6318-4MA... motors that do not have predecessor types, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

SIMOTICS SD 1LG Standard Motors

NEMA Energy Efficient MG1 motors, Table 12-11



Self-ventilated motors
Cast-iron series 1LG6 with order code D42

Selection and ordering data (continued)

Operating values at 60 Hz rated output														Cast-iron series					
P_{rated} 50 Hz	P_{rated} 60 Hz	Frame size	n_{rated} 60 Hz	T_{rated} 60 Hz	EISA CC No. CC032A	η_{ra-} ted, 60 Hz, 4/4	η_{ra-} ted, 60 Hz, 3/4	η_{ra-} ted, 60 Hz, 2/4	$\cos\phi$ rated, 4/4	I_{rated} 60 Hz, 460 V	T_{LR}/I_{rated}	I_{FR}/I_{rated}	T_B/I_{rated}	L_{pFA} 60 Hz	L_{WA} 60 Hz	1LG6 – NEMA Energy Efficient version (NEMA MG1, Table 12-11) Order No.	$m_{IM B3 J}$	Torque class	
kW	hp	FS	rpm	Nm		%	%	%	A							kg	kgm ²	CL	
6-pole: 1200 rpm at 60 Hz																			
15	20	180 L	1178	121	✓	90.2	90.6	89.9	0.80	26	2.9	6.5	3.0	57	70	1LG6186-6AA	175	0.20	16
18.5	25	200 L	1180	151	✓	91.7	92.0	91.2	0.79	32.5	2.9	6.5	2.7	65	78	1LG6206-6AA	210	0.29	16
22	30	200 L	1180	181	✓	91.7	92.1	91.5	0.80	38.5	2.9	6.5	2.7	65	78	1LG6207-6AA	240	0.36	16
30	40	225 M	1184	241	✓	93.0	93.3	92.7	0.82	49	3.4	7.2	3.4	62	75	1LG6223-6AA	325	0.63	16
37	50	250 M	1186	300	–	93.0	93.2	92.5	0.82	61	2.8	6.3	2.4	63	76	1LG6253-6AA	405	0.93	16
45	60	280 S	1190	359	–	93.6	93.7	93.0	0.83	72	3.6	7.7	3.1	62	75	1LG6280-6AA	520	1.4	16
55	75	280 M	1190	449	–	93.6	93.6	92.9	0.83	90	3.9	8.3	3.3	62	75	1LG6283-6AA	570	1.7	16
75	100	315 S	1191	600	✓	94.1	94.0	93.2	0.82	121	3.3	8.4	3.4	66	79	1LG6310-6AA	760	2.5	16
90	125	315 M	1191	750	✓	94.1	94.1	93.5	0.84	148	3.0	7.9	3.1	66	79	1LG6313-6AA	935	3.2	16
110	150	315 L	1192	900	✓	95.0	95.1	94.5	0.84	176	3.3	8.5	3.3	66	79	1LG6316-6AA	1010	4.0	16
132	175	315 L	1192	1050	–	95.0	95.0	94.3	0.84	205	3.8	8.9	3.6	66	79	1LG6317-6AA	1180	4.7	16
160	200	315 L	1192	1200	✓	95.0	94.8	93.9	0.84	235	4.0	9.4	4.0	69	82	1LG6318-6AA	1245	5.4	16
200	250	315 L	1192	1494	✓	95.0	94.9	93.9	0.81	305	3.6	9.4	3.9	70	84	1LG6312-6MA	1420	5.5	16
Voltages (≤ 600 V) ¹⁾																			
50 Hz		230 VΔ/400 VY		60 Hz		460 VY		6		1LG6183 ... 310, 1LG6313		Standard		1		–			
50 Hz		400 VΔ		60 Hz		460 VΔ		6		1LG6183 ... 318		Standard		9		L1U			
50 Hz		500 VY						6		1LG6183 ... 310, 1LG6313		Without additional charge		3		–			
50 Hz		500 VΔ						6		1LG6183 ... 318		Without additional charge		5		–			
Further voltages		For additional charges, code numbers and descriptions, see from Page 2/78																	
9		...																	
Types of construction ²⁾																			
								No. of poles		Motor type		Version				Order code(s)			
Without flange		IM B3/6/7/8 ³⁾		6		1LG6312		Standard		0		–							
		IM V6 ³⁾		6		1LG6312		On request		9		M1E							
		IM V5 without protective cover ³⁾		6		1LG6312		On request		9		M1D							
With flange		IM B5 ⁴⁾		6		1LG6183 ... 318		With additional charge		1		–							
		IM V1 without protective cover ⁴⁾		6		1LG6183 ... 310, 1LG6313		With additional charge		1		–							
				6		1LG6312, 1LG6316 ... 318		With additional charge		8		–							
		IM V3 ⁴⁾		6		1LG6183 ... 310, 1LG6313		With additional charge		9		M1G							
		IM V1 with protective cover ^{4) 5)}		6		1LG6183 ... 318		With additional charge		4		–							
		IM B35		6		1LG6312		With additional charge		6		–							
Further types of construction		For additional charges, code numbers and descriptions, see from Page 2/83																	
9		...																	
Special versions																			
Options		For additional charges, code numbers and descriptions, see from Page 2/94																	
		1LG6 M -Z D42																	

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¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.

²⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

³⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

* For 1LG6312-6MA.. motors, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

SIMOTICS SD 1LG Standard Motors

NEMA Energy Efficient MG1 motors, Table 12-11

Self-ventilated motors – Cast-iron series 1LG6 with increased output with order code D42



Selection and ordering data

Operating values at 60 Hz rated output															Cast-iron series		m _{IM B3} J	Torque class						
P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	n _{rated} 60 Hz	T _{rated} 60 Hz	EISA CC No. CC032A	η _{ra-} ted, 60 Hz, 4/4	η _{ra-} ted, 60 Hz, 3/4	η _{ra-} ted, 60 Hz, 2/4	cos φ rated, 60 Hz, 4/4	I _{rated} 60 Hz, 460 V	T _{LFR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pfA} 60 Hz	L _{WA} 60 Hz	1LG6 – NEMA Energy Efficient version (NEMA MG1, Table 12-11) with increased output Order No.			kg	kgm ²	CL			
kW	hp	FS	rpm	Nm		%	%	%	A							▲ New								
2-pole: 3600 rpm at 60 Hz																								
45	60	200 L	3565	120	✓	93.0	92.6	91.3	0.89	68	2.8	7.9	3.6	75	88	▲ 1LG6208-2AA ■■-Z D42	300	0.22	16					
55	75	225 M	3570	150	✓	93.0	93.0	92.2	0.90	84	3.3	8.7	3.7	74	87	1LG6228-2AA ■■-Z D42	390	0.32	16					
75	100	250 M	3580	199	✓	93.6	93.3	92.0	0.89	112	2.8	8.4	3.5	79	92	1LG6258-2AA ■■-Z D42	470	0.57	16					
110	150	280 M	3580	299	✓	94.5	94.4	93.6	0.90	165	3.1	8.5	3.6	77	90	1LG6288-2AA ■■-Z D42	660	1.2	16					
4-pole: 1800 rpm at 60 Hz																								
55	75	225 M	1785	299	✓	94.1	94.3	93.8	0.85	88	3.0	7.8	3.3	65	78	1LG6228-4AA ■■-Z D42	355	0.66	16					
75	100	250 M	1788	398	✓	94.5	94.6	94.0	0.86	115	3.0	8.1	3.3	68	81	1LG6258-4AA ■■-Z D42	495	0.99	16					
110	150	280 M	1788	598	✓	95.0	94.9	94.1	0.86	172	3.1	8.4	3.5	71	84	1LG6288-4AA ■■-Z D42	710	1.9	16					
6-pole: 1200 rpm at 60 Hz																								
37	50	225 M	1184	301	✓	93.0	94.1	93.7	0.83	61	3.2	7.6	3.4	62	75	1LG6228-6AA ■■-Z D42	355	0.76	16					
45	60	250 M	1186	360	✓	93.6	93.8	93.3	0.82	73	3.4	7.7	2.9	63	76	1LG6258-6AA ■■-Z D42	435	1.1	16					
75	100	280 M	1190	599	✓	94.1	94.3	93.9	0.84	118	4.0	8.4	3.3	62	75	1LG6288-6AA ■■-Z D42	615	1.9	16					
Voltages (≤ 600 V)¹⁾																								
					No. of poles	Motor type		Version		Order code(s)														
50 Hz	230 VΔ/400 VY	60 Hz	460 VY		2, 4, 6	1LG6208 ... 288		Standard		1 -														
50 Hz	400 VΔ	60 Hz	460 VΔ		2, 4, 6	1LG6208 ... 288		Standard		9 L1U														
50 Hz	500 VY				2, 4, 6	1LG6208 ... 288		Without additional charge		3 -														
50 Hz	500 VΔ				2, 4, 6	1LG6208 ... 288		Without additional charge		5 -														
Further voltages					For additional charges, code numbers and descriptions, see from Page 2/78																			
					9 ...																			
Types of construction²⁾																								
					No. of poles	Motor type		Version		Order code(s)														
With flange		IM B5, IM V1 without protective cover ⁴⁾			2, 4, 6	1LG6208 ... 288		With additional charge		1 -														
		IM V3 ⁴⁾			2, 4, 6	1LG6208 ... 288		With additional charge		9 M1G														
		IM V1 with protective cover ^{4) 5)}			2, 4, 6	1LG6208 ... 288		With additional charge		4 -														
Further types of construction					For additional charges, code numbers and descriptions, see from Page 2/83																			
					9 ...																			
Special versions																								
Options					For additional charges, code numbers and descriptions, see from Page 2/94																			
															1LG6 M . ■■ -Z					...+...+...+...				

1) Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-11.

2) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

3) If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

4) 1LG6228 to 1LG6288 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

5) The "Second shaft extension" option, order code K16 is not possible.



SIMOTICS SD 1LG Standard Motors

NEMA Premium Efficient MG1 motors, Table 12-12

Self-ventilated motors
Cast-iron series 1LG6 with order code D41

Selection and ordering data

Operating values at 60 Hz rated output															Cast-iron series				
P_{rated} 50 Hz	P_{rated} 60 Hz	Frame size	n_{rated} 60 Hz	T_{rated} 60 Hz	EISA CC No. CC032A	η_{ra} ted, 60 Hz, 4/4	η_{ra} ted, 60 Hz, 3/4	η_{ra} ted, 60 Hz, 2/4	$\cos\phi$ rated, 60 Hz, 4/4	I_{rated} 60 Hz, 460 V	$T_{LR}/$ T_{rated}	$I_{LR}/$ I_{rated}	$T_B/$ T_{rated}	L_{pFA} 60 Hz	L_{WA} 60 Hz	1LG6 – NEMA Premium Efficient version (NEMA MG1, Table 12-12) Order No.	$m_{IM B3}$ J	Torque class	
kW	hp	FS	rpm	Nm		%	%	%	A							kg	kgm ²	CL	
2-pole: 3600 rpm at 60 Hz																			
250	300	315 L	3588	596	✓	95.8	95.3	94.2	0.92	320	4.4	10.5	4.1	83	98	▲ 1LG6318-2MB ■■-Z D41	1290	2.7	16
315	400	315 L	3588	794	✓	95.8	95.4	94.2	0.89	440	4.5	10.8	4.4	87	101	▲ 1LG6312-2MA ■■-Z D41	1355	2.8	16
4-pole: 1800 rpm at 60 Hz																			
250	300	315 L	1792	1193	✓	96.2	96.1	95.3	0.85	345	3.8	9.6	3.8	78	92	▲ 1LG6318-4MA ■■-Z D41	1270	4.2	16
315	400	315 L	1792	1590	✓	96.2	96.0	95.1	0.84	465	4.4	9.9	3.8	78	92	▲ 1LG6312-4MA ■■-Z D41	1480	5.0	16
6-pole: 1200 rpm at 60 Hz																			
200	250	315 L	1192	1494	✓	95.8	95.7	95.1	0.81	300	3.2	9.3	3.4	70	84	▲ 1LG6312-6MA ■■-Z D41	1545	6.1	16
Volts (≤ 600 V) ¹⁾																			
			No. of poleSI-MOTICS SD 1LG Standard Motorss		Motor type		Version		Order code(s)										
50 Hz	400 VΔ	60 Hz	460 VΔ	2, 4, 6	1LG6312, 1LG6318	Standard	9	L1U											
50 Hz	500 VΔ	2, 4, 6	1LG6312, 1LG6318	Without additional charge	5	-													
Further voltages For additional charges, code numbers and descriptions, see from Page 2/78																			
Types of construction																			
			No. of poles		Motor type		Version		Order code(s)										
Without flange			IM B3/6/7/8 ²⁾		2, 4, 6 1LG6312, 1LG6318		Standard		0 -										
			IM V6 ²⁾		2, 4, 6 1LG6312, 1LG6318		On request		9 M1E										
			IM V5 without protective cover ²⁾		2, 4, 6 1LG6312, 1LG6318		On request		9 M1D										
With flange			IM B5 ³⁾		2, 4, 6 1LG6312, 1LG6318		With additional charge		1 -										
			IM V1 without protective cover ^{2) 3) 6)}		2, 4, 6 1LG6312, 1LG6318		With additional charge		8 -										
			IM V1 with protective cover ^{3) 4) 5)}		2, 4, 6 1LG6312, 1LG6318		With additional charge		4 -										
			IM B35		2, 4, 6 1LG6312, 1LG6318		With additional charge		6 -										
Further types of construction For additional charges, code numbers and descriptions, see from Page 2/83																			
Special versions																			
Options For additional charges, code numbers and descriptions, see from Page 2/94															1LG6 M . ■■ -Z		. . . + . . . + . . .		

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¹⁾ Operating voltages only ≤ 600 V admissible in accordance with MG1 Table 12-12.
²⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
³⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
⁴⁾ 2-pole motors 1LG6312-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.
⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

* For 1LG6312-2MA..., 1LG6312-4MA..., 1LG6318-2MB..., 1LG6318-4MA... and 1LG6312-6MA... motors, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).

SIMOTICS GP 1LA Standard Motors

Pole-changing motors

Self-ventilated motors – Aluminum series 1LA7 and 1LA5 for constant load torque

Selection and ordering data

P _{ra} -ted1, 50 Hz	P _{ra} -ted2, 50 Hz	Frame size	Operating values at rated output for N1										Operating values at rated output for N2										Aluminum series 1LA7/1LA5 – pole-changing for constant load torque Order No.	m _{IM B3} J		Torque class
			n _{ra} -ted1, 50 Hz	T _{ra} -ted1, 50 Hz	η _{ra} -ted1, 50 Hz	cos φ _{ra} -ted1, 50 Hz	I _{LR} /I _{ra} -ted1, 50 Hz	I _{LR} /I _{ra} -ted1, 50 Hz	T _B /T _{ra} -ted1, 50 Hz	n _{ra} -ted2, 50 Hz	T _{ra} -ted2, 50 Hz	η _{ra} -ted2, 50 Hz	cos φ _{ra} -ted2, 50 Hz	I _{LR} /I _{ra} -ted2, 50 Hz	I _{LR} /I _{ra} -ted2, 50 Hz	T _B /T _{ra} -ted2, 50 Hz	► For successor 1LE1011 see Page 1/45	kg	kgm ²							

- Cooling: Self-ventilated (IC 411)
- Line operation: Double pole-changing for constant load torque
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit																						
1500 rpm	3000 rpm	1500 rpm																		3000 rpm		
0.1	0.15	63 M	1330	0.72	43.0	0.79	0.43	1.8	2.7	1.8	2650	0.54	50.0	0.82	0.53	1.8	2.9	1.8	1LA7060-0AA	3.5	0.00029	10
0.15	0.2	63 M	1330	1.1	43.0	0.71	0.71	2.0	3.0	2.0	2750	0.69	55.0	0.73	0.72	2.0	3.3	2.0	1LA7063-0AA	4.1	0.00040	10
0.21	0.28	71 M	1375	1.5	57.0	0.73	0.73	1.6	3.0	1.8	2770	0.97	46.0	0.76	1.16	1.6	3.1	1.8	1LA7070-0AA	4.8	0.00052	10
0.3	0.43	71 M	1390	2.1	62.0	0.76	0.92	1.8	3.7	2.0	2780	1.5	56.0	0.82	1.35	1.8	3.8	2.0	1LA7073-0AA	7.0	0.00076	10
0.48	0.6	80 M	1390	3.3	64.2	0.82	1.32	1.7	3.9	2.0	2810	2.0	62.5	0.84	1.65	1.7	4.0	2.0	1LA7080-0AA	9.0	0.0014	10
0.7	0.85	80 M	1390	4.8	66.9	0.84	1.80	1.8	4.3	2.1	2810	2.9	68.0	0.83	2.15	1.8	4.3	2.1	1LA7083-0AA	10	0.0017	10
1.1	1.4	90 S	1390	7.6	67.0	0.85	2.80	1.6	4.2	1.9	2810	4.8	64.1	0.85	3.70	1.8	4.3	2.0	1LA7090-0AA	13	0.0024	13
1.5	1.9	90 L	1410	10	72.1	0.86	3.50	1.9	4.9	2.0	2860	6.3	70.1	0.85	4.60	1.9	5.3	2.1	1LA7096-0AA	15.6	0.0033	13
2	2.4	100 L	1400	14	79.1	0.84	4.35	1.8	5.0	2.0	2870	8.0	73.2	0.84	5.6	1.8	5.5	2.1	► 1LA7106-0AA	21	0.0048	13
2.6	3.1	100 L	1400	18	79.7	0.86	5.5	2.3	5.6	2.4	2865	10	72.2	0.80	7.7	2.4	5.6	2.4	► 1LA7107-0AA	24	0.0055	13
3.7	4.4	112 M	1420	25	77.3	0.85	8.1	2.0	5.6	2.2	2885	15	74.3	0.80	10.7	2.2	5.8	2.3	► 1LA7113-0AA	31	0.011	13
4.7	5.9	132 S	1450	31	81.3	0.84	9.9	1.7	6.3	2.2	2920	19	78.4	0.85	12.8	1.6	6.5	2.2	► 1LA7130-0AA	41	0.018	10
6.5	8	132 M	1450	43	80.4	0.84	13.9	2.0	6.9	2.5	2930	26	80.5	0.84	17.1	2.1	7.5	2.6	► 1LA7133-0AA	50	0.023	10
9.3	11.5	160 M	1455	61	86.9	0.85	18.2	2.0	6.7	2.6	2930	37	78.5	0.89	23.5	1.8	7.4	2.4	► 1LA7163-0AA	74	0.043	10
13	17	160 L	1455	85	85.6	0.84	26	2.5	7.6	3.0	2930	55	85.6	0.88	32.5	2.8	8.5	3.0	► 1LA7166-0AA	92	0.060	10
15	18	180 M	1470	97	89.3	0.83	29	2.1	6.7	2.7	2950	58	85.1	0.80	38	2.2	7.5	3.2	1LA5183-0AA	113	0.13	10
18	21.5	180 L	1465	117	89.8	0.84	34.5	2.0	6.4	2.6	2950	70	85.7	0.85	42.5	2.2	7.3	3.1	1LA5186-0AA	123	0.15	10
26	31	200 L	1465	169	90.8	0.86	48	2.6	6.7	2.8	2940	101	85.2	0.85	62	2.6	7.5	3.3	1LA5207-0AA	157	0.24	10

Voltagages	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
50 Hz	230 V	4/2	1LA7060 ... 166	1LA5183 ... 207	Standard 1
Direct switch-on	400 V	4/2	1LA7060 ... 166	1LA5183 ... 207	Standard 6
	500 V	4/2	1LA7060 ... 166	1LA5183 ... 207	Without additional charge 5
Further voltages ¹⁾	690 V	4/2	1LA7060 ... 166	1LA5183 ... 207	Without additional charge 0
	For additional charges, code numbers and descriptions, see from Page 2/77				
9	...				
Types of construction	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	4/2	1LA7060 ... 166	1LA5183 ... 207	Standard 0
With flange	IM B5, IM V1 without protective cover ²⁾	4/2	1LA7060 ... 166	1LA5183 ... 207	With additional charge 1
	IM V3	4/2	1LA7060 ... 166	-	With additional charge 1
		4/2	-	1LA5183 ... 207	With additional charge 9
	IM V1 with protective cover ^{2) 3)}	4/2	1LA7060 ... 166	1LA5183 ... 207	With additional charge 4
With standard flange	IM B35	4/2	1LA7060 ... 166	1LA5183 ... 207	With additional charge 6
	IM B14, IM V19, IM V18 without protective cover	4/2	1LA7060 ... 166	-	With additional charge 2
With special flange	IM B34	4/2	1LA7060 ... 166	-	With additional charge 7
	IM B14, IM V19, IM V18 without protective cover	4/2	1LA7060 ... 166	-	With additional charge 3
Further types of construction	For additional charges, code numbers and descriptions, see from Page 2/80				9
...					
Special versions	Options				Order code(s)
For additional charges, code numbers and descriptions, see from Page 2/87					1LA...-Z
					...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.
³⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1LA Standard Motors

Pole-changing motors

Self-ventilated motors – Aluminum series 1LA7 and 1LA5 for constant load torque

Selection and ordering data (continued)

P_{ra-} ted1, 50 Hz	P_{ra-} ted2, 50 Hz	Frame size	Operating values at rated output for N1							Operating values at rated output for N2							Aluminum series 1LA7/1LA5 – pole-changing for constant load torque Order No.	$m_{IM} B3 J$		Torque class		
			n_{ra-} ted1, 50 Hz	T_{ra-} ted1, 50 Hz	η_{ra-} ted1, 50 Hz	$\cos\phi$ rated1, 50 Hz	I_{ra-} ted1, 50 Hz	$T_{LR}/$ T_{ra-} ted1	$I_{LR}/$ I_{ra-} ted1	$T_B/$ T_{ra-} ted1	n_{ra-} ted2, 50 Hz	T_{ra-} ted2, 50 Hz	η_{ra-} ted2, 50 Hz	$\cos\phi$ rated2, 50 Hz	I_{ra-} ted2, 50 Hz	$T_{LR}/$ T_{ra-} ted2		$I_{LR}/$ I_{ra-} ted2	$T_B/$ T_{ra-} ted2		kg	kgm ²
kW	kW	FS	rpm	Nm	%	A			rpm	Nm	%	A							CL			
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Line operation: Double pole-changing for constant load torque Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																						
8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit																						
	<i>750 rpm</i>	<i>1500 rpm</i>		<i>750 rpm</i>					<i>1500 rpm</i>													
0.35	0.5	90 S	675	5.0	58.0	0.71	1.19	1.3	2.5	1.6	1365	3.5	63.0	0.79	1.41	1.3	3.2	1.6	1LA7090-0AB ■■	11	0.0023	10
0.5	0.7	90 L	675	7.1	61.0	0.72	1.59	1.4	3.0	1.7	1380	4.8	60.0	0.78	2.10	1.5	3.5	1.8	1LA7096-0AB ■■	13.2	0.0031	10
0.75	1.1	100 L	680	11	63.0	0.74	2.25	1.7	3.3	2.0	1360	7.7	59.0	0.80	3.25	1.6	3.5	1.9	▶ 1LA7106-0AB ■■	20	0.0051	10
0.9	1.5	100 L	690	12	67.0	0.70	2.70	1.8	3.5	2.0	1380	10	65.7	0.80	4.05	1.6	3.6	1.9	▶ 1LA7107-0AB ■■	22	0.0063	10
1.4	1.9	112 M	690	19	67.1	0.73	4.00	1.4	3.6	1.7	1410	13	68.1	0.75	5.2	1.5	4.4	1.8	▶ 1LA7113-0AB ■■	25	0.013	10
1.8	3.6	132 S	720	24	70.1	0.57	6.3	2.0	4.3	2.3	1430	24	79.3	0.90	7.1	1.3	5.4	1.8	▶ 1LA7130-0AB ■■	41	0.018	10
2.2	5.5	132 M	720	29	71.2	0.60	7.2	2.0	4.3	2.3	1430	37	78.4	0.90	11	1.3	5.4	1.8	▶ 1LA7133-0AB ■■	49	0.023	10
3	7	160 M	725	40	76.2	0.56	9.9	2.0	4.0	2.3	1450	46	84.4	0.89	13.2	1.4	5.4	1.8	▶ 1LA7163-0AB ■■	73	0.043	10
5.6	11	160 L	725	74	76.4	0.56	18.5	2.2	4.2	2.4	1450	72	81.5	0.89	21.5	1.7	5.9	2.0	▶ 1LA7166-0AB ■■	91	0.060	10
11	18	180 L	725	145	82.0	0.69	27.5	1.9	5.2	2.2	1455	118	82.1	0.87	36	2.0	6.2	2.2	1LA5186-0AB ■■	123	0.21	13
17	27	200 L	730	222	87.6	0.68	40.5	2.4	5.4	2.5	1465	176	88.2	0.86	51	2.3	6.6	2.5	1LA5207-0AB ■■	157	0.37	13

Voltagess	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
50 Hz	230 V	8/4	1LA7060 ... 166	1LA5183 ... 207 Standard	1 –
Direct switch-on	400 V	8/4	1LA7060 ... 166	1LA5183 ... 207 Standard	6 –
	500 V	8/4	1LA7060 ... 166	1LA5183 ... 207 Without additional charge	5 –
	690 V	8/4	1LA7060 ... 166	1LA5183 ... 207 Without additional charge	0 –
Further voltages ¹⁾	For additional charges, code numbers and descriptions, see from Page 2/77				9 ...
Types of construction	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Without flange	IM B3/6/7/8, IM V6, IM V5 without protective cover	8/4	1LA7060 ... 166	1LA5183 ... 207 Standard	0 –
With flange	IM B5, IM V1 without protective cover ²⁾	8/4	1LA7060 ... 166	1LA5183 ... 207 With additional charge	1 –
	IM V3	8/4	1LA7060 ... 166	– With additional charge	1 –
		8/4	–	1LA5183 ... 207 With additional charge	9 M1G
	IM V1 with protective cover ^{2) 3)}	8/4	1LA7060 ... 166	1LA5183 ... 207 With additional charge	4 –
	IM B35	8/4	1LA7060 ... 166	1LA5183 ... 207 With additional charge	6 –
With standard flange	IM B14, IM V19, IM V18 without protective cover	8/4	1LA7060 ... 166	– With additional charge	2 –
	IM B34	8/4	1LA7060 ... 166	– With additional charge	7 –
With special flange	IM B14, IM V19, IM V18 without protective cover	8/4	1LA7060 ... 166	– With additional charge	3 –
Further types of construction	For additional charges, code numbers and descriptions, see from Page 2/80				9 ...
Special versions				Order code(s)	
Options	For additional charges, code numbers and descriptions, see from Page 2/87			1LA ... - ... ■■ -Z	...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request.³⁾ The "Second shaft extension" option, order code K16 is not possible.²⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

SIMOTICS GP 1LA Standard Motors

Pole-changing motors

Self-ventilated motors – Aluminum series 1LA7 and 1LA5 for square-law load torque

Selection and ordering data

P _{ra-ted1} 50 Hz kW	P _{ra-ted2} 50 Hz kW	Frame size FS	Operating values at rated output for N1											Operating values at rated output for N2											Aluminum series 1LA7/1LA5 – pole-changing for square-law load torque Order No. ► For successor 1LE101. see Page 1/46	m _{IM B3} J		
			n _{ra-ted1} 50 Hz rpm	T _{ra-ted1} 50 Hz Nm	η _{ra-ted1} 50 Hz, 4/4	cos φ _{rated1} 50 Hz, 4/4	I _{LR/ra-ted1} T _{ra-ted1} A	I _{FR/ra-ted1} A	T _{B/ra-ted1} A	n _{ra-ted2} 50 Hz rpm	T _{ra-ted2} 50 Hz Nm	η _{ra-ted2} 50 Hz, 4/4	cos φ _{rated2} 50 Hz, 4/4	I _{LR/ra-ted2} T _{ra-ted2} A	I _{FR/ra-ted2} A	T _{B/ra-ted2} A	kg	kgm ²	Torque class CL									

- Cooling: Self-ventilated (IC 411)
- Line operation: Double pole-changing for square-law load torque, e.g. for driving fans
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit																						
1500 rpm	3000 rpm																					
0.15	0.7	80 M	1400	1.0	64.6	0.83	0.39	1.8	3.8	2.0	2745	2.4	60.9	0.91	1.76	1.6	4.0	2.0	1LA7080-0BA	10	0.0014	10
0.25	0.95	80 M	1385	1.7	64.7	0.88	0.61	1.8	3.8	2.0	2780	3.3	62.0	0.89	2.40	1.9	4.2	2.0	1LA7083-0BA	11	0.0017	10
0.33	1.4	90 S	1420	2.2	72.8	0.84	0.76	1.9	4.5	2.1	2835	4.7	68.1	0.83	3.50	1.8	4.3	2.0	1LA7090-0BA	13	0.0024	10
0.5	2	90 L	1420	3.4	74.8	0.87	1.08	2.2	5.1	2.5	2835	6.7	68.2	0.86	4.80	2.2	5.0	2.5	1LA7096-0BA	16	0.0033	10
0.65	2.5	100 L	1430	4.3	72.9	0.89	1.41	1.7	5.0	2.3	2865	7.3	73.2	0.89	4.75	2.2	5.5	2.3	1LA7106-0BA	21	0.0048	10
0.8	3.1	100 L	1425	5.0	76.9	0.86	1.59	1.8	5.7	2.6	2860	10	75.2	0.83	6.8	2.3	6.1	2.6	1LA7107-0BA	24	0.0055	10
1.1	4.4	112 M	1445	7.3	75.0	0.83	2.50	2.1	6.2	2.4	2885	15	72.3	0.80	10.7	2.2	6.2	2.4	1LA7113-0BA	31	0.011	10
1.45	5.9	132 S	1455	9.8	80.1	0.84	3.15	2.0	6.8	2.8	2920	18	78.4	0.83	12	2.1	6.5	2.8	1LA7130-0BA	41	0.018	10
2	8	132 M	1455	13	83.2	0.85	4.00	1.9	7.6	2.6	2930	24	84.4	0.84	15	2.1	7.5	2.6	1LA7133-0BA	50	0.023	10
2.9	11.5	160 M	1450	20	83.2	0.86	5.9	1.8	5.6	2.5	2930	36	83.5	0.89	21	1.8	7.4	2.4	1LA7163-0BA	74	0.043	10
4.3	17	160 L	1455	28	84.3	0.86	8.4	1.9	7.1	2.5	2930	55	84.6	0.92	31	2.2	8.5	2.6	1LA7166-0BA	92	0.060	10

6/4-pole: 1000/1500 rpm at 50 Hz with two windings																						
1000 rpm	1500 rpm	1000 rpm																				
0.12	0.4	80 M	940	1.2	42.5	0.75	0.51	1.7	2.8	1.8	1430	2.7	52.8	0.76	1.38	1.7	4.0	2.0	1LA7080-1BD	9.0	0.0014	10
0.18	0.55	80 M	930	1.8	46.6	0.72	0.74	1.5	2.5	1.8	1420	3.7	63.9	0.74	1.63	1.7	4.0	2.0	1LA7083-1BD	10	0.0017	10
0.29	0.8	90 S	950	2.9	52.7	0.71	1.07	1.5	3.4	2.0	1430	5.3	66.0	0.81	2.10	1.5	4.3	2.0	1LA7090-1BD	13	0.0024	10
0.38	1.1	90 L	950	3.8	55.8	0.71	1.33	1.8	3.8	2.3	1430	7.3	72.0	0.81	2.65	1.8	4.9	2.3	1LA7096-1BD	16	0.0033	10
0.6	1.7	100 L	950	6.0	64.9	0.74	1.75	1.8	4.2	2.2	1410	10	73.1	0.85	3.40	1.8	5.2	2.2	1LA7106-1BD	21	0.0047	10
0.75	2.1	100 L	950	7.5	60.9	0.75	2.30	1.5	3.9	2.0	1410	15	76.2	0.86	4.75	1.9	5.2	2.2	1LA7107-1BD	24	0.0054	10
0.9	3	112 M	980	8.8	69.0	0.61	3.00	2.0	4.5	2.5	1450	20	79.2	0.80	6.7	2.1	6.1	2.5	1LA7113-1BD	31	0.012	10
1.2	3.9	132 S	975	11	70.0	0.69	3.20	1.9	5.1	2.5	1460	26	81.3	0.81	8.6	1.7	6.1	2.2	1LA7130-1BD	41	0.018	10
1.7	5.4	132 M	975	15	73.1	0.71	4.05	2.1	5.1	2.6	1460	36	80.4	0.83	11.7	1.9	6.6	2.5	1LA7133-1BD	49	0.023	10
2.5	7.2	160 M	980	21	76.2	0.72	5.7	1.9	5.6	1.9	1470	49	84.4	0.84	15	2.0	7.3	2.0	1LA7163-1BD	73	0.043	10
3.7	12	160 L	980	36	75.3	0.75	9.2	1.9	5.7	2.3	1470	71	88.0	0.83	21.5	2.4	8.1	3.0	1LA7166-1BD	91	0.060	10
5.5	16	180 M	965	54	82.4	0.80	11.8	1.8	4.3	1.9	1470	104	89.1	0.81	31.5	1.9	5.9	2.6	1LA5183-1BD	114	0.081	10
6.5	19	180 L	965	64	82.4	0.81	13.8	1.8	4.3	2.1	1460	124	87.1	0.85	36.5	1.9	5.6	2.6	1LA5186-1BD	128	0.094	10
9.5	26	200 L	980	93	85.5	0.79	20	1.9	5.3	2.1	1470	169	91.0	0.83	49	1.5	5.5	2.1	1LA5207-1BD	157	0.16	10

Voltages	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
50 Hz	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	Standard	1
Direct switch-on	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	Standard	6
	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	Without add. charge	5
	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	Without add. charge	0
Further voltages ¹⁾	For additional charges, code numbers and descriptions, see from Page 2/77				9
					...
Types of construction	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Without flange	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	Standard	0
With flange	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	With add. charge	1
	4/2, 6/4	1LA7080 ... 166	–	With add. charge	1
	4/2, 6/4	–	1LA5183 ... 207	With add. charge	9
	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	With add. charge	4
	4/2, 6/4	1LA7080 ... 166	1LA5183 ... 207	With add. charge	6
With standard flange	4/2, 6/4	1LA7080 ... 166	–	With add. charge	2
	4/2, 6/4	1LA7080 ... 166	–	With add. charge	7
With special flange	4/2, 6/4	1LA7080 ... 166	–	With add. charge	3
Further types of construction	For additional charges, code numbers and descriptions, see from Page 2/80				9
					...
Special versions					Order code(s)
Options	For additional charges, code numbers and descriptions, see from Page 2/87			1LA ... -Z	...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request. ²⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32. ³⁾ The "Second shaft extension" option, order code K16 is not possible.

2.6

SIMOTICS GP 1LA Standard Motors

Pole-changing motors

Self-ventilated motors – Aluminum series 1LA7 and 1LA5 for square-law load torque

Selection and ordering data (continued)

P _{ra-ted1} 50 Hz	P _{ra-ted2} 50 Hz	Frame size	Operating values at rated output for N1							Operating values at rated output for N2							Aluminum series 1LA7/1LA5 – pole-changing for square-law load torque Order No. ▶ For successor 1LE101. see Page 1/46	m _{IM B3} J	Torque class
			n _{ra-ted1} 50 Hz	T _{ra-ted1} 50 Hz	η _{ra-ted1} 50 Hz	cos φ _{ra-ted1} 50 Hz	I _{ra-ted1} 50 Hz	T _{L/R} /I _{ra-ted1}	T _B /I _{ra-ted1}	n _{ra-ted2} 50 Hz	T _{ra-ted2} 50 Hz	η _{ra-ted2} 50 Hz	cos φ _{ra-ted2} 50 Hz	I _{ra-ted2} 50 Hz	T _{L/R} /I _{ra-ted2}	T _B /I _{ra-ted2}			

- Cooling: Self-ventilated (IC 411)
- Line operation: Double pole-changing for square-law load torque, e.g. for driving fans
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

8/4-pole: 750/1500 rpm at 50 Hz with one winding connected in Dahlander circuit

750 rpm	1500 rpm	750 rpm								1500 rpm								Order code(s)				
0.1	0.5	80 M	680	1.4	39.0	0.61	0.56	1.4	2.3	1.7	1375	3.5	66.8	0.82	1.28	1.7	4.1	1.8	1LA7080-0BB	9.0	0.0014	10
0.15	0.7	80 M	685	2.1	43.6	0.61	0.77	1.4	2.4	1.7	1380	4.8	67.9	0.82	1.76	1.8	4.2	1.8	1LA7083-0BB	10	0.0017	10
0.22	1	90 S	695	3.0	39.0	0.62	1.25	1.3	2.4	1.8	1370	7.0	68.0	0.86	2.40	1.5	3.7	2.0	1LA7090-0BB	13	0.0024	10
0.33	1.5	90 L	700	4.5	40.8	0.61	1.82	1.5	2.6	1.8	1375	10	73.1	0.88	3.30	1.8	4.2	2.0	1LA7096-0BB	16	0.0033	10
0.5	2	100 L	710	6.7	49.8	0.57	2.45	1.1	3.1	1.8	1415	13	78.2	0.85	4.25	1.9	5.2	2.1	▶ 1LA7106-0BB	21	0.0047	10
0.65	2.5	100 L	700	8.9	52.9	0.61	2.80	1.1	3.1	1.8	1400	15	75.2	0.88	4.70	1.9	5.4	2.1	▶ 1LA7107-0BB	24	0.0054	10
0.9	3.6	112 M	720	12	53.0	0.50	4.70	1.6	3.2	2.4	1440	24	76.3	0.83	8.0	2.6	6.5	2.6	▶ 1LA7113-0BB	31	0.012	10
1.1	4.7	132 S	720	15	74.0	0.60	3.50	2.0	4.3	2.5	1455	31	78.3	0.78	10.9	2.3	6.4	2.9	▶ 1LA7130-0BB	41	0.018	10
1.4	6.4	132 M	720	20	75.1	0.60	4.70	2.2	4.6	2.7	1455	42	82.4	0.83	13.2	1.9	6.8	2.5	▶ 1LA7133-0BB	49	0.023	10
2.2	9.5	160 M	725	29	77.2	0.62	6.5	1.7	4.1	2.0	1465	62	82.5	0.83	19.7	2.0	7.0	2.6	▶ 1LA7163-0BB	73	0.043	10
3.3	14	160 L	730	43	83.8	0.60	9.3	2.0	4.7	2.2	1470	91	87.1	0.80	28.5	2.6	8.1	3.1	▶ 1LA7166-0BB	91	0.060	10
4.5	16	180 M	730	59	79.3	0.59	13.6	1.4	3.8	2.1	1470	104	84.6	0.83	32.5	2.3	7.0	2.9	1LA5183-0BB	111	0.13	10
5	18.5	180 L	730	65	78.3	0.60	15	1.5	3.8	2.1	1470	120	86.6	0.83	36.5	2.3	7.0	2.7	1LA5186-0BB	118	0.15	10
7.5	28	200 L	732	98	83.4	0.62	20.5	1.9	4.3	2.2	1470	182	89.1	0.86	52	2.5	7.1	2.5	1LA5207-0BB	157	0.24	10

Voltagess	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
50 Hz	8/4	1LA7080 ... 166	1LA5183 ... 207	Standard	1 –
Direct switch-on	8/4	1LA7080 ... 166	1LA5183 ... 207	Standard	6 –
	8/4	1LA7080 ... 166	1LA5183 ... 207	Without additional charge	5 –
	8/4	1LA7080 ... 166	1LA5183 ... 207	Without additional charge	0 –
Further voltages ¹⁾	For additional charges, code numbers and descriptions, see from Page 2/77				9 ...
Types of construction	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Without flange	8/4	1LA7080 ... 166	1LA5183 ... 207	Standard	0 –
With flange	8/4	1LA7080 ... 166	1LA5183 ... 207	With additional charge	1 –
	8/4	1LA7080 ... 166	–	With additional charge	1 –
	8/4	–	1LA5183 ... 207	With additional charge	9 M1G
With standard flange	8/4	1LA7080 ... 166	1LA5183 ... 207	With additional charge	4 –
	8/4	1LA7080 ... 166	1LA5183 ... 207	With additional charge	6 –
With special flange	8/4	1LA7080 ... 166	–	With additional charge	2 –
	8/4	1LA7080 ... 166	–	With additional charge	7 –
Further types of construction	For additional charges, code numbers and descriptions, see from Page 2/80				9 ...
Special versions	Order code(s)				
Options	For additional charges, code numbers and descriptions, see from Page 2/87				1LA ... -Z ...+...+...+...

¹⁾ Operating values at rated output for 60 Hz are available on request.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

²⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

2.6

SIMOTICS GP 1LA Standard Motors

Pole-changing motors

Self-ventilated motors – Aluminum series 1LA7 and 1LA5 for square-law load torque

Selection and ordering data (continued)

			Operating values at rated output for N1								Operating values at rated output for N2								Aluminum series						
P_{ra} ted1, 50 Hz	P_{ra} ted2, 50 Hz	Frame size	n_{ra} ted1, 50 Hz	T_{ra} ted1, 50 Hz	η_{ra} ted1, 50 Hz	$\cos\phi$ rated1, 50 Hz	I_{ra} ted1, 50 Hz	T_{LR}/I_{ra} ted1	I_{LR}/I_{ra} ted1	T_B/I_{ra} ted1	n_{ra} ted2, 50 Hz	T_{ra} ted2, 50 Hz	η_{ra} ted2, 50 Hz	$\cos\phi$ rated2, 50 Hz	I_{ra} ted2, 50 Hz	T_{LR}/I_{ra} ted2	I_{LR}/I_{ra} ted2	T_B/I_{ra} ted2	1LA7/1LA5 – pole-changing for square-law load torque	$m_{IM B3} J$	Torque class				
kW	kW	FS	rpm	Nm	%	A				rpm	Nm	%	A						Order No.	kg	kgm ²	CL			
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Line operation: Triple pole-changing for square-law load torque, e.g. for driving fans Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																									
8/6/4-pole: 750/1000/1500 rpm at 50 Hz with two windings, with 750/1500 rpm connected in Dahlander circuit																									
Data for 8/6-pole: 750/1000 rpm at 50 Hz																									
750 rpm	1000 rpm		750 rpm																1000 rpm						
0.15	0.22	90 S	705	2.0	45.6	0.63	0.75	1.3	2.5	1.9	960	2.2	53.7	0.69	0.86	1.3	2.9	1.9	1LA7090-1BJ ■■■	12	0.0028	10			
0.22	0.3	90 L	705	3.0	47.7	0.60	1.11	1.4	2.5	2.1	955	3.0	48.7	0.75	1.19	1.2	3.1	1.9	1LA7096-1BJ ■■	15	0.0035	10			
0.37	0.55	100 L	700	5.0	48.8	0.63	1.74	0.9	2.8	1.9	955	5.5	60.9	0.74	1.76	1.4	3.8	1.9	1LA7106-1BJ ■■	20	0.0048	10			
0.45	0.7	100 L	700	6.1	51.8	0.65	1.93	0.9	2.8	1.9	955	7.5	60.9	0.75	2.35	1.4	3.8	2.0	1LA7107-1BJ ■■	22	0.0058	10			
0.6	0.85	112 M	715	8.0	50.9	0.59	2.90	1.1	3.1	2.1	970	8.4	64.0	0.66	2.90	1.5	4.4	2.3	1LA7113-1BJ ■■	29	0.011	10			
0.75	1.1	132 S	730	9.8	62.9	0.62	2.80	1.7	3.7	2.3	980	11	67.0	0.68	3.50	1.7	4.5	2.3	1LA7130-1BJ ■■	39	0.018	10			
1	1.5	132 M	730	14	66.0	0.60	4.00	1.8	3.9	2.4	980	15	69.1	0.68	4.60	1.9	4.9	2.4	1LA7133-1BJ ■■	46	0.024	10			
1.6	2.2	160 M	730	20	76.1	0.58	4.90	1.4	3.9	2.1	980	21	72.2	0.66	6.7	1.7	5.1	2.4	1LA7163-1BJ ■■	67	0.040	10			
2.4	3.5	160 L	730	31	77.2	0.58	7.7	1.6	4.1	2.2	980	34	76.3	0.69	9.6	1.8	5.3	2.3	1LA7166-1BJ ■■	85	0.054	10			
3	4.5	180 M	730	39	82.7	0.61	8.6	1.2	3.9	1.6	980	44	82.3	0.76	10.4	1.8	5.0	2.2	1LA5183-1BJ ■■	114	0.081	10			
3.7	5.5	180 L	725	49	81.8	0.62	10.5	1.1	3.9	1.6	975	54	84.9	0.76	12.3	1.9	5.0	2.2	1LA5186-1BJ ■■	128	0.094	10			
5	8	200 L	730	65	82.3	0.64	13.7	1.2	3.6	1.8	975	78	84.5	0.81	16.9	1.9	5.0	2.2	1LA5207-1BJ ■■	157	0.16	10			
Data for 8/4-pole: 750/1500 rpm at 50 Hz																									
750 rpm	1500 rpm		750 rpm																1500 rpm						
0.15	0.7	90 S	705	2.0	45.6	0.63	0.75	1.3	2.5	1.9	1430	4.7	67.9	0.83	1.79	1.3	4.3	1.9	1LA7090-1BJ ■■	12	0.0028	10			
0.22	0.95	90 L	705	3.0	47.7	0.60	1.11	1.4	2.5	2.1	1435	6.3	72.0	0.81	2.35	1.4	4.6	2.2	1LA7096-1BJ ■■	15	0.0035	10			
0.37	1.5	100 L	700	5.0	48.8	0.63	1.74	0.9	2.8	1.9	1400	10	74.1	0.88	3.30	1.5	4.7	2.1	1LA7106-1BJ ■■	20	0.0048	10			
0.45	1.8	100 L	700	6.1	51.8	0.65	1.93	0.9	2.8	1.9	1400	12	73.1	0.89	4.00	1.7	4.7	2.1	1LA7107-1BJ ■■	22	0.0058	10			
0.6	2.4	112 M	715	8.0	50.9	0.59	2.90	1.1	3.1	2.1	1445	15	77.2	0.86	4.80	1.9	6.0	2.5	1LA7113-1BJ ■■	29	0.011	10			
0.75	3.1	132 S	730	9.8	62.9	0.62	2.80	1.7	3.7	2.3	1460	20	75.2	0.81	7.3	1.5	5.5	2.5	1LA7130-1BJ ■■	39	0.018	10			
1	4.4	132 M	730	14	66.0	0.60	4.00	1.8	3.9	2.4	1460	29	77.3	0.83	9.9	1.6	5.8	2.5	1LA7133-1BJ ■■	46	0.024	10			
1.6	6.6	160 M	730	20	76.1	0.58	4.90	1.4	3.9	2.1	1470	43	81.4	0.81	14.4	1.7	7.0	2.7	1LA7163-1BJ ■■	67	0.040	10			
2.4	10	160 L	730	31	77.2	0.58	7.7	1.6	4.1	2.2	1470	65	83.5	0.82	21	2.0	7.7	3.0	1LA7166-1BJ ■■	85	0.054	10			
3	13	180 M	730	39	82.7	0.61	8.6	1.2	3.9	1.6	1470	84	86.1	0.84	26	1.3	5.4	2.3	1LA5183-1BJ ■■	114	0.081	10			
3.7	16	180 L	725	49	81.8	0.62	10.5	1.1	3.9	1.6	1465	104	86.1	0.85	31.5	1.3	5.4	2.3	1LA5186-1BJ ■■	128	0.094	10			
5	22	200 L	730	65	82.3	0.64	13.7	1.2	3.6	1.8	1465	143	87.7	0.85	42.5	1.3	5.4	2.6	1LA5207-1BJ ■■	157	0.16	10			
Voltages																									
50 Hz			230 V		No. of poles		Motor type 1LA7		Motor type 1LA5		Version		Order code(s)												
Direct switch-on			400 V		8/6/4		1LA7090 ... 166		1LA5183 ... 207		Standard		1		-										
			500 V		8/6/4		1LA7090 ... 166		1LA5183 ... 207		Without add. charge		5		-										
			690 V		8/6/4		1LA7090 ... 166		1LA5183 ... 207		Without add. charge		0		-										
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/77																						
													9		...										
Types of construction																									
Without flange			IM B3/6/7/8, IM V6, IM V5 without protective cover		8/6/4		1LA7090 ... 166		1LA5183 ... 207		Standard		0		-										
With flange			IM B5, IM V1 without protective cover ²⁾		8/6/4		1LA7090 ... 166		1LA5183 ... 207		With add. charge		1		-										
			IM V3		8/6/4		1LA7090 ... 166		-		With add. charge		1		-										
					8/6/4		-		1LA5183 ... 207		With add. charge		9		M1G										
			IM V1 with protective cover ²⁾³⁾		4/2, 6/4, 8/4		1LA7090 ... 166		1LA5183 ... 207		With add. charge		4		-										
With standard flange			IM B35		4/2, 6/4, 8/4		1LA7090 ... 166		1LA5183 ... 207		With add. charge		6		-										
			IM B14, IM V19, IM V18 without protective cover		4/2, 6/4, 8/4		1LA7090 ... 166		-		With add. charge		2		-										
			IM B34		4/2, 6/4, 8/4		1LA7090 ... 166		-		With add. charge		7		-										
With special flange			IM B14, IM V19, IM V18 without protective cover		4/2, 6/4, 8/4		1LA7090 ... 166		-		With add. charge		3		-										
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/80																						
													9		...										
Special versions																									
Options			For additional charges, code numbers and descriptions, see from Page 2/87																	1LA - - - - - ■■ -Z		...			

¹⁾ Operating values at rated output for 60 Hz are available on request.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

²⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

SIMOTICS SD 1LG Standard Motors

Pole-changing motors

Self-ventilated motors – Cast-iron series 1LG4 for square-law load torque

Selection and ordering data

$P_{ra-50\text{ Hz}}$ kW	$P_{ra-50\text{ Hz}}$ kW	Frame size	Operating values at rated output for N1							Operating values at rated output for N2							Cast-iron series 1LG4 – pole-changing for square-law load torque Order No.	$m_{IM\ B3\ J}$ kg	Torque class kgm ²	CL		
			$n_{ra-50\text{ Hz}}$ rpm	$T_{ra-50\text{ Hz}}$ Nm	$\eta_{ra-50\text{ Hz}}$ %	$\cos\varphi_{rated1}$ A	$I_{ra-50\text{ Hz}}$ A	$I_{LR}/I_{ra-50\text{ Hz}}$ A	$T_{B}/T_{ra-50\text{ Hz}}$ A	$n_{ra-50\text{ Hz}}$ rpm	$T_{ra-50\text{ Hz}}$ Nm	$\eta_{ra-50\text{ Hz}}$ %	$\cos\varphi_{rated2}$ A	$I_{ra-50\text{ Hz}}$ A	$I_{LR}/I_{ra-50\text{ Hz}}$ A	$T_{B}/T_{ra-50\text{ Hz}}$ A						
4/2-pole: 1500/3000 rpm at 50 Hz with one winding connected in Dahlander circuit																						
			1500 rpm	3000 rpm	1500 rpm					3000 rpm												
4.8	18	180 M	1465	31	87.6	0.86	9.2	2.3	7.5	2.8	2935	59	83.4	0.92	34	2.5	8.1	3.0	1LG4183-0BA	155	0.12	10
5.8	21.5	180 L	1470	38	86.7	0.85	11.4	2.0	6.8	2.8	2950	70	86.1	0.93	39	2.3	7.7	3.3	1LG4186-0BA	180	0.14	10
8.4	31	200 L	1475	55	89.4	0.87	15.6	2.5	7.6	3.1	2950	100	87.1	0.92	56	2.8	8.7	3.5	1LG4207-0BA	225	0.23	10
10.5	38	225 S	1480	68	89.3	0.88	19.3	2.4	6.8	2.7	2960	123	86.5	0.92	69	2.4	7.6	3.2	1LG4220-0BA	290	0.40	10
13	45	225 M	1475	84	89.9	0.89	23.5	2.2	6.2	2.6	2960	145	88.5	0.93	79	2.5	8.1	3.5	1LG4223-0BA	330	0.49	10
15	55	250 M	1480	97	90.4	0.86	28	2.2	5.6	2.0	2960	177	88.5	0.92	97	2.3	6.6	2.8	1LG4253-0BA	390	0.69	10
18	67	280 S	1490	115	90.5	0.87	33	2.5	7.0	2.8	2970	215	87.8	0.90	122	2.3	7.6	3.3	1LG4280-0BA	520	1.2	10
22	80	280 M	1488	141	91.4	0.86	40.5	2.2	6.1	2.4	2975	257	89.7	0.91	141	2.1	7.5	2.9	1LG4283-0BA	560	1.4	10
26	90	315 S	1492	166	92.2	0.84	48.5	2.4	8.4	2.9	2978	289	89.2	0.88	165	1.9	8.1	3.3	1LG4310-0BA	730	1.9	10
32	110	315 M	1492	205	92.1	0.87	58	2.3	7.6	2.9	2975	353	89.0	0.93	192	1.7	6.7	2.9	1LG4313-0BA	810	2.3	10
35	140	315 L	1492	224	93.0	0.87	62	2.2	7.6	2.6	2975	450	91.7	0.93	235	1.8	7.1	2.6	1LG4316-0BA	960	2.9	10
45	170	315 L	1492	288	93.4	0.88	79	2.2	7.5	2.7	2975	546	92.3	0.94	285	1.9	7.4	2.8	1LG4317-0BA	1060	3.5	10
6/4-pole: 1000/1500 rpm at 50 Hz with two windings																						
			1000 rpm	1500 rpm	1000 rpm					1500 rpm												
5.5	16	180 M	960	55	80.0	0.77	12.1	1.6	4.0	1.8	1460	105	87.4	0.77	32	1.7	5.3	2.5	1LG4183-1BD	155	0.082	10
6.5	19	180 L	960	65	80.1	0.77	14.3	1.6	4.0	1.8	1460	124	87.9	0.79	37	1.7	5.2	2.4	1LG4186-1BD	175	0.086	10
9.5	26	200 L	975	93	82.7	0.77	20	1.9	5.0	2.2	1460	170	88.9	0.81	49.5	1.7	5.1	2.4	1LG4207-1BD	235	0.15	10
12	34	225 S	980	117	84.8	0.77	25	2.3	5.7	2.1	1465	222	89.4	0.82	64	1.7	5.6	2.3	1LG4220-1BD	285	0.30	10
14.5	40	225 M	980	141	86.6	0.79	29	2.2	5.6	2.1	1470	260	90.7	0.85	73	1.9	5.8	2.3	1LG4223-1BD	340	0.38	10
18	52	250 M	980	175	87.3	0.83	34.5	2.0	4.9	2.0	1475	337	91.8	0.84	93	2.0	5.9	2.7	1LG4253-1BD	380	0.45	10
25	70	280 S	982	243	87.9	0.84	47.5	2.1	5.0	1.9	1478	452	90.9	0.85	126	2.2	6.2	2.6	1LG4280-1BD	540	1.2	10
30	82	280 M	984	291	88.9	0.83	57	2.5	5.5	2.2	1480	529	91.5	0.83	150	2.4	6.6	2.8	1LG4283-1BD	580	1.4	10
33	92	315 S	990	318	89.8	0.80	65	2.5	5.9	2.5	1488	590	89.7	0.75	185	2.4	6.7	2.9	1LG4310-1BD	730	1.9	10
45	120	315 M	990	435	89.6	0.82	86	2.4	5.4	2.3	1485	771	92.8	0.82	215	2.3	6.4	2.8	1LG4313-1BD	810	2.3	10
50	150	315 L	990	483	89.6	0.83	95	2.4	5.2	2.1	1485	966	93.0	0.85	270	2.0	5.9	2.3	1LG4316-1BD	990	2.5	10
55	170	315 L	988	532	89.4	0.83	103	2.3	5.6	2.1	1488	1091	92.7	0.79	320	2.2	7.9	3.1	1LG4317-1BD	1060	3.5	10
Voltages									No. of poles	Motor type		Version		Order code(s)								
50 Hz	230 V								4/2, 6/4	1LG4183 ... 313		Standard		1 -								
Direct switch-on	400 V								4/2, 6/4	1LG4183 ... 317		Standard		6 -								
	500 V								4/2, 6/4	1LG4183 ... 317		Without add. charge		5 -								
	690 V								4/2, 6/4	1LG4183 ... 317		Without add. charge		0 -								
Further voltages ¹⁾	For additional charges, code numbers and descriptions, see from Page 2/79																					
Types of construction									No. of poles	Motor type		Version		Order code(s)								
Without flange	IM B3/6/7/8 ²⁾								4/2, 6/4	1LG4183 ... 317		Standard		0 -								
	IM V6 ²⁾								4/2, 6/4	1LG4183 ... 313		Standard		0 -								
	IM V5 without protective cover ²⁾								4/2, 6/4	1LG4316 ... 317		Without add. charge		9 M1E								
	IM V5 without protective cover ²⁾								4/2, 6/4	1LG4183 ... 313		Standard		0 -								
	IM V5 without protective cover ²⁾								4/2, 6/4	1LG4316 ... 317		Without add. charge		9 M1D								
With flange	IM B5 ³⁾								4/2, 6/4	1LG4183 ... 317		With add. charge		1 -								
	IM V1 without protective cover ³⁾								4/2, 6/4	1LG4183 ... 313		With add. charge		1 -								
	IM V1 without protective cover ³⁾								4/2, 6/4	1LG4316 ... 317		With add. charge		8 -								
	IM V3 ³⁾								4/2, 6/4	1LG4183 ... 313		With add. charge		9 M1G								
	IM V1 with protective cover ³⁾⁴⁾								4/2, 6/4	1LG4183 ... 317		With add. charge		4 -								
	IM B35								4/2, 6/4	1LG4183 ... 317		With add. charge		6 -								
Further types of construction	For additional charges, code numbers and descriptions, see from Page 2/83																					
Special versions														Order code(s)								
Options	For additional charges, code numbers and descriptions, see from Page 2/94																					
	1LG4 -Z . . . + . . . + . . . + . . .																					

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LG Standard Motors

Pole-changing motors

Self-ventilated motors – Cast-iron series 1LG4 for square-law load torque

Selection and ordering data (continued)

P _{ra- ted1} 50 Hz	P _{ra- ted2} 50 Hz	Frame size	Operating values at rated output for N1									Operating values at rated output for N2									Cast-iron series 1LG4 – pole-changing for square-law load torque Order No.	m _{IM B3} J		Torque class
			n _{ra-} ted1, 50 Hz	T _{ra-} ted1, 50 Hz	η _{ra-} ted1, 50 Hz, 4/4	cos φ rated1, 50 Hz, 4/4	I _{ra-} ted1, 50 Hz, 4/4	T _{L/R} / I _{L/R} / T _B / I _B / T _B / I _B / T _B / I _B / T _B / I _B	n _{ra-} ted2, 50 Hz	T _{ra-} ted2, 50 Hz	η _{ra-} ted2, 50 Hz, 4/4	cos φ rated2, 50 Hz, 4/4	I _{ra-} ted2, 50 Hz, 4/4	T _{L/R} / I _{L/R} / T _B / I _B / T _B / I _B / T _B / I _B / T _B / I _B	kg	kgm ²	CL							
4.5	16	180 M	725	59	80.3	0.63	12.8	1.4	3.6	2.0	1465	104	87.2	0.84	31.5	2.2	6.8	3.1	1LG4183-0BB	155	0.12	10		
5	18.5	180 L	725	66	81.2	0.62	14.3	1.6	3.7	2.1	1470	120	88.5	0.85	35.5	2.4	7.2	3.3	1LG4186-0BB	180	0.14	10		
7.5	28	200 L	730	98	83.3	0.60	21.5	2.1	4.3	2.5	1465	183	89.5	0.86	52	2.7	7.3	2.9	1LG4207-0BB	220	0.19	10		
9.5	35	225 S	738	123	84.6	0.61	26.5	2.0	4.4	2.3	1478	226	90.5	0.86	65	1.7	6.9	2.9	1LG4220-0BB	295	0.45	10		
11.5	42	225 M	738	149	86.4	0.62	31	1.9	4.5	2.2	1475	272	91.2	0.87	76	2.4	6.9	3.0	1LG4223-0BB	330	0.49	10		
14.5	52	250 M	740	187	86.9	0.62	39	2.0	4.0	1.8	1482	335	91.7	0.86	95	2.5	6.8	2.6	1LG4253-0BB	450	0.86	10		
19	70	280 S	742	245	89.2	0.62	49.5	1.8	4.0	1.8	1482	451	92.5	0.86	127	2.0	6.3	2.5	1LG4280-0BB	530	1.2	10		
23	83	280 M	742	296	89.5	0.63	59	1.9	4.2	1.8	1485	534	92.7	0.87	149	2.2	7.2	2.7	1LG4283-0BB	665	1.7	10		
26	95	315 S	744	334	90.0	0.62	67	1.9	4.6	1.9	1490	610	93.0	0.85	174	2.3	6.5	2.6	1LG4310-0BB	730	1.9	10		
30	115	315 M	744	385	90.0	0.58	83	2.1	5.0	2.1	1488	738	92.5	0.83	215	2.5	7.4	2.7	1LG4313-0BB	810	2.3	10		
35	140	315 L	744	449	91.0	0.62	90	2.0	4.7	2.1	1486	899	93.4	0.86	250	2.4	7.0	2.6	1LG4316-0BB	960	2.9	10		
45	175	315 L	744	577	91.0	0.57	125	2.1	4.7	2.2	1490	1125	93.4	0.84	320	3.1	7.5	3.0	1LG4317-0BB	1090	4.2	10		
Voltagess			No. of poles									Motor type			Version			Order code(s)						
50 Hz			230 V									8/4			1LG4183 ... 313			Standard			1			
Direct switch-on			400 V									8/4			1LG4183 ... 317			Standard			6			
			500 V									8/4			1LG4183 ... 317			Without additional charge			5			
			690 V									8/4			1LG4183 ... 317			Without additional charge			0			
Further voltages ¹⁾			For additional charges, code numbers and descriptions, see from Page 2/79															9						
Types of construction			No. of poles									Motor type			Version			Order code(s)						
Without flange			IM B3/6/7/8 ²⁾									8/4			1LG4183 ... 317			Standard			0			
			IM V6 ²⁾									8/4			1LG4183 ... 313			Standard			0			
												8/4			1LG4316 ... 317			Without additional charge			9			
			IM V5 without protective cover ²⁾									8/4			1LG4183 ... 313			Standard			0			
												8/4			1LG4316 ... 317			Without additional charge			9			
With flange			IM B5 ³⁾									8/4			1LG4183 ... 317			With additional charge			1			
			IM V1 without protective cover ³⁾									8/4			1LG4183 ... 313			With additional charge			1			
												8/4			1LG4316 ... 317			With additional charge			8			
			IM V3 ³⁾									8/4			1LG4183 ... 313			With additional charge			1			
			IM V1 with protective cover ^{3) 4)}									8/4			1LG4183 ... 317			With additional charge			4			
			IM B35									8/4			1LG4183 ... 317			With additional charge			6			
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83																		9			
Special versions			Order code(s)																					
Options			For additional charges, code numbers and descriptions, see from Page 2/94												1LG4 ... - ... -Z			...+...+...+...						

¹⁾ Operating values at rated output for 60 Hz are available on request.
²⁾ If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1LA Standard Motors

Motors for converter-fed operation only

Self-ventilated motors
Aluminum series 1LA7 and 1LA5 with special insulation

Selection and ordering data

P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	Operating values at rated output															Aluminum series 1LA7/1LA5 – Version only for converter-fed operation with special insulation Order No.	m _{IM} B3 J	Torque class		
			n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos φ rated, 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	I _{rated} 50 Hz, 690 V	T _{L/R} / T _{ra}	I _{L/R} / I _{ra}	T _B / T _{ra}	L _{pfA} 50 Hz	L _{WA} 50 Hz						
kW	kW	FS	rpm	Nm	%	%	%	A	A							dB(A)	dB(A)	kg	kgm ²	CL		
• Cooling: Self-ventilated (IC 411) • Converter-fed operation: Only for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																						
2-pole: 3000 rpm at 50 Hz																						
3	-	100 L	2890	9.9	-	81.5	81.5	80.5	0.85	6.3	3.6	2.8	6.8	3.0	62	74	1LA7106-2PM	21	0.0035	16		
4	-	112 M	2905	13	-	83.1	83.1	82.1	0.86	8.1	4.7	2.6	7.2	2.9	63	75	1LA7113-2PM	27	0.0059	16		
5.5	-	132 S	2925	18	-	84.7	84.7	83.7	0.89	10.5	6.1	2.0	5.9	2.8	68	80	1LA7130-2PM	37	0.015	16		
7.5	-	132 S	2930	24	-	86.0	86.0	85.0	0.89	14.1	8.2	2.3	6.9	3.0	68	80	1LA7131-2PM	42	0.019	16		
11	-	160 M	2940	36	-	87.6	87.6	86.6	0.88	20.5	11.9	2.1	6.5	2.9	70	82	1LA7163-2PM	63	0.034	16		
15	-	160 M	2940	49	-	88.7	88.7	87.7	0.90	27	15.7	2.2	6.6	3.0	70	82	1LA7164-2PM	72	0.043	16		
18.5	-	160 L	2940	60	-	89.3	89.3	88.3	0.91	33	19	2.4	7.0	3.1	70	82	1LA7166-2PM	82	0.051	16		
22	-	180 M	2940	71	-	89.9	89.9	88.9	0.88	40	23.5	2.5	6.9	3.2	70	83	1LA5183-2PM	113	0.077	16		
30	-	200 L	2945	97	-	90.7	90.7	89.7	0.89	54	31	2.4	7.2	2.8	71	84	1LA5206-2PM	159	0.14	16		
37	-	200 L	2945	120	-	91.2	91.2	90.2	0.89	66	38	2.4	7.7	2.8	71	84	1LA5207-2PM	179	0.16	16		
45	-	225 M	2960	145	-	91.7	91.7	90.7	0.89	80	46	2.8	7.7	3.4	71	84	1LA5223-2PM	209	0.20	16		
4-pole: 1500 rpm at 50 Hz																						
2.2	-	100 L	1420	15	-	79.7	79.7	78.7	0.82	4.85	2.8	2.5	5.6	2.8	53	65	1LA7106-4PM	20	0.0047	16		
3	-	100 L	1420	20	-	81.5	81.5	80.5	0.82	6.5	3.75	2.7	5.6	3.0	53	65	1LA7107-4PM	23	0.0055	16		
4	-	112 M	1440	27	-	83.1	83.1	82.1	0.83	8.4	4.85	2.7	6.0	3.0	53	65	1LA7113-4PM	29	0.012	16		
5.5	-	132 S	1455	36	-	84.7	84.7	83.7	0.81	11.6	6.7	2.5	6.3	3.1	62	74	1LA7130-4PM	39	0.018	16		
7.5	-	132 M	1455	49	-	86.0	86.0	85.0	0.82	15.4	8.9	2.7	6.7	3.2	62	74	1LA7133-4PM	46	0.023	16		
11	-	160 M	1460	72	-	87.6	87.6	86.6	0.84	21.5	12.5	2.2	6.2	2.7	66	78	1LA7163-4PM	67	0.043	16		
15	-	160 L	1460	98	-	88.7	88.7	87.7	0.84	29	16.8	2.6	6.5	3.0	66	78	1LA7166-4PM	81	0.055	16		
18.5	-	180 M	1460	121	-	89.3	89.3	88.3	0.83	36	21	2.3	7.5	3.0	63	76	1LA5183-4PM	113	0.13	16		
22	-	180 L	1460	144	-	89.9	89.9	88.9	0.84	42	24.5	2.3	7.5	3.0	63	76	1LA5186-4PM	123	0.15	16		
30	-	200 L	1465	196	-	90.7	90.7	89.7	0.86	56	32	2.6	7.0	3.2	65	78	1LA5207-4PM	157	0.24	16		
37	-	225 S	1470	240	-	91.2	91.2	90.2	0.87	67	39	2.8	7.0	3.2	65	78	1LA5220-4PM	206	0.32	16		
45	-	225 M	1470	292	-	91.7	91.7	90.7	0.87	81	47	2.8	7.7	3.3	65	78	1LA5223-4PM	232	0.36	16		
6-pole: 1000 rpm at 50 Hz																						
1.5	-	100 L	925	15	-	75.2	75.2	72.2	0.75	3.85	2.25	2.3	4.0	2.3	47	59	1LA7106-6PM	20	0.0047	16		
2.2	-	112 M	940	22	-	77.7	78.2	75.2	0.78	5.2	3.05	2.2	4.6	2.5	52	64	1LA7113-6PM	24	0.0091	16		
3	-	132 S	950	30	-	79.7	79.7	78.7	0.76	7.1	4.15	1.9	4.2	2.2	63	75	1LA7130-6PM	34	0.015	16		
4	-	132 M	950	40	-	81.4	81.4	80.4	0.76	9.3	5.4	2.1	4.5	2.4	63	75	1LA7133-6PM	41	0.019	16		
5.5	-	132 M	950	55	-	83.1	83.1	82.1	0.76	12.6	7.3	2.3	5.0	2.6	63	75	1LA7134-6PM	50	0.025	16		
7.5	-	160 M	960	75	-	84.7	84.7	83.7	0.74	17.3	10	2.1	4.6	2.5	66	78	1LA7163-6PM	70	0.044	16		
11	-	160 L	960	109	-	86.4	86.4	85.4	0.74	25	14.4	2.3	4.8	2.6	66	78	1LA7166-6PM	89	0.063	16		
15	-	180 L	970	148	-	87.7	87.7	86.7	0.77	32	18.6	2.0	5.2	2.4	66	78	1LA5186-6PM	126	0.15	16		
18.5	-	200 L	975	181	-	88.6	88.6	87.6	0.77	39	22.5	2.7	5.5	2.8	66	78	1LA5206-6PM	161	0.24	16		
22	-	200 L	975	215	-	89.2	89.2	88.2	0.77	46	27	2.8	5.5	2.9	66	78	1LA5207-6PM	183	0.28	16		
30	-	225 M	978	293	-	90.2	90.2	89.2	0.77	62	36	2.8	5.7	2.9	66	78	1LA5223-6PM	214	0.36	16		
Voltages				No. poles	Motor type 1LA7	Motor type 1LA5	Version														Order code(s)	
50 Hz	500 VV			2, 4, 6	1LA7106 ... 166	1LA5183 ... 223	Standard														3	
	500 VΔ			2, 4, 6	1LA7106 ... 166	1LA5183 ... 223	Without add. charge														5	
	690 VV			2, 4, 6	1LA7106 ... 166	1LA5183 ... 223	Without add. charge														8	
Further voltages	For additional charges, code numbers and descriptions, see from Page 2/77																			9		
Types of construction				No. poles	Motor type 1LA7	Motor type 1LA5	Version														Order code(s)	
Without flange			IM B3/6/7/8, IM V6, IM V5 without prot. cover	2, 4, 6	1LA7106 ... 166	1LA5183 ... 223	Standard														0	
With flange			IM B5, IM V1 without protective cover ¹⁾	2, 4, 6	1LA7106 ... 166	1LA5183 ... 223	With add. charge														1	
				2, 4, 6	1LA7106 ... 166	-	With add. charge														1	
With standard flange			IM V1 with protective cover ^{1) 2)}	2, 4, 6	-	1LA5183 ... 223	With add. charge														9	
				2, 4, 6	1LA7106 ... 166	1LA5183 ... 223	With add. charge														4	
				2, 4, 6	1LA7106 ... 166	1LA5183 ... 223	With add. charge														6	
With special flange			IM B14, IM V19, IM V18 without prot. cover	2, 4, 6	1LA7106 ... 166	-	With add. charge														2	
				2, 4, 6	1LA7106 ... 166	-	With add. charge														7	
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/80																			9
Special versions																				Order code(s)		
Options			For additional charges, code numbers and descriptions, see from Page 2/87														1LA - PM -Z		. . . + . . . + . . . + . . .			

¹⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

²⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LG Standard Motors

Motors for converter-fed operation only

Self-ventilated motors Cast-iron series 1LG6 with special insulation

Selection and ordering data

Operating values at rated output																Cast-iron series				
P_{rated} 50 Hz	P_{rated} 60 Hz	Frame size	n_{rated} 50 Hz	T_{rated} 50 Hz	IE class	η_{rated} 50 Hz, 4/4	η_{rated} 50 Hz, 3/4	η_{rated} 50 Hz, 2/4	$\cos\phi_{rated}$ 50 Hz, 4/4	I_{rated} 50 Hz, 400 V	I_{rated} 50 Hz, 690 V	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pFA} 50 Hz	L_{WA} 50 Hz	1LG6 – Version only for converter-fed operation with special insulation Order No.	$m_{IM\ B3}$ J	Torque class	
KW	KW	FS	rpm	Nm		%	%	%		A	A							kg	kgm ²	CL
• Cooling: Self-ventilated (IC 411) • Converter-fed operation: Only for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
2-pole: 3000 rpm at 50 Hz																				
22	–	180 M	2955	71	–	90.9	91.3	91.2	0.88	39.7	23	2.5	7.2	3.4	67	80	1LG6183-2PM	180	0.086	16
30	–	200 L	2960	97	–	91.6	91.5	90.6	0.88	53.5	31	2.4	7.0	3.3	71	84	1LG6206-2PM	225	0.15	16
37	–	200 L	2960	119	–	92.0	91.9	91.2	0.89	65.6	38	2.5	7.2	3.3	71	84	1LG6207-2PM	255	0.18	16
45	–	225 M	2965	145	–	92.4	92.6	92.3	0.89	79.4	46	2.5	7.3	3.2	71	84	1LG6223-2PM	330	0.27	16
55	–	250 M	2975	177	–	92.9	92.9	92.5	0.90	94.9	55	2.4	6.8	3.0	71	84	1LG6253-2PM	420	0.47	16
75	–	280 S	2975	241	–	93.6	93.6	92.8	0.89	129	75	2.5	7.0	3.0	73	86	1LG6280-2PM	530	0.83	13
90	–	280 M	2978	289	–	93.8	93.9	93.3	0.90	154	89	2.6	7.6	3.1	73	86	1LG6283-2PM	615	1.0	13
110	–	315 S	2982	352	–	94.0	93.9	93.0	0.91	186	108	2.4	6.9	2.8	76	89	1LG6310-2PM	790	1.4	13
132	–	315 M	2982	423	–	94.4	94.3	93.7	0.91	223	129	2.6	7.1	2.9	76	89	1LG6313-2PM	915	1.6	13
160	–	315 L	2982	512	–	94.6	94.6	94.2	0.92	266	154	2.5	7.1	2.9	76	89	1LG6316-2PM	1055	2.1	13
200	–	315 L	2982	641	–	94.7	94.7	94.4	0.93	328	190	2.5	6.9	2.8	76	89	1LG6317-2PM	1245	2.5	13
4-pole: 1500 rpm at 50 Hz																				
18.5	–	180 M	1470	120	–	90.7	91.3	90.9	0.83	35.4	20.5	2.5	6.4	3.0	60	73	1LG6183-4PM	155	0.12	16
22	–	180 L	1470	143	–	91.1	91.4	91.1	0.84	41.4	24	2.5	6.7	3.1	60	73	1LG6186-4PM	180	0.14	16
30	–	200 L	1470	195	–	91.7	91.8	91.2	0.85	55.2	32	2.6	6.7	3.3	62	75	1LG6207-4PM	225	0.23	16
37	–	225 S	1480	239	–	92.3	92.7	92.4	0.85	68.1	39.5	2.7	6.8	3.0	60	73	1LG6220-4PM	290	0.40	16
45	–	225 M	1480	290	–	92.7	92.9	92.7	0.85	82.8	48	2.8	6.9	3.0	60	73	1LG6223-4PM	330	0.49	16
55	–	250 M	1485	354	–	93.2	93.4	93.1	0.87	98.3	57	2.6	7.5	3.0	65	78	1LG6253-4PM	460	0.86	16
75	–	280 S	1485	482	–	93.6	93.7	93.1	0.87	133	77	2.5	6.8	2.9	67	80	1LG6280-4PM	575	1.4	16
90	–	280 M	1486	578	–	93.9	94.0	93.5	0.86	160	93	2.7	7.5	3.1	67	80	1LG6283-4PM	675	1.7	16
110	–	315 S	1488	706	–	94.2	94.3	93.9	0.87	193	112	2.7	7.1	2.9	68	81	1LG6310-4PM	810	2.3	16
132	–	315 M	1488	847	–	94.5	94.6	94.3	0.88	229	133	2.7	7.3	2.9	68	81	1LG6313-4PM	965	2.9	16
160	–	315 L	1490	1026	–	94.7	94.8	94.5	0.88	278	161	3.0	7.4	3.0	68	81	1LG6316-4PM	1105	3.5	16
200	–	315 L	1490	1282	–	94.8	94.9	94.6	0.88	345	200	3.2	7.6	3.0	68	81	1LG6317-4PM	1305	4.2	16
Voltages				No. of poles	Motor type	Version	Order code(s)													
50 Hz		500 VY		2, 4	1LG6183 ... 317	Standard	3	–												
		500 VA		2, 4	1LG6183 ... 317	Without add. charge	5	–												
		690 VY		2, 4	1LG6183 ... 317	Without add. charge	8	–												
Further voltages		For additional charges, code numbers and descriptions, see from Page 2/79						9	...											
Types of construction				No. of poles	Motor type	Version	Order code(s)													
Without flange		IM B3/6/7/8 ¹⁾		2, 4	1LG6183 ... 317	Standard	0	–												
		IM V6 ¹⁾		2, 4	1LG6183 ... 313	Standard	0	–												
				2	1LG6316, 1LG6317	With add. charge	9	M1E												
				4	1LG6316, 1LG6317	Without add. charge	9	M1E												
		IM V5 without protective cover ¹⁾		2, 4	1LG6183 ... 313	Standard	0	–												
				2	1LG6316, 1LG6317	With add. charge	9	M1D												
				4	1LG6316, 1LG6317	Without add. charge	9	M1D												
With flange		IM B5		2, 4	1LG6183 ... 317	With add. charge	1	–												
		IM V1 without protective cover ²⁾		2, 4	1LG6183 ... 313	With add. charge	1	–												
				2, 4	1LG6316, 1LG6317	With add. charge	8	–												
		IM V3		2, 4	1LG6183 ... 313	With add. charge	9	M1G												
		IM V1 with protective cover ^{2) 3) 4)}		2, 4	1LG6183 ... 317	With add. charge	4	–												
		IM B35		2, 4	1LG6183 ... 317	With add. charge	6	–												
With standard flange		IM B14, IM V19, IM V18 without prot. cover		2, 4	–	–	2	–												
		IM B34		2, 4	–	–	7	–												
With special flange		IM B14, IM V19, IM V18 without prot. cover		2, 4	–	–	3	–												
Further types of construct.		For additional charges, code numbers and descriptions, see from Page 2/83						9	...											
Special versions						Order code(s)														
Options		For additional charges, code numbers and descriptions, see from Page 2/94				1LG6 PM	-Z	. . . + . . . + . . . + . . .												

¹⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

²⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

³⁾ 2-pole motors 1LG6316-... to 1LG6317-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LG Standard Motors

Motors for converter-fed operation only

Self-ventilated motors
Cast-iron series 1LG6 with special insulation

Selection and ordering data (continued)

P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	Operating values at rated output											Cast-iron series 1LG6 – Version only for converter-fed operation with special insulation Order No.	m _M B3 J	Torque class				
			n _r	T _r	IE class	η ₅₀	η ₅₀	η ₅₀	COS φ _{rated}	I _r	I _r	T _{LR}	I _{LR}				T _B	L _{pfA}	L _{WA}	
KW	KW	FS	rpm	Nm	%	%	%	A	A								kg	kgm ²	CL	
• Cooling: Self-ventilated (IC 411) • Converter-fed operation: Only for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
6-pole: 1000 rpm at 50 Hz																				
15	–	180 L	975	147	–	88.8	89.6	89.5	0.81	30	17.4	2.4	5.5	2.5	56	69	1LG6186-6PM	175	0.20	16
18.5	–	200 L	978	181	–	89.7	90.3	89.9	0.81	37.1	21.5	2.4	5.6	2.4	59	72	1LG6206-6PM	210	0.29	16
22	–	200 L	978	215	–	90.4	91.0	91.0	0.82	43.1	25	2.4	5.6	2.4	59	72	1LG6207-6PM	240	0.36	16
30	–	225 M	980	292	–	91.1	91.6	91.6	0.83	56.9	33	2.8	6.5	2.9	59	72	1LG6223-6PM	325	0.63	16
37	–	250 M	985	359	–	91.6	92.0	91.8	0.83	69.9	40.5	2.9	6.8	2.5	60	73	1LG6253-6PM	405	0.93	16
45	–	280 S	988	435	–	92.2	92.4	92.2	0.85	82.8	48	3.0	6.8	2.7	58	71	1LG6280-6PM	520	1.4	16
55	–	280 M	988	532	–	92.4	92.6	92.3	0.85	102	59	3.3	7.3	2.9	58	71	1LG6283-6PM	570	1.7	16
75	–	315 S	990	724	–	93.3	93.3	92.9	0.83	140	81	2.8	7.3	3.0	61	74	1LG6310-6PM	760	2.5	16
90	–	315 M	990	868	–	93.6	93.7	93.3	0.85	164	95	2.7	7.3	2.9	61	74	1LG6313-6PM	935	3.2	16
110	–	315 L	990	1061	–	93.9	94.0	93.8	0.85	198	115	2.9	7.4	2.9	61	74	1LG6316-6PM	1010	4.0	16
132	–	315 L	990	1273	–	94.2	94.2	93.8	0.85	238	138	3.1	7.8	3.1	61	74	1LG6317-6PM	1180	4.7	16
160	–	315 L	990	1543	–	94.4	94.2	93.9	0.86	285	165	3.2	7.8	3.1	64	77	1LG6318-6PM	1245	5.4	16
8-pole: 750 rpm at 50 Hz																				
11	–	180 L	725	145	–	87.3	88.2	88.1	0.76	24	13.9	1.9	4.6	2.2	66	79	1LG6186-8PM	165	0.21	13
15	–	200 L	725	198	–	87.9	88.4	88.4	0.80	30.7	17.8	2.3	5.3	2.6	66	79	1LG6207-8PM	235	0.37	13
18.5	–	225 S	730	242	–	88.6	89.3	89.3	0.81	37.1	21.5	2.3	5.6	2.6	54	67	1LG6220-8PM	295	0.55	13
22	–	225 M	730	288	–	89.3	89.8	89.8	0.81	44	25.5	2.4	5.8	2.8	58	71	1LG6223-8PM	335	0.66	13
30	–	250 M	735	390	–	90.3	90.8	90.7	0.82	58.7	34	2.5	6.0	2.8	57	70	1LG6253-8PM	435	1.1	13
37	–	280 S	738	479	–	91.3	91.5	91.2	0.81	72.5	42	2.3	5.7	2.3	58	71	1LG6280-8PM	510	1.4	13
45	–	280 M	738	582	–	91.9	92.1	91.8	0.81	88	51	2.6	6.1	2.4	58	71	1LG6283-8PM	560	1.6	13
55	–	315 S	740	710	–	92.3	92.4	91.9	0.82	105	61	2.5	6.3	2.9	64	77	1LG6310-8PM	750	2.5	13
75	–	315 M	740	968	–	92.8	93.0	92.6	0.83	140	81	2.5	6.7	2.9	64	77	1LG6313-8PM	840	3.1	13
90	–	315 L	740	1162	–	93.2	93.6	93.5	0.84	166	96	2.4	6.3	2.8	64	77	1LG6316-8PM	1005	4.0	13
110	–	315 L	740	1420	–	93.6	93.9	93.8	0.84	202	117	2.4	6.4	2.6	64	77	1LG6317-8PM	1100	4.5	13
132	–	315 L	740	1704	–	93.9	94.2	94.1	0.84	242	140	2.5	6.7	2.9	64	77	1LG6318-8PM	1270	5.3	13
Voltages																				
50 Hz			500 VY	6, 8	1LG6186 ... 318	Standard	3	–												
			500 VΔ	6, 8	1LG6186 ... 318	Without add. charge	5	–												
			690 VY	6, 8	1LG6186 ... 318	Without add. charge	8	–												
Further voltages			For additional charges, code numbers and descriptions, see from Page 2/79														9	...		
Types of construction																				
Without flange			IM B3/6/7/8 ¹⁾	6, 8	1LG6186 ... 318	Standard	0	–												
			IM V6 ¹⁾	6, 8	1LG6186 ... 313	Standard	0	–												
			IM V5 without protective cover ¹⁾	6, 8	1LG6316 ... 318	Without add. charge	9	M1E												
				6, 8	1LG6186 ... 313	Standard	0	–												
				6, 8	1LG6316 ... 318	Without add. charge	9	M1D												
With flange			IM B5	6, 8	1LG6186 ... 318	With add. charge	1	–												
			IM V1 without protective cover ²⁾	6, 8	1LG6186 ... 313	With add. charge	1	–												
				6, 8	1LG6316 ... 318	With add. charge	8	–												
			IM V3	6, 8	1LG6186 ... 313	With add. charge	9	M1G												
			IM V1 with protective cover ²⁾ / ³⁾	6, 8	1LG6186 ... 318	With add. charge	4	–												
			IM B35	6, 8	1LG6186 ... 318	With add. charge	6	–												
With standard flange			IM B14, IM V19, IM V18 without prot. cover	6, 8	–	–	2	–												
			IM B34	6, 8	–	–	7	–												
With special flange			IM B14, IM V19, IM V18 without prot. cover	6, 8	–	–	3	–												
Further types of construction			For additional charges, code numbers and descriptions, see from Page 2/83														9	...		
Special versions																				
Options			For additional charges, code numbers and descriptions, see from Page 2/94														1LG6 PM	-Z	. . . + . . . + . . . + . . .	

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¹⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

²⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Voltages – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Selection and ordering data

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)												
			Motor version	Motor type (alum.)	Motor type – Frame size												
					63	71	80	90	100	112	132	160	180	200	225		
			IE2 High Efficiency	1LA9	1LA9 ①												
			IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②												
				1LA9	1LA9 with increased output ④												
				1PP7/1PP5	1PP7 ⑤												
				1LP7/1LP5	1LP7 ⑦												
			NEMA Energy Efficient	1LA9	1LA9 ⑨												
			Motor version	Motor type	Frame size												
					63	71	80	90	100	112	132	160	180	200	225		
1PP																	
1L																	
Voltage at 50 Hz or 60 Hz																	
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	1	-	All	All	□	□	□	□	□	□	□	□	□	□	□		
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ 1)	6	-	All except ⑩		□	□	□	□	□	□	□	□	□	□	□		
Voltage at 50 Hz and 50 Hz output																	
500 VY	3	-	All	All	○	○	○	○	○	○	○	○	○	○	○		
500 VΔ	5	-	All	All	-	-	-	-	○	○	○	○	○	○	○		
220 VΔ/380 VY (440 VY at 60 Hz)	9	L1R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
230 VΔ	9	L1E	All	All	○	○	○	○	○	○	○	○	○	○	○		
380 VΔ/660 VY (440 VΔ at 60 Hz) 1)	9	L1L	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
415 VY	9	L1C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
415 VΔ	9	L1D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
400 VY	9	L1A	All	All	○	○	○	○	○	○	○	○	○	○	○		
400 VΔ	9	L1B	All	All	○	○	○	○	○	○	○	○	○	○	○		
400 VΔ (460 VΔ at 60 Hz)	9	L1U	All	All	○	○	○	○	○	○	○	○	○	○	○		
Voltage at 60 Hz and required output at 60 Hz																	
220 VΔ/380 VY; 50 Hz output	9	L2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
220 VΔ/380 VY; 60 Hz output 2)	9	L2B	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
380 VΔ/660 VY; 50 Hz output 1)	9	L2C	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
380 VΔ/660 VY; 60 Hz output 1) 2)	9	L2D	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
440 VY; 50 Hz output	9	L2Q	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
440 VY; 60 Hz output 2)	9	L2W	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
440 VΔ; 50 Hz output	9	L2R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
440 VΔ; 60 Hz output 2)	9	L2X	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
460 VY; 50 Hz output	9	L2S	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
460 VY; 60 Hz output 2)	9	L2E	All except ⑩		○	○	○	○	○	○	○	○	○	○	○		
460 VΔ; 50 Hz output	9	L2T	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
460 VΔ; 60 Hz output 2)	9	L2F	All except ⑩		○	○	○	○	○	○	○	○	○	○	○		
575 VY; 50 Hz output	9	L2U	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
575 VY; 60 Hz output 2)	9	L2L	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
575 VΔ; 50 Hz output	9	L2V	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
575 VΔ; 60 Hz output 2)	9	L2M	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Multi-voltage at 60 Hz and required output at 60 Hz																	
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA 3)	9	L3E	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-		
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA 3)	9	L3F	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-		
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA 3)	9	L3G	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	-		
230 VΔΔ/460 VΔ 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA 3)	9	L3H	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	-		
Non-standard voltage and/or frequencies																	
Non-standard winding 4)	9	L1Y • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

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For legends and footnotes, see Page 2/77.

SIMOTICS GP 1LA Standard Motors

Supplements to order numbers and special versions

Voltages – Aluminum series 1LA7, 1LA5 – pole-changing and for converter-fed operation only

Standard delivery times:

10 working days	20 working days	On request
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Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (alum.)	Motor type – Frame size										
					63	71	80	90	100	112	132	160	180	200	225
1LA ■ .			Pole-changing	1LA7/1LA5	1LA7							1LA5			
			Motor version	Motor type	Frame size										
					63	71	80	90	100	112	132	160	180	200	225

Voltage at 50 Hz and 50 Hz output, direct switch-on

230 V	1	–	All	All	□	□	□	□	□	□	□	□	□	□	□
400 V	6	–	All	All	□	□	□	□	□	□	□	□	□	□	□
500 V	5	–	All	All	○	○	○	○	○	○	○	○	○	○	○
690 V	0	–	All	All	○	○	○	○	○	○	○	○	○	○	○

Voltage at 60 Hz and required output at 60 Hz

220 V; 50 Hz output	9	L4A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 V; 60 Hz output	9	L4B	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 V; 50 Hz output	9	L4C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 V; 60 Hz output	9	L4D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 V; 50 Hz output	9	L4G	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 V; 60 Hz output	9	L4E	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 V; 50 Hz output	9	L4J	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 V; 60 Hz output	9	L4H	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 V; 50 Hz output	9	L4N	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 V; 60 Hz output	9	L4M	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Non-standard voltage and/or frequencies

Non-standard winding ⁴⁾	9	L1Y • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard winding for Δ/Y starting at the lower speed ⁴⁾	9	L3Y • and identification code	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓

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Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (alum.)	Motor type – Frame size										
					63	71	80	90	100	112	132	160	180	200	225
1LA ■ .			For converter-fed operation only	1LA7/1LA5					1LA7			1LA5			
			Motor version	Motor type	Frame size										
					63	71	80	90	100	112	132	160	180	200	225

Voltage at 50 Hz and 50 Hz output

500 VY	3	–	All	All					□	□	□	□	□	□	□
500 VΔ	5	–	All	All					○	○	○	○	○	○	○
690 VY	8	–	All	All					○	○	○	○	○	○	○
400 VY	9	L1A	All	All					○	○	○	○	○	○	○
400 VΔ	9	L1B	All	All					○	○	○	○	○	○	○

Non-standard voltage and/or frequencies

Non-standard winding ^{4) 5)}	9	L1Y • and identification code	All	All					✓	✓	✓	✓	✓	✓	✓
---------------------------------------	----------	--------------------------------------	-----	-----	--	--	--	--	---	---	---	---	---	---	---

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

¹⁾ For the North America export version of 1LA9 with order code D42 NEMA Energy Efficient, voltages above 600 V will not be stamped.

²⁾ Not admissible in combination with order code D42 NEMA Energy Efficient.

³⁾ When ordering with the brake option (order code G26), only 6 motor connection terminals are possible for 1LA7 motors of frame sizes 63 to 90.

⁴⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated output in kW.

⁵⁾ 60 Hz data is not admissible on the rating plate.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Standard delivery times:

Supplements to order numbers and special versions

10 working days	20 working days	On request
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Voltages
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Selection and ordering data															
Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (cast-iron)	Motor type – Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
			IE2 High Efficiency	1LG6					1LG6 ①						
			IE3 Premium Efficiency	1LG6										1LG6 ②	
			IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④						
				1PP4					1PP4 ⑤						
				1LP4					1LP4 ⑥						
			NEMA Energy Efficient	1LG6					1LG6 ⑦						
			NEMA Premium Efficient	1LG6										1LG6 ⑧	
			Motor version	Motor type	Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
			1PP4												
			1L												
Voltage at 50 Hz or 60 Hz															
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	1	–	All	All	□	□	□	□	□	□	□	□	□	□	□
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ ¹⁾	6	–	All except ⑦ and ⑧		□	□	□	□	□	□	□	□	□	□	□
Voltage at 50 Hz and 50 Hz output															
500 VY	3	–	All	All	○	○	○	○	○	○	○	○	○	○	○
500 VΔ	5	–	All	All	–	–	–	–	○	○	○	○	○	○	○
220 VΔ/380 VY (440 VY at 60 Hz)	9	L1R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
230 VΔ	9	L1E	All	All	○	○	○	○	○	○	○	○	○	○	–
380 VΔ/660 VY (440 VΔ at 60 Hz) ¹⁾	9	L1L	All except ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY	9	L1C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
415 VΔ	9	L1D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY	9	L1A	All	All	○	○	○	○	○	○	○	○	○	○	–
400 VΔ	9	L1B	All	All	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz)	9	L1U	All	All	○	○	○	○	○	○	○	○	○	○	○
Voltage at 60 Hz and required output at 60 Hz															
220 VΔ/380 VY; 50 Hz output	9	L2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
220 VΔ/380 VY; 60 Hz output ²⁾	9	L2B	All except ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output ¹⁾	9	L2C	All except ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output ^{1) 2)}	9	L2D	All except ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VY; 60 Hz output ²⁾	9	L2W	All except ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VΔ; 50 Hz output	9	L2R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output ²⁾	9	L2X	All except ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
460 VY; 60 Hz output ²⁾	9	L2E	All except ⑦ and ⑧		○	○	○	○	○	○	○	○	○	○	–
460 VΔ; 50 Hz output	9	L2T	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output ²⁾	9	L2F	All except ⑦ and ⑧		○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VY; 60 Hz output ²⁾	9	L2L	All except ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VΔ; 50 Hz output	9	L2V	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output ²⁾	9	L2M	All except ⑦ and ⑧		○	○	○	○	○	○	○	○	○	○	○
Non-standard voltage and/or frequencies															
Non-standard winding ³⁾	9	L1Y • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends and footnotes, see Page 2/79.

SIMOTICS SD 1LG Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Voltages – Cast-iron series 1LG4 – pole-changing, 1LG6 – for converter-fed operation only

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (cast-iron)	Motor type – Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
1LG4 ■ .			Pole-changing	1LG4	1LG4										
			Motor version	Motor type	Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
Voltage at 50 Hz and 50 Hz output, direct switch-on															
230 V	1	–	All	All					□	□	□	□	□	□	□
400 V	6	–	All	All					□	□	□	□	□	□	□
500 V	5	–	All	All					○	○	○	○	○	○	○
690 V	0	–	All	All					○	○	○	○	○	○	○
Voltage at 60 Hz and required output at 60 Hz															
220 V; 50 Hz output	9	L4A	All	All					✓	✓	✓	✓	✓	✓	✓
220 V; 60 Hz output	9	L4B	All	All					✓	✓	✓	✓	✓	✓	✓
380 V; 50 Hz output	9	L4C	All	All					✓	✓	✓	✓	✓	✓	✓
380 V; 60 Hz output	9	L4D	All	All					✓	✓	✓	✓	✓	✓	✓
440 V; 50 Hz output	9	L4G	All	All					✓	✓	✓	✓	✓	✓	✓
440 V; 60 Hz output	9	L4E	All	All					✓	✓	✓	✓	✓	✓	✓
460 V; 50 Hz output	9	L4J	All	All					✓	✓	✓	✓	✓	✓	✓
460 V; 60 Hz output	9	L4H	All	All					✓	✓	✓	✓	✓	✓	✓
575 V; 50 Hz output	9	L4N	All	All					✓	✓	✓	✓	✓	✓	✓
575 V; 60 Hz output	9	L4M	All	All					✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies															
Non-standard winding ³⁾	9	L1Y • and identification code	All	All					✓	✓	✓	✓	✓	✓	✓

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (cast-iron)	Motor type – Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
1LG6 ■ .			For converter-fed operation only	1LG6	1LG6										
			Motor version	Motor type	Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
Voltage at 50 Hz and 50 Hz output															
500 VY	3	–	All	All					□	□	□	□	□	□	□
500 VΔ	5	–	All	All					○	○	○	○	○	○	○
690 VY	8	–	All	All					○	○	○	○	○	○	○
400 VY	9	L1A	All	All					○	○	○	○	○	○	○
400 VΔ	9	L1B	All	All					○	○	○	○	○	○	○
Non-standard voltage and/or frequencies															
Non-standard winding ^{3) 4) 5)}	9	L1Y • and identification code	All	All					✓	✓	✓	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

¹⁾ For the North America export version of 1LG6 with order code D41 NEMA Premium Efficient or D42 NEMA Energy Efficient, voltages above 600 V will not be stamped.

²⁾ Not admissible in combination with order codes D41 NEMA Premium Efficient or D42 NEMA Energy Efficient.

³⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz additionally required rated output in kW.

⁴⁾ Please inquire in the case of 1LG6 motors of frame size 315 for voltages in the 200 V range.

⁵⁾ 60 Hz data is not admissible on the rating plate.

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SIMOTICS GP 1LA/1LP/1PP Standard Motors


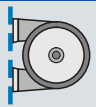
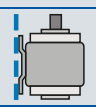
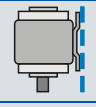
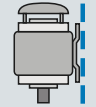

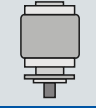

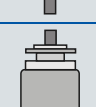

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Selection and ordering data

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)											
			Motor version	Motor type (alum.)	Motor type – Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
			IE2 High Efficiency	1LA9	1LA9 ①											
			IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②						1LA5 ③					
				1LA9	1LA9 with increased output ④											
				1PP7/1PP5	1PP7 ⑤						1PP5 ⑥					
				1LP7/1LP5	1LP7 ⑦						1LP5 ⑧					
			NEMA Energy Efficient	1LA9	1LA9 ⑨											
			Pole-changing	1LA7/1LA5	1LA7 ⑩						1LA5 ⑪					
			For converter-fed operation only	1LA7/1LA5	1LA7 ⑫						1LA5 ⑬					
			Motor version	Motor type	Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
Without flange																
IM B3 ¹⁾		0	–	All except ⑨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
IM B6, IM B7, IM B8 ¹⁾		0	–	All except ⑨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
IM V6 ¹⁾		0	–	All except ⑨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
IM V5 without protective cover ¹⁾		0	–	All except ⑨	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
IM V5 with protective cover ^{1) 2)}		9	M1F	All except ⑤, ⑥, ⑦, ⑧ and ⑨	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	
With flange																
			acc. to DIN EN 50347 acc. to DIN 42948		FF115	FF130	FF165	FF165	FF215	FF215	FF265	FF300	FF300	FF350	FF400	
					A 140	A 160	A 200	A 200	A 250	A 250	A 300	A 350	A 350	A 400	A 450	
IM B5		1	–	All	All	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	
IM V1 without protective cover ³⁾		1	–	All	All	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	
IM V1 with protective cover ^{2) 3)}		4	–	All except ⑤, ⑥, ⑦ and ⑧	All	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	
IM V3 ³⁾		1	–	All	All	☑	☑	☑	☑	☑	☑	☑	–	–	–	
		9	M1G	All	All	–	–	–	–	–	–	–	☑	☑	☑	
IM B35 ¹⁾		6	–	All except ⑨	All	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	

2.8

For legends and footnotes, see Page 2/82.

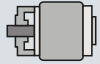
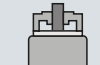



SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Types of construction – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Standard delivery times:

10 working days	20 working days	On request
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Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)											
			Motor version	Motor type (alum.)	Motor type – Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
			IE2 High Efficiency	1LA9	1LA9 ①											
			IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②							1LA5 ③				
				1LA9	1LA9 with increased output ④											
				1PP7/1PP5	1PP7 ⑤							1PP5 ⑥				
				1LP7/1LP5	1LP7 ⑦							1LP5 ⑧				
			NEMA Energy Efficient	1LA9	1LA9 ⑨											
			Pole-changing	1LA7/1LA5	1LA7 ⑩							1LA5 ⑪				
			For converted operation only	1LA7/1LA5	1LA7 ⑫					1LA5 ⑬						
			Motor version	Motor type	Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
With standard flange			acc. to DIN EN 50347		FT75	FT85	FT100	FT115	FT130	FT130	FT165	FT215				
			acc. to DIN 42948		C 90	C 105	C 120	C 140	C 160	C 160	C 200	C 250				
IM B14		2	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
IM V19		2	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
IM V18 without protective cover		2	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
IM V18 with protective cover 2)		9	M2A	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
IM B34 1)		7	-	All except ⑨		✓	✓	✓	✓	✓	✓	✓	✓	-	-	-

2.8

For legends and footnotes, see Page 2/82.

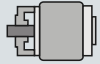
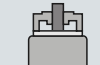



SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction – Aluminum series 1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)											
			Motor version	Motor type (alum.)	Motor type – Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
			IE2 High Efficiency	1LA9	1LA9 ①											
			IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②								1LA5 ③			
				1LA9	1LA9 with increased output ④											
				1PP7/1PP5	1PP7 ⑤								1PP5 ⑥			
			1LP7/1LP5	1LP7 ⑦								1LP5 ⑧				
			NEMA Energy Efficient	1LA9	1LA9 ⑨											
			Pole-changing	1LA7/1LA5	1LA7 ⑩								1LA5 ⑪			
			For converted operation only	1LA7/1LA5									1LA7 ⑫		1LA5 ⑬	
			Motor version	Motor type	Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
			With special flange		acc. to DIN EN 50347				acc. to DIN 42948							
					FT100	FT115	FT130	FT130	FT165	FT165	FT215	FT265				
					C 120	C 140	C 160	C 160	C 200	C 200	C 250	C 300				
IM B14		3	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
IM V19		3	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
IM V18 without protective cover		3	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
IM V18 with protective cover 2)		9	M2B	All except ⑤, ⑥, ⑦ and ⑧	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
IM B34 1)		9	M2C	All except ④	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

1) For the North America export version of 1LA9 with order code D42 NEMA Energy Efficient, types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with NEMA MG1 Table 12-11.

3) For frame sizes 180 M to 225 M, the 1LA5, 1LP5 and 1PP5 motors can be supplied with two additional eyebolts; state identification code "-Z" and order code K32.

2) The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Selection and ordering data

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)													
			Motor version	Motor type (cast-iron)	Motor type – Frame size													
			100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M			
			IE2 High Efficiency	1LG6				1LG6 ①										
			IE3 Premium Efficiency	1LG6								1LG6 ②						
			IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④									
				1PP4				1PP4 ⑤										
				1LP4				1LP4 ⑥										
			NEMA Energy Efficient	1LG6				1LG6 ⑦										
			NEMA Premium Efficient	1LG6										1LG6 ⑧				
			Pole-changing	1LG4				1LG4 ⑨										
			For converter-fed operation only	1LG6				1LG6 ⑩										
			Motor version	Motor type	Frame size				315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M						

1PP4 ■
1L ■

Without flange

Motor type	Order code	Additional code	Notes	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M
IM B3 1)	0	–	All except ⑦	■	■	■	■	■	■	■	■	■	■	■	■	■
IM B6, IM B7, IM B8 1) 2)	0	–	All except ⑦	■	■	■	■	■	■	■	■	■	■	■	■	■
IM V6 1) 2) 4)	0	–	All except ⑦	■	■	■	■	■	■	■	■	■	■	–	–	–
	9	M1E	All except ⑦	–	–	–	–	–	–	–	–	–	–	✓	○	O. R.
IM V5 without protective cover 1) 2) 4)	0	–	All except ⑦	■	■	■	■	■	■	■	■	■	■	–	–	–
	9	M1D	All except ⑦	–	–	–	–	–	–	–	–	–	–	✓	○	O. R.
IM V5 with protective cover 1) 2) 3) 4)	9	M1F	All except ⑤, ⑥ and ⑦ ≤ 200 hp	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.

2.8

For legends and footnotes, see Page 2/86.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Standard delivery times:

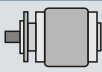




10 working days	20 working days	On request
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Supplements to order numbers and special versions

Types of construction
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Types of construction	Type of construction code with 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)															
			Motor version	Motor type (cast-iron)	Motor type – Frame size															
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M			
			IE2 High Efficiency	1LG6					1LG6 ①											
			IE3 Premium Efficiency	1LG6										1LG6 ②						
			IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④											
				1PP4		1PP4 ⑤														
				1LP4		1LP4 ⑥														
			NEMA Energy Efficient	1LG6					1LG6 ⑦											
			NEMA Premium Efficient	1LG6													1LG6 ⑧			
			Pole-changing	1LG4					1LG4 ⑨											
			For converter-fed operation only	1LG6					1LG6 ⑩											
			Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M			

1PP4 ■
1L ■

With flange		acc. to DIN EN 50347 acc. to DIN 42948		FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350	FF300 A 350	FF350 A 400	FF400 A 450	FF500 A 550	FF500 A 550	FF600 A 660	FF600 A 660	FF600 A 660	FF740 A 800
IM B5		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
IM V1 without protective cover 4) 5)		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
		8	–	All	All	–	–	–	–	–	–	–	–	✓	✓	✓
IM V1 with protective cover 3) 4) 5)		4	–	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM V3 5)		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
		9	M1G	All	All	–	–	–	–	–	–	–	–	–	–	–
IM B35 1)		6	–	All except ⑦ ≤ 200 hp		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 2/86.

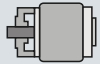
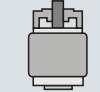
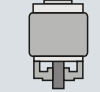
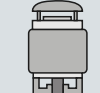
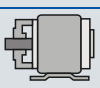
SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)																	
			Motor version	Motor type (cast-iron)	Motor type – Frame size																	
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M					
			IE2 High Efficiency	1LG6					1LG6 ①													
			IE3 Premium Efficiency	1LG6										1LG6 ②								
			IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④													
				1PP4					1PP4 ⑤													
				1LP4					1LP4 ⑥													
			NEMA Energy Efficient	1LG6					1LG6 ⑦													
			NEMA Premium Efficient	1LG6													1LG6 ⑧					
			Pole-changing	1LG4					1LG4 ⑨													
			For converter-fed operation only	1LG6					1LG6 ⑩													
			Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M					
			1PP4.....																			
			1L.....																			
With standard flange			acc. to DIN EN 50347 acc. to DIN 42948				FT130 C 160				FT130 C 160				FT165 C 200				FT215 C 250			
IM B14		2	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-					
IM V19		2	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-					
IM V18 without protective cover		2	-	All	All	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-					
IM V18 with protective cover 3)		9	M2A	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-					
IM B34 1)		7	-	All except ⑦	≤ 200 hp	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-					

2.8

For legends and footnotes, see Page 2/86.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Standard delivery times:

10 working days	20 working days	On request
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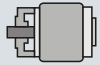
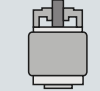
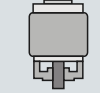
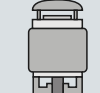
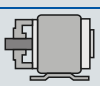
Supplements to order numbers and special versions

Types of construction
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)												
			Motor version	Motor type (cast-iron)	Motor type – Frame size												
			100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M		
			IE2 High Efficiency	1LG6				1LG6 ①									
			IE3 Premium Efficiency	1LG6									1LG6 ②				
			IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③			1LG4 ④									
				1PP4				1PP4 ⑤									
				1LP4				1LP4 ⑥									
			NEMA Energy Efficient	1LG6				1LG6 ⑦									
			NEMA Premium Efficient	1LG6											1LG6 ⑧		
			Pole-changing	1LG4				1LG4 ⑨									
			For converter-fed operation only	1LG6				1LG6 ⑩									
			Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4 to 8-pole, pole-changing	315 L 1LG6 318-M, 1LG6 312-M

1PP4 ■
1L ■

With special flange acc. to DIN EN 50347 FT165 FT165 FT215 FT265
acc. to DIN 42948 C 200 C 200 C 250 C 300

IM B14	IM V19	IM V18 without protective cover	IM V18 with protective cover ③	IM B34 ①	3	9	M2B	M2C	All	All	All except ⑤ and ⑥	All except ⑦ ≤ 200 hp	✓	✓	✓	✓	–	–	–	–	–	–
																						

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

1) For the North America export version of 1LG6 with order code D42 NEMA Energy Efficient, types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with NEMA MG1 Table 12-11.

2) If motors of frame sizes 180 M to 315 L are fixed to the wall, it is recommended that the motor feet are supported.

3) The "Second shaft extension" option, order code K16 is not possible.

4) 60 Hz version is available on request for 2-pole 1LG4/1LG6 motors of frame size 315 L.

5) 1LG4/1LG6 motors of frame sizes 225 S to 315 M are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days

20
working
days

On
request

Options – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		IE2 High Efficiency	1LA9	1LA9 ①											
		IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②								1LA5 ③			
			1LA9	1LA9 with increased output ④											
			1PP7/1PP5	1PP7 ⑤								1PP5 ⑥			
			1LP7/1LP5	1LP7 ⑦								1LP5 ⑧			
		NEMA Energy Efficient	1LA9	1LA9 ⑨											
		Pole-changing	1LA7/1LA5	1LA7 ⑩								1LA5 ⑪			
		For converter-fed operation only	1LA7/1LA5	1LA7 ⑫						1LA5 ⑬					
		1PP	Motor version	Motor type	Frame size										
		1L			63	71	80	90	100	112	132	160	180	200	225
Motor protection															
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping 1)	A11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping 1)	A12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 1)	A23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 1)	A25	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature detectors for tripping 1)	A31	All except ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT100 resistance thermometers 1)	A60	All except ⑫ and ⑬		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Motor connection and connection box															
ECOFAS motor connector Han-Drive 10e for 230 VΔ/400 VY 2)	G55	All except ⑩, ⑪, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
ECOFAS motor connector EMC Han-Drive 10e for 230 VΔ/400 VY 3)	G56	All except ④, ⑩, ⑪, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–
Connection box on RHS	K09	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
One metal cable gland	K54	All except ①, ④ and ⑨		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Only applicable for ①, ④ and ⑨		–	–	✓	✓	✓	✓	✓	✓	✓	–	–	–
Cable gland, max. configuration	K55	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 180°	K85	All	All	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓
Next larger connection box	L00	All	All	–	–	–	–	–	–	–	–	–	✓	✓	✓
External grounding	L13	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 cables protruding, 0.5 m long 4) 5)	L44	All except ⑩ and ⑪; for ⑫ and ⑬ on request		✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.
3 cables protruding, 1.5 m long 4) 5)	L45	All except ⑩ and ⑪; for ⑫ and ⑬ on request		✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.
6 cables protruding, 0.5 m long 4)	L47	All; for ⑫ and ⑬ on request		✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.
6 cables protruding, 1.5 m long 4)	L48	All; for ⑫ and ⑬ on request		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 cables protruding, 3 m long 4)	L49	All except ⑤, ⑥, ⑦, ⑧; for ⑫ and ⑬ on request		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends, see Page 2/92; for footnotes, see Page 2/93.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)												
		Motor version	Motor type (alum.)	Motor type – Frame size												
				63	71	80	90	100	112	132	160	180	200	225		
		IE2 High Efficiency	1LA9	1LA9 ①												
		IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②							1LA5 ③					
			1LA9	1LA9 with increased output ④												
			1PP7/1PP5	1PP7 ⑤							1PP5 ⑥					
			1LP7/1LP5	1LP7 ⑦												
		NEMA Energy Efficient	1LA9	1LA9 ⑧												
		Pole-changing	1LA7/1LA5	1LA7 ⑩							1LA5 ⑪					
		For converter-fed operation only	1LA7/1LA5	1LA7 ⑫							1LA5 ⑬					
		1PP 1L	Motor version	Motor type	Frame size	63	71	80	90	100	112	132	160	180	200	225
Motor connection and connection box (continued)																
Connection box on NDE	M64	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Terminal strip for main and auxiliary terminals	M69	All except ①, ④, ⑧, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–
Windings and insulation																
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11	All except ④, ⑦, ⑧, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12	All except ④, ⑦, ⑧, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13	All except ④, ⑦, ⑧, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 180 (H) at rated output and max. CT 60 °C ⑥)	C18	All except ①, ④, ⑦, ⑧, ⑨, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	All except ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ⑦)	C22	All except ④, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ⑦)	C23	All except ④, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ⑦)	C24	All except ④, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25	All except ④, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	All except ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 •	All except ④, ⑦, ⑧, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 •	All except ④, ⑦, ⑧, ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends, see Page 2/92; for footnotes, see Page 2/93.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		IE2 High Efficiency	1LA9	1LA9 ①											
		IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②								1LA5 ③			
			1LA9	1LA9 with increased output ④											
			1PP7/1PP5	1PP7 ⑤								1PP5 ⑥			
			1LP7/1LP5	1LP7 ⑦								1LP5 ⑧			
		NEMA Energy Efficient	1LA9	1LA9 ⑨											
		Pole-changing	1LA7/1LA5	1LA7 ⑩								1LA5 ⑪			
		For converter-fed operation only	1LA7/1LA5	1LA7 ⑫								1LA5 ⑬			
		Motor version	Motor type	Frame size											
		1PP 1L		63	71	80	90	100	112	132	160	180	200	225	
Colors and paint finish															
Special finish in RAL 7030 stone gray		All	All	□	□	□	□	□	□	□	□	□	□	□	
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" in Catalog D 81.1 · 2008 Part 0 "Introduction"	Y51 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special finish sea air resistant unpainted (only cast-iron parts primed)	M94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Unpainted, only primed	K23	All	All	○	○	○	○	○	○	○	○	○	○	○	
	K24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Modular technology – Basic versions 8)															
Mounting of separately driven fan	G17	All except ⑤, ⑥, ⑦ and ⑧		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of brake 9)	G26	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of 1XP8001-1 (HTL) rotary pulse encoder	H57	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of 1XP8001-2 (TTL) rotary pulse encoder	H58	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Modular technology – Combinations of basic versions 8)															
Mounting of separately driven fan and 1XP8001-1 rotary pulse encoder	H61	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of brake and 1XP8001-1 rotary pulse encoder 9)	H62	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of brake and separately driven fan 9)	H63	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of brake, separately driven fan and 1XP8001-1 rotary pulse encoder 9)	H64	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of separately driven fan and 1XP8001-2 rotary pulse encoder	H97	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of brake and 1XP8001-2 rotary pulse encoder 9)	H98	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of brake, separately driven fan and 1XP8001-2 rotary pulse encoder 9)	H99	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	

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For legends, see Page 2/92; for footnotes, see Page 2/93.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		IE2 High Efficiency	1LA9	1LA9 ①											
		IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②							1LA5 ③				
			1LA9	1LA9 with increased output ④											
			1PP7/1PP5	1PP7 ⑤							1PP5 ⑥				
			1LP7/1LP5	1LP7 ⑦											
		NEMA Energy Efficient	1LA9	1LA9 ⑧											
		Pole-changing	1LA7/1LA5	1LA7 ⑩							1LA5 ⑪				
		For converter-fed operation only	1LA7/1LA5	1LA7 ⑫							1LA5 ⑬				
		Motor version	Motor type	Frame size											
		1PP		63	71	80	90	100	112	132	160	180	200	225	
		1L													
Modular technology – Additional versions															
Brake supply voltage 24 V DC	C00	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Brake supply voltage 400 V AC	C01	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Brake supply voltage 180 V DC, for operation on MICROMASTER 411-ECOFAS ¹⁰⁾	C02	All except ①, ④, ⑤, ⑥, ⑦, ⑧, ⑨, ⑩ and ⑪		✓	✓	✓	✓	✓	✓	✓	–	–	–	–	
Mechanical manual brake release with lever (no locking)	K82	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special technology ⁸⁾															
Prepared for mounting of MMI 11)	H15	All except ①, ④, ⑤, ⑥, ⑦, ⑧, ⑨, ⑫ and ⑬	O. R.	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	
Mounting of LL 861 900 220 rotary pulse encoder	H70	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Prepared for mounting of LL 861 900 220	H78	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Prepared for mounting of HOG 9 D 1024 I	H79	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Prepared for mounting of HOG 10 D 1024 I	H80	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Mechanical design and degrees of protection															
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar ¹²⁾	K17	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With two additional eyebolts for IM V1/IM V3	K32	All except ①, ④ and ⑨		–	–	–	–	–	–	–	–	✓	✓	✓	
Low-noise version for 2-pole motors with clockwise direction of rotation ¹⁰⁾	K37	All except ①, ④, ⑤, ⑥, ⑦, ⑧, ⑨, ⑩ and ⑪		–	–	–	–	–	–	✓	✓	✓	✓	✓	
		Only applicable for ①, ④ and ⑨		–	–	–	–	–	–	–	–	✓	✓	–	
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ¹⁰⁾	K38	All except ①, ④, ⑤, ⑥, ⑦, ⑧, ⑨, ⑩ and ⑪		–	–	–	–	–	–	✓	✓	✓	✓	✓	
		Only applicable for ①, ④ and ⑨		–	–	–	–	–	–	–	–	✓	✓	–	
IP65 degree of protection ¹³⁾	K50	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IP56 degree of protection ¹⁴⁾	K52	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Vibration-proof version	L03	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Condensation drainage holes ¹⁵⁾	L12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rust-resistant screws (externally)	M27	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mechanical protection for encoder ¹⁶⁾	M68	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Coolant temperature and site altitude															
Coolant temperature –40 to +40 °C ¹⁷⁾	D03	All except ①, ④ and ⑨		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Only applicable for ①, ④ and ⑨		–	–	✓	✓	✓	✓	✓	✓	–	–	–	
Coolant temperature –30 to +40 °C ¹⁷⁾	D04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

For legends, see Page 2/92; for footnotes, see Page 2/93.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		IE2 High Efficiency	1LA9	1LA9 ①											
		IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②								1LA5 ③			
			1LA9	1LA9 with increased output ④											
			1PP7/1PP5	1PP7 ⑤								1PP5 ⑥			
			1LP7/1LP5	1LP7 ⑦											
		NEMA Energy Efficient	1LA9	1LA9 ⑧											
		Pole-changing	1LA7/1LA5	1LA7 ⑩								1LA5 ⑪			
		For converter-fed operation only	1LA7/1LA5	1LA7 ⑫								1LA5 ⑬			
		Motor version	Motor type	Frame size											
		1PP	1L	63	71	80	90	100	112	132	160	180	200	225	
Designs in accordance with standards and specifications															
CCC China Compulsory Certification 18)	D01	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		✓	✓	✓	✓	✓	✓	-	-	-	-	-	
		Only applicable for ①, ④ and ⑨		✓	✓	✓	✓	-	-	-	-	-	-	-	
IE1 motor without CE marking for export outside EEA (see EU Directive 640/2009)	D22 <i>New!</i>	Only possible for ②, ③, ④, ⑤, ⑥, ⑦ and ⑧		○	○	○	○	○	○	○	○	○	○	○	
Electrical according to NEMA MG1-12 19)	D30	All except ⑤, ⑥, ⑦ and ⑧; for ⑨ standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Design according to UL with "Recognition Mark" 19)	D31	All except ⑫ and ⑬; for ⑨ standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Certified for Korea acc. to KS C4202 20)	D33	Only possible for ①		-	-	✓	✓	✓	✓	✓	✓	✓	✓	-	
China Energy Efficiency Label	D34 <i>New!</i>	Only possible for ① and ⑨		○	○	○	○	○	○	○	○	○	○	○	
Canadian regulations (CSA) 21)	D40	All except ⑫ and ⑬; for ⑨ standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
NEMA Energy Efficient, North America version according to NEMA MG1, Table 12-11, incl. UL and CSA	D42 <i>New!</i>	Only possible for ⑨		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	-	
PSE mark for Japan 22)	D46	All except ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	-	-	-	-	
VIK version (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate) 23)	K30	Only possible for ①, ⑨, 8-pole motors and motors < 0.75 kW		✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	
Ex nA II on VIK rating plate	C27	Only possible for ①, ⑨, 8-pole motors and motors < 0.75 kW		✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	
Bearings and lubrication															
Measuring nipple for SPM shock pulse measurement for bearing inspection 24)	G50	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	
Bearing design for increased cantilever forces	K20	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	
Regreasing device 24) 25)	K40	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	
Located bearing DE	K94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Located bearing NDE	L04	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	□	□	□	□	
		Only applicable for ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	-	-	-	-	
Balance and vibration quantity															
Vibration quantity level A		All	All	□	□	□	□	□	□	□	□	□	□	□	
Vibration quantity level B	K02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Full-key balancing	L68	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Balancing without key	M37	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Shaft and rotor															
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors 26)	K04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Second standard shaft extension	K16	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Shaft extension with standard dimensions, without feather keyway	K42	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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For legends, see Page 2/92; for footnotes, see Page 2/93.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		IE2 High Efficiency	1LA9	1LA9 ①											
		IE1 Standard Efficiency	1LA7/1LA5	1LA7 ②							1LA5 ③				
			1LA9	1LA9 with increased output ④											
			1PP7/1PP5	1PP7 ⑤					1PP5 ⑥						
			1LP7/1LP5	1LP7 ⑦											
		NEMA Energy Efficient	1LA9	1LA9 ⑧											
		Pole-changing	1LA7/1LA5	1LA7 ⑩							1LA5 ⑪				
		For converter-fed operation only	1LA7/1LA5	1LA7 ⑫					1LA5 ⑬						
		Motor version	Motor type	Frame size	63	71	80	90	100	112	132	160	180	200	225
Shaft and rotor (continued)															
Standard shaft made of stainless steel	M65	All except ①, ④ and ⑧		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension 27)	Y55 • and identification code	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation															
Fan cover for textile industry 28)	H17	All except ①, ④, ⑤, ⑥, ⑦, ⑧ and ⑨		-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Only applicable for ①, ④ and ⑨		-	-	-	-	-	✓	✓	-	-	-	-	-
Metal external fan 29)	K35	All except ⑤, ⑥, ⑦ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 230 V 30)	K45	All; for ⑫ and ⑬ on request		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 115 V 30)	K46	All; for ⑫ and ⑬ on request		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates															
Second lubrication plate, loose	B06	All		-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate for voltage tolerance 31)	B07 <i>New!</i>	All except ⑦, ⑧, ⑩, ⑪ and 8-pole motors		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate, stainless steel	M40 <i>New!</i>	Only possible for ①, ④ and ⑨		✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates															
With one safety and start-up guide per box pallet	B01	All except ⑤, ⑥, ⑦ and ⑧		□	□	□	□	□	□	□	□	□	□	-	-
		Only applicable for ⑤, ⑥, ⑦ and ⑧		-	□	□	□	□	□	□	□	□	-	-	-
Acceptance test certificate 3.1 in acc. with EN 10204 32)	B02	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed German/English Operating Instructions (Compact) enclosed 33)		All		□	□	□	□	□	□	□	□	□	□	□	□
Printed German/English Operating Instructions enclosed	B23	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance	F83	All except ⑫ and ⑬		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	All		○	○	○	○	○	○	○	○	○	○	-	-
Connected in star for dispatch	M32	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.

- O. R. Possible on request
- ✓ With additional charge
- Not possible

For footnotes, see Page 2/93.

SIMOTICS GP 1LA/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Options – Aluminum series
1LA7, 1LA5, 1LA9, 1LP7, 1LP5, 1PP7, 1PP5

- 1) Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended. For pole-changing motors with separate windings, the number of temperature sensors must be doubled (order code A11, prices of A12 or order code A12, prices available on request).
- 2) Not possible for pole-changing motors and for 1LA9 motors with increased output in frame size 132. Only one sensor (temperature sensor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VΔ/400 VY and special voltage with voltage code 9 and order code L1U (400 VΔ). The following order codes cannot be used in combination with the ECOFAST plugs, order code G55: A12, C02, C18, D31, D40, G50, H15, H17, H62, H63, H64, H98, H99, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52.
- 3) Not possible for pole-changing motors. Only one sensor (temperature sensor or PTC thermistor) can be connected. Only possibilities are voltage code 1 with voltage of 230 VΔ/400 VY and special voltage with voltage code 9 and order code L1U (400 VΔ). The following order codes cannot be used in combination with the ECOFAST plugs, order code G56: A12, A23, A31, C00, C18, D31, D40, G50, H15, H17, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52. The following order codes can be used in combination with the ECOFAST plugs, order code G56 only with order codes C01 (400 V AC) or C02 (180 V DC): G26, H62, H63, H64, H98, H99.
- 4) In combination with the options "PTC thermistor" or "Anti-condensation heating", please inquire before ordering.
- 5) Not possible for pole-changing motors and/or with voltage code 1 or 6.
- 6) Cannot be used for motors in UL version (order code D31). Cannot be used for motors according to CSA approval (order code D40) for the 1LA5 motor series in frame sizes 180 to 225. The grease lifetime specified in Catalog D 81.1 · 2008 in Part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease service lifetime or relubrication interval is halved.
- 7) No derating in combination with the following order codes: L2A, L2C, L2Q, L2R, L2S, L2T, L2U, L2V, L3E and L3G.
- 8) Second shaft extension is not possible, with mounted brake on request. The order codes listed cannot be combined within the various technologies nor with each other within the same technology system. This applies for:
 - Modular technology
 - Basic versions of "Modular technology"
 - Combinations of basic versions "Special technology"
- 9) The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake supply voltages are possible with order codes C00, C01 and C02.
- 10) Not possible in motors in a pole-changing version.
- 11) Converter mounting is possible, if the MICROMASTER type is specified for 230 VΔ/400 VY (see Catalog DA 51.3).
- 12) Not possible for type of construction IM V3.
- 13) Not possible in combination with rotary pulse encoder HOG 9 D 1024 I (order code H72, H79) and/or brake 2LM8 (used for motors up to and including frame size 225, order code G26).
- 14) Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code G26).
- 15) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.
- 16) Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.
- 17) For 1LA5/1LA7 motors with special insulation for converter-fed operation, in connection with mountings, the respective technical data must be observed, please inquire before ordering.
- 18) CCC certification is required for:
 - 2-pole motors ≤ 2.2 kW
 - 4-pole motors ≤ 1.1 kW
 - 6-pole motors ≤ 0.75 kW
 - 8-pole motors ≤ 0.55 kW
 For frame sizes 100 and 112, order code D01 is only applicable to 1LA7 pole-changing motors.
- 19) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range. Order codes D30 and D31 do not authorize importing into USA and Mexico. The North America export version of the 1LA9 with order code D42 NEMA Energy Efficient is available for this purpose.
- 20) The 2, 4 and 6-pole IE2 motors 1LA9 and 1LG6 in the 0.75 kW to 200 kW range for 50 Hz output at 60 Hz are certified for Korea.
- 21) The rated voltage is indicated on the rating plate without voltage range. Order code D40 does not authorize importing into Canada. The North America export version of the 1LA9 with order code D42 NEMA Energy Efficient is available for this purpose.
- 22) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the correct marking.
- 23) Not possible in combination with anti-condensation heating, order codes K45 and K46. Order code M14 or M15 must be selected instead – for further details, see Part 4 "SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors".
- 24) Not possible when brake is mounted.
- 25) Not possible for 1LA9 134-6KA.. motors.
- 26) Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20), brake mounting or encoder mounting.
- 27) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and K16:
 - Dimensions D and DA ≤ internal diameter of roller bearing (see dimension tables under "Dimensions")
 - Dimensions E and EA ≤ 2 x length E (normal) of the shaft extension. For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".
- 28) The special requirements of the textile industry regarding the sheet metal cover open up the possibility that a finger may be inserted between the cover and enclosure. The customer must implement appropriate measures to ensure that the installed system is "finger-safe".
- 29) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is not possible in combination with the low-noise version – Order code K37 or K38.
- 30) Not possible in combination with VIK order code K30. Order code M14 or M15 must be selected instead – for further details, see Part 4 "SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors".
- 31) Can be ordered for 230VΔ/400VY or 400VΔ/690VY (voltage code 1 or 6). Not possible for pole-changing motors, naturally cooled motors, 8-pole motors and in combination with order code D34.
- 32) The delivery time for the factory test certificate may differ from the delivery time for the motor.
- 33) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Standard delivery times:

10 working days	20 working days	On request
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Supplements to order numbers and special versions

Options
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (cast-iron)	Motor type – Frame size											
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾	
		IE2 High Efficiency	1LG6					1LG6 ①							
		IE3 Premium Efficiency	1LG6										1LG6 ②		
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③					1LG4 ④						
			1PP4						1PP4 ⑤						
			1LP4						1LP4 ⑥						
		NEMA Energy Efficient	1LG6						1LG6 ⑦						
		NEMA Premium Efficient	1LG6											1LG6 ⑧	
		Pole-changing	1LG4					1LG4 ⑨							
		For converter-fed operation only	1LG6					1LG6 ⑩							
		Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾	
		1PP4.....													
		1L.....													

Motor protection														
Motor protection	Code	Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ¹⁾	A12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT100 resistance thermometers ¹⁾	A60	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 6 PT100 resistance thermometers in stator winding ¹⁾	A61	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings ^{1) 2) 3)}	A72	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings ^{1) 3)}	A78	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT100 double screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings ^{1) 3)}	A80	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Motor connection and connection box														
Two-part plate on connection box	K06	All	All	–	–	–	–	–	✓	✓	✓	✓	✓	✓
Undrilled entry plate	L01	All except ⑤, ⑥ and ⑩	All	–	–	–	–	○	○	○	○	○	○	○
Connection box on RHS	K09	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends, see Page 2/102; for footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)															
		Motor version	Motor type (cast-iron)	Motor type – Frame size															
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}					
		IE2 High Efficiency	1LG6					1LG6 ①											
		IE3 Premium Efficiency	1LG6										1LG6 ②						
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④											
			1PP4	1PP4 ⑤															
			1LP4	1LP4 ⑥															
		NEMA Energy Efficient	1LG6					1LG6 ⑦											
		NEMA Premium Efficient	1LG6											1LG6 ⑧					
		Pole-changing	1LG4					1LG4 ⑨											
		For converter-fed operation only	1LG6					1LG6 ⑩											
				Motor version	Motor type	Frame size			100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}

Motor connection and connection box (continued)

Connection box on top, feet screwed on	K11	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15	All except ⑤ and ⑥		□	□	□	□	✓	✓	✓	□	□	□	□	□	□	□	□	□
One metal cable gland	K54	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cable gland, max. configuration	K55	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 180°	K85	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Next larger connection box	L00	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External grounding	L13	All except ⑩		✓	✓	✓	✓	□	□	□	□	□	□	□	□	□	□	□	□
6 cables protruding, 1.5 m long ⁴⁾	L48	All	All	–	–	–	–	✓	✓	✓	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
6 cables protruding, 3 m long ⁴⁾	L49	All	All	–	–	–	–	✓	✓	✓	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – right side ^{5) 6)}	L51	All	All	–	–	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – left side ^{5) 6)}	L52	All	All	–	–	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Auxiliary connection box 1XB3020	L97	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stud terminal for cable connection, accessories pack (3 items)	M46	All	All	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47	All	All	–	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Windings and insulation																			
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13	All except ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends, see Page 2/102; for footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
request

Options

Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾
		IE2 High Efficiency	1LG6					1LG6 ①						
		IE3 Premium Efficiency	1LG6										1LG6 ②	
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④						
			1PP4					1PP4 ⑤						
			1LP4					1LP4 ⑥						
		NEMA Energy Efficient	1LG6					1LG6 ⑦						
		NEMA Premium Efficient	1LG6											1LG6 ⑧
		Pole-changing	1LG4					1LG4 ⑨						
		For converter-fed operation only	1LG6					1LG6 ⑩						
		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾
		1PP4.....												
		1L.....												
Windings and insulation (continued)														
Temperature class 180 (H) at rated output and max. CT 60 °C ^{7) 8) 9)}	C18	Only possible for ③, ④, ⑤ and ⑧		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	All All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	C22	All except ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	C23	All except ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	C24	All except ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25	All except ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	All All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 •	All except ⑩ and specified output, CT .. °C or SA m above sea level		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements ⁸⁾	Y52 •	All except ⑩ and specified output, CT .. °C or SA m above sea level		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends, see Page 2/102; for footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)														
		Motor version	Motor type (cast-iron)	Motor type – Frame size														
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}				
		IE2 High Efficiency	1LG6					1LG6 ①										
		IE3 Premium Efficiency	1LG6										1LG6 ②					
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④										
			1PP4					1PP4 ⑤										
			1LP4					1LP4 ⑥										
		NEMA Energy Efficient	1LG6															
		NEMA Premium Efficient	1LG6											1LG6 ⑧				
		Pole-changing	1LG4					1LG4 ⑨										
		For converter-fed operation only	1LG6					1LG6 ⑩										
		Motor version	Motor type	Frame size				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
		1PP4	1L															

Colors and paint finish														
Standard finish in RAL 7030 stone gray		All	All	–	–	–	–	□	□	□	□	□	□	□
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y53 • and standard finish RAL	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Special finish in RAL 7030 stone gray ¹⁰⁾	K26	All	All	□	□	□	□	✓	✓	✓	✓	✓	✓	✓
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" in Catalog D 81.1 · 2008 Part 0 "Introduction"	Y51 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special paint for use offshore	M91	All	All	O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓	✓	✓
Special finish sea air resistant	M94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unpainted (only cast-iron parts primed)	K23	All	All	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modular technology – Basic versions ¹¹⁾														
Mounting of separately driven fan ¹²⁾	G17	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
Mounting of brake ^{12) 13)}	G26	All except ⑤ and ⑥		–	–	–	–	✓	✓	✓	✓	✓	✓	–
Mounting of 1XP8001-1 (HTL) rotary pulse encoder	H57	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of 1XP8001-2 (TTL) rotary pulse encoder	H58	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends, see Page 2/102; for footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Standard delivery times:

10 working days	20 working days	On request
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Supplements to order numbers and special versions

Options Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (cast-iron)	Motor type – Frame size											
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}	
		IE2 High Efficiency	1LG6					1LG6 ①							
		IE3 Premium Efficiency	1LG6										1LG6 ②		
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④							
			1PP4					1PP4 ⑤							
			1LP4					1LP4 ⑥							
		NEMA Energy Efficient	1LG6					1LG6 ⑦							
		NEMA Premium Efficient	1LG6											1LG6 ⑧	
		Pole-changing	1LG4					1LG4 ⑨							
		For converter-fed operation only	1LG6					1LG6 ⑩							
		Motor version	Motor type	Frame size	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
		1PP4.....													
		1L.....													

Modular technology – Combinations of basic versions ¹¹⁾

Option	Code	Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
Mounting of separately driven fan and 1XP8001-1 rotary pulse encoder	H61	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Mounting of brake and 1XP8001-1 rotary pulse encoder ¹³⁾	H62	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-
Mounting of brake and separately driven fan ^{12) 13)}	H63	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-
Mounting of brake, separately driven fan and 1XP8001-1 rotary pulse encoder ¹³⁾	H64	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-
Mounting of separately driven fan and 1XP8001-2 rotary pulse encoder	H97	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Mounting of brake and 1XP8001-2 rotary pulse encoder ¹³⁾	H98	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-
Mounting of brake, separately driven fan and 1XP8001-2 rotary pulse encoder ¹³⁾	H99	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-

Modular technology – Additional versions

Brake supply voltage 24 V DC	C00	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-
Brake supply voltage 400 V AC	C01	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-
Mechanical manual brake release with lever (no locking)	K82	All except ⑤ and ⑥		-	-	-	-	✓	✓	✓	✓	✓	✓	-

Special technology ¹¹⁾

Mounting of LL 861 900 220 rotary pulse encoder	H70	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for mounting of LL 861 900 220	H78	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for mounting of HOG 9 D 1024 I	H79	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for mounting of HOG 10 D 1024 I	H80	All except ⑤ and ⑥		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I rotary pulse encoder, terminal box protection against humidity	J15	All except ⑤, ⑥, ⑨ and ⑩		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends, see Page 2/102; for footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
		IE2 High Efficiency	1LG6					1LG6 ①						
		IE3 Premium Efficiency	1LG6										1LG6 ②	
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④						
			1PP4					1PP4 ⑤						
			1LP4					1LP4 ⑥						
		NEMA Energy Efficient	1LG6					1LG6 ⑦						
		NEMA Premium Efficient	1LG6										1LG6 ⑧	
		Pole-changing	1LG4					1LG4 ⑨						
		For converter-fed operation only	1LG6					1LG6 ⑩						
		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
		1PP4.....												
		1L.....												

Special technology ¹¹⁾ (continued)														
Mounting of HOG 10 DN 1024 I rotary pulse encoder, terminal box protection against dust	J16	All except ⑤, ⑥, ⑨ and ⑩	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against humidity	Y74 • and required speed rpm	All except ⑤, ⑥, ⑨ and ⑩	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against dust	Y76 • and required speed rpm	All except ⑤, ⑥, ⑨ and ⑩	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I rotary pulse encoder + ESL 93, (speed rpm), terminal box protection against dust	Y79 • and required speed (max. 3) rpm	All except ⑤, ⑥, ⑨ and ⑩	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection														
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar (not possible for IM V3 type of construction) ¹⁴⁾	K17	All All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation ¹⁵⁾	K37	Only possible for ③ and ④	–	–	✓	✓	–	✓	✓	✓	✓	✓	✓	–
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ¹⁵⁾	K38	Only possible for ③ and ④	–	–	✓	✓	–	✓	✓	✓	✓	✓	✓	–
IP65 degree of protection ¹⁶⁾	K50	All All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection ¹⁷⁾	K52	All All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	All All	✓	✓	✓	✓	–	–	–	–	–	–	–	–
Condensation drainage holes ¹⁸⁾	L12	All except ⑤	✓	✓	✓	✓	✓	□	□	□	□	□	□	□
Rust-resistant screws (externally)	M27	All All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Grounding brush for converter-fed operation	M44	All except ⑤ and ⑥	–	–	–	–	–	–	–	–	–	O. R.	O. R.	O. R.
Mechanical protection for encoder ¹⁹⁾	M68	All except ⑤ and ⑥	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends, see Page 2/102; for footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Standard delivery times:

10 working days	20 working days	On request
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Supplements to order numbers and special versions

Options

Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
		IE2 High Efficiency	1LG6											1LG6 ①
		IE3 Premium Efficiency	1LG6											1LG6 ②
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④						
			1PP4					1PP4 ⑤						
			1LP4					1LP4 ⑥						
		NEMA Energy Efficient	1LG6											1LG6 ⑦
		NEMA Premium Efficient	1LG6											1LG6 ⑧
		Pole-changing	1LG4											1LG4 ⑨
		For converter-fed operation only	1LG6											1LG6 ⑩
		Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
		1PP4.....												
		1L.....												
Coolant temperature and site altitude														
Coolant temperature -50 to +40 °C ^{20) 21)}	D02	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Coolant temperature -40 to +40 °C ²⁰⁾	D03	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature -30 to +40 °C ²⁰⁾	D04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications (percentage additional charges for order codes D25 and D41 refer to the basic machine)														
IE1 motor without CE marking for export outside EEA (see EU Directive 640/2009)	D22 <i>New!</i>	Only possible for ③, ④, ⑤ and ⑥		○	○	○	○	○	○	○	○	○	○	○
Premium Efficiency IE3	D25	Only possible for ②		-	-	-	-	-	-	-	-	-	✓	✓
Electrical according to NEMA MG1-12 ²²⁾	D30	All except ⑤, ⑥ and ⑩; for ⑦ and ⑧ standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to UL with "Recognition Mark" ^{9) 22)}	D31	All except ⑩; for ⑦ and ⑧ standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
Certified for Korea acc. to KS C4202 ^{9) 23)}	D33	Only possible for ①		-	-	-	-	✓	✓	✓	✓	✓	✓	-
China Energy Efficiency Label ⁹⁾	D34 <i>New!</i>	Only possible for ①, ②, ⑦ and ⑧		-	-	-	-	○	○	○	○	○	○	-
Canadian regulations (CSA) ^{9) 24)}	D40	All except ⑩; for ⑦ and ⑧ standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
NEMA Premium Efficient, North America version according to NEMA MG1, Table 12-12, incl. UL and CSA	D41 <i>New!</i>	Only possible for ⑧		-	-	-	-	-	-	-	-	-	-	✓
NEMA Energy Efficient, North America version according to NEMA MG1, Table 12-11, incl. UL and CSA	D42 <i>New!</i>	Only possible for ⑦		-	-	-	-	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	✓
PSE mark for Japan ²⁵⁾	D46	Only possible for ③		✓	✓	✓	-	-	-	-	-	-	-	-
VIK version (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate)	K30	Only possible for ①, ②, ⑦, ⑧ and 8-pole motors		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex nA II on VIK rating plate ⁹⁾	C27	Only possible for ①, ②, ⑦ and 8-pole motors		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-

For legends, see Page 2/102; for footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾
		IE2 High Efficiency	1LG6					1LG6 ①						
		IE3 Premium Efficiency	1LG6										1LG6 ②	
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④						
			1PP4					1PP4 ⑤						
			1LP4					1LP4 ⑥						
		NEMA Energy Efficient	1LG6					1LG6 ⑦						
		NEMA Premium Efficient	1LG6									1LG6 ⑧		
		Pole-changing	1LG4					1LG4 ⑨						
		For converter-fed operation only	1LG6					1LG6 ⑩						
		Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ¹⁾
		1PP4.....												
		1L.....												

Bearings and lubrication														
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces ²⁶⁾	K20	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size 63 ²⁷⁾	K36	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Regreasing device	K40	All	All	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□
Located bearing DE	K94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	All	All	✓	✓	✓	□	□	□	□	□	□	□	□
Insulated bearing cartridge ²⁸⁾	L27	All	All	–	–	–	–	–	–	✓	✓	✓	✓	✓
Balance and vibration quantity														
Vibration quantity level A		All	All	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B	K02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	L68	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor														
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ²⁹⁾	K04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second stand. shaft extension ³⁰⁾	K16	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with stand. dimen., without feather keyway	K42	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stand. shaft made stain. steel	M65	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ³¹⁾	Y55 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation														
Fan cover for textile industry ³²⁾	H17	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–
Metal external fan ³³⁾	K35	All except ⑤ and ⑥	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 230 V	K45	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 115 V	K46	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sheet metal fan cover	L36	All except ⑤ and ⑥	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code	All except ⑤ and ⑥	All	–	–	–	–	–	–	✓	✓	✓	✓	–

For legends, see Page 2/102; for footnotes, see Page 2/103.

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SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Standard delivery times:

10 working days	20 working days	On request
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Supplements to order numbers and special versions

Options
Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (cast-iron)	Motor type – Frame size											
				100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}	
		IE2 High Efficiency	1LG6					1LG6 ①							
		IE3 Premium Efficiency	1LG6										1LG6 ②		
		IE1 Standard Efficiency	1LA6/1LG4	1LA6 ③				1LG4 ④							
			1PP4					1PP4 ⑤							
			1LP4					1LP4 ⑥							
		NEMA Energy Efficient	1LG6					1LG6 ⑦							
		NEMA Premium Efficient	1LG6											1LG6 ⑧	
		Pole-changing	1LG4					1LG4 ⑨							
		For converter-fed operation only	1LG6					1LG6 ⑩							
		1PP4.....													
		1L.....													

Rating plate and extra rating plates														
Description	Code	Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M/L	315 L 1LG6 318-M, 1LG6 312-M ^{*)}
Second lubrication plate, loose	B06	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate for voltage tolerance ³⁴⁾	B07 <i>New!</i>	All except ⑥, ⑨ and 8-pole motors	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate, stainless steel	M40 <i>New!</i>	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates														
With one safety and start-up guide per box pallet	B01	All	All	○	○	○	○	–	–	–	–	–	–	–
Acceptance test certificate 3.1 in acc. with EN 10204 ³⁵⁾	B02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed German/English Operating Instructions (Compact) enclosed ³⁶⁾		All	All	□	□	□	□	□	□	□	□	□	□	□
Printed German/English Operating Instructions enclosed	B23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance	F83	All except ⑩	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	All	All	○	○	○	○	–	–	–	–	–	–	–
Connected in star for dispatch	M32	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33	All	All	✓	✓	✓	✓	✓	✓	□	□	□	□	□

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- . R. Possible on request
- ✓ With additional charge
- Not possible

For footnotes, see Page 2/103.

SIMOTICS SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Options

Cast-iron series 1LA6, 1LG4, 1LG6, 1LP4, 1PP4

- * For 1LG6312-2MA.., 1LG6312-4MA.., 1LG6318-2MB.. and 1LG6318-4MA.. motors, it is not possible to use the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27), brakes, brakes with encoder (G26, H47, H62, H63, H64, H98, H99), low-noise versions (K37, K38) and mounting of a separately driven fan, separately driven fan with encoder (G17, H61, H64, H97, H99).
- 1) Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended. For pole-changing motors with separate windings, the number of temperature sensors must be doubled (order code A11, prices of A12 or order code A12, prices available on request).
 - 2) For 1LG6 motors with special insulation for converter-fed operation, order code A72 is not possible for frame sizes 225 to 315 in combination with the option "Insulated bearing cartridge" – Order code L27.
 - 3) For 1LG4 pole-changing motors in frame size 200, PT100 bearing monitoring is only possible at the drive end (DE).
 - 4) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
 - 5) Possible in combination with order code L44 to L49 or length specification in plain text.
 - 6) For 1LG4 pole-changing motors, 1LG6 motors with special insulation for converter-fed operation and 1PP4 forced-air cooled motors, in combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
 - 7) Cannot be used for motors in UL version (order code D31). Cannot be used for motors according to CSA approval (order code D40) for 1LG4/1LG6 motor series. The grease lifetime specified in Catalog D 81.1 · 2008 in Part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease service lifetime or relubrication interval is halved.
 - 8) Not possible for 1LG4 motors with increased output.
 - 9) Order identically priced predecessor type for 1LG6...2AA../1LG6...2AB.. 2-pole motors or 1LG6...4AA.. 4-pole motors using the options for country certificates (D31, D33, D34, D35, D40), marine certificates (E11, E21, E31, E51), explosion-proof version (M72, M73, M34, M35, M38, M39, M74, M75, C27) and IE3 version for SH 315 (D25).
 - 10) For frame sizes 100 to 160, do not specify an order code. Order code is only necessary for frame sizes 180 to 315.
 - 11) Second shaft extension is not possible, with mounted brake on request. The order codes listed cannot be combined within the various technologies nor with each other within the same technology system. This applies for:
 - Modular technology
 - Basic versions of "Modular technology"
 - Combinations of basic versions "Special technology"
 - 12) For 1LG4/1LG6 motors, order codes G17, G26 and H63 frame size 225 and above can also be combined with all rotary pulse encoders in the "Special technology" range.
 - 13) The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake supply voltages are possible with order codes C00 and C01.
 - 14) Not available for 2-pole motors of frame size 180 and above.
 - 15) For 1LG4 motors, in the low-noise version, a second shaft extension and/or encoder mounting is not possible. Not necessary for 1LG6 motors because these motors are already noise optimized.
 - 16) Not possible in combination with rotary pulse encoder HOG 9 D 1024 I (order code H72, H79) and/or brake 2LM8 (used for motors up to and including frame size 225, order code G26).
 - 17) Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code G26).
 - 18) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE (IP55, IP56, IP65). If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.
 - 19) Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.
 - 20) For 1LG6 motors with special insulation for converter-fed operation, in connection with mountings, their respective technical data must be considered, please inquire before ordering.
 - 21) In combination with order code D02, the motor achieves IP54 degree of protection.
 - 22) Possible up to 600 V max. Order with voltage code 9 and order code for voltage and frequency. The rated voltage is indicated on the rating plate. Order codes D30 and D31 do not authorize importing into USA and Mexico. The North America export version of the 1LG6 with order code D41 NEMA Premium Efficient or D42 NEMA Energy Efficient is available for this purpose.
 - 23) The 2, 4 and 6-pole IE2 motors 1LA9 and 1LG6 in the 0.75 kW to 200 kW range for 50 Hz output at 60 Hz are certified for Korea.
 - 24) Order with voltage code 9 and order code for voltage and frequency. The rated voltage is indicated on the rating plate. Order code D40 does not authorize importing into Canada. The North America export version of the 1LG6 with order code D41 NEMA Premium Efficient or D42 NEMA Energy Efficient is available for this purpose.
 - 25) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the correct marking.
 - 26) Not possible for 2-pole motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level B are available on request for motors of frame size 180 and above. Not possible for motors of frame size 180 and above in the combination "Concentricity of the shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors" – Order code K04.
 - 27) With 4-pole to 8-pole motors of frame size 280 and above, standard version.
 - 28) For 1LG6 motors with special insulation for converter-fed operation, this option is not possible for frame sizes 225 to 315 in combination with the option "Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings" – Order code A72.
 - 29) Can be combined with deep-groove bearings of series 60... 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20), brake mounting or encoder mounting.
 - 30) Possible for motors of frame size 315 and above in vertical types of construction or 2-pole for version with second shaft extension on request. Version with protective cover not possible.
 - 31) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and K16:
 - Dimensions D and DA ≤ internal diameter of roller bearing (see dimension tables under "Dimensions")
 - Dimensions E and EA ≤ 2 x length E (normal) of the shaft extension.
 For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".
 - 32) The special requirements of the textile industry regarding the sheet metal cover open up the possibility that a finger may be inserted between the cover and enclosure. The customer must implement appropriate measures to ensure that the installed system is "finger-safe".
 - 33) Converter-fed operation is permitted for 1LG motors with metal external fans. The metal external fan is not possible in combination with the low-noise version – Order code K37 or K38.
 - 34) Can be ordered for 230VΔ/400VY or 400VΔ/690VY (voltage code 1 or 6). Not possible for pole-changing motors, naturally cooled motors, 8-pole motors and in combination with order code D34.
 - 35) The delivery time for the factory test certificate may differ from the delivery time for the motor.
 - 36) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>.

2.8

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Accessories

Overview

Modular technology

The components of modular technology can be ordered as accessories. The brake, as a safety-related module, must not be retrofitted.

Cables for rotary pulse encoders can be ordered from Catalog DA 65.10.

Mounting of rotary pulse encoder and separately driven fan for 1LA5, 1LA6, 1LA7 and 1LG motors					Weight
Version		Frame size	Number of poles	Order No.	kg
Rotary pulse encoder¹⁾	HTL version	100 ... 225	All	1XP8 001-1	0.3
	TTL version	100 ... 225	All	1XP8 001-2	0.3
Separately driven fan incl. mounting parts ²⁾		100	All	2CW2180-8RF54-1AB0	3.9
		112	All	2CW2210-8RF54-1AB1	4.4
		132	All	2CW2250-8RF54-1AB2	6.7
		160	All	2CW2300-8RF54-1AB3	7.2
		180	All	2CW2300-8RF54-1AB4	9.8
		200	All	2CW2300-8RF54-1AB5	10.7
		225 ³⁾	All	2CW2300-8RF54-1AB6	10.7
		250	All	1PP9063-2LA12-ZA11+K50⁴⁾	
		280	All	1PP9063-2LA12-ZA11+K50⁴⁾	
		315	2	1PP9070-2LA12-ZA11+K50⁴⁾	
		315	4 to 8	1PP9063-2LA12-ZA11+K50⁴⁾	
Separately driven fan and rotary pulse encoder 1XP8001-1 incl. mounting parts ²⁾		100	All	2CW2180-8RF54-2AB0	4.2
		112	All	2CW2210-8RF54-2AB1	4.7
		132	All	2CW2250-8RF54-2AB2	6.0
		160	All	2CW2300-8RF54-2AB3	7.5
		180	All	2CW2300-8RF54-2AB4	10.1
		200	All	2CW2300-8RF54-2AB5	11.0
	225 ³⁾	All	2CW2300-8RF54-2AB6	11.0	

Encoder mounting

In the case of mounting by the customer.

Options H79, H80

Baumer Hübner GmbH
Postfach 126943
10609 Berlin, Germany
Tel. +49 (0) 30-690 03-0
Fax +49 (0) 30-690 03-104

www.baumerhuebner.com
E-mail: info@baumerhuebner.com

Option H78

Leine & Linde (Deutschland) GmbH
Bahnhofstraße 36
73430 Aalen, Germany
Tel. +49 (0) 7361-78 093-0
Fax +49 (0) 7361-78 093-11

www.leinelinde.com
E-mail: info@leinelinde.se

¹⁾ For motor series 1LG, the rotary pulse encoders are available on request. They are only available for motor series 1LA7 as accessories for spare parts.

²⁾ The separately driven fan 2CW2 ... comprises a complete fan unit with impeller, the separately driven fan 1PP9 ... only comprises the fan motor without mounting components and impeller.

³⁾ For 1LG motors with separately driven fan with Order No. 1PP9 063-2LA12-Z A11+K50 (weight 4.37 kg).

⁴⁾ Only for replacement purposes.

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Accessories

Overview (continued)

Slide rails with fixing bolts and tensioning screws according to DIN 42923

Slide rails are used to tension the belt of a machine easily and conveniently when a belt tightener is not available. They are fixed to the base using stone bolts or foundation blocks.

The assignment of slide rails to motor size can be found in DIN 42923. For motors of frame sizes 355 to 450, there are no standardized slide rails (please inquire).

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Foundation block according to DIN 799

The foundation blocks are inserted into the stone foundation and embedded in concrete. They are used for fixing machines of medium size, slide rails, pedestal bearings, baseframes, etc. After the fixing bolts have been unscrewed, the machine can be dragged without it having to be lifted.

When the machine is initially installed, the foundation block that is bolted to the machine (without washers) and fitted with tapered pins is not embedded with concrete until the machine has been fully aligned. The machine is set 2 to 3 mm deeper in this case. The difference in shaft height is compensated by inserting shims on final installation. The tapered pins safeguard the exact position of the machine when it is repeatedly removed and replaced without the need for realignment.

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Taper pins to DIN 258 with threaded ends and constant taper lengths

Taper pins are used for components that are repeatedly removed. The drilled hole is ground conical using a conical reamer until the pin can be pushed in by hand until the cone shoulder lies approx. 3 to 4 mm above the rim of the hole.

It can then be driven in using a hammer until it is correctly seated. The pin is removed from the drilled hole by screwing on the nut and tightening it.

Standardized taper pins are available from general engineering suppliers.

Source of supply, for example:

Otto Roth GmbH & Co. KG
Rutesheimer Straße 22
70499 Stuttgart, Germany
Tel. +49 (0)711-13 88-0
Fax. +49 (0)711-13 88-233

www.ottoroth.de
E-mail: info@ottoroth.de

Couplings

The motor from Siemens is connected to the machine or gear unit through a coupling. Siemens is an important coupling manufacturer with a wide range of products.

For standard applications, Siemens recommends that elastic couplings of types N-EUPEX and RUPEX or torsionally rigid couplings of types ARPEX and ZAPEX are used. For special applications, FLUDEX and ELPEX-S couplings are recommended.

Source of supply:

Siemens contact partner - ordering from Catalog
Siemens MD 10.1 "FLENDER Standard Couplings"

or

SIEMENS AG
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Tel. +49 (0)2871-92 21 85
Fax +49 (0)2871-92 25 79

www.siemens.com
E-mail: flendercouplings@siemens.com

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Supplements to order numbers and special versions

Accessories

More information

Spare motors and repair parts

- Supply commitment for spare motors and repair parts following delivery of the motor:
 - For up to 5 years, in the event of total motor failure, Siemens will supply a comparable motor with regard to the mounting dimensions and functions.
 - Spare parts will generally be available for up to 5 years.
 - After 5 years and up to 10 years, Siemens will provide information about spare parts and will, if necessary, supply documentation for acquiring spare parts.
- When repair parts are ordered, the following details must be provided:
 - Designation and part number
 - Order No. and factory number of the motor.

Example for ordering a fan cover 1LA7,
frame size 160 L, 6-pole:

**Fan cover No. 7.40,
1LA7 166-6AA60-Z, factory No. E0912/5229221_01_001**

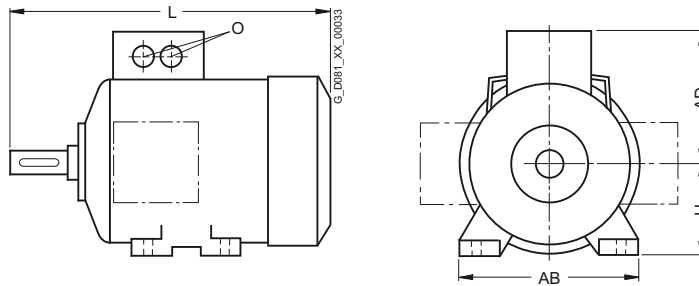
- For bearing assignment, see Catalog D 81.1 · 2008, Part "Introduction".
- Repair parts for 1MJ6, 1MJ7, 1MJ8, 1MJ1, 1ME8, 1ML8 motors are available on request.
- For standard components, a supply commitment does not apply.
- Support – Hotline
In Germany
Tel. +49 (0)1 80/5 05 04 48

You will find telephone numbers for other countries on our Internet site:

www.siemens.com/automation/service&support

Overview

Overall dimensions



Frame size	Type	Number of poles	Dimension					
			L	AD	H	AB	O	
63 M	1LA7		202.5	101	63	120	1 x M16 x 1.5	
	1LA9060		202.5	101	63	120	1 x M25 x 1.5	
	1LA9063	1PP7	228.5	101	63	120	1 x M16 x 1.5	
	1PP7		172	101	63	120	1 x M25 x 1.5	
71 M	1LA7		240	111	71	132	1 x M16 x 1.5	
	1LA9		240	111	71	132	1 x M25 x 1.5	
	1LP7/1PP7	207	111	71	132	1 x M16 x 1.5		
80 M	1LA7		273.5	120	80	150	1 x M16 x 1.5	
	1LA9080		273.5	120	80	150	1 x M25 x 1.5	
	1LA9083	1LP7/1PP7	308.5	120	80	150	1 x M16 x 1.5	
	1LP7/1PP7		237	120	80	150	1 x M25 x 1.5	
90 S/ 90 L	1LA7		331	128	90	165	1 x M16 x 1.5	
	1LA9		331	128	90	165	1 x M25 x 1.5	
	1LA9096-6K.	1LP4/1PP4	376	128	90	165	1 x M16 x 1.5	
	1LA9096-2..		358	128	90	165	1 x M25 x 1.5	
	1LA9096-4..	1PP4208	358	128	90	165	1 x M16 x 1.5	
	1LP7/1PP7		286	128	90	165	1 x M25 x 1.5	
	100 L	1LA6		372	164	100	196	2 x M32 x 1.5
1LA7		372		135	100	196	2 x M32 x 1.5	
1LA9		1LP7/1PP7	407	135	100	196	2 x M32 x 1.5	
1LA9107-4KA.			442	135	100	196	2 x M32 x 1.5	
1LP7/1PP7		331	135	100	196	2 x M32 x 1.5		
112 M		1LA6		393	178	112	226	2 x M32 x 1.5
		1LA7		393	148	112	226	2 x M32 x 1.5
	1LA9	1LP7/1PP7	431	148	112	226	2 x M32 x 1.5	
	1LP7/1PP7		349	148	112	226	2 x M32 x 1.5	
132 S/ 132 M	1LA6		453	194	132	256	2 x M32 x 1.5	
	1LA7		452.5	167	132	256	2 x M32 x 1.5	
	1LA9	4	452.5	167	132	256	2 x M32 x 1.5	
	1LA9131		490.5	167	132	256	2 x M32 x 1.5	
	1LA9133	1LP7/1PP7	490.5	167	132	256	2 x M32 x 1.5	
	1LA9134		490.5	167	132	256	2 x M32 x 1.5	
	1LP7/1PP7	397	167	132	256	2 x M32 x 1.5		
160 M/ 160 L	1LA6		588	226	160	300	2 x M40 x 1.5	
	1LA7		588	197	160	300	2 x M40 x 1.5	
	1LA9	1LP7/1PP7	588	197	160	300	2 x M40 x 1.5	
	1LA9166		628	197	160	300	2 x M40 x 1.5	
	1LP7/1PP7	529	197	160	300	2 x M40 x 1.5		
	180 M/ 180 L	1LA5		712	258	180	339	2 x M40 x 1.5
		1LA9		712	258	180	339	2 x M40 x 1.5
		1LG4	2	669	262	180	339	2 x M40 x 1.5
		1LG4188		720	262	180	339	2 x M40 x 1.5
	1LG6183	4	720	262	180	339	2 x M40 x 1.5	
1LG6186	669		262	180	339	2 x M40 x 1.5		
1LP4/1PP4	2, 4	720	262	180	339	2 x M40 x 1.5		
1PP4188		562	262	180	339	2 x M40 x 1.5		
1LP5/1PP5		613	262	180	339	2 x M40 x 1.5		
200 L	1LA5		769.5	305	200	388	2 x M50 x 1.5	
1LA9	768.5		305	200	388	2 x M50 x 1.5		
1LG4	2, 6	720	300	200	378	2 x M50 x 1.5		
1LG4208		777	300	200	378	2 x M50 x 1.5		
1LG6206	2, 6	720	300	200	378	2 x M50 x 1.5		
1LG6207		777	300	200	378	2 x M50 x 1.5		
1LG6208	4, 8	720	300	200	378	2 x M50 x 1.5		
1LP4/1PP4		837	300	200	378	2 x M50 x 1.5		
1PP4208	2	617	300	200	378	2 x M50 x 1.5		
1LP5/1PP5		674	300	200	378	2 x M50 x 1.5		
225 S/ 225 M	1LA5		806	305	225	426	2 x M50 x 1.5	
1LA5	776		305	225	426	2 x M50 x 1.5		
1LG4	2	789	325	225	436	2 x M50 x 1.5		
1LG4223		759	325	225	436	2 x M50 x 1.5		
1LG4228	4, 6, 8	819	325	225	436	2 x M50 x 1.5		
1LG6220		849	325	225	436	2 x M50 x 1.5		
1LG6223	4, 8	789	325	225	436	2 x M50 x 1.5		
1LG6223		819	325	225	436	2 x M50 x 1.5		
1LG6228	2	849	325	225	436	2 x M50 x 1.5		
1LP4/1PP4		869	325	225	436	2 x M50 x 1.5		
1LP4/1PP4	4, 6	899	325	225	436	2 x M50 x 1.5		
1LP4/1PP4223		670	325	225	436	2 x M50 x 1.5		
1LP4223	2	640	325	225	436	2 x M50 x 1.5		
1LP4223		670	325	225	436	2 x M50 x 1.5		
250 M	1LG4		887	392	250	490	2 x M63 x 1.5	
	1LG4258		957	392	250	490	2 x M63 x 1.5	
	1LG6253	4	887	392	250	490	2 x M63 x 1.5	
	1LG6258		957	392	250	490	2 x M63 x 1.5	
	1LP4/1PP4	2, 4, 6	957	392	250	490	2 x M63 x 1.5	
	1PP4258		764	392	250	490	2 x M63 x 1.5	
1PP4258	4	834	392	250	490	2 x M63 x 1.5		

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Dimensions

Overall dimensions

Overview (continued)

Frame size	Type	Number of poles	Dimension				
			L	AD	H	AB	O
280 S/	1LG4		960	432	280	540	2 x M63 x 1.5
280 M	1LG4288	2, 4	1070	432	280	540	2 x M63 x 1.5
	1LG6280	2, 4, 6, 8	960	432	280	540	2 x M63 x 1.5
	1LG6283	2, 4	1070	432	280	540	2 x M63 x 1.5
		6, 8	960	432	280	540	2 x M63 x 1.5
	1LG6288	2, 4, 6	1070	432	280	540	2 x M63 x 1.5
	1LP4/1PP4		830	432	280	540	2 x M63 x 1.5
	1PP4288	2, 4	940	432	280	540	2 x M63 x 1.5
315 S/	1LG4		1072	500	315	610	2 x M63 x 1.5
315 M/	1LG4310	4, 6,	1102	500	315	610	2 x M63 x 1.5
315 L		4/2, 6/4, 8/4					
	1LG4313	4, 6,	1102	500	315	610	2 x M63 x 1.5
		4/2, 6/4, 8/4					
	1LG4316	2	1232	500	315	610	2 x M63 x 1.5
		4, 6,	1262	500	315	610	2 x M63 x 1.5
		4/2, 6/4, 8/4					
	1LG4317	2	1232	500	315	610	2 x M63 x 1.5
		4, 6,	1262	500	315	610	2 x M63 x 1.5
		4/2, 6/4, 8/4					
	1LG4318	8	1262	500	315	610	2 x M63 x 1.5
		6	1402	500	315	610	2 x M63 x 1.5
315 S/	1LG6310	2	1072	500	315	610	2 x M63 x 1.5
315 M/		4, 6, 8	1102	500	315	610	2 x M63 x 1.5
315 L	1LG6313	2	1232	500	315	610	2 x M63 x 1.5
		4, 6	1262	500	315	610	2 x M63 x 1.5
		8	1102	500	315	610	2 x M63 x 1.5
	1LG6316	2	1232	500	315	610	2 x M63 x 1.5
		4, 6, 8	1262	500	315	610	2 x M63 x 1.5
	1LG6317	8	1262	500	315	610	2 x M63 x 1.5
		2	1372	500	315	610	2 x M63 x 1.5
		4, 6	1402	500	315	610	2 x M63 x 1.5
	1LG6318	2	1372	500	315	610	2 x M63 x 1.5
		4, 6, 8	1402	500	315	610	2 x M63 x 1.5
	IM B35/V1 only	4	1462	500	315	610	2 x M63 x 1.5
	1LG6312	2	1372	500	315	610	2 x M63 x 1.5
		4, 6	1546	500	315	610	2 x M63 x 1.5
		8	1426	500	315	610	2 x M63 x 1.5
	IM B35/V1 only	8	1486	500	315	610	2 x M63 x 1.5
	1LP4/1PP4310	2	925	500	315	610	2 x M63 x 1.5
		4, 6, 8	955	500	315	610	2 x M63 x 1.5
	1LP4/1PP4313	2	925	500	315	610	2 x M63 x 1.5
		4, 6, 8	955	500	315	610	2 x M63 x 1.5
	1LP4/1PP4316	2	1085	500	315	610	2 x M63 x 1.5
		4, 6, 8	1115	500	315	610	2 x M63 x 1.5
	1LP4/1PP4317	2	1085	500	315	610	2 x M63 x 1.5
		4, 6, 8	1115	500	315	610	2 x M63 x 1.5

Overview**Notes on the dimensions**

- Dimension designations according to DIN EN 50347 and IEC 60072.
- Fits
The shaft extensions specified in the dimension tables (DIN 748) and centering spigot diameters (DIN EN 50347) are machined with the following fits:

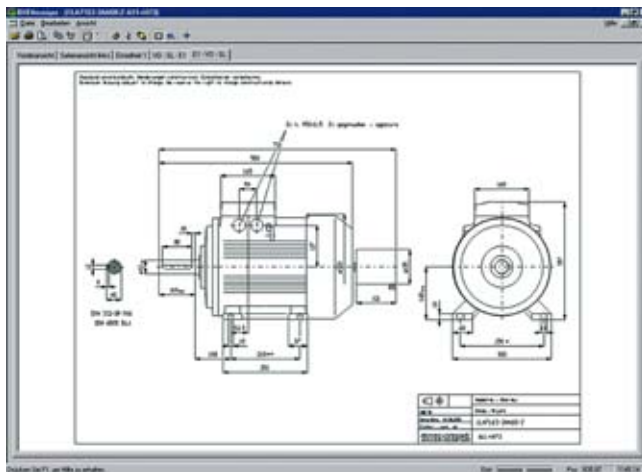
Dimension designation	ISO fit DIN ISO 286-2	
D, DA	to 30 over 30 to 50 over 50	j6 k6 m6
N	to 250 over 250	j6 h6
F, FA		h9
K		H17
S	flange (FF)	H17

The drilled holes of couplings and belt pulleys should have an ISO fit of at least H7.

Dimension sheet generator

(part of the DT Configurator)

A dimension drawing can be created in the DT Configurator for every configurable motor. A dimension drawing can be requested for every other motor.



- Dimension tolerances
For the following dimension designations, the admissible deviations are given below:

Dimension designation	Dimension	Admissible deviation
H	to 250 over 250	- 0.5 - 1.0
E, EA		- 0.5

Keyways and feather keyways (dimensions GA, GC, F and FA) are made in compliance with DIN 6885 Part 1.

- All dimensions are specified in mm.

When a complete Order No. is entered with or without order codes, a dimension drawing can be called up under the "Documentation" tab.

These dimension drawings can be presented in different views and sections and printed.

The corresponding dimension sheets can be exported, saved and processed further in DXF format (interchange/import format for CAD systems) or as bitmap graphics.

Online access in the Siemens Industry Mall

The DT Configurator is integrated into the Siemens Industry Mall and can be used on the Internet without installation.

German: www.siemens.de/dt-konfigurator
English: www.siemens.com/dt-configurator

Offline access in the Interactive Catalog CA 01

The DT Configurator is also integrated on the DVD of the Interactive Catalog CA 01, the offline version of the Siemens Industry Mall. You can order the CA 01 with your respective Siemens sales person or in the Internet:

www.siemens.com/automation/CA01

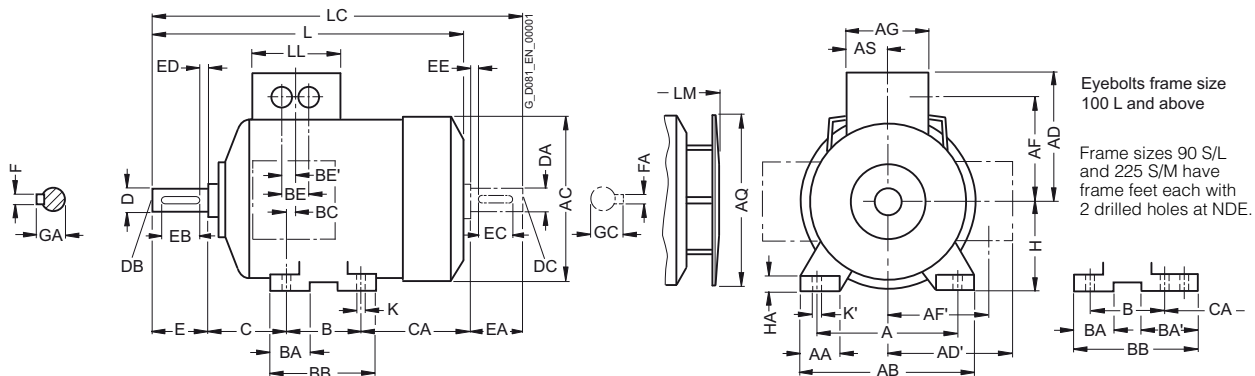
SIMOTICS GP 1LA Standard Motors

Dimensions

Aluminum series 1LA7 and 1LA5
Frame sizes 63 M to 225 M

Dimensional drawings

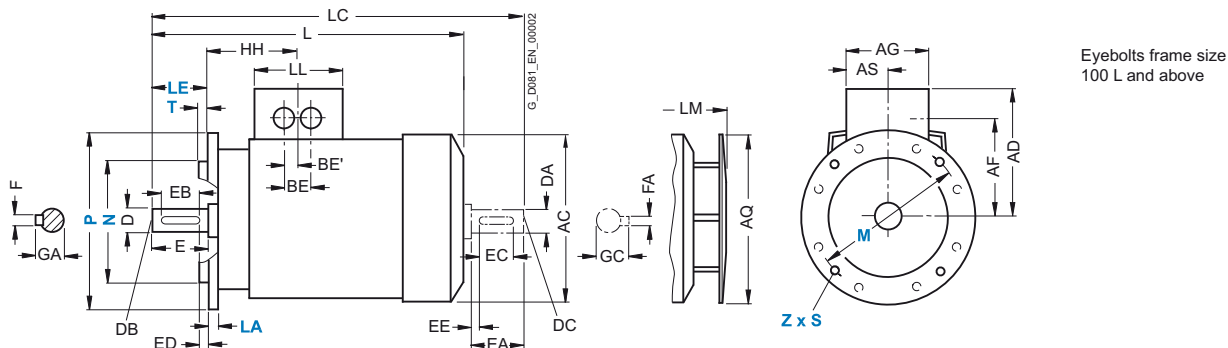
Type of construction IM B3



Eyebolts frame size 100 L and above
Frame sizes 90 S/L and 225 S/M have frame feet each with 2 drilled holes at NDE.

Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



Eyebolts frame size 100 L and above

For motor		Dimension designation acc. to IEC																						
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD ²⁾	AD'	AF ²⁾	AF'	AG ²⁾	AQ	AS	B*	BA	BA'	BB	BC	BE ²⁾	BE' ²⁾	C	CA*	H	HA
63 M	1LA7060 1LA7063	2, 4, 6	100	27	120	124	101	101	78	78	75	124	37.5	80	28	-	96	30	32	18	40	66	63	7
71 M	1LA7070 1LA7073	2, 4, 6, 8	112	27	132	145	111	111	88	88	75	124	37.5	90	27	-	106	18	32	18	45	83	71	7
80 M	1LA7080 1LA7083	2, 4, 6, 8, ●	125	30.5	150	163	120	120	97	97	75	124	37.5	100	32	-	118	14	32	18	50	94	80	8
90 S	1LA7090	2, 4, 6, 8, ●	140	30.5	165	180	128	128	105	105	75	170	37.5	100	33	54	143	23	32	18	56	143	90	10
90 L	1LA7096	2, 4, 6, 8, ●	140	30.5	165	180	128	128	105	105	75	170	37.5	125	33	54	143	23	32	18	118	143	90	10
100 L	1LA7106 1LA7107	2, 4, 6, 8, ●	160	42	196	203	135	163	78	123	120	170	60	140	47	-	176	39	42	21	63	125 195 ³⁾	100	12
112 M	1LA7113	2, 4, 6, 8, ●	190	46	226	227	148	176	91	136	120	170	60	140	47	-	176	32	42	21	70	141	112	12
132 S	1LA7130 1LA7131 2	2, 4, 6, 8, ●	216	53	256	267	167	194	107	154	140	250	70	140	49	-	180	39	42	21	89	162.5	132	15
132 M	1LA7133 1LA7134	4, 6, 8, ●	216	53	256	267	167	194	107	154	140	250	70	178	49	-	218	39	42	21	89	124.5 162.5 ⁴⁾	132	15
160 M	1LA7163 1LA7164	2, 4, 6, 8, ●	254	60	300	320	197	226	127	183	165	250	82.5	210	57	-	256	52.5	54	27	108	183	160	18
160 L	1LA7166	2, 4, 6, 8, ●	254	60	300	320	197	226	127	183	165	250	82.5	254	57	-	300	52.5	54	27	108	139 176 ⁵⁾	160	18
180 M	1LA5183	2, 4, ●	279	69.5	339	363	258	258	216	216	152	340	71	241	50	-	287	38	54	27	121	259	180	18
180 L	1LA5186	4, 6, 8, ●	279	69.5	339	363	258	258	216	216	152	340	71	279	50	-	325	38	54	27	121	221	180	18
200 L	1LA5206 1LA5207	2, 6 2, 4, 6, 8, ●	318	83	388	402	305	305	252	252	260	340	96	305	58.5	-	355	45	85	42.5	133	239	200	24
225 S	1LA5220	4, 8	356	103	426	402	305	305	252	252	260	340	96	286	58	83	361	36	85	42.5	149	248.5	225	24
225 M	1LA5223	2 4, 6, 8	356	103	426	402	305	305	252	252	260	340	96	311	58	83	361	36	85	42.5	149	223.5	225	24

● Pole-changing motors

For SIMOTICS GP 1LA7 and 1LA5 Standard Motors in pole-changing version (6 or 9 terminals), the dimensions of the basic version apply.

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Measured across the bolt heads.

2) The values increase if the connection box is rotated or if a brake is mounted. Further information is provided by the dimension sheet generator in the DT Configurator.

3) Only for 1LA7107-4PM.

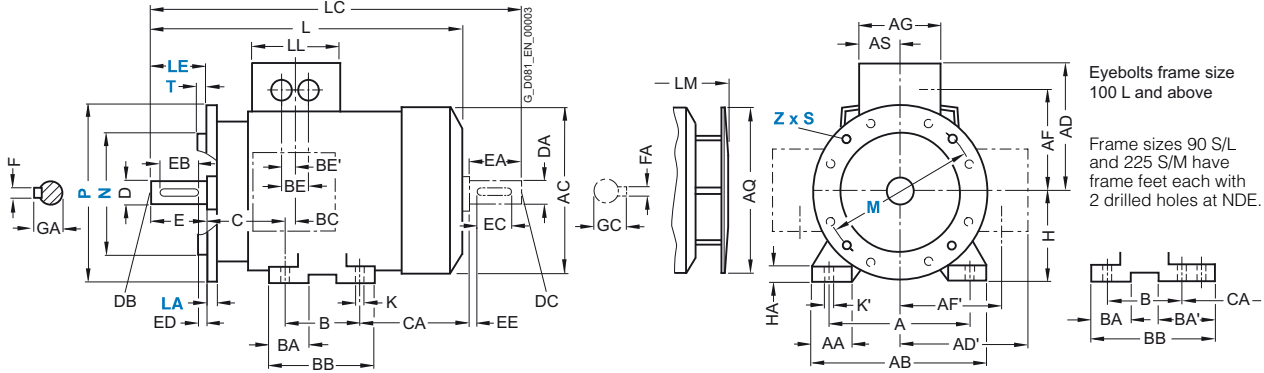
4) Only for 1LA7134-6PM.

5) Only for 1LA7166-6PM.

Dimensional drawings (continued)

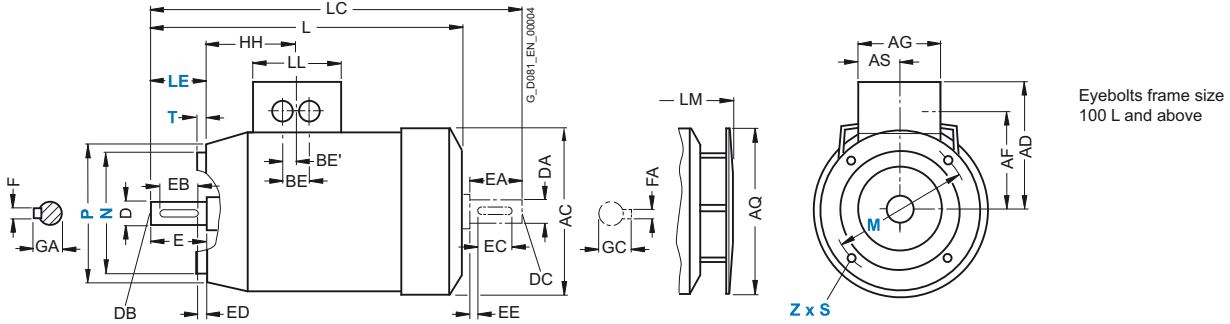
Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



Type of construction IM B14

Type of construction IM B14 not possible for 1LA5 motors, frame sizes 180 M to 225 M
For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension									
Frame size	Type	Number of poles	HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
63 M	1LA7060 1LA7063	2, 4, 6	69.5	7	10	202.5 ¹⁾	232 ¹⁾	75	231.5 ¹⁾	11	M4	23	16	3.5	4	12.5	11	M4	23	16	3.5	4	12.5
71 M	1LA7070 1LA7073	2, 4, 6, 8	63.5	7	10	240	278	75	268	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 M	1LA7080 1LA7083	2, 4, 6, 8, ● 2, 4, 6, 8, ●	63.5	9.5	13.5	273.5	324 364	75	299.5	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S	1LA7090	2, 4, 6, 8, ●	79	10	14	331	389	75	382.5	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
90 L	1LA7096	2, 4, 6, 8, ●																					
100 L	1LA7106 1LA7107	2, 4, 6, 8, ● 4, 8, ●	102	12	16	372 442 ³⁾	438 508 ³⁾	120	423.5 493 ³⁾	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1LA7113	2, 4, 6, 8, ●	102	12	16	393	461	120	444.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1LA7130 1LA7131 2	2, 4, 6, 8, ●	128	12	16	452.5 ²⁾	551.5	140	505 ²⁾	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1LA7133 1LA7134	4, 6, 8, ● 6	128	12	16	452.5 ²⁾ 490.5 ⁴⁾	551.5 589.5 ⁴⁾	140	505 ²⁾ 543 ⁴⁾	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1LA7163 1LA7164 2, 8	2, 4, 6, 8, ●	160.5	15	19	588	721	165	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1LA7166	2, 4, 6, 8, ● 6	160.5	15	19	588 628 ⁵⁾	721 761 ⁵⁾	165	640.5 680.5 ⁵⁾	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
180 M	1LA5183	2, 4, ●	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LA5186	4, 6, 8, ●	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LA5206 1LA5207	2, 6 2, 4, 6, 8, ●	178	19	25	769.5	897	192	850	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S	1LA5220	4, 8	184.5	19	25	806	933.5	192	887.5	60	M20	140	125	7.5	18	64	55	M20	110	100	5	16	59
225 M	1LA5223	2 4, 6, 8	184.5	19	25	776 806	903.5 933.5	192	857.5 887.5	55 60	M20	110 140	100 125	5 7.5	16 18	59 64	55	M20	110	100	5	16	59

● Pole-changing motors

¹⁾ For 1LA7063 in the case of type of construction code 1 (IM B5, IM V1 without protective cover, IM V3), dimensions L, LC and LM are 26 mm longer.
²⁾ In a low-noise version, the dimension L is 8 mm greater and the dimension LM is 11.5 mm greater.

³⁾ Only for 1LA7107-4PM.
⁴⁾ Only for 1LA7134-6PM.
⁵⁾ Only for 1LA7166-6PM.

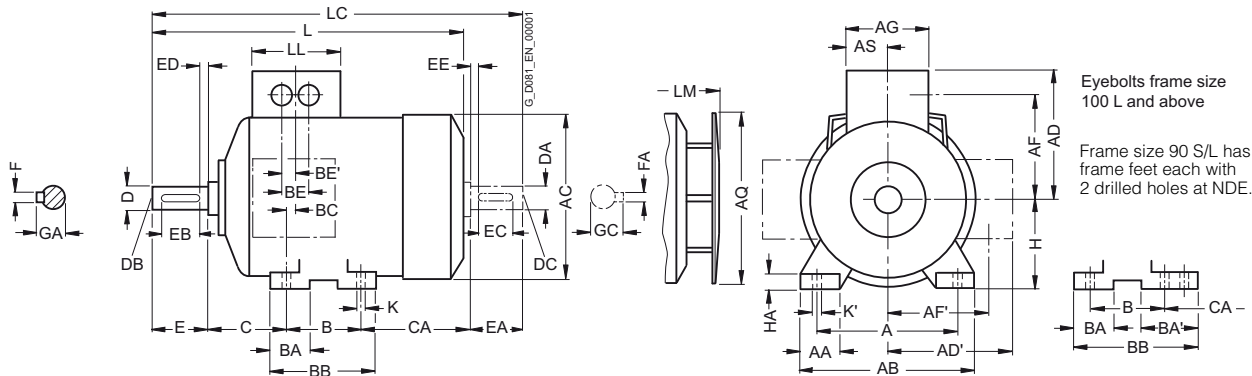
SIMOTICS GP 1LA Standard Motors

Dimensions

Aluminum series 1LA9
Frame sizes 63 M to 200 L

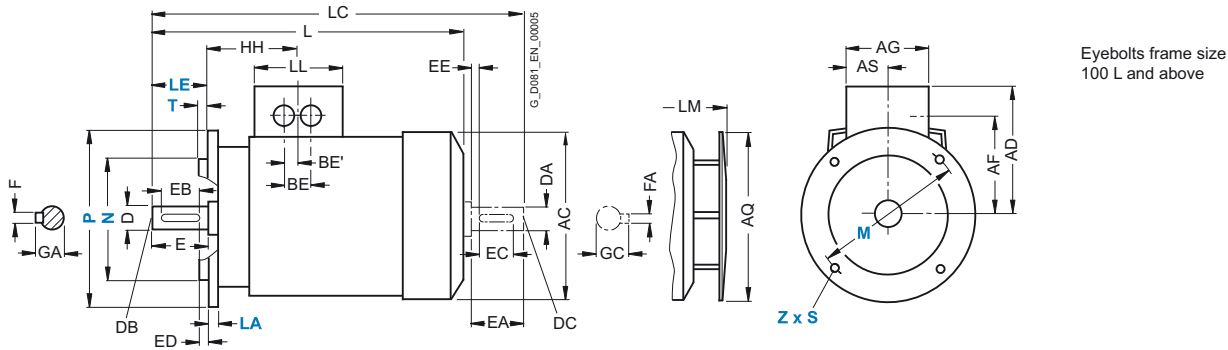
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																						
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C	CA*	H	HA
63 M	1LA9060	2, 4	100	27	120	124	101	101	78	78	75	124	37.5	80	28	-	96	30	32	18	40	66	63	7
	1LA9063																							
71 M	1LA9070	2, 4	112	30.5	132	145	111	111	88	88	75	124	37.5	90	27	-	106	18	32	18	45	83	71	7
	1LA9073																							
80 M	1LA9080	2, 4	125	30.5	150	163	120	120	97	97	75	124	37.5	100	32	-	118	14	32	18	50	94	80	8
	1LA9083																							
90 S 90 L	1LA9090	2, 4, 6	140	30.5	165	180	128	128	105	105	75	170	37.5	100	33	54	143	23	32	18	56	143	90	10
	1LA9096																							
100 L	1LA9106	2, 4, 6	160	42	196	203	135	163	78	123	120	170	60	140	47	-	176	39	42	21	63	160	100	12
	1LA9107																							
112 M	1LA9113	2, 4, 6	190	46	226	227	148	176	91	136	120	170	60	140	47	-	176	32	42	21	70	179	112	12
132 S	1LA9130	2, 4	216	53	256	267	167	194	107	154	140	250	70	140	49	-	180	39	42	21	89	162.5	132	15
	1LA9131																							
132 M	1LA9133	6	216	53	256	267	167	194	107	154	140	250	70	178	49	-	218	39	42	21	89	124.5	132	15
	1LA9134																							
160 M	1LA9163	2, 4, 6	254	60	300	320	197	226	127	183	165	250	82.5	210	57	-	256	52.5	54	27	108	183	160	18
	1LA9164																							
160 L	1LA9166	2, 4, 6	254	60	300	320	197	226	127	183	165	250	82.5	254	57	-	300	52.5	54	27	108	179	160	18
180 M	1LA9183	2, 4	279	69.5	339	363	258	258	216	216	152	340	71	241	50	-	287	38	54	27	121	259	180	18
	1LA9186																							
200 L	1LA9206	2, 6	318	83	388	402	305	305	252	252	260	340	96	305	58.5	-	355	45	85	42.5	133	239	200	24
	1LA9207																							

* This dimension is assigned in DIN EN 50347 to the frame size listed.

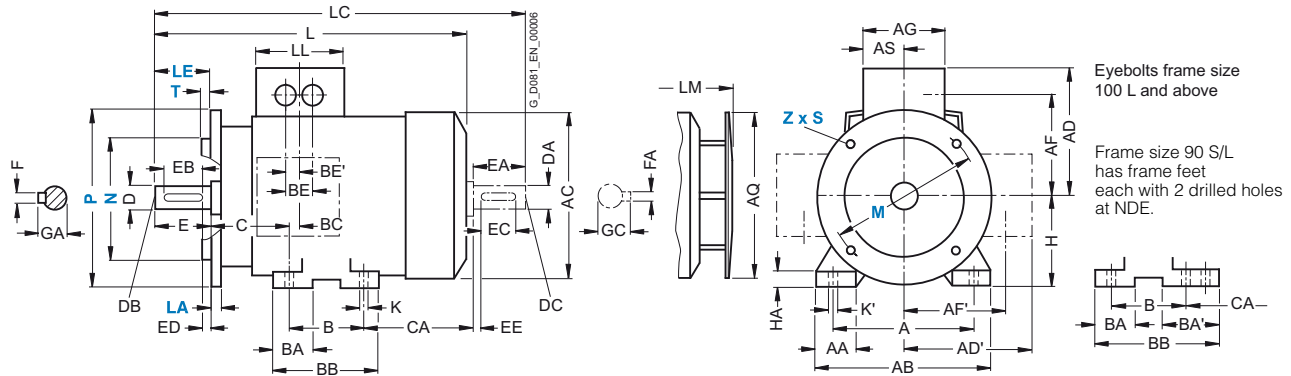
¹⁾ Measured across the bolt heads.

²⁾ Only for 1LA9107-4KA.

Dimensional drawings (continued)

Type of construction IM B35

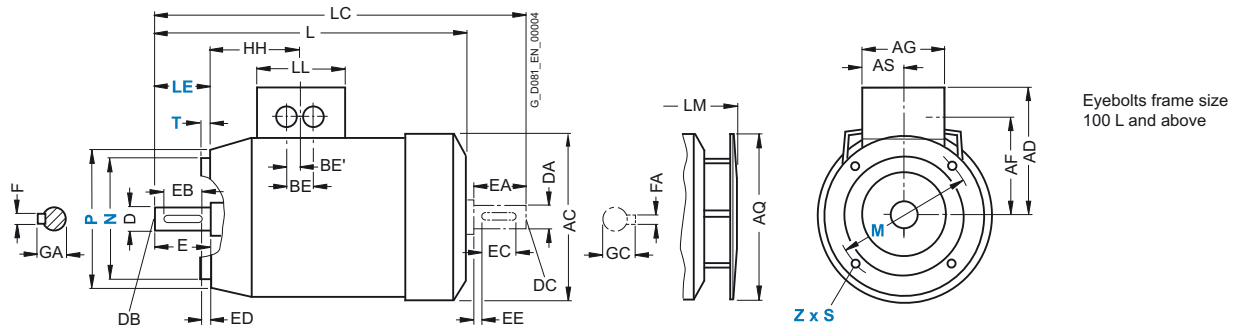
For flange dimensions, see Page 2/130 (Z = the number of retaining holes)

Eyebolts frame size
100 L and aboveFrame size 90 S/L
has frame feet
each with 2 drilled holes
at NDE.

Type of construction IM B14

Type of construction IM B14 not possible for 1LA9 motors, frame sizes 180 M to 200 L

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)

Eyebolts frame size
100 L and above

For motor		Dimension designation acc. to IEC										DE shaft extension					NDE shaft extension						
Frame size	Type	Number of poles	HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
63 M	1LA9060	2, 4	69.5	7	10	202.5 ¹⁾	232 ¹⁾	75	231.5	11	M4	23	16	3.5	4	12.5	11	M4	23	16	3.5	4	12.5
	228.5					258	257.5																
71 M	1LA9070	2, 4	63.5	7	10	240	278	75	268	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
	1LA9073																						
80 M	1LA9080	2, 4	63.5	9.5	13.5	273.5	324	75	299.5	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
	1LA9083					308.5	364																
90 S	1LA9090	2, 4, 6	79	10	14	331	389	75	382.5	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
	90 L					1LA9096	376 ²⁾																
100 L	1LA9106	2, 4, 6	102	12	16	407	473	120	458.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
	1LA9107					442 ⁴⁾	508 ⁴⁾																
112 M	1LA9113	2, 4, 6	102	12	16	431	499	120	482.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1LA9130	2, 4	128	12	16	452.5	551.5	140	505	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
	1LA9131					490.5	589.5																
132 M	1LA9133	6 4 6	128	12	16	452.5	551.5	140	505	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
	1LA9134					490.5	589.5																
160 M	1LA9163	2, 4, 6	160.5	15	19	588	721	165	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
	1LA9164																						
160 L	1LA9166	2, 4, 6	160.5	15	19	628	761	165	680.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
180 M	1LA9183	2, 4	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LA9186	4, 6	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LA9206	2, 6 2, 4, 6	178	19	25	768.5	897	192	850	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LA9207																						

¹⁾ For 1LA9060 in the case of type of construction code 1 (IM B5, IM V1 without protective cover, IM V3), dimensions L, LC and LM are 26 mm longer.

²⁾ Only for 1LA9096-6KA.

³⁾ Only for 1LA9096-2 and 1LA9096-4.

⁴⁾ Only for 1LA9107-4KA

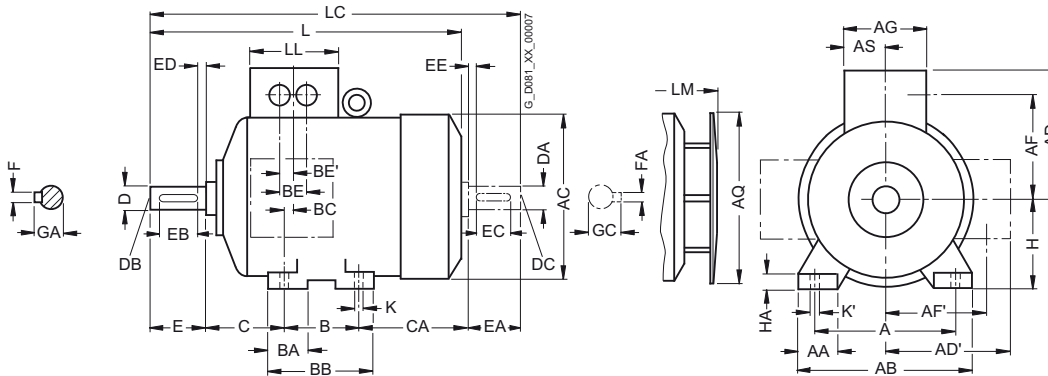
SIMOTICS SD 1LA Standard Motors

Dimensions

Cast-iron series 1LA6
Frame sizes 100 L to 160 L

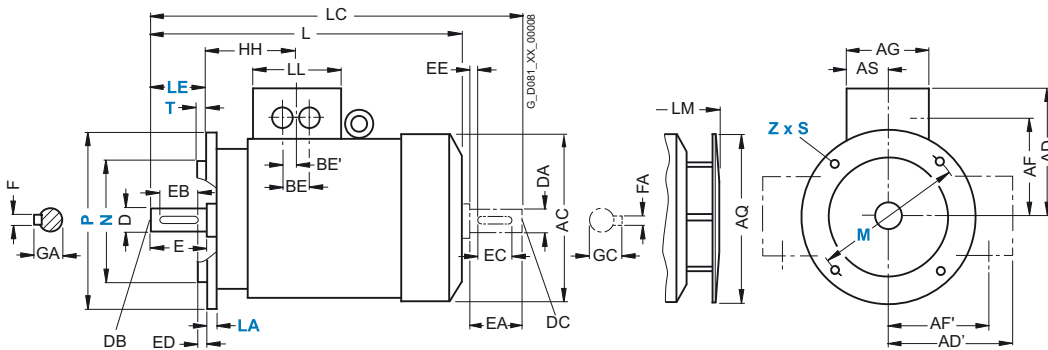
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



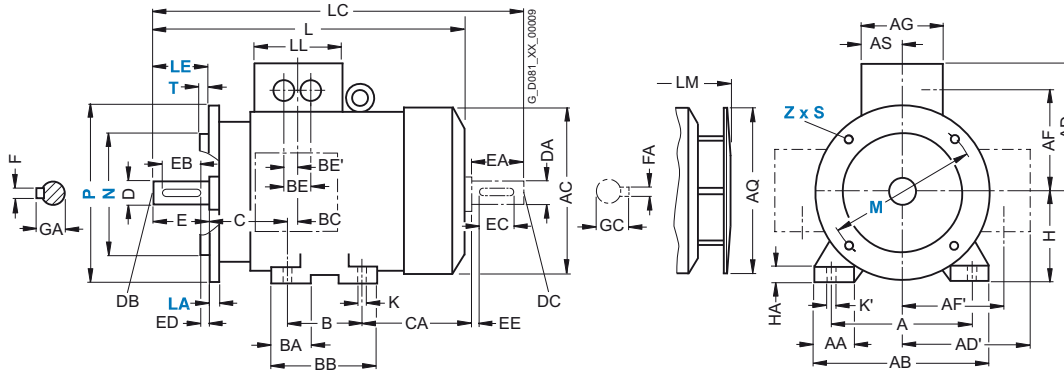
For motor		Dimension designation acc. to IEC																					
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AQ	AS	B	BA	BB	BC	BE	BE'	C	CA	H	HA
100 L	1LA6106	2, 4, 6, 8	160	40	196	201	164	164	124	124	121	170	60.5	140	46	180	42	44	22	63	125	100	12
	1LA6107	4, 8																					
112 M	1LA6113	2, 4, 6, 8	190	42.5	226	225.5	178	178	138	138	121	170	60.5	140	46	180	34	44	22	70	141	112	15
132 S	1LA6130	2, 4, 6, 8	216	50	256	265	194	194	154	154	141	250	70.5	140	47	180	42	44	22	89	162.5	132	17
	1LA6131	2																					
132 M	1LA6133	4, 6, 8	216	50	256	265	194	194	154	154	141	250	70.5	178	49	218	42	44	22	89	124.5	132	17
	1LA6134	6																					
160 M	1LA6163	2, 4, 6, 8	254	60	300	320	226	226	183	183	166	250	83	210	63	256	52	54	27	108	183	160	18
	1LA6164	2, 8																					
160 L	1LA6166	2, 4, 6, 8	254	60	300	320	226	226	183	183	166	250	83	254	63	300	52	54	27	108	139	160	18

¹⁾ Measured across the bolt heads.

Dimensional drawings (continued)

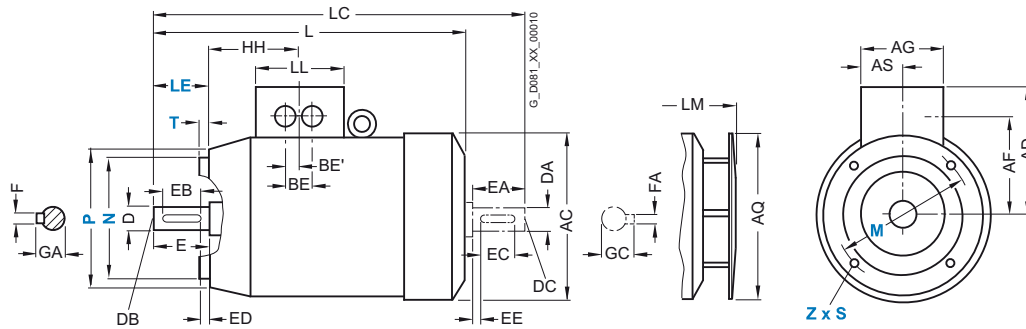
Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC								DE shaft extension					NDE shaft extension								
Frame size	Type	Number of poles	HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	1LA6106 1LA6107	2, 4, 6, 8 4, 8	104.5	12	16	372	438	121	423.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1LA6113	2, 4, 6, 8	104.5	12	16	393	461	121	444.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1LA6130 1LA6131	2, 4, 6, 8 2	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1LA6133 1LA6134	4, 6, 8 6	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1LA6163 1LA6164	2, 4, 6, 8 2, 8	160	14.5	18	588	721	166	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1LA6166	2, 4, 6, 8	160	14.5	18	588	721	166	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

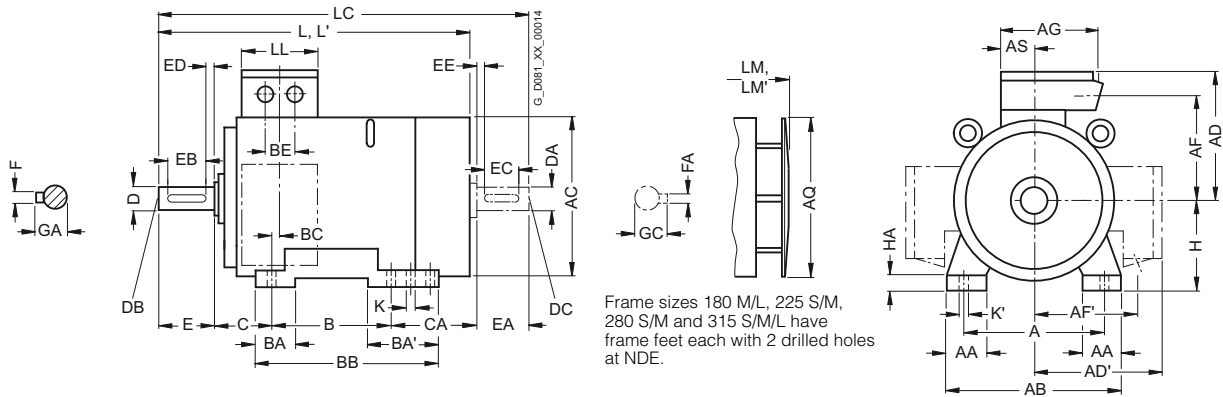
SIMOTICS SD 1LG Standard Motors

Dimensions

Cast-iron series 1LG4
Frame sizes 180 M to 315 L

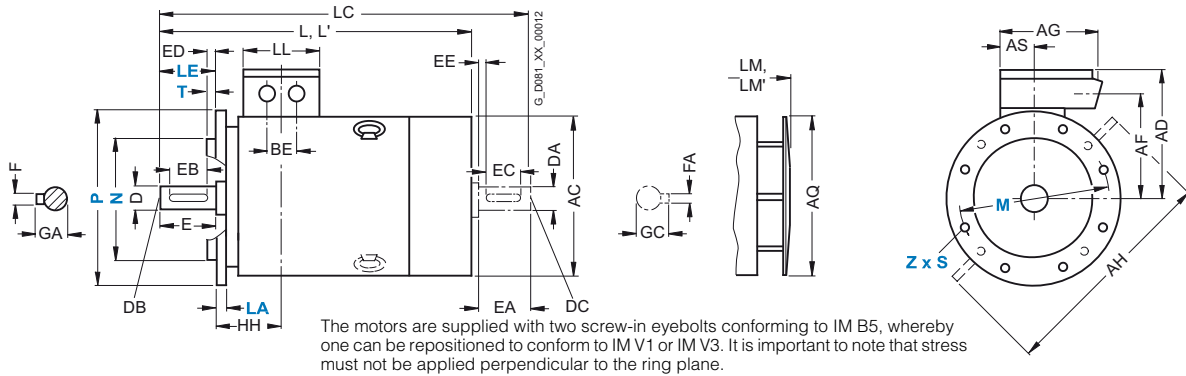
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																							
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA	
180 M	1LG4183	2, 4, ●	279	65	339	363	262	262	220	220	152	452	340	71	241	70	111	328	36	54	121	202	180	20	
	180 L	1LG4186	4, 6, 8, ●	279	65	339	363	262	262	220	220	152	452	340	71	279	70	111	328	36	54	121	164	180	20
	1LG4188	2, 4, 6, 8	279	65	339	363	262	262	220	220	152	452	340	71	279	70	111	328	36	54	121	215	180	20	
200 L	1LG4206	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25	
	1LG4207	2, 4, 6, 8, ●	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25	
	1LG4208	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	234	200	25	
		4, 8																				177			
225 S	1LG4220	4, 8, ●	356	80	436	442	325	325	272	272	260	556	425	96	286	85	110	361	47	85	149	218	225	34	
225 M	1LG4223	2	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	193	225	34	
	1LG4228	4, 6, 8, ●	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	253	225	34	
		2																							
		4, 6, 8																							
250 M	1LG4253	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	235	250	40	
	1LG4258	4, 6, 8, ●	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	235	250	40	
		2																				305			
		4																				235			
		6, 8																							
280 S	1LG4280	2	457	100	540	555	432	432	348	348	300	672	525	118	368	100	151	479	62	110	190	267	280	40	
280 M	1LG4283	2, 4, 6, 8, ●	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	216	280	40	
	1LG4288	4, 6, 8, ●	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40	
		2																							
		4																							
		6, 8																				216			
315 S	1LG4310	2	508	120	610	610	500	500	400	400	380	780	590	154	406	125	176	527	69	110	216	315	315	50	
315 M ²⁾	1LG4313	2	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	527	69	110	216	264	315	50	
		4, 6, 8, ●	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	527	69	110	216	264	315	50	
315 L ²⁾	1LG4316/317	2	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50	
	1LG4318	4, 6, 8, ●	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50	
		8																							
		6																							

● Pole-changing motors

* This dimension is assigned in DIN EN 50347 to the frame size listed.

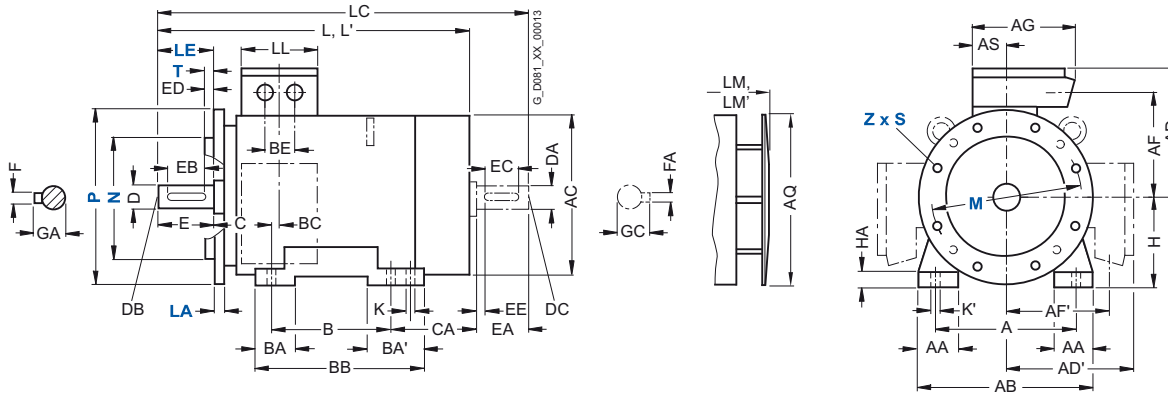
1) Measured across the bolt heads.

2) With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 508 mm). BB will then be 666 mm.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC										DE shaft extension					NDE shaft extension								
Frame size	Type	Number of poles	HH	K	K'	L	L ⁽¹⁾	LC ⁽²⁾	LL	LM	LM ⁽¹⁾	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1LG4183	2, 4, ●	157	15	19	669	669	784	132	759	759	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LG4186	4, 6, 8, ●	157	15	19	669	—	784	132	759	—	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
	1LG4188	2, 4, 6, 8	157	15	19	720	720	835	132	810	810	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LG4206	2, 6	196	19	25	720	754	835	192	810	844	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LG4207	2, 4, 6, 8, ●	196	19	25	720	754	835	192	810	844	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LG4208	2, 6	196	19	25	777	811	892	192	867	901	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
		4, 8	—	—	—	720	—	835	—	810	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
225 S	1LG4220	4, 8, ●	196	19	25	789	—	903	192	889	—	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1LG4223	2	196	19	25	759	793	873	192	859	893	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
	1LG4228	4, 6, 8, ●	—	—	—	789	—	903	—	889	—	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		2	196	19	25	819	853	933	192	919	953	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6, 8	—	—	—	849	—	963	—	949	—	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
250 M	1LG4253	2	237	24	30	887	924	1002	236	987	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4, 6, 8, ●	—	—	—	—	—	1032	—	—	—	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG4258	2	237	24	30	887	924	1002	236	987	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4	—	—	—	957	—	1102	—	1057	—	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		6, 8	—	—	—	887	—	1032	—	987	—	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
280 S	1LG4280	2	252	24	30	960	998	1105	236	1070	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8, ●	—	—	—	—	—	—	—	—	—	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
280 M	1LG4283	2	252	24	30	960	998	1105	236	1070	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8, ●	—	—	—	—	—	—	—	—	—	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
	1LG4288	2	252	24	30	1070	1108	1215	236	1180	1218	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4	—	—	—	—	—	—	—	—	—	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
		6, 8	—	—	—	960	—	1105	—	1070	—	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
315 S	1LG4310	2	285	28	35	1072	1142	1217	307	1182	1252	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8, ●	—	—	—	—	—	1247	—	1212	—	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 M ³⁾	1LG4313	2	285	28	35	1072	1142	1217	307	1182	1252	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8, ●	—	—	—	—	—	1247	—	1212	—	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 L ³⁾	1LG4316/317	2	285	28	35	1232	1302	1377	307	1342	1412	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8, ●	—	—	—	1262	—	1407	—	1372	—	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG4318	8	—	—	—	—	—	—	—	—	—	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
		6	285	28	35	1402	—	1547	307	1512	—	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5

● Pole-changing motors

¹⁾ For version with low-noise fan for 2-pole motors.

²⁾ In the low-noise version, a second shaft extension and/or mounted encoder is not possible.

³⁾ With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 508 mm). BB will then be 666 mm.

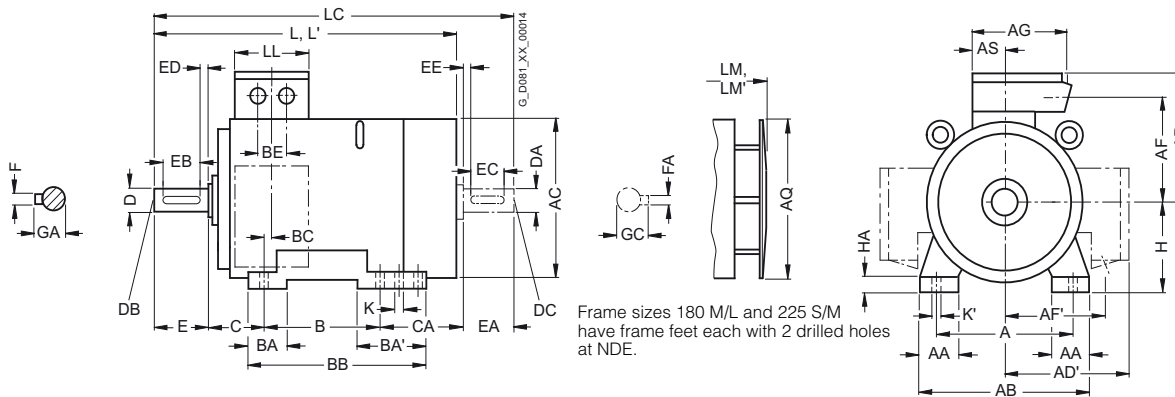
SIMOTICS SD 1LG Standard Motors

Dimensions

Cast-iron series 1LG6
Frame sizes 180 M to 250 M

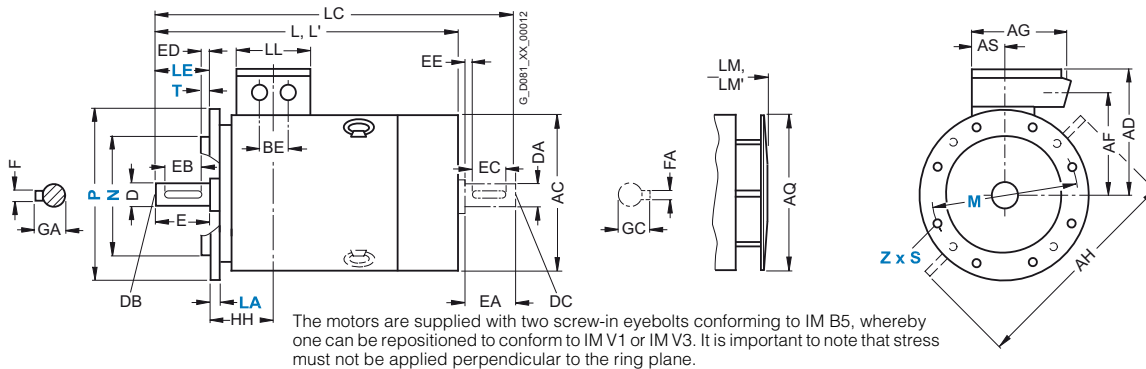
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



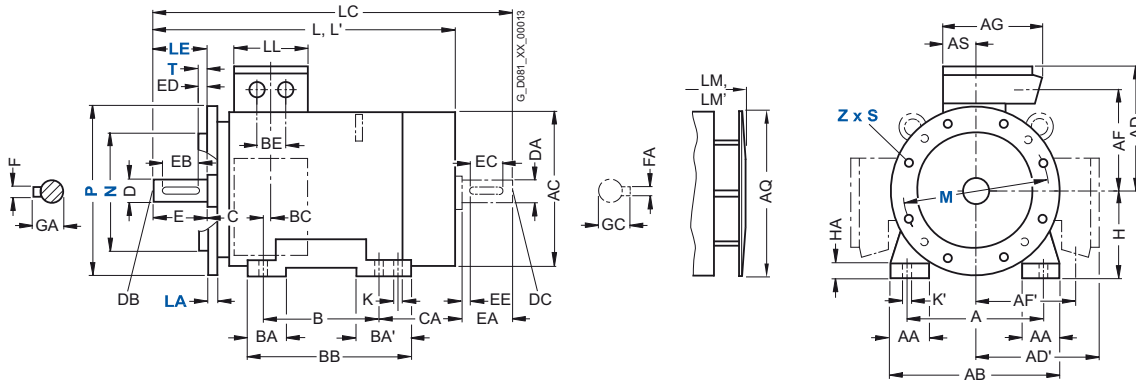
For motor			Dimension designation acc. to IEC																					
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
180 M	1LG6183	2	279	65	339	363	262	262	220	220	152	452	340	71	241	70	111	328	36	54	121	253	180	20
		4																				202	215	180
180 L	1LG6186	4, 6, 8	279	65	339	363	262	262	220	220	152	452	340	71	279	70	111	328	36	54	121	215	180	20
		2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25
		4, 8	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	234	200	25
200 L	1LG6206	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25
		4, 8	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	234	200	25
		2	318	70	378	402	300	300	247	247	164	486	340	96	305	80	80	355	63	85	133	294	200	25
225 S	1LG6220	4, 8	356	80	436	442	325	325	272	272	260	556	425	96	286	85	110	361	47	85	149	218	225	34
		2	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	253	225	34
		4, 6, 8	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	303	225	34
250 M	1LG6253	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	235	250	40
		4																				305	250	40
		6, 8																				235	250	40
250 M	1LG6258	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	305	250	40
		4																				305	250	40
		6																				305	250	40

* This dimension is assigned in DIN EN 50347 to the frame size listed.
 1) Measured across the bolt heads.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Number of poles	Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension								
Frame size	Type		HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1LG6183	2	157	15	19	720	835	132	810	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
		4					669	784															
180 L	1LG6186	4, 6, 8	157	15	19	720	835	132	810	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LG6206	2, 6	196	19	25	754	835	192	844	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
		2, 6	196	19	25	811	892	192	901	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LG6207	4, 8				720	835		810														
	1LG6208	2	196	19	25	871	952	192	961	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S	1LG6220	4, 8	196	19	25	789	903	192	889	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1LG6223	2	196	19	25	853	933	192	953	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6, 8				849	963		949	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
	1LG6228	2	196	19	25	903	983	192	1003	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6				899	1013		999	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
250 M	1LG6253	2	237	24	30	924	1002	236	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4				957	1102		1057	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		6, 8				887	1032		987	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6258	2	237	24	30	994	1102	236	1094	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4, 6				957			1057	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64

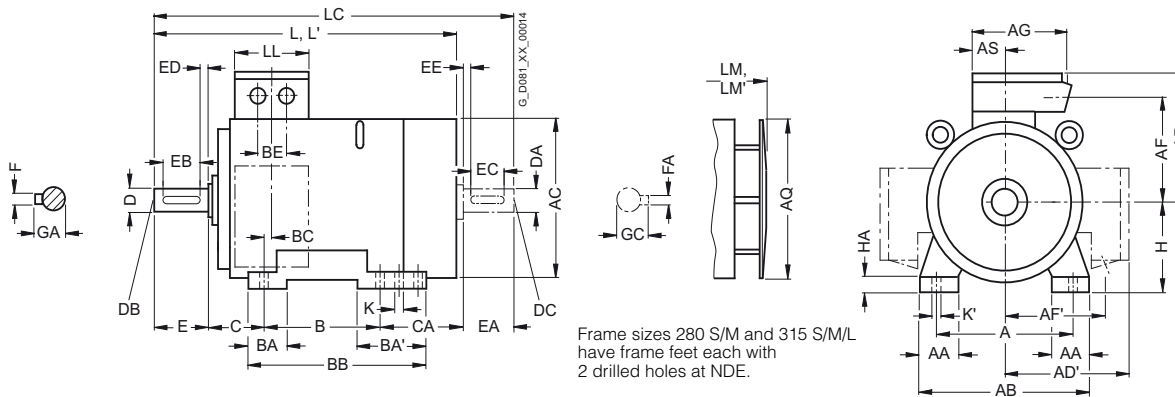
SIMOTICS SD 1LG Standard Motors

Dimensions

Cast-iron series 1LG6
Frame sizes 280 S to 315 L

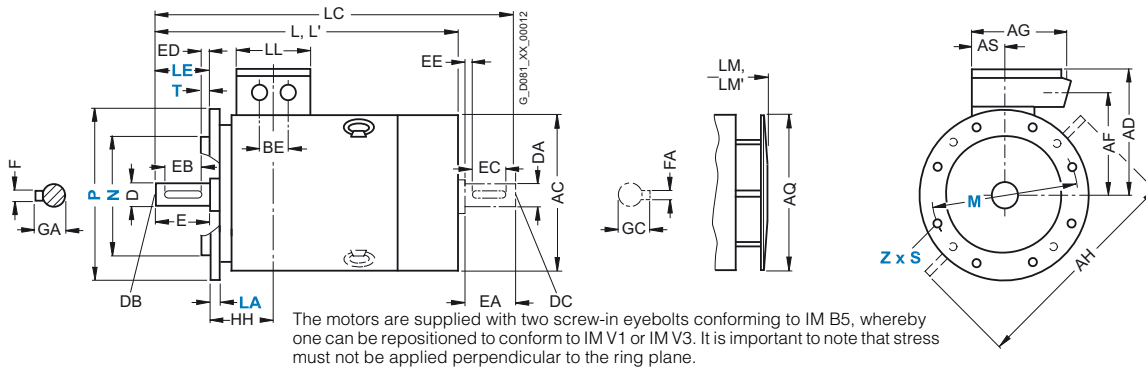
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																							
Frame size	Type	Type of construction	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
280 S	1LG6280	All	2	457	100	540	555	432	432	348	348	300	672	525	118	368	100	151	479	62	110	190	267	280	40
			4, 6, 8	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
280 M	1LG6283	All	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
			4, 6, 8	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
280 L	1LG6288	All	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
			4, 6	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
315 S	1LG6310	All	2	508	120	610	610	500	500	400	400	380	780	590	154	406	125	176	527	69	110	216	315	315	50
315 M ²⁾	1LG6313	All	8	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	527	69	110	216	264	315	50
			2	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	578	69	110	216	424	315	50
315 L ²⁾	1LG6316	All	2	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
			4, 6	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
315 L	1LG6317	All	2	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50
			4, 6	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50
315 L	1LG6318	All	8	508	120	610	610	500	500	400	400	380	780	590	165	508	155	206	648	69	110	216	513	315	50
			2	508	120	610	610	500	500	400	400	226	780	590	154	508	155	206	648	69	135	216	513	315	50
315 L	1LG6312	All	4														250	666	129			573		30	
			4																						
315 L	1LG6312	All	2	508	120	610	610	500	500	400	400	226	780	590	154	508	155	206	648	69	135	216	513	315	50
			4, 6	508	120	610	610	500	500	400	400	226	780	590	154	508	155	206	666	129			657		30
315 L	1LG6312	All	8 ³⁾				625										206	648	69			537		50	
			8 ³⁾				610											206	648	69			537		50
315 L	1LG6312	All	8 ³⁾				610										250	666	129			597		30	
			8 ³⁾				610											250	666	129			597		30

* This dimension is assigned in DIN EN 50347 to the frame size listed.
 1) Measured across the bolt heads.

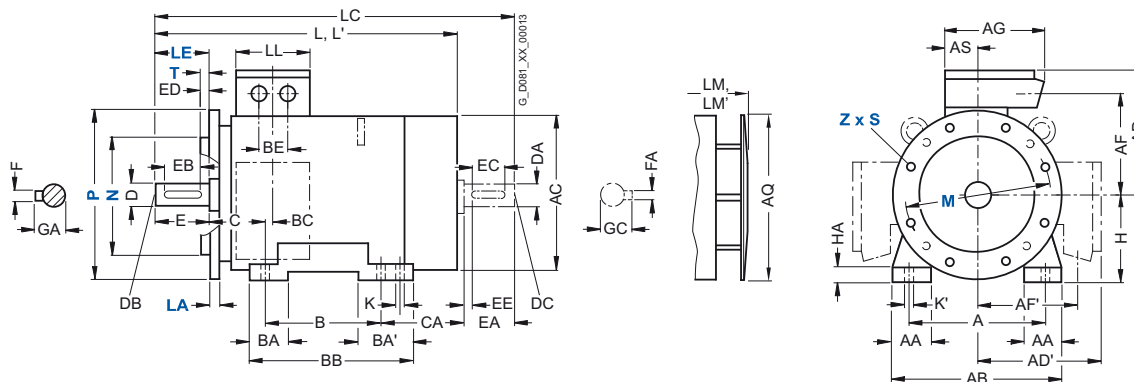
2) With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension 'B*' (406, 457 and 508 mm). BB will then be 666 mm.

3) Motor 1LG6312-8 is not possible in efficiency class IE3.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor			Dimension designation acc. to IEC									DE shaft extension				NDE shaft extension								
Frame size	Type	Type of construction	Number of poles	HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
280 S	1LG6280	All	2	252	24	30	998	1105	236	1252	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
			4, 6, 8				960			1070	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
280 M	1LG6283	All	2	252	24	30	1108	1215	236	1218	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
			4				1070			1180	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
	1LG6288	All	2	252	24	30	960	1105	236	1070	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
			4, 6				1180	1215	236	1218	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
							1070			1180	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
315 S	1LG6310	All	2	285	28	35	1142	1217	307	1252	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
			4, 6, 8				1102	1247		1212	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 M	1LG6313	All	8	285	28	35	1102	1247	307	1212	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
			2	285	28	35	1302	1377	307	1412	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
			4, 6				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 L	1LG6316	All	2	285	28	35	1302	1377	307	1412	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
			4, 6				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
			8							80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5	
	1LG6317	All	2	285	28	35	1442	1517	307	1552	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
			4, 6				1402	1547		1512	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
			8				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6318	All	6, 8	285	28	35	1402	1547	330	1512	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6318	All	2	285	28	35	1442	1517	307	1552	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		All	4				1402	1547		1512	85 ¹⁾	M20	170	140	25	22	90	70	M20	140	125	10	20	74.5
		IM B35, IM V1	4	345			1462	1607		1572	85 ¹⁾	M20	170	140	25	22	90	70	M20	140	125	10	20	74.5
	1LG6312	All	2	285	28	35	1372	1517	307	1482	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		All	4, 6	345			1546	1691		1656	85 ¹⁾	M20	170	140	25	22	90	70	M20	140	125	10	20	74.5
		All	8	285			1426	1571		1512	85 ¹⁾	M20	170	140	25	22	90	70	M20	140	125	10	20	74.5
		IM B35, IM V1	8	345			1486	1631		1572	85 ¹⁾	M20	170	140	25	22	90	70	M20	140	125	10	20	74.5

¹⁾ Diameters up to 90 mm are possible.

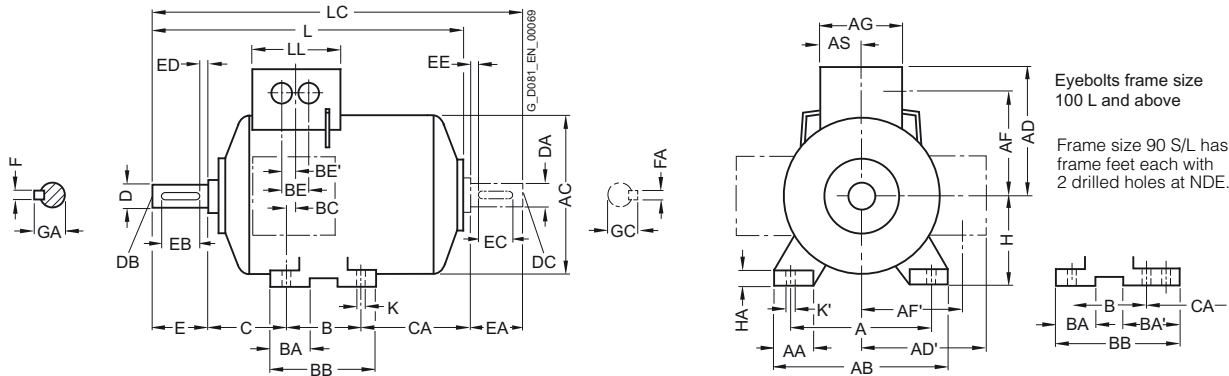
SIMOTICS GP 1LP Standard Motors

Dimensions

Aluminum series 1LP7 and 1LP5
Frame sizes 63 M to 200 L

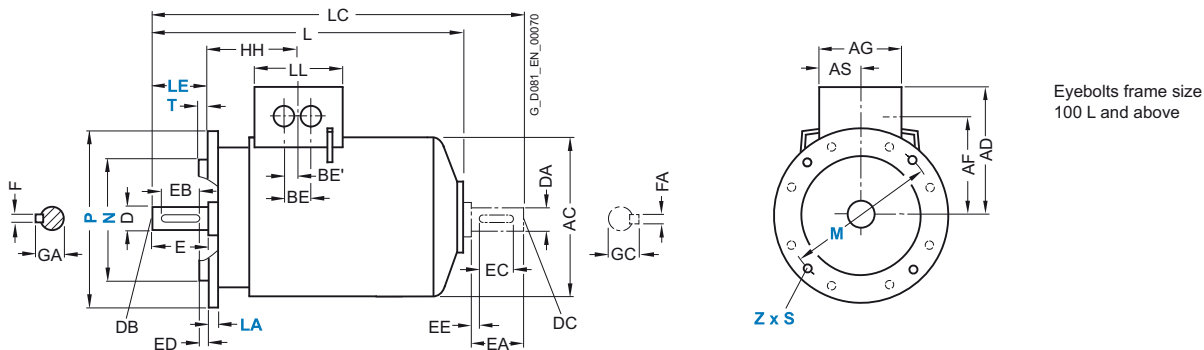
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



2.9

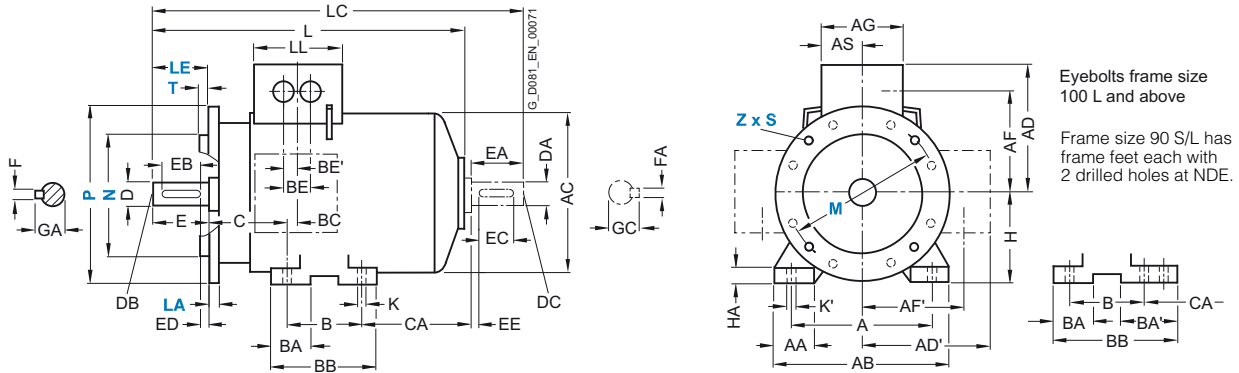
For motor	Dimension designation acc. to IEC																						
Frame size	Type	Number of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AS	B*	BA	BA'	BB	BC	BE	BE'	C	CA*	H	HA
63 M	1LP7060 1LP7063	2, 4, 6	100	27	120	124	101	101	78	78	75	37.5	80	28	-	96	30	32	18	40	40	63	7
71 M	1LP7070 1LP7073	2, 4, 6, 8	112	27	132	145	111	111	88	88	75	37.5	90	27	-	106	18	32	18	45	42	71	7
80 M	1LP7080 1LP7083	2, 4, 6, 8	125	30.5	150	163	120	120	97	97	75	37.5	100	32	-	118	14	32	18	50	47	80	8
90 S 90 L	1LP7090 1LP7096	2, 4, 6, 8	140	30.5	165	180	128	128	105	105	75	37.5	100 125	33	54	143	23	32	18	56	80 55	90	10
100 L	1LP7106 1LP7107	2, 4, 6, 8 4, 8	160	42	196	203	135	163	78	123	120	60	140	47	-	176	39	42	21	63	68	100	12
112 M	1LP7113	2, 4, 6, 8	190	46	226	227	148	176	91	136	120	60	140	47	-	176	32	42	21	70	79	112	12
132 S	1LP7130 1LP7131	2, 4, 6, 8 2	216	53	256	267	167	194	107	154	140	70	140	49	-	180	39	42	21	89	96	132	15
132 M	1LP7133 1LP7134	4, 6, 8 6	216	53	256	267	167	194	107	154	140	70	178	49	-	218	39	42	21	89	58	132	15
160 M	1LP7163 1LP7164	2, 4, 6, 8 2, 8	254	60	300	320	197	226	127	183	165	82.5	210	57	-	256	52.5	54	27	108	107	160	18
160 L	1LP7166	2, 4, 6, 8	254	60	300	320	197	226	127	183	165	82.5	254	57	-	300	52.5	54	27	108	63	160	18
180 M	1LP5183	2, 4	279	69.5	339	363	258	258	216	216	152	71	241	50	-	287	38	54	27	121	145	180	18
180 L	1LP5186	4, 6, 8	279	69.5	339	363	258	258	216	216	152	71	279	50	-	325	38	54	27	121	107	180	18
200 L	1LP5206 1LP5207	2, 6 2, 4, 6, 8	318	83	388	402	305	305	252	252	260	96	305	58.5	-	355	45	85	42.5	133	133	200	24

* This dimension is assigned in DIN EN 50347 to the frame size listed.

Dimensional drawings (continued)

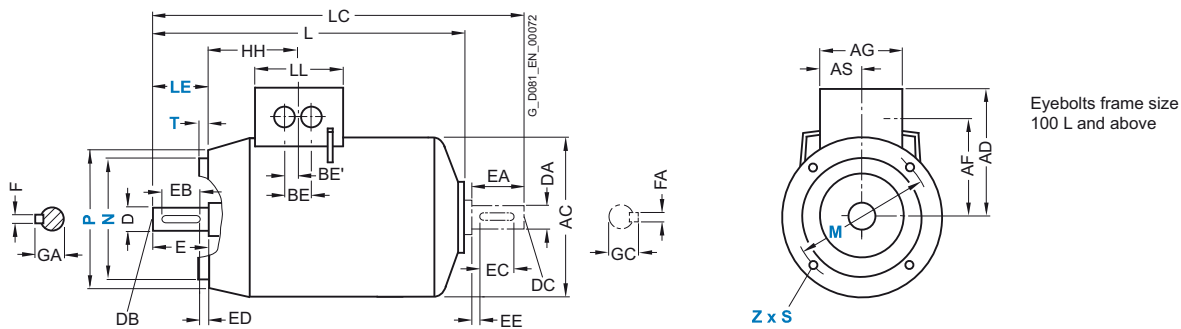
Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



Type of construction IM B14

Type of construction IM B14 not possible for 1LP5 motors, frame sizes 180 M to 200 L
For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor	Dimension designation acc. to IEC										DE shaft extension				NDE shaft extension							
Frame size	Type	Number of poles	HH	K	K'	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
63 M	1LP7060 1LP7063	2, 4, 6	69.5	7	10	172 ¹⁾	206 ¹⁾	75	11	M4	23	16	3.5	4	12.5	11	M4	23	16	3.5	4	12.5
71 M	1LP7070 1LP7073	2, 4, 6, 8	63.5	7	10	207	240	75	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 M	1LP7080 1LP7083	2, 4, 6, 8	63.5	9.5	13.5	237	280	75	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S 90 L	1LP7090 1LP7096	2, 4, 6, 8	79	10	14	286 286	333 333	75	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	1LP7106 1LP7107	2, 4, 6, 8 4, 8	102	12	16	331	385 ²⁾	120	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1LP7113	2, 4, 6, 8	102	12	16	349 ³⁾	403 ⁴⁾	120	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1LP7130 1LP7131	2, 4, 6, 8 2	128	12	16	397	485	140	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1LP7133 1LP7134	4, 6, 8 6	128	12	16	397	485	140	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1LP7163 1LP7164	2, 4, 6, 8 2, 8	160.5	15	19	529	645	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1LP7166	2, 4, 6, 8	160.5	15	19	529	645	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
180 M	1LP5183	2, 4	159	15	19	611	727	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LP5186	4, 6, 8	159	15	19	611	727	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LP5206 1LP5207	2, 6 2, 4, 6, 8	178	19	25	675	791	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59

1) For 1LP7063 in the case of type of construction code 1 (IM B5, IM V1 without protective cover, IM V3), dimensions L and LC are 26 mm longer.

2) 381 mm for IM B14 type of construction.

3) 345 mm for IM B5 type of construction.

4) 399 mm for IM B5 type of construction.

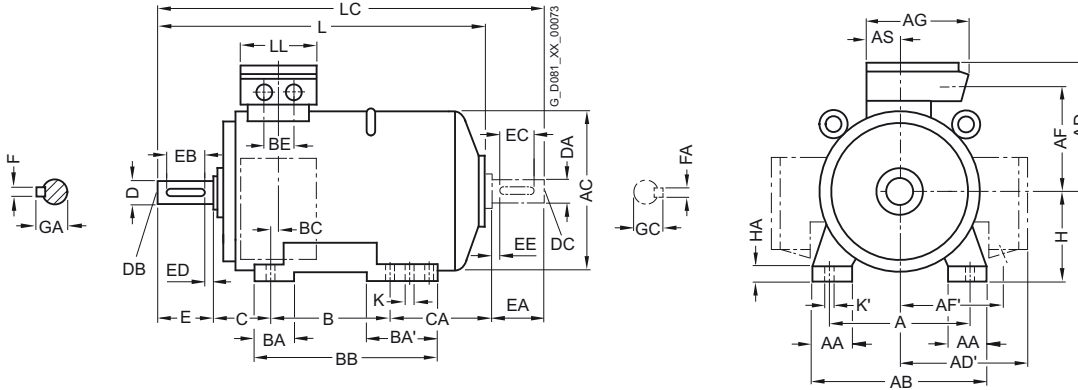
SIMOTICS SD 1LP Standard Motors

Dimensions

Cast-iron series 1LP4
Frame sizes 180 M to 315 L

Dimensional drawings

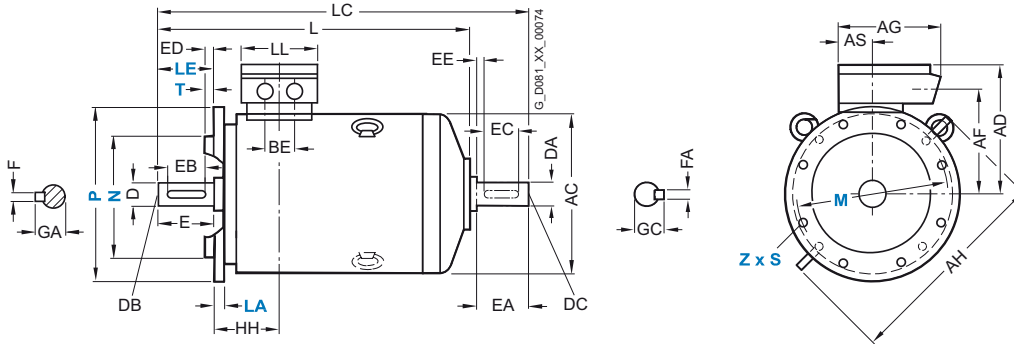
Type of construction IM B3



Frame sizes 180 M/L, 225 S/M, 280 S/M and 315 S/M/L have frame feet each with 2 drilled holes at NDE.

Types of construction IM B5 and IM V1 (IM B5 only up to frame size 315 M)

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



The motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

For motor		Dimension designation acc. to IEC																					
Frame size	Type	Number of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AH	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
180 M	1LP4183	2, 4	279	65	339	363	262	262	220	220	152	452	71	241	70	111	328	36	54	121	94	180	20
180 L	1LP4186	4, 6, 8	279	65	339	363	262	262	220	220	152	452	71	279	70	111	328	36	54	121	56	180	20
200 L	1LP4206	2, 6	318	70	378	402	300	300	247	247	260	512	96	305	80	80	355	63	85	133	76	200	25
	1LP4207	2, 4, 6, 8	318	70	378	402	300	300	247	247	260	512	96	305	80	80	355	63	85	133	76	200	25
225 S	1LP4220	4, 8	356	80	436	442	325	325	272	272	260	556	96	286	85	110	361	47	85	149	99	225	34
225 M	1LP4223	2, 4, 6, 8	356	80	436	442	325	325	272	272	260	556	96	311	85	110	361	47	85	149	74	225	34
250 M	1LP4253	2, 4, 6, 8	406	100	490	495	392	392	308	308	300	620	118	349	100	100	409	69	110	168	111	250	40
280 S	1LP4280	2, 4, 6, 8	457	100	540	555	432	432	348	348	300	672	118	368	100	151	479	62	110	190	137	280	40
280 M	1LP4283	2, 4, 6, 8	457	100	540	555	432	432	348	348	300	672	118	414	100	151	479	62	110	190	86	280	40
315 S	1LP4310	2, 4, 6, 8	508	120	610	610	500	500	400	400	380	780	154	406	125	176	527	69	110	216	168	315	50
315 M ¹⁾	1LP4313	2, 4, 6, 8	508	120	610	610	500	500	400	400	380	780	154	457	125	176	527	69	110	216	117	315	50
315 L ¹⁾	1LP4316/317	2, 4, 6, 8	508	120	610	610	500	500	400	400	380	780	154	508	125	176	578	69	110	216	226	315	50

* This dimension is assigned in DIN EN 50347 to the frame size listed.

¹⁾ With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 508 mm). BB will then be 666 mm.

SIMOTICS SD 1LP Standard Motors

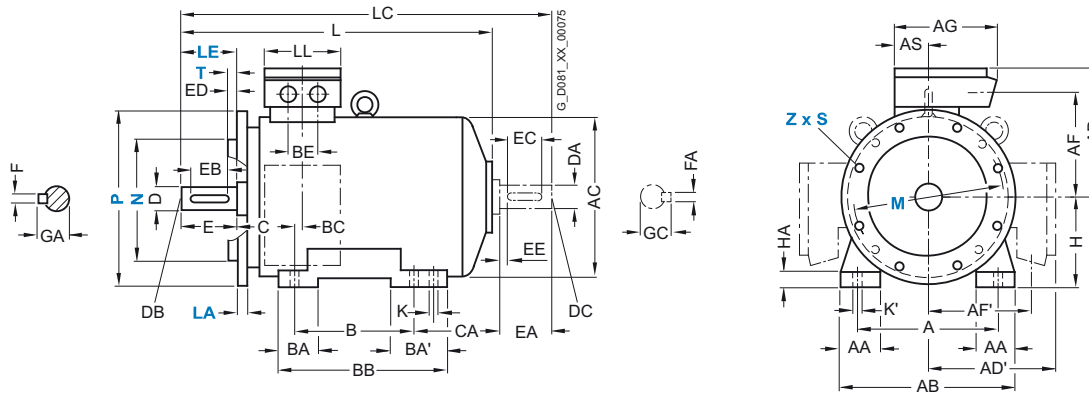
Dimensions

Cast-iron series 1LP4
Frame sizes 180 M to 315 L

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Number of poles	Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension							
Frame size	Type		HH	K	K'	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1LP4183	2, 4	157	15	19	562	676	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LP4186	4, 6, 8	157	15	19	562	676	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LP4206	2, 6	196	19	25	617	734	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LP4207	2, 4, 6, 8	196	19	25	617	734	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S	1LP4220	4, 8	196	19	25	670	784	192	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1LP4223	2	196	19	25	640	754	192	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6, 8	670	784	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59				
250 M	1LP4253	2	237	24	30	764	878	236	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4, 6, 8				908		65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
280 S	1LP4280	2	252	24	30	830	975	236	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8						75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69	
280 M	1LP4283	2	252	24	30	830	975	236	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8						75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69	
315 S	1LP4310	2	285	28	35	925	1070	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				955	1100	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5	
315 M ¹⁾	1LP4313	2	285	28	35	925	1070	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				955	1100	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5	
315 L ¹⁾	1LP4316/317	2	285	28	35	1085	1230	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				1115	1260	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5	

¹⁾ With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 508 mm). BB will then be 666 mm.

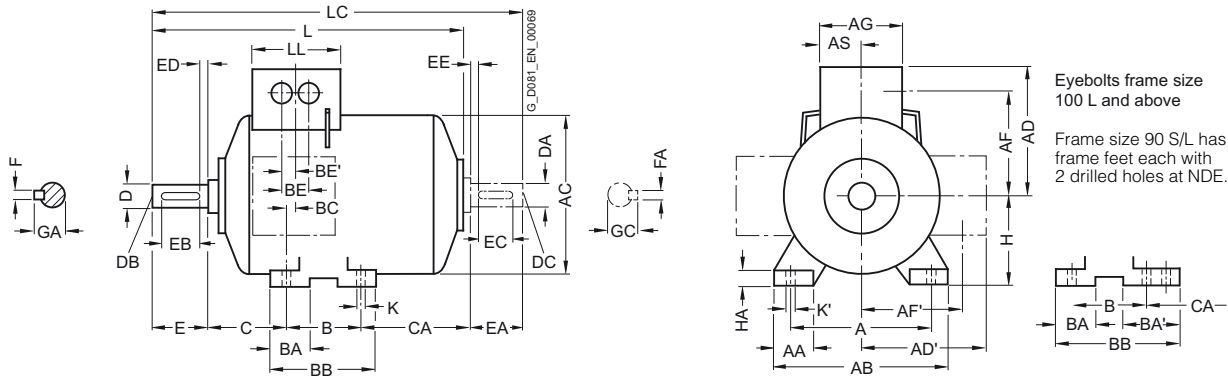
SIMOTICS GP 1PP Standard Motors

Dimensions

Aluminum series 1PP7 and 1PP5
Frame sizes 63 M to 200 L

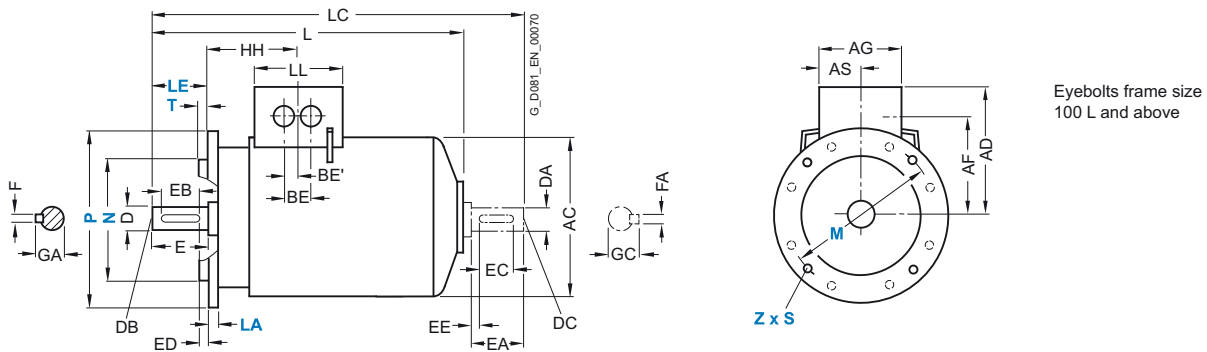
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



2.9

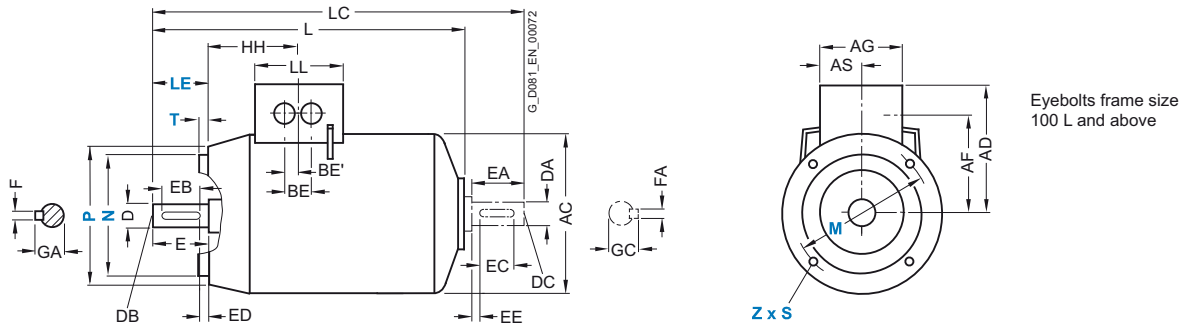
For motor		Dimension designation acc. to IEC																					
Frame size	Type	Number of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AS	B*	BA	BA'	BB	BC	BE	BE'	C	CA*	H	HA
63 M	1PP7060 1PP7063	2, 4, 6	100	27	120	124	101	101	78	78	75	37.5	80	28	-	96	30	32	18	40	40	63	7
71 M	1PP7070 1PP7073	2, 4, 6, 8	112	27	132	145	111	111	88	88	75	37.5	90	27	-	106	18	32	18	45	42	71	7
80 M	1PP7080 1PP7083	2, 4, 6, 8	125	30.5	150	163	120	120	97	97	75	37.5	100	32	-	118	14	32	18	50	47	80	8
90 S 90 L	1PP7090 1PP7096	2, 4, 6, 8	140	30.5	165	180	128	128	105	105	75	37.5	100 125	33	54	143	23	32	18	56	80 55	90	10
100 L	1PP7106 1PP7107	2, 4, 6, 8 4, 8	160	42	196	203	135	163	78	123	120	60	140	47	-	176	39	42	21	63	68	100	12
112 M	1PP7113	2, 4, 6, 8	190	46	226	227	148	176	91	136	120	60	140	47	-	176	32	42	21	70	79	112	12
132 S	1PP7130 1PP7131	2, 4, 6, 8 2	216	53	256	267	167	194	107	154	140	70	140	49	-	180	39	42	21	89	96	132	15
132 M	1PP7133 1PP7134	4, 6, 8 6	216	53	256	267	167	194	107	154	140	70	178	49	-	218	39	42	21	89	58	132	15
160 M	1PP7163 1PP7164	2, 4, 6, 8 2, 8	254	60	300	320	197	226	127	183	165	82.5	210	57	-	256	52.5	54	27	108	107	160	18
160 L	1PP7166	2, 4, 6, 8	254	60	300	320	197	226	127	183	165	82.5	254	57	-	300	52.5	54	27	108	63	160	18
180 M	1PP5183	2, 4	279	69.5	339	363	258	258	216	216	152	71	241	50	-	287	38	54	27	121	145	180	18
180 L	1PP5186	4, 6, 8	279	69.5	339	363	258	258	216	216	152	71	279	50	-	325	38	54	27	121	107	180	18
200 L	1PP5206 1PP5207	2, 6 2, 4, 6, 8	318	83	388	402	305	305	252	252	260	96	305	58.5	-	355	45	85	42.5	133	133	200	24

* This dimension is assigned in DIN EN 50347 to the frame size listed.

Dimensional drawings (continued)

Type of construction IM B14

Type of construction IM B14 not possible for 1PP5 motors, frame sizes 180 M to 200 L
For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC										DE shaft extension				NDE shaft extension						
Frame size	Type	Number of poles	HH	K	K'	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
63 M	1PP7060 1PP7063	2, 4, 6	69.5	7	10	172 ¹⁾	206 ¹⁾	75	11	M4	23	16	3.5	4	12.5	11	M4	23	16	3.5	4	12.5
71 M	1PP7070 1PP7073	2, 4, 6, 8	63.5	7	10	207	240	75	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 M	1PP7080 1PP7083	2, 4, 6, 8	63.5	9.5	13.5	237	280	75	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S 90 L	1PP7090 1PP7096	2, 4, 6, 8	79	10	14	286	333	75	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	1PP7106 1PP7107	2, 4, 6, 8 4, 8	102	12	16	331	385 ²⁾	120	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1PP7113	2, 4, 6, 8	102	12	16	349 ³⁾	403 ⁴⁾	120	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1PP7130 1PP7131	2, 4, 6, 8 2	128	12	16	397	485	140	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1PP7133 1PP7134	4, 6, 8 6	128	12	16	397	485	140	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1PP7163 1PP7164	2, 4, 6, 8 2, 8	160.5	15	19	529	645	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1PP7166	2, 4, 6, 8	160.5	15	19	529	645	165	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
180 M	1PP5183	2, 4	159	15	19	611	727	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1PP5186	4, 6, 8	159	15	19	611	727	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1PP5206 1PP5207	2, 6 2, 4, 6, 8	178	19	25	675	791	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59

1) For 1PP7063 in the case of type of construction code 1 (IM B5, IM V1 without protective cover, IM V3), dimensions L and LC are 26 mm longer.

2) 381 mm for IM B14 type of construction.

3) 345 mm for IM B5 type of construction.

4) 399 mm for IM B5 type of construction.

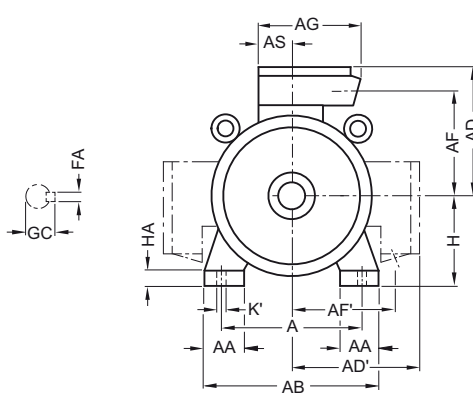
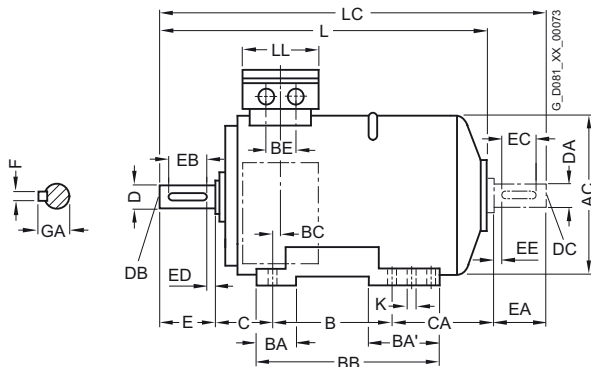
SIMOTICS SD 1PP Standard Motors

Dimensions

Cast-iron series 1PP4
Frame sizes 180 M to 315 L

Dimensional drawings

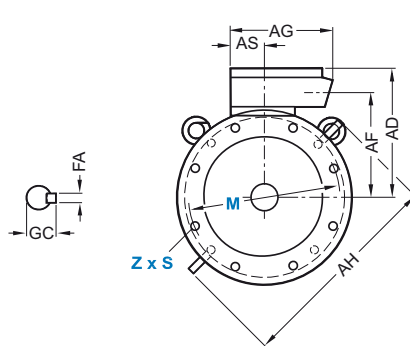
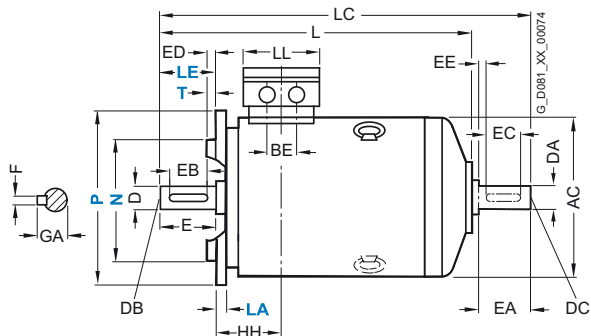
Type of construction IM B3



Frame sizes 180 M/L, 225 S/M, 280 S/M/L and 315 S/M/L have frame feet each with 2 drilled holes at NDE.

Types of construction IM B5 and IM V1 (IM B5 only up to frame size 315 M)

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



The motors are supplied with two screw-in eyebolts conforming to IM B5, whereby one can be repositioned to conform to IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

For motor		Dimension designation acc. to IEC																					
Frame size	Type	Number of poles	A	AA	AB	AC	AD	AD'	AF	AF'	AG	AH	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
180 M	1PP4183	2, 4	279	65	339	363	262	262	220	220	152	452	71	241	70	111	328	36	54	121	94	180	20
	1PP4186	4, 6, 8	279	65	339	363	262	262	220	220	152	452	71	279	70	111	328	36	54	121	56	180	20
	1PP4188	2, 4, 6, 8	279	65	339	363	262	262	220	220	152	452	71	279	70	111	328	36	54	121	107	180	20
200 L	1PP4206	2, 6	318	70	378	402	300	300	247	247	260	512	96	305	80	80	355	63	85	133	76	200	25
	1PP4207	2, 4, 6, 8	318	70	378	402	300	300	247	247	260	512	96	305	80	80	355	63	85	133	76	200	25
	1PP4208	2, 6, 4, 8	318	70	378	402	300	300	247	247	260	512	96	305	80	80	355	63	85	133	133	200	25
225 S	1PP4220	4, 8	356	80	436	442	325	325	272	272	260	556	96	286	85	110	361	47	85	149	99	225	34
	1PP4223	2	356	80	436	442	325	325	272	272	260	556	96	311	85	110	361	47	85	149	74	225	34
	1PP4228	2, 4, 6, 8	356	80	436	442	325	325	272	272	260	556	96	311	85	110	361	47	85	149	134	225	34
250 M	1PP4253	2, 4, 6, 8	406	100	490	495	392	392	308	308	300	620	118	349	100	100	409	69	110	168	111	250	40
	1PP4258	2, 4, 6, 8	406	100	490	495	392	392	308	308	300	620	118	349	100	100	409	69	110	168	111	250	40
																					181		
280 S	1PP4280	2, 4, 6, 8	457	100	540	555	432	432	348	348	300	672	118	368	100	151	479	62	110	190	137	280	40
280 M	1PP4283	2, 4, 6, 8	457	100	540	555	432	432	348	348	300	672	118	414	100	151	479	62	110	190	86	280	40
	1PP4288	2, 4, 6, 8	457	100	540	555	432	432	348	348	300	672	118	419	100	151	479	62	110	190	196	280	40
																					86		
315 S	1PP4310	2, 4, 6, 8	508	120	610	610	500	500	400	400	380	780	154	406	125	176	527	69	110	216	168	315	50
315 M ¹⁾	1PP4313	2, 4, 6, 8	508	120	610	610	500	500	400	400	380	780	154	457	125	176	527	69	110	216	117	315	50
315 L ¹⁾	1PP4316/317	2, 4, 6, 8	508	120	610	610	500	500	400	400	380	780	154	508	125	176	578	69	110	216	226	315	50
	1PP4318	8, 6	508	120	610	610	500	500	400	400	380	780	154	508	155	206	648	69	110	216	366	315	50

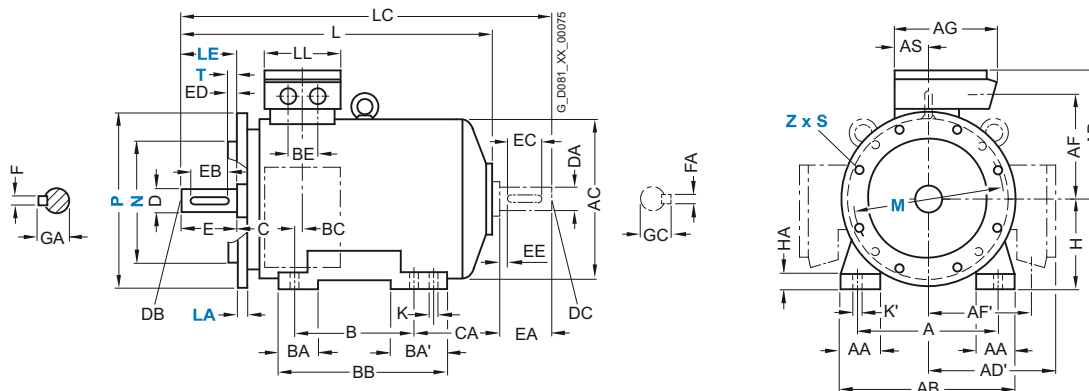
* This dimension is assigned in DIN EN 50347 to the frame size listed.

¹⁾ With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 506 mm). BB will then be 666 mm.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 2/130 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC											DE shaft extension								NDE shaft extension							
Frame size	Type	Number of poles	HH	K	K'	L	LC	LL	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC						
180 M	1PP4183	2, 4	157	15	19	562	676	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5						
180 L	1PP4186	4, 6, 8	157	15	19	562	676	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5						
	1PP4188	2, 4, 6, 8	157	15	19	613	727	132	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5						
200 L	1PP4206	2, 6	196	19	25	617	734	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59						
	1PP4207	2, 4, 6, 8	196	19	25	617	734	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59						
	1PP4208	2, 6	196	19	25	674	791	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59						
		4, 8				617	734																					
225 S	1PP4220	4, 8	196	19	25	670	784	192	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59						
225 M	1PP4223	2	196	19	25	640	754	192	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5						
		4, 6, 8				670	784		60	M20	140	125	10	18	64	55	M20	110	100	5	16	59						
	1PP4228	2	196	19	25	700	814	192	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5						
		4, 6, 8				730	844		60	M20	140	125	10	18	64	55	M20	110	100	5	16	59						
250 M	1PP4253	2	237	24	30	764	878	236	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59						
		4, 6, 8				908	908		65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
	1PP4258	2	237	24	30	764	878	236	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59						
		4				834	978		65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
		6, 8				764	908		65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
280 S	1PP4280	2	252	24	30	830	975	236	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
		4, 6, 8							75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69						
280 M	1PP4283	2	252	24	30	830	975	236	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
		4, 6, 8							75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69						
	1PP4288	2	252	24	30	940	1085	236	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
		4							75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69						
		6, 8				830	975		75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69						
315 S	1PP4310	2	285	28	35	925	1070	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
		4, 6, 8				955	1100		80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5						
315 M ¹⁾	1PP4313	2	285	28	35	925	1070	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
		4, 6, 8				955	1100		80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5						
315 L ¹⁾	1PP4316/317	2	285	28	35	1085	1230	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64						
		4, 6, 8				1115	1260		80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5						
		8							80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5						
	1PP4318	6	285	28	35	1255	1400	307	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5						

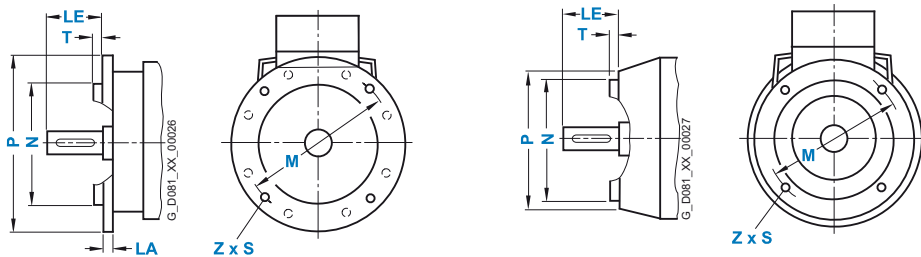
¹⁾ With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 506 mm). BB will then be 666 mm.

SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors

Dimensions

Flange dimensions

Dimensional drawings



In DIN EN 50347, the frame sizes are allocated flange FF with through holes and flange FT with tapped holes. The designation of flange A and C according to DIN 42948 (invalid since September 2003) are also listed for information purposes. See the table below. (Z = the number of retaining holes)

Frame size	Type of construction	Flange type	Flange with through holes (FF/A) tapped holes (FT/C)		Dimension designation acc. to IEC							
			acc. to DIN EN 50347	acc. to DIN 42948	LA	LE	M	N	P	S	T	Z
63 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 115	A 140	8	23	115	95	140	10	3	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 75	C 90	–	23	75	60	90	M5	2.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 100	C 120	–	23	100	80	120	M6	3	4
71 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 130	A 160	9	30	130	110	160	10	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 85	C 105	–	30	85	70	105	M6	2.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 115	C 140	–	30	115	95	140	M8	3	4
80 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 165	A 200	10	40	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 100	C 120	–	40	100	80	120	M6	3	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 130	C 160	–	40	130	110	160	M8	3.5	4
90 S, 90 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 165	A 200	10	50	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 115	C 140	–	50	115	95	140	M8	3	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 130	C 160	–	50	130	110	160	M8	3.5	4
100 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 165	C 200	–	60	165	130	200	M10	3.5	4
112 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 165	C 200	–	60	165	130	200	M10	3.5	4
132 S, 132 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 265	A 300	12	80	265	230	300	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 165	C 200	–	80	165	130	200	M10	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 215	C 250	–	80	215	180	250	M12	4	4
160 M, 160 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 300	A 350	13	110	300	250	350	18.5	5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 215	C 250	–	110	215	180	250	M12	4	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 265	C 300	–	110	265	230	300	M12	4	4
180 M, 180 L	IM B5, IM V1, IM V3	Flange	FF 300	A 350	13	110	300	250	350	18.5	5	4
200 L	IM B5	Flange	FF 350	A 400	15	110	350	300	400	18.5	5	4
225 S, 225 M 2-pole 4-pole to 8-pole	IM B5, IM V1, IM V3	Flange	FF 400	A 450	16	110	400	350	450	18.5	5	8
250 M	IM B5, IM V1, IM V3	Flange	FF 500	A 550	18	140	500	450	550	18.5	5	8
280 S, 280 M	IM B5, IM V1, IM V3	Flange	FF 500	A 550	18	140	500	450	550	18.5	5	8
315 S, 315 M, 315 L 2-pole 4-pole to 8-pole	IM B5, IM V1, IM V3	Flange	FF 600	A 660	22	140	600	550	660	24	6	8
1LG6312 4-pole to 8-pole	IM B35, IM V1	Flange	FF 740	A 800	25	170	740	680	800	22	6	8
1LG6318 4-pole	IM B35, IM V1	Flange	FF 740	A 800	25	170	740	680	800	22	6	8

SIMOTICS N-compact Non-Standard Motors



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SIMOTICS N-compact Non-Standard Motors

Orientation

Overview

SIMOTICS N-compact: Series 1LA8, 1PQ8, 1LL8



The three-phase motor series SIMOTICS N-compact covers outputs up to 1250 kW (at 50 Hz) in the non-standard range. A number of technical features provide this motor series with its ruggedness and long service life and ensure the highest level of availability, for example, motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping is standard.

SIMOTICS N-compact motors are also characterized by their high output for small frame size. The consequence of this is an extremely compact design that can be used to save space in a number of industrial applications.

SIMOTICS N-compact motors are not only optimized in terms of their construction, but also in terms of their efficiency, so they also contribute towards lower energy consumption.

Apart from mains-fed operation, the SIMOTICS N-compact motors are also specially designed for converter-fed operation, for example, insulated bearings are used at the non-drive-end NDE for converter-fed operation as standard to prevent damage being caused as a result of bearing currents. In combination with frequency converters from the SINAMICS and SIMOVERT MASTERDRIVES product series, they build up perfectly interacting drive systems for variable-speed drive applications.

Versions in the SIMOTICS N-compact series

Series 1LA8

The motors are asynchronous squirrel-cage motors with compact dimensions in fin-cooled design. They are designed for direct connection to the three-phase supply and for converter-fed operation.

1LA8 for mains-fed operation	1LA8 for converter-fed operation
<ul style="list-style-type: none"> Designed for operation on the three-phase supply 	<ul style="list-style-type: none"> Converter-fed operation, optimized for the SINAMICS and SIMOVERT MASTERDRIVES drive systems
<ul style="list-style-type: none"> Degree of protection: IP55 	<ul style="list-style-type: none"> Degree of protection: IP55
<ul style="list-style-type: none"> Cooling method: IC411, self-ventilated 	<ul style="list-style-type: none"> Cooling method: IC411, self-ventilated
<ul style="list-style-type: none"> Housing: Cast iron 	<ul style="list-style-type: none"> Housing: Cast iron
	<ul style="list-style-type: none"> With standard insulation for voltages ≤ 500 V or with special insulation for 690 V

Series 1PQ8

The motors are asynchronous squirrel-cage motors with compact dimensions in fin-cooled design with forced ventilation. As these motors are forced-ventilated, no derating or only relatively minor derating (depending on their speed range) is required for operation at constant load torque and with wide speed ranges. The motors are designed for converter-fed operation with the SINAMICS and SIMOVERT MASTERDRIVES drive system.

1PQ8 for converter-fed operation

- Converter-fed operation
- Degree of protection: IP55
- Cooling method: IC416, forced ventilation
- Housing: Cast iron
- With standard insulation for voltages ≤ 500 V or with special insulation for 690 V

Series 1LL8

The motors of series 1LL8 are asynchronous squirrel-cage motors with compact dimensions in an open fin-cooled design with self-cooling. They are similar in construction to 1LA8 motors. IP23 degree of protection is achieved by opening the internal cooling circuit which enables it to be supplied with external cooling air. This can increase the performance by up to 25 % as compared to the 1LA8. They are designed for direct connection to the three-phase supply and for converter-fed operation.

Motors of the 1LL8 type series are intended for installation indoors. They must not be subjected to humid, salty or corrosive atmospheres.

1LL8 for mains-fed operation

- Designed for operation on the three-phase supply
- Degree of protection: IP23
- Cooling method: IC01, self-ventilated
- Housing: Cast iron

1LL8 for converter-fed operation

- Converter-fed operation
- Degree of protection: IP23
- Cooling method: IC01, self-ventilated
- Housing: Cast iron

Versions with special insulation for > 500 V and operation without an output filter on the frequency converter are only available on request.

Standardline

4-pole 1LA8 motors up to 500 kW are available with a reduced range of options as the *Standardline*.

Benefits to the customer:

- Much shorter delivery time
- Can be configured with a variety of options, retaining a high degree of flexibility.

Applications

Standardline low-voltage motors are optimized for applications in pump, fan and compressor drives. The low-voltage motors are specially constructed for use in complete, coordinated drive systems comprising the motor and a SINAMICS G150 frequency converter.

Standardline motors can be ordered using order code B20.

Scope of the *Standardline*

- 4-pole version
- Power range 250 to 500 kW
- Types 1LA8315, 1LA8317, 1LA8353, 1LA8355 and 1LA8357
- Type of construction code 0 (IM B3)
- For mains-fed operation: Voltage code 6 (400 V Δ /690 VY) or 5 (500 V Δ)
- For converter-fed operation: Voltage code 4 (400 V Δ), 8 (400 V Δ /690 VY) or 5 (500 V Δ)
- Can be ordered for converter-fed operation, but not in the 690 V version
- Possible order codes: A23, A61, A72, G50, H70, H73, K09, K10, K45, K46, K57, K83, K84, K85, L00, L97, M58 (frame size 315 only), M88 and Y53

Benefits

Non-standard motors from Siemens offer the user numerous advantages:

- The optimized efficiency results in lower operating costs.
- The high output/size ratio ensures low space requirements combined with low weight.
- The cast-iron housing and bearing plates are extremely rigid and rugged and can therefore be subjected to considerable stress and have excellent vibration damping properties and are resistant to corrosion.

- The bearings are designed for maximum reliability, which results in good vibration characteristics, a long service life and low maintenance costs.
- The DURIGNIT IR 2000 insulation system with VPI or current-UV impregnation results in high reliability, a long service life and high resistance to stress, for example, during starting or under overload conditions.
- Due to the low noise emission level, the stringent requirements of worker protection are fulfilled without the need for additional measures.

Application

Thanks to the many options, the motor series SIMOTICS N-compact covers applications in a wide range of different sectors: Chemicals, paper, water/waste water, steel and shipbuilding are just a few examples. The available types of construction are IM B3, IM B35 and IM V1 according to DIN EN 60034-7. The degree of protection is IP55 as standard, but IP23 for motor series 1LL8.

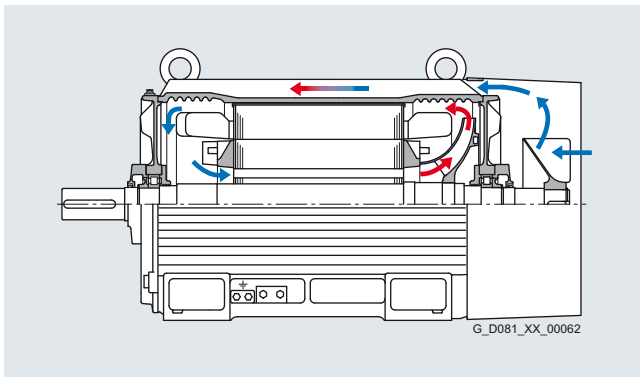
The 1PQ8 motors are specially designed for variable-speed applications with constant torque. The mounted separately driven fan provides a constantly high cooling air flow at any speed. These motors can therefore be continuously operated at low speed and high torque simultaneously.

The low-voltage motor series SIMOTICS N-compact is also available in a through-ventilated version to IP23 degree of protection. This 1LL8 motor series boasts an output 25 % higher than that of the closed 1LA8 motor series for the same frame size.

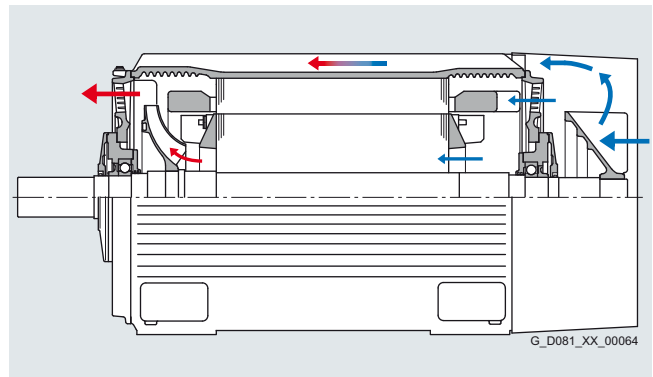
The 1LL8 motor is therefore useful for applications in which a closed 1LA8 motor is not essential and when the ambient conditions permit the use of a through-ventilated machine (IC 01 cooling method, IP23 degree of protection). Motors of the 1LL8 type series are only intended for installation indoors. They must not be subjected to humid, salty or corrosive atmospheres.

Design

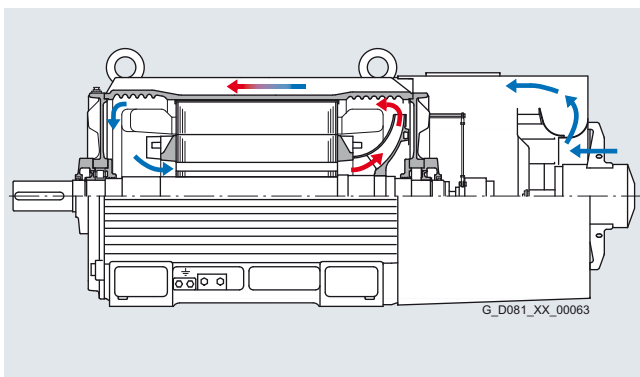
The basic structure of the non-standard motors is shown in the following sectional diagrams.



Sectional diagram of 1LA8



Sectional diagram of 1LL8



Sectional diagram of 1PQ8

In conventional fin-cooled motors, the one-sided external ventilation naturally results in an uneven temperature distribution – this is however not the case with SIMOTICS N-compact motors with their additional internal air-flow channels. This cools, in particular, the stator winding heads, the rotor winding and the drive-end bearings. The resulting reduction in thermal loading increases the operating reliability and lengthens the service life. The internal air-flow channels increase the efficiency of the ventilation which means that the external air-flow can be reduced. The lower volumetric flow and air-flow optimization of all guide channels results in a low level of fan noise.

Orientation

Technical specifications

Rating plate

According to DIN EN 60034-1, the approximate overall weight is specified on the rating plate for all motors of frame size 90 and above (from approx. 30 kg).

For all motors, an additional rating plate can be supplied loose, order code K31. An extra rating plate for identification codes is also possible, order code Y82. In the standard version, the rating plate is available in English and German.

SIEMENS										
3~MOT. 1LA8 317-4AB60-Z NoN- A91302567020001 / 2010 IMB3 Th.Cl.155(F)										
V	Hz	IE2	A	kW	cosφ	1/min	I_A/I_N	T_{ES}	Certif.No.	IP
400 Δ 690 Y	50	95.7%	550 315	315	0.87	1488				55
Rotor SQU.CAGE KL 13 IEC/EN 60034-1									Gew/Wt	1.5 t
380..420VΔ, 570..520A 660..725V Y, 330..300A 50Hz										
NMAX=3000 1/MIN										
Ta:-20...+40°C										
MADE IN GERMANY D-90441 Nürnberg										

Example of rating plate for 1LA8 mains-fed operation (IE2)

SIEMENS										
3~MOT. 1LA8 317-4AZ94-Z NoN- A01299606010001 / 2010 IMV1 Th.Cl.155(F)										
V	Hz	IE3	A	kW	cosφ	1/min	I_A/I_N	T_{ES}	Certif.No.	IP
400 Δ	50	96.1%	430	250	0.87	1488				55
Rotor SQU.CAGE KL 13 IEC/EN 60034-1									Gew/Wt	1.5 t
NMAX=3000 1/MIN										
Ta:-20...+40°C										
MADE IN GERMANY D-90441 Nürnberg										

Example of rating plate for 1LA8 mains-fed operation (IE3)

SIEMENS										
3~MOT. 1LA8 317-4PB80-Z NoN- A61297041010001 / 2010 IMB3 Th.Cl.155(F)										
V	Hz		A	kW	cosφ	1/min	I_A/I_N	T_{ES}	Certif.No.	IP
400 Δ 690 Y	50		550 315	315	0.87	1488				55
Rotor SQU.CAGE KL 13 IEC/EN 60034-1									Gew/Wt	1.5 t
FÜR/FOR SIMOVERT MASTERDRIVES/SINAMICS										
NMAX=3000 1/MIN										
Ta:-20...+40°C										
MADE IN GERMANY D-90441 Nürnberg										

Example of rating plate for 1LA8 converter-fed operation

All motors which comply with the international standard IEC 60034-30:2008 (Rotating electrical machines – Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code)) display the efficiency class and the efficiency on the rating plate. This efficiency is based, according to the above standard, on the losses determined in accordance with standard part IEC 60034-2-1:2007.

Explosion-proof motors, order codes M35 and M39 for Zone 22 as well as M72 and M73 for Zone 2, display the corresponding identification on an extra rating plate.

SIEMENS	
Ex tD A22 IP55 T125°C	
IEC / EN 61241	
A61297041010001	

Example for extra rating plate for Zone 22 (mains-fed and converter-fed operation)

SIEMENS	
Ex nAemb II T3	
IEC / EN 60079	
AN1306193010001	

Example for extra rating plate for Zone 2 (mains-fed and converter-fed operation)

Converter-fed operation

The motors are equipped with standard rotors and are suitable for mains-fed or converter-fed operation. All motors can therefore be operated with a converter, in principle. Special measures are necessary in the case of some motors, especially when non-Siemens converters are used. All data is applicable to a 50 Hz sinusoidal supply.

Rated voltage

The tolerance for the rated voltage is in accordance with DIN EN 60034-1 in all cases, a rated voltage range is not specified.

Motor protection

A motor protection function can be implemented using the R^2t sensing circuit implemented in the converter software.

If required, more precise motor protection can be afforded by direct temperature measurement using KTY84 sensors, PT100 resistance thermometers or PTC thermistors in the motor winding. Some converters from Siemens determine the motor temperature using the resistance of the temperature sensor. They can be set to a required temperature for alarm and tripping. If PT100 resistance thermometers are ordered for cooling temperature monitoring (order code A61) or KTY84 temperature sensors (order code A23), the standard thermistors are omitted. Combination of A12 and A61 or A12 and A23 is possible, additional charge on request. Evaluation of the KTY or PT100 sensor is performed as described above, for example, in the converter. For motors for mains-fed operation, the 3RS10 temperature monitoring device that forms part of the protective equipment must be ordered separately, for further details, see Catalog IC 10.

Technical specifications (continued)Insulation

The standard insulation of the motors is designed such that converter-fed operation is possible without limitation at voltages ≤ 500 V. This also applies for operation with a pulse-controlled AC converter with voltage rise times $t_s > 0.1 \mu\text{s}$ at the motor terminals.

All motors with voltage codes 4, 5 and 8 must be operated under these preconditions on a converter.

This does not apply to motors with voltages > 500 up to 690 V, that must have special insulation for operation on a pulse-controlled AC converter (SINAMICS, SIMOVERT MASTERDRIVES) without a converter circuit (du/dt filter or sine-wave filter), i.e. when 10th position of the Order No. = "M".

For converter-fed operation with the outputs specified in the Catalog, the motors are used according to temperature class 155 (F), i.e. in this case neither a service factor > 1 nor an increased coolant temperature is possible (order codes C11, C12 and C13 cannot be ordered).

Connecting motors

When connecting the motors, it is important to consider the restrictions for mains-fed machines as well as the maximum conductor cross-sections permitted for the converter.

Ventilation/noise generation

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated motors (this is not the case for forced-ventilated motors 1PQ8). To increase motor utilization at low speeds it is recommended that forced-ventilated 1PQ8 motors are used.

Technical data of the separately driven fans for 1PQ8 motors

Frame size	P_{rated} , 50 Hz kW	P_{rated} , 60 Hz kW	I_{rated} , 400 V 50 Hz A	I_{rated} , 460 V 50 Hz A
FS	kW	kW	A	A
315	0.75	1.23	3.4	3.3
355, 400	1.3	2.2	6.4	6.2
450	3.0	4.2	8.2	7.7

In general, for converter-fed operation, the noise level is higher than that specified in the Catalog (exception: 1PQ8). The increase depends on the converter type and can lie between 5 and 10 dB(A) depending on the frame size and number of poles of the motor.

Mechanical stress and grease lifetime

When motors are operated at speeds above the rated speed, the running smoothness and the bearings are subjected to greater mechanical stress. This reduces the service life of the grease and bearings. More detailed information on request.

Bearings

To prevent damage being caused as a result of bearing currents, insulated bearings are used at the non-drive-end (NDE) of 1LA8, 1LL8 and 1PQ8 motors for converter-fed operation in the standard version (this can be recognized when 9th position of Order No. = "P").

When operating multiphase induction machines on a converter, an electrical bearing stress results from a capacitive induced voltage via the bearing lubricating film, depending on the principle being used. The physical cause of this is the common-mode voltage at the converter output that is inherent in the control method for a converter: The sum of the three phase voltages is – in contrast to straightforward mains-fed operation – not equal to zero at every point in time. The high-frequency, pulse-shaped common-mode voltage brings about a residual current, which closes back to the converter's DC link via the machine's internal capacitances, the machine housing and the grounding circuit. The machine's internal capacitances include the main insulation winding capacitance, the geometric capacitance between the

rotor and stator, the lubricating film capacitance and the capacitance of any bearing insulation that may be present. The level of the currents due to the internal capacitances is proportional to the gradients, i.e. the voltage variation of the DC voltage ($i(t) = C \cdot du/dt$).

In order to apply currents to the motor which are sinusoidal as far as possible (smooth running, oscillation torques, stray losses), a high clock frequency is required for the converter's output voltage. The related (very steep) switching edges of the converter output voltage (and also, therefore, of the common-mode voltage) cause correspondingly high capacitive currents and voltages on the machine's internal capacitances.

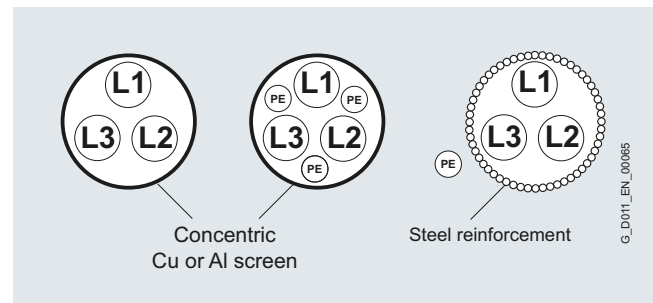
The voltage that is injected capacitively across the bearing can result, in the worst case, in stochastic arcing through the lubrication film of the bearing and prematurely age or damage the bearing. (The current pulses caused by arcing in the lubrication film are known as EDM currents (Electrostatic Discharge Machining) in the technical literature.)

This physical effect, which occurs in isolated cases, has mostly been observed in connection with larger motors.

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

The most important measures for reducing bearing currents:

- Insulated motor bearings at the non-drive-end NDE (standard for 1LA8, 1LL8 and 1PQ8 for converter-fed operation)
- Use of cables with a symmetrical cable cross-section:



- Preference given to a supply with insulated neutral point (IT system)
- Use of grounding cables with low impedance in a large frequency range (DC up to approximately 70 MHz): for example, plaited copper ribbon cables, HF litz wires
- Separate HF equipotential-bonding cable between motor housing and driven machine
- Separate HF equipotential-bonding cable between motor housing and converter PE busbar
- 360° HF contacting of the cable shield on the motor housing and the converter PE busbar. This can be achieved using EMC screwed glands on the motor end and EMC shield clips on the converter end, for example
- Using motor reactors at the converter
- Common-mode filters at the converter output

Orientation

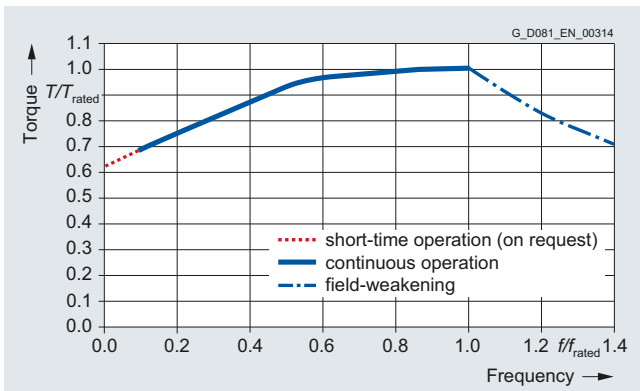
Technical specifications (continued)

Thermal torque limits

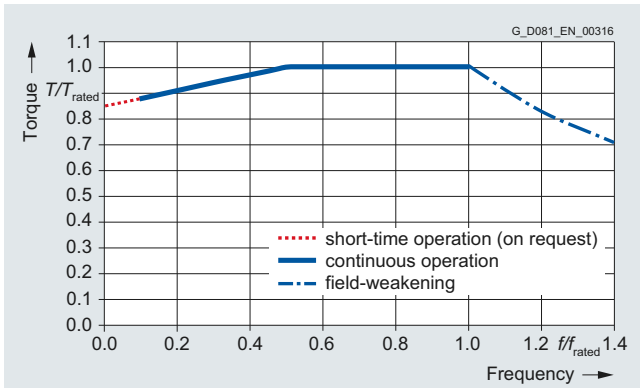
In the case of self-ventilated motors, such as series 1LA8 and 1LL8, the thermally admissible load torques are reduced for continuous operation for speeds below the rated speed. This must be taken into account in those applications in particular that are not subjected to a load torque that is dependent on the square of the speed. Also in the case of forced-air cooled motors of series 1PQ8, the maximum load torques are reduced slightly for high speed ranges.

When motors are operated at speeds above their rated speed (operation in the field-weakening range), the maximum load torque is also reduced.

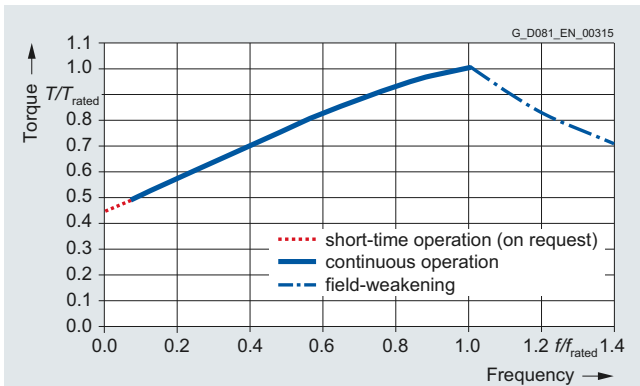
Operating points with speeds lower than one tenth of the rated speed are only possible following consultation. In an inquiry, the load torque, the duration of the load and, if necessary, the frequency (number per time interval) of the occurring load must be specified.



Thermal torque limit characteristic 1LA8



Thermal torque limit characteristic 1PQ8

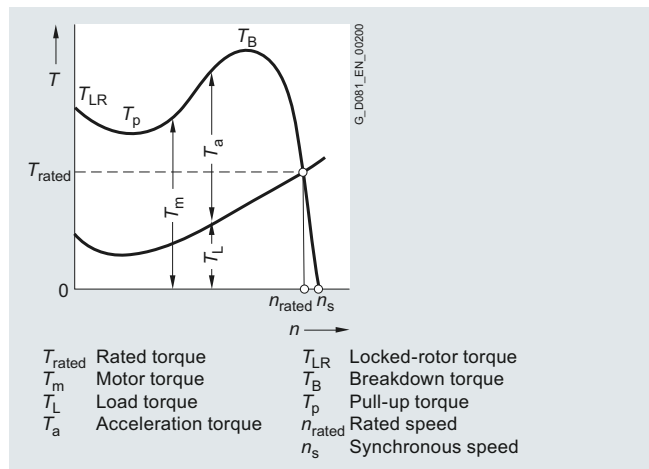


Thermal torque limit characteristic 1LL8

Technical explanations regarding torque and determination of the start-up time for mains-fed operation

Torque characteristic

The torque generated by a three-phase motor at its shaft varies considerably within the speed range $n = 0$ to $n = n_s$. The characteristic curve of the torque as a function of the speed of a three-phase motor with squirrel-cage rotor (CL) is shown in the following diagram.



The values for locked-rotor torque and breakdown torque as well as for locked-rotor current for a certain motor can be found in the selection and ordering data.

The limit for the mechanical overload capability is the breakdown torque. According to IEC/EN 60034-1 asynchronous motors must have an overload capability at rated voltage and rated frequency of up to 1.6 times the rated torque for a duration of 15 s.

At rated voltage, the pull-up torque of asynchronous motors must – unless otherwise agreed – at least have the rated torque values specified in the following.

For three-phase motors without pole changing with a rated output equal to or greater than 100 kW the following applies:

- 0.3 times their rated torque and at least 0.5 times the locked-rotor torque

According to IEC/EN 60034-1, the following tolerances are admissible:

- For locked-rotor torque, from -15 to 25 % of the stated locked-rotor torque
- For locked-rotor current, up to 20 % of the stated locked-rotor current without lower limit
- For breakdown torque, up to -10 % of the stated breakdown torque
- For pull-up torque, -15 % of the guaranteed value.

Taking these tolerances into account, the locked-rotor torque must be sufficiently higher than the breakaway torque of the driven machine; and the motor torque must constantly exceed the load torque during ramp-up until the operating speed is achieved.

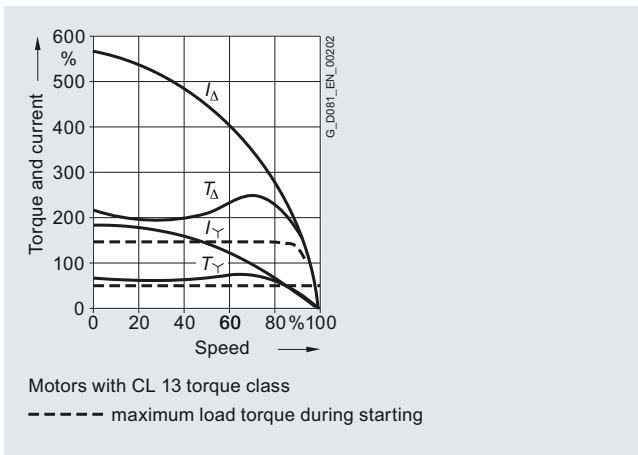
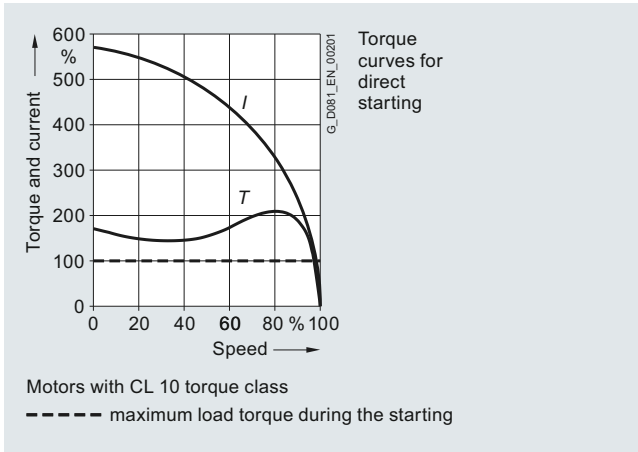
In the case of squirrel-cage motors, the locked-rotor torque and breakdown torque are listed in the selection and ordering data as multiples of the rated torque.

Technical specifications (continued)

The normal practice is to start squirrel-cage motors directly on line. The torque class indicates that with direct-on-line starting, even if there is 5 % undervoltage, it is possible to start up the motor against a load torque of

- 130 % (for CL 13),
- 100 % (for CL 10),
- 70 % (for CL 7),
- 50 % (for CL 5)

of the rated torque.



The rated torque can be calculated as follows:

$$T_{\text{rated}} = 9.55 \cdot P_{\text{rated}} \cdot \frac{1000}{n_{\text{rated}}}$$

T_{rated} Rated torque in Nm
 n_{rated} Rated speed in rpm
 P_{rated} Rated output in kW

The rated speed of the motor differs from the synchronous speed by the slip S_{rated} .

It is:

$$S_{\text{rated}} = \frac{n_s - n_{\text{rated}}}{n_s} \cdot 100$$

S_{rated} Slip in %
 n_s Synchronous speed in rpm
 n_{rated} Rated speed in rpm

Calculation of the start-up time for direct on-line starting

The start-up time from $n = 0$ to $n = n_{\text{op}}$ can be approximately determined from the average acceleration torque.

$$t_{\text{st}} = \frac{\sum J \cdot n_{\text{op}}}{9.55 \cdot T_{\text{aav}}}$$

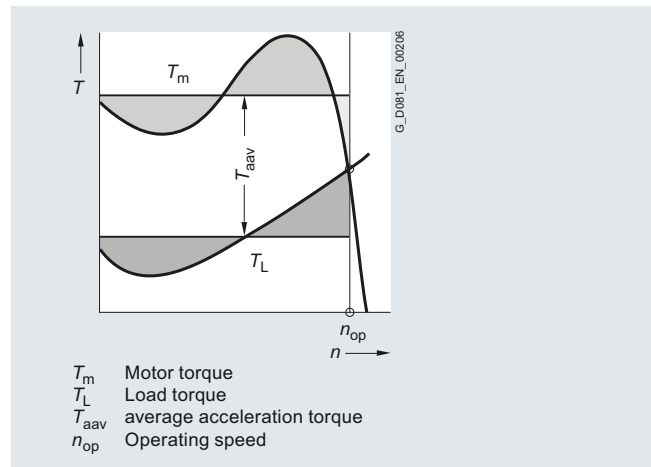
t_{st} Start-up time in s
 J Total moment of inertia in kgm^2
 n_{op} Operating speed in rpm
 T_{aav} Average acceleration torque in Nm

The total moment of inertia is made up of the motor moment of inertia plus the moment of inertia of the driven machine and the coupling or belt pulleys and is converted to the speed of the motor shaft.

Limit values for the start-up curve of three-phase squirrel-cage motors for voltages up to and including 690 V are included in IEC/EN 60034.

If no sound start-up is possible due to a high moment of inertia and/or a high load torque, a larger motor or a three-phase motor with a SINAMICS frequency converter can be selected for SIMOTICS N-compact motors.

A mechanical solution for coping with heavy starting is to use a starting coupling, whose application is limited by its capability to absorb heat.



Determination of the average acceleration torque

Orientation

Technical specifications (continued)

Start-up procedure for three-phase motors with squirrel-cage rotor

Three-phase motors with squirrel-cage rotors should, as far as possible, be started directly on-line.

- It must be observed that the torque and current curve for a specific motor is predetermined, regardless of the heaviness of start-up. Star/delta start-up of motors with squirrel-cage rotor must be used if small locked-rotor currents (e.g. in the supply conditions of the electric power company) or a particularly low start-up torque (soft starting) are required. Locked-rotor torque, breakdown torque and all other torque values as well as the locked-rotor current are 25 to 30 % of the values at direct on-line starting.
- The motor torque must be sufficiently higher than the load torque during start-up in the star stage. The change from star to delta must not occur before approximately the operating speed.

The first diagram shows a case in which star-delta start-up is not appropriate, because the excessive load torque causes the premature change which in turn causes a high torque and current that renders the star-delta starting ineffective.

The torque curve can be approximately reduced by the square of the voltage and the current curve linearly with the voltage by reducing the voltage at the motor terminals with the help of a starting transformer or starting resistors.

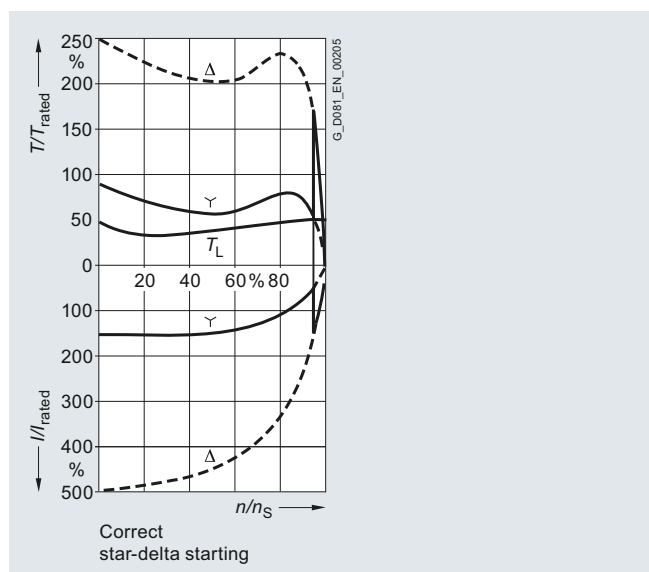
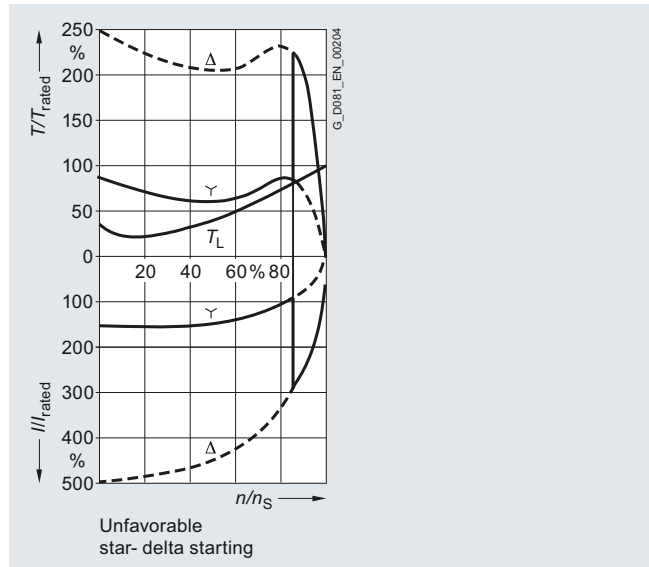
A starting with rated current is possible on the converter – second diagram.

Soft starting for motors with squirrel-cage rotor can also be achieved with short-circuit soft starting (a resistor can be connected in one phase during start-up). The locked-rotor torque can be arbitrarily reduced with the help of this circuit. The locked-rotor current without a resistor or reactor is slightly higher in both phases than with direct on-line starting.

This start-up procedure can be achieved more satisfactorily using the electronic motor starter "SIKOSTART" which limits the torque and the current during starting.

Any inquiries regarding start-up procedures must include the following information:

- 1) Required output and rated speed of the driven machine
- 2) Planned motor speed
- 3) Load torque of the driven machine, depending on the speed of the driven machine or the motor speed
- 4) Total external moment of inertia and rated speed of the driven machine or referred to the motor speed
- 5) Number of starts in a specific time period and duty cycle or
- 6) Characteristics and number of operating cycles in a certain time (method of braking)



Technical specifications (continued)

Start-up times and moments of inertia for 1LA8 motors for mains-fed operation (default values)

The values in the following table are only valid for 1LA8 motors for mains-fed operation (Pages 3/15 and 3/17) and are applicable for continuous heating of 90 % of the rated output at 50 Hz ($0.9 \times P_{\text{rated}}$). At 60 Hz, the admissible moments of inertia must be reduced again by about 20 %. The moment of inertia J_{adm} in the tables is the moment of inertia which the driven machine is allowed to have as a maximum in order to start the motor. For this reason, the moment of inertia of the motor is already taken into account in the selection and ordering data on Pages 3/15 and 3/17.

Frame size	Type	Locking of brake		Admissible moment of inertia and start-up times when starting up the motor			
		cold Blocking time t_{Br} s	warm Blocking time t_{Br} s	1x cold Moment of inertia J_{adm} kgm ²	Start-up time t_{st} s	1x warm Moment of inertia J_{adm} kgm ²	Start-up time t_{st} s
Self-ventilated motors for mains-fed operation, cast-iron series 1LA8 – 2-pole: 3000 rpm at 50 Hz							
315	1LA8315-2AC..	18	10	125	33.9	48	13.0
315	1LA8317-2AC..	17.5	10	140	33.2	58	13.4
355	1LA8353-2AC..	18	9	175	41.4	33	7.8
355	1LA8355-2AC..	20	10	190	45.8	40	9.7
355	1LA8357-2AC..	15	7.5	180	30.0	40	6.7
400	1LA8403-2AC..	22	13	245	40.2	95	15.7
400	1LA8405-2AC..	19	11	255	37.2	90	13.1
400	1LA8407-2AC..	17	9.5	300	34.9	85	9.9
450	1LA8453-2AE..	21.5	15	178	31.3	83	14.6
450	1LA8455-2AE..	20.5	14	190	30.2	90	14.3
450	1LA8457-2AE..	19	13	200	28.2	95	13.4
Self-ventilated motors for mains-fed operation, cast-iron series 1LA8 – 4-pole: 1500 rpm at 50 Hz							
315	1LA8315-4AB..	22	13	590	36.9	350	21.9
315	1LA8317-4AB..	19	11	730	32.3	425	18.8
355	1LA8353-4AB..	20	11	1000	45.7	270	12.4
355	1LA8355-4AB..	18	10	1020	39.6	280	10.9
355	1LA8357-4AB..	19	10.5	1370	41.9	370	11.3
400	1LA8403-4AB..	20.5	11.5	1420	46.2	430	14.0
400	1LA8405-4AB..	20	11	1600	44.5	480	13.3
400	1LA8407-4AB..	19	10.5	1750	43.6	525	13.1
450	1LA8453-4CE..	17.5	10	950	23.7	300	7.5
450	1LA8455-4AC..	18.5	10.5	1200	26.8	370	8.3
450	1LA8457-4AC..	17	9	1160	22.3	380	7.3
Self-ventilated motors for mains-fed operation, cast-iron series 1LA8 – 6-pole: 1000 rpm at 50 Hz							
315	1LA8315-6AB..	33	18	1900	57.4	830	25.1
315	1LA8317-6AB..	31	15.5	2300	55.6	1000	24.2
355	1LA8355-6AB..	40	22	2950	62.2	1350	28.5
355	1LA8356-6AB..	37	18	3150	60	1450	27.9
355	1LA8357-6AB..	40	22	3950	62.5	1800	28.5
400	1LA8403-6AB..	34	18.4	3450	51.1	850	12.6
400	1LA8405-6AB..	32	17.5	3500	43.3	900	11.1
400	1LA8407-6AB..	24	12	2200	25.6	740	8.6
450	1LA8453-6AB..	16	7	1400	15.5	560	6.2
450	1LA8455-6AB..	19	8.5	1700	18.1	670	7.1
450	1LA8457-6AB..	16	7	1800	15.9	720	6.4
Self-ventilated motors for mains-fed operation, cast-iron series 1LA8 – 8-pole: 750 rpm at 50 Hz							
315	1LA8315-8AB..	40	22	4800	109.5	1950	44.5
315	1LA8317-8AB..	42	23	6800	125.9	2500	46.3
355	1LA8355-8AB..	41	22.5	6200	89.6	3100	44.8
355	1LA8357-8AB..	40	22	7600	88.7	3800	44.3
400	1LA8403-8AB..	55	30	9700	107.5	4400	48.8
400	1LA8405-8AB..	54	29.5	11000	102.9	5400	50.5
400	1LA8407-8AB..	52	28.5	11200	95.4	5400	46.0
450	1LA8453-8AB..	44	25	9800	78.8	2900	23.3
450	1LA8455-8AB..	42	23	10500	71.4	3000	20.4
450	1LA8457-8AB..	44	25	12400	78.1	3700	23.3

SIMOTICS N-compact Non-Standard Motors

Orientation

Technical specifications (continued)

Frame size	Type	Locking of brake		Admissible moment of inertia and start-up times when starting up the motor			
		cold	warm	1x cold		1x warm	
		Blocking time	Blocking time	Moment of inertia	Start-up time	Moment of inertia	Start-up time
FS		t_{Br} s	t_{Br} s	J_{adm} kgm ²	t_{st} s	J_{adm} kgm ²	t_{st} s
Self-ventilated motors for mains-fed operation, cast-iron series 1LA8, IE3 version – 2-pole: 3000 rpm at 50 Hz							
315	1LA8315-2EC..	18	10	125	33.9	48	13.0
315	1LA8317-2EC..	17.5	10	140	33.2	58	13.4
355	1LA8353-2EC..	18	9	175	41.4	33	7.8
Self-ventilated motors for mains-fed operation, cast-iron series 1LA8, IE3 version – 4-pole: 1500 rpm at 50 Hz							
315	1LA8316-4EB..	28	13	590	36.7	350	21.9
315	1LA8318-4EB..	31	9	730	38.4	330	17.5
355	1LA8353-4EB..	23	9	1000	49.6	270	13.6
Self-ventilated motors for mains-fed operation, cast-iron series 1LA8, IE3 version – 6-pole: 1000 rpm at 50 Hz							
315	1LA8317-6EB..	49	17	1900	72.1	830	31.6
315	1LA8318-6EB..	42	16	2300	71	1000	31
355	1LA8355-6EB..	40	22	2950	62.2	1350	28.5
355	1LA8356-6EB..	37	18	3150	60	1450	27.9

Standard delivery times:

10 working days	20 working days	On request
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Overview of selection and ordering data
with base prices and standard delivery times

Overview

Category	3.1 – Motors specially designed for mains-fed operation		
Series version	Cast-iron series 1LA8 with Premium Efficiency IE3	Cast-iron series 1LA8 with High Efficiency IE2	Cast-iron series 1LL8 with High Efficiency IE2
Cooling	Self-ventilated (IC 411)	Self-ventilated (IC 411)	Self-ventilated with through-ventilation (IC 01)
Degree of protection	IP55, optionally IP56 (non-heavy-sea) or IP65	IP55, optionally IP56 (non-heavy-sea) or IP65	IP23
Insulation	Thermal class 155 (F), optionally 180 (H)	Thermal class 155 (F), optionally 180 (H)	Thermal class 155 (F), optionally 180 (H)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6	2, 4, 6, 8	2, 4, 6, 8
Frame size (FS)	315 ... 355	315 ... 450	315 ... 450
Rated output at 50 Hz	250 ... 400 kW	160 ... 1000 kW	200 ... 1250 kW
Synchronous speed	1000 ... 3600 rpm	750 ... 3600 rpm	750 ... 3600 rpm
Rated torque at 50 Hz	801 ... 3418 Nm	801 ... 8090 Nm	1010 ... 10300 Nm
Efficiency	Premium Efficiency IE3	High Efficiency IE2	High Efficiency IE2
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -	N - W - - -
Price group	6ZZ	6ZZ	6ZZ

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 (for order number supplements and special versions see Catalog Section 3.3, for delivery times refer to colored background following the Order No.)

Frame size	$P_{rated, 50 Hz}$ kW	IE class	Order No. ▲ New	$P_{rated, 50 Hz}$ kW	IE class	Order No. ▲ New ▼ Standardline	$P_{rated, 50 Hz}$ kW	IE class	Order No.
2-pole: 3000 rpm at 50 Hz									
315	250	IE3	▲ 1LA8315-2EC..	250	IE2	1LA8315-2AC..	315	IE2	1LL8315-2AC..
315	315	IE3	▲ 1LA8317-2EC..	315	IE2	1LA8317-2AC..	400	-	1LL8317-2AC..
355	355	IE3	▲ 1LA8353-2EC..	355	IE2	1LA8353-2AC..	450	-	1LL8353-2AD..
355				400	-	1LA8355-2AC..	500	-	1LL8355-2AD..
355				500	-	1LA8357-2AC..	630	-	1LL8357-2AD..
400				560	-	1LA8403-2AC..	710	-	1LL8403-2AD..
400				630	-	1LA8405-2AC..	800	-	1LL8405-2AD..
400				710	-	1LA8407-2AC..	900	-	1LL8407-2AD..
450				800	-	1LA8453-2AE..	1000	-	1LL8453-2AE..
450				900	-	1LA8455-2AE..	1120	-	1LL8455-2AE..
450				1000	-	1LA8457-2AE..	1250	-	1LL8457-2AE..
4-pole: 1500 rpm at 50 Hz									
315	250	IE3	▲ 1LA8316-4EB..	250	IE2	▼ 1LA8315-4AB..	315	IE2	1LL8315-4AC..
315	315	IE3	▲ 1LA8318-4EB..	315	IE2	▼ 1LA8317-4AB..	400	-	1LL8317-4AC..
355	355	IE3	▲ 1LA8353-4EB..	355	IE2	▼ 1LA8353-4AB..	450	-	1LL8353-4AC..
355				400	-	▼ 1LA8355-4AB..	500	-	1LL8355-4AC..
355				500	-	▼ 1LA8357-4AB..	630	-	1LL8357-4AC..
400				560	-	1LA8403-4AB..	710	-	1LL8403-4AC..
400				630	-	1LA8405-4AB..	800	-	1LL8405-4AC..
400				710	-	1LA8407-4AB..	900	-	1LL8407-4AC..
450				800	-	1LA8453-4AC..	1000	-	1LL8453-4AD..
450				900	-	1LA8455-4AC..	1120	-	1LL8455-4AD..
450				1000	-	1LA8457-4AC..	1250	-	1LL8457-4AD..
6-pole: 1000 rpm at 50 Hz									
315	200	IE3	▲ 1LA8317-6EB..	200	IE2	1LA8315-6AB..	250	IE2	1LL8315-6AC..
315	250	IE3	▲ 1LA8318-6EB..	250	IE2	1LA8317-6AB..	315	IE2	1LL8317-6AC..
355	315	IE3	▲ 1LA8353-6EB..	315	IE2	1LA8355-6AB..	400	-	1LL8355-6AC..
355	355	IE3	▲ 1LA8356-6EB..	355	IE2	▲ 1LA8356-6AB..			
355				400	-	1LA8357-6AB..	500	-	1LL8357-6AC..
400				450	-	1LA8403-6AB..	560	-	1LL8403-6AC..
400				500	-	1LA8405-6AB..	630	-	1LL8405-6AC..
400				560	-	1LA8407-6AB..	710	-	1LL8407-6AC..
450				630	-	1LA8453-6AB..	800	-	1LL8453-6AD..
450				710	-	1LA8455-6AB..	900	-	1LL8455-6AD..
450				800	-	1LA8457-6AB..	1000	-	1LL8457-6AD..
8-pole: 750 rpm at 50 Hz									
315				160	-	1LA8315-8AB..	200	-	1LL8315-8AC..
315				200	-	1LA8317-8AB..	250	-	1LL8317-8AC..
355				250	-	1LA8355-8AB..	315	-	1LL8355-8AC..
355				315	-	1LA8357-8AB..	400	-	1LL8357-8AC..
400				355	-	1LA8403-8AB..	450	-	1LL8403-8AD..
400				400	-	1LA8405-8AB..	500	-	1LL8405-8AD..
400				450	-	1LA8407-8AB..	560	-	1LL8407-8AD..
450				500	-	1LA8453-8AB..	630	-	1LL8453-8AD..
450				560	-	1LA8455-8AB..	710	-	1LL8455-8AD..
450				630	-	1LA8457-8AB..	800	-	1LL8457-8AD..

3.0

SIMOTICS N-compact Non-Standard Motors

Orientation

Overview of selection and ordering data with base prices and standard delivery times

Standard delivery times:

10
working
days

20
working
days

On
request

Overview (continued)

Category	3.2 – Motors specially designed for converter-fed operation – optimally matched to SINAMICS and SIMOVERT MASTERDRIVES drive systems	
Series version	Cast-iron series 1LA8 with standard insulation for ≤ 500 V	Cast-iron series 1LA8 with special insulation for > 500 to 690 V
Cooling	Self-ventilated (IC 411)	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 (non-heavy-sea) or IP65	IP55, optionally IP56 (non-heavy-sea) or IP65
Insulation	Thermal class 155 (F), optionally 180 (H)	Thermal class 155 (F), optionally 180 (H)
Utilization	Thermal class 155 (F)	Thermal class 155 (F)
Number of poles	2, 4, 6, 8	2, 4, 6, 8
Frame size (FS)	315 ... 450	315 ... 450
Rated output at 50 Hz	160 ... 1000 kW	145 ... 980 kW
Synchronous speed	750 ... 3600 rpm	750 ... 3600 rpm
Rated torque at 50 Hz	801 ... 8090 Nm	770 ... 7691 Nm
Efficiency	High Efficiency	High Efficiency
Metal factor for metal surcharges (MS)	N - W - -	N - W - -
Price group	6ZZ	6ZZ

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 3.3, for delivery times refer to colored background following the Order No.)

Frame size	$P_{rated, 50 Hz}$ kW	Order No. ▲ New ▼ Standardline	$P_{rated, 50 Hz}$ kW	Order No. ▲ New
2-pole: 3000 rpm at 50 Hz				
315	250	1LA8315-2PC..	240	1LA8315-2PM..
315	315	1LA8317-2PC..	300	1LA8317-2PM..
355	355	1LA8353-2PC..	345	1LA8353-2PM..
355	400	1LA8355-2PC..	390	1LA8355-2PM..
355	500	1LA8357-2PC..	485	1LA8357-2PM..
400	560	1LA8403-2PC..	545	1LA8403-2PM..
400	630	1LA8405-2PC..	610	1LA8405-2PM..
400	710	1LA8407-2PC..	680	1LA8407-2PM..
450	800	1LA8453-2PE..	775	1LA8453-2PM..
450	900	1LA8455-2PE..	875	1LA8455-2PM..
450	1000	1LA8457-2PE..	970	1LA8457-2PM..
4-pole: 1500 rpm at 50 Hz				
315	250	▼ 1LA8315-4PB..	235	1LA8315-4PM..
315	315	▼ 1LA8317-4PB..	290	1LA8317-4PM..
355	355	▼ 1LA8353-4PB..	340	1LA8353-4PM..
355	400	▼ 1LA8355-4PB..	385	1LA8355-4PM..
355	500	▼ 1LA8357-4PB..	480	1LA8357-4PM..
400	560	1LA8403-4PB..	545	1LA8403-4PM..
400	630	1LA8405-4PB..	615	1LA8405-4PM..
400	710	1LA8407-4PB..	690	1LA8407-4PM..
450	800	1LA8453-4PC..	785	1LA8453-4PM..
450	900	1LA8455-4PC..	880	1LA8455-4PM..
450	1000	1LA8457-4PC..	980	1LA8457-4PM..
6-pole: 1000 rpm at 50 Hz				
315	200	1LA8315-6PB..	190	1LA8315-6PM..
315	250	1LA8317-6PB..	235	1LA8317-6PM..
355	315	1LA8355-6PB..	300	1LA8355-6PM..
355	355	▲ 1LA8356-6PB..	340	▲ 1LA8356-6PM..
355	400	1LA8357-6PB..	380	1LA8357-6PM..
400	450	1LA8403-6PB..	435	1LA8403-6PM..
400	500	1LA8405-6PB..	485	1LA8405-6PM..
400	560	1LA8407-6PB..	545	1LA8407-6PM..
450	630	1LA8453-6PB..	615	1LA8453-6PM..
450	710	1LA8455-6PB..	690	1LA8455-6PM..
450	800	1LA8457-6PB..	780	1LA8457-6PM..
8-pole: 750 rpm at 50 Hz				
315	160	1LA8315-8PB..	145	1LA8315-8PM..
315	200	1LA8317-8PB..	180	1LA8317-8PM..
355	250	1LA8355-8PB..	230	1LA8355-8PM..
355	315	1LA8357-8PB..	290	1LA8357-8PM..
400	355	1LA8403-8PB..	335	1LA8403-8PM..
400	400	1LA8405-8PB..	375	1LA8405-8PM..
400	450	1LA8407-8PB..	425	1LA8407-8PM..
450	500	1LA8453-8PB..	485	1LA8453-8PM..
450	560	1LA8455-8PB..	545	1LA8455-8PM..
450	630	1LA8457-8PB..	600	1LA8457-8PM..

Standard delivery times:

10 working days	20 working days	On request
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Overview of selection and ordering data
with base prices and standard delivery times

Overview (continued)

Category	3.2 – Motors specially designed for converter-fed operation – optimally matched to SINAMICS and SIMOVERT MASTERDRIVES drive systems	
Series version	Cast-iron series 1LL8 with standard insulation for ≤ 500 V	Cast-iron series 1LL8 with special insulation for > 500 to 690 V
Cooling	Self-ventilated with through-ventilation (IC 01)	Self-ventilated with through-ventilation (IC 01)
Degree of protection	IP23	IP23
Insulation	Thermal class 155 (F), optionally 180 (H)	Thermal class 155 (F), optionally 180 (H)
Utilization	Thermal class 155 (F)	Thermal class 155 (F)
Number of poles	2, 4, 6, 8	2, 4, 6, 8
Frame size (FS)	315 ... 450	315 ... 450
Rated output at 50 Hz	200 ... 1250 kW	180 ... 1225 kW
Synchronous speed	750 ... 3600 rpm	750 ... 3600 rpm
Rated torque at 50 Hz	1010 ... 10300 Nm	962 ... 9782 Nm
Efficiency	High Efficiency	High Efficiency
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -
Price group	6ZZ	6ZZ

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 3.3, for delivery times refer to colored background following the Order No.)

Frame size	P_{rated} , 50 Hz kW	Order No.	P_{rated} , 50 Hz kW	Order No.
2-pole: 3000 rpm at 50 Hz				
315	315	1LL8315-2PC..	300	1LL8315-2PM..
315	400	1LL8317-2PC..	380	1LL8317-2PM..
355	450	1LL8353-2PD..	435	1LL8353-2PM..
355	500	1LL8355-2PD..	485	1LL8355-2PM..
355	630	1LL8357-2PD..	610	1LL8357-2PM..
400	710	1LL8403-2PD..	690	1LL8403-2PM..
400	800	1LL8405-2PD..	770	1LL8405-2PM..
400	900	1LL8407-2PD..	860	1LL8407-2PM..
450	1000	1LL8453-2PE..	965	1LL8453-2PM..
450	1120	1LL8455-2PE..	1085	1LL8455-2PM..
450	1250	1LL8457-2PE..	1210	1LL8457-2PM..
4-pole: 1500 rpm at 50 Hz				
315	315	1LL8315-4PC..	295	1LL8315-4PM..
315	400	1LL8317-4PC..	365	1LL8317-4PM..
355	450	1LL8353-4PC..	430	1LL8353-4PM..
355	500	1LL8355-4PC..	480	1LL8355-4PM..
355	630	1LL8357-4PC..	600	1LL8357-4PM..
400	710	1LL8403-4PC..	690	1LL8403-4PM..
400	800	1LL8405-4PC..	780	1LL8405-4PM..
400	900	1LL8407-4PC..	870	1LL8407-4PM..
450	1000	1LL8453-4PD..	980	1LL8453-4PM..
450	1120	1LL8455-4PD..	1095	1LL8455-4PM..
450	1250	1LL8457-4PD..	1225	1LL8457-4PM..
6-pole: 1000 rpm at 50 Hz				
315	250	1LL8315-6PC..	235	1LL8315-6PM..
315	315	1LL8317-6PC..	295	1LL8317-6PM..
355	400	1LL8355-6PC..	380	1LL8355-6PM..
355	500	1LL8357-6PC..	475	1LL8357-6PM..
400	560	1LL8403-6PC..	540	1LL8403-6PM..
400	630	1LL8405-6PC..	610	1LL8405-6PM..
400	710	1LL8407-6PC..	690	1LL8407-6PM..
450	800	1LL8453-6PD..	780	1LL8453-6PM..
450	900	1LL8455-6PD..	870	1LL8455-6PM..
450	1000	1LL8457-6PD..	975	1LL8457-6PM..
8-pole: 750 rpm at 50 Hz				
315	200	1LL8315-8PC..	180	1LL8315-8PM..
315	250	1LL8317-8PC..	225	1LL8317-8PM..
355	315	1LL8355-8PC..	285	1LL8355-8PM..
355	400	1LL8357-8PC..	365	1LL8357-8PM..
400	450	1LL8403-8PD..	420	1LL8403-8PM..
400	500	1LL8405-8PD..	465	1LL8405-8PM..
400	560	1LL8407-8PD..	525	1LL8407-8PM..
450	630	1LL8453-8PD..	610	1LL8453-8PM..
450	710	1LL8455-8PD..	690	1LL8455-8PM..
450	800	1LL8457-8PD..	760	1LL8457-8PM..

3.0

SIMOTICS N-compact Non-Standard Motors

Orientation

Overview of selection and ordering data with base prices and standard delivery times

Standard delivery times:

10
working
days

20
working
days

On
request

Overview (continued)

Category	3.2 – Motors specially designed for converter-fed operation – optimally matched to SINAMICS and SIMOVERT MASTERDRIVES drive systems			
Series version	Cast-iron series 1PQ8 with standard insulation for ≤ 500 V		Cast-iron series 1PQ8 with special insulation for > 500 to 690 V	
Cooling	Forced-air cooled with mounted separately driven fan (IC 416)		Forced-air cooled with mounted separately driven fan (IC 416)	
Degree of protection	IP55, optionally IP56 (non-heavy-sea) or IP65		IP55, optionally IP56 (non-heavy-sea) or IP65	
Insulation	Thermal class 155 (F), optionally 180 (H)		Thermal class 155 (F), optionally 180 (H)	
Utilization	Thermal class 155 (F)		Thermal class 155 (F)	
Number of poles	2, 4, 6, 8		2, 4, 6, 8	
Frame size (FS)	315 ... 450		315 ... 450	
Rated output at 50 Hz	160 ... 1000 kW		145 ... 980 kW	
Synchronous speed	750 ... 3600 rpm		750 ... 3600 rpm	
Rated torque at 50 Hz	801 ... 8090 Nm		770 ... 7691 Nm	
Efficiency	High Efficiency		High Efficiency	
Metal factor for metal surcharges (MS)	N - W - - -		N - W - - -	
Price group	6ZZ		6ZZ	
Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 (for order number supplements and special versions see Catalog Section 3.3, for delivery times refer to colored background following the Order No.)				
Frame size	P_{rated} , 50 Hz kW	Order No. ▲ New	P_{rated} , 50 Hz kW	Order No. ▲ New
2-pole: 3000 rpm at 50 Hz				
315	250	1PQ8315-2PC..	240	1PQ8315-2PM..
315	315	1PQ8317-2PC..	300	1PQ8317-2PM..
355	355	1PQ8353-2PC..	345	1PQ8353-2PM..
355	400	1PQ8355-2PC..	390	1PQ8355-2PM..
355	500	1PQ8357-2PC..	485	1PQ8357-2PM..
400	560	1PQ8403-2PC..	545	1PQ8403-2PM..
400	630	1PQ8405-2PC..	610	1PQ8405-2PM..
400	710	1PQ8407-2PC..	680	1PQ8407-2PM..
450	800	1PQ8453-2PE..	775	1PQ8453-2PM..
450	900	1PQ8455-2PE..	875	1PQ8455-2PM..
450	1000	1PQ8457-2PE..	970	1PQ8457-2PM..
4-pole: 1500 rpm at 50 Hz				
315	250	1PQ8315-4PB..	235	1PQ8315-4PM..
315	315	1PQ8317-4PB..	290	1PQ8317-4PM..
355	355	1PQ8353-4PB..	340	1PQ8353-4PM..
355	400	1PQ8355-4PB..	385	1PQ8355-4PM..
355	500	1PQ8357-4PB..	480	1PQ8357-4PM..
400	560	1PQ8403-4PB..	545	1PQ8403-4PM..
400	630	1PQ8405-4PB..	615	1PQ8405-4PM..
400	710	1PQ8407-4PB..	690	1PQ8407-4PM..
450	800	1PQ8453-4PC..	785	1PQ8453-4PM..
450	900	1PQ8455-4PC..	880	1PQ8455-4PM..
450	1000	1PQ8457-4PC..	980	1PQ8457-4PM..
6-pole: 1000 rpm at 50 Hz				
315	200	1PQ8315-6PB..	190	1PQ8315-6PM..
315	250	1PQ8317-6PB..	235	1PQ8317-6PM..
355	315	1PQ8355-6PB..	300	1PQ8355-6PM..
355	355	▲ 1PQ8356-6PB..	340	▲ 1PQ8356-6PM..
355	400	1PQ8357-6PB..	380	1PQ8357-6PM..
400	450	1PQ8403-6PB..	435	1PQ8403-6PM..
400	500	1PQ8405-6PB..	485	1PQ8405-6PM..
400	560	1PQ8407-6PB..	545	1PQ8407-6PM..
450	630	1PQ8453-6PB..	615	1PQ8453-6PM..
450	710	1PQ8455-6PB..	690	1PQ8455-6PM..
450	800	1PQ8457-6PB..	780	1PQ8457-6PM..
8-pole: 750 rpm at 50 Hz				
315	160	1PQ8315-8PB..	145	1PQ8315-8PM..
315	200	1PQ8317-8PB..	180	1PQ8317-8PM..
355	250	1PQ8355-8PB..	230	1PQ8355-8PM..
355	315	1PQ8357-8PB..	290	1PQ8357-8PM..
400	355	1PQ8403-8PB..	335	1PQ8403-8PM..
400	400	1PQ8405-8PB..	375	1PQ8405-8PM..
400	450	1PQ8407-8PB..	425	1PQ8407-8PM..
450	500	1PQ8453-8PB..	485	1PQ8453-8PM..
450	560	1PQ8455-8PB..	545	1PQ8455-8PM..
450	630	1PQ8457-8PB..	600	1PQ8457-8PM..

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for mains-fed operation



Self-ventilated motors
Cast-iron series 1LA8

Selection and ordering data

Operating values at rated output															Cast-iron series							
$P_{rated, 50 Hz}$	$P_{rated, 60 Hz}$	Frame size	$n_{rated, 50 Hz}$	$T_{rated, 50 Hz}$	IE class	$\eta_{rated, 50 Hz, 4/4}$	$\eta_{rated, 50 Hz, 3/4}$	$\eta_{rated, 50 Hz, 2/4}$	cos- $\phi_{rated, 50 Hz, 4/4}$	$I_{rated, 50 Hz, 400 V}$	$I_{rated, 50 Hz, 690 V}$	T_{LR}/T_{ra-}	L_{LR}/L_{ra-}	T_B/T_{ra-}	$L_{pfA, 50 Hz}$	$L_{WA, 50 Hz}$	1LA8 – Specially designed for mains-fed operation Order No.	$m_{IM B3}$	J	Torque class		
kW	kW	FS	rpm	Nm		%	%	%		A	A				dB(A)	dB(A)	▲ New	kg	kgm ²	CL		
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Mains-fed operation: Service factor (SF) 1.1 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																						
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																						
250	280	315	2979	801	IE3	95.8	95.8	95.1	0.90	420	245	1.8	7.0	2.8	82 (75) ²⁾	97 (90) ²⁾	▲ 1LA8315-2EC	1300	2.7	10		
315	353	315	2979	1010	IE3	96.0	96.1	95.5	0.91	520	300	1.8	7.0	2.8	82 (75) ²⁾	97 (90) ²⁾	▲ 1LA8317-2EC	1500	3.3	10		
355	398	355	2980	1140	IE3	96.0	96.1	95.5	0.90	590	345	1.7	6.5	2.5	77 ³⁾	92 ³⁾	▲ 1LA8353-2EC	1900	4.8	10		
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																						
250	288	315	1490	1602	IE3	96.0	96.0	95.5	0.85	440	255	1.7	7.0	3.2	75	90	▲ 1LA8316-4EB	1500	4.1	13		
315	362	315	1488	2021	IE3	96.0	96.0	95.8	0.86	550	320	1.6	6.5	3.0	75	90	▲ 1LA8318-4EB	1600	4.8	13		
355	408	355	1489	2277	IE3	96.1	96.0	95.6	0.85	630	365	1.6	6.5	2.9	75	90	▲ 1LA8353-4EB	2000	6.1	13		
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																						
200	230	315	993	1923	IE3	95.8	95.7	95.1	0.84	360	210	1.8	6.5	2.7	68	82	▲ 1LA8317-6EB	1300	7.3	13		
250	288	315	992	2407	IE3	95.8	95.7	95.2	0.84	450	260	1.7	6.2	2.7	68	82	▲ 1LA8318-6EB	1500	7.7	13		
315	362	355	992	3033	IE3	95.9	95.9	95.6	0.85	560	325	1.9	6.5	2.8	71	86	▲ 1LA8355-6EB	2000	13	13		
355	408	355	992	3418	IE3	96.0	96.1	95.9	0.86	620	360	1.9	6.8	2.8	71	86	▲ 1LA8356-6EB	2200	15	13		
Voltages		No. of poles	Motor type		Version																Order code(s)	
50 Hz	400 VΔ/690 VY	2, 4, 6	1LA8 315 ... 356		Standard																6	
	500 VΔ		1LA8 315 ... 356		Without additional charge																5	
60 Hz ¹⁾	460 VΔ	2, 4, 6	1LA8 315 ... 356		Without additional charge																9	
																					9	
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.																				
For types of construction see Page 3/33.		Motor type		Version																Order code(s)		
Without flange	IM B3	1LA8 315 ... 356		Standard																0		
	IM V5, IM V6	1LA8 315 ... 356		With additional charge																0		
With flange	IM V1 without protective cover	1LA8 315 ... 356		With additional charge		Not for explosion-proof motors.														8		
	IM V1 with protective cover	1LA8 315 ... 356		With additional charge		The "Second shaft extension" option (K16) is not possible.														4		
	IM B35	1LA8 315 ... 356		With additional charge																6		
Special versions		Order code(s)																				
Options		For additional charges, order codes and descriptions, see from Page 3/34.															1LA8 ... -Z		...+...+...			
Motor type 1LA8		315-2	317-2	353-2	316-4	318-4	353-4	317-6	318-6	355-6	356-6											
Parallel feeders required																						
400 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	Yes	Yes	Yes											
500 V	–	–	Yes	–	–	Yes	–	–	–	–	Yes											
690 V	–	–	–	–	–	–	–	–	–	–	–											
Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 4-pole motors on request.)																						
Standard use	–	–	3600	3600	3600	3000	3000	2500	2950	2950	2500	2500										
IM V1 type	–	–	–	–	3100	–	–	–	–	–	–	–										
Ex protection	–	–	–	–	–	2650	2650	2350	2350	2350	2350	2100	2100									

3.1

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

²⁾ Low-noise version in brackets. To reduce noise, 2-pole motors can be equipped with an axial fan for one direction of rotation. Clockwise rotation order code K37, counter-clockwise rotation K38.

³⁾ Standard version with axial fan for clockwise rotation. Without order code K37. For counter-clockwise rotation, order code K38 is necessary.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for mains-fed operation

IE2

Self-ventilated motors
Cast-iron series 1LA8

Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW ¹⁾	Frame size	Operating values at rated output												Cast-iron series 1LA8 – Specially designed for mains-fed operation Order No.	m _{IM B3}	J	Torque class					
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{ra-} 50 Hz, 4/4	η _{ra-} 50 Hz, 3/4	η _{ra-} 50 Hz, 2/4	COS- φ _{rated} 50 Hz, 4/4	I _r 50 Hz, 400 V	I _r 50 Hz, 690 V	T _{LR} / I _r	I _{LR} / I _r	T _P / T _r					L _p fA, 50 Hz dB(A)	L _{WA} , 50 Hz dB(A)			
• Cooling: Self-ventilated (IC 411) • Mains-fed operation: Up to frame size 355, a service factor (SF) of 1.1 is stamped, above this 1.05. • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																							
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																							
250	280	315	2979	801	IE2	95.7	95.7	95.1	0.90	420	245	1.8	7.0	2.8	82 (75) ²⁾	97 (90) ²⁾	1LA8315-2AC	1300	2.7	10			
315	353	315	2979	1010	IE2	95.7	95.7	95.5	0.91	520	300	1.8	7.0	2.8	82 (75) ²⁾	97 (90) ²⁾	1LA8317-2AC	1500	3.3	10			
355	398	355	2980	1140	IE2	95.7	95.7	95.5	0.90	590	345	1.7	6.5	2.5	77 ³⁾	92 ³⁾	1LA8353-2AC	1900	4.8	10			
400	448	355	2980	1280	–	96.2	96.3	96.0	0.91	660	380	1.7	6.5	2.5	77 ³⁾	92 ³⁾	1LA8355-2AC	2000	5.3	10			
500	560	355	2982	1600	–	96.6	96.7	96.2	0.91	820	475	1.8	6.5	2.6	77 ³⁾	92 ³⁾	1LA8357-2AC	2200	6.4	10			
560	616	400	2985	1790	–	96.6	96.7	96.4	0.91	920	530	1.6	7.0	2.8	79 ³⁾	94 ³⁾	1LA8403-2AC	2800	8.6	10			
630	693	400	2985	2020	–	96.6	96.7	96.6	0.91	1040	600	1.6	7.0	2.8	79 ³⁾	94 ³⁾	1LA8405-2AC	3000	9.6	10			
710	781	400	2985	2270	–	96.8	96.9	96.8	0.91	–	670 ⁴⁾	1.7	7.0	2.8	79 ³⁾	94 ³⁾	1LA8407-2AC	3200	11	10			
800	–	450	2986	2560	–	96.7	96.8	96.5	0.91	–	760	0.9	7.0	3.0	81 ³⁾	96 ³⁾	1LA8453-2AE	4000	19	5			
900	–	450	2986	2880	–	96.8	96.9	96.5	0.92	–	850	0.9	7.0	2.8	81 ³⁾	96 ³⁾	1LA8455-2AE	4200	21	5			
1000	–	450	2986	3200	–	96.9	97.0	96.7	0.93	–	930	0.9	7.0	2.7	81 ³⁾	96 ³⁾	1LA8457-2AE	4400	23	5			
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																							
250	288	315	1488	1600	IE2	95.5	95.6	95.2	0.87	435	250	1.8	6.5	2.8	75	87	1LA8315-4AB	1300	3.6	13			
315	362	315	1488	2020	IE2	95.7	95.8	95.5	0.87	550	315	2.0	6.8	2.8	75	87	1LA8317-4AB	1500	4.4	13			
355	408	355	1488	2280	IE2	95.8	95.9	95.5	0.87	610	355	1.8	6.0	2.5	75	90	1LA8353-4AB	1900	6.1	13			
400	460	355	1488	2570	–	95.9	96.0	95.7	0.87	690	400	2.0	6.2	2.5	75	90	1LA8355-4AB	2000	6.8	13			
500	575	355	1488	3210	–	96.2	96.3	96.1	0.88	850	495	2.0	6.5	2.5	75	90	1LA8357-4AB	2200	8.5	13			
560	644	400	1492	3580	–	96.2	96.3	95.8	0.88	950	550	1.9	6.5	2.7	78	93	1LA8403-4AB	2800	13	13			
630	725	400	1492	4030	–	96.4	96.5	95.9	0.88	1080	620	1.9	6.8	2.7	78	93	1LA8405-4AB	3000	14	13			
710	817	400	1492	4540	–	96.5	96.6	96.2	0.89	–	690 ⁴⁾	1.9	6.8	2.7	78	93	1LA8407-4AB	3200	16	13			
800	920	450	1492	5120	–	96.5	96.6	96.1	0.88	–	790 ⁴⁾	1.6	7.0	2.6	81	96	1LA8453-4AC	4000	23	10			
900	1040	450	1492	5760	–	96.6	96.7	96.2	0.87	–	900 ⁵⁾	1.6	7.0	2.6	81	96	1LA8455-4AC	4200	26	10			
1000	1150	450	1492	6400	–	96.6	96.7	96.3	0.89	–	970 ⁵⁾	1.7	7.0	2.6	81	96	1LA8457-4AC	4400	28	10			
Voltag			No. of poles	Motor type	Version	6	0	5	9	9						Order code(s)							
50 Hz			400 V Δ/690 V Y	2, 4	1LA8315 ... 405	Standard	6	0	5	9						–							
690 V Δ			2, 4	1LA8407 ... 457	Standard	0	0	5	9						–								
500 V Δ			2, 4	1LA8315 ... 457	Without additional charge	5	0	5	9						–								
60 Hz ¹⁾			460 V Δ	2, 4	1LA8315 ... 405	With additional charge	9	0	5	9	1LA8407 onwards, on request.					L2F							
Further voltag			For additional charges, code numbers, order codes and descriptions, see from Page 3/32.												9	...							
For types of construction			see Page 3/33.	Motor type	Version	0	0	8	4	6						Order code(s)							
Without flange			IM B3	1LA8315 ... 457	Standard	0	0	8	4	6						–							
			IM V5, IM V6	1LA8315 ... 457	With additional charge	0	0	8	4	6						–							
With flange			IM V1 without protective cover	1LA8315 ... 457 ⁶⁾	With additional charge	8	0	8	4	6	Not for explosion-proof motors.					–							
			IM V1 with protective cover	1LA8315 ... 457 ⁶⁾	With additional charge	4	0	8	4	6	The "Second shaft extension" option (K16) is not possible.					–							
			IM B35	1LA8315 ... 457 ⁷⁾	With additional charge	6	0	8	4	6						–							
Special versions															Order code(s)								
▼ Standardline			No. of poles	Motor type	Voltage	Type	For the range of options, see "Special versions".												1LA83 ... -4AB 6 0 -Z B20+ ...				
With price and delivery time advantages			4	1LA8315 ... 357	50 Hz, 400 V Δ/690 V Y	IM B3													5 0 -Z B20+ ...				
Options			For additional charges, order codes and descriptions, see from Page 3/34.												1LA8 ... -Z ...								
Motor type 1LA8																							
315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4																							
Parallel feeders required																							
400 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–			
500 V	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	Yes	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes		
690 V	–	–	–	–	–	–	–	–	–	–	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes	
Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 4-pole motors on request.)																							
Standard	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2200	2100	2100	2100	
IM V1	–	–	3100	3100	3100	3100	3100	–	–	–	–	–	–	–	–	–	2100	2100	2100	1800	1800	1800	
Ex prot.	–	–	–	–	–	–	–	–	–	–	–	–	–	2650	2650	2350	2350	2350	2100	2100	2100	1900	1900

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

²⁾ Low-noise version in brackets. To reduce noise, 2-pole motors can be equipped with an axial fan for one direction of rotation. Clockwise rotation order code K37, counter-clockwise rotation K38.

³⁾ Standard version with axial fan for clockwise rotation. Without order code K37. For counter-clockwise rotation, order code K38 is necessary.

⁴⁾ Can be ordered for 400 V Δ 50 Hz as special version with voltage code 9 and order code L1Y (specify output, voltage and frequency).

⁵⁾ Also available on request for 400 V Δ 50 Hz.

⁶⁾ Not for 1LA8353 to 457 2-pole, 60 Hz.

⁷⁾ Not for 1LA8453 to 457 2-pole, 60 Hz.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for mains-fed operation



Self-ventilated motors
Cast-iron series 1LA8

Selection and ordering data (continued)

Operating values at rated output																	Cast-iron series 1LA8 – Specially designed for mains-fed operation Order No.	m _{IM B3}	J	Torque class				
P _{rated} , 50 Hz	P _{rated} , 60 Hz ¹⁾	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	I _{rated} , 50 Hz, 690 V	T _{LR} /T _{ra} -ted	I _{LR} /I _{ra} -ted	T _B /T _{ra} -ted	L _{pfA} , 50 Hz	L _{WA} , 50 Hz								
kW	kW	FS	rpm	Nm		%	%	%		A	A							▲ New	kg	kgm ² CL				
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Mains-fed operation: Up to frame size 355, a service factor (SF) of 1.1 is stamped, above this 1.05. Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																								
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																								
200	230	315	990	1930	IE2	95.2	95.4	94.8	0.86	355	205	2.0	6.3	2.5	68	82		1LA8315-6AB	1300	6.0	13			
250	288	315	989	2410	IE2	95.4	95.6	95.2	0.86	440	255	2.0	6.3	2.5	68	82		1LA8317-6AB	1500	7.3	13			
315	362	355	992	3040	IE2	95.7	95.7	95.5	0.86	550	320	2.1	6.5	2.8	71	86		1LA8355-6AB	2000	13	13			
355	408	355	992	3418	IE2	95.7	95.7	95.6	0.86	620	360	2.0	6.8	2.9	71	86	▲	1LA8356-6AB	2200	15	13			
400	460	355	993	3850	–	96.0	96.1	95.7	0.86	700	405	2.2	6.5	2.8	71	86		1LA8357-6AB	2200	16	13			
450	518	400	992	4330	–	96.0	96.1	95.8	0.86	790	455	2.1	6.5	2.7	73	88		1LA8403-6AB	2800	21	13			
500	575	400	992	4810	–	96.0	96.1	95.8	0.86	870	510	2.2	6.5	2.7	73	88		1LA8405-6AB	3000	24	13			
560	644	400	992	5390	–	96.2	96.3	96.0	0.86	980	570	2.2	6.5	2.7	73	88		1LA8407-6AB	3200	27	13			
630	725	450	993	6060	–	96.3	96.4	96.2	0.85	1120	640	2.0	6.5	2.6	75	90		1LA8453-6AB	4000	35	13			
710	817	450	993	6830	–	96.3	96.4	96.4	0.85	–	730 ²⁾	2.0	6.5	2.5	75	90		1LA8455-6AB	4200	39	13			
800	920	450	993	7690	–	96.5	96.7	96.5	0.85	–	820 ³⁾	2.0	6.5	2.5	75	90		1LA8457-6AB	4500	44	13			
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																								
160	184	315	739	2070	–	94.4	94.5	94.4	0.81	300	176	2.1	6.0	2.4	65	79		1LA8315-8AB	1300	6.0	13			
200	230	315	739	2580	–	94.7	94.8	94.8	0.82	370	215	2.1	6.0	2.4	65	79		1LA8317-8AB	1500	7.3	13			
250	288	355	741	3220	–	95.2	95.3	95.1	0.82	460	270	2.1	6.1	2.4	67	82		1LA8355-8AB	2000	13	13			
315	362	355	741	4060	–	95.5	95.6	95.4	0.82	580	335	2.1	6.1	2.4	67	82		1LA8357-8AB	2200	16	13			
355	408	400	742	4570	–	95.6	95.7	95.6	0.82	650	380	2.0	6.2	2.6	69	84		1LA8403-8AB	2800	21	13			
400	460	400	742	5150	–	95.7	95.8	95.5	0.82	740	425	2.1	6.5	2.6	69	84		1LA8405-8AB	3000	24	13			
450	518	400	742	5790	–	95.8	95.9	95.8	0.82	830	480	2.1	6.5	2.6	69	84		1LA8407-8AB	3200	27	13			
500	575	450	744	6420	–	95.9	96.0	95.7	0.80	940	550	2.0	6.6	2.4	71	86		1LA8453-8AB	4000	35	13			
560	644	450	744	7190	–	96.0	96.1	95.8	0.81	1040	600	2.0	6.6	2.4	71	86		1LA8455-8AB	4200	39	13			
630	725	450	744	8090	–	96.1	96.2	95.9	0.81	1160	680	2.0	6.6	2.4	71	86		1LA8457-8AB	4500	44	13			
Voltagess		No. of poles		Motor type		Version															Order code(s)			
50 Hz		400 VΔ/690 VY		6		1LA8315 ... 453		Standard															6 –	
				8		1LA8315 ... 457		Standard															6 –	
		690 VΔ		6		1LA8455 ... 457		Standard															0 –	
		500 VΔ		6, 8		1LA8315 ... 457		Without additional charge															5 –	
60 Hz ¹⁾		460 VΔ		6		1LA8315 ... 453		With additional charge		1LA8455 onwards, on request.												9 L2F		
				8		1LA8315 ... 457		With additional charge												9 L2F				
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.																	9 ...					
For types of construction		see Page 3/33.		Motor type		Version															Order code(s)			
Without flange		IM B3		1LA8315 ... 457		Standard															0 –			
		IM V5, IM V6		1LA8315 ... 457		With additional charge															0 –			
With flange		IM V1 without protective cover		1LA8315 ... 457		With additional charge		Not for explosion-proof motors.												8 –				
		IM V1 with protective cover		1LA8315 ... 457		With additional charge		The "Second shaft extension" option (K16) is not possible.												4 –				
		IM B35		1LA8315 ... 457		With additional charge															6 –			
Special versions																			Order code(s)					
Options		For additional charges, order codes and descriptions, see from Page 3/34.																	1LA8 ... - ... -Z ...+...+...					
Motor type 1LA8		315-6 317-6 355-6 356-6 357-6 403-6 405-6 407-6 453-6 455-6 457-6 315-8 317-8 355-8 357-8 403-8 405-8 407-8 453-8 455-8 457-8																						
Parallel feeders required																								
400 V		– Yes Yes Yes Yes – Yes Yes Yes Yes Yes – – – Yes – – Yes Yes Yes Yes																						
500 V		– – – Yes Yes – – – Yes Yes Yes – – – – – – – Yes Yes																						
690 V		– – – Yes Yes – – – – – – – – – – – – – – – –																						
Mechanical limit speed n _{max} in rpm (limit speeds for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																								
Standard		2950 2950 2500 2500 2500 2200 2200 2200 2100 2100 2100 2950 2950 2500 2500 2200 2200 2200 2100 2100 2100																						
IM V1		– – – – – 2100 2100 2100 1800 1800 1800 – – – – – 2100 2100 2100 1800 1800 1800																						
Ex prot.		2350 2350 2100 2100 2100 1900 1900 1900 1700 1700 1700 2350 2350 2100 2100 1900 1900 1900 1700 1700 1700																						

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

²⁾ Can be ordered for 400 VΔ 50 Hz as special version with voltage code 9 and order code L1Y (specify output, voltage and frequency).

³⁾ Also available on request for 400 VΔ 50 Hz.

3.1

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for mains-fed operation

Self-ventilated motors with through-ventilation
Cast-iron series 1LL8

IE2

Selection and ordering data (continued)

P _{rated} , 50 Hz		P _{rated} , 60 Hz		Frame size	Operating values at rated output			COS- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	I _{rated} , 50 Hz, 690 V	T _{LR} / T _{ra} - ted	L _{pA} , 50 Hz	L _{WA} , 50 Hz	Cast-iron series 1LL8 – Specially designed for mains-fed operation	m _{IM B3} kg	J kgm ²	Torque class CL					
kW	kVA	kW	kVA		n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class											η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	T _{LR} / T _{ra} - ted	L _{pA} , 50 Hz
<ul style="list-style-type: none"> Cooling: Self-ventilated with through-ventilation (IC 01) Mains-fed operation: A service factor (SF) of 1.05 is stamped onto all 1LL8 motors connected to the mains. Insulation: Thermal class 155 (temperature class F), IP23 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																						
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																						
315	345	315	2977	1010	IE2	95.5	95.7	95.6	0.92	520	300	1.6	7.0	2.8	84 ²⁾	99	1LL8315-2AC	1300	2.7	10		
400	440	315	2977	1280	–	95.9	96.2	96.1	0.92	650	380	1.7	7.0	2.8	84 ²⁾	99	1LL8317-2AC	1500	3.3	10		
450	495	355	2981	1440	–	95.9	96.0	95.7	0.91	740	430	1.4	7.0	2.6	86 ²⁾	101	1LL8353-2AD	1900	4.8	7		
500	550	355	2982	1600	–	96.1	96.3	96.0	0.92	820	475	1.4	7.0	2.6	86 ²⁾	101	1LL8355-2AD	2000	5.3	7		
630	690	355	2982	2020	–	96.4	96.6	96.5	0.93	1020	590	1.6	7.0	2.6	86 ²⁾	101	1LL8357-2AD	2200	6.4	7		
710	780	400	2986	2270	–	96.5	96.6	96.3	0.91	1160	680	1.4	6.8	2.6	88 ²⁾	103	1LL8403-2AD	2800	8.6	7		
800	880	400	2986	2560	–	96.6	96.7	96.5	0.92	1300	750	1.5	7.0	2.6	88 ²⁾	103	1LL8405-2AD	3000	9.6	7		
900	990	400	2987	2880	–	96.8	96.9	96.7	0.92	–	850	1.5	7.0	2.7	88 ²⁾	103	1LL8407-2AD	3200	11	7		
1000	1100	450	2987	3200	–	96.8	96.7	96.3	0.93	–	930	0.9	7.0	2.9	90 ²⁾	105	1LL8453-2AE	4000	19	5		
1120	1230	450	2986	3580	–	96.8	96.9	96.6	0.94	–	1020	0.9	7.0	2.7	90 ²⁾	105	1LL8455-2AE	4200	21	5		
1250	1370	450	2984	4000	–	97.0	97.1	96.8	0.94	–	1140	0.9	7.0	2.6	90 ²⁾	105	1LL8457-2AE	4400	23	5		
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																						
315	360	315	1485	2030	IE2	95.5	95.6	95.4	0.87	550	315	1.6	7.0	2.7	77	90	1LL8315-4AC	1300	3.6	10		
400	460	315	1485	2570	–	95.7	95.9	95.8	0.88	690	395	1.7	7.0	2.7	77	90	1LL8317-4AC	1500	4.4	10		
450	515	355	1487	2890	–	96.0	96.0	95.8	0.87	780	450	1.5	7.0	2.6	77	92	1LL8353-4AC	1900	6.1	10		
500	575	355	1488	3210	–	96.1	96.2	96.0	0.88	850	495	1.6	7.0	2.6	77	92	1LL8355-4AC	2000	6.8	10		
630	725	355	1490	4040	–	96.4	96.5	96.2	0.88	1080	620	1.6	7.0	2.7	77	92	1LL8357-4AC	2200	8.5	10		
710	815	400	1490	4550	–	96.4	96.5	96.3	0.88	1200	700	1.6	7.0	2.4	81	96	1LL8403-4AC	2800	13	10		
800	920	400	1490	5130	–	96.5	96.6	96.4	0.88	1360	790	1.7	7.0	2.5	81	96	1LL8405-4AC	3000	14	10		
900	1035	400	1492	5760	–	96.7	96.7	96.4	0.87	–	900	1.7	7.0	2.6	81	96	1LL8407-4AC	3200	16	10		
1000	1150	450	1492	6400	–	96.7	96.7	96.3	0.86	–	1000	1.5	7.0	2.8	84	99	1LL8453-4AD	4000	23	7		
1120	1280	450	1491	7170	–	96.7	96.7	96.5	0.89	–	1080	1.5	7.0	2.6	84	99	1LL8455-4AD	4200	26	7		
1250	1430	450	1490	8010	–	96.8	96.8	96.7	0.89	–	1220	1.5	7.0	2.5	84	99	1LL8457-4AD	4400	28	7		
Voltages		No. of poles		Motor type		Version		Order code(s)														
50 Hz	400 VΔ/690 VY	2, 4	1LL8315 ... 405	Standard		6	–															
	690 VΔ	2, 4	1LL8407 ... 457	Standard		0	–															
	500 VΔ	2, 4	1LL8315 ... 457	Without additional charge		5	–															
60 Hz ¹⁾	460 VΔ	2, 4	1LL8315 ... 405	With additional charge		9	L2F															
	Further voltages ¹⁾ For additional charges, code numbers, order codes and descriptions, see from Page 3/32. 9 ...																					
For types of construction see Page 3/33. Motor type								Version		Order code(s)												
Without flange	IM B3	1LL8315 ... 457 ³⁾		Standard		0	–															
	IM V1 without protective cover	1LL8315 ... 457 ⁴⁾		With additional charge		8	–															
	IM V1 with protective cover	1LL8315 ... 457 ⁴⁾		With additional charge		4	–															
	IM B35	1LL8315 ... 457 ⁴⁾		With additional charge		6	–															
The "Second shaft extension" option (K16) is not possible.																						
Special versions										Order code(s)												
Options For additional charges, order codes and descriptions, see from Page 3/34.										1LL8 . . . - . . . - Z . . . + . . . + . . .												
Motor type 1LL8																						
315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4																						
Parallel feeders required																						
400 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	
500 V	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	Yes	
690 V	–	–	–	–	–	–	–	–	–	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes	
Mechanical limit speed n _{max} in rpm																						
Standard	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2200	2100	2100	2100
IM V1	–	–	3100	3100	3100	3100	3100	–	–	–	–	2600	2600	2200	2200	2200	1900	1900	1900	1800	1800	1800

3.1

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.
²⁾ The noise values for 2-pole 1LL8 motors are for guidance only.

³⁾ Not for 1LL8453 to 457 2-pole, 60 Hz.
⁴⁾ Not for 1LL8 2-pole, 60 Hz.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for mains-fed operation



Self-ventilated motors with through-ventilation
Cast-iron series 1LL8

Selection and ordering data (continued)

Operating values at rated output																				Cast-iron series				
P_{rated} , 50 Hz	P_{rated} , 60 Hz ¹⁾	Frame size	n_{rated} , 50 Hz	T_{rated} , 50 Hz	IE class	η_{rated} , 50 Hz, 4/4	η_{rated} , 50 Hz, 3/4	η_{rated} , 50 Hz, 2/4	COS- φ_{rated} , 50 Hz, 4/4	I_{rated} , 50 Hz, 400 V	I_{rated} , 50 Hz, 690 V	$T_{LR}/$ T_{ra-} ted	$I_{LR}/$ I_{ra-} ted	$T_{P}/$ T_{ra-} ted	L_{pfa} , 50 Hz	L_{WA} , 50 Hz	1LL8 – Specially designed for mains-fed operation		$m_{IM B3}$	J	Torque class			
kW	kW	FS	rpm	Nm		%	%	%		A	A						Order No.	kg	kgm ²	CL				
<ul style="list-style-type: none"> • Cooling: Self-ventilated with through-ventilation (IC 01) • Mains-fed operation: A service factor (SF) of 1.05 is stamped onto all 1LL8 motors connected to the mains. • Insulation: Thermal class 155 (temperature class F), IP23 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																								
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																								
250	285	315	988	2420	IE2	95.0	95.0	94.8	0.88	430	250	1.6	7.0	2.6	70	84	1LL8315-6AC	1300	6.0	10				
315	360	315	988	3040	IE2	95.2	95.2	95.1	0.89	540	310	1.7	7.0	2.6	70	84	1LL8317-6AC	1500	7.3	10				
400	460	355	991	3850	–	95.6	95.8	95.9	0.88	690	400	1.7	7.0	2.5	73	88	1LL8355-6AC	2000	13	10				
500	575	355	992	4820	–	95.9	96.2	96.1	0.88	860	495	1.8	7.0	2.6	73	88	1LL8357-6AC	2200	16	10				
560	645	400	993	5390	–	96.1	96.1	95.8	0.86	980	570	1.8	7.0	2.6	76	91	1LL8403-6AC	2800	21	10				
630	725	400	993	6060	–	96.2	96.4	96.3	0.87	1080	630	1.8	7.0	2.6	76	91	1LL8405-6AC	3000	24	10				
710	815	400	993	6830	–	96.2	96.4	96.3	0.88	1220	700	1.8	7.0	2.5	76	91	1LL8407-6AC	3200	27	10				
800	920	450	993	7700	–	96.3	96.5	96.4	0.86	1380	810	1.5	7.0	2.5	78	93	1LL8453-6AD	4000	35	7				
900	1035	450	992	8660	–	96.3	96.6	96.6	0.87	–	900	1.5	7.0	2.4	78	93	1LL8455-6AD	4200	39	7				
1000	1150	450	993	9620	–	96.4	96.7	96.7	0.88	–	990	1.5	7.0	2.5	78	93	1LL8457-6AD	4500	44	7				
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																								
200	230	315	738	2590	–	94.2	94.7	94.9	0.82	375	215	1.6	5.8	2.4	67	81	1LL8315-8AC	1300	6.0	10				
250	285	315	738	3240	–	94.5	95.1	95.2	0.82	465	270	1.6	5.8	2.4	67	81	1LL8317-8AC	1500	7.3	10				
315	360	355	740	4070	–	95.0	95.2	95.2	0.83	580	335	1.6	6.0	2.4	69	84	1LL8355-8AC	2000	13	10				
400	460	355	740	5160	–	95.1	95.4	95.5	0.84	720	420	1.6	6.0	2.3	69	84	1LL8357-8AC	2200	16	10				
450	515	400	741	5800	–	95.4	95.6	95.7	0.84	810	470	1.3	5.8	2.3	72	87	1LL8403-8AD	2800	21	7				
500	575	400	741	6440	–	95.6	95.8	95.8	0.84	900	520	1.4	5.8	2.4	72	87	1LL8405-8AD	3000	24	7				
560	645	400	742	7210	–	95.7	95.9	95.8	0.83	1020	590	1.4	6.0	2.4	72	87	1LL8407-8AD	3200	27	7				
630	745	450	742	8100	–	95.8	96.0	96.0	0.82	1160	670	1.3	5.8	2.3	74	89	1LL8453-8AD	4000	35	7				
710	815	450	743	9130	–	95.9	96.2	96.1	0.83	1280	750	1.3	5.8	2.3	74	89	1LL8455-8AD	4200	39	7				
800	920	450	742	10300	–	96.0	96.0	95.9	0.83	–	840	1.3	5.8	2.3	74	89	1LL8457-8AD	4500	44	7				
Voltages		No. of poles	Motor type		Version																Order code(s)			
50 Hz	400 VΔ/690 VY	6	1LL8315 ... 453		Standard																6			
		8	1LL8315 ... 455		Standard																6			
	690 VΔ	6	1LL8455 ... 457		Standard																0			
		8	1LL8457		Standard																0			
	500 VΔ	6, 8	1LL8315 ... 457		Without additional charge																5			
60 Hz ¹⁾	460 VΔ	6	1LL8315 ... 453		With additional charge		1LL8455 onwards, on request.																9	
		8	1LL8315 ... 455		With additional charge		For 1LL8457 on request.																9	
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.																		9				
For types of construction see Page 3/33.		Motor type	Version																Order code(s)					
Without flange	IM B3	1LL8315 ... 457		Standard																0				
With flange	IM V1 without protective cover	1LL8315 ... 457		With additional charge																8				
	IM V1 with protective cover	1LL8315 ... 457		With additional charge		The "Second shaft extension" option (K16) is not possible.																4		
	IM B35	1LL8315 ... 457		With additional charge																6				
Special versions		Options																		Order code(s)				
		For additional charges, order codes and descriptions, see from Page 3/34.																		1LL8 ... - ... -Z				
Motor type 1LL8		315-6	317-6	355-6	357-6	403-6	405-6	407-6	453-6	455-6	457-6	315-8	317-8	355-8	357-8	403-8	407-8	453-8	455-8	457-8				
Parallel feeders required																								
400 V	–	Yes	Yes	Yes	–	Yes	Yes	Yes	Yes	Yes	–	–	–	Yes	–	Yes	Yes	Yes	Yes	Yes				
500 V	–	–	–	Yes	–	–	–	Yes	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes				
690 V	–	–	–	Yes	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Mechanical limit speed n_{max} in rpm																								
Standard	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100	2100	2950	2950	2500	2500	2200	2200	2100	2100	2100				
IM V1	2600	2600	2200	2200	1900	1900	1900	1800	1800	1800	1800	2600	2600	2200	2200	1900	1900	1800	1800	1800				

3.1

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors Cast-iron series 1LA8 with standard insulation for ≤ 500 V

Selection and ordering data

P_{rated} 50 Hz	P_{rated} 60 Hz ¹⁾	Frame size	Operating values at rated output with sinusoidal infeed											Cast-iron series	$m_{IM B3}$	J	Torque class
kW	kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} 50 Hz, 4/4	η_{rated} 50 Hz, 3/4	$\cos\Phi_{rated}$ 50 Hz, 4/4	I_{rated} 50 Hz, 400 V	I_{rated} 50 Hz, 690 V	T_B/T_{rated}	L_{pfA} , 50Hz, tolerance +3 dB(A)	L_{WA} , 50Hz, tolerance +3 dB(A)	▼ Standardline	kg	kgm ²	CL	

Order No.

1LA8 – with standard insulation

• Cooling: Self-ventilated (IC 411)

• Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with standard insulation for voltages of ≤ 500 V

• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz¹⁾

250	280	315	2979	801	95.7	95.7	0.90	420	245	2.8	82 (75) ²⁾	97 (90) ²⁾	1LA8315-2PC	1300	2.7	10
315	353	315	2979	1010	95.7	95.7	0.91	520	300	2.8	82 (75) ²⁾	97 (90) ²⁾	1LA8317-2PC	1500	3.3	10
355	398	355	2980	1140	95.7	95.7	0.90	590	345	2.5	77 ³⁾	92 ³⁾	1LA8353-2PC	1900	4.8	10
400	448	355	2980	1280	96.2	96.3	0.91	660	380	2.5	77 ³⁾	92 ³⁾	1LA8355-2PC	2000	5.3	10
500	560	355	2982	1600	96.6	96.7	0.91	820	475	2.6	77 ³⁾	92 ³⁾	1LA8357-2PC	2200	6.4	10
560	616	400	2985	1790	96.6	96.7	0.91	920	530	2.8	79 ³⁾	94 ³⁾	1LA8403-2PC	2800	8.6	10
630	693	400	2985	2020	96.6	96.7	0.91	1040	600	2.8	79 ³⁾	94 ³⁾	1LA8405-2PC	3000	9.6	10
710	781	400	2985	2270	96.8	96.9	0.91	-	670 ⁴⁾	2.8	79 ³⁾	94 ³⁾	1LA8407-2PC	3200	11	10
800	-	450	2986	2560	96.7	96.8	0.91	-	760	3.0	81 ³⁾	96 ³⁾	1LA8453-2PC	4000	19	5
900	-	450	2986	2880	96.8	96.9	0.92	-	850	2.8	81 ³⁾	96 ³⁾	1LA8455-2PC	4200	21	5
1000	-	450	2986	3200	96.9	97.0	0.93	-	930	2.7	81 ³⁾	96 ³⁾	1LA8457-2PC	4400	23	5

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz¹⁾

250	288	315	1488	1600	95.5	95.6	0.87	435	250	2.8	75	87	▼ 1LA8315-4PB	1300	3.6	13
315	362	315	1488	2020	95.7	95.8	0.87	550	315	2.8	75	87	▼ 1LA8317-4PB	1500	4.4	13
355	408	355	1488	2280	95.8	95.9	0.87	610	355	2.5	75	90	▼ 1LA8353-4PB	1900	6.1	13
400	460	355	1488	2570	95.9	96.0	0.87	690	400	2.5	75	90	▼ 1LA8355-4PB	2000	6.8	13
500	575	355	1488	3210	96.2	96.3	0.88	850	495	2.5	75	90	▼ 1LA8357-4PB	2200	8.5	13
560	644	400	1492	3580	96.2	96.3	0.88	950	550	2.7	78	93	1LA8403-4PB	2800	13	13
630	725	400	1492	4030	96.4	96.5	0.88	1080	620	2.7	78	93	1LA8405-4PB	3000	14	13
710	817	400	1492	4540	96.5	96.6	0.89	-	690 ⁴⁾	2.7	78	93	1LA8407-4PB	3200	16	13
800	920	450	1492	5120	96.5	96.6	0.88	-	790 ⁴⁾	2.6	81	96	1LA8453-4PC	4000	23	10
900	1040	450	1492	5760	96.6	96.7	0.87	-	900 ⁵⁾	2.6	81	96	1LA8455-4PC	4200	26	10
1000	1150	450	1492	6400	96.6	96.7	0.89	-	970 ⁵⁾	2.6	81	96	1LA8457-4PC	4400	28	10

Voltages	No. of poles	Motor type	Version	Order code(s)
50 Hz 400 VΔ/690 VY ⁶⁾	2, 4	1LA8315 ... 405	Standard	8 -
690 VΔ ⁶⁾	2, 4	1LA8407 ... 457	Standard	7 -
400 VΔ	2, 4	1LA8315 ... 457	Without additional charge	4 -
500 VΔ	2, 4	1LA8315 ... 457	Without additional charge	5 -
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.		9 ...

For types of construction see Page 3/33	Motor type	Version	Order code(s)
Without flange IM B3	1LA8315 ... 457	Standard	0 -
IM V5, IM V6	1LA8315 ... 457	With additional charge	0 -
With flange IM V1 without protective cover	1LA8315 ... 457 ⁷⁾	With additional charge Not for explosion-proof motors.	8 -
IM V1 with protective cover	1LA8315 ... 457 ⁷⁾	With additional charge The "Second shaft extension" option (K16) is not possible.	4 -
IM B35	1LA8315 ... 457 ⁸⁾	With additional charge	6 -

Special versions	No. of poles	Motor type	Voltage	Type	Order code(s)
▼ Standardline					
For the range of options, see "Special versions".					
With price and delivery time advantages	4	1LA8315 ... 357	50 Hz, 400 VΔ/690 VY 50 Hz, 500 VΔ	IM B3	1LA83 ... 4AB 60 -Z B20 +...+...+... 50 -Z B20 +...+...+...
Options					1LA8 ... +... -Z ...+...+...+...

Motor type 1LA8
315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4

Parallel feeders required																					
400 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
500 V	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes	Yes	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes
690 V	-	-	-	-	-	-	-	-	-	-	-	Yes	Yes	-	-	-	-	-	-	Yes	Yes
Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 4-pole motors on request.)																					
Standard	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2200	2100	2100	2100
IM V1	-	-	3100	3100	3100	3100	3100	-	-	-	-	-	-	-	-	2100	2100	2100	1800	1800	1800
Ex prot.	-	-	-	-	-	-	-	-	-	-	-	2650	2650	2350	2350	2350	2100	2100	2100	1900	1900
Mechanical limit frequency f_{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 4-pole motors on request.)																					
Standard	60	60	60	60	60	60	60	50	50	50	50	100	100	83	83	73	73	73	70	70	70
IM V1	-	-	52	52	52	52	52	-	-	-	-	-	-	-	-	70	70	70	60	60	60
Ex prot.	-	-	-	-	-	-	-	-	-	-	-	88	88	78	78	78	70	70	70	63	63

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.
 2) Low-noise version in brackets. To reduce noise, 2-pole motors can be equipped with an axial fan. Clockwise rotation order code K37, counter-clockwise rotation K38.
 3) Standard version with axial fan for clockwise rotation. Without order code K37. For counter-clockwise rotation, order code K38 is necessary.

4) Can be ordered for 400 VΔ 50 Hz as special version with voltage code 9 and order code L1Y (specify output, voltage and frequency).
 5) Also available on request for 400 VΔ 50 Hz.
 6) Operation is possible only with converter circuit (du/dt filter or sine-wave filter).
 7) Not for 1LA8353 to 457 2-pole, 60 Hz.
 8) Not for 1LA8453 to 457 2-pole, 60 Hz.

3.2

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors
Cast-iron series 1LA8 with standard insulation for ≤ 500 V

Selection and ordering data (continued)

P _{Rated} , 50 Hz	P _{Rated} , 60 Hz 1)	Frame size	Operating values at rated output with sinusoidal infeed										Lp/A, 50Hz, tolerance +3 dB(A)	LWA, 50Hz, tolerance +3 dB(A)	Cast-iron series 1LA8 – with standard insulation Order No.	m _{IM B3}	J	Torque class
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	I _{rated} , 50 Hz, 690 V	T _B /T _{rated}								
kW	kW	FS	rpm	Nm	%	%		A	A		dB(A)	dB(A)	▲ New	kg	kgm ²	CL		

- Cooling: Self-ventilated (IC 411)
- Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with standard insulation for voltages of ≤ 500 V
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz 1)																	
200	230	315	990	1930	95.2	95.4	0.86	355	205	2.5	68	82	▲	1LA8315-6PB	1300	6.0	13
250	288	315	989	2410	95.4	95.6	0.86	440	255	2.5	68	82		1LA8317-6PB	1500	7.3	13
315	362	355	992	3040	95.7	95.7	0.86	550	320	2.8	71	86		1LA8355-6PB	2000	13	13
355	408	355	992	3418	95.7	95.7	0.86	620	360	2.9	71	86		1LA8356-6PB	2200	15	13
400	460	355	993	3850	96.0	96.1	0.86	700	405	2.8	71	86		1LA8357-6PB	2200	16	13
450	518	400	992	4330	96.0	96.1	0.86	790	455	2.7	73	88		1LA8403-6PB	2800	21	13
500	575	400	992	4810	96.0	96.1	0.86	870	510	2.7	73	88		1LA8405-6PB	3000	24	13
560	644	400	992	5390	96.2	96.3	0.86	980	570	2.7	73	88		1LA8407-6PB	3200	27	13
630	725	450	993	6060	96.3	96.4	0.85	1120	640	2.6	75	90		1LA8453-6PB	4000	35	13
710	817	450	993	6830	96.3	96.4	0.85	–	730 ²⁾	2.5	75	90		1LA8455-6PB	4200	39	13
800	920	450	993	7690	96.5	96.7	0.85	–	820 ³⁾	2.5	75	90		1LA8457-6PB	4500	44	13
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz 1)																	
160	184	315	739	2070	94.4	94.5	0.81	300	176	2.4	65	79		1LA8315-8PB	1300	6.0	13
200	230	315	739	2580	94.7	94.8	0.82	370	215	2.4	65	79		1LA8317-8PB	1500	7.3	13
250	288	355	741	3220	95.2	95.3	0.82	460	270	2.4	67	82		1LA8355-8PB	2000	13	13
315	362	355	741	4060	95.5	95.6	0.82	580	335	2.4	67	82		1LA8357-8PB	2200	16	13
355	408	400	742	4570	95.6	95.7	0.82	650	380	2.6	69	84		1LA8403-8PB	2800	21	13
400	460	400	742	5150	95.7	95.8	0.82	740	425	2.6	69	84		1LA8405-8PB	3000	24	13
450	518	400	742	5790	95.8	95.9	0.82	830	480	2.6	69	84		1LA8407-8PB	3200	27	13
500	575	450	744	6420	95.9	96.0	0.80	940	550	2.4	71	86		1LA8453-8PB	4000	35	13
560	644	450	744	7190	96.0	96.1	0.81	1040	600	2.4	71	86		1LA8455-8PB	4200	39	13
630	725	450	744	8090	96.1	96.2	0.81	1160	680	2.4	71	86		1LA8457-8PB	4500	44	13

Voltages			No. of poles	Motor type	Version	Order code(s)	
50 Hz	400 VΔ/690 VY 4)	6	1LA8315 ... 453	Standard	8	–	
		8	1LA8315 ... 457	Standard	8	–	
	690 VΔ 4)	6	1LA8455 ... 457	Standard	7	–	
		6	1LA8315 ... 453	Without additional charge	4	–	
	400 VΔ	8	1LA8315 ... 457	Without additional charge	4	–	
		6, 8	1LA8315 ... 457	Without additional charge	5	–	
Further voltages 1)			For additional charges, code numbers, order codes and descriptions, see from Page 3/32.			9	...
For types of construction see Page 3/33.			Motor type	Version	Order code(s)		
Without flange	IM B3	1LA8315 ... 457	Standard	0	–		
	IM V5, IM V6	1LA8315 ... 457	With additional charge	0	–		
With flange	IM V1 without protective cover	1LA8315 ... 457	With additional charge	8	–		
	IM V1 with protective cover	1LA8315 ... 457	With additional charge	4	–		
	IM B35	1LA8315 ... 457	With additional charge	6	–		

Not for explosion-proof motors. The "Second shaft extension" option (K16) is not possible.

Special versions

Options: For additional charges, order codes and descriptions, see from Page 3/34. 1LA8 ... -Z ...+...+...+...

Motor type 1LA8

315-6 317-6 355-6 356-6 357-6 403-6 405-6 407-6 453-6 455-6 457-6 315-8 317-8 355-8 357-8 403-8 405-8 407-8 453-8 455-8 457-8

Parallel feeders required

400 V	–	Yes	Yes	Yes	Yes	–	Yes	Yes	Yes	–	–	–	–	–	Yes	–	–	Yes	Yes	Yes	
500 V	–	–	–	Yes	Yes	–	–	–	Yes	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes
690 V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)

Standard	2950	2950	2500	2500	2500	2200	2200	2200	2100	2100	2100	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100
IM V1	–	–	–	–	–	2100	2100	2100	1800	1800	1800	–	–	–	–	2100	2100	2100	1800	1800	1800
Ex prot.	2350	2350	2100	2100	2100	1900	1900	1900	1700	1700	1700	2350	2350	2100	2100	1900	1900	1900	1700	1700	1700

Mechanical limit frequency f_{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)

Standard	147	147	125	125	125	110	110	110	105	105	105	196	196	166	166	146	146	146	140	140	140
IM V1	–	–	–	–	–	105	105	105	90	90	90	–	–	–	–	140	140	140	120	120	120
Ex prot.	117	117	105	105	105	95	95	95	85	85	85	156	156	140	140	126	126	126	113	113	113

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.
 2) Can be ordered for 400 VΔ 50 Hz as special version with voltage code 9 and order code L1Y (specify output, voltage and frequency).
 3) Also available on request for 400 VΔ 50 Hz.
 4) Operation is possible only with converter circuit (du/dt filter or sine-wave filter).

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors
Cast-iron series 1LA8 with special insulation for > 500 to 690 V

Selection and ordering data

P _{rated} , 50 Hz	P _{rated} , 60 Hz (1)	Frame size	Operating values at rated output with sinusoidal infeed										Cast-iron series 1LA8 – with special insulation	m _{IM} B3	J	Torque class						
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	cos- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 690 V	T _B / T _{rated}	L _{pfA} , 50Hz, tolerance +3 dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A)	Order No.					kg	kgm ²	CL			
• Cooling: Self-ventilated (IC 411)																						
• Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V																						
• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F)																						
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																						
240	270	315	2978	770	95.5	95.6	0.90	235	3.0	82 (75) ²⁾	97 (90) ²⁾	1LA8315-2PM	1300	2.7	10							
300	335	315	2978	962	95.7	95.7	0.91	290	3.0	82 (75) ²⁾	97 (90) ²⁾	1LA8317-2PM	1500	3.3	10							
345	385	355	2981	1105	95.7	95.7	0.90	335	2.6	77 ³⁾	92 ³⁾	1LA8353-2PM	1900	4.8	10							
390	435	355	2981	1249	96.1	96.2	0.91	375	2.6	77 ³⁾	92 ³⁾	1LA8355-2PM	2000	5.3	10							
485	545	355	2982	1553	96.5	96.6	0.91	460	2.6	77 ³⁾	92 ³⁾	1LA8357-2PM	2200	6.4	10							
545	600	400	2986	1743	96.6	96.7	0.91	520	3.0	79 ³⁾	94 ³⁾	1LA8403-2PM	2800	8.6	10							
610	670	400	2986	1951	96.6	96.7	0.91	580	3.1	79 ³⁾	94 ³⁾	1LA8405-2PM	3000	9.6	10							
680	750	400	2986	2175	96.7	96.8	0.92	640	3.0	79 ³⁾	94 ³⁾	1LA8407-2PM	3200	11	10							
775	–	450	2987	2478	96.7	96.8	0.92	730	2.8	81 ³⁾	96 ³⁾	1LA8453-2PM	4000	19	5							
875	–	450	2987	2798	96.8	96.9	0.92	820	2.8	81 ³⁾	96 ³⁾	1LA8455-2PM	4200	21	5							
970	–	450	2987	3101	96.9	97.0	0.93	900	2.8	81 ³⁾	96 ³⁾	1LA8457-2PM	4400	23	5							
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																						
235	270	315	1485	1511	95.3	95.4	0.87	235	2.8	75	87	1LA8315-4PM	1300	3.6	13							
290	335	315	1485	1865	95.4	95.5	0.87	290	2.8	75	87	1LA8317-4PM	1500	4.4	13							
340	390	355	1488	2182	95.5	95.6	0.87	340	2.6	75	90	1LA8353-4PM	1900	6.1	13							
385	445	355	1488	2471	95.7	95.8	0.87	385	2.6	75	90	1LA8355-4PM	2000	6.8	13							
480	550	355	1488	3081	95.9	96.0	0.87	480	2.5	75	90	1LA8357-4PM	2200	8.5	13							
545	625	400	1491	3491	96.0	96.1	0.88	540	2.6	78	93	1LA8403-4PM	2800	13	13							
615	710	400	1491	3939	96.2	96.3	0.88	610	2.7	78	93	1LA8405-4PM	3000	14	13							
690	795	400	1491	4420	96.4	96.5	0.89	670	2.6	78	93	1LA8407-4PM	3200	16	13							
785	905	450	1492	5025	96.3	96.4	0.88	780	2.5	81	96	1LA8453-4PM	4000	23	10							
880	1010	450	1492	5633	96.5	96.6	0.87	880	2.6	81	96	1LA8455-4PM	4200	26	10							
980	1125	450	1492	6273	96.6	96.7	0.89	950	2.6	81	96	1LA8457-4PM	4400	28	10							
Voltages		No. of poles	Motor type		Version													Order code(s)				
50 Hz	400 VΔ/690 VY	2	1LA8315 ... 357		Standard													8	–			
		4	1LA8315 ... 405		Standard													8	–			
	690 VΔ	2	1LA8403 ... 457		Standard													7	–			
		4	1LA8407 ... 457		Standard													7	–			
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.													9	...						
For types of construction		see Page 3/33. Motor type				Version													Order code(s)			
Without flange	IM B3	1LA8315 ... 457		Standard													0	–				
	IM V5, IM V6	1LA8315 ... 457		With additional charge													0	–				
With flange	IM V1 without protective cover	1LA8315 ... 457 ⁴⁾		With additional charge		Not for explosion-proof motors.													8	–		
	IM V1 with protective cover	1LA8315 ... 457 ⁴⁾		With additional charge		The "Second shaft extension" option (K16) is not possible.													4	–		
	IM B35	1LA8315 ... 457 ⁵⁾		With add.charge													6	–				
Special versions															Order code(s)							
Options		For additional charges, order codes and descriptions, see from Page 3/34.											1LA8 ... -Z ...+...+...+...									
Motor type 1LA8		315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4																				
Parallel feeders required																						
400 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	
500 V	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	Yes	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	
690 V	–	–	–	–	–	–	–	–	–	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes	
Mechanical limit speed n _{max} in rpm (limit speeds for reinforced bearings, order code K20, for 4-pole motors on request.)																						
Standard	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2200	2100	2100	2100
IM V1	–	–	3100	3100	3100	3100	3100	–	–	–	–	–	–	–	–	–	2100	2100	2100	1800	1800	1800
Ex prot.	–	–	–	–	–	–	–	–	–	–	–	–	2650	2650	2350	2350	2100	2100	2100	1900	1900	1900
Mechanical limit frequency f _{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 4-pole motors on request.)																						
Standard	60	60	60	60	60	60	60	60	50	50	50	100	100	83	83	83	73	73	73	70	70	70
IM V1	–	–	52	52	52	52	52	–	–	–	–	–	–	–	–	–	70	70	70	60	60	60
Ex prot.	–	–	–	–	–	–	–	–	–	–	–	88	88	78	78	78	70	70	70	63	63	63

- ¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.
- ²⁾ Low-noise version, 2-pole, in brackets. To reduce noise, 2-pole motors can be equipped with an axial fan. Clockwise rotation order code K37, counter-clockwise rotation K38.
- ³⁾ Standard version with axial fan for clockwise rotation. Without order code K37. For counter-clockwise rotation, order code K38 is necessary.
- ⁴⁾ Not for 1LA8353 to 457 2-pole, 60 Hz.
- ⁵⁾ Not for 1LA8453 to 457 2-pole, 60 Hz.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors
Cast-iron series 1LA8 with special insulation for > 500 to 690 V

Selection and ordering data (continued)

P _{rated} , 50 Hz		P _{rated} , 60 Hz ¹⁾		Frame size	Operating values at rated output with sinusoidal infeed								Cast-iron series		m _{IM B3}	J	Torque class				
kW	kW	FS	rpm		Nm	%	%	cos-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 690 V	T _B /T _{rated}	L _{pfA} , 50Hz, tolerance +3 dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A)	Order No.	▲ New				kg	kgm ²	CL	
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F) 																					
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																					
190	220	315	990	1833	95.0	95.2	0.85	196	2.7	68	82	1LA8315-6PM	1300	6.0	13						
235	270	315	990	2267	95.2	95.4	0.86	240	2.7	68	82	1LA8317-6PM	1500	7.3	13						
300	345	355	992	2888	95.7	95.7	0.86	305	2.8	71	86	1LA8355-6PM	2000	13	13						
340	390	355	992	3273	95.6	95.7	0.86	345	3.1	71	86	▲ 1LA8356-6PM	2200	15	13						
380	435	355	992	3658	95.9	96.0	0.86	385	2.9	71	86	1LA8357-6PM	2200	16	13						
435	500	400	993	4184	95.9	96.0	0.85	445	2.8	73	88	1LA8403-6PM	2800	21	13						
485	560	400	993	4664	96.0	96.1	0.86	490	2.8	73	88	1LA8405-6PM	3000	24	13						
545	625	400	993	5241	96.1	96.2	0.86	550	2.7	73	88	1LA8407-6PM	3200	27	13						
615	705	450	993	5915	96.3	96.4	0.84	640	2.7	75	90	1LA8453-6PM	4000	35	13						
690	795	450	993	6636	96.3	96.4	0.85	710	2.5	75	90	1LA8455-6PM	4200	39	13						
780	895	450	993	7502	96.4	96.6	0.85	800	2.6	75	90	1LA8457-6PM	4500	44	13						
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																					
145	165	315	740	1871	94.1	94.2	0.79	164	2.5	65	79	1LA8315-8PM	1300	6.0	13						
180	205	315	740	2323	94.4	94.5	0.80	200	2.5	65	79	1LA8317-8PM	1500	7.3	13						
230	265	355	743	2956	95.0	95.1	0.80	255	2.4	67	82	1LA8355-8PM	2000	13	13						
290	335	355	743	3727	95.2	95.3	0.81	315	2.4	67	82	1LA8357-8PM	2200	16	13						
335	385	400	743	4306	95.5	95.6	0.80	365	2.6	69	84	1LA8403-8PM	2800	21	13						
375	430	400	743	4820	95.6	95.7	0.80	410	2.7	69	84	1LA8405-8PM	3000	24	13						
425	490	400	743	5463	95.7	95.8	0.79	470	2.7	69	84	1LA8407-8PM	3200	27	13						
485	560	450	745	6217	96.0	96.1	0.78	540	2.5	71	86	1LA8453-8PM	4000	35	13						
545	625	450	745	6986	96.1	96.2	0.78	610	2.5	71	86	1LA8455-8PM	4200	39	13						
600	690	450	745	7691	96.2	96.3	0.79	660	2.5	71	86	1LA8457-8PM	4500	44	13						
Voltages		No. of poles		Motor type		Version												Order code(s)			
50 Hz		400 VΔ/690 VY		6		1LA8315 ... 453		Standard												8	
				8		1LA8315 ... 457		Standard												8	
		690 VΔ		6		1LA8455 ... 457		Standard												7	
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.															9				
For types of construction see Page 3/33.		Motor type		Version												Order code(s)					
Without flange		IM B3		1LA8315 ... 457		Standard												0			
		IM V5, IM V6		1LA8315 ... 457		With additional charge												0			
With flange		IM V1 without protective cover		1LA8315 ... 457		With additional charge		Not for explosion-proof motors.												8	
		IM V1 with protective cover		1LA8315 ... 457		With additional charge		The "Second shaft extension" option (K16) is not possible.												4	
		IM B35		1LA8315 ... 457		With additional charge												6			
Special versions																	Order code(s)				
Options		For additional charges, order codes and descriptions, see from Page 3/34.															1LA8 ... -Z ...				
Motor type 1LA8		315-6 317-6 355-6 356-6 357-6 403-6 405-6 407-6 453-6 455-6 457-6 315-8 317-8 355-8 357-8 403-8 405-8 407-8 453-8 455-8 457-8																			
Parallel feeders required																					
400 V		Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes																			
500 V		Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes																			
690 V		Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes																			
Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																					
Standard		2950 2950 2500 2500 2500 2200 2200 2200 2100 2100 2100 2950 2950 2500 2500 2200 2200 2200 2100 2100 2100																			
IM V1		2100 2100 2100 1800 1800 1800 2100 2100 2100 1800 1800 1800																			
Ex protection		2350 2350 2100 2100 2100 1900 1900 1900 1700 1700 1700 2350 2350 2100 2100 1900 1900 1900 1700 1700 1700																			
Mechanical limit frequency f_{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																					
Standard		147 147 125 125 125 110 110 110 105 105 105 196 196 166 166 146 146 146 140 140 140																			
IM V1		105 105 105 90 90 90 140 140 140 120 120 120																			
Ex protection		117 117 105 105 105 95 95 95 85 85 85 156 156 140 140 126 126 126 113 113 113																			

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors with through-ventilation
Cast-iron series 1LL8 with standard insulation for ≤ 500 V

Selection and ordering data

P _{rated} , 50 Hz, kW	P _{rated} , 60 Hz, 1) kW	Frame size FS	Operating values at rated output with sinusoidal infeed										Cast-iron series 1LL8 – with standard insulation Order No.	m _{IM B3} kg	J kgm ²	Torque class CL							
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	η _{rated} , 50 Hz, 4/4 %	η _{rated} , 50 Hz, 3/4 %	cos φ _{rated} , 50 Hz, 4/4	i _{rated} , 50 Hz, 400 V A	i _{rated} , 50 Hz, 690 V A	T _B / T _{rated}	L _{pFA} , 50Hz, tolerance +3 dB(A) dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A) dB(A)											
<ul style="list-style-type: none"> • Cooling: Self-ventilated with through-ventilation (IC 01) • Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with standard insulation for voltages of ≤ 500 V • Insulation: Thermal class 155 (temperature class F), IP23 degree of protection, utilization in accordance with thermal class 155 (temperature class F) 																							
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																							
315	345	315	2977	1010	95.5	95.7	0.92	520	300	2.8	84 ²⁾	99	1LL8315-2PC	1300	2.7	10							
400	440	315	2977	1280	95.9	96.2	0.92	650	380	2.8	84 ²⁾	99	1LL8317-2PC	1500	3.3	10							
450	495	355	2981	1440	95.9	96.0	0.91	740	430	2.6	86 ²⁾	101	1LL8353-2PD	1900	4.8	7							
500	550	355	2982	1600	96.1	96.3	0.92	820	475	2.6	86 ²⁾	101	1LL8355-2PD	2000	5.3	7							
630	690	355	2982	2020	96.4	96.6	0.93	1020	590	2.6	86 ²⁾	101	1LL8357-2PD	2200	6.4	7							
710	780	400	2986	2270	96.5	96.6	0.91	1160	680	2.6	88 ²⁾	103	1LL8403-2PD	2800	8.6	7							
800	880	400	2986	2560	96.6	96.7	0.92	1300	750	2.6	88 ²⁾	103	1LL8405-2PD	3000	9.6	7							
900	990	400	2987	2880	96.8	96.9	0.92	–	850	2.7	88 ²⁾	103	1LL8407-2PD	3200	11	7							
1000	1100	450	2987	3200	96.8	96.7	0.93	–	930	2.9	90 ²⁾	105	1LL8453-2PE	4000	19	5							
1120	1230	450	2986	3580	96.8	96.9	0.94	–	1020	2.7	90 ²⁾	105	1LL8455-2PE	4200	21	5							
1250	1370	450	2984	4000	97.0	97.1	0.94	–	1140	2.6	90 ²⁾	105	1LL8457-2PE	4400	23	5							
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																							
315	360	315	1485	2030	95.5	95.6	0.87	550	315	2.7	77	90	1LL8315-4PC	1300	3.6	10							
400	460	315	1485	2570	95.7	95.9	0.88	690	395	2.7	77	90	1LL8317-4PC	1500	4.4	10							
450	515	355	1487	2890	96.0	96.0	0.87	780	450	2.6	77	92	1LL8353-4PC	1900	6.1	10							
500	575	355	1488	3210	96.1	96.2	0.88	850	495	2.6	77	92	1LL8355-4PC	2000	6.8	10							
630	725	355	1490	4040	96.4	96.5	0.88	1080	620	2.7	77	92	1LL8357-4PC	2200	8.5	10							
710	815	400	1490	4550	96.4	96.5	0.88	1200	700	2.4	81	96	1LL8403-4PC	2800	13	10							
800	920	400	1490	5130	96.5	96.6	0.88	–	790	2.5	81	96	1LL8405-4PC	3000	14	10							
900	1035	400	1492	5760	96.7	96.7	0.87	–	900	2.6	81	96	1LL8407-4PC	3200	16	10							
1000	1150	450	1492	6400	96.7	96.7	0.86	–	1000	2.8	84	99	1LL8453-4PD	4000	23	7							
1120	1280	450	1491	7170	96.7	96.7	0.89	–	1080	2.6	84	99	1LL8455-4PD	4200	26	7							
1250	1430	450	1490	8010	96.8	96.8	0.89	–	1220	2.5	84	99	1LL8457-4PD	4400	28	7							
Voltages			No. of poles	Motor type		Version												Order code(s)					
50 Hz	400 VΔ/690 VY ³⁾	2, 4	1LL8315 ... 405	Standard												8							
	690 VΔ ³⁾	2, 4	1LL8407 ... 457	Standard												7							
	400 VΔ	2, 4	1LL8315 ... 405	Without additional charge												4							
	500 VΔ	2, 4	1LL8315 ... 457	Without additional charge												5							
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 3/32.										9	...									
For types of construction			see Page 3/33.	Motor type		Version												Order code(s)					
Without flange	IM B3	1LL8315 ... 457 ⁴⁾	Standard												0								
With flange	IM V1 without protective cover	1LL8315 ... 457 ⁵⁾	With additional charge												8								
	IM V1 with protective cover	1LL8315 ... 457 ⁵⁾	With additional charge		The "Second shaft extension" option (K16) is not possible.										4								
	IM B35	1LL8315 ... 457 ⁵⁾	With additional charge												6								
Special versions													Order code(s)										
Options			For additional charges, order codes and descriptions, see from Page 3/34.										1LL8 ... -Z	...+...+...+...									
Motor type 1LL8																							
315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4																							
Parallel feeders required																							
400 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–		
500 V	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	Yes	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes		
690 V	–	–	–	–	–	–	–	–	–	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes		
Mechanical limit speed n_{max} in rpm																							
Standard	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2200	1900	1900	2100	2100
IM V1	–	–	3100	3100	3100	3100	3100	–	–	–	2600	2600	2200	2200	2200	1900	1900	1900	1800	1800	1800	1800	
Mechanical limit frequency f_{max} in Hz																							
Standard	60	60	60	60	60	60	60	50	50	50	100	100	83	83	83	73	73	73	70	70	70	70	
IM V1	–	–	52	52	52	52	52	–	–	–	87	87	73	73	73	63	63	63	60	60	60	60	

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.
2) The noise values for 2-pole 1LL8 motors are for guidance only.
3) Operation is possible only with converter circuit (du/dt filter or sine-wave filter).
4) Not for 1LL8353 to 457 2-pole, 60 Hz.
5) Not for 1LL8453 to 457 2-pole, 60 Hz.

3.2

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors with through-ventilation
Cast-iron series 1LL8 with standard insulation for ≤ 500 V

Selection and ordering data (continued)

Operating values at rated output with sinusoidal infeed															Cast-iron series		$m_{IM\ B3}$		J		Torque class
$P_{rated, 50\ Hz}$	$P_{rated, 60\ Hz}^1)$	Frame size	$n_{rated, 50\ Hz}$	$T_{rated, 50\ Hz}$	$\eta_{rated, 50\ Hz, 4/4}$	$\eta_{rated, 50\ Hz, 3/4}$	$COS\phi_{rated, 50\ Hz, 4/4}$	$I_{rated, 50\ Hz, 400\ V}$	$I_{rated, 50\ Hz, 690\ V}$	T_B/T_{rated}	$L_{pF, 50\ Hz, tolerance +3\ dB(A)}$	$L_{WA, 50\ Hz, tolerance +3\ dB(A)}$	1LL8 – with standard insulation	$m_{IM\ B3}$	J	Torque class					
kW	kW	FS	rpm	Nm	%	%		A	A		dB(A)	dB(A)	Order No.	kg	kgm ²	CL					
• Cooling: Self-ventilated with through-ventilation (IC 01) • Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with standard insulation for voltages of ≤ 500 V • Insulation: Thermal class 155 (temperature class F), IP23 degree of protection, utilization in accordance with thermal class 155 (temperature class F)																					
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																					
250	285	315	988	2420	95.0	95.0	0.88	430	250	2.6	70	84	1LL8315-6PC	1300	6.0	10					
315	360	315	988	3040	95.2	95.2	0.89	540	310	2.6	70	84	1LL8317-6PC	1500	7.3	10					
400	460	355	991	3850	95.6	95.8	0.88	690	400	2.5	73	88	1LL8355-6PC	2000	13	10					
500	575	355	992	4820	95.9	96.2	0.88	860	495	2.6	73	88	1LL8357-6PC	2200	16	10					
560	645	400	993	5390	96.1	96.1	0.86	980	570	2.6	76	91	1LL8403-6PC	2800	21	10					
630	725	400	993	6060	96.2	96.4	0.87	1080	630	2.6	76	91	1LL8405-6PC	3000	24	10					
710	815	400	993	6830	96.2	96.4	0.88	1220	700	2.5	76	91	1LL8407-6PC	3200	27	10					
800	920	450	993	7700	96.3	96.5	0.86	–	810	2.5	78	93	1LL8453-6PD	4000	35	7					
900	1035	450	992	8660	96.3	96.6	0.87	–	900	2.4	78	93	1LL8455-6PD	4200	39	7					
1000	1150	450	993	9620	96.4	96.7	0.88	–	990	2.5	78	93	1LL8457-6PD	4500	44	7					
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																					
200	230	315	738	2590	94.2	94.7	0.82	375	215	2.4	67	81	1LL8315-8PC	1300	6.0	10					
250	285	315	738	3240	94.5	95.1	0.82	465	270	2.4	67	81	1LL8317-8PC	1500	7.3	10					
315	360	355	740	4070	95.0	95.2	0.83	580	335	2.4	69	84	1LL8355-8PC	2000	13	10					
400	460	355	740	5160	95.1	95.4	0.84	720	420	2.3	69	84	1LL8357-8PC	2200	16	10					
450	515	400	741	5800	95.4	95.6	0.84	810	470	2.3	72	87	1LL8403-8PD	2800	21	7					
500	575	400	741	6440	95.6	95.8	0.84	900	520	2.4	72	87	1LL8405-8PD	3000	24	7					
560	645	400	742	7210	95.7	95.9	0.83	1020	590	2.4	72	87	1LL8407-8PD	3200	27	7					
630	745	450	742	8100	95.8	96.0	0.82	1160	670	2.3	74	89	1LL8453-8PD	4000	35	7					
710	815	450	743	9130	95.9	96.2	0.83	1280	750	2.3	74	89	1LL8455-8PD	4200	39	7					
800	920	450	742	10300	96.0	96.0	0.83	–	840	2.3	74	89	1LL8457-8PD	4500	44	7					
Voltages	No. of poles		Motor type		Version		Order code(s)														
50 Hz	400 V Δ/690 V Y ²⁾	6	1LL8315 ... 453		Standard		8 –														
		8	1LL8315 ... 455		Standard		8 –														
	690 V Δ ²⁾	6	1LL8455 ... 457		Standard		7 –														
		8	1LL8457		Standard		7 –														
	400 V Δ	6	1LL8315 ... 453		Without additional charge		4 –														
		8	1LL8315 ... 455		Without additional charge		4 –														
	500 V Δ	6, 8	1LL8315 ... 457		Without additional charge		5 –														
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.						9 ...													
For types of construction see Page 3/33.			Motor type		Version		Order code(s)														
Without flange	IM B3	1LL8315 ... 457	Standard		0 –																
With flange	IM V1 without protective cover	1LL8315 ... 457	With additional charge		8 –																
	IM V1 with protective cover	1LL8315 ... 457	With additional charge		The "Second shaft extension" option (K16) is not possible.		4 –														
	IM B35	1LL8315 ... 457	With additional charge		6 –																
Special versions																					
Options			For additional charges, order codes and descriptions, see from Page 3/34.						1LL8 ... -Z ...+...+...+												
Motor type 1LL8																					
315-6	317-6	355-6	357-6	403-6	405-6	407-6	453-6	455-6	457-6	315-8	317-8	355-8	357-8	403-8	405-8	407-8	453-8	455-8	457-8		
Parallel feeders required																					
400 V	–	Yes	Yes	Yes	–	Yes	Yes	Yes	–	–	–	–	–	–	Yes	–	–	Yes	Yes	Yes	Yes
500 V	–	–	–	Yes	–	–	–	Yes	Yes	Yes	–	–	–	–	–	–	–	–	–	Yes	Yes
690 V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Mechanical limit speed n_{max} in rpm																					
Standard	2950	2950	2500	2500	2200	2200	2100	2100	2100	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100		
IM V1	2600	2600	2200	2200	1900	1900	1900	1800	1800	1800	2600	2600	2200	2200	1900	1900	1900	1800	1800	1800	
Mechanical limit frequency f_{max} in Hz																					
Standard	147	147	125	125	110	110	110	105	105	105	196	196	166	166	146	146	146	140	140	140	
IM V1	130	130	110	110	95	95	95	90	90	90	173	173	146	146	126	126	126	120	120	120	

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

²⁾ Operation is possible only with converter circuit (du/dt filter or sine-wave filter).

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors with through-ventilation
Cast-iron series 1LL8 with special insulation for > 500 to 690 V

Selection and ordering data

P _{rated} , 50 Hz kW	P _{rated} , 60 Hz kW ¹⁾	Frame size FS	Operating values at rated output with sinusoidal infeed							L _{pA} , 50Hz, tolerance +3 dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A)	Cast-iron series 1LL8 – with special insulation Order No.	m _{IM} B3 kg	J kgm ²	Torque class CL							
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	η _{rated} , 50 Hz, 4/4 %	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 690 V A	T _B / T _{rated}														
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																						
300	330	315	2977	962	95.3	0.91	290	2.9	84 ²⁾	99	1LL8315-2PM	1300	2.7	10								
380	415	315	2977	1219	95.8	0.91	365	2.9	84 ²⁾	99	1LL8317-2PM	1500	3.3	10								
435	475	355	2982	1393	95.7	0.90	420	2.7	86 ²⁾	101	1LL8353-2PM	1900	4.8	7								
485	530	355	2982	1553	96.0	0.90	470	2.7	86 ²⁾	101	1LL8355-2PM	2000	5.3	7								
610	670	355	2983	1953	96.3	0.91	580	2.7	86 ²⁾	101	1LL8357-2PM	2200	6.4	7								
690	755	400	2986	2207	96.4	0.91	660	2.7	88 ²⁾	103	1LL8403-2PM	2800	8.6	7								
770	845	400	2986	2463	96.4	0.91	730	2.7	88 ²⁾	103	1LL8405-2PM	3000	9.6	7								
860	945	400	2988	2749	96.7	0.92	810	2.8	88 ²⁾	103	1LL8407-2PM	3200	11	7								
965	1060	450	2988	3084	96.7	0.92	910	3.0	90 ²⁾	105	1LL8453-2PM	4000	19	5								
1085	1190	450	2987	3469	96.7	0.92	1020	2.8	90 ²⁾	105	1LL8455-2PM	4200	21	5								
1210	1330	450	2985	3871	96.9	0.93	1120	2.7	90 ²⁾	105	1LL8457-2PM	4400	23	5								
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																						
295	340	315	1485	1897	95.2	0.86	300	2.9	77	90	1LL8315-4PM	1300	3.6	10								
365	420	315	1487	2344	95.6	0.87	365	3.0	77	90	1LL8317-4PM	1500	4.4	10								
430	495	355	1489	2758	95.8	0.86	435	2.7	77	92	1LL8353-4PM	1900	6.1	10								
480	550	355	1489	3079	96.0	0.87	480	2.7	77	92	1LL8355-4PM	2000	6.8	10								
600	690	355	1490	3846	96.3	0.86	600	2.8	77	92	1LL8357-4PM	2200	8.5	10								
690	790	400	1491	4420	96.2	0.87	690	2.5	81	96	1LL8403-4PM	2800	13	10								
780	895	400	1491	4996	96.4	0.88	770	2.6	81	96	1LL8405-4PM	3000	14	10								
870	1000	400	1493	5565	96.6	0.85	880	2.7	81	96	1LL8407-4PM	3200	16	10								
980	1125	450	1493	6269	96.6	0.85	1000	2.9	84	99	1LL8453-4PM	4000	23	7								
1095	1255	450	1492	7009	96.6	0.88	1060	2.7	84	99	1LL8455-4PM	4200	26	7								
1225	1405	450	1491	7846	96.7	0.88	1200	2.6	84	99	1LL8457-4PM	4400	28	7								
Voltages		No. of poles	Motor type		Version											Order code(s)						
50 Hz		400 VΔ/690 VY	6	1LL8315 ... 453		Standard											8					
690 VΔ			6	1LL8455 ... 457		Standard											7					
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.										9	...									
For types of construction see Page 3/33.			Motor type		Version											Order code(s)						
Without flange		IM B3	1LL8315 ... 457 ³⁾		Standard											0						
With flange		IM V1 without protective cover	1LL8315 ... 457 ⁴⁾		With additional charge											8						
		IM V1 with protective cover	1LL8315 ... 457 ⁴⁾		With additional charge		The "Second shaft extension" option (K16) is not possible.									4						
		IM B35	1LL8315 ... 457 ⁴⁾		With additional charge											6						
Special versions													Order code(s)									
Options		For additional charges, order codes and descriptions, see from Page 3/34.										1LL8 -Z . . . + . . . + . . .										
Motor type 1LL8																						
315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4																						
Parallel feeders required																						
400 V		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
500 V		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
690 V		-	-	-	-	-	-	-	-	Yes	Yes	Yes	-	-	-	-	-	-	Yes	Yes	Yes	
Mechanical limit speed n _{max} in rpm																						
Standard		3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2100	2100	2100	
IM V1		-	-	3100	3100	3100	3100	3100	-	-	-	2600	2600	2200	2200	2200	1900	1900	1900	1800	1800	
Mechanical limit frequency f _{max} in Hz																						
Standard		60	60	60	60	60	60	60	50	50	50	100	100	83	83	83	73	73	73	70	70	70
IM V1		-	-	52	52	52	52	52	-	-	-	87	87	73	73	73	63	63	63	60	60	60

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.
2) The noise values for 2-pole 1LL8 motors are for guidance only.

3) Not for 1LL8453 to 1LL8457 2-pole, 60 Hz.
4) Not for 1LL8353 to 457 2-pole, 60 Hz.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Self-ventilated motors with through-ventilation
Cast-iron series 1LL8 with special insulation for > 500 to 690 V

Selection and ordering data (continued)

P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	Operating values at rated output with sinusoidal infeed								Cast-iron series 1LL8 – with special insulation	m _{IM B3}	J	Torque class						
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	η _{rated} , 50 Hz, 4/4	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 690 V	T _B / I _{rated}	L _{pfA} , 50Hz, tolerance +3 dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A)										
kW	kW	FS	rpm	Nm	%		A			Order No.	kg	kgm ²	CL							
• Cooling: Self-ventilated with through-ventilation (IC 01) • Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V • Insulation: Thermal class 155 (temperature class F), IP23 degree of protection, utilization in accordance with thermal class 155 (temperature class F) 6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz 1)																				
235	270	315	990	2267	94.5	0.87	240	2.8	70	84	1LL8315-6PM	1300	6.0	10						
295	335	315	990	2846	94.8	0.87	300	2.8	70	84	1LL8317-6PM	1500	7.3	10						
380	435	355	992	3658	95.1	0.87	380	2.6	73	88	1LL8355-6PM	2000	13	10						
475	545	355	993	4568	95.8	0.87	480	2.7	73	88	1LL8357-6PM	2200	16	10						
540	620	400	993	5193	95.9	0.86	550	2.7	76	91	1LL8403-6PM	2800	21	10						
610	700	400	994	5861	96.0	0.87	610	2.7	76	91	1LL8405-6PM	3000	24	10						
690	790	400	993	6636	96.1	0.87	690	2.6	76	91	1LL8407-6PM	3200	27	10						
780	895	450	993	7502	96.2	0.87	780	2.6	78	93	1LL8453-6PM	4000	35	7						
870	1000	450	993	8367	96.3	0.87	870	2.5	78	93	1LL8455-6PM	4200	39	7						
975	1120	450	993	9377	96.3	0.88	960	2.6	78	93	1LL8457-6PM	4500	44	7						
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz 1)																				
180	205	315	738	2329	93.6	0.81	198	2.7	67	81	1LL8315-8PM	1300	6.0	10						
225	255	315	740	2904	94.3	0.80	250	2.7	67	81	1LL8317-8PM	1500	7.3	10						
285	325	355	741	3673	94.6	0.81	310	2.7	69	84	1LL8355-8PM	2000	13	10						
365	415	355	741	4704	94.9	0.83	385	2.5	69	84	1LL8357-8PM	2200	16	10						
420	480	400	741	5413	95.0	0.83	445	2.5	72	87	1LL8403-8PM	2800	21	7						
465	530	400	742	5985	95.5	0.83	490	2.6	72	87	1LL8405-8PM	3000	24	7						
525	600	400	742	6757	95.5	0.82	560	2.6	72	87	1LL8407-8PM	3200	27	7						
610	700	450	742	7851	95.4	0.82	660	2.4	74	89	1LL8453-8PM	4000	35	7						
690	790	450	742	8881	95.5	0.82	730	2.4	74	89	1LL8455-8PM	4200	39	7						
760	870	450	742	9782	95.5	0.83	800	2.4	74	89	1LL8457-8PM	4500	44	7						
Voltages		No. of poles	Motor type		Version									Order code(s)						
50 Hz	400 VΔ/690 VY	6	1LL8315 ... 453		Standard									8	-					
		8	1LL8315 ... 457		Standard									8	-					
	690 VΔ	6	1LL8455 ... 457		Standard									7	-					
Further voltages 1)		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.										9	...							
For types of construction		see Page 3/33.		Motor type		Version									Order code(s)					
Without flange	IM B3	1LL8315 ... 457		Standard									0	-						
With flange	IM V1 without protective cover	1LL8315 ... 457		With additional charge									8	-						
	IM V1 with protective cover	1LL8315 ... 457		With additional charge		The "Second shaft extension" option (K16) is not possible.									4	-				
	IM B35	1LL8315 ... 457		With additional charge									6	-						
Special versions												Order code(s)								
Options		For additional charges, order codes and descriptions, see from Page 3/34.										1LL8 ... -Z		...+...+...+...						
Motor type 1LL8																				
315-6 317-6 355-6 357-6 403-6 405-6 407-6 453-6 455-6 457-6 315-8 317-8 355-8 357-8 403-8 405-8 407-8 453-8 455-8 457-8																				
Parallel feeders required																				
400 V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
500 V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
690 V	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-	-	-
Mechanical limit speed n_{max} in rpm																				
Standard	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100
IM V1	2600	2600	2200	2200	1900	1900	1900	1800	1800	1800	2600	2600	2200	2200	1900	1900	1900	1800	1800	1800
Mechanical limit frequency f_{max} in Hz																				
Standard	147	147	125	125	110	110	110	105	105	105	196	196	166	166	146	146	146	140	140	140
IM V1	130	130	110	110	95	95	95	90	90	90	173	173	146	146	126	126	126	120	120	120

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Forced-air cooled motors with mounted separately driven fan
Cast-iron series 1PQ8 with standard insulation for ≤ 500 V

Selection and ordering data

Operating values at rated output with sinusoidal infeed													Cast-iron series		m _{IM B3}	J	Torque class
P _{rated} , 50 Hz	P _{rated} , 60 Hz ¹⁾	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	COS φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	I _{rated} , 50 Hz, 690 V	T _p / T _{rated}	L _{pfA} , 50Hz, tolerance +3 dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A)	1PQ8 – with standard insulation	kg			
kW	kW	FS	rpm	Nm	%	%		A	A		dB(A)	dB(A)	Order No.				
• Cooling: Forced-air cooled with mounted separately driven fan (IC 416) – for technical specifications see Page 3/5 • Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with standard insulation for voltages of ≤ 500 V • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F) 2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																	
250	280	315	2979	801	95.7	95.7	0.90	420	245	2.8	79	94	1PQ8315-2PC	1400	2.7 10		
315	353	315	2979	1010	95.7	95.7	0.91	520	300	2.8	79	94	1PQ8317-2PC	1600	3.3 10		
355	398	355	2980	1140	95.7	95.7	0.90	590	345	2.5	81	96	1PQ8353-2PC	2000	4.8 10		
400	448	355	2980	1280	96.2	96.3	0.91	660	380	2.5	81	96	1PQ8355-2PC	2100	5.3 10		
500	560	355	2982	1600	96.6	96.7	0.91	820	475	2.6	81	96	1PQ8357-2PC	2300	6.4 10		
560	616	400	2985	1790	96.6	96.7	0.91	920	530	2.8	83	98	1PQ8403-2PC	2900	8.6 10		
630	693	400	2985	2020	96.6	96.7	0.91	1040	600	2.8	83	98	1PQ8405-2PC	3100	9.6 10		
710	781	400	2985	2270	96.8	96.9	0.91	–	670 ²⁾	2.8	83	98	1PQ8407-2PC	3300	11 10		
800	–	450	2986	2560	96.7	96.8	0.91	–	760	3.0	86	101	1PQ8453-2PE	4100	19 5		
900	–	450	2986	2880	96.8	96.9	0.92	–	850	2.8	86	101	1PQ8455-2PE	4300	21 5		
1000	–	450	2986	3200	96.9	97.0	0.93	–	930	2.7	86	101	1PQ8457-2PE	4500	23 5		
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																	
250	288	315	1488	1600	95.5	95.6	0.87	435	250	2.8	79	93	1PQ8315-4PB	1400	3.6 13		
315	362	315	1488	2020	95.7	95.8	0.87	550	315	2.8	79	93	1PQ8317-4PB	1600	4.4 13		
355	408	355	1488	2280	95.8	95.9	0.87	610	355	2.5	81	96	1PQ8353-4PB	2000	6.1 13		
400	460	355	1488	2570	95.9	96.0	0.87	690	400	2.5	81	96	1PQ8355-4PB	2100	6.8 13		
500	575	355	1488	3210	96.2	96.3	0.88	850	495	2.5	81	96	1PQ8357-4PB	2300	8.5 13		
560	644	400	1492	3580	96.2	96.3	0.88	950	550	2.7	83	98	1PQ8403-4PB	2900	13 13		
630	725	400	1492	4030	96.4	96.5	0.88	1080	620	2.7	83	98	1PQ8405-4PB	3100	14 13		
710	817	400	1492	4540	96.5	96.6	0.89	–	690 ²⁾	2.7	83	98	1PQ8407-4PB	3300	16 13		
800	920	450	1492	5120	96.5	96.6	0.88	–	790 ²⁾	2.6	86	101	1PQ8453-4PC	4100	23 10		
900	1040	450	1492	5760	96.6	96.7	0.87	–	900 ³⁾	2.6	86	101	1PQ8455-4PC	4300	26 10		
1000	1150	450	1492	6400	96.6	96.7	0.89	–	970 ³⁾	2.6	86	101	1PQ8457-4PC	4500	28 10		

Voltagess	No. of poles	Motor type	Version	Order code(s)		
50 Hz	400 VΔ/690 VY ⁴⁾	2, 4	1PQ8315 ... 405	Standard	8	–
	690 VΔ ⁴⁾	2, 4	1PQ8407 ... 457	Standard	7	–
	400 VΔ	2, 4	1PQ8315 ... 405	Without additional charge	4	–
	500 VΔ	2, 4	1PQ8315 ... 457	Without additional charge	5	–
Further voltages ¹⁾					9	...
For types of construction	see Page 3/33.	Motor type	Version	Order code(s)		
Without flange		IM B3	1PQ8315 ... 457	Standard	0	–
		IM V5, IM V6	1PQ8315 ... 457	With additional charge	0	–
With flange		IM V1 without protective cover	1PQ8315 ... 457 ⁵⁾	With additional charge	8	–
		IM V1 with protective cover	1PQ8315 ... 457 ⁵⁾	With additional charge	4	–
		IM B35	1PQ8315 ... 457 ⁶⁾	With additional charge	6	–

Special versions
Options For additional charges, order codes and descriptions, see from Page 3/34. 1PQ8 ... - ... -Z ... + ... + ... + ...

Motor type 1PQ8
315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4

Parallel feeders required																				
400 V	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–
500 V	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes
690 V	–	–	–	–	–	–	–	–	–	Yes	Yes	–	–	–	–	–	–	–	–	Yes

Mechanical limit speed n _{max} in rpm (limit speeds for reinforced bearings, order code K20, for 4-pole motors on request.)																				
Standard	3600	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2200	2100
IM V1	–	–	3100	3100	3100	3100	3100	3100	–	–	–	–	–	–	–	–	2100	2100	2100	1800
Ex prot.	–	–	–	–	–	–	–	–	–	–	–	–	–	2650	2650	2350	2350	2100	2100	1900

Mechanical limit frequency f _{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 4-pole motors on request.)																				
Standard	60	60	60	60	60	60	60	60	50	50	50	100	100	83	83	83	73	73	73	70
IM V1	–	–	52	52	52	52	52	52	–	–	–	–	–	–	–	–	70	70	70	60
Ex prot.	–	–	–	–	–	–	–	–	–	–	–	88	88	78	78	78	70	70	70	63

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.
 2) Can be ordered for 400 VΔ 50 Hz as special version with voltage code 9 and order code LTY (specify output, voltage and frequency).
 3) Also available on request for 400 VΔ 50 Hz.
 4) Operation is possible only with converter circuit (du/dt filter or sine-wave filter).
 5) Not for 1PQ8353 to 457 2-pole, 60 Hz.
 6) Not for 1PQ8453 to 457 2-pole, 60 Hz.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

**Forced-air cooled motors with mounted separately driven fan
Cast-iron series 1PQ8 with standard insulation for ≤ 500 V**

Selection and ordering data (continued)

Operating values at rated output with sinusoidal infeed																	Cast-iron series		m _{IM B3}		J	Torque class
P _{Rated} , 50 Hz	P _{Rated} , 60 Hz 1)	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	COS- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	I _{rated} , 50 Hz, 690 V	T _B / T _{rated}	L _{plA} , 50Hz, tolerance +3 dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A)	1PQ8 – with standard insulation Order No.	▲ New	kg	kgm ² CL						
kW	kW	FS	rpm	Nm	%	%		A	A		dB(A)	dB(A)				CL						
• Cooling: Forced-air cooled with mounted separately driven fan (IC 416) – for technical specifications see Page 3/5 • Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with standard insulation for voltages of ≤ 500 V • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F) 6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																						
200	230	315	990	1930	95.2	95.4	0.86	355	205	2.5	80	94	1PQ8315-6PB	▲	1400	6.0 13						
250	288	315	989	2410	95.4	95.6	0.86	440	255	2.5	80	94	1PQ8317-6PB	▲	1600	7.3 13						
315	362	355	992	3040	95.7	95.7	0.86	550	320	2.8	82	97	1PQ8355-6PB	▲	2100	13 13						
355	408	355	992	3418	95.7	95.7	0.86	620	360	2.9	82	97	1PQ8356-6PB	▲	2200	15 13						
400	460	355	993	3850	96.0	96.1	0.86	700	405	2.8	82	97	1PQ8357-6PB	▲	2300	16 13						
450	518	400	992	4330	96.0	96.1	0.86	790	455	2.7	84	99	1PQ8403-6PB	▲	2900	21 13						
500	575	400	992	4810	96.0	96.1	0.86	870	510	2.7	84	99	1PQ8405-6PB	▲	3100	24 13						
560	644	400	992	5390	96.2	96.3	0.86	980	570	2.7	84	99	1PQ8407-6PB	▲	3300	27 13						
630	725	450	993	6060	96.3	96.4	0.85	1120	640	2.6	87	102	1PQ8453-6PB	▲	4100	35 13						
710	817	450	993	6830	96.3	96.4	0.85	–	730 ²⁾	2.5	87	102	1PQ8455-6PB	▲	4300	39 13						
800	920	450	993	7690	96.5	96.7	0.85	–	820 ³⁾	2.5	87	102	1PQ8457-6PB	▲	4600	44 13						
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																						
160	184	315	739	2070	94.4	94.5	0.81	300	176	2.4	79	93	1PQ8315-8PB	▲	1400	6.0 13						
200	230	315	739	2580	94.7	94.8	0.82	370	215	2.4	79	93	1PQ8317-8PB	▲	1600	7.3 13						
250	288	355	741	3220	95.2	95.3	0.82	460	270	2.4	81	96	1PQ8355-8PB	▲	2100	13 13						
315	362	355	741	4060	95.5	95.6	0.82	580	335	2.4	81	96	1PQ8357-8PB	▲	2300	16 13						
355	408	400	742	4570	95.6	95.7	0.82	650	380	2.6	83	98	1PQ8403-8PB	▲	2900	21 13						
400	460	400	742	5150	95.7	95.8	0.82	740	425	2.6	83	98	1PQ8405-8PB	▲	3100	24 13						
450	518	400	742	5790	95.8	95.9	0.82	830	480	2.6	83	98	1PQ8407-8PB	▲	3300	27 13						
500	575	450	744	6420	95.9	96.0	0.80	940	550	2.4	86	101	1PQ8453-8PB	▲	4100	35 13						
560	644	450	744	7190	96.0	96.1	0.81	1040	600	2.4	86	101	1PQ8455-8PB	▲	4300	39 13						
630	725	450	744	8090	96.1	96.2	0.81	1160	680	2.4	86	101	1PQ8457-8PB	▲	4600	44 13						
Voltages			No. of poles		Motor type		Version						Order code(s)									
50 Hz			400 VΔ/690 VY ⁴⁾		6		1PQ8315 ... 453		Standard		8		–									
					8		1PQ8315 ... 457		Standard		8		–									
			690 VΔ ⁴⁾		6		1PQ8455 ... 457		Standard		7		–									
			400 VΔ		6		1PQ8315 ... 453		Without additional charge		4		–									
					8		1PQ8315 ... 457		Without additional charge		4		–									
			500 VΔ		6, 8		1PQ8315 ... 457		Without additional charge		5		–									
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 3/32.												9		...					
For types of construction			see Page 3/33.		Motor type		Version						Order code(s)									
Without flange			IM B3		1PQ8315 ... 457		Standard						0		–							
			IM V5, IM V6		1PQ8315 ... 457		With additional charge						0		–							
With flange			IM V1 without protective cover		1PQ8315 ... 457		With additional charge		Not for explosion-proof motors.				8		–							
			IM V1 with protective cover		1PQ8315 ... 457		With additional charge		The "Second shaft extension" option (K16) is not possible.				4		–							
			IM B35		1PQ8315 ... 457		With additional charge						6		–							
Special versions															Order code(s)							
Options			For additional charges, order codes and descriptions, see from Page 3/34.												1PQ8 ... - ... -Z ... + ... + ... + ...							
Motor type 1PQ8			315-6 317-6 355-6 356-6 357-6 403-6 405-6 407-6 453-6 455-6 457-6 315-8 317-8 355-8 357-8 403-8 405-8 407-8 453-8 455-8 457-8																			
Parallel feeders required																						
400 V	–	Yes	Yes	Yes	Yes	–	Yes	Yes	Yes	–	–	–	–	Yes	–	Yes	Yes	Yes				
500 V	–	–	–	Yes	Yes	–	–	–	Yes	Yes	Yes	–	–	–	–	–	–	Yes	Yes			
690 V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–			
Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																						
Standard	2950	2950	2500	2500	2500	2200	2200	2200	2100	2100	2100	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100	
IM V1	–	–	–	–	–	2100	2100	2100	1800	1800	1800	–	–	–	–	2100	2100	2100	1800	1800	1800	
Ex protection	2350	2350	2100	2100	2100	1900	1900	1900	1700	1700	1700	2350	2350	2100	2100	1900	1900	1900	1700	1700	1700	
Mechanical limit frequency f_{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																						
Standard	147	147	125	125	125	110	110	110	105	105	105	196	196	166	166	146	146	146	140	140	140	
IM V1	–	–	–	–	–	105	105	105	90	90	90	–	–	–	–	140	140	140	120	120	120	
Ex prot.	117	117	105	105	105	95	95	95	85	85	85	156	156	140	140	126	126	126	113	113	113	

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

³⁾ Also available on request for 400 VΔ 50 Hz.

²⁾ Can be ordered for 400 VΔ 50 Hz as special version with voltage code 9 and order code L1Y (specify output, voltage and frequency).

⁴⁾ Operation is possible only with converter circuit (du/dt filter or sine-wave filter).

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Forced-air cooled motors with mounted separately driven fan
Cast-iron series 1PQ8 with special insulation for > 500 to 690 V

Selection and ordering data

P _{rated} , 50 Hz, kW	P _{rated} , 60 Hz, 1) kW	Frame size FS	Operating values at rated output with sinusoidal infeed										Cast-iron series 1PQ8 – with special insulation Order No.	m _{IM B3} kg	J kgm ²	Torque class CL						
			n _{rated} , 50 Hz, rpm	T _{rated} , 50 Hz, Nm	η _{rated} , 50 Hz, 4/4 %	η _{rated} , 50 Hz, 3/4 %	COS φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 690 V A	T _B / T _{rated}	L _p fA, 50Hz, tolerance +3 dB(A) dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A) dB(A)											
<ul style="list-style-type: none"> Cooling: Forced-air cooled with mounted separately driven fan (IC 416) – for technical specifications see Page 3/5 Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F) 																						
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																						
240	270	315	2978	770	95.5	95.6	0.90	230	3.0	79	94	1PQ8315-2PM	1400	2.7	10							
300	335	315	2978	962	95.7	95.7	0.91	285	3.0	79	94	1PQ8317-2PM	1600	3.3	10							
345	385	355	2981	1105	95.7	95.7	0.90	335	2.6	81	96	1PQ8353-2PM	2000	4.8	10							
390	435	355	2981	1249	96.1	96.2	0.91	370	2.6	81	96	1PQ8355-2PM	2100	5.3	10							
485	545	355	2982	1553	96.5	96.6	0.91	460	2.6	81	96	1PQ8357-2PM	2300	6.4	10							
545	600	400	2986	1743	96.6	96.7	0.91	520	3.0	83	98	1PQ8403-2PM	2900	8.6	10							
610	670	400	2986	1951	96.6	96.7	0.91	580	3.1	83	98	1PQ8405-2PM	3100	9.6	10							
680	750	400	2986	2175	96.7	96.8	0.92	640	3.0	83	98	1PQ8407-2PM	3300	11	10							
775	–	450	2987	2478	96.7	96.8	0.92	730	2.8	86	101	1PQ8453-2PM	4100	19	5							
875	–	450	2987	2798	96.8	96.9	0.92	820	2.8	86	101	1PQ8455-2PM	4300	21	5							
970	–	450	2987	3101	96.9	97.0	0.93	900	2.8	86	101	1PQ8457-2PM	4500	23	5							
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																						
235	270	315	1485	1511	95.3	95.4	0.87	235	2.8	79	93	1PQ8315-4PM	1400	3.6	13							
290	335	315	1485	1865	95.4	95.5	0.87	285	2.8	79	93	1PQ8317-4PM	1600	4.4	13							
340	390	355	1488	2182	95.5	95.6	0.87	340	2.6	81	96	1PQ8353-4PM	2000	6.1	13							
385	445	355	1488	2471	95.7	95.8	0.87	385	2.6	81	96	1PQ8355-4PM	2100	6.8	13							
480	550	355	1488	3081	95.9	96.0	0.87	480	2.5	81	96	1PQ8357-4PM	2300	8.5	13							
545	625	400	1491	3491	96.0	96.1	0.88	540	2.6	83	98	1PQ8403-4PM	2900	13	13							
615	710	400	1491	3939	96.2	96.3	0.88	600	2.7	83	98	1PQ8405-4PM	3100	14	13							
690	795	400	1491	4420	96.4	96.5	0.89	670	2.6	83	98	1PQ8407-4PM	3300	16	13							
785	905	450	1492	5025	96.3	96.4	0.88	770	2.5	86	101	1PQ8453-4PM	4100	23	10							
880	1010	450	1492	5633	96.5	96.6	0.87	870	2.6	86	101	1PQ8455-4PM	4300	26	10							
980	1125	450	1492	6273	96.6	96.7	0.89	950	2.6	86	101	1PQ8457-4PM	4500	28	10							
Voltages			No. of poles		Motor type			Version					Order code(s)									
50 Hz 400 VΔ/690 VY			2		1PQ8315 ... 357			Standard			8		–									
																		4		1PQ8315 ... 405		
			690 VΔ		2		1PQ8403 ... 457			Standard			7		–							
					4		1PQ8407 ... 457			Standard			7		–							
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 3/32.																			
For types of construction			see Page 3/33.		Motor type			Version					Order code(s)									
Without flange			IM B3		1PQ8315 ... 457			Standard			0		–									
			IM V5, IM V6		1PQ8315 ... 457			With additional charge			0		–									
With flange			IM V1 without protective cover		1PQ8315 ... 457 ²⁾			With additional charge			8		–									
			IM V1 with protective cover		1PQ8315 ... 457 ²⁾			With additional charge			4		–									
			IM B35		1PQ8315 ... 457 ³⁾			With additional charge			6		–									
Special versions			Order code(s)																			
Options			For additional charges, order codes and descriptions, see from Page 3/34.																			
Motor type 1PQ8													1PQ8 ... - ...		-Z ...+...+...+...							
315-2 317-2 353-2 355-2 357-2 403-2 405-2 407-2 453-2 455-2 457-2 315-4 317-4 353-4 355-4 357-4 403-4 405-4 407-4 453-4 455-4 457-4																						
Parallel feeders required																						
400 V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	Yes	Yes	Yes	Yes	Yes	Yes	–	–	–	–	
500 V	Yes	Yes	Yes	Yes	–	–	Yes	Yes	Yes	Yes	Yes	–	–	Yes	Yes	–	–	Yes	Yes	Yes	Yes	
690 V	–	–	–	–	–	–	–	–	–	–	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes
Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 4-pole motors on request.)																						
Standard	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000	3000	3000	2500	2500	2500	2200	2200	2100	2100	2100	
IM V1	–	–	3100	3100	3100	3100	3100	–	–	–	–	–	–	–	–	–	2100	2100	2100	1800	1800	1800
Ex protection	–	–	–	–	–	–	–	–	–	–	–	2650	2650	2350	2350	2350	2100	2100	2100	1900	1900	1900
Mechanical limit frequency f_{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 4-pole motors on request.)																						
Standard	60	60	60	60	60	60	60	50	50	50	100	100	83	83	83	73	73	73	70	70	70	
IM V1	–	–	52	52	52	52	52	–	–	–	–	–	–	–	–	70	70	70	60	60	60	
Ex protection	–	–	–	–	–	–	–	–	–	–	88	88	78	78	78	70	70	70	63	63	63	

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

²⁾ Not for 1PQ8353 to 457 2-pole, 60 Hz.

³⁾ Not for 1PQ8453 to 457 2-pole, 60 Hz.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Forced-air cooled motors with mounted separately driven fan
Cast-iron series 1PQ8 with special insulation for > 500 to 690 V

Selection and ordering data (continued)

Operating values at rated output with sinusoidal infeed													Cast-iron series		$m_{IM B3}$	J	Torque class				
$P_{rated, 50 Hz}$	$P_{rated, 60 Hz 1)}$	Frame size	$n_{rated, 50 Hz}$	$T_{rated, 50 Hz}$	$\eta_{rated, 50 Hz, 4/4}$	$\eta_{rated, 50 Hz, 3/4}$	$\cos\phi_{rated, 50 Hz, 4/4}$	$I_{rated, 50 Hz, 690 V}$	T_{β}/I_{rated}	$L_{pA, 50 Hz, tolerance +3 dB(A)}$	$L_{WA, 50 Hz, tolerance +3 dB(A)}$	1PQ8 – with special insulation Order No.	▲ New	kg				kgm ² CL			
kW	kW	FS	rpm	Nm	%	%		A		dB(A)	dB(A)										
• Cooling: Forced-air cooled with mounted separately driven fan (IC 416) – for technical specifications see Page 3/5 • Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F)																					
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																					
190	220	315	990	1833	95.0	95.2	0.85	196	2.7	80	94	1PQ8315-6PM	▲	1400	6.0	13					
235	270	315	990	2267	95.2	95.4	0.86	240	2.7	80	94	1PQ8317-6PM	▲	1600	7.3	13					
300	345	355	992	2888	95.7	95.7	0.86	305	2.8	82	97	1PQ8355-6PM	▲	2100	13	13					
340	390	355	992	3273	95.6	95.7	0.86	345	3.1	82	97	1PQ8356-6PM	▲	2200	15	13					
380	435	355	992	3658	95.9	96.0	0.86	385	2.9	82	97	1PQ8357-6PM	▲	2300	16	13					
435	500	400	993	4184	95.9	96.0	0.85	445	2.8	84	99	1PQ8403-6PM	▲	2900	21	13					
485	560	400	993	4664	96.0	96.1	0.86	490	2.8	84	99	1PQ8405-6PM	▲	3100	24	13					
545	625	400	993	5241	96.1	96.2	0.86	550	2.7	84	99	1PQ8407-6PM	▲	3300	27	13					
615	705	450	993	5915	96.3	96.4	0.84	630	2.7	87	102	1PQ8453-6PM	▲	4100	35	13					
690	795	450	993	6636	96.3	96.4	0.85	700	2.5	87	102	1PQ8455-6PM	▲	4300	39	13					
780	895	450	993	7502	96.4	96.6	0.85	790	2.6	87	102	1PQ8457-6PM	▲	4600	44	13					
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																					
145	165	315	740	1871	94.1	94.2	0.79	162	2.5	79	93	1PQ8315-8PM	▲	1400	6.0	13					
180	205	315	740	2323	94.4	94.5	0.80	198	2.5	79	93	1PQ8317-8PM	▲	1600	7.3	13					
230	265	355	743	2956	95.0	95.1	0.80	250	2.4	81	96	1PQ8355-8PM	▲	2100	13	13					
290	335	355	743	3727	95.2	95.3	0.81	315	2.4	81	96	1PQ8357-8PM	▲	2300	16	13					
335	385	400	743	4306	95.5	95.6	0.80	365	2.6	83	98	1PQ8403-8PM	▲	2900	21	13					
375	430	400	743	4820	95.6	95.7	0.80	410	2.7	83	98	1PQ8405-8PM	▲	3100	24	13					
425	490	400	743	5463	95.7	95.8	0.79	470	2.7	83	98	1PQ8407-8PM	▲	3300	27	13					
485	560	450	745	6217	96.0	96.1	0.78	540	2.5	86	101	1PQ8453-8PM	▲	4100	35	13					
545	625	450	745	6986	96.1	96.2	0.78	610	2.5	86	101	1PQ8455-8PM	▲	4300	39	13					
600	690	450	745	7691	96.2	96.3	0.79	660	2.5	86	101	1PQ8457-8PM	▲	4600	44	13					
Voltages																					
50 Hz		400 VΔ/690 VY		No. of poles		Motor type		Version						Order code(s)							
				6		1PQ8315 ... 453		Standard						8		-					
				8		1PQ8315 ... 457		Standard						8		-					
		690 VΔ		6		1PQ8455 ... 457		Standard						7		-					
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 3/32.																			
For types of construction see Page 3/33.																					
				Motor type		Version								Order code(s)							
Without flange		IM B3		1PQ8315 ... 457		Standard								0		-					
		IM V5, IM V6		1PQ8315 ... 457		With additional charge								0		-					
With flange		IM V1 without protective cover		1PQ8315 ... 457		With additional charge		Not for explosion-proof motors.						8		-					
		IM V1 with protective cover		1PQ8315 ... 457		With additional charge		The "Second shaft extension" option (K16) is not possible.						4		-					
		IM B35		1PQ8315 ... 457		With additional charge								6		-					
Special versions																					
Options		For additional charges, order codes and descriptions, see from Page 3/34.																			
Motor type 1PQ8																					
315-6 317-6 355-6 356-6 357-6 403-6 405-6 407-6 453-6 455-6 457-6 315-8 317-8 355-8 357-8 403-8 405-8 407-8 453-8 455-8 457-8																					
Parallel feeders required																					
400 V	-	Yes	Yes	Yes	Yes	-	Yes	Yes	Yes	-	-	-	-	-	Yes	-	-	Yes	Yes	Yes	
500 V	-	-	-	Yes	Yes	-	-	-	Yes	Yes	Yes	-	-	-	-	-	-	-	-	Yes	Yes
690 V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mechanical limit speed n_{max} in rpm (limit speeds for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																					
Standard	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100	
IM V1	-	-	-	-	2100	2100	2100	1800	1800	1800	-	-	-	-	2100	2100	2100	1800	1800	1800	
Ex protection	2350	2350	2100	2100	2100	1900	1900	1900	1700	1700	1700	2350	2350	2100	2100	1900	1900	1900	1700	1700	1700
Mechanical limit frequency f_{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																					
Standard	147	147	125	125	125	110	110	110	105	105	105	196	196	166	166	146	146	146	140	140	140
IM V1	-	-	-	-	-	105	105	105	90	90	90	-	-	-	-	140	140	140	120	120	120
Ex protection	117	117	105	105	105	95	95	95	85	85	85	156	156	140	140	126	126	126	113	113	113

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Voltages
Cast-iron series 1LA8, 1LL8, 1PQ8

Selection and ordering data

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category			Standard delivery time (colored area)							
			Motor version	Motor type	Number of poles	Motor type – Frame size							
						315	355	400	450				
			Mains-fed operation	1LA8	2, 4, 6, 8	1LA8							
				1LL8	2, 4, 6, 8	1LL8							
			Converter-fed operation	1LA8	2, 4, 6, 8	1LA8							
				1LL8	2, 4, 6, 8	1LL8							
				1PQ8	2, 4, 6, 8	1PQ8							
			Motor version	Motor type	Number of poles	Motor type 1LA8 ... /1LL8 ... /1PQ8 ...	315	353	403	407	453	455	457
							317	355	405				
								356					
								357					
Voltage at 50 Hz and 50 Hz output													
400 VΔ/690 VY ¹⁾													
	6	–	Mains-fed operation	1LA8, 1LL8	2, 4		□	□	□	–	–	–	–
					6		□	□	□	□	□	–	–
					8		□	□	□	□	□	□	□ ²⁾
	8	–	Converter-fed operation with standard insulation	1LA8, 1LL8, 1PQ8	2, 4		□	□	□	–	–	–	–
					6		□	□	□	□	□	–	–
					8		□	□	□	□	□	□	□ ²⁾
400 VΔ													
	4	–	Mains-fed operation	1LA8, 1LL8	2, 4, 6, 8		–	–	–	–	–	–	–
			Converter-fed operation with standard insulation	1LA8, 1LL8, 1PQ8	2, 4		○	○	○	–	–	–	–
					6		○	○	○	○	○	–	–
					8		○	○	○	○	○	○	○
500 VΔ													
	5	–	Mains-fed operation	1LA8, 1LL8	2, 4, 6, 8		○	○	○	○	○	○	○
			Converter-fed operation with standard insulation	1LA8, 1LL8, 1PQ8	2, 4, 6, 8		○	○	○	○	○	○	○
690 VΔ ¹⁾													
	0	–	Mains-fed operation	1LA8, 1LL8	2, 4		– ³⁾	– ³⁾	– ³⁾	□	□	□	□
					6		– ³⁾	– ³⁾	– ³⁾	– ³⁾	□	□	□
					8		– ³⁾	– ³⁾	– ³⁾	– ³⁾	– ³⁾	– ³⁾	□ ⁴⁾
	7	–	Converter-fed operation with standard insulation	1LA8, 1LL8, 1PQ8	2, 4		– ⁵⁾	– ⁵⁾	– ⁵⁾	□	□	□	□
					6		– ⁵⁾	– ⁵⁾	– ⁵⁾	– ⁵⁾	– ⁵⁾	– ⁵⁾	□
					8		– ³⁾	– ³⁾	– ³⁾	– ³⁾	– ³⁾	– ³⁾	□ ⁴⁾
Voltage at 60 Hz and required output at 60 Hz													
380 VΔ/660 VY, 50 Hz output ⁶⁾													
	9	L2C	All	All	All		✓ ⁷⁾	✓ ⁷⁾	✓ ⁷⁾	✓ ⁷⁾	✓ ⁷⁾	✓ ⁷⁾	✓ ⁷⁾
380 VΔ/660 VY, 60 Hz output ⁶⁾													
	9	L2D	All	All	All		✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz output ⁶⁾													
	9	L2R	All	All	All		✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output ⁶⁾													
	9	L2X	All	All	All		✓	✓	✓	✓	✓	✓	✓
460 VΔ; 50 Hz output ⁶⁾													
	9	L2T	All	All	All		✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output ⁶⁾													
	9	L2F	All	All	All		✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz output													
	9	L2V	All	All	All		✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output													
	9	L2M	All	All	All		✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies													
Standard winding ⁸⁾													
	9	L8Y • and identification code	All	All	All		✓	✓	✓	✓	✓	✓	✓
Non-standard winding ⁹⁾													
	9	L1Y • and identification code	All	All	All		✓	✓	✓	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

Note:
The order codes listed above are only valid for motor series 1PQ8 with forced-air cooled motor.
For the mounted separately driven fan, the required voltage/frequency must be ordered according to order code Y81 "Separately driven fan with non-standard voltage and/or frequency" in plain text with indication of the voltage, frequency and circuit.

- 1) Operation of the 1LA8, 1LL8 and 1PQ8 motors with standard insulation is only possible when connected to a converter (du/dt filter or sine-wave filter).
- 2) Not possible for 8-pole motors 1LL8457-8.
- 3) As special version with voltage code 9 and order code L1Y (specify output, voltage and frequency).
- 4) Not possible for 8-pole motors 1LA8457-8 and 1PQ8457-8.
- 5) For 1LL8 motors, as special version with voltage code 9 and order code L1Y (specify output, voltage and frequency).
- 6) Only possible with rated outputs of up to 630 kW.
- 7) Not possible for 2-pole 1LL8 motors in 60 Hz version of frame size 355 and above.

- 8) Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.
Winding according to voltage code:
– 0, 4, 5, 6, 7 or 8 for 1LA8 motors
– 4, 5, 7 or 8 for 1PQ8 motors
– 0, 5 or 6 for 1LL8 motors.
The rating plate will be stamped in accordance with identification code. The order code Y80 is not necessary, as it is included in the price of L8Y.
- 9) Plain text must be specified in the order: Voltage between 380 V and 690 V (voltages outside this range are available on request), frequency, circuit, required rated output in kW.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Types of construction
Cast-iron series 1LA8, 1LL8, 1PQ8







Standard delivery times:

10
working
days

20
working
days

On
request

Selection and ordering data

Types of construction	Type of construction code 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)				
			Motor version	Motor type	Motor type – Frame size				
					315	355	400	450	
	1PQ8.....		Motor version	Motor type	Frame size				
	1L.....				315	355	400	450	
Without flange									
IM B3		0	–	All	All	□	□ ¹⁾	□ ¹⁾	□ ¹⁾
IM V6		0	– <i>New!</i>	Mains-fed operation	1LA8	O. R.	O. R.	O. R.	O. R.
					1LL8	–	–	–	–
					1PQ8	O. R.	O. R.	O. R.	O. R.
IM V5		0	– <i>New!</i>	Mains-fed operation	1LA8	O. R.	O. R.	O. R.	O. R.
					1LL8	–	–	–	–
					1PQ8	O. R.	O. R.	O. R.	O. R.
				Converter-fed operation	1LA8	O. R.	O. R.	O. R.	O. R.
					1LL8	–	–	–	–
					1PQ8	O. R.	O. R.	O. R.	O. R.
With flange									
		acc. to DIN EN 50347 acc. to DIN 42948			–	–	–	–	–
					A 800	A 900	A 1000	A 1150	
IM V1 without protective cover ²⁾		8	–	Mains-fed operation	1LA8	✓	✓ ³⁾	✓ ³⁾	✓ ³⁾
					1LL8	✓	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
					1PQ8	✓	✓ ³⁾	✓ ³⁾	✓ ³⁾
IM V1 with protective cover ⁴⁾		4	–	Mains-fed operation	1LA8	✓	✓ ³⁾	✓ ³⁾	✓ ³⁾
					1LL8	✓	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
					1PQ8	✓	✓ ³⁾	✓ ³⁾	✓ ³⁾
IM B35		6	–	Mains-fed operation	1LA8	✓	✓	✓	✓
					1LL8	O. R.	O. R.	O. R.	O. R.
					1PQ8	✓	✓	✓	✓
				Converter-fed operation	1LA8	✓	✓	✓	✓
					1LL8	O. R.	O. R.	O. R.	O. R.
					1PQ8	✓	✓	✓	✓

- Standard version
- O. R. Possible on request
- ✓ With additional charge

Note:

With the same order number supplement in the 12th position, the respective basic type of construction will always be specified on the rating plate.

Ordering example:

Selection criteria	Requirement	Structure of the Order No.
Motor type	Non-standard motor specially designed for mains-fed operation, self-ventilated, cast-iron version, IP55 degree of protection	1LA8■■■■-■■■■■
Motor frame size/No. of poles/speed	315/6-pole/1000 rpm	1LA8315-6AB■■■
Rated output	200 kW	
Voltage and frequency	400 VΔ/690 VY, 50 Hz	1LA8315-6AB6■
Type	IM V1 with protective cover	1LA8315-6AB64

¹⁾ Not possible for 2-pole 1LL8 motors in 60 Hz version for mains-fed operation.

²⁾ For explosion-proof 1LA8 and 1PQ8 motors, the type of construction IM V1 without protective cover is not possible.

³⁾ For 2-pole 1LA8 and 1PQ8 motors for mains-fed and converter-fed operation up to 500 V, the 60 Hz version is not possible.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
requestOptions
Cast-iron series 1LA8, 1LL8, 1PQ8

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
	1PQ8.....-Z 1L.....-Z	Motor version	Motor type	Frame size			
				315	355	400	450
Standardline							
Standardline version ¹⁾ The price reduction refers to the basic machine Possible range of options: A23, A61, A72, G50, H70, H73, K09, K10, K45, K46, K57, K83, K84, K85, L00, L97, M58 (frame size 315 only), M88, Y53	B20	Mains-fed operation	1LA8 1LL8	○ –	○ –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	○ – –	○ – –	– – –	– – –
Motor protection							
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ²⁾	A12	All	All	□	□	□	□
Motor temperature detection with embedded temperature sensor KTY 84-130 ³⁾	A23	All	All	○	○	○	○
Installation of 6 PT100 resistance thermometers in stator winding ³⁾	A61	All	All	✓	✓	✓	✓
Installation of 6 PT100 resistance thermometers in stator winding, 3-wire circuit from auxiliary terminal box (Option M50 or M88)	A64	All	All	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance thermistors in basic circuit for rolling-contact bearings	A72	All	All	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance ther- mistors for rolling-contact bearings, in 3-wire circuit from auxiliary terminal box (Option M50 or M88)	A78	All	All	✓	✓	✓	✓
Installation of 2 PT100 double screw-in resis- tance thermometers in 3-wire circuit for rolling- contact bearings	A80 <i>New!</i>	All	All	✓	✓	✓	✓
6 x PT100 Smart transmitter –40 to +140 °C Rosemount ⁴⁾	M62	All	All	✓	✓	✓	✓
Motor connection and connection box							
Two-part plate on connection box	K06	Mains-fed operation	1LA8 1LL8	✓ ⁵⁾ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	O. R. O. R. O. R.	O. R. O. R. O. R.	O. R. O. R. O. R.	O. R. O. R. O. R.
Undrilled entry plate	L01	All	All	○ ⁶⁾	○	○	○
Connection box on RHS	K09	All	All	□	□	□	□
Connection box on LHS	K10 <i>New!</i>	All	All	○	○	○	○
Cable entry in direction of NDE with rotation of the terminal box console through 180°	N81	All	All	○	○	○	○
Cable entry in direction of DE with rotation of the terminal box console through 180°	N82 <i>New!</i>	All	All	○	○	○	○
Cable entry from the top	N83 <i>New!</i>	All	All	○	○	○	○
Rotation of the terminal box console through 180°	N84 <i>New!</i>	All	All	○	○	○	○
Connection box on NDE	N85 <i>New!</i>	All	All	O. R.	O. R.	O. R.	O. R.
Connection box on top (1XB1634 connection box) ⁷⁾	K11	All	All	✓	✓	✓	✓
DIN 89280 cable gland, maximum configuration	K57	All	All	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83	All	All	○	○	○	○
Rotation of the connection box through 90°, entry from NDE	K84	All	All	○	○	○	○
Rotation of the connection box through 180°	K85	All	All	○	○	○	○
Larger connection box (1XB1621 connection box)	M58	All	All	✓	– ⁸⁾	–	–
PE connection without cable lug	Q00 <i>New!</i>	All	All	✓	✓	✓	✓
Larger connection box (1XB1631 connection box)	L00	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ⁸⁾ □	□ □	□ □
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ⁸⁾ □ ✓ ⁸⁾	□ □ □	□ □ □

For legends, see Page 3/42; for footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options

Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
	1PQ8..... -Z 1L..... -Z	Motor version	Motor type	Frame size			
				315	355	400	450
Motor connection and connection box (continued)							
Larger connection box (1XB9600 connection box) ⁹⁾	M63 <i>New!</i>	All	All	–	✓	✓	✓
Subsequently rotatable main connection box	J12 <i>New!</i>	All	All	✓	✓	✓	✓
6 cables protruding, 1.5 m long	L48	All	All	O. R.	O. R.	O. R.	O. R.
6 cables protruding, 3 m long	L49	All	All	O. R.	O. R.	O. R.	O. R.
Auxiliary connection box 1XB9016 (cast-iron)	M50	All	All	✓	✓	✓	✓
Auxiliary connection box 1XB9015 (stainless steel)	M51	All	All	✓	✓	✓	✓
Flange version A660 instead of standard version ¹⁰⁾	M61	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	– – –	– – –
Auxiliary connection box 1XB3020 ¹¹⁾	L97	All	All	✓	✓	✓	✓
Auxiliary connection box 1XB9014 (aluminum)	M88	All	All	✓	✓	✓	✓
Connection box on NDE	M64	All	All	✓	✓	✓	✓
Windings and insulation							
Temperature class 155 (F), utilized to 155 (F), with service factor (1LA8 motors: SF 1.1 from frame size 400 SF 1.05; 1LL8 motors: SF 1.05) ¹²⁾	C11	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Temperature class 155 (F), utilized to 155 (F), with increased output (1LA8 motors: 10 %, from frame size 400 5 %; 1LL8 motors: 5 %) ¹²⁾	C12	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Temperature class 155 (F), utilized to 155 (F), with increased coolant temperature (1LA8 motors: 55 °C, from frame size 400 50 °C; 1LL8 motors: 50 °C) ¹²⁾	C13	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Temperature class 180 (H), utilized to 155 (F), with service factor (SF 1.1) ¹²⁾	C14	Mains-fed operation	1LA8 1LL8	✓ O. R.	✓ O. R.	✓ O. R.	✓ O. R.
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ O. R. ✓	✓ O. R. ✓	✓ O. R. ✓	✓ O. R. ✓
Colors and paint finish							
Standard finish in RAL 7030 stone gray		All	All	□	□	□	□
Standard paint finish in other colors	Y53 • and standard finish RAL	All	All	✓	✓	✓	✓
Special finish in RAL 7030 stone gray	K26	All	All	✓	✓	✓	✓
Special finish in other colors	Y54 • and special finish RAL	All	All	✓	✓	✓	✓
Unpainted (only cast-iron parts primed)	K23	All	All	○	○	○	○
Special technology							
Mounting of brake (incl. the brake from Stromag)	H47	Mains-fed operation	1LA8 1LL8	O. R. –	O. R. –	O. R. –	O. R. –
		Converter-fed operation	1LA8 1LL8 1PQ8	O. R. – O. R.	O. R. – O. R.	O. R. – O. R.	O. R. – O. R.
Mounting of the holding brake SFB 160, 1600 Nm, 230 V, Pintsch-Bubbenzer ¹³⁾	J48 <i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	– – –	– – –	– – –

For legends, see Page 3/42; for footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
	1PQ8.....-Z 1L.....-Z	Motor version	Motor type	Frame size			
				315	355	400	450
Special technology (continued)							
Mounting of the holding brake SFB 160 SH, 2100 Nm, 230 V, Pintsch-Bubenzler ¹³⁾	J49	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	– –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	– – –	– – –
Mounting of the holding brake SFB 160 H, 2500 Nm, 230 V, Pintsch-Bubenzler ¹³⁾	J56	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	– – –	– – –
Mounting of the holding brake SFB 250 SH, 3300 Nm, 230 V, Pintsch-Bubenzler ¹³⁾	J57	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	✓ –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	✓ – ✓	– – –
Mounting of the holding brake SFB 250 H, 4000 Nm, 230 V, Pintsch-Bubenzler ¹³⁾	J58	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	✓ –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	✓ – ✓	– – –
Mounting of the holding brake SFB 250 H, 4000 Nm, 400 V, Pintsch-Bubenzler ¹³⁾	J59	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	✓ – –
Mounting of the holding brake SFB 400 SH, 5200 Nm, 400 V, Pintsch-Bubenzler ¹³⁾	J66	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	✓ – –
Mounting of the holding brake SFB 400 H, 6300 Nm, 400 V, Pintsch-Bubenzler ¹³⁾	J67	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	✓ – ✓
Mounting of the holding brake SFB 630 SH, 8000 Nm, 400 V, Pintsch-Bubenzler ¹³⁾	J68	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – ✓
Mounting of the holding brake SFB 630 H, 10000 Nm, 400 V, Pintsch-Bubenzler ¹³⁾	J69	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – ✓
Prepared for mounting of the holding brake SFB for shaft height 315 ¹³⁾	J06	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	– –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	– – –	– – –
Prepared for mounting of the holding brake SFB for shaft height 355 ¹³⁾	J07	<i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	✓ –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	✓ – ✓	– – –

For legends, see Page 3/42; for footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)				
		Motor version	Motor type	Motor type – Frame size				
				315	355	400	450	
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8				
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8				
	1PQ8.....-Z 1L.....-Z	Motor version	Motor type	Frame size	315	355	400	450
Special technology (continued)								
Prepared for mounting of the holding brake SFB for shaft height 400 ¹³⁾	J08 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	✓ –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	✓ – –	– – –
Prepared for mounting of the holding brake SFB for shaft height 450 ¹³⁾	J09 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	✓ –
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –	✓ – –
Mounting of LL 861 900 220 rotary pulse encoder	H70	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
Prepared for mounting of LL 861 900 220	H78	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
Prepared for mounting of HOG 10 D 1024 I	H80	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
Mounting of HOG10 DN 2048 incremental encoder	H83 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
Mounting of HOG11 DN 2048 incremental encoder	H84 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
Mounting of LL861 incremental encoder (2048 pulses)	H85 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
Mounting of LL861900 222 rotary pulse encoder with Advanced Diagnostic System	H16 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
HOG 11 DN 1024 I rotary pulse encoder (16 mm) with special anti-corrosion protection	H88 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓

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For legends, see Page 3/42; for footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
requestOptions
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
	1PQ8.....-Z 1L.....-Z	Motor version	Motor type	Frame size			
				315	355	400	450
Special technology (continued)							
Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against humidity	Y74 • and required speed rpm <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			1PQ8	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against dust	Y76 • and required speed rpm <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			1PQ8	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I with terminal box/protection against dust	N05 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			1PQ8	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I with terminal box/protection against dust (zero signal)	N06 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			1PQ8	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I with terminal box/protection against humidity (zero signal)	N08 <i>New!</i>	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			1PQ8	✓	✓	✓	✓
Mounting a special type of rotary pulse encoder	Y70 • and encoder designation	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8	O. R. O. R.	O. R. O. R.	O. R. O. R.	O. R. O. R.
			1PQ8	O. R.	O. R.	O. R.	O. R.
Mechanical design and degrees of protection							
Low-noise version for 2-pole motors with clockwise direction of rotation	K37	Mains-fed operation	1LA8 1LL8	✓ ✓	□ ○	□ ○	□ ○
			Converter-fed operation	1LA8 1LL8	✓ ✓	□ ○	□ ○
		1PQ8		–	–	–	–
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38	Mains-fed operation	1LA8 1LL8	✓ ✓	□ ○	□ ○	□ ○
			Converter-fed operation	1LA8 1LL8	✓ ✓	□ ○	□ ○
		1PQ8		–	–	–	–
IP65 degree of protection	K50	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –
		1PQ8		✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea)	K52	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –
		1PQ8		O. R.	O. R.	O. R.	O. R.
Rust-resistant screws (externally) ¹⁴⁾	M27	All	All	✓	✓	✓	✓

For legends, see Page 3/42; for footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)				
		Motor version	Motor type	Motor type – Frame size				
				315	355	400	450	
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8				
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8				
	1PQ8..... -Z 1L..... -Z	Motor version	Motor type	Frame size				
				315	355	400	450	
Coolant temperature and site altitude								
Coolant temperature –50 to +40 °C	D02	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
Coolant temperature –40 to +40 °C	D03		Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
Coolant temperature –30 to +40 °C	D04		Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
Coolant temperature 45 °C, derating 4 % ¹⁵⁾	D11		All	All	○	○	○	○
Coolant temperature 50 °C, derating 8 % ¹⁵⁾	D12		All	All	○	○	○	○
Coolant temperature 55 °C, derating 13 % ¹⁵⁾	D13		All	All	○	○	○	○
Coolant temperature 60 °C, derating 18 % ¹⁵⁾	D14		All	All	○	○	○	○
Designs in accordance with standards and specifications								
Electrical according to NEMA MG1-12 ¹⁴⁾	D30		All	All	✓	✓	✓	✓
Design according to UL with "Recognition Mark"	D31		All	All	✓	✓	✓	✓
China Energy Efficiency Label ¹⁶⁾	D34	<i>New!</i>	Mains-fed operation	1LA8 1LL8	○ ○	○ ○	– –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Ex certification for Russia – only in combination with order codes M35, M39, M72 and M73	D35	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
Conformity statement in accordance with 94/9/EC (ATEX) of an independent body for Zone 2 motors (Ex nA)	D36	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
IEC Ex certificate – only in combination with order codes M72 and M73	D37	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ – O. R.	✓ – O. R.	✓ – O. R.	✓ – O. R.
Canadian regulations (CSA)	D40		All	All	✓	✓	✓	✓
Pump drives for sea water desalination plants								
Commissioning of the classification society by Siemens ¹⁷⁾	E88	<i>New!</i>	All	All	✓	✓	✓	✓
Commissioning of the classification society by third party ¹⁷⁾	E89	<i>New!</i>	All	All	✓	✓	✓	✓
Pump drive for sea water desalination plants certified according to Lloyd's Register ¹⁷⁾	E90	<i>New!</i>	All	All	✓	✓	✓	✓

3.3

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
request
Options
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
	1PQ8.....-Z 1L.....-Z	Motor version	Motor type	Frame size			
				315	355	400	450
Design for Zones according to ATEX ¹⁸⁾							
Design for Zone 2 for mains-fed operation Ex nA II T3 according to IEC/EN 60079-15 ^{19) 20)}	M72	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Design for Zone 2 for converter-fed operation, with derating Ex nA II T3 according to IEC/EN 60079-15 ^{19) 20) 21)}	M73	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	O. R. – O. R.	O. R. – O. R.	O. R. – O. R.	O. R. – O. R.
Design for Zone 22 for non-conductive dust (IP55) for mains-fed operation ²⁰⁾	M35	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Design for Zone 22 for non-conductive dust (IP55) for converter-fed operation, with derating ^{19) 20)}	M39	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ – –	✓ – –	✓ – –	✓ – –
VIK version (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate) ^{20) 22)}	K30	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	O. R. – –	O. R. – –	– – –	– – –
Ex nA II on VIK rating plate	C27	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	O. R. – –	O. R. – –	– – –	– – –
Bearings and lubrication							
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	All	All	✓	✓	✓	✓
Shock pulse measurement, fixed sensor and distributor box	H05 <i>New!</i>	All	All	✓	✓	✓	✓
Shock pulse measurement, complete alarm box ²³⁾	H07 <i>New!</i>	All	All	✓	✓	✓	✓
Automatic re-lubricating device EasyMatic ²⁴⁾	N30 <i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
Automatic re-lubricating device STAR CONTROL TIME M120 ²⁵⁾	N31 <i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
Automatic re-lubricating device STAR CONTROL IMPULSE L250 ²⁶⁾	N32 <i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	✓ –	✓ –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	✓ – ✓	✓ – ✓
Bearing design for increased cantilever forces ²⁷⁾	K20	Mains-fed operation	1LA8 1LL8	✓ –	✓ –	– –	– –
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ – ✓	✓ – ✓	– – –	– – –

For legends, see Page 3/42; for footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)				
		Motor version	Motor type	Motor type – Frame size				
				315	355	400	450	
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8				
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8				
	1PQ8.....-Z 1L.....-Z	Motor version	Motor type	Frame size	315	355	400	450
Balance and vibration severity								
Vibration severity level B	K02	All	All	✓	✓	✓	✓	
Full-key balancing	L68	All	All	✓	✓	✓	✓	
Shaft and rotor								
Second standard shaft extension ²⁸⁾	K16	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓	
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ –	✓ ✓ –	✓ ✓ –	✓ ✓ –	
Shaft extension with standard dimensions, without feather keyway	K42	All	All	✓	✓	✓	✓	
Non-standard cylindrical shaft extension	Y55 • and identification code	All	All	✓	✓	✓	✓	
Heating and ventilation								
Metal external fan	K35	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓	
		Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ –	✓ ✓ –	✓ ✓ –	✓ ✓ –	
Anti-condensation heating for 230 V	K45	All	All	✓	✓	✓	✓	
Anti-condensation heating for 115 V	K46	All	All	✓	✓	✓	✓	
Anti-condensation heating for 400 V	L08 <i>New!</i>	All	All	✓	✓	✓	✓	
Anti-condensation heating for 500 V	L09 <i>New!</i>	All	All	✓	✓	✓	✓	
Sheet metal fan cover	L36	Mains-fed operation	1LA8 1LL8	– □	– □	– □	– □	
		Converter-fed operation	1LA8 1LL8 1PQ8	– □ –	– □ –	– □ –	– □ –	
Separately driven fan with non-standard voltage and/or frequency ²⁹⁾	Y81 • and identification code	Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –	
		Converter-fed operation	1LA8 1LL8 1PQ8	– – ✓	– – ✓	– – ✓	– – ✓	
Rating plate and extra rating plates								
Second rating plate, loose	K31	All	All	✓	✓	✓	✓	
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	✓	✓	✓	✓	
Extra rating plate with identification codes	Y82 • and identification code	All	All	✓	✓	✓	✓	
Extension of liability for defects ³⁰⁾ (percentage additional charge refers to the basic machine)								
Extension of liability for defects by 12 to 24 months	Q80 <i>New!</i>	All	All	✓	✓	✓	✓	
Extension of liability for defects by 18 to 30 months ³¹⁾	Q81 <i>New!</i>	All	All	✓	✓	✓	✓	
Extension of liability for defects by 24 to 36 months ³¹⁾	Q82 <i>New!</i>	All	All	✓	✓	✓	✓	
Extension of liability for defects by 30 to 42 months ³¹⁾	Q83 <i>New!</i>	All	All	✓	✓	✓	✓	
Extension of liability for defects by 36 to 48 months ³²⁾	Q84 <i>New!</i>	All	All	✓	✓	✓	✓	
Extension of liability for defects by 48 to 60 months ³²⁾	Q85 <i>New!</i>	All	All	✓	✓	✓	✓	

3.3

For legends, see Page 3/42; for footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
	1PQ8.....-Z 1L.....-Z	Motor version	Motor type	Frame size	355	400	450
Packaging, safety notes, documentation and test certificates ³³⁾							
Document – Electrical data sheet	B31	All	All	✓	✓	✓	✓
Document – Order dimension drawing	B32	All	All	○	○	○	○
Document – Standard test schedule	B34 <i>New!</i>	All	All	✓	✓	✓	✓
Document – Load characteristics	B37	All	All	O. R.	O. R.	O. R.	O. R.
Document – Production schedule: Generated once	B43 <i>New!</i>	All	All	✓	✓	✓	✓
Document – Production schedule: Updated every two weeks	B44 <i>New!</i>	All	All	✓	✓	✓	✓
Document – Production schedule: Updated monthly	B45 <i>New!</i>	All	All	✓	✓	✓	✓
Standard test (routine test) with acceptance	F01	All	All	✓	✓	✓	✓
Visual acceptance and report handover with acceptance	F03	All	All	✓	✓	✓	✓
Temperature-rise test, without acceptance	F04	All	All	✓	✓	✓	✓
Temperature-rise test with acceptance	F05	All	All	✓	✓	✓	✓
Noise measurement in no-load operation, no noise analysis, without acceptance	F28	All	All	✓	✓	✓	✓
Noise measurement in no-load operation, no noise analysis, with acceptance	F29	All	All	✓	✓	✓	✓
Noise measurement in no-load operation, with noise analysis, without acceptance	F62	All	All	✓	✓	✓	✓
Noise measurement in no-load operation, with noise analysis, with acceptance	F63	All	All	✓	✓	✓	✓
Recording of current and torque curves with torque metering shaft during starting, without acceptance	F34	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Recording of current and torque curves with torque metering shaft during starting, with acceptance	F35	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Measurement of locked-rotor torque and current, without acceptance	F52	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Measurement of locked-rotor torque and current, with acceptance	F53	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
		Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
Type test with heat run for horizontal motors, without acceptance	F82	All	All	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance	F83	All	All	✓	✓	✓	✓
Type test with heat run for vertical motors, without acceptance	F92	All	All	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F93	All	All	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

For footnotes, see Page 3/43.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Options
Cast-iron series 1LA8, 1LL8, 1PQ8

Ordering example:

Selection criteria	Requirement	Structure of the Order No.
Motor type	Non-standard motor specially designed for mains-fed operation, self-ventilated, cast-iron version, IP55 degree of protection	1LA8■■■■-■■■■■■■
Motor frame size/No. of poles/speed	315/6-pole/1000 rpm	1LA8315-6AB■■■
Rated output	200 kW	1LA8315-6AB6■
Voltage and frequency	400 VΔ/690 VY, 50 Hz	1LA8315-6AB64
Type	IM V1 with protective cover	1LA8315-6AB64-Z K35
Special versions	Metal external fan Extension of liability for defects by 12 to 24 months	1LA8315-6AB64-Z K35+Q10

- 1) Only for 1LA8 motors in 4-pole version, IM B3 type of construction, voltage 400 VΔ/690 VY or 500 VΔ (without special insulation). Only the following order codes can be ordered in combination with the Standardline: A23, A61, A72, G50, H70, H73, K09, K10, K45, K46, K57, K83, K84, K85, L00, L97, M58 (frame size 315 only), M88, Y53.
- 2) Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended.
- 3) The standard thermistors are omitted. If PTC thermistors are required as well as KTYs or PT100s, this must be specified in the order in plain text. A combination of A12 and A23 or A12 and A61 is available on request for an additional charge.
- 4) Only possible in combination with the stainless steel auxiliary terminal box (order code M51).
- 5) Only possible in combination with the larger connection boxes 1XB1621 or 1XB1631 (order codes M58 or L00).
- 6) For 1LA8 and 1PQ8 motors, only possible in combination with the larger connection boxes 1XB1621 or 1XB1631 (order codes M58 or L00).
- 7) Combination with the order codes M88 and M50 is not possible. The 1XB1634 connection box is rotatable by 4 x 90°. Cable entry is from NDE or the delivery position. Dimension drawings available on request.
- 8) For motors 1LA8357-2, 1LA8357-4, 1PQ8357-2 and 1PQ8357-4, connection box 1XB1631 is supplied in the standard version.
- 9) For 1LA8357-2, 1PQ8357-2, 1LA8357-4, 1PQ8357-4, 1LA8 and 1PQ8 motors frame size 400 and 450, terminal box 1XB9600 can be ordered as the next largest connection box. For 1LA8353 to 1LA8355 and 1PQ8353 to 1PQ8355 as well as for 1LA8356-6, 1LA8357-6 and 1LA8357-8 and with 1PQ8356-6, 1PQ8357-6 and 1PQ8357-8, only terminal box 1XB1631 can be ordered as the next largest connection box.
- 10) Only possible for 4-pole and 6-pole 1LA8 and 1PQ8 motors with frame size 315 or 355 in versions IM V1 or IM B35.
- 11) VIK version is not possible for 1LA8 motors.
- 12) Utilization according to temperature class 180 (H) is not possible. All 400 V versions are available upon request only. Due to the rated current, for frame size 400 (2-pole and 4-pole) and 450 (all numbers of poles), a larger connection box with the type designation 1XB9600 is provided in some cases which is part of the order code C14.
- 13) Only possible for horizontal version IM B3 – other versions (such as type, rated voltage, mounting position) on request.
- 14) For 1PQ8 motors, only possible for the main motor – not for the separately driven fan motor.
- 15) Site altitude 1000 m above sea level.
- 16) For 1LA8 motors in mains-fed operation up to 315 kW.
- 17) Sector solution for pump drives certified according to Lloyds Register LR-T-3600 (Rev. 9 of August 2008), (Electric Motors higher than 100 hp) and LR-T-3601 (Rev. 8 of August 2008), (Vertical Electric Motors higher than 100 hp). Only combination of order codes E88 + E90 or E89 + E90 can be ordered.
- 18) Explosion-proof encoders are available on request.
- 19) These motors do not have a rated voltage range stamped on the rating plate.
- 20) For 1LA8 motors, with options K30, M35, M39, M72 and M73, the metal external fan order code K35 must also be ordered.
- 21) In the order, the "Speed range and torque characteristic" must be specified in plain text. A system test is necessary for $M = \text{constant}$.
- 22) For 2-pole 1LA8 motors of frame size 315, the low-noise version is also required. Order code K37 or K38 and, in addition, the metal external fan order code K35. Note the specified output and dimensions. For 1LA8353 to 1LA8357 motors, the connection box cannot be rotated by 4 x 90°.
- 23) Does not apply to explosion-proof motors.
- 24) Only approved for 1LA8 and 1PQ8 motors of the IM V1 type of construction, maintenance interval 2 years.
- 25) Only approved for 1LA8 and 1PQ8 motors of the IM B3 type of construction, maintenance interval 1 year.
- 26) Only approved for 1LA8 and 1PQ8 motors of the IM B3 type of construction, maintenance interval 2 years.
- 27) Not possible for 2-pole motors and motors of vertical type of construction.
- 28) Please inquire in the case of 2-pole motors and motors in vertical type of construction.
- 29) When ordering, specify in plain text: Voltage, frequency and circuit.
- 30) Extension is only valid in the case of proper use. For long-term storage > 6 months, a special agreement is necessary.
- 31) Registration and declaration of the installation site.
- 32) Additional condition: Simultaneous completion of a maintenance contract subject to charge, with regular inspection.
- 33) Type testing is also performed for converter-fed operation.

SIMOTICS N-compact Non-Standard Motors

Supplements to order numbers and special versions

Accessories

Overview

Slide rails with fixing bolts and tensioning screws according to DIN 42923

Slide rails are used to tension the belt of a machine easily and conveniently when a belt tightener is not available. They are fixed to the base using stone bolts or foundation blocks.

The assignment of slide rails to motor size can be found in DIN 42923. For motors of frame sizes 355 to 450, there are no standardized slide rails (please inquire).

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Foundation block according to DIN 799

The foundation blocks are inserted into the stone foundation and embedded in concrete. They are used for fixing machines of medium size, slide rails, pedestal bearings, baseframes, etc. After the fixing bolts have been unscrewed, the machine can be dragged without it having to be lifted.

When the machine is initially installed, the foundation block that is bolted to the machine (without washers) and fitted with tapered pins is not embedded with concrete until the machine has been fully aligned. The machine is set 2 to 3 mm deeper in this case. The difference in shaft height is compensated by inserting shims on final installation. The tapered pins safeguard the exact position of the machine when it is repeatedly removed and replaced without the need for realignment.

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Taper pins to DIN 258 with threaded ends and constant taper lengths

Taper pins are used for components that are repeatedly removed. The drilled hole is ground conical using a conical reamer until the pin can be pushed in by hand until the cone shoulder lies 3 to 4 mm above the rim of the hole.

It can then be driven in using a hammer until it is correctly seated. The pin is removed from the drilled hole by screwing on the nut and tightening it.

Standardized taper pins are available from general engineering suppliers.

Source of supply, for example:

Otto Roth GmbH & Co. KG
Rutesheimer Straße 22
70499 Stuttgart, Germany
Tel. +49 (0)711-13 88-0
Fax. +49 (0)711-13 88-233

www.ottoroth.de
E-mail: info@ottoroth.de

Couplings

The motor from Siemens is connected to the machine or gear unit through a coupling. Siemens is an important coupling manufacturer with a wide range of products.

For standard applications, Siemens recommends that elastic couplings of types N-EUPEX and RUPEX or torsionally rigid couplings of types ARPEX and ZAPEX are used. For special applications, FLUDEX and ELPEX-S couplings are recommended.

Source of supply:

Siemens contact partner – ordering from Catalog
Siemens MD 10.1 "FLENDER Standard Couplings"

or

SIEMENS AG
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Tel. +49 (0)2871-92 21 85
Fax +49 (0)2871-92 25 79

www.siemens.com
E-mail: flendercouplings@siemens.com

More information

Spare motors and repair parts

- Supply commitment for spare motors and repair parts following delivery of the motor:
 - For up to 5 years, in the event of total motor failure, Siemens will supply a comparable motor with regard to the mounting dimensions and functions.
 - Spare parts will generally be available for up to 5 years.
 - After 5 years and up to 10 years, Siemens will provide information about spare parts and will, if necessary, supply documentation for acquiring spare parts.
- When repair parts are ordered, the following details must be provided:
 - Designation and part number
 - Order No. and factory number of the motor.

Example for ordering a fan cover 1LA8,
frame size 315, 4-pole:

**Fan cover No. 12.01,
1LA8315-4AB60, factory No. J1172515010001**

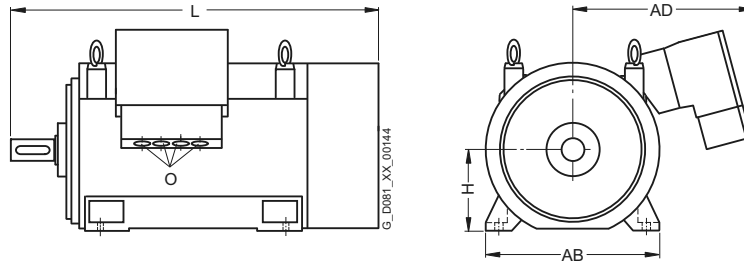
- For bearing assignment, see Catalog D 81.1 · 2008, Part "Introduction".
- For standard components, a supply commitment does not apply.
- Support – Hotline
In Germany
Tel. +49 (0)1 80/5 05 04 48

You will find telephone numbers for other countries on our Internet site:

www.siemens.com/automation/service&support

Overview

Overall dimensions



Frame size	Type	Number of poles	Dimension			
			L	AD	H	AB
315	1LA8	2	1380	570	315	680
	1LA8	4, 6, 8	1410	570	315	680
	1LA8	4, 6, 8 ¹⁾	1430	570	315	680
	1PQ8	2	1742	570	315	680
	1PQ8	4, 6, 8	1772	570	315	680
	1PQ8	4 ¹⁾	1792	570	315	680
	1LL8	2	1380	662	315	680
	1LL8	4, 6, 8	1410	662	315	680
	355	1LA8	2	1605	710	355
1LA8		4, 6, 8	1635	710	355	780
1LA8		4, 6, 8 ¹⁾	1699	710	355	780
1PQ8		2	1971	690	355	780
1PQ8		4, 6, 8	2001	690	355	780
1PQ8		4, 6, 8 ¹⁾	2065	690	355	780
1LL8		2	1635	840	355	780
1LL8		4, 6, 8	1675	840	355	780

Frame size	Type	Number of poles	Dimension			
			L	AD	H	AB
400	1LA8	2	1793	865	400	860
	1LA8	4, 6, 8	1833	865	400	860
	1PQ8	2	2148	865	400	860
	1PQ8	4, 6, 8	2188	865	400	860
	1LL8	2	1793	865	400	860
	1LL8	4, 6, 8	1833	865	400	860
450	1LA8	2	1953	900	450	980
	1LA8	4, 6, 8	1993	900	450	980
	1PQ8	2	2308	900	450	980
	1PQ8	4, 6, 8	2348	900	450	980
	1LL8	2	1953	900	450	980
	1LL8	4, 6, 8	2033	900	450	980

For dimension "O", see "Introduction" under "Connection boxes".

Notes on the dimensions

- Dimension designations according to DIN EN 50347 and IEC 60072.
- Fits
The shaft extensions specified in the dimension tables (DIN 748) and centering spigot diameters (DIN EN 50347) are machined with the following fits:

Dimension designation	ISO fit DIN ISO 286-2	
D, DA	over 50	m6
N	over 250	h6
F, FA		h9
K		H17
S	flange (FF)	H17

The drilled holes of couplings and belt pulleys should have an ISO fit of at least H7.

- Dimension tolerances
For the following dimension designations, the admissible deviations are given below:

Dimension designation	Dimension	Admissible deviation
H	over 250	- 1.0
E, EA		- 0.5

Keyways and feather keyways (dimensions GA, GC, F and FA) are made in compliance with DIN 6885 Part 1.
- All dimensions are specified in mm.

¹⁾ With bearings for increased cantilever forces.

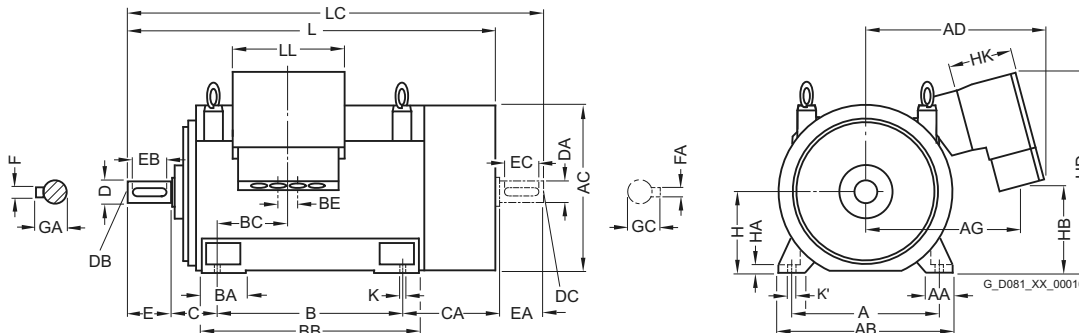
SIMOTICS N-compact Non-Standard Motors

Dimensions

Cast-iron series 1LA8
Frame sizes 315 to 450

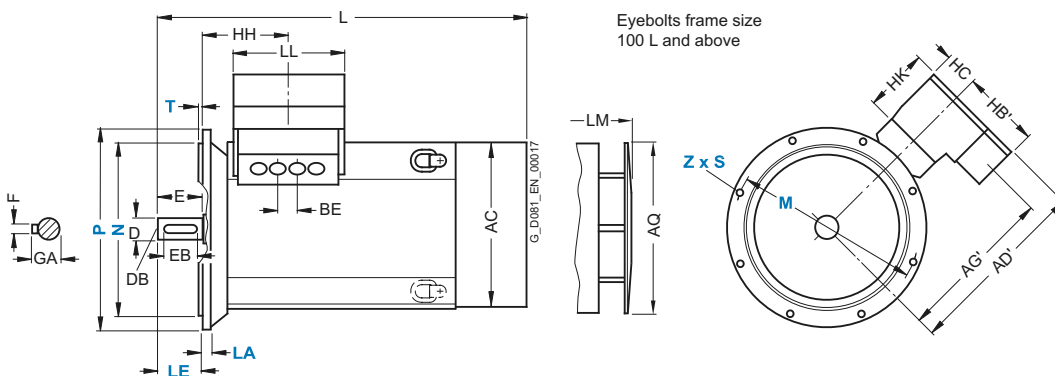
Dimensional drawings

Type of construction IM B3



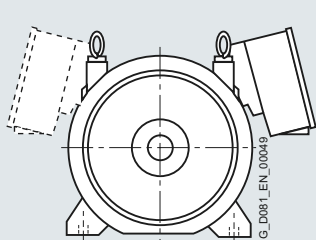
Type of construction IM V1

For flange dimensions, see Page 3/52 (Z = the number of retaining holes)



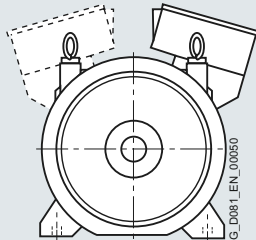
Connection box position

Basic version

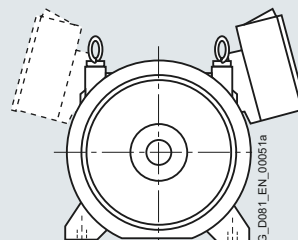


Cable entry: bottom
Console: 0°
Order code: -

Special versions



Cable entry: top
Console: 180°
Order code: K85



Cable entry: top
Console: 0°
Order code: N83

With cable entry from above, protection against rain and other adverse weather conditions must be provided.

For motor			Dimension designation acc. to IEC																				
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AG	AG'	AQ	B	BA	BB	BC	BE	C	CA	H	HA	HB	HB'	HC
315	1LA831	2 4, 6, 8 4, 6, 8 ²⁾	560	120	680	710	570	582	474	481	670	630	180	780	195	140	180 180 200	435	315	28	404	217	162
355	1LA835	2 4, 6, 8	630	150	780	790	690	697	597	593	750	800	220	980	185	135	200 200	470	355	35	431	290	165
	1LA8356	6					829	875	739	745						100	200				359	395	175
	1LA8357	2, 4																					
	1LA835	4, 6, 8 ²⁾					690	697	597	593						135	224				431	290	165
400	1LA840	2 4, 6, 8	710	150	860	880	865	925	775	795	850	900	220	1080	186	100	224	506	400	35	439	395	175
450	1LA845	2 ³⁾ 4, 6, 8	800	180	980	970	900	975	810	845	950	1000	260	1220	170	100	250	540	450	42	525	395	175

¹⁾ Measured across the bolt heads (not in the flattened area of the fan cover).

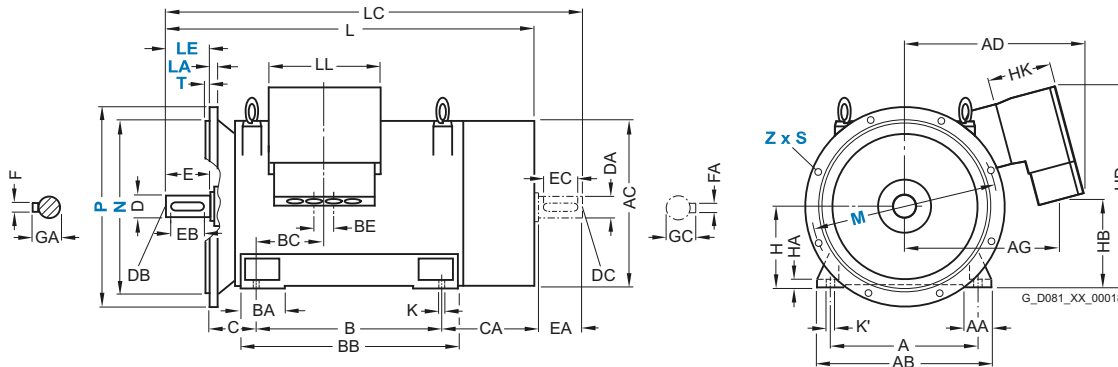
²⁾ With bearings for increased cantilever forces. Second shaft extension is not possible.

³⁾ Only at 50 Hz.

Dimensional drawings (continued)

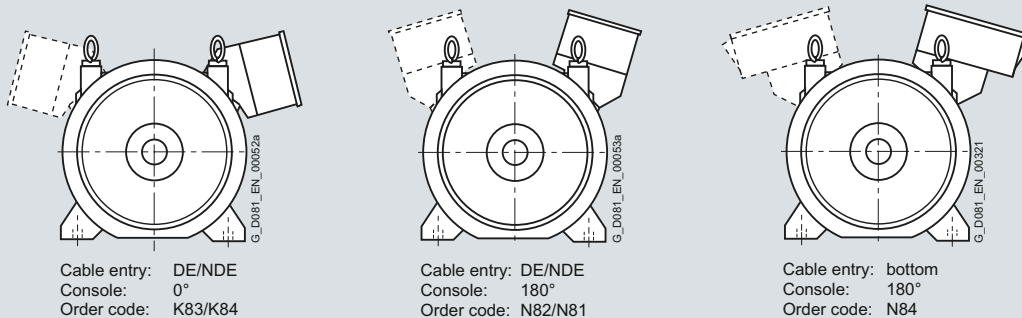
Type of construction IM B35

For flange dimensions, see Page 3/52 (Z = the number of retaining holes)



Connection box position

Special versions



For motor	Frame size	Type	Number of poles	Dimension designation acc. to IEC								DE shaft extension					NDE shaft extension									
				HD	HK	K	K'	L	LC	LL	LM	D	DB	E	EB	F	GA	DA	DC	EA	EC	FA	GC			
315	1LA831		2	783	170	26	33	1380	1495	308	1510	65	M20	140	125	18	69	50	M16	110	100	14	53.5			
			4, 6, 8																							
			4, 6, 8 ¹⁾																							
355	1LA835		2	896	229	33	40	1605	1750	330	1745	75	M20	140	125	20	79.5	60	M20	140	125	18	64			
			4, 6, 8																							
	1LA8356		6	945	320						554															
			2, 4																							
			4, 6, 8 ¹⁾																							
400	1LA840		2	1025	320	33	40	1793	1940	554	1943	80	M20	170	140	22	85	70	M20	140	125	20	74.5			
			4, 6, 8																							
450	1LA845		2 ²⁾	1111	320	39	47	1953	2100	554	2103	90	M24	170	140	25	95	75	M20	140	125	20	79.5			
			4, 6, 8																							

¹⁾ With bearings for increased cantilever forces. Second shaft extension is not possible.

²⁾ Only at 50 Hz.

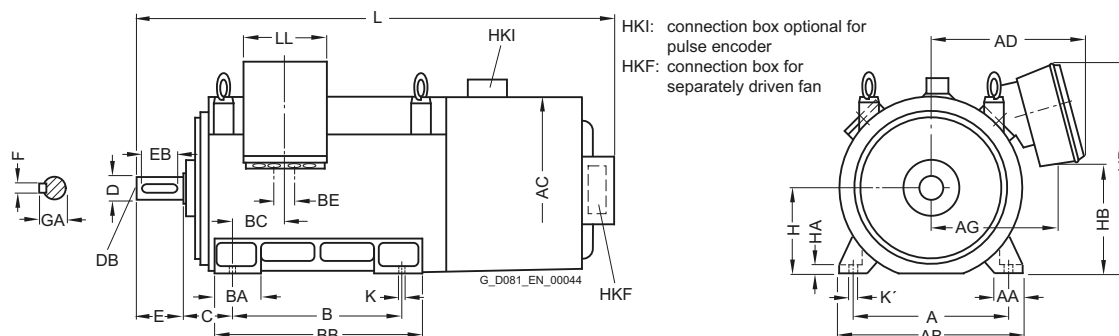
SIMOTICS N-compact Non-Standard Motors

Dimensions

Cast-iron series 1PQ8
Frame sizes 315 to 450

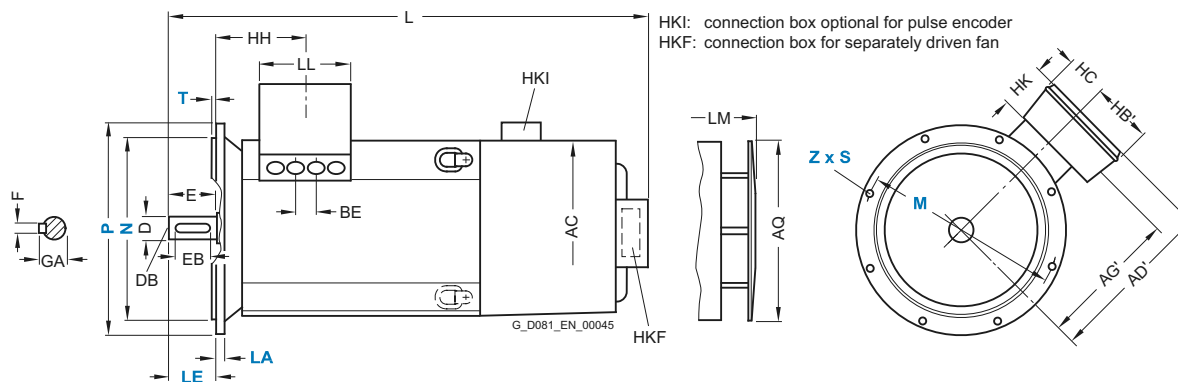
Dimensional drawings

Type of construction IM B3



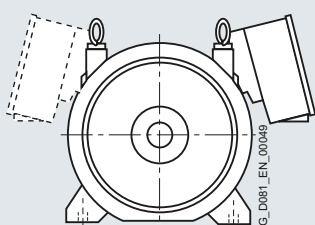
Type of construction IM V1

For flange dimensions, see Page 3/52 (Z = the number of retaining holes)



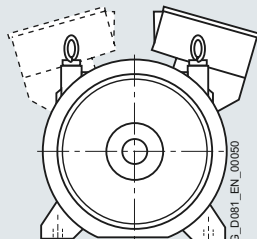
Connection box position

Basic version

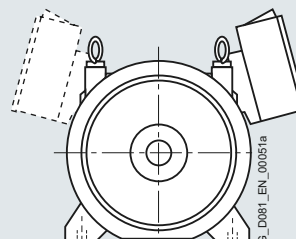


Cable entry: bottom
Console: 0°
Order code: -

Special versions



Cable entry: top
Console: 180°
Order code: K85



Cable entry: top
Console: 0°
Order code: N83

With cable entry from above, protection against rain and other adverse weather conditions must be provided.

For motor			Dimension designation acc. to IEC																													
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AG	AG'	AQ	B	BA	BB	BC	BE	C															
315	1PQ831.	2	560	120	680	710	570	582	474	481	750	630	180	780	195	140	180															
		4, 6, 8															180															
		4, 6, 8 ²⁾															200															
355	1PQ835. 35.	2	630	150	780	790	690	697	597	593	850	800	220	980	185	135	200															
		4, 6, 8															200															
		6															829	875	739	745	100	200										
		1PQ8356															2, 4															
		1PQ8357																														
1PQ835.	4, 6, 8 ²⁾					670	697	597	593							135	224															
400	1PQ840.	2	710	150	860	880	865	925	775	795	950	900	220	1080	186	100	224															
		4, 6, 8																														
450	1PQ845.	2 ³⁾	800	180	980	970	900	980	810	845	950	1000	260	1220	170	100	250															
		4, 6, 8																														

¹⁾ Measured across the bolt heads (not in the flattened area of the fan cover).

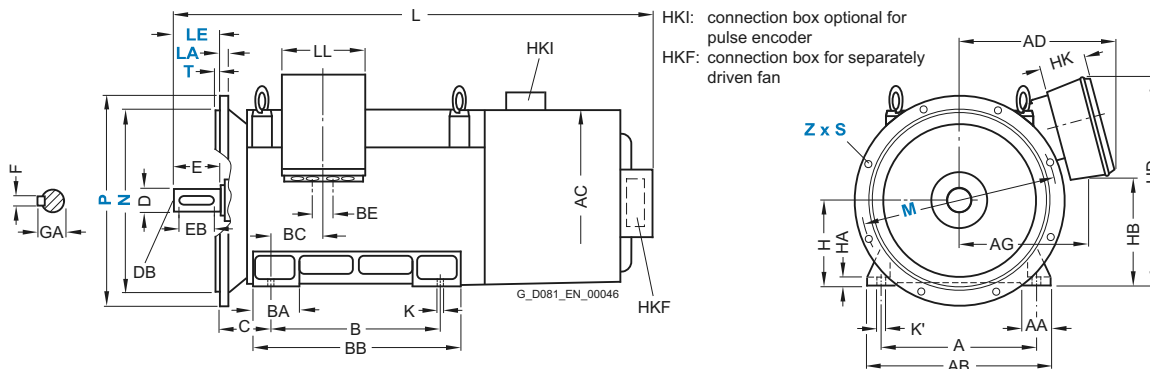
²⁾ With bearings for increased cantilever forces.

³⁾ Only at 50 Hz.

Dimensional drawings (continued)

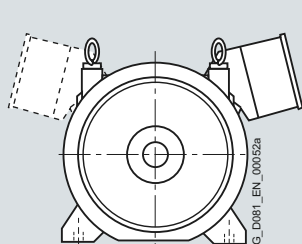
Type of construction IM B35

For flange dimensions, see Page 3/52 (Z = the number of retaining holes)

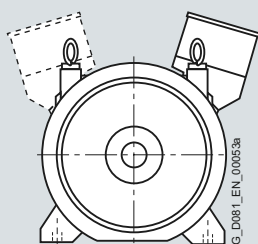


Connection box position

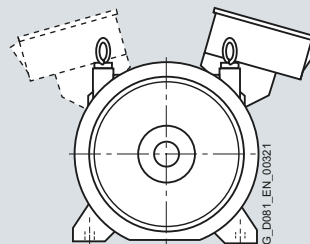
Special versions



Cable entry: DE/NDE
Console: 0°
Order code: K83/K84



Cable entry: DE/NDE
Console: 180°
Order code: N82/N81



Cable entry: bottom
Console: 180°
Order code: N84

For motor		Number of poles	Dimension designation acc. to IEC													DE shaft extension				
Frame size	Type		H	HA	HB	HB'	HC	HD	HK	K	K'	L	LL	LM	D	DB	E	EB	F	GA
315	1PQ831.	2	315	28	404	217	162	783	170	26	33	1742	308	1765	65	M20	140	125	18	69
		4, 6, 8													85	M20	170	140	22	90
		4, 6, 8 ¹⁾													95	M24	170	140	25	100
355	1PQ835.	2	355	35	431	290	165	896	229	33	40	1971	330	2005	75	M20	140	125	20	79.5
		4, 6, 8													95	M24	170	140	25	100
	1PQ8356	6	359	395	175	945	320						554							
	1PQ8357	2, 4																		
	1PQ835.	4, 6, 8 ¹⁾													100	M24	210	180	28	106
400	1PQ840.	2	400	35	440	400	175	1025	320	33	40	2148	554	2182	80	M20	170	140	22	85
		4, 6, 8										2188			110	M24	210	180	28	116
450	1PQ845.	2 ²⁾	450	42	525	400	175	1111	320	39	47	2308	554	2340	90	M24	170	140	25	95
		4, 6, 8										2348			120		210	180	32	127

¹⁾ With bearings for increased cantilever forces.

²⁾ Only at 50 Hz.

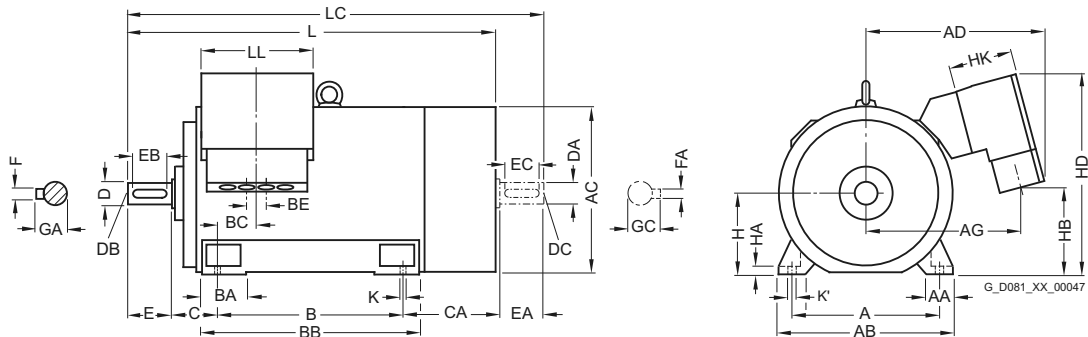
SIMOTICS N-compact Non-Standard Motors

Dimensions

Cast-iron series 1LL8
Frame sizes 315 to 450

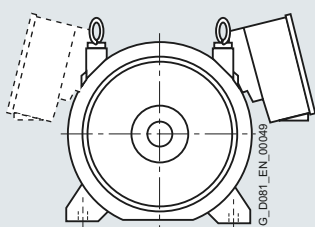
Dimensional drawings

Type of construction IM B3



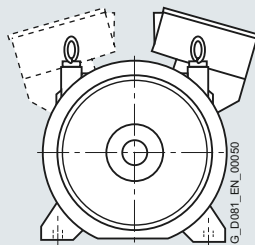
Connection box position

Basic version

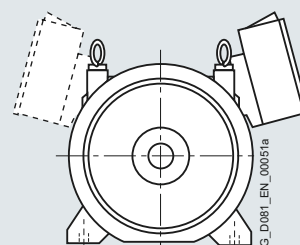


Cable entry: bottom
Console: 0°
Order code: -

Special versions



Cable entry: top
Console: 180°
Order code: K85



Cable entry: top
Console: 0°
Order code: N83

For motor			Dimension designation acc. to IEC															
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AG	AG'	AQ	B	BA	BB	BC	BE	C	CA
315	1LL831.	2 4, 6, 8	560	120	680	710	662	- 660	569	- 560	670	630	180	780	195	110	180	435
355	1LL835.	2 4, 6, 8	630	150	780	790	829	- 880	739	- 745	750	800	220	980	185	135	200	470
400	1LL840.	2 4, 6, 8	710	150	860	880	865	- 930	775	- 795	850	900	220	1080	186	100	224	506
450	1LL845.	2 ²⁾ 4, 6, 8	800	180	980	970	900	- 980	810	- 845	950	1000	260	1220	170	100	250	540

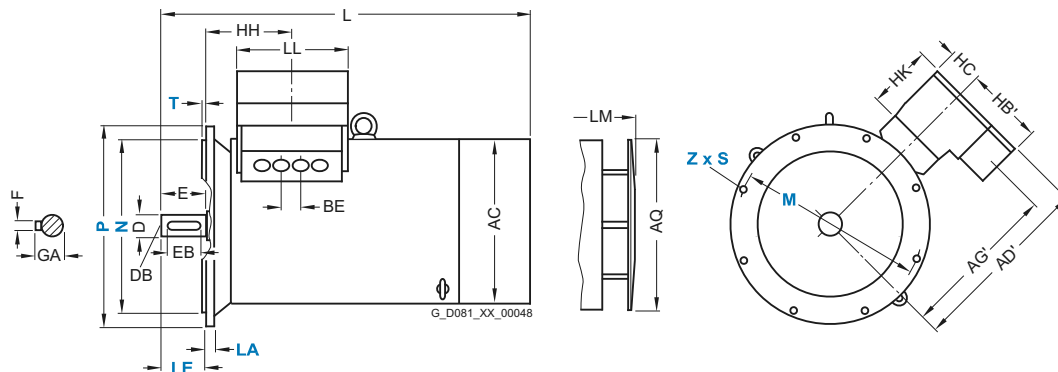
1) Measured across the bolt heads.

2) Only at 50 Hz.

Dimensional drawings (continued)

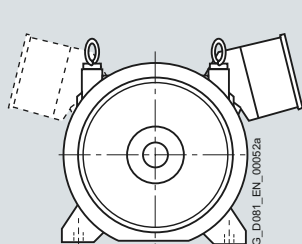
Type of construction IM V1

For flange dimensions, see Page 3/52 (Z = the number of retaining holes)

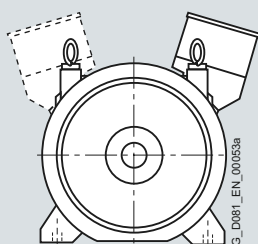


Connection box position

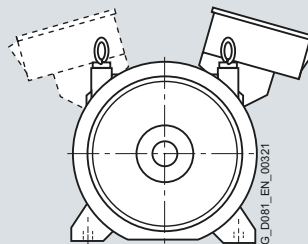
Special versions



Cable entry: DE/NDE
Console: 0°
Order code: K83/K84



Cable entry: DE/NDE
Console: 180°
Order code: N82/N81



Cable entry: bottom
Console: 180°
Order code: N84

For motor		Dimension designation acc. to IEC														DE shaft extension					
Frame size	Type	Number of poles	H	HA	HB	HB'	HD	HK	K	K'	L	LC	LL	LM	D	DB	E	EB	F	GA	
315	1LL831.	2	315	28	363	-	828	229	26	33	1380	1495	330	1510	70	M20	140	125	20	74.5	
		4, 6, 8				290									90	M24	170	140	25	95	
355	1LL835.	2	355	35	359	-	945	320	33	40	1605	1750	554	1775	80	M20	170	140	22	85	
		4, 6, 8				400									110	M24	210	180	28	116	
400	1LL840.	2	400	35	439	-	1025	320	33	40	1793	1940	554	1943	85	M20	170	140	22	90	
		4, 6, 8				400									120	M24	210	180	32	127	
450	1LL845.	2 ¹⁾	450	42	525	-	1111	320	39	47	1953	2100	554	2143	90	M24	170	140	25	95	
		4, 6, 8				400									130	M24	250	220	32	137	

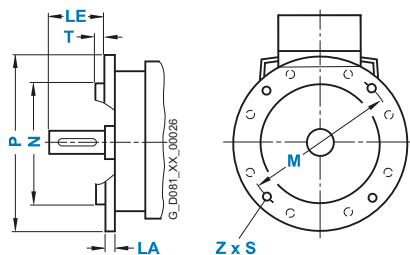
¹⁾ Only at 50 Hz.

SIMOTICS N-compact Non-Standard Motors

Dimensions

Flange dimensions

Dimensional drawings



Frame size	Type of construction	Flange type	Flange with through holes (FF/A)		Dimension designation acc. to IEC							
			acc. to DIN EN 50347	acc. to DIN 42948	LA	LE	M	N	P	S	T	Z
315 2-pole 4-pole to 8-pole	IM B35, IM V1	Flange	-	acc. to DIN 42948 A 800	25	140	740	680	800	22	6	8
						170						
355 2-pole 4-pole to 8-pole	IM B35, IM V1	Flange	-	A 900	25	140	840	780	900	22	6	8
						170						
400 2-pole 4-pole to 8-pole	IM B35, IM V1	Flange	-	A 1000	28	170	940	880	1000	22	6	8
						210						
450 2-pole 4-pole to 8-pole	IM B35, IM V1	Flange	-	A 1150	30	170	1080	1000	1150	26	6	8
						210						

SIMOTICS XP

1MA/1MJ/1LA/1LG

Explosion-Proof Motors

4



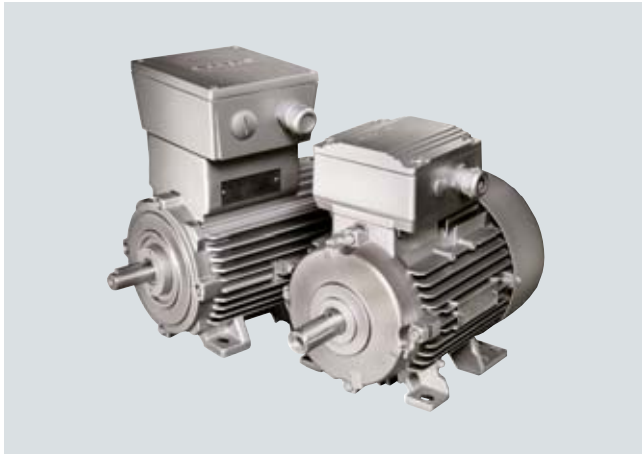
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SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

Orientation

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Overview (continued)



In many industrial and public sectors, explosion protection or explosion hazards are ever-present, e.g. in the chemicals industry, in refineries, on drilling platforms, at petrol stations, in feed manufacturing and in sewage treatment plants.

The risk of explosion is always present when gases, fumes, mist or dust are mixed with oxygen in the air in an explosive ratio close to sources of ignition that are able to release the so-called minimum ignition energy.

In the chemical and petrochemical industries in particular, when crude oil and natural gas are transported, or in mining, milling (e.g. grain and solids), this can result in serious injury to persons and damage to equipment.

To ensure maximum safety in these areas, legislators in most countries have implemented appropriate stipulations in the form of laws and regulations based on national and international standards.

Explosion-protected equipment are designed such that an explosion can be prevented when they are used properly.

The explosion-protected equipment can be designed in accordance with various types of protection.

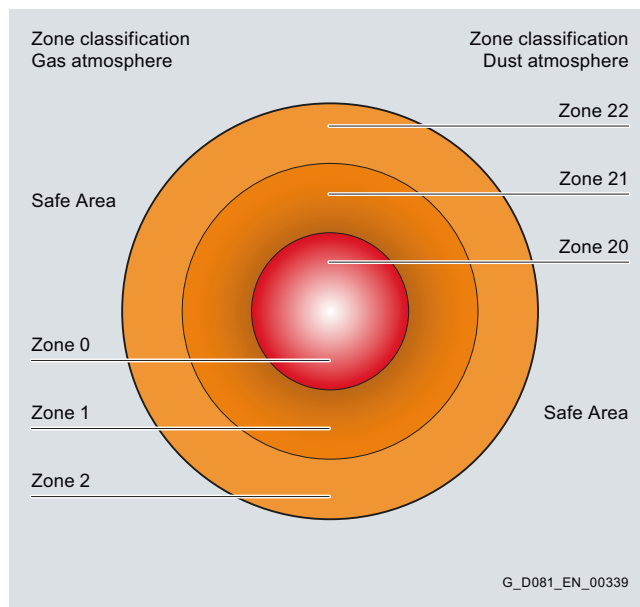
The local conditions must be subdivided into specified zones by the user with the assistance of the responsible authorities in accordance with the frequency of occurrence of an explosion hazard. Device (equipment) categories are assigned to these zones. The zones are then subdivided into possible types of protection and therefore into possible equipment (product) types.

Classification of zones

Areas subject to explosion hazard are divided into zones. Division into zones depends on the chronological and geographical probability of the presence of a hazardous, potentially explosive atmosphere. Information and specifications for classification of the zones are laid down in the following standards:

- IEC/EN 60079-10-1 for gas atmospheres
- IEC/EN 60079-10-2 for dust atmospheres

Further, a distinction is made between various explosion groups as well as temperature classes and these are included in the hazard assessment.



Depending on the particular zone and therefore the associated hazard, operating equipment must comply with defined minimum requirements regarding the type of protection. The different types of protection require corresponding measures to prevent ignition that should be implemented at the motor in order to prevent that a surrounding explosive atmosphere is ignited.

Zone Gas ^{1) 2)}	Dust ^{1) 2)}	Zone definition acc. to IEC/EN 60079-10-1 for gas atmospheres IEC/EN 60079-10-2 for dust atmospheres	Assigned types of protection	Category according to 94/9/EC
0	–	An area in which there is an explosive gas atmosphere constantly, over a long period or frequently .	Low-voltage motors not permitted	1
1	–	An area in which it is expected that an explosive gas atmosphere will occur occasionally during normal operation.	Ex e Ex d	2
2	–	An area in which in normal operation it is expected that an explosive gas atmosphere will occur only rarely and then only briefly .	Ex nA	3
–	20	An area in which there is an explosive atmosphere comprising a dust-air mixture constantly, over a long period or frequently .	Low-voltage motors not permitted	1
–	21	An area in which it is expected that an explosive atmosphere comprising a dust-air mixture will occur occasionally during normal operation.	Ex tD A21	2
–	22	An area in which in normal operation it is expected that an explosive atmosphere in the form of a cloud of flammable dust in air will occur only rarely and then only briefly .	Ex tD A22	3

¹⁾ Motors of
 - Zone 1 can also be used in Zone 2
 - Zone 21 can also be used in Zone 22

²⁾ Motors which are certified for gas or dust protection must not be used in hybrid mixtures! Hybrid mixtures: When explosive gas and dust atmospheres occur simultaneously.

Overview (continued)**Types of protection**

Type of protection "Increased safety" **Ex e** acc. to [IEC/EN 60079-7](#)

Additional measures are taken to prevent the possibility of high temperatures and to prevent sparks or arcs from occurring on the inside and on external components of the motor.

Motors of the 1MA6 and 1MA7 series are designed with "Increased safety".

Type of protection "Explosion-proof enclosure" **Ex d** acc. to [IEC/EN 60079-1](#)

The components that can ignite an explosive atmosphere are located in an enclosure that is not damaged by an internal explosion and flameproof joints prevent flames from escaping to the explosive atmosphere on the outside.

Motors of the 1MJ6 and 1MJ7 series are designed with "Explosion-proof enclosure".

Type of protection "Non-sparking" **Ex nA** acc. to [IEC/EN 60079-15](#)

The type of protection **Ex nA** ensures that a motor in normal operation as well as when operated under deviating conditions as specified in the standard is not in a position to ignite a surrounding explosive gas atmosphere.

Motors of the 1LA and 1LG series are optionally available in **Ex nA** design.

Type of protection "Dust explosion protection" **Ex tD** acc. to [IEC/EN 61241](#)

This type of protection applies for electrical equipment protected using an enclosure and with limited surface temperature for use in areas in which combustible dust can occur in concentration levels that could cause a fire or an explosion.

Motors of the 1LA and 1LG series are optionally available in **Ex tD** design.

Explosion-proof motors for converter-fed operation

Principally, explosion-proof motors (except for Ex e) can be fed from converters. Particular attention must be paid to the interaction between the motor and converter system, especially with regard to the following aspects:

- The harmonic content of the supply voltage raises the motor temperature, so the motor output must be reduced
- Less cooling of the motor at speeds below the rated speed
- Voltage stress on the motor winding
- Bearing currents

Certification

IEC motors for use in hazardous zones are certified according to the EU Directive 94/9/EC (ATEX) and are marked according to the following schematic:

Example for explosion-proof enclosure:	CE	0158	Ex	II	2	G	Ex	de	IIC	T4	X
CE marking											
Number of the certifying "notified" body (0158 = EXAM)											
Explosion protection marking											
Device group: I = Underground II = All other areas											
Category: 2 (Zone 1/21) 3 (Zone 2/22)											
Explosive atmosphere G = Gas D = Dust											
Explosion protected equipment											
Type of protection nA, d, e or tD (de = Ex d motor enclosure with Ex e connection box)											
Explosion group											
Temperature class with max. surface temperature T1 = 450 °C T2 = 300 °C T3 = 200 °C T4 = 135 °C T5 = 100 °C T6 = 85 °C											
Special conditions according to the Operating Instructions or type test certificate											

Additional information on the subject of explosion protection, types of protection and zones is provided in the Siemens brochure "Explosion Protection".

SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

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Overview (continued)

Overview of SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

The table below contains a complete overview of our products, their types of protection and the assignment of motor types to categories. It is important to note that depending on whether the

motor is used for converter-fed operation or mains-fed operation, different order codes are required for unique selection of the required product.

Sector	Category	Zone	Frequency of occurrence of the Ex atmosphere	Type of protection	Temperature class	Degree of protection	Motor type (Pos. 1-4 of Order No.)	Operation	Order code	Utilization according to temperature class	Standard
Gases and vapors (G)	1G	0	Constantly or long-term	Not admissible with low-voltage motors							
	2G	1	Occasionally	Ex de IIC ¹⁾ (explosion-proof enclosure)	T1 – T4	IP55	1MJ6 1MJ7	Mains Converter	– A15 A16	130 (B) 155 (F)	IEC/EN 60079-0 IEC/EN 60079-1
				Ex e II (increased safety)	T1 – T3	IP55	1MA6 1MA7	Mains	–	130 (B)/ 155 (F) ³⁾	IEC/EN 60079-0 IEC/EN 60079-7
3G	2	Rarely or briefly	Ex nA II (non-sparking)	T1 – T3	IP55	1LA6 1LA7 1LA8, 1PQ8 ²⁾ 1LA9 1LG4/6	Mains Converter	M72 M73	130 (B)	IEC/EN 60079-15	
Dust (D)	1D	20	Constantly or long-term	Not admissible with low-voltage motors							
	2D	21	Occasionally	Ex tD A21: Conductive and non-conductive dust	Max. enclosure temperature T 125 °C	IP65	1LA5 1LA6 1LA7 1LA8 ⁴⁾ , 1PQ8 ²⁾	Mains Converter	M34 M38	130 (B)	IEC/EN 61241
								Mains Converter	M35 M39		
3D	22	Rarely or briefly	Ex tD A22: Non-conductive dust		IP55	1LA9 1LG4/6					
Gases and vapors (G) and dust (D) ⁵⁾	2G/D	1/21	Occasionally	Ex de IIC ¹⁾ (explosion-proof enclosure)/ Ex tD A21: Conductive and non-conductive dust	T1 – T4/ Max. enclosure temperature T 135 °C	IP65	1MJ6/7	Mains Converter	M76 M77	130 (B) 155 (F)	IEC/EN 60079-0 IEC/EN 60079-1 IEC/EN 61241
								Mains Converter	M74 M75	130 (B)	IEC/EN 60079-15 IEC/EN 61241
3G/D	2/22	Rarely or briefly	Ex nA II (non-sparking)/ Ex tD A22: Non-conductive dust	T1 – T3/ Max. enclosure temperature T 125 °C	IP55	1LA6 1LA7 1LA9 1LG4/6					

Benefits

The explosion-proof motors offer the user numerous advantages:

- The motors are designed in accordance with Directive 94/9/EC (ATEX 95 previously ATEX 100a). As product supplier, Siemens accepts responsibility for compliance with the applicable product standards for the selected equipment.
- By using this product, the plant operating company satisfies Directive 1999/92/EC in accordance with Appendix II B (ATEX 137 previously ATEX 118a). The plant manufacturer or plant operating company is responsible for correct selection and proper usage of the equipment.
- Comprehensive series of explosion-proof motors for protection against gas and dust.
- Individual versions of motors are possible thanks to the numerous catalog options.
- Further special versions are possible on request.
- Factory certificates 2.1 are available for a defined spectrum of Siemens motors/converters.
- The Operating Instructions (Compact) are available in all the official EU languages as well as Russian and Chinese.

Application

The explosion-proof motors are used in the following sectors to prevent explosion hazards that result in serious injury to persons and severe damage to equipment:

- Chemical and petrochemical industry
- Production of crude oil and natural gas
- Gas works
- Gas supply companies
- Petrol stations
- Coking plants
- Mills (e.g. grain, solids)
- Sewage treatment plants
- Wood processing (e.g. sawdust, tree resin)
- Other industries subject to explosion hazards

¹⁾ Highest explosion group IIC includes IIB and IIA. Optionally with Ex d connection box (order code K53).

²⁾ 1PQ8 is not possible for Zone 21. Zone 2 and 22 for 1PQ8 available on request. Utilization according to temperature class 155 (F).

³⁾ See EC type test certificate.

⁴⁾ 1LA8 only available for Zone 22 (order codes M35, M39). Converter: Utilization as standard according to temperature class 155 (F).

⁵⁾ The explosion-proof motor is not admissible in an explosive atmosphere of gas and dust (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

Technical specifications

General information

Ex motors in vertical type of construction with shaft extension pointing down must have a protective cover.

Extensive Operating Instructions (Compact) are supplied as standard with explosion-proof motors in English and German. Translations are also available in all the other official EU languages as well as in Russian and Chinese.

For all explosion-proof motors, designs according to UL (order code D31) and CSA (order code D40) are not possible.

Motor connection

For 1MA and 1MJ motors, as well as 1LA/1LG motors in the explosion-proof version (except for 1LA/1LG motors in the version for Zone 22, VIK), certified metric cable glands/sealing plugs are included in the scope of supply.

The certificates for the motors for hazardous areas are stored with the documentation in the selection tool DT Configurator.

Certified motor protection switches/tripping units must always be used for motor protection, see Catalog IC 10.

In the case of SIMOTICS N-compact motors 1LA8 and 1PQ8, monitoring of the bearing temperature is only mandatory for Zone 22 (order code A72).

Zone 1 with type of protection Ex e II increased safety "e"

All 1MA motors in type of protection Ex e II are certified exclusively for mains-fed operation for temperature classes T1 to T3 at an ambient temperature from -20 to $+40$ °C and have an EC type test certificate according to Directive 94/9/EC (ATEX 95). Higher temperature classes are available on request. The rated voltage range according to the EC type test certificate is ± 5 %.

Explosion protection is achieved when the certified motor versions interact with a similarly certified motor protection switch. The motor protection switch is selected in accordance with the values certified for the motor for the starting current ratio I_{LR}/I_{rated} and the t_E times, so that in the case of a locked rotor fault, the motor is isolated from the supply within the t_E time. The t_E times assigned to the separate temperature classes and the starting current ratio are marked on the rating plate.

Explosion protection can be achieved exclusively by the PTC thermistors embedded in the winding provided that the motor has been specially approved and certified for this. This type of protection is not technically possible for every motor, so it is essential to inquire before ordering.

With the exception of 2-pole motors with frame size 225 M and above, all motors are standard, i.e. at T1/T2 or T3 the motors can be operated with the appropriate rated output. For special versions (different frequency, output, coolant temperature, site altitude, etc.) a new certificate is necessary (please inquire). The temperature class must be specified in the order, otherwise the universal version T1/T2 and T3 will be certified (doubling the certification costs).

- 2-pole 1MA motors of frame size 132 to 160 are equipped as standard with a double rating plate (T1/T2 and T3). If the motors are designed to order codes A11/A12 or voltage code "9", the T3 output will be stamped on the rating plate as standard. Alternatively, the "T1/T2 output" can be stamped on the rating plate – Order code C30.

Identification on the rating plate:

 II 2G Ex e II T1 – T3

Zone 1 with type of protection Ex de IIC explosion-proof enclosure "d"

All 1MJ motors are designed in the basic version for mains-fed operation. They have the highest explosion group IIC, temperature classes T1 to T4 at ambient temperatures from -20 to $+60$ °C and have an EC type test certificate according to Directive 94/9/EC (ATEX 95).

These motors are designed such that an explosion within the housing cannot result in an explosion in the environment. The energy that is generated internally by an explosion is dissipated in the so-called "flameproof joints" so far that the energy is no longer sufficient for ignition outside the housing. The housing temperature is below the ignition temperature of the gases to which temperature class T4 applies.

The 1MJ6 motors (frame sizes 71 to 200) generally have a located bearing on the non-drive-end (NDE) of the motor.

The following variations are possible on request:

- Coolant temperature > 40 °C or site altitude > 1000 m (for 1MJ6, the reduction factors listed in Catalog D 81.1 · 2008 Part 0 "Introduction" under "General technical data", "Coolant temperature and site altitude" are applicable).
- Frequency and rated duty
- Pole-changing motors
- Insulated bearing at the non-drive-end (NDE)
- Utilization according to temperature class 155 (F) in mains-fed operation

Identification on the rating plate:

 II 2G Ex de IIC T1 – T4

or

 II 2G Ex d IIC T1 – T4

- The 1MJ6/1MJ7 motors for use in type of protection Ex d/de (Zone 1)/Ex tD (Zone 21), as well as Zone 22 with electrically conductive dust – Order code M76 ¹⁾.

Zone 1/21:  II 2G Ex de IIC T4 or  II 2G Ex d IIC T4

 II 2D Ex tD A21 IP65 T 135 °C

For converter-fed operation, see Page 4/6.

¹⁾ The explosion-proof motor is not admissible in an explosive atmosphere of gas and dust (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

Orientation

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Technical specifications (continued)

Type of protection Ex nA for use in Zone 2

- Design for Zone 2 for mains-fed operation (order code M72)
- For design for Zone 2 for converter-fed operation, see Page 4/7.

1LA/1LG motors are modified for this purpose in the "Non-sparking" design and are suitable for use in hazardous areas of Zone 2 for temperature classes T1 to T3. The maximum surface temperature that can occur during operation must lie below the limit temperature of the respective temperature class. The ventilation system must be in accordance with IEC/EN 60079-0. The motors are equipped with an external grounding terminal. The connection box is similar to the Ex e design.


Please inquire in the case of:

- Utilization according to temperature class 155 (F)
- For pole-changing versions

For motors in the "Non-sparking" version, a conformity statement is available from a recognized testing authority.

Ambient temperature -20 °C to $+60\text{ °C}$, whereby derating applies from 40 °C upwards. Other temperatures are available on request.

The rating plate or the extra rating plate contains the text:

 II 3G Ex nA II T3

Number of the "Conformity statement"

Type of protection Ex tD for use in Zone 21 and 22

The distinction between Zone 21 and 22 is as follows:

- Zone 21 according to IEC/EN 61241 ¹⁾
 - Design for Zone 21 ²⁾, as well as Zone 22 for conductive dust (IP65) for mains-fed operation (order code M34)
- Zone 22 according to IEC/EN 61241
 - Design for Zone 22 for non-conductive dust (IP55) for mains-fed operation (order code M35)
- For design for Zone 21/22 for converter-fed operation, see Page 4/8.

The 1LA/1LG motors are modified for this purpose for use in zones subject to dust explosion hazards. The surface temperature is $\leq 125\text{ °C}$ at rated duty.



An external grounding terminal and a metal external fan are fitted to the motors. In the design for Zone 21, the connection box is similar to the Ex e design.

Pole-changing versions are not possible for Zone 21 – they are possible for Zone 22 on request.

Certification:

- Zone 21: EC type test certificate (ATEX), issued by the DMT testing authority (Deutsche Montan-Technologie) and EC declaration of conformity
- Zone 22: EC declaration of conformity

Identification on the rating plate (additional rating plate for SIMOTICS N-compact motors):


- Zone 21:  II 2D Ex tD A21 IP65 T125 °C
- Zone 22:  II 3D Ex tD A22 IP55 T125 °C


Ambient temperature -20 °C to $+60\text{ °C}$, whereby derating applies from 40 °C upwards. Other temperatures are available on request.

Type of protection Ex nA/Ex tD for use in Zone 2/22

The motors must be ordered with:

- Design for Zone 2 and 22 for non-conductive dust (IP55) for mains-fed operation – Order code M74

Zone 2/22:  II 3D Ex nA II T3 °C

 II 3D Ex tD A22 IP55 T125 °C

Converter-fed operation

General information

All the data listed in the catalog is applicable for a 50 Hz line supply. With converter-fed operation, the torque reduction factors for constant torque and drives for fans, pumps and compressors must be configured using SIZER for Siemens Drives. Higher noise levels must be expected at frequencies other than 50 Hz for motors operating with converters due to the harmonic content of the supply.

The motors are converter compatible for peak voltage durations of $t_s > 0.1\text{ }\mu\text{s}$ at $U \leq 500\text{ V}$ in motorized mode (for the 1LA8 motor series, up to 500 V generally).

For converter-fed operation, Ex motors must always be monitored using PTC thermistors. Certified tripping units are required for this purpose, see Catalog IC 10.

For converter-fed operation with frame size 225 and above, it is recommended that an "Insulated bearing cartridge" – Order code L27 is used.

Type of protection "Explosion-proof enclosure" Ex de IIC T4/Ex d II C T4

The motors must be ordered with:

- Motor protection with PTC thermistors for converter-fed operation with 4 embedded temperature sensors for tripping – Order code A15

or


- Motor protection with PTC thermistors for converter-fed operation with 8 embedded temperature sensors for alarm and tripping – Order code A16

Zone 1:  II 2G Ex de IIC T4 or  II 2G Ex d II C T4

or

- Design (IP65) for Zone 1 and 21, as well as Zone 22 for conductive dust, for converter-fed operation; with derating – Order code M77 (includes order code A15 ³⁾)

Zone 1/21:  II 2G Ex de IIC T4 or  II 2G Ex d II C T4

 II 2D Ex tD A21 IP65 T 135 °C

For 1MJ6 and 1MJ7 motor series, there is an additional PTC thermistor in the connection box.

Thermal utilization is according to temperature class 155 (F) in the version with order codes A15, A16 and M77.

The EC type test certificate and factory certificate 2.1 also cover converter-fed operation.

¹⁾ Zone 21 only up to frame size 315 L.

²⁾ Zone 21 includes conductive and non-conductive dust.

³⁾ The explosion-proof motor is not admissible in an explosive atmosphere of gas and dust (hybrid). A standard is not currently available that describes the product requirements for a hybrid mixture.

Technical specifications (continued)Converter-fed operation in general for Zone 2/21/22

1LA and 1LG motors for Zones 2, 21 and 22 for converter-fed operation have 3 PTC thermistors in the motor winding for tripping as standard. 1LG4/1LG6 motors also have an additional PTC thermistor in the connection box.

Optionally available: PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22 – Order code A10.

For all motors, "MICROMASTER DUTY S9" is stamped on the rating plate complete with the relevant operating data. (Exception: motor series 1LA8 and 1PQ8).

These rated operating points apply for both constant torque drives and pump/fan/compressor drives. For a constant torque drive, the resulting thermal motor torques in the positioning range must be taken into account.

The operating data for mains-fed operation is specified on the rating plate – on an additional rating plate, according to the selected product, 4 rated operating points are possible in the following variants:

Possible variants:	Rated operating points in Hz				Additional order code
50 Hz field weakening range	5	25	50	f_{max}	50 Hz voltage: e.g. "9" and L1A
60 Hz field weakening range	6	30	60	f_{max}	60 Hz voltage: e.g. "9" and L2E
87 Hz characteristic	5	25	87	f_{max}	87 Hz at 400 VΔ: "9" and L3A

f_{max} see Page 4/9.

SIEMENS 3~Mot. 1LA91864WA60 – Z		IE2 H	
D-90441 Nürnberg E 1105/5286261 14 001 IEC/EN 60034		CE	
Made in Germany 146 kg IM B3 180 L IP65 Th.Cl.155 (F)			
50 Hz 400/690 VΔ/Y	Ex	60 Hz 460 VΔ	CE
22.0 kW 41.5/24.0 A		22.0 kW 36 A	
cos φ 0.84 1465/min	II 2 D	cos φ 0.83 1775/min	
IE2-91.6 % Ex tD A21 IP65 T 125° CIE2-92.4 %			
DMT 01 ATEX E014X			
G_D081_XX_00341			

Example: Rating plate for mains-fed operation Ex tD, Zone 21
1LA9 186-4WA60-Z
M34

SIEMENS 3~Mot. 1LA91864WA90 – Z		IE2 H	
D-90441 Nürnberg E 1105/5286261 13 001 IEC/EN 60034		CE	
Made in Germany 146 kg IM B3 180 L IP65 Th.Cl.155 (F)			
50 Hz 400 V Y	Ex	60 Hz 460 V Δ	CE
22.0 kW 41.5 A		22.0 kW 36 A	
cos φ 0.84 1465/min	II 2 D	cos φ 0.83 1775/min	
IE2-91.6 % Ex tD A21 IP65 T 125° C			
DMT 01 ATEX E014X			
SIEMENS 3~Mot.			
D-90441 Nürnberg E 1105/5286261 13 001 IEC/EN 60034			
Made in Germany			
5 Hz 42 V Y	1.2 kW	26.5 A	cos φ 0.83
25 Hz 201 V Y	9.0 kW	35.5 A	cos φ 0.83
50 Hz 400 V Y	17.8 kW	34.5 A	cos φ 0.82
100 Hz 400 V Y	15.5 kW	29.0 A	cos φ 0.86
SINAMICS G120 DUTY: S9			
G_D081_XX_00342			

Example: Rating plate for converter-fed operation Ex tD, Zone 21
1LA9 186-4WA90-Z
M38 +L1A+Y68
Plain text Y68: SINAMICS G120

1) Not technically possible for 1LG, FS 315 L.

Alternatively, rated operating points for SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS G120, SINAMICS S120 or ET 200S FC on the rating plate can be ordered as follows:

Y68 with plain text (C text): SIMOVERT MASTERDRIVES

Y68 with plain text (C text): SINAMICS G110

Y68 with plain text (C text): SINAMICS G120

(for 1LA motors up to FS 225)

Y68 with plain text (C text): ET 200S FC

Y68 with plain text (C text): SINAMICS S120

The converter type and the associated operating data are on the rating plate.

The reasons for stamping the converter type on the motor rating plate are the different control levels for the converter with a converter output frequency of 45 Hz and above and the associated derating of the motor.

For compliance with the admissible temperature class 130 (B), derating is necessary in the case of converter-fed operation in Zones 2, 21 and 22. The derating must be determined from the load data using the configuration tool SIZER for Siemens Drives (see the appendix).

Factory certificates 2.1 for the named converters are stored under "Documentation" in the DT Configurator tool for low-voltage motors.

Only "one" voltage must be assigned to voltage codes/order codes:

Voltage code	Order code	Mains voltage
3	–	500 VY, 50 Hz
5	–	500 VΔ, 50 Hz
9	L1A	400 VY, 50 Hz
9	L1B	400 VΔ, 50 Hz
9	L1C	415 VY, 50 Hz
9	L1D	415 VΔ, 50 Hz
9	L2E	460 VY, 60 Hz
9	L2F	460 VΔ, 60 Hz
9	L2W	440 VY, 60 Hz
9	L2X	440 VΔ, 60 Hz
9	L1Y (non-standard winding)	Plain text (max. 460 VY, 50 or 60 Hz)
9	L3A ¹⁾	For 87 Hz 400 VΔ (4 to 8-pole)

For all motors, an additional rating plate complete with the operating data for the converter is fitted.

Converter-fed operation specially for motors in type of protection "Ex nA" (Zone 2)

The motors must be ordered with:

- Design for Zone 2 for converter-fed operation, with derating Ex nA II T3 according to IEC/EN 60079-15 – Order code M73.

In the version for order code M73, PTC thermistors are included according to temperature class 130 (B).

IEC/EN 60079-15 specifies that the motor and converter must be tested as a unit (individual test). Individual testing has been performed for motors of type of protection "n" operating with the MICROMASTER, SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS S120 and SIMATIC ET 200S FC converters (partially for "Non-standard motors of frame size 315 and above"). For details, see factory certificate 2.1. Individual testing can be performed for non-Siemens converters on request; the customer may be required to supply the non-Siemens converter.

Please inquire in the case of a non-Siemens converter (additional charge). The test will cost more in the case of non-Siemens converters (especially on commissioning). Commissioning personnel must be provided by the customer for setting up and operating the non-Siemens converter during the test, if required.

Ex II 3G Ex nA II T3

SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

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Technical specifications (continued)

Converter-fed operation specially for motors in type of protection "Ex tD" (Zone 21/22)

The motors must be ordered with:

- Design for Zone 21 ¹⁾, as well as Zone 22 for conductive dust (IP65) for converter-fed operation, derating – Order code M38
- Design for Zone 22 for non-conductive dust (IP55) for converter-fed operation, derating – Order code M39; no derating for SIMOTICS N-compact motors

Zone 21:  II 2D Ex tD A21 IP65 T125 °C

Zone 22:  II 3D Ex tD A22 IP55 T125 °C

according to IEC/EN 61241

In order codes M38/M39, PTC thermistors are included in accordance with temperature class 130 (B).

The drive system comprising motors protected against dust explosions operating on MICROMASTER, SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS S120 and SIMATIC ET 200S FC converters has been tested. For details, see factory certificate 2.1. Please inquire about operation with non-Siemens converters.


Converter-fed operation specially for motors in type of protection "Ex n/Ex tD" (Zone 2/22)


The motors must be ordered with:

- Design for Zone 2 and 22 for non-conductive dust (IP55) for converter-fed operation, derating – Order code M75

The order code M75 includes PTC thermistors according to temperature class 130 (B).

Factory certificate 2.1 analogous to that for Zones 2, 21 and 22. For non-Siemens converters, please inquire.

Zone 2:  II 3D Ex nA II T3 °C

Zone 22:  II 3D Ex tD A22 IP55 T125 °C

1LA8, 1PQ8 motors for converter-fed operation

When 1LA8 and 1PQ8 motors are ordered, the speed setting range and the load torque must be specified in plain text as well as whether the application is for a "Constant torque drive" or a "Fan/pump/compressor drive".

In some cases, a system test must be performed to ensure that the admissible limit temperature is not exceeded.

- A system test is not generally required for motors for applications with square-law load torque ($T \sim n^2$).
- A system test is usually required for motors for applications with constant load torque. In individual cases in which the motor type has already been measured once using the same speed setting range, a new system test is not necessary.

Please inquire in such cases.

For all motors, an additional rating plate complete with the operating data for the converter is fitted.

¹⁾ Zone 21 includes conductive and non-conductive dust.

Technical specifications (continued)

Mechanical limit speeds n_{\max} at maximum supply frequency f_{\max}

SIMOTICS XP 1MJ Explosion-Proof Motors in Zone 1 with type of protection "de" (motor series 1MJ)

Motor frame size	Motor type	2-pole ¹⁾		4-pole		6-pole		8-pole	
		n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz
1MJ6									
71 M	1MJ607.	6000	100	3000	100	2000	100	1500	100
80 M	1MJ608.	6000	100	3000	100	2000	100	1500	100
90 L	1MJ609.	6000	100	3000	100	2000	100	1500	100
100 L	1MJ610.	5400	90	3000	100	2000	100	1500	100
112 M	1MJ611.	5400	90	3000	100	2000	100	1500	100
132 S/M	1MJ613.	4800	80	3000	100	2000	100	1500	100
160 M/L	1MJ616.	4500	75	3000	100	2000	100	1500	100
180 M/L	1MJ618.	5100	85	3000	100	2000	100	1500	100
200 L	1MJ620.	5100	85	3000	100	2000	100	1500	100
1MJ7									
225 S/M	1MJ722.	4500	75	3000	100	2000	100	1500	100
250 M	1MJ725.	3900	65	3700	100	2000	100	1500	100
280 S	1MJ728.	3600	60	3000	100	2000	100	1500	100
315 S/M	1MJ731.	3600	60	2610	87	2000	100	1500	100

SIMOTICS XP 1MA Explosion-Proof Motors in Zone 1 with type of protection "e" (motor series 1MA)

1MA motors cannot be operated with a converter.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors in Zones 2, 21 and 22 with type of protection "n" or "tD" (motor series 1LA and 1LG)

Motor frame size	Motor type	2-pole ¹⁾		4-pole		6-pole		8-pole	
		n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz	n_{\max} rpm	f_{\max} Hz
1LA5, 1LA6, 1LA7, 1LA9									
63 M	1LA706., 1LA906.	6000	100	3000	100	2000	100	1500	100
71 M	1LA707., 1LA907.	6000	100	3000	100	2000	100	1500	100
80 M	1LA708., 1LA908.	6000	100	3000	100	2000	100	1500	100
90 L	1LA709., 1LA909.	6000	100	3000	100	2000	100	1500	100
100 L	1LA610., 1LA710., 1LA910.	5400	90	3000	100	2000	100	1500	100
112 M	1LA611., 1LA711., 1LA911.	5400	90	3000	100	2000	100	1500	100
132 S/M	1LA613., 1LA713., 1LA913.	4800	80	3000	100	2000	100	1500	100
160 M/L	1LA616., 1LA716., 1LA916.	4500	75	3000	100	2000	100	1500	100
180 M/L	1LA518., 1LA918.	5100 ²⁾	85 ²⁾	3000	100	2000	100	1500	100
200 L	1LA520., 1LA920.	5100 ²⁾	85 ²⁾	3000	100	2000	100	1500	100
225 S/M	1LA522.	5100	85	3000	100	2000	100	1500	100
1LG4, 1LG6									
180 M/L	1LG418., 1LG618.	4500	75	3000	100	2000	100	1500	100
200 L	1LG420., 1LG620.	4500	75	3000	100	2000	100	1500	100
225 S/M	1LG422., 1LG622.	4500	75	3000	100	2000	100	1500	100
250 M	1LG425., 1LG625.	3900	65	3000	100	2000	100	1500	100
280 S/M	1LG428., 1LG628.	3600	60	3000	100	2000	100	1500	100
315 S/M/L	1LG431., 1LG631.	3600	60	2610	87	2000	100	1500	100

¹⁾ Request required for continuous operation in the f_{\max} (n_{\max}) range.²⁾ For 1LA9 motors frame sizes 180 M/L and 200 L, $n_{\max} = 4500$ rpm and $f_{\max} = 75$ Hz.

SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

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Technical specifications (continued)

VIK version

- **VIK standard version** – Order code K30
"VIK" identification on rating plate.
- **VIK Ex n version** – Order codes K30 + C27
"VIK" and "Ex nA II T3" identification on the rating plate according to Directive 94/9/EC (ATEX)
"Ex nA II T3" identification will only be included on the rating plate on request as recommended by VIK.
Note: Order code C27 can only be ordered in combination with order code K30.

Both versions include technology for Zone 2 to type of protection Ex nA II T3.

Motors up to frame size 355 can be supplied in accordance with the technical requirements of the VIK (Verband der Industriellen Energie- und Kraftwirtschaft e.V.).

Not possible for 1LA5, 1LA6, 1LA7, 1LG4, 1MJ6 and 1MJ7 motors, because the VIK "standard version" must be designed to efficiency class IE2, "Ex n" and "Ex d/de" should have efficiency class IE2 according to the VIK recommendations published in March 2011. Not possible for 1LA9 motors (frame sizes 180 and 200), 1LG motors are supplied.

Note:

8-pole motors or motors < 0.75 kW in series 1LA6, 1LA7, 1LG4, 1MJ6 and 1MJ7 are still possible, because these motors are not in the output range of IE stamp.

1LG6 motors in frame size 315 are supplied with special connection boxes with a removable cable gland plate.

Note the output and dimensions in the case of 1LA8 motors. With 1LA8 motors, the connection boxes cannot be rotated by 4 x 90°. Motors in a vertical type of construction with the shaft extension pointing down must have a protective cover (type of construction code 4). Utilization according to temperature class 130 (B) is mandatory. Frame sizes 400 and 450 are not included in VIK.

Please inquire about converter-fed operation in all cases.

Motors in VIK version with mounted technology (brake, rotary pulse encoder, separately driven fan and anti-condensation heater) are not compatible with Zone 2. Designs for Zone 21/22 are not possible.

Ex certification for China

For projects in China in particular, explosion-proof motors are required that have been approved by a named Chinese testing authority.

Ex certification for China – Order code D32

The following motor series have Chinese Ex certification:

- Zone 1 type of protection "d" or Ex de IIC T4/Ex d IIC T4:
1MJ6, 1MJ7 – only admissible for converter-fed operation in combination with the order codes A15, A16 or M77.
- Zone 2 type of protection "n" or Ex nA II T3:
1LA6, 1LA7, 1LA9, 1LG when ordered in:
 - Design for Zone 2 for mains-fed operation
Ex nA II T3 according to IEC/EN 60079-15 – Order code M72
 - Design for Zone 2 for converter-fed operation, with derating
Ex nA II T3 according to IEC/EN 60079-15 – Order code M73.

In addition, the VIK version for motor series 1LA, 1LG can also be ordered with Ex certification for China.

When these motors are ordered in the version:

- "Ex certification for China" – Order code D32

the "NEPSI ¹⁾ certificate number" and the "NEPSI" logo are stamped on the rating plate.

For motor series 1LA8, the "CQST ²⁾ certificate number" and the logo "CQST" are then stamped on the rating plate.

Ex certification for Russia

For commissioning explosion-proof motors in Russia, approval is required from a named Russian testing authority.

Ex certification for Russia – Order code D35

All explosion-proof motor versions in Part 4 of this catalog with type designation 1MA, 1MJ, 1LA5/6/7/9, and 1LG have Russian Ex approval.

In addition, the VIK version for motor series 1MA, 1LA and 1LG can also be ordered with Ex certification for Russia.

When these motors are ordered in the version:

- "Ex certification for Russia" – Order code D35

the "RTN ³⁾ certificate number" and the "GOST R" logo are stamped on the rating plate.

If motors are supplied to Russia that are not installed in a machine (single motors or replacement motors), an authenticated GOST certificate is required for customs clearance. Please contact your local Siemens office for advice.

Every order for explosion-proof motors for the Russian market must be coordinated with your local Siemens Sales contact.

¹⁾ NEPSI = National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation.

²⁾ CQST = China National Quality Supervision and Test Centre for Explosion Protected Electrical Products.

³⁾ RTN = Rostekhnadzor

Technical specifications (continued)**Coolant temperature and site altitude**

Coolant temperature –40 to +40 °C for explosion-proof motor

For all 1LA5, 1LA6, 1LA7, 1LA9 (with the exception of 1LA9 with increased output), 1LG4, 1LG6, 1MA6 and 1MA7 motors in frame sizes 63 to 315 in the corresponding types of protection Ex e, Ex nA or Ex tD (Zone 21/22), the ambient operating temperature can be optionally extended to –40 °C. Extensive technical measures are necessary in this case (e.g.: metal external fan).

Order code D19

Order code D19 is not possible in combination with order code L03 "Vibration-proof version".

The mechanical limit speed for the 2-pole motors 1LA5/1LA9 in the Ex tD version is reduced for frame size 180 and above as compared to the values for mechanical limit speeds on Page 4/9:

Frame size	Motor type	2-pole	
		n_{\max} rpm	f_{\max} Hz
180	1LA5/1LA9	3300	55
200		3100	51
225		3000	50

With converter-fed operation and operation on 60 Hz line supplies, particular attention has to be paid to the mechanical limit speeds – 60 Hz data are not stamped on the rating plate. Alternative: 1LG4/1LG6 motors in Ex tD version.

Special technology

"Special technology" comprises mounted technology that is compatible with explosion-proof motors.

Explosion-proof motors can be implemented in a broader range of applications when explosion-proof rotary pulse encoders or explosion-proof separately driven fans are mounted.

The use of a separately driven fan is recommended to increase motor utilization at low speeds and to limit noise generation at speeds significantly higher than the synchronous speed.

Both of these results are normally only appropriate with converter-fed operation.

For explosion-proof motor versions with explosion-proof rotary pulse encoders or explosion-proof separately driven fans, see the tables below.

The following explosion-proof motor versions are available with explosion-proof rotary pulse encoders:

Type of protection	Order No. + Order code	Frame size	Order code for explosion-proof rotary pulse encoder
Ex nA	1LA6/7/9... + M73 1LG4/6... + M73	100 L ... 160 L 180 M ... 315 L	H86: Mounting of explosion-proof rotary pulse encoder – LL841 900 013 – for use in Zones 2, 21 and 22.
Ex tD (Zone 21)	1LA6/7... + M38 1LA5... + M38 1LA9... + M38 1LG4/6... + M38	100 L ... 160 L 180 M ... 225 M 100 L ... 200 L 180 M ... 315 L	
Ex tD (Zone 22)	1LA6/7... + M39 1LA5... + M39 1LA9... + M39 1LG4/6... + M39	100 L ... 160 L 180 M ... 225 M 100 L ... 200 L 180 M ... 315 L	
Ex nA or Ex tD (Zone 22)	1LA6/7/9... + M75 1LG4/6... + M75	100 L ... 160 L 180 M ... 315 L	
Ex de	1MJ6... + A15/A16 1MJ7... + A15/A16	90 L ... 200 L 225 M ... 315 M	H87: Mounting of explosion-proof rotary pulse encoder for use on motors Ex d/de in Zone 1: • Ex OG 9 DN 1024 I (FS 90 L to 160 L) • Ex HOG 161 DN 1024 I (FS 180 M to 315 L)

The following explosion-proof motor versions are available with explosion-proof separately driven fans:

Type of protection	Order No. + Order code	Frame size	Order code for explosion-proof separately driven fan
Ex nA	1LG4/6 + M73	225 M ... 315 L	M95: "Mounting of explosion-proof separately driven fan Ex nA for use in Zone 2".
Ex tD (Zone 21)	1LG4/6 + M38	225 M ... 315 L	M96: "Mounting of explosion-proof separately driven fan II 2D for use in Zone 21".
Ex tD (Zone 22)	1LG4/6 + M39 1LA6/7 + M39 1LA5 + M39 1LA9 + M39	180 M ... 315 L 100 L ... 160 L 180 M ... 225 M 100 L ... 200 L	M97: "Mounting of explosion-proof separately driven fan II 3D for use in Zone 22".
Ex de	1MJ7 + A15/A16	225 M ... 315 M	M98: "Mounting of explosion-proof separately driven fan Ex de for use in Zone 1".

Note: Alternatively, explosion-proof separately driven fans can also be used in mains-fed operation for special applications.

Technical specifications (continued)

Explosion-proof rotary pulse encoder

The rotary pulse encoder can only be mounted on a standard non-drive end (NDE), i.e. a second shaft extension or protective cover cannot be supplied. In the case of a vertical mounting position, therefore, a suitable cover must be implemented by the customer to prevent small parts from falling into the fan cover (see also standard IEC/EN 60079-0).

Explosion-proof rotary pulse encoders do not have insulated bearings due to their design (please inquire).

The type of protection of the rotary pulse encoder must be observed. The relevant data are stamped on the rating plate of the rotary pulse encoder.

When an explosion-proof rotary pulse encoder is mounted, the length of the motor increases by Δl . For an explanation of the additional dimensions and weights, see "Dimensions and weights of explosion-proof rotary pulse encoders".

LL 841 900 013 rotary pulse encoder

This encoder has a rugged construction and is therefore also suitable for difficult operating conditions. It is resistant to shock and vibration.

The *LL 841 900 013* rotary pulse encoder for use in Zones 2, 21 and 22 can be supplied with the already mounted ADS diagnostic system for early detection of errors in the encoder. Order code H86

Rotary pulse encoders

Ex OG 9 DN 1024 I and Ex HOG 161 DN 1024 I

The *HOG 10 DN 1024 I* rotary pulse encoder has an extremely rugged design and is therefore ideally suited to difficult operating conditions.

Ex OG 9 DN 1024 I rotary pulse encoders (for frame sizes 90 to 160) and *HOG 10 DN 1024 I* rotary pulse encoders (for frame sizes 180 to 315) can be supplied already mounted for use with Ex d/de motors in Zone 1. Order code H87

Technical specifications

Type of rotary pulse encoder	LL 841 900 013 (HTL version)	Ex OG 9 DN 1024 I (HTL version)	Ex HOG 161 DN 1024 I (HTL version)
Order code	H86	H87 (for frame sizes 90 ... 160)	H87 (for frame sizes 180 ... 315)
Supply voltage U_B	+9 ... +30 V	+9 ... +30 V	+9 ... +30 V
Current input without load	Max. 80 mA	Approx. 90 mA	Approx. 100 mA
Admissible load current per output	40 mA	60 mA, 300 mA peak	60 mA, 300 mA peak
Pulses per revolution	1024	1024	1024
Outputs	6 short-circuit proof square-wave pulses A, A', B, B', 0, 0', high current HTL Floating switching output for ADS signal	6 short-circuit proof square-wave pulses A, B and A', B' and R, R'	64 short-circuit proof square-wave pulses A, B and A', B' and R, R'
Pulse offset between the two outputs	90° ± 25° el.	90° ± 20 %	90° ± 20 %
Output amplitude	$U_{High} > U_B - 4 V$ $U_{Low} < 2.5 V$	$U_{High} \geq U_B - 3.5 V$ $U_{Low} \leq 1.5 V$	$U_{High} = U_B - 3.5 V$ $U_{Low} = 1.5 V$
Mark space ratio	1:1 ± 10 %	1:1 ± 20 %	1:1 ± 20 %
Edge steepness	50 V/μs (without load)	10 V/μs	10 V/μs
Maximum frequency	100 kHz for 350 m cable	120 kHz	120 kHz
Maximum speed	4200 rpm	7000 rpm	5600 rpm
Temperature range	-40 ... +70 °C	-20 ... +55 °C	-20 ... +65 °C
Degree of protection	IP65	IP56	IP56
Maximum adm. radial cantilever force	150 N	350 N	650 N
Maximum adm. axial force	100 N	200 N	450 N
Connection system	Terminal strips in encoder, cable connection M20 x 1.5 radial	Terminals with increased safety e, cable connection M20 x 1.5	Terminals with increased safety e, cable connection M20 x 1.5
Mech. design acc. to Baumer Hübner Ident. No.	-	73 775 B	74 140 A
Weight, approx.	1.7 kg	3.5 kg	8.8 kg

Mounting of encoder for use below -20 °C and higher than +40 °C available on request.

Manufacturers of rotary pulse encoders

Type: *LL 841 900 013*:
Leine und Linde (Germany) GmbH
Bahnhofstrasse 36
73430 Aalen, Germany
Tel. +49 (0) 73 61-78093-0
Fax +49 (0) 73 61-78093-11

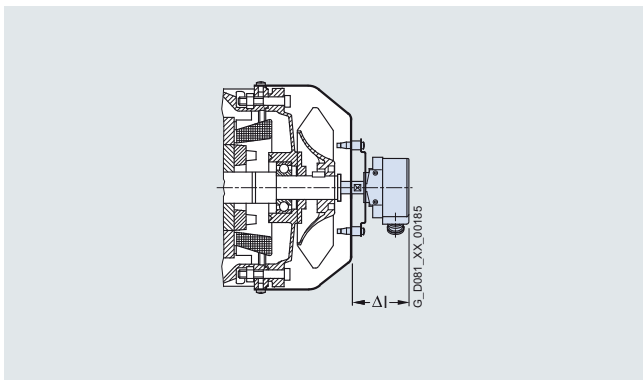
www.leinelinde.com
E-mail: info@leinelinde.se

Types: *Ex OG 9 DN 1024 I* and *Ex HOG 161 DN 1024 I*:
Baumer Hübner GmbH
Max-Dohrn-Str. 2+4
10589 Berlin, Germany
Tel. +49 (0) 30-6 90 03-0
Fax +49 (0) 30-6 90 03-1 04

www.baumerhuebner.com
E-mail: info@baumerhuebner.com

Technical specifications (continued)

Dimensions and weights of the explosion-proof rotary pulse encoders



Explosion-proof rotary pulse encoder (on cover), order codes H86 and H87

Frame size	Ex d/de (Zone 1)		Ex nA (Zone 2) and Ex tD (Zone 21/22)			
	1MJ6/7		1LA5/6/7/9		1LG4/6	
	Δl	Weight approx.	Δl	Weight approx.	Δl	Weight approx.
	mm	kg	mm	kg	mm	kg
90	184	14.0	–	–	–	–
100	188	14.5	110	2.0	–	–
112	190	14.5	110	2.0	–	–
132	186	16.5	110	2.0	–	–
160	183	17.5	110	2.0	–	–
180	164	9.0	110	2.0	100	3
200	164	9.0	110	2.0	100	3
225	160	12	110	2.0	100	3
250	160	12	–	–	100	3
280	160	12	–	–	100	3
315	160	12	–	–	100	3

1MJ6 motors of frame sizes 90 to 160 feature the rugged, flanged rotary pulse encoder Ex OG 9 which offers a high level of mechanical protection for itself.

A protective cover of non-corrosive sheet steel is available for the explosion-proof rotary pulse encoders of the "Special technology" section, see "Mechanical protection for encoder" under "Mechanical design and degrees of protection". Order code M68

This increases the motor length as follows:

- For 1LA motors, by up to 146 mm
- For 1MJ6 motors, by up to 175 mm
- For 1LG/1MJ7 motors, by up to 25 mm

Explosion-proof separately driven fan

The use of a separately driven fan is recommended to increase motor utilization at low speeds and to limit noise generation at speeds significantly higher than the synchronous speed. Both of these results can only be achieved with converter-fed operation. Please inquire about traction and vibratory operation.

The separately driven fan can be supplied already mounted for the following zones:

- Mounting of explosion-proof separately driven fan Ex de for use in Zone 1 – Order code M98
- Mounting of explosion-proof separately driven fan Ex nA for use in Zone 2 – Order code M95
- Mounting of explosion-proof separately driven fan II 2D Ex tD A21 for use in Zone 21 – Order code M96
- Mounting of explosion-proof separately driven fan II 3D Ex tD A22 for use in Zone 22 – Order code M97

The supply voltage for the explosion-proof motors with separately driven fan is specified as follows:

Type 2CW2 has a winding with a wide voltage input range (see "Technical data of separately driven fans for explosion-proof basic motors 1LA5/6/7/9 and 1LG4/6 (frame sizes 180 and 200) in design for Zone 22" below).

The 1LA/1MJ explosion-proof motors with separately driven fan have a rated voltage (rated voltage range) with tolerances according to IEC/EN 60034-1, Categories A and B.

A rating plate with the operating data is fitted to each explosion-proof motor with separately driven fan.

The type of protection of the explosion-proof motor with separately driven fan corresponds to that of the associated explosion-proof basic motor (note order codes for the appropriate zone).

Please note the direction of rotation of the separately driven fan (axial-flow fan) when connecting it.

Please inquire regarding coolant temperatures outside the range –20 to +40 °C.

The explosion-proof motors with separately driven fan are designed to IP55 degree of protection as standard (higher degrees of protection are available on request).

Motors with a separately driven fan must be equipped with a PTC thermistor as motor protection. For explosion-proof motors, the versions for converter-fed operation (order codes: M73, M38, M39, M75, M77, A15, A16) already have PTC thermistors for tripping. In the event of a fault in the separately driven fan, the PTC thermistor must reliably trip the motor.

For assignments and order numbers, see the tables "Technical data of separately driven fans for explosion-proof motors ..." on the following pages. A rating plate listing all the important data is fitted to the separately driven fan. For supply voltages outside the rated voltage range for 1LA motors, order code Y81 and plain text are required. Please note the direction of rotation of the separately driven fan (axial-flow fan) when connecting it. The admissible coolant temperatures are CT_{min} –20 °C or CT_{max} +40 °C. Lower coolant temperatures are available on request.

When a separately driven fan is mounted, the length of the motor increases by Δl. For an explanation of the additional dimensions and weights, see "Dimensions and weights of explosion-proof separately driven fans".

SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

Orientation

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Technical specifications (continued)

Technical data of separately driven fans for explosion-proof motors 1LA5/6/7/9 and 1LG4/6 (frame sizes 180 and 200) in Ex tD design for Zone 22

Frame size	Designation on rating plate of separately driven fan	Rated voltage range		Frequency	Rated speed	Power consumption	Rated current
		V		Hz	rpm	kW	A
100	2CW2180-8RF54-1AC0	1 AC	230 to 277	50	2790	0.075	0.29
		3 AC	220 to 290 Δ	50	2830	0.086	0.27
		3 AC	380 to 500 Y	50	2830	0.086	0.16
		1 AC	230 to 277	60	3280	0.094	0.28
		3 AC	220 to 332 Δ	60	3490	0.093	0.27
		3 AC	380 to 575 Y	60	3490	0.093	0.16
112	2CW2180-8RF54-1AC1	1 AC	230 to 277	50	2720	0.073	0.26
		3 AC	220 to 290 Δ	50	2770	0.085	0.27
		3 AC	380 to 500 Y	50	2770	0.085	0.15
		1 AC	230 to 277	60	3000	0.107	0.31
		3 AC	220 to 332 Δ	60	3280	0.094	0.28
		3 AC	380 to 575 Y	60	3280	0.094	0.16
132	2CW2180-8RF54-1AC2	1 AC	230 to 277	50	2860	0.115	0.40
		3 AC	220 to 290 Δ	50	2880	0.138	0.45
		3 AC	380 to 500 Y	50	2880	0.138	0.24
		1 AC	230 to 277	60	3380	0.185	0.59
		3 AC	220 to 332 Δ	60	3470	0.148	0.41
		3 AC	380 to 575 Y	60	3470	0.148	0.24
160 to 225 ¹⁾	2CW2180-8RF54-1AC3	1 AC	230 to 277	50	2780	0.236	0.96
		3 AC	220 to 290 Δ	50	2840	0.220	0.76
		3 AC	380 to 500 Y	50	2830	0.220	0.43
		3 AC	220 to 332 Δ	60	3400	0.284	0.94
		3 AC	380 to 575 Y	60	3400	0.284	0.56

Technical data of separately driven fans for explosion-proof motors 1LG4/6 (frame sizes 225 to 315) in Ex nA and Ex tD designs for Zone 2²⁾, 21, 22

Frame size	Designation on rating plate of separately driven fan	Rated voltage range		Frequency	Rated speed	Power consumption	Rated current at rated voltage ³⁾
		V		Hz	rpm	kW	A
225 M ... 280 M	1LA7073-2AA62-Z	3 AC	220 to 240 Δ	50	2800	0.550	1.36
		3 AC	380 to 420 Y	50	2800	0.550	0.79
		3 AC	440 to 480 Y	60	3400	0.630	1.32
315 – 2-pole	1LA9073-2LA92-Z	3 AC	220 to 240 Δ	50	2780	0.700	1.73
		3 AC	380 to 420 Y	50	2780	0.700	1.00
		3 AC	440 to 480 Y	60	3385	0.700	1.64
315 – 4-, 6-, 8-pole	1LA7073-2AA62-Z	3 AC	220 to 240 Δ	50	2800	0.550	1.36
		3 AC	380 to 420 Y	50	2800	0.550	0.79
		3 AC	440 to 480 Y	60	3400	0.630	1.32

Technical data of separately driven fans for explosion-proof motors 1MJ7 (frame sizes 225 to 315) in Ex de design for Zone 1

Frame size	Designation on rating plate of separately driven fan	Rated voltage range		Frequency	Rated speed	Power consumption	Rated current at rated voltage
		V		Hz	rpm	kW	A
225 M ... 280 M	1MJ6073-2CA92-Z: Data for 50/60 Hz	3 AC	220 to 240 Δ	50	2790	0.550	1.38
		3 AC	380 to 420 Y	50	2790	0.550	0.8
		3 AC	440 to 480 Y	60	3390	0.630	1.38
315 – 2-pole	1MJ6073-2CA92-Z: Data for 50/60 Hz	3 AC	220 to 240 Δ	50	2790	0.550	1.38
		3 AC	380 to 420 Y	50	2790	0.550	0.8
		3 AC	440 to 480 Y	60	3390	0.630	1.38
315 – 4-, 6-, 8-pole	1MJ6073-2CA92-Z: Data for 50/60 Hz	3 AC	220 to 240 Δ	50	2790	0.550	1.38
		3 AC	380 to 420 Y	50	2790	0.550	0.8
		3 AC	440 to 480 Y	60	3390	0.630	1.38

¹⁾ Separately driven fans with Order No. **1LA...** are used for 1LG motors of frame size 225 and above.

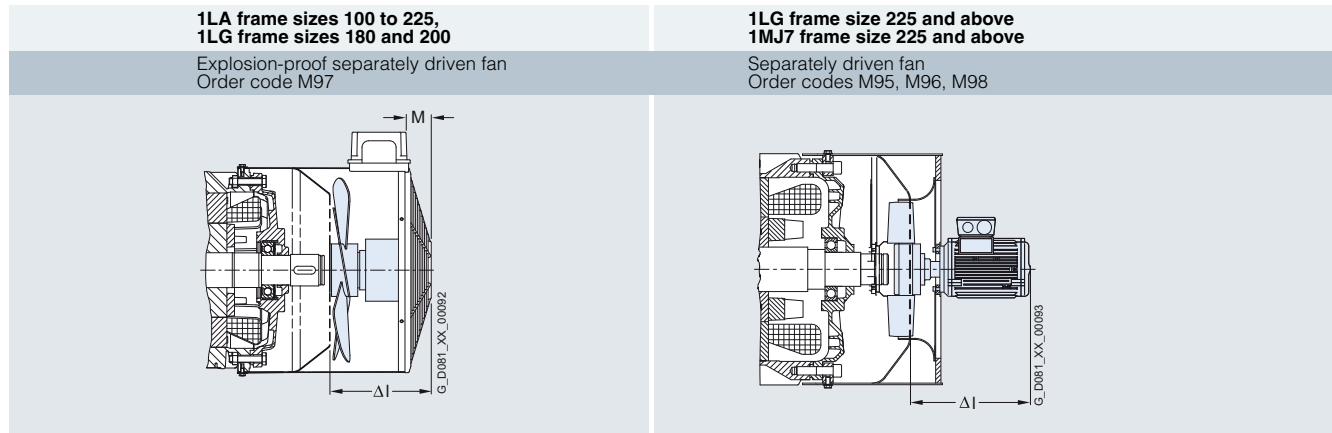
²⁾ Motors for Zone 2 have no rated voltage range.

³⁾ The values are only valid for the average value of the rated voltage, so a rated voltage range is not admissible.

Technical specifications (continued)

Dimensions and weights of the explosion-proof separately driven fans

Explosion-proof rotary pulse encoder (on cover), order codes H86 and H87



Frame size	Ex tD (Zone 22) 1LA5/6/7/9		1LG4/6		Ex nA (Zone 2), Ex tD (Zone 21) 1LG4/6		Ex d/de (Zone 1) 1MJ6/7	
	Δl	Weight approx. kg	Δl	Weight approx. kg	Δl	Weight approx. kg	Δl	Weight approx. kg
	mm		mm		mm		mm	
100	141	4	–	–	–	–	–	–
112	158	4.5	–	–	–	–	–	–
132	177	5.5	–	–	–	–	–	–
160	227	7	–	–	–	–	–	–
180	269	10	269	10	–	–	–	–
200	272	11	272	11	–	–	–	–
225	272	11	235	22	235	22	372	27
250	–	–	235	25	235	25	370	32
280	–	–	235	28	235	28	370	34
315	–	–	247	36	247	36	385	40

Loher and SIMOTICS XP 1MA Explosion-Proof Motors

Standard delivery times:

Orientation

Overview of selection and ordering data
with base prices and standard delivery times

10
working
days

20
working
days

On
request

4.0

Overview

Category	4.1 – Loher motors	4.2 – Motors for Zone 1 in type of protection Ex e
Series version	Loher CHEMSTAR motors Types 1PS1, 1PS2 and 1PS5	Aluminum series 1MA7 with Standard Efficiency IE1
Cooling	Self-ventilated (IC 411) or forced-air cooled (IC 416)	Self-ventilated (IC 411)
Degree of protection	IP56 ... IP66	IP55, optionally IP56 or IP65
Insulation	Standard: Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Standard: Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6	2, 4, 6
Frame sizes (FS)	71 ... 355 (range for standard motors)	63 M ... 160 L
Rated output at 50 Hz	Up to 315 kW	0.12 ... 16 kW
Synchronous speed	1000 ... 3600 rpm	1000 ... 3000 rpm
Rated torque at 50 Hz	More information: www.siemens.com/lowvoltagemotors	0.61 ... 96 Nm
Efficiency	Standard: High Efficiency IE2	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	More information: www.siemens.com/lowvoltagemotors	N - W - - -
Price group (PG)	More information: www.siemens.com/lowvoltagemotors	3Z4

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 4.5; for delivery times refer to colored background following the Order No.)

Loher – the leading expert in explosion-proof motors

Loher, with headquarters in Ruhstorf near Passau in Germany, assumed a leading role in explosion-proof drives as early as the 1960's, becoming in the meantime a center of expertise of international renown, constantly developing its leading position.

By satisfying all the requirements of the industry and due to its decades of experience, Loher sets the standard in drive technology in chemicals and petrochemicals as well as in oil and gas with the motor series – Loher CHEMSTAR and Loher VARIO.

Decades of experience in development, engineering, design and production of explosion-proof motors guarantees optimum operational safety, availability and adaptation to the prevailing operating conditions.

The motors are not only extremely rugged and reliable, but they can also be supplied in every type of protection, Ex n, Ex e and Ex d; and for extreme requirements they can even be supplied with dual protection against gas and dust or Ex e and Ex d.

Application-specific special versions are also available on request.

More information:
www.siemens.com/lowvoltagemotors

P_{Rated} , 50 Hz kW	Tempera- ture classes	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz			
0.18	T1-T3	63 M	1MA7060-2BA..
0.25	T1-T3	63 M	1MA7063-2BA..
0.37	T1-T3	71 M	1MA7070-2BA..
0.55	T1-T3	71 M	1MA7073-2BA..
0.75	T1-T3	80 M	1MA7080-2BA..
1.1	T1-T3	80 M	1MA7083-2BA..
1.3	T1-T3	90 S	1MA7090-2BA..
1.85	T1-T3	90 L	1MA7096-2BA..
2.5	T1-T3	100 L	1MA7106-2BA..
3.3	T1-T3	112 M	1MA7113-2BB..
4.6	T1-T3	132 S	1MA7130-2BB..
5.5	T3	132 S	1MA7131-2BB..
6.5	T1-T2	132 S	1MA7131-2BB..
7.5	T3	160 M	1MA7163-2BB..
9.5	T1-T2	160 M	1MA7163-2BB..
10	T3	160 M	1MA7164-2BB..
13	T1-T2	160 M	1MA7164-2BB..
12.5	T3	160 L	1MA7166-2BB..
16	T1-T2	160 L	1MA7166-2BB..
4-pole: 1500 rpm at 50 Hz			
0.12	T1-T3	63 M	1MA7060-4BB..
0.18	T1-T3	63 M	1MA7063-4BB..
0.25	T1-T3	71 M	1MA7070-4BB..
0.37	T1-T3	71 M	1MA7073-4BB..
0.55	T1-T3	80 M	1MA7080-4BA..
0.75	T1-T3	80 M	1MA7083-4BA..
1	T1-T3	90 S	1MA7090-4BA..
1.35	T1-T3	90 L	1MA7096-4BA..
2	T1-T3	100 L	1MA7106-4BA..
2.5	T1-T3	100 L	1MA7107-4BA..
3.6	T1-T3	112 M	1MA7113-4BA..
5	T1-T3	132 S	1MA7130-4BA..
6.8	T1-T3	132 M	1MA7133-4BA..
10	T1-T3	160 M	1MA7163-4BB..
13.5	T1-T3	160 L	1MA7166-4BB..
6-pole: 1000 rpm at 50 Hz			
0.25	T1-T3	71 M	1MA7073-6BA..
0.37	T1-T3	80 M	1MA7080-6BA..
0.55	T1-T3	80 M	1MA7083-6BA..
0.65	T1-T3	90 S	1MA7090-6BA..
0.95	T1-T3	90 L	1MA7096-6BA..
1.3	T1-T3	100 L	1MA7106-6BA..
1.9	T1-T3	112 M	1MA7113-6BB..
2.6	T1-T3	132 S	1MA7130-6BB..
3.5	T1-T3	132 M	1MA7133-6BB..
4.8	T1-T3	132 M	1MA7134-6BB..
6.6	T1-T3	160 M	1MA7163-6BB..
9.7	T1-T3	160 L	1MA7166-6BB..

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

4.0

Overview (continued)

Category	4.2 – Motors for Zone 1 in type of protection Ex e (continued)
Series version	Cast-iron series 1MA6 with Standard Efficiency IE1
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	100 L ... 315 L
Rated output at 50 Hz	1.3 ... 165 kW
Synchronous speed	1000 ... 3000 rpm
Rated torque at 50 Hz	8.3 ... 1300 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z4

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 4.5; for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz	Tempera- ture classes	Frame size	Order No.	P_{rated} , 50 Hz	Tempera- ture classes	Frame size	Order No.
kW		FS		kW		FS	
2-pole: 3000 rpm at 50 Hz				4-pole: 1500 rpm at 50 Hz			
2.5	T1-T3	100 L	1MA6106-2BA..	30	T3	225 S	1MA6220-4BC..
3.3	T1-T3	112 M	1MA6113-2BB..	33	T1, T2	225 S	1MA6220-4BC..
4.6	T1-T3	132 S	1MA6130-2BB..	36	T3	225 M	1MA6223-4BC..
5.5	T3	132 S	1MA6131-2BB..	40	T1, T2	225 M	1MA6223-4BC..
6.5	T1-T2	132 S	1MA6131-2BB..	44	T3	250 M	1MA6253-4BC..
7.5	T3	160 M	1MA6163-2BB..	50	T1, T2	250 M	1MA6253-4BC..
9.5	T1-T2	160 M	1MA6163-2BB..	58	T3	280 S	1MA6280-4BC..
10	T3	160 M	1MA6164-2BB..	68	T1, T2	280 S	1MA6280-4BC..
13	T1-T2	160 M	1MA6164-2BB..	70	T3	280 M	1MA6283-4BC..
12.5	T3	160 L	1MA6166-2BB..	80	T1, T2	280 M	1MA6283-4BC..
16	T1-T2	160 L	1MA6166-2BB..	84	T3	315 S	1MA6310-4BD..
15	T3	180 M	1MA6183-2BC..	100	T1, T2	315 S	1MA6310-4BD..
19	T1, T2	180 M	1MA6183-2BC..	100	T3	315 M	1MA6313-4BD..
20	T3	200 L	1MA6206-2BC..	120	T1, T2	315 M	1MA6313-4BD..
25	T1, T2	200 L	1MA6206-2BC..	115	T3	315 L	1MA6316-4BD..
24	T3	200 L	1MA6207-2BC..	135	T1, T2	315 L	1MA6316-4BD..
31	T1, T2	200 L	1MA6207-2BC..	135	T3	315 L	1MA6317-4BD..
28	T3	225 M	1MA6223-2BC..	165	T1, T2	315 L	1MA6317-4BD..
38	T1, T2	225 M	1MA6223-2AC..	6-pole: 1000 rpm at 50 Hz			
36	T3	250 M	1MA6253-2BC..	1.3	T1-T3	100 L	1MA6106-6BA..
47	T1, T2	250 M	1MA6253-2AC..	1.9	T1-T3	112 M	1MA6113-6BB..
47	T3	280 S	1MA6280-2BD..	2.6	T1-T3	132 S	1MA6130-6BB..
64	T1, T2	280 S	1MA6280-2AD..	3.5	T1-T3	132 M	1MA6133-6BB..
58	T3	280 M	1MA6283-2BD..	4.8	T1-T3	132 M	1MA6134-6BB..
76	T1, T2	280 M	1MA6283-2AD..	6.6	T1-T3	160 M	1MA6163-6BB..
68	T3	315 S	1MA6310-2BD..	9.7	T1-T3	160 L	1MA6166-6BB..
95	T1, T2	315 S	1MA6310-2AD..	13.2	T1-T3	180 L	1MA6186-6BC..
80	T3	315 M	1MA6313-2BD..	16.5	T1-T3	200 L	1MA6206-6BC..
112	T1, T2	315 M	1MA6313-2AD..	20	T1-T3	200 L	1MA6207-6BC..
100	T3	315 L	1MA6316-2BD..	27	T1-T3	225 M	1MA6223-6BC..
135	T1, T2	315 L	1MA6316-2AD..	33	T1-T3	250 M	1MA6253-6BC..
125	T3	315 L	1MA6317-2BD..	40	T1-T3	280 S	1MA6280-6BC..
165	T1, T2	315 L	1MA6317-2AD..	46	T3	280 M	1MA6283-6BC..
4-pole: 1500 rpm at 50 Hz				50	T1, T2	280 M	1MA6283-6BC..
2	T1-T3	100 L	1MA6106-4BA..	64	T3	315 S	1MA6310-6BC..
2.5	T1-T3	100 L	1MA6107-4BA..	68	T1, T2	315 S	1MA6310-6BC..
3.6	T1-T3	112 M	1MA6113-4BA..	76	T3	315 M	1MA6313-6BC..
5	T1-T3	132 S	1MA6130-4BA..	82	T1, T2	315 M	1MA6313-6BC..
6.8	T1-T3	132 M	1MA6133-4BA..	92	T3	315 L	1MA6316-6BC..
10	T1-T3	160 M	1MA6163-4BB..	98	T1, T2	315 L	1MA6316-6BC..
13.5	T1-T3	160 L	1MA6166-4BB..	110	T3	315 L	1MA6317-6BC..
15	T3	180 M	1MA6183-4BC..	120	T1, T2	315 L	1MA6317-6BC..
17	T1, T2	180 M	1MA6183-4BC..	125	T3	315 L	1MA6318-6BC..
17.5	T3	180 L	1MA6186-4BC..	135	T1, T2	315 L	1MA6318-6BC..
20	T1, T2	180 L	1MA6186-4BC..				
24	T3	200 L	1MA6207-4BC..				
27	T1, T2	200 L	1MA6207-4BC..				

SIMOTICS XP 1MJ Explosion-Proof Motors

Standard delivery times:

Orientation

10
working
days20
working
daysOn
request

Overview of selection and ordering data
with base prices and standard delivery times

4.0

Overview (continued)

Category	4.3 – Motors for Zone 1 in type of protection Ex de
Series version	Cast-iron series 1MJ6, 1MJ7 with Standard Efficiency IE1
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	71 M ... 315 M
Rated output at 50 Hz	0.25 ... 132 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	1.3 ... 970 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - V - - -
Price group (PG)	3Z5

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 4.5, for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz kW	Tempera- ture classes	Frame size FS	Order No.	P_{rated} , 50 Hz kW	Tempera- ture classes	Frame size FS	Order No.
2-pole: 3000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
0.37	T1-T4	71 M	1MJ6070-2CA..	0.25	T1-T4	71 M	1MJ6073-6CA..
0.55	T1-T4	71 M	1MJ6073-2CA..	0.37	T1-T4	80 M	1MJ6080-6CA..
0.75	T1-T4	80 M	1MJ6080-2CA..	0.55	T1-T4	80 M	1MJ6083-6CA..
1.1	T1-T4	80 M	1MJ6083-2CA..	0.75	T1-T4	90 L	1MJ6096-6CA..
1.5	T1-T4	90 L	1MJ6096-2CA..	1.1	T1-T4	90 L	1MJ6097-6CA..
2.2	T1-T4	90 L	1MJ6097-2CA..	1.5	T1-T4	100 L	1MJ6106-6CA..
3	T1-T4	100 L	1MJ6106-2CA..	2.2	T1-T4	112 M	1MJ6113-6CA..
4	T1-T4	112 M	1MJ6113-2CA..	3	T1-T4	132 S	1MJ6130-6CA..
5.5	T1-T4	132 S	1MJ6130-2CA..	4	T1-T4	132 M	1MJ6133-6CA..
7.5	T1-T4	132 S	1MJ6131-2CA..	5.5	T1-T4	132 M	1MJ6134-6CA..
11	T1-T4	160 M	1MJ6163-2CA..	7.5	T1-T4	160 M	1MJ6163-6CA..
15	T1-T4	160 M	1MJ6164-2CA..	11	T1-T4	160 L	1MJ6166-6CA..
18.5	T1-T4	160 L	1MJ6166-2CA..	15	T1-T4	180 L	1MJ6186-6CA..
22	T1-T4	180 M	1MJ6183-2CA..	18.5	T1-T4	200 L	1MJ6206-6CA..
30	T1-T4	200 L	1MJ6206-2CA..	22	T1-T4	200 L	1MJ6207-6CA..
37	T1-T4	200 L	1MJ6207-2CA..	30	T1-T4	225 M	1MJ7223-6CA..
45	T1-T4	225 M	1MJ7223-2CB..	37	T1-T4	250 M	1MJ7253-6CA..
55	T1-T4	250 M	1MJ7253-2CB..	45	T1-T4	280 S	1MJ7280-6CA..
75	T1-T4	280 S	1MJ7280-2CC..	55	T1-T4	280 M	1MJ7283-6CA..
90	T1-T4	280 M	1MJ7283-2CC..	75	T1-T4	315 S	1MJ7310-6CA..
110	T1-T4	315 S	1MJ7310-2CC..	90	T1-T4	315 M	1MJ7313-6CA..
132	T1-T4	315 M	1MJ7313-2CC..	8-pole: 750 rpm at 50 Hz			
4-pole: 1500 rpm at 50 Hz				0.37	T1-T4	90 L	1MJ6096-8CB..
0.25	T1-T4	71 M	1MJ6070-4CB..	0.55	T1-T4	90 L	1MJ6097-8CB..
0.37	T1-T4	71 M	1MJ6073-4CB..	0.75	T1-T4	100 L	1MJ6106-8CB..
0.55	T1-T4	80 M	1MJ6080-4CA..	1.1	T1-T4	100 L	1MJ6107-8CB..
0.75	T1-T4	80 M	1MJ6083-4CA..	1.5	T1-T4	112 M	1MJ6113-8CB..
1.1	T1-T4	90 L	1MJ6096-4CA..	2.2	T1-T4	132 S	1MJ6130-8CB..
1.5	T1-T4	90 L	1MJ6097-4CA..	3	T1-T4	132 M	1MJ6133-8CB..
2.2	T1-T4	100 L	1MJ6106-4CA..	4	T1-T4	160 M	1MJ6163-8CB..
3	T1-T4	100 L	1MJ6107-4CA..	5.5	T1-T4	160 M	1MJ6164-8CB..
4	T1-T4	112 M	1MJ6113-4CA..	7.5	T1-T4	160 L	1MJ6166-8CB..
5.5	T1-T4	132 S	1MJ6130-4CA..	11	T1-T4	180 L	1MJ6186-8CB..
7.5	T1-T4	132 M	1MJ6133-4CA..	15	T1-T4	200 L	1MJ6207-8CB..
11	T1-T4	160 M	1MJ6163-4CA..	18.5	T1-T4	225 S	1MJ7220-8CB..
15	T1-T4	160 L	1MJ6166-4CA..	22	T1-T4	225 M	1MJ7223-8CB..
18.5	T1-T4	180 M	1MJ6183-4CA..	30	T1-T4	250 M	1MJ7253-8CB..
22	T1-T4	180 L	1MJ6186-4CA..	37	T1-T4	280 S	1MJ7280-8CB..
30	T1-T4	200 L	1MJ6207-4CA..	45	T1-T4	280 M	1MJ7283-8CB..
37	T1-T4	225 S	1MJ7220-4CA..	55	T1-T4	315 S	1MJ7310-8CB..
45	T1-T4	225 M	1MJ7223-4CA..	75	T1-T4	315 M	1MJ7313-8CB..
55	T1-T4	250 M	1MJ7253-4CA..				
75	T1-T4	280 S	1MJ7280-4CA..				
90	T1-T4	280 M	1MJ7283-4CA..				
110	T1-T4	315 S	1MJ7310-4CA..				
132	T1-T4	315 M	1MJ7313-4CA..				

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

4.0

Overview (continued)

Category	4,4 – Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD
Series version	Aluminum series 1LA7, 1LA5 with order code for explosion protection with Standard Efficiency IE1
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	63 M ... 225 M
Rated output at 50 Hz	0.09 ... 45 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	0.61 ... 293 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3

(for order number supplements and special versions see Catalog Section 4.5, for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz	IE class	Frame size	Order No. with order code for explosion protection	P_{rated} , 50 Hz	IE class	Frame size	Order No. with order code for explosion protection
kW		FS		kW		FS	
2-pole: 3000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
0.18	-	63 M	1LA7060-2AA...Z	0.09	-	63 M	1LA7063-6AB...Z
0.25	-	63 M	1LA7063-2AA...Z	0.18	-	71 M	1LA7070-6AA...Z
0.37	-	71 M	1LA7070-2AA...Z	0.25	-	71 M	1LA7073-6AA...Z
0.55	-	71 M	1LA7073-2AA...Z	0.37	-	80 M	1LA7080-6AA...Z
0.75	IE1	80 M	1LA7080-2AA...Z	0.55	-	80 M	1LA7083-6AA...Z
1.1	IE1	80 M	1LA7083-2AA...Z	0.75	IE1	90 S	1LA7090-6AA...Z
1.5	IE1	90 S	1LA7090-2AA...Z	1.1	IE1	90 L	1LA7096-6AA...Z
2.2	IE1	90 L	1LA7096-2AA...Z	1.5	IE1	100 L	1LA7106-6AA...Z
3	IE1	100 L	1LA7106-2AA...Z	2.2	IE1	112 M	1LA7113-6AA...Z
4	IE1	112 M	1LA7113-2AA...Z	3	IE1	132 S	1LA7130-6AA...Z
5.5	IE1	132 S	1LA7130-2AA...Z	4	IE1	132 M	1LA7133-6AA...Z
7.5	IE1	132 S	1LA7131-2AA...Z	5.5	IE1	132 M	1LA7134-6AA...Z
11	IE1	160 M	1LA7163-2AA...Z	7.5	IE1	160 M	1LA7163-6AA...Z
15	IE1	160 M	1LA7164-2AA...Z	11	IE1	160 L	1LA7166-6AA...Z
18.5	IE1	160 L	1LA7166-2AA...Z	15	IE1	180 L	1LA5186-6AA...Z
22	IE1	180 M	1LA5183-2AA...Z	18.5	IE1	200 L	1LA5206-6AA...Z
30	IE1	200 L	1LA5206-2AA...Z	22	IE1	200 L	1LA5207-6AA...Z
37	IE1	200 L	1LA5207-2AA...Z	30	IE1	225 M	1LA5223-6AA...Z
45	IE1	225 M	1LA5223-2AA...Z	8-pole: 750 rpm at 50 Hz			
4-pole: 1500 rpm at 50 Hz				0.09	-	71 M	1LA7070-8AB...Z
0.12	-	63 M	1LA7060-4AB...Z	0.12	-	71 M	1LA7073-8AB...Z
0.18	-	63 M	1LA7063-4AB...Z	0.18	-	80 M	1LA7080-8AB...Z
0.25	-	71 M	1LA7070-4AB...Z	0.25	-	80 M	1LA7083-8AB...Z
0.37	-	71 M	1LA7073-4AB...Z	0.37	-	90 S	1LA7090-8AB...Z
0.55	-	80 M	1LA7080-4AA...Z	0.55	-	90 L	1LA7096-8AB...Z
0.75	IE1	80 M	1LA7083-4AA...Z	0.75	-	100 L	1LA7106-8AB...Z
1.1	IE1	90 S	1LA7090-4AA...Z	1.1	-	100 L	1LA7107-8AB...Z
1.5	IE1	90 L	1LA7096-4AA...Z	1.5	-	112 M	1LA7113-8AB...Z
2.2	IE1	100 L	1LA7106-4AA...Z	2.2	-	132 S	1LA7130-8AB...Z
3	IE1	100 L	1LA7107-4AA...Z	3	-	132 M	1LA7133-8AB...Z
4	IE1	112 M	1LA7113-4AA...Z	4	-	160 M	1LA7163-8AB...Z
5.5	IE1	132 S	1LA7130-4AA...Z	5.5	-	160 M	1LA7164-8AB...Z
7.5	IE1	132 M	1LA7133-4AA...Z	7.5	-	160 L	1LA7166-8AB...Z
11	IE1	160 M	1LA7163-4AA...Z	11	-	180 L	1LA5186-8AB...Z
15	IE1	160 L	1LA7166-4AA...Z	15	-	200 L	1LA5207-8AB...Z
18.5	IE1	180 M	1LA5183-4AA...Z	18.5	-	225 S	1LA5220-8AB...Z
22	IE1	180 L	1LA5186-4AA...Z	22	-	225 M	1LA5223-8AB...Z
30	IE1	200 L	1LA5207-4AA...Z				
37	IE1	225 S	1LA5220-4AA...Z				
45	IE1	225 M	1LA5223-4AA...Z				

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Standard delivery times:

Orientation

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

4.0

Overview (continued)

Category	4.4 – Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD (continued)
Series version	Cast-iron series 1LA6, 1LG4 with order code for explosion protection with Standard Efficiency IE1
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	100 L ... 315 L
Rated output at 50 Hz	0.75 ... 200 kW
Synchronous speed	750 ... 3600 rpm
Rated torque at 50 Hz	9.9 ... 1708 Nm
Efficiency	Standard Efficiency IE1
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 4.5, for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz	IE class	Frame size	Order No. with order code for explosion protection	P_{rated} , 50 Hz	IE class	Frame size	Order No. with order code for explosion protection
kW		FS		kW		FS	
2-pole: 3000 rpm at 50 Hz				6-pole: 1000 rpm at 50 Hz			
3	IE1	100 L	1LA6106-2AA...Z	1.5	-	100 L	1LA6106-6AA...Z
4	IE1	112 M	1LA6113-2AA...Z	2.2	-	112 M	1LA6113-6AA...Z
5.5	IE1	132 S	1LA6130-2AA...Z	3	-	132 S	1LA6130-6AA...Z
7.5	IE1	132 S	1LA6131-2AA...Z	4	-	132 M	1LA6133-6AA...Z
11	IE1	160 M	1LA6163-2AA...Z	5.5	-	132 M	1LA6134-6AA...Z
15	IE1	160 M	1LA6164-2AA...Z	7.5	-	160 M	1LA6163-6AA...Z
18.5	IE1	160 L	1LA6166-2AA...Z	11	-	160 L	1LA6166-6AA...Z
22	IE1	180 M	1LG4183-2AA...Z	15	IE1	180 L	1LG4186-6AA...Z
30	IE1	200 L	1LG4206-2AA...Z	18.5	IE1	200 L	1LG4206-6AA...Z
37	IE1	200 L	1LG4207-2AA...Z	22	IE1	200 L	1LG4207-6AA...Z
45	IE1	225 M	1LG4223-2AA...Z	30	IE1	225 M	1LG4223-6AA...Z
55	IE1	250 M	1LG4253-2AB...Z	37	IE1	250 M	1LG4253-6AA...Z
75	IE1	280 S	1LG4280-2AB...Z	45	IE1	280 S	1LG4280-6AA...Z
90	IE1	280 M	1LG4283-2AB...Z	55	IE1	280 M	1LG4283-6AA...Z
110	IE1	315 S	1LG4310-2AB...Z	75	IE1	315 S	1LG4310-6AA...Z
132	IE1	315 M	1LG4313-2AB...Z	90	IE1	315 M	1LG4313-6AA...Z
160	IE1	315 L	1LG4316-2AB...Z	110	IE1	315 L	1LG4316-6AA...Z
200	IE1	315 L	1LG4317-2AB...Z	132	IE1	315 L	1LG4317-6AA...Z
4-pole: 1500 rpm at 50 Hz				8-pole: 750 rpm at 50 Hz			
2.2	IE1	100 L	1LA6106-4AA...Z	0.75	-	100 L	1LA6106-8AB...Z
3	IE1	100 L	1LA6107-4AA...Z	1.1	-	100 L	1LA6107-8AB...Z
4	IE1	112 M	1LA6113-4AA...Z	1.5	-	112 M	1LA6113-8AB...Z
5.5	IE1	132 S	1LA6130-4AA...Z	2.2	-	132 S	1LA6130-8AB...Z
7.5	IE1	132 M	1LA6133-4AA...Z	3	-	132 M	1LA6133-8AB...Z
11	IE1	160 M	1LA6163-4AA...Z	4	-	160 M	1LA6163-8AB...Z
15	IE1	160 L	1LA6166-4AA...Z	5.5	-	160 M	1LA6164-8AB...Z
18.5	IE1	180 M	1LG4183-4AA...Z	7.5	-	160 L	1LA6166-8AB...Z
22	IE1	180 L	1LG4186-4AA...Z	11	-	180 L	1LG4186-8AB...Z
30	IE1	200 L	1LG4207-4AA...Z	15	-	200 L	1LG4207-8AB...Z
37	IE1	225 S	1LG4220-4AA...Z	18.5	-	225 S	1LG4220-8AB...Z
45	IE1	225 M	1LG4223-4AA...Z	22	-	225 M	1LG4223-8AB...Z
55	IE1	250 M	1LG4253-4AA...Z	30	-	250 M	1LG4253-8AB...Z
75	IE1	280 S	1LG4280-4AA...Z	37	-	280 S	1LG4280-8AB...Z
90	IE1	280 M	1LG4283-4AA...Z	45	-	280 M	1LG4283-8AB...Z
110	IE1	315 S	1LG4310-4AA...Z	55	-	315 S	1LG4310-8AB...Z
132	IE1	315 M	1LG4313-4AA...Z	75	-	315 M	1LG4313-8AB...Z
160	IE1	315 L	1LG4316-4AA...Z	90	-	315 L	1LG4316-8AB...Z
200	IE1	315 L	1LG4317-4AA...Z	110	-	315 L	1LG4317-8AB...Z
				132	-	315 L	1LG4318-8AB...Z

Standard delivery times:

10 working days	20 working days	On request
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Overview of selection and ordering data with base prices and standard delivery times

4.0

Overview (continued)

Category	4.4 – Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD (continued)	
Series version	Aluminum series 1LA9 with order code for explosion protection with High Efficiency IE2	Aluminum series 1LA9 with order code for explosion protection NEMA Energy Efficient with order code D42 ¹⁾
Cooling	Self-ventilated (IC 411)	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)	Thermal class 155 (F)
Utilization	Thermal class 130 (B)	Thermal class 130 (B)
Number of poles	2, 4, 6	2, 4, 6
Frame sizes (FS)	63 M ... 200 L	63 M ... 200 L
Rated output	0.12 ... 37 kW at 50 Hz	0.16 ... 50 hp at 60 Hz
Synchronous speed	1000 ... 3000 rpm at 50 Hz	1200 ... 3600 rpm at 60 Hz
Rated torque	0.61 ... 215 Nm at 50 Hz	0.5 ... 179 Nm at 60 Hz
Efficiency	High Efficiency IE2	NEMA Energy Efficient MG1 Table 12-11 with order code D42 ¹⁾
Metal factor for metal surcharges (MS)	N - W - - -	N - W - - -
Price group (PG)	3Z1	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3 (for order number supplements and special versions see Catalog Section 4.5, for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz	IE class	Frame size	Order No. with order code for explosion protection	P_{rated} , 60 Hz	EISA CC No. CC032A	Frame size	Order No. with order code for explosion protection
2-pole: 3000 rpm at 50 Hz				2-pole: 3600 rpm at 60 Hz			
kW		FS		hp		FS	
0.18	-	63 M	1LA9060-2KA..-Z	0.25	-	63 M	1LA9060-2KA..-Z D42+
0.25	-	63 M	1LA9063-2KA..-Z	0.33	-	63 M	1LA9063-2KA..-Z D42+
0.37	-	71 M	1LA9070-2KA..-Z	0.5	-	71 M	1LA9070-2KA..-Z D42+
0.55	-	71 M	1LA9073-2KA..-Z	0.75	-	71 M	1LA9073-2KA..-Z D42+
0.75	IE2	80 M	1LA9080-2KA..-Z	1	-	80 M	1LA9080-2KA..-Z D42+
1.1	IE2	80 M	1LA9083-2KA..-Z	1.5	-	80 M	1LA9083-2KA..-Z D42+
1.5	IE2	90 S	1LA9090-2KA..-Z	2	✓	90 S	1LA9090-2KA..-Z D42+
2.2	IE2	90 L	1LA9096-2KA..-Z	3	✓	90 L	1LA9096-2KA..-Z D42+
3	IE2	100 L	1LA9106-2KA..-Z	4	-	100 L	1LA9106-2KA..-Z D42+
4	IE2	112 M	1LA9113-2KA..-Z	5	✓	112 M	1LA9113-2KA..-Z D42+
5.5	IE2	132 S	1LA9130-2KA..-Z	7.5	✓	132 S	1LA9130-2KA..-Z D42+
7.5	IE2	132 S	1LA9131-2KA..-Z	10	✓	132 S	1LA9131-2KA..-Z D42+
11	IE2	160 M	1LA9163-2KA..-Z	15	✓	160 M	1LA9163-2KA..-Z D42+
15	IE2	160 M	1LA9164-2KA..-Z	20	✓	160 M	1LA9164-2KA..-Z D42+
18.5	IE2	160 L	1LA9166-2KA..-Z	25	✓	160 L	1LA9166-2KA..-Z D42+
22	IE2	180 M	1LA9183-2WA..-Z	30	✓	180 M	1LA9183-2WA..-Z D42+
30	IE2	200 L	1LA9206-2WA..-Z	40	✓	200 L	1LA9206-2WA..-Z D42+
37	IE2	200 L	1LA9207-2WA..-Z	50	✓	200 L	1LA9207-2WA..-Z D42+
4-pole: 1500 rpm at 50 Hz				4-pole: 1800 rpm at 60 Hz			
0.12	-	63 M	1LA9060-4KA..-Z	0.16	-	63 M	1LA9060-4KA..-Z D42+
0.18	-	63 M	1LA9063-4KA..-Z	0.25	-	63 M	1LA9063-4KA..-Z D42+
0.25	-	71 M	1LA9070-4KA..-Z	0.33	-	71 M	1LA9070-4KA..-Z D42+
0.37	-	71 M	1LA9073-4KA..-Z	0.5	-	71 M	1LA9073-4KA..-Z D42+
0.55	-	80 M	1LA9080-4KA..-Z	0.75	-	80 M	1LA9080-4KA..-Z D42+
0.75	IE2	80 M	1LA9083-4KA..-Z	1	-	80 M	1LA9083-4KA..-Z D42+
1.1	IE2	90 S	1LA9090-4KA..-Z	1.5	✓	90 S	1LA9090-4KA..-Z D42+
1.5	IE2	90 L	1LA9096-4KA..-Z	2	✓	90 L	1LA9096-4KA..-Z D42+
2.2	IE2	100 L	1LA9106-4KA..-Z	3	-	100 L	1LA9106-4KA..-Z D42+
3	IE2	100 L	1LA9107-4KA..-Z	4	-	100 L	1LA9107-4KA..-Z D42+
4	IE2	112 M	1LA9113-4KA..-Z	5	✓	112 M	1LA9113-4KA..-Z D42+
5.5	IE2	132 S	1LA9130-4KA..-Z	7.5	✓	132 S	1LA9130-4KA..-Z D42+
7.5	IE2	132 M	1LA9133-4KA..-Z	10	✓	132 M	1LA9133-4KA..-Z D42+
11	IE2	160 M	1LA9163-4KA..-Z	15	✓	160 M	1LA9163-4KA..-Z D42+
15	IE2	160 L	1LA9166-4KA..-Z	20	✓	160 L	1LA9166-4KA..-Z D42+
18.5	IE2	180 M	1LA9183-4WA..-Z	25	✓	180 M	1LA9183-4WA..-Z D42+
22	IE2	180 L	1LA9186-4WA..-Z	30	✓	180 L	1LA9186-4WA..-Z D42+
30	IE2	200 L	1LA9207-4WA..-Z	40	✓	200 L	1LA9207-4WA..-Z D42+
6-pole: 1000 rpm at 50 Hz				6-pole: 1200 rpm at 60 Hz			
0.75	IE2	90 S	1LA9090-6KA..-Z	1	✓	90 S	1LA9090-6KA..-Z D42+
1.1	IE2	90 L	1LA9096-6KA..-Z	1.5	✓	90 L	1LA9096-6KA..-Z D42+
1.5	IE2	100 L	1LA9106-6KA..-Z	2	-	100 L	1LA9106-6KA..-Z D42+
2.2	IE2	112 M	1LA9113-6KA..-Z	3	✓	112 M	1LA9113-6KA..-Z D42+
4	IE2	132 M	1LA9133-6KA..-Z	5	✓	132 M	1LA9133-6KA..-Z D42+
5.5	IE2	132 M	1LA9134-6KA..-Z	7.5	✓	132 M	1LA9134-6KA..-Z D42+
7.5	IE2	160 M	1LA9163-6KA..-Z	10	✓	160 M	1LA9163-6KA..-Z D42+
11	IE2	160 L	1LA9166-6KA..-Z	15	✓	160 L	1LA9166-6KA..-Z D42+
15	IE2	180 L	1LA9186-6WA..-Z	20	✓	180 L	1LA9186-6WA..-Z D42+
18.5	IE2	200 L	1LA9206-6WA..-Z	25	✓	200 L	1LA9206-6WA..-Z D42+
22	IE2	200 L	1LA9207-6WA..-Z	30	✓	200 L	1LA9207-6WA..-Z D42+

1) Note on order code D42 NEMA Energy Efficient for explosion-proof motors:
 - Comprises CC No.
 - For ≤ 200 hp, only flange-mounting types

SIMOTICS XP 1LG Explosion-Proof Motors

Standard delivery times:

10 working days	20 working days	On request
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Orientation

Overview of selection and ordering data
with base prices and standard delivery times

4.0

Overview (continued)

Category	4.4 – Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD (continued)
Series version	Cast-iron series 1LG6 with order code for explosion protection with High Efficiency IE2
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6, 8
Frame sizes (FS)	180 M ... 315 L
Rated output at 50 Hz	11 ... 250 kW
Synchronous speed at 50 Hz	750 ... 3000 rpm
Rated torque at 50 Hz	71 ... 1704 Nm
Efficiency	High Efficiency IE2
Metal factor for metal surcharges (MS)	N - W - - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 4.5, for delivery times refer to colored background following the Order No.)

P_{rated} , 50 Hz kW	IE class	Frame size FS	Order No. with order code for explosion protection ▲ New	P_{rated} , 50 Hz kW	IE class	Frame size FS	Order No. with order code for explosion protection
2-pole: 3000 rpm at 50 Hz				8-pole: 750 rpm at 50 Hz			
22	IE2	180 M	1LG6183-2AA..-Z	11	-	180 L	1LG6186-8AB..-Z
30	IE2	200 L	1LG6206-2AA..-Z	15	-	200 L	1LG6207-8AB..-Z
37	IE2	200 L	1LG6207-2AA..-Z	18.5	-	225 S	1LG6220-8AB..-Z
45	IE2	200 L	▲ 1LG6208-2AA..-Z	22	-	225 M	1LG6223-8AB..-Z
45	IE2	225 M	1LG6223-2AA..-Z	30	-	250 M	1LG6253-8AB..-Z
55	IE2	225 M	1LG6228-2AA..-Z	37	-	280 S	1LG6280-8AB..-Z
55	IE2	250 M	1LG6253-2AA..-Z	45	-	280 M	1LG6283-8AB..-Z
75	IE2	250 M	1LG6258-2AA..-Z	55	-	315 S	1LG6310-8AB..-Z
75	IE2	280 S	1LG6280-2AB..-Z	75	-	315 M	1LG6313-8AB..-Z
90	IE2	280 M	1LG6283-2AB..-Z	90	-	315 L	1LG6316-8AB..-Z
110	IE2	280 M	1LG6288-2AA..-Z	110	-	315 L	1LG6317-8AB..-Z
110	IE2	315 S	1LG6310-2AB..-Z	132	-	315 L	1LG6318-8AB..-Z
132	IE2	315 M	1LG6313-2AB..-Z				
160	IE2	315 L	1LG6316-2AB..-Z				
200	IE2	315 L	1LG6317-2AB..-Z				
250	IE2	315 L	1LG6318-2AA..-Z				
4-pole: 1500 rpm at 50 Hz							
18.5	IE2	180 M	1LG6183-4AA..-Z				
22	IE2	180 M	1LG6186-4AA..-Z				
30	IE2	200 L	1LG6207-4AA..-Z				
37	IE2	225 S	1LG6220-4AA..-Z				
45	IE2	225 M	1LG6223-4AA..-Z				
55	IE2	225 M	1LG6228-4AA..-Z				
55	IE2	250 M	1LG6253-4AA..-Z				
75	IE2	250 M	1LG6258-4AA..-Z				
75	IE2	280 S	1LG6280-4AA..-Z				
90	IE2	280 M	1LG6283-4AA..-Z				
110	IE2	280 M	1LG6288-4AA..-Z				
110	IE2	315 S	1LG6310-4AA..-Z				
132	IE2	315 M	1LG6313-4AA..-Z				
160	IE2	315 L	1LG6316-4AA..-Z				
200	IE2	315 L	1LG6317-4AA..-Z				
250	IE2	315 L	1LG6318-4AA..-Z				
6-pole: 1000 rpm at 50 Hz							
15	IE2	180 L	1LG6186-6AA..-Z				
18.5	IE2	200 L	1LG6206-6AA..-Z				
22	IE2	200 L	1LG6207-6AA..-Z				
30	IE2	225 M	1LG6223-6AA..-Z				
37	IE2	225 M	1LG6228-6AA..-Z				
37	IE2	250 M	1LG6253-6AA..-Z				
45	IE2	250 M	1LG6258-6AA..-Z				
45	IE2	280 S	1LG6280-6AA..-Z				
55	IE2	280 M	1LG6283-6AA..-Z				
75	IE2	280 M	1LG6288-6AA..-Z				
75	IE2	315 S	1LG6310-6AA..-Z				
90	IE2	315 M	1LG6313-6AA..-Z				
110	IE2	315 L	1LG6316-6AA..-Z				
132	IE2	315 L	1LG6317-6AA..-Z				
160	IE2	315 L	1LG6318-6AA..-Z				

Standard delivery times:

10
working
days20
working
daysOn
requestOverview of selection and ordering data
with base prices and standard delivery times

4.0

Overview (continued)

Category	4.4 – Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD (continued)
Series version	Cast-iron series 1LG6 with order code for explosion protection NEMA Energy Efficient with order code D42 ¹⁾
Cooling	Self-ventilated (IC 411)
Degree of protection	IP55, optionally IP56 or IP65
Insulation	Thermal class 155 (F)
Utilization	Thermal class 130 (B)
Number of poles	2, 4, 6
Frame sizes (FS)	180 M ... 315 L
Rated output at 60 Hz	20 ... 300 hp
Synchronous speed at 60 Hz	1200 ... 3600 rpm
Rated torque at 60 Hz	60 ... 1200 Nm
Efficiency	NEMA Energy Efficient MG1 Table 12-11 with order code D42 ¹⁾
Metal factor for metal surcharges (MS)	N - W - -
Price group (PG)	3Z1

Range of motors with Order No., delivery time and base price plus MS for type of construction IM B3
(for order number supplements and special versions see Catalog Section 4.5; for delivery times refer to colored background following the Order No.)

P_{rated} , 60 Hz	EISA CC No. CC032A	Frame size	Order No. with order code for explosion protection
------------------------	--------------------------	---------------	--

hp	FS
----	----

2-pole: 3600 rpm at 60 Hz

30	✓	180 M	1LG6183-2AA..-Z D42+
40	✓	200 L	1LG6206-2AA..-Z D42+
50	✓	200 L	1LG6207-2AA..-Z D42+
60	✓	200 L	1LG6208-2AA..-Z D42+
60	✓	225 M	1LG6223-2AA..-Z D42+
75	✓	225 M	1LG6228-2AA..-Z D42+
75	-	250 M	1LG6253-2AA..-Z D42+
100	✓	250 M	1LG6258-2AA..-Z D42+
100	-	280 S	1LG6280-2AB..-Z D42+
125	✓	280 M	1LG6283-2AB..-Z D42+
150	✓	280 M	1LG6288-2AA..-Z D42+
150	✓	315 S	1LG6310-2AB..-Z D42+
175	-	315 M	1LG6313-2AB..-Z D42+
200	✓	315 L	1LG6316-2AB..-Z D42+
250	✓	315 L	1LG6317-2AB..-Z D42+
300	✓	315 L	1LG6318-2AA..-Z D42+

4-pole: 1800 rpm at 60 Hz

25	✓	180 M	1LG6183-4AA..-Z D42+
30	✓	180 M	1LG6186-4AA..-Z D42+
40	✓	200 L	1LG6207-4AA..-Z D42+
50	-	225 S	1LG6220-4AA..-Z D42+
60	✓	225 M	1LG6223-4AA..-Z D42+
75	✓	225 M	1LG6228-4AA..-Z D42+
75	-	250 M	1LG6253-4AA..-Z D42+
100	✓	250 M	1LG6258-4AA..-Z D42+
100	-	280 S	1LG6280-4AA..-Z D42+
125	✓	280 M	1LG6283-4AA..-Z D42+
150	✓	280 M	1LG6288-4AA..-Z D42+
150	✓	315 S	1LG6310-4AA..-Z D42+
175	-	315 M	1LG6313-4AA..-Z D42+
200	✓	315 L	1LG6316-4AA..-Z D42+
250	✓	315 L	1LG6317-4AA..-Z D42+
300	✓	315 L	1LG6318-4AA..-Z D42+

6-pole: 1200 rpm at 60 Hz

20	✓	180 L	1LG6186-6AA..-Z D42+
25	✓	200 L	1LG6206-6AA..-Z D42+
30	✓	200 L	1LG6207-6AA..-Z D42+
40	✓	225 M	1LG6223-6AA..-Z D42+
50	✓	225 M	1LG6228-6AA..-Z D42+
50	-	250 M	1LG6253-6AA..-Z D42+
60	✓	250 M	1LG6258-6AA..-Z D42+
60	-	280 S	1LG6280-6AA..-Z D42+
75	-	280 M	1LG6283-6AA..-Z D42+
100	✓	280 M	1LG6288-6AA..-Z D42+
100	✓	315 S	1LG6310-6AA..-Z D42+
125	✓	315 M	1LG6313-6AA..-Z D42+
150	✓	315 L	1LG6316-6AA..-Z D42+
175	-	315 L	1LG6317-6AA..-Z D42+
200	✓	315 L	1LG6318-6AA..-Z D42+

¹⁾ Note on order code D42 NEMA Energy Efficient for explosion-proof motors:
- Comprises CC No.
- For ≤ 200 hp, only flange-mounting types

Explosion-Proof Motors

Loher motors

Loher CHEMSTAR motors – Loher three-phase industrial motors for applications in the chemical and petrochemical sector

IE1 IE2 IE3
On request

Loher CHEMSTAR Ex nA II motors – Ex Zone 2 motors
Type 1PS1 (industrial motor) – Loher designation: AMGK

4.1

Overview



Motors for use in hazardous areas of Zone 2 in accordance with EN 50014 and EN 50021 or EN 60079-0 and EN 60079-15. They are designated with II 3 G Ex nA II in accordance with the EC Directive (94/9/EC). These motors are specially designed for use in the chemical and petrochemical industry. These motors fulfill these demanding requirements even in the standard version. More specific, customized adaptations are available as options for the chemicals industry.

Benefits

- Accepted by Shell, DOW, Bayer, Statoil, BP, Chevron, Wacker, Ticona, OMV, ADNOC and many more.
- Suitable for almost all applications and specifications
- Certified throughout according to ATEX and IEC Ex
- Motors with optimized parameters (adapted winding variants and rotors) achieve extremely high levels of efficiency at the best possible power factors (low operating costs)
- Complete performance range
- Suitable for converter-fed operation (configured, for example, using Siemens configuration tool "SIZER for Siemens Drives")

Applications

For use in hazardous areas in Zone 2

- Pumps
- Compressors
- Fans
- Extruders
- Mixers

Technical specifications

Frame sizes (FS)	71 ... 355 (range for standard motors)
Rated output (50 Hz types)	Up to 315 kW (thermal utilization in accordance with temperature class B for TU = 40 °C)
Number of poles	2, 4, 6
Voltage range	Standard low voltages and voltage ranges according to IEC 60038
Rated voltages	230/400 V ± 10 %, 50 Hz 400/690 V ± 10 %, 50 Hz 500 V ± 5 %, 50 Hz
Mode of operation	S1 mains-fed operation or S9 converter-fed operation
Degree of protection	IP56 to IP66
Cooling	IC 411, IC 416
Types of construction	IM B3, IM B5, IM B6, IM B7, IM B8, IM B14, IM B34, IM B35, IM V1, IM V3, IM V5, IM V6, IM V18
Enclosure	Cast iron
Bearings	Rolling-contact bearings (standard) and special bearings for high axial and radial forces
Standards and regulations	IEC, EN, DIN, VDE
Type of protection	Zone 2: II 3 G Ex nA II; Ex dust protection: II 2 D or II 3 D
Paint finish	RAL color variants – special chemical-resistant coating N14/A
Vibration quantity level	Level B
Sound pressure level	≤ 77 dBA + 3 dBA tolerance

Special designs – Options

- Ambient temperature from –55 to +60 °C
- Enhanced connection system
- SPM nipple in FS 132 and above
- Regreasing device in FS 160 and above
- Stainless steel bolts
- Additional connection box in FS 132 and above
- Anti-condensation heating in FS 132 and above
- Condensation drainage holes in FS 132 and above
- PTC thermistor as sole protection (TMS) up to FS 250 inclusive
- PTC thermistor as additional protection (TMS)
- 60 Hz
- Pole changing
- Electrical according to "NEMA Standards Publication No MG1"
- Flange-mounting motors with flange and shaft extension according to NEMA
- Fast availability within a few working days (standard version)

More information

www.siemens.com/lowvoltagegimotors

IE1 IE2 IE3

On request

Loher CHEMSTAR motors – Loher three-phase industrial motors for applications in the chemical and petrochemical sector

**Loher CHEMSTAR Ex e motors – Ex Zone 1 motors
Type 1PS2 – Loher designation: EMGV**

Overview



Motors for use in hazardous areas of Zone 1 in accordance with EN 50014 and EN 50019 or EN 60079-0 and EN 60079-7. They are designated with II 2 G Ex e II in accordance with the EC Directive (94/9/EC). These motors are specially designed for applications in the chemical and petrochemical industries.

Benefits

- Accepted by Shell, DOW, Bayer, Statoil, BP, Chevron, Wacker, Ticona, OMV, ADNOC and many more.
- Even in the standard version, the motors meet the requirements profile for implementation in the chemical industry
- Motors with optimized parameters (adapted winding variants and rotors) achieve extremely high levels of efficiency at the best possible power factors (low operating costs)
- Complete performance range
- Certified throughout according to ATEX, NEPSI and GOST

Applications

For use in hazardous areas in Zone 1

- Pumps
- Compressors
- Fans
- Extruders
- Mixers

Technical specifications

Frame sizes (FS)	71 ... 355 (range for standard motors)
Rated output (50 Hz types)	Up to 220 kW (thermal utilization in accordance with temperature class B for TU = 40 °C)
Number of poles	2, 4, 6
Voltage range	Standard low voltages and voltage ranges according to IEC 60038
Rated voltages	230/400 V ± 10 %, 50 Hz 400/690 V ± 10 %, 50 Hz 500 V ± 5 %, 50 Hz
Mode of operation	S1 mains-fed operation
Degree of protection	IP56 to IP66
Cooling	IC 411
Types of construction	IM B3, IM B5, IM B6, IM B7, IM B8, IM B14, IM B34, IM B35, IM V1, IM V3, IM V5, IM V6, IM V18
Enclosure	Cast iron
Bearings	Rolling-contact bearings
Standards and regulations	IEC, EN, DIN, VDE
Type of protection	Zone 1: II 2 G Ex e II Ex dust protection: acc. to EN 50281-1-1/EN 50281-1-2
Paint finish	RAL color variants – special chemical-resistant coating N14/A
Vibration quantity level	Level B
Sound pressure level	≤ 77 dBA + 3 dBA tolerance

Special designs – Options

- Ambient temperature from –55 to +60 °C
- Enhanced connection system
- SPM nipple in FS 132 and above
- Regreasing device in FS 160 and above
- Stainless steel bolts
- Additional connection box in FS 132 and above
- Anti-condensation heating in FS 132 and above
- Condensation drainage holes in FS 132 and above
- PTC thermistor or PT100 as additional protection (TMS)
- 60 Hz
- Electrical according to "NEMA Standards Publication No MG1"
- Flange-mounting motors with flange and shaft extension according to NEMA

More information

www.siemens.com/lowvoltage/motors

Explosion-Proof Motors

Loher motors

Loher CHEMSTAR motors – Loher three-phase industrial motors for applications in the chemical and petrochemical sector

IE1 IE2 IE3
On request

Loher CHEMSTAR Ex d(e) motors
Type 1PS5 (industrial motor) – Loher designation: DNGW

4.1

Overview



Motors for use in hazardous areas in Zone 1 in accordance with EN 50014, EN 50018, EN 50019 or EN 60079-0, EN 60079-1 and EN 60079-7. They are designated with II 2 G Ex d IIB, II 2 G Ex d IIC in accordance with the EC Directive (94/9/EC) (or II 2 G Ex de IIB, II 2 G Ex de IIC when the connection box is designed for increased safety). These motors are specially designed for applications in the chemical and petrochemical industries.

Benefits

- Accepted by Shell, DOW, Bayer, Statoil, BP, Chevron, Wacker, Ticona, OMV, ADNOC and many more.
- Suitable for almost all applications and specifications
- Motors with optimized parameters (adapted winding variants and rotors) achieve extremely high levels of efficiency at the best power factors and low locked-rotor currents
- Complete performance range
- Also suitable for converter-controlled drives

Applications

- For use in hazardous areas in Zone 1
- Pumps
 - Compressors
 - Fans
 - Extruders
 - For universal use as driven/driving machine

Technical specifications

Frame sizes (FS)	71 ... 315 (range for standard motors)
Rated output (50 Hz types)	Up to 250 kW (thermal utilization in accordance with temperature class B for TU = 40 °C)
Number of poles	2, 4, 6
Voltage range	Standard low voltages and voltage ranges according to IEC 60038
Rated voltages	230/400 V ± 10 %, 50 Hz 400/690 V ± 10 %, 50 Hz 500 V ± 5 %, 50 Hz
Mode of operation	S1 mains-fed operation or S9 converter-fed operation
Degree of protection	IP56 to IP66
Cooling	IC 411, IC 416
Types of construction	IM B3, IM B5, IM B6, IM B7, IM B8, IM B14, IM B34, IM B35, IM V1, IM V3, IM V5, IM V6, IM V18
Enclosure	Cast iron
Bearings	Rolling-contact bearings (standard) and special bearings for high axial and radial forces
Standards and regulations	IEC, EN, DIN, VDE
Type of protection	Zone 1: II 2 G Ex de IIC temperature class T4 dust protection (max. surface temperature 120 °C): II 2 G Ex de IIC + II 2 D
Paint finish	RAL color variants – special chemical-resistant coating N14/A
Vibration quantity level	Level B
Sound pressure level	≤ 77 dBA + 3 dBA tolerance

Special designs – Options

- Ambient temperatures from –55 to +60 °C
- Enhanced connection system
- SPM nipple in FS 132 and above
- Regreasing device in FS 160 and above
- Stainless steel bolts
- Additional connection box in FS 132 and above
- Anti-condensation heating in FS 132 and above
- PTC thermistor as sole protection (TMS) up to FS 250 inclusive
- PTC thermistor as additional protection (TMS)
- 60 Hz
- Pole changing
- Special voltages
- Electrical according to "NEMA Standards Publication No MG1"
- Flange-mounting motors with flange and shaft extension according to NEMA
- Fast availability within a few working days (standard version)

More information

www.siemens.com/lowvoltage/motors

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e



Self-ventilated motors with Standard Efficiency IE1
Aluminum series 1MA7

4.2

Selection and ordering data

P _{rated} , 50 Hz kW	Tempera- ture class	Frame size	Operating values at rated output											Aluminum series		Torque class			
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4 %	η _{rated} , 50 Hz, 3/4 %	η _{rated} , 50 Hz, 2/4 %	COS- φ _{rated} , 50 Hz, 4/4 %	I _r , 50 Hz, 400 V A	T _L /I _r , T _{rated}	I _L /I _r , T _{rated}	T _B /I _r , T _{rated}	t _E , 50 Hz, T1/T2 s	t _E , 50 Hz, T3 s	1MA7 – IE1 version for Zone 1 in type of protection Ex e	m _{IM B3} J	kg	kgm ²
• Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾																			
2-pole: 3000 rpm at 50 Hz, temperature classes T1 to T3																			
0.18	T1,T2,T3	63 M	2810	0.61	–	63.6	62.6	58.6	0.74	0.55	2.3	4.4	2.3	30	27	1MA7060-2BA	3.5	0.00018	16
0.25	T1,T2,T3	63 M	2800	0.85	–	65.7	64.7	60.7	0.85	0.7	2.2	4.4	2.3	19	16	1MA7063-2BA	4.0	0.00023	16
0.37	T1,T2,T3	71 M	2825	1.3	–	70.8	70.8	66.8	0.80	0.93	2.3	5.6	3.0	28	25	1MA7070-2BA	6.0	0.00035	16
0.55	T1,T2,T3	71 M	2785	1.9	–	69.9	69.9	65.9	0.84	1.4	3.0	5.2	2.6	18	13	1MA7073-2BA	7.0	0.00045	16
0.75	T1,T2,T3	80 M	2845	2.5	IE1	72.1	72.1	68.1	0.85	1.81	2.5	6.2	2.7	13	11	1MA7080-2BA	9.0	0.00085	16
1.1	T1,T2,T3	80 M	2855	3.7	IE1	75.0	75.0	72.0	0.85	2.5	2.8	6.4	3.0	12	10	1MA7083-2BA	11	0.0011	16
1.3	T1,T2,T3	90 S	2850	4.4	IE1	76.2	76.2	73.2	0.88	2.9	2.6	6.2	2.8	12	11	1MA7090-2BA	13	0.0015	16
1.85	T1,T2,T3	90 L	2860	6.2	IE1	78.6	79.1	76.6	0.88	3.95	2.8	7.2	2.8	9	8	1MA7096-2BA	16	0.0020	16
2.5	T1,T2,T3	100 L	2865	8.3	IE1	80.5	80.5	79.5	0.87	5.3	2.6	7.4	2.8	9	8	1MA7106-2BA	21	0.0038	16
3.3	T1,T2,T3	112 M	2875	11	IE1	82.1	82.1	81.1	0.89	6.7	2.1	6.6	2.3	10	9	1MA7113-2BB	27	0.0055	13
4.6	T1,T2,T3	132 S	2920	15	IE1	83.8	83.8	82.8	0.90	9.2	1.9	6.8	2.5	15	13	1MA7130-2BB	38	0.016	13
5.5	T3	132 S	2925	18	IE1	84.7	84.7	83.7	0.92	10.6	2.2	7.7	2.7	15	13	1MA7131-2BB ²⁾	44	0.021	13
7.5	T3	160 M	2945	24	IE1	86.0	86.0	85.0	0.90	14.3	2.2	7.6	3.1	29	18	1MA7163-2BB ²⁾	67	0.034	13
10	T3	160 M	2940	32	IE1	87.2	87.2	86.2	0.92	18.6	2.1	7.6	2.9	23	12	1MA7164-2BB ²⁾	72	0.040	13
12.5	T3	160 L	2940	41	IE1	88.0	88.0	87.0	0.93	23	2.3	7.6	3.0	21	9	1MA7166-2BB ²⁾	82	0.052	13
2-pole: 3000 rpm at 50 Hz, temperature classes T1 and T2 with double rating plate (T1/T2 and T3)																			
6.5	T1,T2	132 S	2900	21	IE1	85.4	85.4	84.4	0.93	12.5	1.9	6.5	2.3	12	7	1MA7131-2BB ²⁾	44	0.021	13
9.5	T1,T2	160 M	2920	31	IE1	87.0	87.0	86.0	0.91	18.1	1.7	6.0	2.4	24	–	1MA7163-2BB ²⁾	67	0.034	13
13	T1,T2	160 M	2910	43	IE1	88.2	88.2	87.2	0.92	24.5	1.6	5.8	2.2	16	–	1MA7164-2BB ²⁾	72	0.040	13
16	T1,T2	160 L	2910	53	IE1	88.9	88.9	87.9	0.93	30	1.8	5.8	2.3	15	–	1MA7166-2BB ²⁾	82	0.052	13
Voltages		No. of poles		Motor type		Version		Order code(s)											
50 Hz	230 VΔ/400 VY	2	1MA7060 ... 166	Standard	1	–													
	400 VΔ/690 VY	2	1MA7070 ... 166	Standard	6	–													
	500 VY	2	1MA7060 ... 166	Without additional charge	3	–													
	500 VΔ	2	1MA7106 ... 166	Without additional charge	5	–													
Further voltages		For additional charges, voltage codes, order codes and descriptions, see from Page 4/61.		9		...													
Note: For delta connection, overload protection with phase-failure protection must be provided.																			
Types of construction		No. of poles		Motor type		Version		Order code(s)											
Without flange		IM B3/6/7/8, IM V6 ³⁾		2 1MA7060 ... 166		Standard		0 –											
With flange		IM B5, IM V3 ³⁾		2 1MA7060 ... 166		With additional charge		1 –											
		IM V1 with protective cover ^{3) 4)}		2 1MA7060 ... 166		With additional charge		4 –											
		IM B35		2 1MA7060 ... 166		With additional charge		6 –											
With standard flange		IM B14, IM V19 ³⁾		2 1MA7060 ... 166		With additional charge		2 –											
		IM B34		2 1MA7060 ... 166		With additional charge		7 –											
With special flange		IM B14, IM V19 ³⁾		2 1MA7060 ... 166		With additional charge		3 –											
Further types of construction		For additional charges, type of construction codes and descriptions, see from Page 4/66.		9		...													
Special versions		Options		For additional charges, order codes and descriptions, see from Page 4/76.		1MA7 ... -Z		...+...+...+...											
		Motor type 1MA7, 2-pole		060-2 063-2 070-2 073-2 080-2 083-2 090-2 096-2 106-2 113-2 130-2 131-2 163-2 164-2 166-2															
Noise at rated output and 50 Hz – measuring-surface sound pressure level L _{pfA} , 50 Hz and sound power level L _{WA} , 50 Hz																			
L _{pfA} , 50 Hz	dB(A)	49	49	52	52	56	56	60	60	62	63	68	68	70	70	70			
L _{WA} , 50 Hz	dB(A)	60	60	63	63	67	67	72	72	74	75	80	80	82	82	82			

¹⁾ For motors 1MA7164 and 1MA7166 with double rating plate, utilization in accordance with thermal class 155 (temperature class F).
²⁾ In the following versions, the T3 output is stamped on the rating plate as standard:
 – Order code A11/A12
 – Voltage code "9"
 Alternatively: order code C30 "T1/T2 output on the rating plate"

³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e

Self-ventilated motors with Standard Efficiency IE1
Aluminum series 1MA7



Selection and ordering data (continued)

P _{rated} , 50 Hz kW	Tempera- ture class	Frame size	Operating values at rated output											Aluminum series 1MA7 – IE1 version for Zone 1 in type of protection Ex e	m _{IM B3 J}		Torque class																			
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4 %	η _{rated} , 50 Hz, 3/4 %	η _{rated} , 50 Hz, 2/4 %	COS- φ _{rated} , 50 Hz, 4/4	I _r rated, 50 Hz, 400 V A	T _{LR} / T _{rated}	I _{LR} / I _r rated	T _B / T _{rated}		t _E , 50 Hz, T1/T2 s	t _E , 50 Hz, T3 s		Order No.	kg	kgm ²	CL															
4-pole: 1500 rpm at 50 Hz, temperature classes T1 to T3																																				
0.12	T1,T2,T3	63 M	1375	0.83	–	52.5	51.0	46.5	0.66	0.52	1.9	2.6	1.9	35	30	1MA7060-4BB	4.0	0.00030	13																	
0.18	T1,T2,T3	63 M	1330	1.3	–	54.6	53.1	48.6	0.75	0.62	1.9	2.7	1.9	30	25	1MA7063-4BB	4.0	0.00040	13																	
0.25	T1,T2,T3	71 M	1310	1.8	–	57.7	56.2	51.7	0.77	0.8	1.9	3.1	1.9	50	40	1MA7070-4BB	6.0	0.00060	13																	
0.37	T3	71 M	1355	2.6	–	64.8	63.8	59.8	0.74	1.1	1.9	3.7	2.1	35	29	1MA7073-4BB	7.0	0.00083	13																	
0.55	T1,T2,T3	80 M	1390	3.8	–	70.9	70.9	66.9	0.73	1.59	2.4	4.6	2.5	24	21	1MA7080-4BA	9.0	0.0015	16																	
0.75	T1,T2,T3	80 M	1395	5.1	IE1	72.1	72.1	68.1	0.75	2.05	2.6	4.8	2.6	19	16	1MA7083-4BA	11	0.0018	16																	
1	T1,T2,T3	90 S	1420	6.7	IE1	74.3	74.3	71.3	0.78	2.5	2.2	5.4	2.5	16	14	1MA7090-4BA	13	0.0028	16																	
1.35	T1,T2,T3	90 L	1415	9.1	IE1	76.5	77.0	73.5	0.82	3.1	2.3	5.9	2.5	15	13	1MA7096-4BA	16	0.0035	16																	
2	T1,T2,T3	100 L	1420	14	IE1	79.1	79.6	77.1	0.82	4.5	2.5	6.4	2.7	13	11	1MA7106-4BA	20	0.0048	16																	
2.5	T1,T2,T3	100 L	1415	17	IE1	80.5	80.5	79.5	0.83	5.5	2.6	6.4	2.7	12	10	1MA7107-4BA	23	0.0058	16																	
3.6	T1,T2,T3	112 M	1435	24	IE1	82.5	82.5	81.5	0.83	7.5	2.6	7.2	2.9	10	9	1MA7113-4BA	29	0.011	16																	
5	T1,T2,T3	132 S	1455	33	IE1	84.2	84.2	83.2	0.82	10.4	2.7	6.6	3.2	10	9	1MA7130-4BA	42	0.021	16																	
6.8	T1,T2,T3	132 M	1460	44	IE1	85.6	85.6	84.6	0.82	14	3.0	7.7	3.6	11	9	1MA7133-4BA	61	0.027	16																	
10	T1,T2,T3	160 M	1460	65	IE1	87.2	87.2	86.2	0.87	19.7	2.3	6.5	2.7	17	10	1MA7163-4BB	67	0.052	13																	
13.5	T1,T2,T3	160 L	1460	88	IE1	88.3	88.3	87.3	0.84	27	2.4	6.9	3.0	18	9	1MA7166-4BB	107	0.057	13																	
Voltages			No. of poles		Motor type		Version												Order code(s)																	
50 Hz			230 VΔ/400 VY		4		1MA7060 ... 166		Standard												1 –															
			400 VΔ/690 VY		4		1MA7070 ... 166		Standard												6 –															
			500 VY		4		1MA7070 ... 166		Without additional charge												3 –															
			500 VΔ		4		1MA7106 ... 166		Without additional charge												5 –															
Further voltages			For additional charges, voltage codes, order codes and descriptions, see from Page 4/61.																9 ...																	
Note: For delta connection, overload protection with phase-failure protection must be provided.																																				
Types of construction			No. of poles		Motor type		Version												Order code(s)																	
Without flange			IM B3/6/7/8, IM V6 ²⁾		4		1MA7060 ... 166		Standard												0 –															
With flange			IM B5, IM V3 ²⁾		4		1MA7060 ... 166		With additional charge												1 –															
			IM V1 with protective cover ^{2) 3)}		4		1MA7060 ... 166		With additional charge												4 –															
			IM B35		4		1MA7060 ... 166		With additional charge												6 –															
With standard flange			IM B14, IM V19 ²⁾		4		1MA7060 ... 166		With additional charge												2 –															
			IM B34		4		1MA7060 ... 166		With additional charge												7 –															
With special flange			IM B14, IM V19 ²⁾		4		1MA7060 ... 166		With additional charge												3 –															
Further types of construction			For additional charges, type of construction codes and descriptions, see from Page 4/66.																9 ...																	
Special versions			Order code(s)																																	
Options			For additional charges, order codes and descriptions, see from Page 4/76.																1MA7 ... -Z ...+...+...+...																	
			Motor type 1MA7, 4-pole																																	
			060-4		063-4		070-4		073-4		080-4		083-4		090-4		096-4		106-4		107-4		113-4		130-4		133-4		163-4		166-4					
Noise at rated output and 50 Hz – measuring-surface sound pressure level L_{ptA}, 50 Hz and sound power level L_{WA}, 50 Hz			L _{ptA} , 50 Hz		dB(A)		42		42		44		44		47		47		48		48		53		53		53		62		62		66		66	
			L _{WA} , 50 Hz		dB(A)		53		53		55		55		58		58		60		60		65		65		65		74		74		78		78	

1) For motors 1MA7164 and 1MA7166 with double rating plate, utilization in accordance with thermal class 155 (temperature class F).
 2) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
 3) The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e



Self-ventilated motors with Standard Efficiency IE1
Aluminum series 1MA7

4.2

Selection and ordering data (continued)

P _{rated} , 50 Hz kW	Tempera- ture class	Frame size	Operating values at rated output											Aluminum series		Torque class		
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4 %	η _{rated} , 50 Hz, 3/4 %	η _{rated} , 50 Hz, 2/4 %	COS- φ _{rated} , 50 Hz, 4/4 %	I _r rated, 50 Hz, 400 V A	T _{LR} /I _r rated	I _{LR} /I _r rated	T _B /I _r rated	t _E , 50 Hz, T1/T2 s	t _E , 50 Hz, T3 s	1MA7 – IE1 version for Zone 1 in type of protection Ex e	m _{IM B3} J	CL
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																		
6-pole: 1000 rpm at 50 Hz, temperature classes T1 to T3																		
0.25	T1,T2,T3	71 M	850	2.8	–	60.7	59.2	54.7	0.72	0.81	2.2	3.0	2.1	130	70	1MA7073-6BA	7.0	0.0090 16
0.37	T1,T2,T3	80 M	920	3.6	–	65.8	64.8	60.8	0.70	1.14	2.3	3.6	2.4	60	55	1MA7080-6BA	9.0	0.0015 16
0.55	T1,T2,T3	80 M	930	5.6	–	67.5	67.0	63.5	0.67	1.75	2.4	4.0	2.4	30	27	1MA7083-6BA	13	0.0025 16
0.65	T1,T2,T3	90 S	915	6.8	–	68.9	68.9	64.9	0.75	1.8	2.3	3.9	2.4	35	30	1MA7090-6BA	14	0.0028 16
0.95	T1,T2,T3	90 L	910	9.9	IE1	71.9	71.9	67.9	0.75	2.6	2.3	4.1	2.4	22	19	1MA7096-6BA	16	0.0038 16
1.3	T1,T2,T3	100 L	935	13	IE1	74.2	74.2	71.2	0.73	3.35	2.4	4.8	2.5	26	26	1MA7106-6BA	20	0.0063 16
1.9	T1,T2,T3	112 M	940	19	IE1	76.8	77.3	73.8	0.76	4.7	2.3	5.0	2.5	19	16	1MA7113-6BB	24	0.011 13
2.6	T1,T2,T3	132 S	945	26	IE1	78.8	79.3	76.8	0.75	6.5	1.8	4.4	2.4	21	18	1MA7130-6BB	36	0.015 13
3.5	T1,T2,T3	132 M	955	35	IE1	80.6	80.6	79.6	0.72	9.0	2.3	5.1	2.8	16	13	1MA7133-6BB	41	0.019 13
4.8	T1,T2,T3	132 M	950	48	IE1	82.4	82.4	81.4	0.76	11.4	2.4	5.6	2.8	13	11	1MA7134-6BB	50	0.025 13
6.6	T1,T2,T3	160 M	960	65	IE1	84.0	84.0	83.0	0.75	14.9	2.7	6.4	3.1	18	9	1MA7163-6BB	70	0.041 13
9.7	T1,T2,T3	160 L	965	96	IE1	85.9	85.9	84.9	0.76	21	2.8	7.7	2.2	15	8	1MA7166-6BB	105	0.055 13
Voltages					No. of poles	Motor type		Version						Order code(s)				
50 Hz			230 VΔ/400 VY		6	1MA7073 ... 166		Standard						1 –				
			400 VΔ/690 VY		6	1MA7073 ... 166		Standard						6 –				
			500 VY		6	1MA7073 ... 166		Without additional charge						3 –				
			500 VΔ		6	1MA7106 ... 166		Without additional charge						5 –				
Further voltages ¹⁾															9 ...			
Note: For delta connection, overload protection with phase-failure protection must be provided.																		
Types of construction					No. of poles	Motor type		Version						Order code(s)				
Without flange			IM B3/6/7/8, IM V6 ¹⁾		6	1MA7060 ... 166		Standard						0 –				
With flange			IM B5, IM V3 ¹⁾		6	1MA7060 ... 166		With additional charge						1 –				
			IM V1 with protective cover ^{1) 2)}		6	1MA7060 ... 166		With additional charge						4 –				
			IM B35		6	1MA7060 ... 166		With additional charge						6 –				
With standard flange			IM B14, IM V19 ¹⁾		6	1MA7060 ... 166		With additional charge						2 –				
			IM B34		6	1MA7060 ... 166		With additional charge						7 –				
With special flange			IM B14, IM V19 ¹⁾		6	1MA7060 ... 166		With additional charge						3 –				
Further types of construction															9 ...			
Special versions															Order code(s)			
Options															1MA7 ... - ... -Z ...+...+...+...			
					Motor type 1MA7, 6-pole													
					073-6	080-6	083-6	090-6	096-6	106-6	113-6	130-6	133-6	134-6	163-6	166-6		
Noise at rated output and 50 Hz – measuring-surface sound pressure level L _{ptA} , 50 Hz and sound power level L _{WA} , 50 Hz																		
L _{ptA} , 50 Hz		dB(A)		39	40	40	43	43	47	52	63	63	63	66	66			
L _{WA} , 50 Hz		dB(A)		50	51	51	55	55	59	64	75	75	75	78	78			

¹⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

²⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e

Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MA6



Selection and ordering data (continued)

P _{rated} , 50 Hz kW	Tempera- ture class	Frame size	Operating values at rated output												Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m _{IM} B3 J	Torque class		
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4 %	η _{rated} , 50 Hz, 3/4 %	η _{rated} , 50 Hz, 2/4 %	COS- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V A	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}	t _E , 50 Hz, T1/T2 s				t _E , 50 Hz, T3 s	Order No.
• Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾																			
2-pole: 3000 rpm at 50 Hz, temperature classes T1 to T3																			
2.5	T1,T2,T3	100 L	2865	8.3	IE1	80.5	80.5	79.5	0.87	5.3	2.6	7.4	2.8	9	8	1MA6106-2BA	34	0.0038	16
3.3	T1,T2,T3	112 M	2875	11	IE1	82.1	82.1	81.1	0.89	6.7	2.1	6.6	2.3	10	9	1MA6113-2BB	43	0.0055	13
4.6	T1,T2,T3	132 S	2920	15	IE1	83.8	83.8	82.8	0.90	9.2	1.9	6.8	2.5	15	13	1MA6130-2BB	53	0.016	13
5.5	T3	132 S	2925	18	IE1	84.7	84.7	83.7	0.92	10.6	2.2	7.7	2.7	15	13	1MA6131-2BB	58	0.021	13
7.5	T3	160 M	2945	24	IE1	86.0	86.0	85.0	0.90	14.3	2.2	7.6	3.1	29	18	1MA6163-2BB	96	0.034	13
10	T3	160 M	2940	32	IE1	87.2	87.2	86.2	0.92	18.6	2.1	7.6	2.9	23	12	1MA6164-2BB	105	0.040	13
12.5	T3	160 L	2940	41	IE1	88.0	88.0	87.0	0.93	23	2.3	7.6	3.0	21	9	1MA6166-2BB	115	0.052	13
15	T3	180 M	2955	49	IE1	88.7	91.0	90.0	0.87	29	2.0	6.9	3.3	30	14	1MA6183-2BC	170	0.077	10
20	T3	200 L	2960	64	IE1	89.6	90.0	89.0	0.86	39	1.9	6.0	2.9	35	14	1MA6206-2BC	245	0.14	10
24	T3	200 L	2965	77	IE1	90.1	91.0	90.0	0.87	46	2.0	6.4	3.0	35	10	1MA6207-2BC	246	0.16	10
28	T3	225 M	2970	90	IE1	90.5	90.4	89.5	0.90	51	1.8	6.4	2.7	30	13	1MA6223-2BC	310	0.24	10
38	T1,T2	225 M	2970	122	IE1	91.3	91.2	90.7	0.89	69 ³⁾	1.8	7.0	2.7	16	–	1MA6223-2AC	310	0.24	10
36	T3	250 M	2975	116	IE1	91.2	90.9	89.6	0.91	64	1.5	6.6	2.7	30	11	1MA6253-2BC	415	0.45	10
47	T1,T2	250 M	2975	151	IE1	91.8	91.7	90.1	0.90	85	1.5	6.5	2.7	18	–	1MA6253-2AC	415	0.45	10
47	T3	280 S	2983	150	IE1	91.8	91.3	89.8	0.90	84	1.5	7.1	2.9	30	23	1MA6280-2BD	570	0.79	7
64	T1,T2	280 S	2980	205	IE1	92.4	92.0	90.5	0.89	115	1.5	7.8	2.9	19	–	1MA6280-2AD	570	0.79	7
58	T3	280 M	2982	186	IE1	92.2	91.9	90.7	0.91	104	1.5	7.2	2.8	27	11	1MA6283-2BD	610	0.92	7
76	T1,T2	280 M	2978	244	IE1	92.7	92.6	91.6	0.90	134	1.5	7.5	2.8	15	–	1MA6283-2AD	610	0.92	7
68	T3	315 S	2985	218	IE1	92.5	91.8	90.0	0.91	120	1.4	7.1	2.8	50	21	1MA6310-2BD	790	1.3	7
95	T1,T2	315 S	2985	304	IE1	93.1	92.6	91.1	0.90	169	1.5	7.3	2.9	30	–	1MA6310-2AD	790	1.3	7
80	T3	315 M	2985	256	IE1	92.8	92.4	90.9	0.91	142	1.6	7.0	2.8	40	19	1MA6313-2BD	850	1.5	7
112	T1,T2	315 M	2985	358	IE1	93.3	93.0	91.8	0.91	198 ³⁾	1.4	7.5	2.7	21	–	1MA6313-2AD	850	1.5	7
100	T3	315 L	2984	320	IE1	93.1	92.7	91.5	0.92	174	1.4	6.8	2.8	40	11	1MA6316-2BD	990	1.8	7
135	T1,T2	315 L	2984	432	IE1	93.6	93.5	92.4	0.91	234	1.6	7.4	2.9	17	–	1MA6316-2AD	990	1.8	7
125	T3	315 L	2985	400	IE1	93.5	93.2	92.2	0.91	214	1.5	7.3	2.8	30	7	1MA6317-2BD	1100	2.3	7
165	T1,T2	315 L	2986	528	IE1	93.8	93.5	92.7	0.91	280	1.8	9.3	2.9	7	–	1MA6317-2AD	1100	2.3	7

Voltages		No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	2	1MA6106 ... 313	Standard	1 –
	400 VΔ/690 VY	2	1MA6106 ... 317	Standard	6 –
	500 VY	2	1MA6106 ... 317	Without additional charge	3 –
	500 VΔ	2	1MA6106 ... 317	Without additional charge	5 –
Further voltages ¹⁾ For additional charges, voltage codes, order codes and descriptions, see from Page 4/62.					9 ...
Note: For delta connection, overload protection with phase-failure protection must be provided.					
Types of construction		No. of poles	Motor type	Version	Order code(s)
Without flange	IM B3/6/7/8 ^{5) 6)}	2	1MA6106 ... 317	Standard	0 –
	IM V6 ^{5) 6)}	2	1MA6106 ... 313	With additional charge	1 –
With flange	IM B5 ^{5) 7)}	2	1MA6316 ... 317	With additional charge	9 M1E
	IM V3 ^{5) 7)}	2	1MA6106 ... 313	With additional charge	1 –
		2	1MA6106 ... 166	With additional charge	1 –
		2	1MA6183 ... 313	With additional charge	9 M1G
		2	1MA6106 ... 317 ⁹⁾	With additional charge	4 –
With standard flange	IM B35	2	1MA6106 ... 317	With additional charge	6 –
	IM B14, IM V19 ⁵⁾	2	1MA6106 ... 166	With additional charge	2 –
	IM B34	2	1MA6106 ... 166	With additional charge	7 –
With special flange	IM B14, IM V19 ⁵⁾	2	1MA6106 ... 166	With additional charge	3 –
Further types of construction For additional charges, type of construction codes and descriptions, see from Page 4/68.					9 ...
Special versions					Order code(s)
Options		For additional charges, order codes and descriptions, see from Page 4/79.			1MA6 ... -Z ...+...+...+...

For noise values and footnotes, see Page 4/31.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e



Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MA6

4.2

Selection and ordering data (continued)

P _{rated} , 50 Hz	Tempera- ture class	Frame size	Operating values at rated output										Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m _{IM B3}	J	Torque class													
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}					T _B / T _{rated}	t _E , 50 Hz, T1/T2	t _E , 50 Hz, T3	Order No.	kg	kgm ²	CL						
kW	FS	rpm	Nm	%	%	%	A	s	s	Order No.	kg	kgm²	CL																
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾ 																													
2-pole: 3000 rpm at 50 Hz, temperature classes T1 and T2 with double rating plate (T1/T2 and T3)																													
6.5	T1,T2	132 S	2900	21	IE1	85.4	85.4	84.4	0.93	12.5	1.9	6.5	2.3	12	7	1MA6131-2BB ²⁾	58	0.021	13										
9.5	T1,T2	160 M	2920	31	IE1	87.0	87.0	86.0	0.91	18.1	1.7	6.0	2.4	24	–	1MA6163-2BB ²⁾	96	0.034	13										
13	T1,T2	160 M	2910	43	IE1	88.2	88.2	87.2	0.92	24.5	1.6	5.8	2.2	16	–	1MA6164-2BB ²⁾	105	0.040	13										
16	T1,T2	160 L	2910	53	IE1	88.9	88.9	87.9	0.93	30	1.8	5.8	2.3	15	–	1MA6166-2BB ²⁾	115	0.052	13										
19	T1,T2	180 M	2935	62	IE1	89.4	90.0	89.0	0.88	36.5	1.6	5.5	2.6	24	–	1MA6183-2BC ²⁾	170	0.077	10										
25	T1,T2	200 L	2950	81	IE1	90.2	90.0	89.0	0.87	49	1.5	4.8	2.3	28	–	1MA6206-2BC ²⁾	245	0.14	10										
31	T1,T2	200 L	2950	100	IE1	90.8	90.0	89.0	0.88	60	1.5	4.9	2.3	26	–	1MA6207-2BC ²⁾	246	0.16	10										
Voltages			No. of poles		Motor type		Version				Order code(s)																		
50 Hz			230 VΔ/400 VY		2		1MA6106 ... 313		Standard		1		–																
			400 VΔ/690 VY		2		1MA6106 ... 317		Standard		6		–																
			500 VY		2		1MA6106 ... 317		Without additional charge		3		–																
			500 VΔ		2		1MA6106 ... 317		Without additional charge		5		–																
Further voltages ¹⁾			For additional charges, voltage codes, order codes and descriptions, see from Page 4/62.																										
Note: For delta connection, overload protection with phase-failure protection must be provided.																													
Types of construction			No. of poles		Motor type		Version				Order code(s)																		
Without flange			IM B3/6/7/8 ^{5) 6)}		2		1MA6106 ... 317		Standard		0		–																
			IM V6 ^{5) 6)}		2		1MA6106 ... 313		With additional charge		1		–																
					2		1MA6316 ... 317		With additional charge		9		M1E																
With flange			IM B5 ^{5) 7)}		2		1MA6106 ... 313		With additional charge		1		–																
			IM V3 ^{5) 7)}		2		1MA6106 ... 166		With additional charge		1		–																
					2		1MA6183 ... 313		With additional charge		9		M1G																
			IM V1 with protective cover ^{5) 7) 8)}		2		1MA6106 ... 317 ⁹⁾		With additional charge		4		–																
			IM B35		2		1MA6106 ... 317		With additional charge		6		–																
With standard flange			IM B14, IM V19 ⁵⁾		2		1MA6106 ... 166		With additional charge		2		–																
			IM B34		2		1MA6106 ... 166		With additional charge		7		–																
With special flange			IM B14, IM V19 ⁵⁾		2		1MA6106 ... 166		With additional charge		3		–																
Further types of construction			For additional charges, type of construction codes and descriptions, see from Page 4/68.																										
Special versions											Order code(s)																		
Options			For additional charges, order codes and descriptions, see from Page 4/79.																										
											1MA6 ... - ... -Z		...+...+...+...																
Motor type 1MA6, 2-pole																													
			106-2	113-2	130-2	131-2	163-2	164-2	166-2	183-2	206-2	207-2	223-2BC	223-2AC	253-2BC	253-2AC	280-2BD	280-2AD	283-2BD	283-2AD	310-2BD	310-2AD	313-2BD	313-2AD	316-2BD	316-2AD	317-2BD	317-2AD	
Noise at rated output and 50 Hz – measuring-surface sound pressure level L_{p1A}, 50 Hz and sound power level L_{WA}, 50 Hz																													
L _{p1A} , 50 Hz			dB(A)	62	63	68	68	70	70	70	71	71	71	71	75	75	77	77	77	77	77	79	79	79	79	79	79	79	79
L _{WA} , 50 Hz			dB(A)	74	75	80	80	82	82	82	83	84	84	84	84	89	89	91	91	91	91	91	93	93	93	93	93	93	93

1) For motors 1MA6164-... to 1MA6207-... with double rating plate, utilization in accordance with thermal class 155 (temperature class F).

2) In the following versions, the T3 output is stamped on the rating plate as standard:
– Order code A11/A12
– Voltage code "9"
Alternatively: order code C30 "T1/T2 output on the rating plate"

3) For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").

4) Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).

5) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

6) If motors 1MA6183-... to 1MA6317-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

7) 1MA6220-... to 1MA6317-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

8) The "Second shaft extension" option, order code K16 is not possible.

9) 2-pole motors 1MA6316-... to 1MA6317-... (motor series 1MA6 frame size 315 L) in 60 Hz version available on request.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e

Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MA6



Selection and ordering data (continued)

P _{rated} , 50 Hz kW	Tempera- ture class	Frame size	Operating values at rated output											Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m _{IM B3} kg	J kgm ²	Torque class CL		
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS- φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}					t _E , 50 Hz, T1/T2	t _E , 50 Hz, T3
4-pole: 1500 rpm at 50 Hz, temperature classes T1 to T3																			
2	T1,T2,T3	100 L	1420	14	IE1	79.1	79.6	77.1	0.82	4.5	2.5	6.4	2.7	13	11	1MA6106-4BA	33	0.0048	16
2.5	T1,T2,T3	100 L	1415	17	IE1	80.5	80.5	79.5	0.83	5.5	2.6	6.4	2.7	12	10	1MA6107-4BA	36	0.0058	16
3.6	T1,T2,T3	112 M	1435	24	IE1	82.5	82.5	81.5	0.83	7.5	2.6	7.2	2.9	10	9	1MA6113-4BA	45	0.011	16
5	T1,T2,T3	132 S	1455	33	IE1	84.2	84.2	83.2	0.82	10.4	2.7	6.6	3.2	10	9	1MA6130-4BA	55	0.021	16
6.8	T1,T2,T3	132 M	1460	44	IE1	85.6	85.6	84.6	0.82	14	3.0	7.7	3.6	11	9	1MA6133-4BA	62	0.027	16
10	T1,T2,T3	160 M	1460	65	IE1	87.2	87.2	86.2	0.87	19.7	2.3	6.5	2.7	17	10	1MA6163-4BB	100	0.052	13
13.5	T1,T2,T3	160 L	1460	88	IE1	88.3	88.3	87.3	0.84	27	2.4	6.9	3.0	18	9	1MA6166-4BB	114	0.057	13
15	T3	180 M	1465	97	IE1	88.7	89.0	88.0	0.80	31	1.8	6.1	2.9	18	11	1MA6183-4BC	165	0.13	10
17.5	T3	180 L	1475	114	IE1	89.1	90.0	89.0	0.80	36	1.8	6.4	3.0	16	11	1MA6186-4BC	177	0.15	10
24	T3	200 L	1480	155	IE1	90.1	91.0	90.0	0.82	47.5	2.2	7.9	3.1	20	11	1MA6207-4BC	280	0.32	10
30	T3	225 S	1481	193	IE1	90.7	90.6	89.9	0.83	59	1.6	6.7	2.7	13	13	1MA6220-4BC	300	0.44	10
36	T3	225 M	1484	232	IE1	91.2	91.3	91.0	0.84	70 ²⁾	1.7	6.9	2.8	12	12	1MA6223-4BC	330	0.52	10
44	T3	250 M	1485	283	IE1	91.6	91.4	90.4	0.85	83	1.7	7.3	2.5	18	11	1MA6253-4BC	435	0.79	10
58	T3	280 S	1488	372	IE1	92.2	92.1	91.4	0.84	111	1.7	6.3	2.5	30	7	1MA6280-4BC	640	1.4	10
70	T3	280 M	1488	449	IE1	92.6	92.1	92.1	0.85	130	1.7	7.0	2.5	26	6	1MA6283-4BC	660	1.6	10
84	T3	315 S	1492	538	IE1	92.9	92.8	91.8	0.84	158	1.7	7.7	2.8	28	8	1MA6310-4BD	830	2.2	7
100	T3	315 M	1492	640	IE1	93.1	93.0	92.3	0.85	185	1.6	7.2	2.5	29	7	1MA6313-4BD	910	2.7	7
115	T3	315 L	1490	740	IE1	93.3	93.2	92.3	0.86	214	1.7	7.5	2.5	28	5	1MA6316-4BD	1060	3.2	7
135	T3	315 L	1482	868	IE1	93.6	93.5	92.6	0.86	245	1.7	7.8	2.8	26	7	1MA6317-4BD	1200	4.2	7

Voltages		No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	4	1MA6106 ... 313	Standard	1 –
	400 VΔ/690 VY	4	1MA6106 ... 317	Standard	6 –
	500 VY	4	1MA6106 ... 317	Without additional charge	3 –
	500 VΔ	4	1MA6106 ... 317	Without additional charge	5 –
Further voltages		For additional charges, voltage codes, order codes and descriptions, see from Page 4/62.			9 ...
Note: For delta connection, overload protection with phase-failure protection must be provided.					
Types of construction		No. of poles	Motor type	Version	Order code(s)
Without flange	IM B3/6/7/8 ^{4) 5)}	4	1MA6106 ... 317	Standard	0 –
	IM V6 ^{4) 5)}	4	1MA6106 ... 313	With additional charge	1 –
		4	1MA6316 ... 317	With additional charge	9 M1E
With flange	IM B5 ^{4) 6)}	4	1MA6106 ... 313	With additional charge	1 –
	IM V3 ^{4) 6)}	4	1MA6106 ... 166	With additional charge	1 –
		4	1MA6183 ... 313	With additional charge	9 M1G
		4	1MA6106 ... 317	With additional charge	4 –
With standard flange	IM B35	4	1MA6106 ... 317	With additional charge	6 –
	IM B14, IM V19 ⁴⁾	4	1MA6106 ... 166	With additional charge	2 –
	IM B34	4	1MA6106 ... 166	With additional charge	7 –
With special flange	IM B14, IM V19 ⁴⁾	4	1MA6106 ... 166	With additional charge	3 –
Further types of construction		For additional charges, type of construction codes and descriptions, see from Page 4/68.			9 ...
Special versions					Order code(s)
Options		For additional charges, order codes and descriptions, see from Page 4/79.			1MA6 ... -... -Z ...+...+...+...

For noise values, see Page 4/33.

- For motors 1MA6183 and 1MA6186-... with double rating plate, utilization in accordance with thermal class 155 (temperature class F).
- For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").
- Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).
- The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
- If motors 1MA6183-... to 1MA6317-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.
- 1MA6220-... to 1MA6317-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e



Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MA6

4.2

Selection and ordering data (continued)

P _{rated} , 50 Hz kW	Temperature class	Frame size	Operating values at rated output										Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m _{IM B3} J	Torque class					
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /I _{rated}	I _{LR} /I _{rated}				T _B /I _{rated}	t _E , 50 Hz, T1/T2	t _E , 50 Hz, T3	Order No.	kg
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾ 																				
4-pole: 1500 rpm at 50 Hz, temperature classes T1 and T2 with double rating plate (T1/T2 and T3)																				
17	T1,T2	180 M	1460	111	IE1	89.0	89.0	88.0	0.82	35.5	1.6	5.3	2.4	13	–	1MA6183-4BC	165	0.13	10	
20	T1,T2	180 L	1465	130	IE1	89.6	89.0	88.0	0.82	41 ²⁾	1.6	5.6	2.6	13	–	1MA6186-4BC	177	0.15	10	
27	T1,T2	200 L	1475	175	IE1	90.4	91.0	90.0	0.84	53	1.9	7.1	2.7	19	–	1MA6207-4BC	280	0.32	10	
33	T1,T2	225 S	1480	213	IE1	91.0	91.2	90.5	0.84	64 ²⁾	1.4	6.2	2.5	11	–	1MA6220-4BC	300	0.44	10	
40	T1,T2	225 M	1485	258	IE1	91.4	91.7	91.5	0.85	77 ²⁾	1.5	6.2	2.5	10	–	1MA6223-4BC	330	0.52	10	
50	T1,T2	250 M	1485	322	IE1	91.9	91.8	91.2	0.86	94	1.5	6.4	2.1	15	–	1MA6253-4BC	435	0.79	10	
68	T1,T2	280 S	1485	437	IE1	92.5	92.7	92.3	0.85	131	1.5	5.3	2.1	23	–	1MA6280-4BC	640	1.4	10	
80	T1,T2	280 M	1490	514	IE1	92.8	92.9	92.5	0.87	150 ²⁾	1.5	6.0	2.2	20	–	1MA6283-4BC	660	1.6	10	
100	T1,T2	315 S	1488	641	IE1	93.1	93.2	92.6	0.85	188	1.4	6.5	2.4	24	–	1MA6310-4BD	830	2.2	7	
120	T1,T2	315 M	1488	770	IE1	93.4	93.5	93.1	0.86	222 ²⁾	1.3	6.0	2.1	24	–	1MA6313-4BD	910	2.7	7	
135	T1,T2	315 L	1485	868	IE1	93.6	93.7	93.2	0.86	248	1.4	6.4	2.1	21	–	1MA6316-4BD	1060	3.2	7	
165	T1,T2	315 L	987	1061	IE1	93.8	93.9	93.5	0.87	305	1.5	6.3	2.3	17	–	1MA6317-4BD	1200	4.2	7	
Voltages			No. of poles	Motor type	Version	Order code(s)														
50 Hz	230 VΔ/400 VY	400 VΔ/690 VY	4	1MA6106 ... 313	Standard	1	–													
					Standard	6	–													
					Without additional charge	3	–													
					Without additional charge	5	–													
Further voltages	For additional charges, voltage codes, order codes and descriptions, see from Page 4/62.				9	...														
Note: For delta connection, overload protection with phase-failure protection must be provided.																				
Types of construction			No. of poles	Motor type	Version	Order code(s)														
Without flange	IM B3/6/7/8 ^{4) 5)}	IM V6 ^{4) 5)}	4	1MA6106 ... 313	Standard	0	–													
					With additional charge	1	–													
With flange	IM B5 ^{4) 6)}	IM V3 ^{4) 6)}	4	1MA6316 ... 317	With additional charge	9	M1E													
					With additional charge	1	–													
					With additional charge	1	–													
					With additional charge	9	M1G													
					With additional charge	4	–													
					With additional charge	6	–													
With standard flange	IM B14, IM V19 ⁴⁾	IM B35	4	1MA6106 ... 166	With additional charge	2	–													
					With additional charge	7	–													
					With additional charge	3	–													
					With additional charge	9	...													
Further types of construction	For additional charges, type of construction codes and descriptions, see from Page 4/68.				9	...														
Special versions			Options			Order code(s)														
			For additional charges, order codes and descriptions, see from Page 4/79.			1MA6 ... -... -Z ...+...+...+...														
Motor type 1MA6, 4-pole																				
106-4 107-4 113-4 130-4 133-4 163-4 166-4 183-4 186-4 207-4 220-4 223-4 253-4 280-4 283-4 310-4 313-4 316-4 317-4																				
Noise at rated output and 50 Hz – measuring-surface sound pressure level L _{pfA} , 50 Hz and sound power level L _{WA} , 50 Hz																				
L _{pfA} , 50 Hz	dB(A)		53	53	53	62	62	66	66	63	63	65	65	65	65	67	67	69	69	69
L _{WA} , 50 Hz	dB(A)		65	65	65	74	74	78	78	76	76	78	78	78	79	81	81	83	83	83

1) For motors 1MA6183 and 1MA6186-... with double rating plate, utilization in accordance with thermal class 155 (temperature class F).

2) For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").

3) Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).

4) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

5) If motors 1MA6183-... to 1MA6317-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

6) 1MA6220-... to 1MA6317-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

7) The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e

Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MA6



Selection and ordering data (continued)

P _{rated} , 50 Hz kW	Tempera- ture class	Frame size	Operating values at rated output											Cast-iron series		m _{IM B3} J	Torque class		
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS- φ _{rated} , 50 Hz, 4/4	I _r rated, 50 Hz, 400 V	T _{LR} / T _r rated	I _{LR} / I _r rated	T _B / T _r rated	t _E , 50 Hz, T1/T2	t _E , 50 Hz, T3			Order No.	kg
• Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾																			
6-pole: 1000 rpm at 50 Hz, temperature classes T1 to T3																			
1.3	T1,T2,T3	100 L	935	13	IE1	74.2	74.2	71.2	0.73	3.35	2.4	4.8	2.5	26	26	1MA6106-6BA	33	0.0063	16
1.9	T1,T2,T3	112 M	940	19	IE1	76.8	77.3	73.8	0.76	4.7	2.3	5.0	2.5	19	16	1MA6113-6BB	40	0.011	13
2.6	T1,T2,T3	132 S	945	26	IE1	78.8	79.3	76.8	0.75	6.5	1.8	4.4	2.4	21	18	1MA6130-6BB	50	0.015	13
3.5	T1,T2,T3	132 M	955	35	IE1	80.6	80.6	79.6	0.72	9.0	2.3	5.1	2.8	16	13	1MA6133-6BB	57	0.019	13
4.8	T1,T2,T3	132 M	950	48	IE1	82.4	82.4	81.4	0.76	11.4	2.4	5.6	2.8	13	11	1MA6134-6BB	66	0.025	13
6.6	T1,T2,T3	160 M	960	65	IE1	84.0	84.0	83.0	0.75	14.9	2.7	6.4	3.1	18	9	1MA6163-6BB	103	0.041	13
9.7	T1,T2,T3	160 L	965	96	IE1	85.9	85.9	84.9	0.76	21	2.8	7.7	2.2	15	8	1MA6166-6BB	122	0.055	13
13.2	T1,T2,T3	180 L	975	129	IE1	87.2	88.0	87.0	0.78	28.5	1.6	5.4	2.5	22	18	1MA6186-6BC	177	0.20	10
16.5	T1,T2,T3	200 L	980	161	IE1	88.1	89.0	88.0	0.81	34.5	1.7	5.4	2.6	23	19	1MA6206-6BC	220	0.29	10
20	T1,T2,T3	200 L	980	195	IE1	90.2	89.0	88.0	0.82	41	1.7	5.6	2.6	22	17	1MA6207-6BC	235	0.33	10
27	T1,T2,T3	225 M	975	263	IE1	89.9	90.6	90.3	0.82	54	1.6	5.6	2.5	15	15	1MA6223-6BC	305	0.57	10
33	T1,T2,T3	250 M	985	320	IE1	90.5	91.1	90.7	0.83	66	1.6	5.3	2.4	16	16	1MA6253-6BC	410	0.89	10
40	T1,T2,T3	280 S	990	386	IE1	91.1	91.3	90.8	0.85	77	1.5	6.2	2.6	13	13	1MA6280-6BC	540	1.3	10
46	T3	280 M	988	445	IE1	91.4	91.4	90.9	0.86	86	1.6	6.5	2.5	-	12	1MA6283-6BC	580	1.5	10
64	T3	315 S	991	617	IE1	92.2	92.2	91.5	0.84	124	1.7	6.2	2.5	-	14	1MA6310-6BC	770	2.4	10
76	T3	315 M	991	732	IE1	92.6	92.6	92.0	0.84	146	1.7	6.4	2.5	-	8	1MA6313-6BC	830	2.9	10
92	T3	315 L	991	887	IE1	93.0	93.1	92.6	0.85	172	1.7	6.5	2.5	-	9	1MA6316-6BC	970	3.5	10
110	T3	315 L	991	1060	IE1	93.3	93.5	92.9	0.84	210	1.7	6.8	2.5	-	6	1MA6317-6BC ¹⁾	1060	4.3	10
125	T3	315 L	991	1210	IE1	93.5	93.7	93.2	0.86	220	1.6	7.0	2.5	-	6	1MA6318-6BC ¹⁾	1100	4.9	10

Voltages		No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	6	1MA6106 ... 313	Standard	1 -
	400 VΔ/690 VY	6	1MA6106 ... 318	Standard	3 -
	500 VY	6	1MA6106 ... 318	Without additional charge	6 -
	500 VΔ	6	1MA6106 ... 318	Without additional charge	5 -
Further voltages		For additional charges, voltage codes, order codes and descriptions, see from Page 4/62.			9 ...
Note: For delta connection, overload protection with phase-failure protection must be provided.					
Types of construction		No. of poles	Motor type	Version	Order code(s)
Without flange	IM B3/6/7/8 ^{2) 3)}	6	1MA6106 ... 317	Standard	0 -
	IM V6 ^{2) 3)}	6	1MA6106 ... 313	With additional charge	1 -
		6	1MA6316 ... 318	With additional charge	9 M1E
With flange	IM B5 ^{2) 4)}	6	1MA6106 ... 313	With additional charge	1 -
	IM V3 ^{2) 4)}	6	1MA6106 ... 166	With additional charge	1 -
		6	1MA6186 ... 313	With additional charge	9 M1G
		6	1MA6106 ... 318	With additional charge	4 -
With standard flange	IM B35	6	1MA6106 ... 318	With additional charge	6 -
	IM B14, IM V19 ²⁾	6	1MA6106 ... 166	With additional charge	2 -
	IM B34	6	1MA6106 ... 166	With additional charge	7 -
With special flange	IM B14, IM V19 ²⁾	6	1MA6106 ... 166	With additional charge	3 -
Further types of construction		For additional charges, type of construction codes and descriptions, see from Page 4/68.			9 ...
Special versions					Order code(s)
Options		For additional charges, order codes and descriptions, see from Page 4/79.			1MA6 ... -Z ...+...+...+...

For noise values, see Page 4/35.

1) Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).
 2) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
 3) If motors 1MA6183-... to 1MA6318-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.
 4) 1MA6220-... to 1MA6318-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
 5) The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MA Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex e



Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MA6

4.2

Selection and ordering data (continued)

P _{rated} , 50 Hz	Tempera- ture class	Frame size	Operating values at rated output										Cast-iron series		m _{IM B3}	J	Torque class				
			n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	COS- φ _{rated} , 50 Hz, 4/4	I _r rated, 50 Hz, 400 V	T _{LR} /I _r rated	I _{LR} /I _r rated	T _B /I _r rated	t _E , 50 Hz, T1/T2				t _E , 50 Hz, T3	1MA6 – IE1 version for Zone 1 in type of protection Ex e	Order No.	kg
kW		FS	rpm	Nm	%	%	%	A				s	s								
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾ 																					
6-pole: 1000 rpm at 50 Hz, temperature classes T1 and T2 with double rating plate (T1/T2 and T3)																					
50	T1,T2	280 M	990	484	IE1	91.7	92.3	92.2	0.86	96	1.5	5.8	2.3	14	–	1MA6283-6BC	580	1.5	10		
68	T1,T2	315 S	990	656	IE1	92.4	92.6	92.0	0.85	131	1.6	5.9	2.3	22	–	1MA6310-6BC	770	2.4	10		
82	T1,T2	315 M	990	791	IE1	92.8	93.0	92.5	0.84	158	1.6	5.9	2.3	18	–	1MA6313-6BC	830	2.9	10		
98	T1,T2	315 L	990	945	IE1	93.1	93.4	93.0	0.85	185	1.6	6.1	2.3	20	–	1MA6316-6BC	970	3.5	10		
120	T1,T2	315 L	990	1160	IE1	93.4	93.7	93.4	0.85	230	1.6	6.2	2.3	16	–	1MA6317-6BC	1060	4.3	10		
135	T1,T2	315 L	990	1300	IE1	93.6	94.5	94.4	0.86	240	1.5	6.5	2.3	17	–	1MA6318-6BC	1100	4.9	10		
Voltages				No. of poles	Motor type	Version											Order code(s)				
50 Hz	230 VΔ/400 VY		6	1MA6106 ... 313	Standard		1	–													
	400 VΔ/690 VY		6	1MA6106 ... 318	Standard		6	–													
	500 VY		6	1MA6106 ... 318	Without additional charge		3	–													
	500 VΔ		6	1MA6106 ... 318	Without additional charge		5	–													
Further voltages			For additional charges, voltage codes, order codes and descriptions, see from Page 4/62.																		
Note: For delta connection, overload protection with phase-failure protection must be provided.																					
Types of construction				No. of poles	Motor type	Version											Order code(s)				
Without flange			IM B3/6/7/8 ^{2) 3)}		6	1MA6106 ... 317	Standard		0	–											
			IM V6 ^{2) 3)}		6	1MA6106 ... 313	With additional charge		1	–											
					6	1MA6316 ... 318	With additional charge		9	M1E											
With flange			IM B5 ^{2) 4)}		6	1MA6106 ... 313	With additional charge		1	–											
			IM V3 ^{2) 4)}		6	1MA6106 ... 166	With additional charge		1	–											
					6	1MA6186 ... 313	With additional charge		9	M1G											
			IM V1 with protective cover ^{2) 4) 5)}		6	1MA6106 ... 318	With additional charge		4	–											
			IM B35		6	1MA6106 ... 318	With additional charge		6	–											
With standard flange			IM B14, IM V19 ²⁾		6	1MA6106 ... 166	With additional charge		2	–											
			IM B34		6	1MA6106 ... 166	With additional charge		7	–											
With special flange			IM B14, IM V19 ²⁾		6	1MA6106 ... 166	With additional charge		3	–											
Further types of construction			For additional charges, type of construction codes and descriptions, see from Page 4/68.																		
Special versions			Order code(s)																		
Options			For additional charges, order codes and descriptions, see from Page 4/79.													1MA6 ... -Z	...+...+...+...				
Motor type 1MA6, 6-pole																					
			106-6	113-6	130-6	133-6	134-6	163-6	166-6	186-6	206-6	207-6	223-6	253-6	280-6	283-6	310-6	313-6	316-6	317-6	318-6
Noise at rated output and 50 Hz – measuring-surface sound pressure level L_{ptA}, 50 Hz and sound power level L_{WA}, 50 Hz																					
L _{ptA} , 50 Hz	dB(A)		47	52	63	63	63	66	66	66	66	66	66	60	60	60	63	63	63	63	
L _{WA} , 50 Hz	dB(A)		59	64	75	75	75	78	78	78	78	78	78	74	74	74	77	77	77	77	

¹⁾ Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ If motors 1MA6183-... to 1MA6318-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1MA6220-... to 1MA6318-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MJ Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex de

Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MJ6, 1MJ7



Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output											Cast-iron series 1MJ6/1MJ7 – IE1 version for Zone 1 in type of protection Ex de	m _{IM B3 J}				
			n _r rpm	T _r Nm	IE class	η _r 50 Hz, 4/4	η _r 50 Hz, 3/4	η _r 50 Hz, 2/4	COS- φ _r 50 Hz, 4/4	I _r 50 Hz, 400 V	T _{LR} / T _r	I _{LR} / I _r	T _B / T _r		L _{pfA} 50 Hz	L _{WA} 50 Hz	Order No.	kg	kgm ²
0.37	0.43	071 M	2750	1.3	–	65.8	64.8	60.8	0.81	1.00	2.3	4.3	2.3	52	63	1MJ6070-2CA	19	0.00035	16
0.55	0.63	071 M	2790	1.9	–	69.4	69.4	65.4	0.81	1.42	2.5	5.3	2.6	52	63	1MJ6073-2CA	20	0.00045	16
0.75	0.86	080 M	2840	2.5	IE1	72.1	72.1	68.1	0.86	1.75	2.4	6.3	2.3	56	67	1MJ6080-2CA	24	0.00085	16
1.1	1.27	080 M	2835	3.7	IE1	75.0	75.0	72.0	0.87	2.45	2.6	6.3	2.3	56	67	1MJ6083-2CA	24	0.0011	16
1.5	1.75	090 L	2850	5.0	IE1	77.2	77.7	74.2	0.84	3.35	2.5	6.7	2.5	62	74	1MJ6096-2CA	32	0.0015	16
2.2	2.55	090 L	2860	7.4	IE1	79.7	79.7	78.7	0.86	4.65	2.8	7.1	2.8	62	74	1MJ6097-2CA	35	0.0020	16
3	3.45	100 L	2885	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	7.7	3	62	74	1MJ6106-2CA	44	0.0038	16
4	4.55	112 M	2895	13	IE1	83.1	83.1	82.1	0.88	7.9	2.4	7.6	2.8	63	75	1MJ6113-2CA	56	0.0055	16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	6.3	2.6	68	80	1MJ6130-2CA	81	0.016	16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	2.6	68	80	1MJ6131-2CA	86	0.021	16
11	12.6	160 M	2930	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.3	2.6	70	82	1MJ6163-2CA	123	0.034	16
15	17.3	160 M	2930	49	IE1	88.7	88.7	87.7	0.91	27	2.2	7.2	3.1	70	82	1MJ6164-2CA	136	0.040	16
18.5	21.3	160 L	2930	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.7	3.3	70	82	1MJ6166-2CA	161	0.052	16
22	24.5	180 M	2940	71	IE1	89.9	89.9	88.9	0.88	40	2.5	6.9	3.2	70	83	1MJ6183-2CA	175	0.077	16
30	33.5	200 L	2940	97	IE1	90.7	90.7	89.7	0.89	54	2.4	6.5	2.8	71	84	1MJ6206-2CA	250	0.14	16
37	41.5	200 L	2945	120	IE1	91.2	91.2	90.2	0.90	65	2.4	7.7	2.8	71	84	1MJ6207-2CA	266	0.16	16
45	51	225 M	2955	145	IE1	91.7	91.8	91.5	0.90	79 ²⁾	2.3	6.9	2.7	71	84	1MJ7223-2CB	335	0.24	13
55	62	250 M	2965	177	IE1	92.1	91.9	91.1	0.90	96	2.1	6.9	2.8	75	89	1MJ7253-2CB	445	0.45	13
75	84	280 S	2975	241	IE1	92.7	92.6	91.7	0.90	130	1.9	7.0	2.7	77	91	1MJ7280-2CC	600	0.79	10
90	101	280 M	2975	289	IE1	93.0	92.8	92.3	0.91	153 ²⁾	2.0	7.0	2.7	77	91	1MJ7283-2CC	640	0.92	10
110	123	315 S	2980	353	IE1	93.3	92.6	91.7	0.90	189	1.8	7.0	2.8	79	93	1MJ7310-2CC	840	1.3	10
132	148	315 M	2980	423	IE1	93.5	92.7	91.7	0.90	225	1.9	7.0	2.8	79	93	1MJ7313-2CC	900	1.5	10

Voltages		No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version	Order code(s)	
50 Hz	230 VΔ/400 VY	2	1MJ6070 ... 207	1MJ7223 ... 313	Standard	1 –	
	400 VΔ/690 VY	2	1MJ6070 ... 207	1MJ7223 ... 313	Standard	6 –	
	500 VY	2	1MJ6070 ... 207	1MJ7223 ... 313	Without additional charge	3 –	
	500 VΔ	2	1MJ6106 ... 207	1MJ7223 ... 313	Without additional charge	5 –	
Further voltages ¹⁾		For additional charges, voltage codes, order codes and descriptions, see from Page 4/63.					9 ...
Types of construction		No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version	Order code(s)	
Without flange		IM B3/6/7/8, IM V6 ^{3) 4)}	2	1MJ6070 ... 207	1MJ7223 ... 313	Standard	0 –
With flange		IM B5 ^{3) 5)}	2	1MJ6070 ... 207	1MJ7223 ... 313	With additional charge	1 –
		IM V3 ^{3) 5)}	2	1MJ6070 ... 166	–	With additional charge	1 –
With standard flange		IM V1 with prot. cover ^{3) 5) 6)}	2	1MJ6070 ... 207	1MJ7223 ... 313	With additional charge	9 M1G
		IM B35	2	1MJ6070 ... 207	1MJ7223 ... 313	With additional charge	4 –
With special flange		IM B14, IM V19 ³⁾	2	1MJ6070 ... 207	–	With additional charge	6 –
		IM B34	2	1MJ6070 ... 097	–	With additional charge	2 –
Further types of constr.		IM B14, IM V19 ³⁾	2	1MJ6070 ... 083	–	With additional charge	7 –
		For additional charges, type of construction codes and descriptions, see from Page 4/70.					9 ...
Special versions		Motor type 1MJ6	Motor type 1MJ7	Order code(s)			
The 1MJ6/1MJ7 motors can also be ordered for use in type of protection Ex d/de (Zone 1), Dust Ex Zone 21, as well as Zone 22 with electrically conductive dust:							
Zone 1, 21, 22 (IP65)		Mains-fed operation	1MJ6070 ... 207	1MJ7223 ... 313	1MJ ... -Z	M76	
		Converter-fed operation (FC) with derating	1MJ6070 ... 207	1MJ7223 ... 313	1MJ ... -Z	M77	
Options		For additional charges, order codes and descriptions, see from Page 4/82.			1MJ ... -Z	...+...+...+...	

Other versions up to 900 kW can be ordered as 2-pole versions from Lohrer in the DN series under order numbers 1PS4

(Ex de IIB) and 1PS5 (Ex de IIC), as well as with higher outputs and different numbers of poles.

- Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/63. Operating values at rated output for 60 Hz are available on request.
- For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").
- The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
- If motors 1MJ6183-... to 1MJ7313-... (motor series 1MJ6 frame size 180 M and higher to motor series 1MJ7 frame size 315 M) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.
- 1MJ7223-... to 1MJ7313-... motors (motor series 1MJ7 frame sizes 225 M to 315 M) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MJ Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex de



Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MJ6, 1MJ7

Selection and ordering data (continued)

P _{rated} , 50 Hz		P _{rated} , 60 Hz		Frame size	Operating values at rated output										Cast-iron series		m _{IM B3} J		Torque class			
kW	kW	FS	rpm	Nm	n _{rated} , 50 Hz	T _{rated} , 50 Hz	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V	T _{LR} /T _{rated}	I _{LR} /I _{rated}	T _B /T _{rated}	L _{pfA} , 50 Hz	L _{WA} , 50 Hz	1MJ6/1MJ7 – IE1 version for Zone 1 in type of protection Ex de	kg	kgm ²	CL	
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																						
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾ , temperature classes T1 to T4																						
0.25	0.29	071 M	1325	1.8	–	61.9	60.4	55.9	0.77	1.8	3.2	1.8	44	55	1MJ6070-4CB	20	0.0060	13				
0.37	0.43	071 M	1375	2.5	–	65.8	64.8	60.8	0.74	1.1	2.0	3.6	2.0	44	55	1MJ6073-4CB	21	0.0080	13			
0.55	0.63	080 M	1395	3.8	–	69.4	69.4	65.4	0.79	1.45	2.3	4.7	2.4	47	58	1MJ6080-4CA	24	0.0015	16			
0.75	0.86	080 M	1395	5.1	IE1	72.1	72.1	68.1	0.79	1.9	2.5	5.0	2.6	47	58	1MJ6083-4CA	26	0.0018	16			
1.1	1.27	090 L	1410	7.5	IE1	75.0	75.0	72.0	0.80	2.65	2.1	4.9	2.5	48	60	1MJ6096-4CA	32	0.0028	16			
1.5	1.75	090 L	1420	10	IE1	77.2	77.7	74.2	0.80	3.5	2.2	5.8	2.6	48	60	1MJ6097-4CA	35	0.0035	16			
2.2	2.55	100 L	1420	15	IE1	79.7	79.7	78.7	0.80	5.0	2.2	6.0	2.6	53	65	1MJ6106-4CA	44	0.0048	16			
3	3.45	100 L	1415	20	IE1	81.5	81.5	80.5	0.82	6.5	2.7	6.4	3.0	53	65	1MJ6107-4CA	47	0.0058	16			
4	4.55	112 M	1435	27	IE1	83.1	83.1	82.1	0.82	8.5	2.8	7.2	3.0	53	65	1MJ6113-4CA	58	0.011	16			
5.5	6.3	132 S	1450	36	IE1	84.7	84.7	83.7	0.83	11.3	2.4	6.9	3.3	62	74	1MJ6130-4CA	76	0.018	16			
7.5	8.6	132 M	1450	49	IE1	86.0	86.0	85.0	0.84	15	2.7	7.7	3.3	62	74	1MJ6133-4CA	90	0.024	16			
11	12.6	160 M	1455	72	IE1	87.6	87.6	86.6	0.85	21.5	2.4	6.6	2.9	66	78	1MJ6163-4CA	128	0.040	16			
15	17.3	160 L	1455	98	IE1	88.7	88.7	87.7	0.85	28.5	2.8	7.4	3.2	66	78	1MJ6166-4CA	158	0.052	16			
18.5	21.3	180 M	1460	121	IE1	89.3	89.3	88.3	0.84	35.5	2.3	7.1	3.0	63	76	1MJ6183-4CA	175	0.13	16			
22	25.3	180 L	1460	144	IE1	89.9	89.9	88.9	0.85	41.5	2.3	7.1	3.0	63	76	1MJ6186-4CA	189	0.15	16			
30	34.5	200 L	1465	196	IE1	90.7	90.7	89.7	0.86	56	2.6	7.4	3.2	65	78	1MJ6207-4CA	247	0.24	16			
37	42.5	225 S	1475	240	IE1	91.2	91.2	90.5	0.86	68 ²⁾	2.5	7.0	3.1	65	78	1MJ7220-4CA	325	0.44	16			
45	52	225 M	1475	292	IE1	91.7	91.7	91.3	0.87	81 ²⁾	2.6	7.0	3.2	65	78	1MJ7223-4CA	355	0.52	16			
55	63	250 M	1480	355	IE1	92.1	91.3	89.4	0.87	99	2.6	6.7	2.5	65	79	1MJ7253-4CA	465	0.79	16			
75	86	280 S	1485	482	IE1	92.7	92.2	90.6	0.86	136	2.5	6.7	2.7	67	81	1MJ7280-4CA	630	1.4	16			
90	104	280 M	1485	579	IE1	93.0	93.0	92.5	0.86	162 ²⁾	2.5	6.8	2.8	67	81	1MJ7283-4CA	680	1.6	16			
110	127	315 S	1488	706	IE1	93.3	93.0	92.7	0.86	198	2.5	7.0	2.7	69	83	1MJ7310-4CA	870	2.2	16			
132	152	315 M	1488	847	IE1	93.5	93.5	93.0	0.86	235	2.7	7.5	3.0	69	83	1MJ7313-4CA	950	2.7	16			
Voltages		No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version	Order code(s)																
50 Hz	230 VΔ/400 VY	4	1MJ6070 ... 207	1MJ7220 ... 313	Standard	1 –																
	400 VΔ/690 VY	4	1MJ6070 ... 207	1MJ7220 ... 313	Standard	6 –																
	500 VY	4	1MJ6070 ... 207	1MJ7220 ... 313	Without additional charge	3 –																
	500 VΔ	4	1MJ6106 ... 207	1MJ7220 ... 313	Without additional charge	5 –																
Further voltages ¹⁾		For additional charges, voltage codes, order codes and descriptions, see from Page 4/63.																				
9		...																				
Types of construction		No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version	Order code(s)																
Without flange		IM B3/6/7/8, IM V6 ^{3) 4)}	4	1MJ6070 ... 207	1MJ7220 ... 313	Standard	0 –															
With flange		IM B5 ^{3) 5)}	4	1MJ6070 ... 207	1MJ7220 ... 313	With additional charge	1 –															
		IM V3 ^{3) 5)}	4	1MJ6070 ... 166	–	With additional charge	1 –															
		IM V1 with prot. cover ^{3) 5) 6)}	4	1MJ6183 ... 207	1MJ7220 ... 313	With additional charge	9 M1G															
		IM V1 with prot. cover ^{3) 5) 6)}	4	1MJ6070 ... 207	1MJ7220 ... 313	With additional charge	4 –															
		IM B35	4	1MJ6070 ... 207	1MJ7220 ... 313	With additional charge	6 –															
With standard flange		IM B14, IM V19 ³⁾	4	1MJ6070 ... 097	–	With additional charge	2 –															
		IM B34	4	1MJ6070 ... 097	–	With additional charge	7 –															
With special flange		IM B14, IM V19 ³⁾	4	1MJ6070 ... 083	–	With additional charge	3 –															
9		...																				
Special versions		Motor type 1MJ6		Motor type 1MJ7	Order code(s)																	
The 1MJ6/1MJ7 motors can also be ordered for use in type of protection Ex d/de (Zone 1), Dust Ex Zone 21, as well as Zone 22 with electrically conductive dust:																						
Zone 1, 21, 22 (IP65)		Mains-fed operation		1MJ6070 ... 207	1MJ7220 ... 313	1MJ -Z M76																
		Converter-fed operation (FC) with derating		1MJ6070 ... 207	1MJ7220 ... 313	1MJ -Z M77																
Options		For additional charges, order codes and descriptions, see from Page 4/82.																				
1MJ -Z ...+.+.+.+.+																						

Other versions up to 1400 kW can be ordered as 4-pole versions from Lohr in the DN series under order numbers 1PS4

(Ex de IIB) and 1PS5 (Ex de IIC), as well as with higher outputs and different numbers of poles.

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/63. Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").
³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

⁴⁾ If motors 1MJ6183... to 1MJ7313... (motor series 1MJ6 frame size 180 M and higher to motor series 1MJ7 frame size 315 M) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.
⁵⁾ 1MJ7220... to 1MJ7313... motors (motor series 1MJ7 frame sizes 225 S to 315 M) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
⁶⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MJ Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex de

Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MJ6, 1MJ7



Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output													Cast-iron series 1MJ6/1MJ7 – IE1 version for Zone 1 in type of protection Ex de	m _{IM B3 J}		
			n _r rpm	T _r Nm	IE class	η _r 50 Hz, 4/4	η _r 50 Hz, 3/4	η _r 50 Hz, 2/4	COS- φ _r 50 Hz, 4/4	I _r 50 Hz, 400 V	T _{LR} / T _r	I _{LR} / I _r	T _B / T _r	L _p fA, 50 Hz	L _{WA} , 50 Hz		Order No.	kg	kgm ²

• Cooling: Self-ventilated (IC 411)
• Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz¹⁾, temperature classes T1 to T4

0.25	0.29	071 M	870	2.7	–	60.5	59.0	54.5	0.70	0.85	2.2	3.1	2.2	39	50	1MJ6073-6CA	16	0.0090	16
0.37	0.43	080 M	910	3.9	–	64.1	63.1	59.1	0.71	1.17	1.9	3.3	2.0	40	51	1MJ6080-6CA	25	0.0015	16
0.55	0.63	080 M	900	5.8	–	65.0	64.0	60.0	0.74	1.65	2.0	3.5	2.1	40	51	1MJ6083-6CA	23	0.0018	16
0.75	0.86	090 L	910	8.0	IE1	70.0	70.0	66.0	0.76	2.05	2.2	3.9	2.3	43	55	1MJ6096-6CA	34	0.0028	16
1.1	1.27	090 L	905	12	IE1	72.9	72.9	69.9	0.75	2.9	2.4	4.3	2.4	43	55	1MJ6097-6CA	32	0.0035	16
1.5	1.75	100 L	930	15	IE1	75.2	75.2	72.2	0.73	3.95	2.3	4.5	2.5	47	59	1MJ6106-6CA	46	0.0063	16
2.2	2.55	112 M	945	22	IE1	77.7	78.2	75.2	0.76	5.4	2.2	4.8	2.5	52	64	1MJ6113-6CA	52	0.011	16
3	3.45	132 S	945	30	–	79.0	79.5	77.0	0.75	7.3	2.0	4.8	2.2	63	75	1MJ6130-6CA	78	0.015	16
4	4.55	132 M	945	40	–	80.0	80.0	79.0	0.76	9.5	2.0	5.0	2.4	63	75	1MJ6133-6CA	85	0.019	16
5.5	6.3	132 M	950	55	IE1	83.1	83.1	82.1	0.76	12.6	2.2	5.4	2.5	63	75	1MJ6134-6CA	92	0.025	16
7.5	8.6	160 M	960	75	IE1	84.7	84.7	83.7	0.72	17.8	2.1	5.1	2.5	66	78	1MJ6163-6CA	132	0.041	16
11	12.6	160 L	960	109	IE1	86.4	86.4	85.4	0.74	25	2.3	5.5	2.5	66	78	1MJ6166-6CA	171	0.049	16
15	18	180 L	970	148	IE1	87.7	87.7	86.7	0.83	29.5	2.6	6.3	2.4	66	78	1MJ6186-6CA	190	0.20	16
18.5	22	200 L	975	181	IE1	88.6	88.6	87.6	0.82	37	2.6	6.3	2.3	66	78	1MJ6206-6CA	240	0.29	16
22	26.5	200 L	975	215	IE1	89.2	89.2	88.2	0.83	43	2.5	5.7	2.3	66	78	1MJ6207-6CA	255	0.33	16
30	36	225 M	978	293	IE1	90.2	90.7	90.8	0.84	57 ²⁾	2.6	5.7	2.2	66	78	1MJ7223-6CA	330	0.57	16
37	44.5	250 M	980	361	IE1	90.8	91.3	91.4	0.84	70	2.6	6.0	2.1	60	74	1MJ7253-6CA	440	0.89	16
45	54	280 S	982	438	IE1	91.4	91.8	91.9	0.86	83	2.4	6.0	2.3	60	74	1MJ7280-6CA	560	1.3	16
55	66	280 M	984	534	IE1	91.9	92.1	91.9	0.86	100	2.5	6.2	2.4	60	74	1MJ7283-6CA	600	1.5	16
75	90	315 S	988	725	IE1	92.6	92.4	92.0	0.85	138	2.4	6.2	2.5	63	77	1MJ7310-6CA	810	2.4	16
90	108	315 M	988	870	IE1	92.9	92.9	92.7	0.85	165	2.4	6.2	2.5	63	77	1MJ7313-6CA	870	2.9	16

Voltages		No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version	Order code(s)
50 Hz	230 VΔ/400 VY	6	1MJ6073 ... 207	1MJ7223 ... 313	Standard	1
	400 VΔ/690 VY	6	1MJ6073 ... 207	1MJ7223 ... 313	Standard	6
	500 VY	6	1MJ6073 ... 207	1MJ7223 ... 313	Without additional charge	3
	500 VΔ	6	1MJ6106 ... 207	1MJ7223 ... 313	Without additional charge	5
Further voltages ¹⁾		For additional charges, voltage codes, order codes and descriptions, see from Page 4/63.				9

Types of construction		No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version	Order code(s)
Without flange	IM B3/6/7/8, IM V6 ^{3) 4)}	6	1MJ6073 ... 207	1MJ7223 ... 313	Standard	0
With flange	IM B5 ^{3) 5)}	6	1MJ6073 ... 207	1MJ7223 ... 313	With additional charge	1
	IM V3 ^{3) 5)}	6	1MJ6073 ... 166	–	With additional charge	1
	–	6	1MJ6186 ... 207	1MJ7223 ... 313	With additional charge	9
	IM V1 with prot. cover ^{3) 5) 6)}	6	1MJ6073 ... 207	1MJ7223 ... 313	With additional charge	4
With standard flange	IM B35	6	1MJ6073 ... 207	1MJ7223 ... 313	With additional charge	6
	IM B14, IM V19 ³⁾	6	1MJ6073 ... 097	–	With additional charge	2
	IM B34	6	1MJ6073 ... 097	–	With additional charge	7
With special flange	IM B14, IM V19 ³⁾	6	1MJ6073 ... 083	–	With additional charge	3
Further types of constr.		For additional charges, type of construction codes and descriptions, see from Page 4/70.				9

Special versions		Motor type 1MJ6	Motor type 1MJ7	Order code(s)
The 1MJ6/1MJ7 motors can also be ordered for use in type of protection Ex d/de (Zone 1), Dust Ex Zone 21, as well as Zone 22 with electrically conductive dust:				
Zone 1, 21, 22 (IP65)	Mains-fed operation	1MJ6073 ... 207	1MJ7223 ... 313	1MJ ... - ... -Z M76
	Converter-fed operation (FC) with derating	1MJ6073 ... 207	1MJ7223 ... 313	1MJ ... - ... -Z M77
Options		For additional charges, order codes and descriptions, see from Page 4/82.		1MJ ... - ... -Z ...+...+...+...

Other versions up to 1600 kW can be ordered as 6-pole versions from Loher in the DN series under order numbers 1PS4

(Ex de IIB) and 1PS5 (Ex de IIC), as well as with higher outputs and different numbers of poles.

- Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/63. Operating values at rated output for 60 Hz are available on request.
- For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").
- The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
- If motors 1MJ6183-... to 1MJ7313-... (motor series 1MJ6 frame size 180 M and higher to motor series 1MJ7 frame size 315 M) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.
- 1MJ7220-... to 1MJ7313-... motors (motor series 1MJ7 frame sizes 225 S to 315 M) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MJ Explosion-Proof Motors

Motors for Zone 1 in type of protection Ex de

IE1

**Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1MJ6, 1MJ7**
Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size	Operating values at rated output													Cast-iron series 1MJ6, 1MJ7 – IE1 version for Zone 1 in type of protection Ex de	m _{IM B3}	J	Torque class
			n _r rated, 50 Hz rpm	T _r rated, 50 Hz Nm	IE class	η _r rated, 50 Hz, 4/4	η _r rated, 50 Hz, 3/4	η _r rated, 50 Hz, 2/4	COS- φ _r rated, 50 Hz, 4/4	I _r rated, 50 Hz, 400 V A	T _{LR} / T _r rated	L _{LR} / I _r rated	T _p / T _r rated	L _p fA, 50 Hz dB(A)	L _{WA} , 50 Hz dB(A)				
• Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																			
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾ , temperature classes T1 to T4																			
0.37	0.43	090 L	655	5.3	–	58.8	57.3	52.8	0.76	1.2	1.4	2.8	1.7	41	53	1MJ6096-8CB	28	0.0025	13
0.55	0.63	090 L	655	7.9	–	62.9	61.9	56.9	0.76	1.66	1.5	2.9	1.7	41	53	1MJ6097-8CB	30	0.0035	13
0.75	0.86	100 L	665	11	–	62.9	61.9	56.9	0.77	2.25	1.6	3.5	1.8	45	57	1MJ6106-8CB	40	0.0053	13
1.1	1.27	100 L	685	16	–	72.0	72.0	68.0	0.74	3.0	1.8	3.9	2.0	45	57	1MJ6107-8CB	48	0.0070	13
1.5	1.75	112 M	700	21	–	72.1	72.1	68.1	0.73	4.1	1.8	4.4	2.0	49	61	1MJ6113-8CB	52	0.013	13
2.2	2.55	132 S	695	30	–	72.2	72.2	68.2	0.72	6.1	1.7	4.2	2.1	53	65	1MJ6130-8CB	78	0.014	13
3	3.45	132 M	700	40	–	74.2	74.2	71.2	0.72	8.1	1.9	4.4	2.2	53	65	1MJ6133-8CB	85	0.019	13
4	4.55	160 M	715	54	–	79.3	79.8	77.3	0.72	10.1	2.1	4.8	2.3	63	75	1MJ6163-8CB	119	0.035	13
5.5	6.3	160 M	710	74	–	81.4	81.4	80.4	0.72	13.6	2.3	5.1	3.1	63	75	1MJ6164-8CB	134	0.043	13
7.5	8.6	160 L	715	100	–	82.4	82.4	81.4	0.72	18.2	2.6	5.8	2.8	63	75	1MJ6166-8CB	159	0.062	13
11	13.2	180 L	725	145	–	85.5	85.5	84.5	0.70	26.5	2.0	5.0	2.2	60	73	1MJ6186-8CB	191	0.21	13
15	18	200 L	725	198	–	86.1	86.1	85.1	0.78	32	2.1	5.0	2.2	58	71	1MJ6207-8CB	263	0.37	13
18.5	22	225 S	725	244	–	87.5	88.4	88.6	0.80	38	2.1	5.0	2.2	58	71	1MJ7220-8CB	325	0.58	13
22	26.5	225 M	725	290	–	88.0	88.7	88.7	0.81	44.5	2.1	5.0	2.2	58	71	1MJ7223-8CB	350	0.66	13
30	36	250 M	730	392	–	89.7	90.5	91.0	0.81	60	2.1	5.0	2.1	57	71	1MJ7253-8CB	465	1.1	13
37	44.5	280 S	732	483	–	90.4	91.0	90.9	0.82	72	2.2	5.5	2.2	58	72	1MJ7280-8CB	570	1.4	13
45	54	280 M	734	585	–	91.0	91.6	91.6	0.83	86	2.2	5.5	2.2	58	72	1MJ7283-8CB	620	1.6	13
55	66	315 S	738	712	–	91.6	92.0	91.8	0.82	106	2.2	6.0	2.4	62	76	1MJ7310-8CB	780	2.3	13
75	90	315 M	738	970	–	92.3	92.4	92.2	0.82	143	2.3	6.2	2.5	62	76	1MJ7313-8CB	890	3.0	13
Voltages			No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version			Order code(s)										
50 Hz	230 VΔ/400 VY		8	1MJ6096 ... 207	1MJ7220 ... 313	Standard	1	–											
	400 VΔ/690 VY		8	1MJ6096 ... 207	1MJ7220 ... 313	Standard	6	–											
	500 VY		8	1MJ6096 ... 207	1MJ7220 ... 313	Without additional charge	3	–											
	500 VΔ		8	1MJ6106 ... 207	1MJ7220 ... 313	Without additional charge	5	–											
Further voltages ¹⁾			For additional charges, voltage codes, order codes and descriptions, see from Page 4/63.						9	...									
Types of construction			No. of poles	Motor type 1MJ6	Motor type 1MJ7	Version			Order code(s)										
Without flange			8	1MJ6096 ... 207	1MJ7220 ... 313	Standard	0	–											
With flange			8	1MJ6096 ... 207	1MJ7220 ... 313	With additional charge	1	–											
						With additional charge	1	–											
			8	1MJ6186 ... 207	1MJ7220 ... 313	With additional charge	9	M1G											
						With additional charge	4	–											
With standard flange			8	1MJ6096 ... 207	1MJ7220 ... 313	With additional charge	6	–											
						With additional charge	2	–											
			8	1MJ6096 ... 097	–	With additional charge	7	–											
						With additional charge	9	...											
Further types of constr.			For additional charges, type of construction codes and descriptions, see from Page 4/70.						9	...									
Special versions			Motor type 1MJ6	Motor type 1MJ7			Order code(s)												
The 1MJ6/1MJ7 motors can also be ordered for use in type of protection Ex d/de (Zone 1), Dust Ex Zone 21, as well as Zone 22 with electrically conductive dust:																			
Zone 1, 21, 22 (IP65)			Mains-fed operation	1MJ6096 ... 207	1MJ7223 ... 313	1MJ ... -Z	M76												
			Converter-fed operation (FC) with derating	1MJ6096 ... 207	1MJ7223 ... 313	1MJ ... -Z	M77												
Options			For additional charges, order codes and descriptions, see from Page 4/82.			1MJ ... -Z	...+...+...+...												

Other versions up to 1350 kW can be ordered as 8-pole versions from Loher in the DN series under order numbers 1PS4 (Ex de IIB) and 1PS5 (Ex de IIC), as well as with higher outputs and different numbers of poles.

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/63. Operating values at rated output for 60 Hz are available on request.

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ If motors 1MJ6183-... to 1MJ7313-... (motor series 1MJ6 frame size 180 M and higher to motor series 1MJ7 frame size 315 M) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1MJ7220-... to 1MJ7313-... motors (motor series 1MJ7 frame sizes 225 S to 315 M) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with Standard Efficiency IE1
Aluminum series 1LA7, 1LA5 with order code for explosion protection



Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output											Aluminum series 1LA7/1LA5 – IE1 version for Zone 2 or 21/22 in type of pro- tection Ex n or Ex tD	m _{IM B3 J}		Torque class CL
			n _r rpm	T _r Nm	IE class	η ₅₀ %	η ₇₅ %	η ₁₀₀ %	COS- φ _r	I _r A	T _{LR} /T _r	I _{LR} /I _r	T _B /T _r		L _{pfA} dB(A)	L _{WA} dB(A)	

- Cooling: Self-ventilated (IC 411)
 - Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
 - Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- 2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾

0.18	0.21	63 M	2820	0.61	–	62.0	60.5	56.0	0.82	0.51	2.0	3.7	2.2	49	60	1LA7060-2AA	3.6	0.00018	16
0.25	0.29	63 M	2830	0.84	–	63.0	62.0	57.0	0.82	0.70	2.0	4.0	2.2	49	60	1LA7063-2AA	4.0	0.00022	16
0.37	0.43	71 M	2740	1.3	–	66.0	65.0	61.0	0.82	0.99	2.3	3.5	2.3	52	63	1LA7070-2AA	5.0	0.00029	16
0.55	0.63	71 M	2800	1.9	–	71.0	71.0	67.0	0.82	1.36	2.5	4.3	2.6	52	63	1LA7073-2AA	6.0	0.00041	16
0.75	0.86	80 M	2855	2.5	IE1	72.1	72.1	68.1	0.86	1.75	2.3	5.6	2.4	56	67	1LA7080-2AA	9.0	0.00079	16
1.1	1.27	80 M	2845	3.7	IE1	75.0	75.0	72.0	0.87	2.45	2.6	6.1	2.7	56	67	1LA7083-2AA	10.7	0.0010	16
1.5	1.75	90 S	2860	5.0	IE1	77.2	77.7	74.2	0.85	3.3	2.4	5.5	2.7	62	74	1LA7090-2AA	13	0.0014	16
2.2	2.55	90 L	2880	7.3	IE1	79.7	79.7	78.7	0.85	4.7	2.8	6.3	3.1	62	74	1LA7096-2AA	15.7	0.0018	16
3	3.45	100 L	2890	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	6.8	3.0	62	74	1LA7106-2AA	21.5	0.0035	16
4	4.55	112 M	2905	13	IE1	83.1	83.1	82.1	0.86	8.1	2.6	7.2	2.9	63	75	1LA7113-2AA	28.5	0.0059	16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	5.9	2.8	68	80	1LA7130-2AA	39	0.015	16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	3.0	68	80	1LA7131-2AA	48	0.019	16
11	12.6	160 M	2940	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.5	2.9	70	82	1LA7163-2AA	68	0.034	16
15	17.3	160 M	2940	49	IE1	88.7	88.7	87.7	0.90	27	2.2	6.6	3.0	70	82	1LA7164-2AA	77	0.043	16
18.5	21.3	160 L	2940	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.0	3.1	70	82	1LA7166-2AA	86	0.051	16
22	24.5	180 M	2940	71	IE1	89.9	89.9	88.9	0.88	40 ²⁾	2.5	6.9	3.2	70	83	1LA5183-2AA	113	0.077	16
30	33.5	200 L	2945	97	IE1	90.7	90.7	89.7	0.89	54	2.4	7.2	2.8	71	84	1LA5206-2AA	159	0.14	16
37	41.5	200 L	2945	120	IE1	91.2	91.2	90.2	0.89	66 ²⁾	2.4	7.7	2.8	71	84	1LA5207-2AA	179	0.16	16
45	51	225 M	2960	145	IE1	91.7	91.7	90.7	0.89	80 ²⁾	2.8	7.7	3.4	71	84	1LA5223-2AA	209	0.20	16

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
50 Hz 230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	2	1LA7060 ... 166	1LA5183 ... 223	Standard	1
50 Hz 400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	2	1LA7060 ... 166	1LA5183 ... 223	Standard	6
50 Hz 500 VY		2	1LA7106 ... 166	1LA5183 ... 223	Without additional charge	3
500 VΔ		2	1LA7060 ... 166	1LA5183 ... 223	Without additional charge	5
Further voltages ¹⁾	For additional charges, code numbers, order codes and descriptions, see from Page 4/64.					9
...						
Types of construction		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Without flange	IM B3/6/7/8, IM V6 ³⁾	2	1LA7060 ... 166	1LA5183 ... 223	Standard	0
With flange	IM B5 ³⁾	2	1LA7060 ... 166	1LA5183 ... 223	With additional charge	1
	IM V3 ³⁾	2	1LA7060 ... 166	–	With additional charge	1
		2	–	1LA5183 ... 223	With additional charge	9
	IM V1 with prot. cover ^{3) 4) 5)}	2	1LA7060 ... 166	1LA5183 ... 223	With additional charge	4
	IM B35	2	1LA7060 ... 166	1LA5183 ... 223	With additional charge	6
With standard flange	IM B14, IM V19 ³⁾	2	1LA7060 ... 166	–	With additional charge	2
	IM B34	2	1LA7060 ... 166	–	With additional charge	7
With special flange	IM B14, IM V19 ³⁾	2	1LA7060 ... 166	–	With additional charge	3
Further types of constr.	For additional charges, code numbers, order codes and descriptions, see from Page 4/72.					9
...						
Design according to ATEX		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Zone 2	Mains-fed operation	2	1LA7060 ... 166	–	With add. charge	1LA ... -Z M72
	Converter-fed operation (FC)	2	1LA7060 ... 166	–	With add. charge	1LA ... -Z M73
Zone 21	Mains-fed operation	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... -Z M34
	Converter-fed operation (FC)	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... -Z M38
Zone 22	Mains-fed operation	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... -Z M35
	Converter-fed operation (FC)	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... -Z M39
Zone 2/22 (IP55)	Mains-fed operation	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... -Z M74
	Converter-fed operation (FC)	2	1LA7060 ... 166	1LA5183 ... 223	With add. charge	1LA ... -Z M75
Special versions						Order code(s)
Options	For additional charges, order codes and descriptions, see from Page 4/86.				1LA ... -Z	...+...+...+...

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/64. Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
⁴⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.
⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with Standard Efficiency IE1
Aluminum series 1LA7, 1LA5 with order code for explosion protection

Selection and ordering data (continued)

P _{Rated} 50 Hz kW	P _{Rated} 60 Hz kW	Frame size FS	Operating values at rated output											Aluminum series		m _{IM B3} kg	J kgm ²	Torque class CL		
			n _r rpm	T _r Nm	IE class	η _r 50 Hz, 4/4	η _r 50 Hz, 3/4	η _r 50 Hz, 2/4	cos-φ _r 50 Hz, 4/4	I _r A	T _{LR} /I _r	I _{LR} /I _r	T _B /I _r	L _{pfA} 50 Hz	L _{WA} 50 Hz				1LA7/1LA5 – IE1 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	Order No. with order code for Ex prot.
• Cooling: Self-ventilated (IC 411) • Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																				
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾																				
0.12	0.14	63 M	1350	0.85	–	53.6	52.1	47.6	0.75	0.43	1.9	2.8	2.0	42	53	1LA7060-4AB	–Z	3.6	0.00029	13
0.18	0.21	63 M	1350	1.3	–	58.3	56.8	52.3	0.77	0.58	1.9	3.0	1.9	42	53	1LA7063-4AB	–Z	4.0	0.00037	13
0.25	0.29	71 M	1350	1.8	–	61.9	60.4	55.9	0.78	0.75	1.9	3.0	1.9	44	55	1LA7070-4AB	–Z	4.8	0.00052	13
0.37	0.43	71 M	1370	2.6	–	65.8	64.8	60.8	0.78	1.04	1.9	3.3	2.1	44	55	1LA7073-4AB	–Z	6.3	0.00077	13
0.55	0.63	80 M	1395	3.8	–	69.4	69.4	65.4	0.81	1.41	2.2	3.9	2.2	47	58	1LA7080-4AA	–Z	8.8	0.0014	16
0.75	0.86	80 M	1395	5.1	IE1	72.1	72.1	68.1	0.80	1.88	2.3	4.2	2.3	47	58	1LA7083-4AA	–Z	10	0.0017	16
1.1	1.27	90 S	1415	7.4	IE1	75.0	75.0	72.0	0.81	2.6	2.3	4.6	2.4	48	60	1LA7090-4AA	–Z	12.9	0.0024	16
1.5	1.75	90 L	1420	10	IE1	77.2	77.7	74.2	0.81	3.45	2.4	5.3	2.6	48	60	1LA7096-4AA	–Z	15.5	0.0033	16
2.2	2.55	100 L	1420	15	IE1	79.7	79.7	78.7	0.82	4.85	2.5	5.6	2.8	53	65	1LA7106-4AA	–Z	21	0.0047	16
3	3.45	100 L	1420	20	IE1	81.5	81.5	80.5	0.82	6.5	2.7	5.6	3.0	53	65	1LA7107-4AA	–Z	24	0.0055	16
4	4.55	112 M	1440	27	IE1	83.1	83.1	82.1	0.83	8.4	2.7	6.0	3.0	53	65	1LA7113-4AA	–Z	30.5	0.012	16
5.5	6.3	132 S	1455	36	IE1	84.7	84.7	83.7	0.81	11.6	2.5	6.3	3.1	62	74	1LA7130-4AA	–Z	41	0.018	16
7.5	8.6	132 M	1455	49	IE1	86.0	86.0	85.0	0.82	15.4	2.7	6.7	3.2	62	74	1LA7133-4AA	–Z	49	0.023	16
11	12.6	160 M	1460	72	IE1	87.6	87.6	86.6	0.84	21.5	2.2	6.2	2.7	66	78	1LA7163-4AA	–Z	73	0.043	16
15	17.3	160 L	1460	98	IE1	88.7	88.7	87.7	0.84	29	2.6	6.5	3.8	66	78	1LA7166-4AA	–Z	85	0.055	16
18.5	21.3	180 M	1455	121	IE1	89.3	89.3	88.3	0.83	36 ²⁾	2.3	7.5	3.0	63	76	1LA5183-4AA	–Z	113	0.13	16
22	25.3	180 L	1455	144	IE1	89.9	89.9	88.9	0.84	42 ²⁾	2.3	7.5	3.0	63	76	1LA5186-4AA	–Z	123	0.15	16
30	34.5	200 L	1465	196	IE1	90.7	90.7	89.7	0.86	56	2.6	7.0	3.2	65	78	1LA5207-4AA	–Z	157	0.24	16
37	42.5	225 S	1470	240	IE1	91.2	91.2	90.2	0.87	67 ²⁾	2.8	7.0	3.2	65	78	1LA5220-4AA	–Z	206	0.32	16
45	52	225 M	1470	292	IE1	91.7	91.7	90.7	0.87	81 ²⁾	2.8	7.7	3.3	65	78	1LA5223-4AA	–Z	232	0.36	16
Voltages	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)															
50 Hz 230 VΔ/400 VY	4	1LA7060 ... 166	1LA5183 ... 223	Standard	1															
50 Hz 400 VΔ/690 VY	4	1LA7060 ... 166	1LA5183 ... 223	Standard	6															
50 Hz 500 VY	4	1LA7106 ... 166	1LA5183 ... 223	Without additional charge	3															
500 VΔ	4	1LA7060 ... 166	1LA5183 ... 223	Without additional charge	5															
Further voltages ¹⁾	For additional charges, code numbers, order codes and descriptions, see from Page 4/64.				9															
Types of construction	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)															
Without flange	4	1LA7060 ... 166	1LA5183 ... 223	Standard	0															
With flange	4	1LA7060 ... 166	1LA5183 ... 223	With additional charge	1															
	4	1LA7060 ... 166	–	With additional charge	1															
	4	–	1LA5183 ... 223	With additional charge	9															
With standard flange	4	1LA7060 ... 166	1LA5183 ... 223	With additional charge	4															
	4	1LA7060 ... 166	1LA5183 ... 223	With additional charge	6															
	4	1LA7060 ... 166	–	With additional charge	2															
With special flange	4	1LA7060 ... 166	–	With additional charge	7															
	4	1LA7060 ... 166	–	With additional charge	3															
	4	1LA7060 ... 166	–	With additional charge	9															
Further types of constr.	For additional charges, code numbers, order codes and descriptions, see from Page 4/72.				9															
Design according to ATEX	No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)															
Zone 2	Mains-fed operation	4	1LA7060 ... 166	–	With add. charge 1LA ... –Z	M72														
	Converter-fed operation (FC)	4	1LA7060 ... 166	–	With add. charge 1LA ... –Z	M73														
Zone 21	Mains-fed operation	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge 1LA ... –Z	M34														
	Converter-fed operation (FC)	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge 1LA ... –Z	M38														
Zone 22	Mains-fed operation	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge 1LA ... –Z	M35														
	Converter-fed operation (FC)	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge 1LA ... –Z	M39														
Zone 2/22 (IP55)	Mains-fed operation	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge 1LA ... –Z	M74														
	Converter-fed operation (FC)	4	1LA7060 ... 166	1LA5183 ... 223	With add. charge 1LA ... –Z	M75														
Special versions	Options				Order code(s)															
For additional charges, order codes and descriptions, see from Page 4/86.					1LA ... –Z ...+...+...+...															

4.4

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/64. Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

⁴⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with Standard Efficiency IE1
Aluminum series 1LA7, 1LA5 with order code for explosion protection



Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output										Aluminum series 1LA7/1LA5 – IE1 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	m _{IM B3} J		Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	COS- φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}		T _B / T _{rated}	L _{pfA} 50 Hz	

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾

0.09	0.10	63 M	850	1.0	–	50.2	48.7	44.2	0.66	0.39	1.8	2.0	1.9	39	50	1LA7063-6AB	4.0	0.00037	13
0.18	0.21	71 M	850	2.0	–	57.3	55.8	51.3	0.68	0.67	2.1	2.3	1.9	39	50	1LA7070-6AA	4.8	0.00055	16
0.25	0.29	71 M	860	2.8	–	61.9	60.4	55.9	0.76	0.77	2.2	2.7	2.0	39	50	1LA7073-6AA	5.8	0.00080	16
0.37	0.43	80 M	920	3.8	–	64.1	63.1	59.1	0.72	1.16	1.9	3.1	2.1	40	51	1LA7080-6AA	8.6	0.0014	16
0.55	0.63	80 M	910	5.8	–	67.5	67.0	63.5	0.74	1.59	2.1	3.4	2.2	40	51	1LA7083-6AA	9.8	0.0017	16
0.75	0.86	90 S	915	7.8	IE1	70.0	70.0	66.0	0.76	2.05	2.2	3.7	2.2	43	55	1LA7090-6AA	12.6	0.0024	16
1.1	1.27	90 L	915	11	IE1	72.9	72.9	69.9	0.77	2.85	2.3	3.8	2.3	43	55	1LA7096-6AA	15.7	0.0033	16
1.5	1.75	100 L	925	15	IE1	75.2	75.2	72.2	0.75	3.85	2.3	4.0	2.3	47	59	1LA7106-6AA	21	0.0047	16
2.2	2.55	112 M	940	22	IE1	77.7	78.2	75.2	0.78	5.2	2.2	4.6	2.5	52	64	1LA7113-6AA	26	0.0091	16
3	3.45	132 S	950	30	IE1	79.7	79.7	78.7	0.76	7.1	1.9	4.2	2.2	63	75	1LA7130-6AA	38	0.015	16
4	4.55	132 M	950	40	IE1	81.4	81.4	80.4	0.76	9.3	2.1	4.5	2.4	63	75	1LA7133-6AA	44	0.019	16
5.5	6.3	132 M	950	55	IE1	83.1	83.1	82.1	0.76	12.6	2.3	5.0	2.6	63	75	1LA7134-6AA	52	0.025	16
7.5	8.6	160 M	960	75	IE1	84.7	84.7	83.7	0.74	17.3	2.1	4.6	2.5	66	78	1LA7163-6AA	74	0.044	16
11	12.6	160 L	960	109	IE1	86.4	86.4	85.4	0.74	25	2.3	4.8	2.6	66	78	1LA7166-6AA	95	0.063	16
15	18	180 L	970	148	IE1	87.7	87.7	86.7	0.77	32	2.0	5.2	2.4	66	78	1LA5186-6AA	126	0.15	16
18.5	22	200 L	975	181	IE1	88.6	88.6	87.6	0.77	39	2.7	5.5	2.8	66	78	1LA5206-6AA	161	0.24	16
22	26.5	200 L	975	215	IE1	89.2	89.2	88.2	0.77	46	2.8	5.5	2.9	66	78	1LA5207-6AA	183	0.28	16
30	36	225 M	978	293	IE1	90.2	90.2	89.2	0.77	62 ²⁾	2.8	5.7	2.9	66	78	1LA5223-6AA	214	0.36	16

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6	1LA7063 ... 166	1LA5186 ... 223	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6	1LA7063 ... 166	1LA5186 ... 223	Standard	6	–
50 Hz	500 VY			6	1LA7106 ... 166	1LA5186 ... 223	Without additional charge	3	–
	500 VΔ			6	1LA7063 ... 166	1LA5186 ... 223	Without additional charge	5	–
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 4/64.					9	...	
Types of construction		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
Without flange		IM B3/6/7/8, IM V6 ³⁾	6	1LA7063 ... 166	1LA5186 ... 223	Standard	0	–	
With flange		IM B5 ³⁾	6	1LA7063 ... 166	1LA5186 ... 223	With additional charge	1	–	
		IM V3 ³⁾	6	1LA7063 ... 166	–	With additional charge	1	–	
		–	6	–	1LA5186 ... 223	With additional charge	9	M1G	
		IM V1 with prot. cover ^{3) 4) 5)}	6	1LA7063 ... 166	1LA5186 ... 223	With additional charge	4	–	
		IM B35	6	1LA7063 ... 166	1LA5186 ... 223	With additional charge	6	–	
With standard flange		IM B14, IM V19 ³⁾	6	1LA7063 ... 166	–	With additional charge	2	–	
		IM B34	6	1LA7063 ... 166	–	With additional charge	7	–	
With special flange		IM B14, IM V19 ³⁾	6	1LA7063 ... 166	–	With additional charge	3	–	
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/72.					9	...	
Design according to ATEX		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
Zone 2	Mains-fed operation	6	1LA7063 ... 166	–	With add. charge	1LA ... - ... -Z M72			
	Converter-fed operation (FC)	6	1LA7063 ... 166	–	With add. charge	1LA ... - ... -Z M73			
Zone 21	Mains-fed operation	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... -Z M34			
	Converter-fed operation (FC)	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... -Z M38			
Zone 22	Mains-fed operation	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... -Z M35			
	Converter-fed operation (FC)	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... -Z M39			
Zone 2/22 (IP55)	Mains-fed operation	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... -Z M74			
	Converter-fed operation (FC)	6	1LA7063 ... 166	1LA5183 ... 223	With add. charge	1LA ... - ... -Z M75			
Special versions						Order code(s)			
Options		For additional charges, order codes and descriptions, see from Page 4/86.					1LA ... - ... -Z ...+...+...+...		

- ¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/64. Operating values at rated output for 60 Hz are available on request.
- ²⁾ For connection to 230 V, parallel feeders are necessary.
- ³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

- ⁴⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.
- ⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with Standard Efficiency IE1
Aluminum series 1LA7, 1LA5 with order code for explosion protection

Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output											Aluminum series		m _{IM B3} J		Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos- φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}	L _{pfA} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)	Order No. with order code for Ex prot.	kg	

- Cooling: Self-ventilated (IC 411)
 - Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
 - Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- 8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾

0.09	0.104	71 M	630	1.4	-	51.0	49.5	45.0	0.68	0.38	1.9	2.2	1.7	36	47	1LA7070-8AB ■■■-Z	5.8	0.00080	13
0.12	0.14	71 M	645	1.8	-	51.0	49.5	45.0	0.64	0.53	2.2	2.2	2.0	36	47	1LA7073-8AB ■■■-Z	5.8	0.00080	13
0.18	0.21	80 M	675	2.5	-	49.0	47.5	43.0	0.68	0.78	1.7	2.3	1.9	41	52	1LA7080-8AB ■■■-Z	8.8	0.0014	13
0.25	0.29	80 M	685	3.5	-	53.0	51.5	47.0	0.64	1.06	2.0	2.6	2.2	41	52	1LA7083-8AB ■■■-Z	9.9	0.0017	13
0.37	0.43	90 S	675	5.2	-	61.0	59.5	55.0	0.75	1.17	1.6	2.9	1.8	41	53	1LA7090-8AB ■■■-Z	11	0.0023	13
0.55	0.63	90 L	675	7.8	-	64.0	63.0	59.0	0.76	1.63	1.7	3.0	1.9	41	53	1LA7096-8AB ■■■-Z	12.6	0.0031	13
0.75	0.86	100 L	680	11	-	64.0	63.0	59.0	0.76	2.25	1.6	3.0	1.9	45	57	1LA7106-8AB ■■■-Z	19	0.0051	13
1.1	1.27	100 L	680	15	-	70.0	70.0	66.0	0.76	3.0	1.8	3.3	2.1	45	57	1LA7107-8AB ■■■-Z	21.5	0.0063	13
1.5	1.75	112 M	705	20	-	72.1	72.1	68.1	0.76	3.95	1.8	3.7	2.1	49	61	1LA7113-8AB ■■■-Z	24	0.013	13
2.2	2.55	132 S	700	30	-	73.2	73.2	70.2	0.74	5.9	1.9	3.9	2.3	53	65	1LA7130-8AB ■■■-Z	38	0.014	13
3	3.45	132 M	700	41	-	75.2	75.2	72.2	0.74	7.8	2.1	4.1	2.4	53	65	1LA7133-8AB ■■■-Z	44	0.019	13
4	4.55	160 M	715	53	-	78.3	78.8	75.8	0.72	10.2	2.2	4.5	2.6	63	75	1LA7163-8AB ■■■-Z	64	0.036	13
5.5	6.3	160 M	710	74	-	81.9	81.9	80.9	0.73	13.3	2.3	4.7	2.7	63	75	1LA7164-8AB ■■■-Z	74	0.046	13
7.5	8.6	160 L	715	100	-	83.9	83.9	82.9	0.72	17.9	2.7	5.3	3.0	63	75	1LA7166-8AB ■■■-Z	94	0.064	13
11	13.2	180 L	725	145	-	85.5	85.5	84.5	0.75	25	2.0	5.0	2.2	60	73	1LA5186-8AB ■■■-Z	128	0.21	13
15	18	200 L	725	198	-	86.1	86.1	85.1	0.78	32	2.1	5.0	2.2	58	71	1LA5207-8AB ■■■-Z	176	0.37	13
18.5	22	225 S	725	244	-	87.8	87.8	86.8	0.79	38.5	2.1	4.5	2.2	58	71	1LA5220-8AB ■■■-Z	184	0.37	13
22	26.5	225 M	725	290	-	89.3	89.3	88.3	0.79	45	2.2	4.8	2.3	58	71	1LA5223-8AB ■■■-Z	214	0.45	13

Voltages		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	8	1LA7070 ... 166	1LA5186 ... 223	Standard	1	-
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	8	1LA7070 ... 166	1LA5186 ... 223	Standard	6	-
50 Hz	500 VY			8	1LA7106 ... 166	1LA5186 ... 223	Without additional charge	3	-
	500 VΔ			8	1LA7070 ... 166	1LA5186 ... 223	Without additional charge	5	-
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 4/64.						9	...

Types of construction		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)			
Without flange	IM B3/6/7/8, IM V6 ²⁾	8	1LA7070 ... 166	1LA5186 ... 223	Standard	0	-		
With flange	IM B5 ²⁾	8	1LA7070 ... 166	1LA5186 ... 223	With additional charge	1	-		
	IM V3 ²⁾	8	1LA7070 ... 166	-	With additional charge	1	-		
		8	-	1LA5186 ... 223	With additional charge	9	M1G		
	IM V1 with prot. cover ^{2) 3) 4)}	8	1LA7070 ... 166	1LA5186 ... 223	With additional charge	4	-		
	IM B35	8	1LA7070 ... 166	1LA5186 ... 223	With additional charge	6	-		
With standard flange	IM B14, IM V19 ²⁾	8	1LA7070 ... 166	-	With additional charge	2	-		
	IM B34	8	1LA7070 ... 166	-	With additional charge	7	-		
With special flange	IM B14, IM V19 ²⁾	8	1LA7070 ... 166	-	With additional charge	3	-		
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/72.						9	...

Design according to ATEX		No. of poles	Motor type 1LA7	Motor type 1LA5	Version	Order code(s)
Zone 2	Mains-fed operation	8	1LA7070 ... 166	-	With add. charge	1LA ■■■-Z M72
	Converter-fed operation (FC)	8	1LA7070 ... 166	-	With add. charge	1LA ■■■-Z M73
Zone 21	Mains-fed operation	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ■■■-Z M34
	Converter-fed operation (FC)	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ■■■-Z M38
Zone 22	Mains-fed operation	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ■■■-Z M35
	Converter-fed operation (FC)	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ■■■-Z M39
Zone 2/22 (IP55)	Mains-fed operation	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ■■■-Z M74
	Converter-fed operation (FC)	8	1LA7070 ... 166	1LA5186 ... 223	With add. charge	1LA ■■■-Z M75

Special versions		Order code(s)
Options	For additional charges, order codes and descriptions, see from Page 4/86.	1LA ■■■-Z ...+...+...+...

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/64. Operating values at rated output for 60 Hz are available on request.

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ 1LA5 motors can be supplied as an option with two additional eyebolts – specify order code K32.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1LA6, 1LG4 with order code for explosion protection



Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output												L _{pfa} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)	Cast-iron series 1LA6/1LG4 – IE1 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	m _{IM B3} kg	J kgm ²	Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	COS-φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} T _{rated}	I _{LR} I _{rated}	T _B T _{rated}							

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾

3	3.45	100 L	2890	9.9	IE1	81.5	81.5	80.5	0.85	6.3	2.8	6.8	3.0	62	74	1LA6106-2AA ■■-Z 34	0.0035	16
4	4.55	112 M	2905	13	IE1	83.1	83.1	82.1	0.86	8.1	2.6	7.2	2.9	63	75	1LA6113-2AA ■■-Z 43	0.0059	16
5.5	6.3	132 S	2925	18	IE1	84.7	84.7	83.7	0.89	10.5	2.0	5.9	2.8	68	80	1LA6130-2AA ■■-Z 53	0.015	16
7.5	8.6	132 S	2930	24	IE1	86.0	86.0	85.0	0.89	14.1	2.3	6.9	3.0	68	80	1LA6131-2AA ■■-Z 58	0.019	16
11	12.6	160 M	2940	36	IE1	87.6	87.6	86.6	0.88	20.5	2.1	6.5	2.9	70	82	1LA6163-2AA ■■-Z 96	0.034	16
15	17.3	160 M	2940	49	IE1	88.7	88.7	87.7	0.90	27	2.2	6.6	3.0	70	82	1LA6164-2AA ■■-Z 105	0.043	16
18.5	21.3	160 L	2940	60	IE1	89.3	89.3	88.3	0.91	33	2.4	7.0	3.1	70	82	1LA6166-2AA ■■-Z 115	0.051	16
22	24.5	180 M	2945	71	IE1	89.9	90.0	89.6	0.86	41 ²⁾	2.5	6.4	3.4	69	82	1LG4183-2AA ■■-Z 145	0.068	16
30	33.5	200 L	2950	97	IE1	90.7	90.8	90.1	0.88	54 ²⁾	2.3	6.5	3.0	73	86	1LG4206-2AA ■■-Z 205	0.13	16
37	41.5	200 L	2955	120	IE1	91.2	91.5	90.8	0.89	66 ²⁾	2.5	7.2	3.3	73	86	1LG4207-2AA ■■-Z 225	0.15	16
45	51	225 M	2960	145	IE1	91.7	92.0	91.6	0.88	80 ²⁾	2.4	6.7	3.1	73	86	1LG4223-2AA ■■-Z 285	0.22	16
55	62	250 M	2970	177	IE1	92.1	92.2	91.4	0.88	98	2.1	6.7	3.1	75	88	1LG4253-2AB ■■-Z 375	0.40	13
75	84	280 S	2975	241	IE1	92.7	92.5	91.5	0.87	134 ²⁾	2.5	7.5	3.1	74	87	1LG4280-2AB ■■-Z 500	0.72	13
90	101	280 M	2975	289	IE1	93.0	93.1	92.5	0.89	157 ²⁾	2.6	7.2	3.1	74	87	1LG4283-2AB ■■-Z 540	0.83	13
110	123	315 S	2982	352	IE1	93.3	92.9	91.5	0.87	196 ²⁾	2.4	7.2	3.1	79	92	1LG4310-2AB ■■-Z 720	1.2	13
132	148	315 M	2982	423	IE1	93.5	93.2	92.5	0.90	225 ²⁾	2.4	6.9	3.0	79	92	1LG4313-2AB ■■-Z 775	1.4	13
160	180	315 L	2982	512	IE1	93.8	93.6	93.1	0.91	270 ³⁾	2.4	7.0	3.0	79	92	1LG4316-2AB ■■-Z 900	1.6	13
200	224	315 L	2982	641	IE1	94.0	93.9	93.5	0.92	335 ³⁾	2.3	6.7	2.9	79	92	1LG4317-2AB ■■-Z 1015	2.1	13

Voltages		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2	1LA6106 ... 166	1LG4183 ... 313	Standard	1	-
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VA	2	1LA6106 ... 166	1LG4183 ... 317	Standard	6	-
50 Hz	500 VY			2	1LA6106 ... 166	1LG4183 ... 313	Without additional charge	3	-
	500 VA			2	1LA6106 ... 166	1LG4183 ... 317	Without additional charge	5	-
Further voltages ¹⁾	For additional charges, code numbers, order codes and descriptions, see from Page 4/65.						9	...	

Types of construction		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)		
Without flange	IM B3/6/7/8 ^{4) 5)}	2	1LA6106 ... 166	1LG4183 ... 317	Standard	0	-	
	IM V6 ^{4) 5)}	2	1LA6106 ... 166	1LG4183 ... 313	Standard	0	-	
		2	-	1LG4316 ... 317	With additional charge	9	M1E	
With flange	IM B5 ^{4) 6)}	2	1LA6106 ... 166	1LG4183 ... 317	With additional charge	1	-	
	IM V3 ^{4) 6)}	2	1LA6106 ... 166	-	With additional charge	1	-	
		2	-	1LG4183 ... 313	With additional charge	9	M1G	
	IM V1 with prot. cover ^{4) 6) 7)}	2	1LA6106 ... 166	1LG4183 ... 317 ⁸⁾	With additional charge	4	-	
With standard flange	IM B35	2	1LA6106 ... 166	1LG4183 ... 317	With additional charge	6	-	
	IM B14, IM V19 ⁴⁾	2	1LA6106 ... 166	-	With additional charge	2	-	
	IM B34	2	1LA6106 ... 166	-	With additional charge	7	-	
With special flange	IM B14, IM V19 ⁴⁾	2	1LA6106 ... 166	-	With additional charge	3	-	
Further types of constr.	For additional charges, code numbers, order codes and descriptions, see from Page 4/74.						9	...

Design according to ATEX		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)
Zone 2	Mains-fed operation	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L ■■-Z M72
	Converter-fed operation (FC)	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L ■■-Z M73
Zone 21	Mains-fed operation	2	-	1LG4183 ... 317	With add. charge	1L ■■-Z M34
	Converter-fed operation (FC)	2	-	1LG4183 ... 317	With add. charge	1L ■■-Z M38
Zone 22	Mains-fed operation	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L ■■-Z M35
	Converter-fed operation (FC)	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L ■■-Z M39
Zone 2/22 (IP55)	Mains-fed operation	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L ■■-Z M74
	Converter-fed operation (FC)	2	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L ■■-Z M75

Special versions		Order code(s)
Options	For additional charges, order codes and descriptions, see from Page 4/91.	1L ■■-Z+.....

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ For connection to 400 V, parallel feeders are necessary.

⁴⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts

from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

⁵⁾ If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁶⁾ 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁷⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1LA6, 1LG4 with order code for explosion protection

Selection and ordering data (continued)

Operating values at rated output																Cast-iron series 1LA6/1LG4 – IE1 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	m _{IM B3}	J	Torque class
P _{rated} 50 Hz	P _{rated} 60 Hz	Frame size	n _{rated} 50 Hz	T _{rated} 50 Hz	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	COS-φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} /T _{rated}	I _{LR} /I _{rated}	T _B /T _{rated}	L _{pFA} 50 Hz	L _{WA} 50 Hz				
kW	kW	FS	rpm	Nm	%	%	%	%	A					dB(A)	dB(A)				

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾

2.2	2.55	100 L	1420	15	IE1	79.7	79.7	78.7	0.82	4.85	2.5	5.6	2.8	53	68	1LA6106-4AA...-Z	33	0.0047	16
3	3.45	100 L	1420	20	IE1	81.5	81.5	80.5	0.82	6.5	2.7	5.6	3.0	53	68	1LA6107-4AA...-Z	36	0.0055	16
4	4.55	112 M	1440	27	IE1	83.1	83.1	82.1	0.83	8.4	2.7	6.0	3.0	53	65	1LA6113-4AA...-Z	45	0.012	16
5.5	6.3	132 S	1455	36	IE1	84.7	84.7	83.7	0.81	11.6	2.5	6.3	3.1	62	74	1LA6130-4AA...-Z	55	0.018	16
7.5	8.6	132 M	1455	49	IE1	86.0	86.0	85.0	0.82	15.4	2.7	6.7	3.2	62	74	1LA6133-4AA...-Z	62	0.023	16
11	12.6	160 M	1460	72	IE1	87.6	87.6	86.6	0.84	21.5	2.2	6.2	2.7	66	78	1LA6163-4AA...-Z	100	0.043	16
15	17.3	160 L	1460	98	IE1	88.7	88.7	87.7	0.84	29	2.6	6.5	3.8	66	78	1LA6166-4AA...-Z	114	0.055	16
18.5	21.3	180 M	1465	121	IE1	89.3	89.7	89.2	0.84	35.5 ²⁾	2.4	6.7	3.1	65	78	1LG4183-4AA...-Z	140	0.10	16
22	25.3	180 L	1465	143	IE1	89.9	90.4	90.0	0.84	42 ²⁾	2.5	6.9	3.2	65	78	1LG4186-4AA...-Z	155	0.12	16
30	34.5	200 L	1465	196	IE1	90.7	91.1	90.6	0.85	56 ²⁾	2.5	6.7	3.4	66	79	1LG4207-4AA...-Z	205	0.19	16
37	42.5	225 S	1475	240	IE1	91.2	91.6	91.0	0.85	69 ²⁾	2.3	6.7	3.1	66	79	1LG4220-4AA...-Z	265	0.37	16
45	52	225 M	1475	291	IE1	91.7	92.2	91.8	0.86	82 ²⁾	2.6	7.2	3.2	66	79	1LG4223-4AA...-Z	300	0.45	16
55	63	250 M	1480	355	IE1	92.1	92.4	92.0	0.85	101	2.4	6.1	2.8	67	80	1LG4253-4AA...-Z	390	0.69	16
75	86	280 S	1485	482	IE1	92.7	92.6	91.6	0.85	137 ²⁾	2.5	7.1	3.0	70	83	1LG4280-4AA...-Z	535	1.2	16
90	104	280 M	1485	579	IE1	93.0	92.9	92.0	0.86	162 ²⁾	2.5	7.4	3.0	70	83	1LG4283-4AA...-Z	580	1.4	16
110	127	315 S	1488	706	IE1	93.3	93.3	92.7	0.85	200 ²⁾	2.5	6.4	2.8	70	83	1LG4310-4AA...-Z	730	1.9	16
132	152	315 M	1488	847	IE1	93.5	93.5	92.9	0.85	240 ²⁾	2.7	6.8	2.9	70	83	1LG4313-4AA...-Z	810	2.3	16
160	184	315 L	1486	1028	IE1	93.8	93.9	93.5	0.86	285 ³⁾	2.7	6.8	2.8	70	83	1LG4316-4AA...-Z	955	2.9	16
200	230	315 L	1486	1285	IE1	94.0	94.2	94.0	0.88	350 ³⁾	2.6	6.5	2.8	70	83	1LG4317-4AA...-Z	1060	3.5	16

Voltages				No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	4	1LA6106 ... 166	1LG4183 ... 313	Standard	1
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	4	1LA6106 ... 166	1LG4183 ... 317	Standard	6
50 Hz	500 VY			4	1LA6106 ... 166	1LG4183 ... 313	Without additional charge	3
	500 VΔ			4	1LA6106 ... 166	1LG4183 ... 317	Without additional charge	5
Further voltages ¹⁾				For additional charges, code numbers, order codes and descriptions, see from Page 4/65.				9
Types of construction				No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)
Without flange		IM B3/6/7/8 ^{4) 5)}		4	1LA6106 ... 166	1LG4183 ... 317	Standard	0
		IM V6 ^{4) 5)}		4	1LA6106 ... 166	1LG4183 ... 317	Standard	0
				4	–	1LG4183 ... 317	Without additional charge	9
With flange		IM B5 ^{4) 6)}		4	1LA6106 ... 166	1LG4183 ... 317	With additional charge	1
		IM V3 ^{4) 6)}		4	1LA6106 ... 166	–	With additional charge	1
				4	–	1LG4183 ... 313	With additional charge	9
		IM V1 with prot. cover ^{4) 6) 7)}		4	1LA6106 ... 166	1LG4183 ... 317	With additional charge	4
		IM B35		4	1LA6106 ... 166	1LG4183 ... 317	With additional charge	6
With standard flange		IM B14, IM V19 ⁴⁾		4	1LA6106 ... 166	–	With additional charge	2
		IM B34		4	1LA6106 ... 166	–	With additional charge	7
With special flange		IM B14, IM V19 ⁴⁾		4	1LA6106 ... 166	–	With additional charge	3
Further types of constr.				For additional charges, code numbers, order codes and descriptions, see from Page 4/74.				9
Design according to ATEX				No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)
Zone 2	Mains-fed operation			4	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L.....-...-Z M72
	Converter-fed operation (FC)			4	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L.....-...-Z M73
Zone 21	Mains-fed operation			4	–	1LG4183 ... 317	With add. charge	1L.....-...-Z M34
	Converter-fed operation (FC)			4	–	1LG4183 ... 317	With add. charge	1L.....-...-Z M38
Zone 22	Mains-fed operation			4	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L.....-...-Z M35
	Converter-fed operation (FC)			4	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L.....-...-Z M39
Zone 2/22 (IP55)	Mains-fed operation			4	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L.....-...-Z M74
	Converter-fed operation (FC)			4	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L.....-...-Z M75
Special versions								Order code(s)
Options				For additional charges, order codes and descriptions, see from Page 4/91.				1L.....-...-Z ...+...+...+...

- 1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.
- 2) For connection to 230 V, parallel feeders are necessary.
- 3) For connection to 400 V, parallel feeders are necessary.
- 4) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
- 5) If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
- 6) 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- 7) The "Second shaft extension" option, order code K16 is not possible.

4.4

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1LA6, 1LG4 with order code for explosion protection

Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz kW	Frame size FS	Operating values at rated output										L _{WA} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)	Cast-iron series 1LA6/1LG4 – IE1 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	m _{IM B3} kg	J kgm ²	Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	cos-φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}						

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾

1.5	1.75	100 L	925	15	IE1	75.2	72.2	0.75	3.85	2.3	4.0	2.3	47	59	1LA6106-6AA	33	0.0047	16
2.2	2.55	112 M	940	22	IE1	77.7	78.2	0.78	5.2	2.2	4.6	2.5	52	64	1LA6113-6AA	40	0.0091	16
3	3.45	132 S	950	30	IE1	79.7	79.7	0.76	7.1	1.9	4.2	2.2	63	75	1LA6130-6AA	50	0.015	16
4	4.55	132 M	950	40	IE1	81.4	81.4	0.76	9.3	2.1	4.5	2.4	63	75	1LA6133-6AA	57	0.019	16
5.5	6.3	132 M	950	55	IE1	83.1	83.1	0.76	12.6	2.3	5.0	2.6	63	75	1LA6134-6AA	66	0.025	16
7.5	8.6	160 M	960	75	IE1	84.7	84.7	0.74	17.3	2.1	4.6	2.5	66	78	1LA6163-6AA	103	0.044	16
11	12.6	160 L	960	109	IE1	86.4	86.4	0.74	25	2.3	4.8	2.6	66	78	1LA6166-6AA	122	0.063	16
15	18	180 L	965	148	IE1	87.7	88.1	0.83	29.5	2.3	5.3	2.5	59	72	1LG4186-6AA	150	0.18	16
18.5	22	200 L	975	181	IE1	88.6	89.0	0.81	37	2.5	5.6	2.5	59	72	1LG4206-6AA	195	0.24	16
22	26.5	200 L	975	215	IE1	89.2	89.9	0.88	44	2.6	5.7	2.5	59	72	1LG4207-6AA	205	0.29	16
30	36	225 M	978	293	IE1	90.2	91.2	0.83	58 ²⁾	2.7	5.6	2.5	60	73	1LG4223-6AA	280	0.49	16
37	44.5	250 M	980	361	IE1	90.8	91.5	0.83	71	2.7	6.0	2.3	61	74	1LG4253-6AA	370	0.76	16
45	54	280 S	985	436	IE1	91.4	92.1	0.85	84	2.4	6.1	2.4	61	74	1LG4280-6AA	475	1.1	16
55	66	280 M	985	533	IE1	91.9	92.5	0.86	100	2.5	6.3	2.5	61	74	1LG4283-6AA	510	1.4	16
75	90	315 S	988	725	IE1	92.6	92.8	0.84	139	2.5	6.5	2.8	65	78	1LG4310-6AA	685	2.1	16
90	108	315 M	988	870	IE1	92.9	93.2	0.84	166 ²⁾	2.6	6.8	2.9	65	78	1LG4313-6AA	750	2.5	16
110	132	315 L	988	1063	IE1	93.3	93.6	0.86	198	2.5	6.8	2.9	65	78	1LG4316-6AA	990	3.2	16
132	158	315 L	988	1276	IE1	93.5	93.7	0.86	235	3.1	7.3	3.0	65	78	1LG4317-6AA	890	4.0	16
160	192	315 L	988	1547	IE1	93.8	93.9	0.86	285 ³⁾	3.0	7.5	3.0	65	78	1LG4318-6AA	1180	4.7	16

Voltages		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6	1LA6106 ... 166	1LG4183 ... 313	Standard	1	-
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6	1LA6106 ... 166	1LG4183 ... 318	Standard	6	-
50 Hz	500 VY			6	1LA6106 ... 166	1LG4183 ... 313	Without additional charge	3	-
	500 VΔ			6	1LA6106 ... 166	1LG4183 ... 318	Without additional charge	5	-
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 4/65.					9	...	

Types of construction		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)		
Without flange	IM B3/6/7/8 ^{4) 5)}	6	1LA6106 ... 166	1LG4183 ... 318	Standard	0	-	
	IM V6 ^{4) 5)}	6	1LA6106 ... 166	1LG4183 ... 318	Standard	0	-	
		6	-	1LG4183 ... 318	Without additional charge	9	M1E	
With flange	IM B5 ^{4) 6)}	6	1LA6106 ... 166	1LG4183 ... 318	With additional charge	1	-	
	IM V3 ^{4) 6)}	6	1LA6106 ... 166	-	With additional charge	1	-	
		6	-	1LG4183 ... 313	With additional charge	9	M1G	
	IM V1 with prot. cover ^{4) 6) 7)}	6	1LA6106 ... 166	1LG4183 ... 318	With additional charge	4	-	
With standard flange	IM B35	6	1LA6106 ... 166	1LG4183 ... 318	With additional charge	6	-	
	IM B14, IM V19 ⁴⁾	6	1LA6106 ... 166	-	With additional charge	2	-	
	IM B34	6	1LA6106 ... 166	-	With additional charge	7	-	
With special flange	IM B14, IM V19 ⁴⁾	6	1LA6106 ... 166	-	With additional charge	3	-	
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/74.					9	...

Design according to ATEX		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)
Zone 2	Mains-fed operation	6	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - - - - -Z M72
	Converter-fed operation (FC)	6	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - - - - -Z M73
Zone 21	Mains-fed operation	6	-	1LG4183 ... 317	With add. charge	1L - - - - -Z M34
	Converter-fed operation (FC)	6	-	1LG4183 ... 317	With add. charge	1L - - - - -Z M38
Zone 22	Mains-fed operation	6	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - - - - -Z M35
	Converter-fed operation (FC)	6	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - - - - -Z M39
Zone 2/22 (IP55)	Mains-fed operation	6	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - - - - -Z M74
	Converter-fed operation (FC)	6	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - - - - -Z M75

Special versions		Order code(s)
Options	For additional charges, order codes and descriptions, see from Page 4/91.	1L - - - - -Z + + +

- Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.
- For connection to 230 V, parallel feeders are necessary.
- For connection to 400 V, parallel feeders are necessary.
- The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
- If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
- 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- The "Second shaft extension" option, order code K16 is not possible.

4.4

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with Standard Efficiency IE1
Cast-iron series 1LA6, 1LG4 with order code for explosion protection

Selection and ordering data (continued)

P _{rated} 50 Hz kW	P _{rated} 60 Hz 1) kW	Frame size FS	Operating values at rated output												Cast-iron series 1LA6/1LG4 – IE1 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD Order No. with order code for Ex prot.	m _{IM B3} kg	J kgm ²	Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4 %	η _{rated} 50 Hz, 3/4 %	η _{rated} 50 Hz, 2/4 %	cos-φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pFA} 50 Hz dB(A)				

- Cooling: Self-ventilated (IC 411)
- Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) ¹⁾

8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																			
0.75	0.86	100 L	680	11	–	64.0	63.0	59.0	0.76	2.25	1.6	3.0	1.9	45	57	1LA6106-8AB	29	0.0051	13
1.1	1.27	100 L	680	15	–	70.0	70.0	66.0	0.76	3.0	1.8	3.3	2.1	45	57	1LA6107-8AB	32	0.0063	13
1.5	1.75	112 M	705	20	–	72.1	72.1	68.1	0.76	3.95	1.8	3.7	2.1	49	61	1LA6113-8AB	39	0.013	13
2.2	2.55	132 S	700	30	–	73.2	73.2	70.2	0.74	5.9	1.9	3.9	2.3	53	65	1LA6130-8AB	50	0.014	13
3	3.45	132 M	700	41	–	75.2	75.2	72.2	0.74	7.8	2.1	4.1	2.4	53	65	1LA6133-8AB	57	0.019	13
4	4.55	160 M	715	53	–	78.3	78.8	75.8	0.72	10.2	2.2	4.5	2.6	63	75	1LA6163-8AB	91	0.036	13
5.5	6.3	160 M	710	74	–	81.9	81.9	80.9	0.73	13.3	2.3	4.7	2.7	63	75	1LA6164-8AB	102	0.046	13
7.5	8.6	160 L	715	100	–	83.9	83.9	82.9	0.72	17.9	2.7	5.3	3.0	63	75	1LA6166-8AB	122	0.064	13
11	13.2	180 L	725	145	–	85.6	86.4	86.1	0.73	25.5	1.7	4.2	2.1	67	80	1LG4186-8AB	150	0.17	13
15	18	200 L	725	198	–	87.0	87.7	87.3	0.76	32.5	2.2	4.9	2.6	57	70	1LG4207-8AB	205	0.29	13
18.5	22	225 S	730	242	–	88.0	88.9	88.7	0.78	39	2.3	5.5	2.7	57	70	1LG4220-8AB	270	0.48	13
22	26.5	225 M	730	288	–	88.6	89.4	89.3	0.79	45.5	2.3	5.6	2.8	61	74	1LG4223-8AB	290	0.55	13
30	36	250 M	730	392	–	89.7	90.3	90.3	0.81	60	2.3	5.5	2.6	55	68	1LG4253-8AB	385	0.84	13
37	44.5	280 S	735	481	–	90.4	91.3	91.3	0.81	73	2.2	5.0	2.1	58	71	1LG4280-8AB	475	1.1	13
45	54	280 M	735	585	–	91.0	91.8	91.8	0.81	88	2.2	5.1	2.1	58	71	1LG4283-8AB	515	1.4	13
55	66	315 S	740	710	–	91.6	92.0	91.6	0.81	107	2.2	5.8	2.6	64	77	1LG4310-8AB	680	2.1	13
75	90	315 M	738	971	–	92.3	93.0	92.8	0.83	141	2.2	5.7	2.6	64	77	1LG4313-8AB	745	2.5	13
90	108	315 L	738	1165	–	92.6	93.2	93.2	0.83	169	2.2	5.8	2.7	64	77	1LG4316-8AB	865	3.1	13
110	132	315 L	738	1423	–	93.1	93.5	93.2	0.83	205	2.4	6.1	2.8	64	77	1LG4317-8AB	1020	3.9	13
132	158	315 L	738	1708	–	93.3	93.7	93.5	0.83	245	2.5	6.5	2.9	64	77	1LG4318-8AB	1100	4.5	13

Voltages		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	8	1LA6106 ... 166	1LG4183 ... 313	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	8	1LA6106 ... 166	1LG4183 ... 318	Standard	6	–
50 Hz	500 VY			8	1LA6106 ... 166	1LG4183 ... 313	Without additional charge	3	–
	500 VΔ			8	1LA6106 ... 166	1LG4183 ... 318	Without additional charge	5	–
Further voltages ¹⁾	For additional charges, code numbers, order codes and descriptions, see from Page 4/65.							9	...
Types of construction		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
Without flange	IM B3/6/7/8 ^{2) 3)}	8	1LA6106 ... 166	1LG4183 ... 318	Standard	0	–		
	IM V6 ^{2) 3)}	8	1LA6106 ... 166	1LG4183 ... 318	Standard	0	–		
With flange		8	–	1LG4183 ... 318	Without additional charge	9	M1E		
	IM B5 ^{2) 4)}	8	1LA6106 ... 166	1LG4183 ... 318	With additional charge	1	–		
	IM V3 ^{2) 4)}	8	1LA6106 ... 166	–	With additional charge	1	–		
		8	–	1LG4183 ... 313	With additional charge	9	M1G		
	IM V1 with prot. cover ^{2) 4) 5)}	8	1LA6106 ... 166	1LG4183 ... 318	With additional charge	4	–		
	IM B35	8	1LA6106 ... 166	1LG4183 ... 318	With additional charge	6	–		
With standard flange	IM B14, IM V19 ²⁾	8	1LA6106 ... 166	–	With additional charge	2	–		
	IM B34	8	1LA6106 ... 166	–	With additional charge	7	–		
With special flange	IM B14, IM V19 ²⁾	8	1LA6106 ... 166	–	With additional charge	3	–		
Further types of constr.	For additional charges, code numbers, order codes and descriptions, see from Page 4/74.							9	...
Design according to ATEX		No. of poles	Motor type 1LA6	Motor type 1LG4	Version	Order code(s)			
Zone 2	Mains-fed operation	8	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - . . . - Z M72			
	Converter-fed operation (FC)	8	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - . . . - Z M73			
Zone 21	Mains-fed operation	8	–	1LG4183 ... 317	With add. charge	1L - . . . - Z M34			
	Converter-fed operation (FC)	8	–	1LG4183 ... 317	With add. charge	1L - . . . - Z M38			
Zone 22	Mains-fed operation	8	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - . . . - Z M35			
	Converter-fed operation (FC)	8	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - . . . - Z M39			
Zone 2/22 (IP55)	Mains-fed operation	8	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - . . . - Z M74			
	Converter-fed operation (FC)	8	1LA6106 ... 166	1LG4183 ... 317	With add. charge	1L - . . . - Z M75			
Special versions						Order code(s)			
Options	For additional charges, order codes and descriptions, see from Page 4/91.							1L - . . . - Z . . . + . . . + . . . + . . .	

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ If 1LG4 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1LG4220 to 1LG4318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with High Efficiency IE2
Aluminum series 1LA9 with order code for explosion protection

IE2

Selection and ordering data

P _{rated} 50 Hz kW	P _{rated} 60 Hz ¹⁾ kW	Frame size FS	Operating values at rated output											Aluminum series 1LA9 – IE2 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	m _{IM B3 J}		Torque class CL
			n _{rated} 50 Hz rpm	T _{rated} 50 Hz Nm	IE class	η _{rated} 50 Hz, 4/4	η _{rated} 50 Hz, 3/4	η _{rated} 50 Hz, 2/4	COS- φ _{rated} 50 Hz, 4/4	I _{rated} 50 Hz, 400 V A	T _{LR} T _{rated}	I _{LR} I _{rated}	T _B T _{rated}		L _{pFA} 50 Hz dB(A)	L _{WA} 50 Hz dB(A)	

- Cooling: Self-ventilated (IC 411)
 - Efficiency: High Efficiency IE2 in accordance with IEC 60034-30
 - Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- 2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz¹⁾

0.18	0.21	63 M	2840	0.61	–	67.4	66.9	62.4	0.78	0.50	2.5	4.8	3.1	49	60	1LA9060-2KA ■■-Z	4.0	0.00022	16
0.25	0.29	63 M	2840	0.84	–	69.9	69.9	65.9	0.80	0.65	2.3	4.9	2.5	49	60	1LA9063-2KA ■■-Z	4.7	0.00026	16
0.37	0.43	71 M	2840	1.2	–	72.8	72.8	69.8	0.77	0.95	3.1	6.5	3.1	52	63	1LA9070-2KA ■■-Z	6.0	0.00041	16
0.55	0.63	71 M	2835	1.9	–	74.4	74.4	71.4	0.75	1.42	3.4	6.3	2.9	52	63	1LA9073-2KA ■■-Z	7.2	0.00050	16
0.75	0.86	80 M	2885	2.5	IE2	77.4	77.9	74.4	0.82	1.71	3.5	8.3	3.2	56	67	1LA9080-2KA ■■-Z	10.7	0.0010	16
1.1	1.27	80 M	2860	3.7	IE2	79.6	79.6	78.6	0.89	2.25	3.2	7.0	3.2	56	67	1LA9083-2KA ■■-Z	12.4	0.0013	16
1.5	1.75	90 S	2890	5.0	IE2	81.3	81.3	80.3	0.87	3.05	3.5	7.0	3.5	60	72	1LA9090-2KA ■■-Z	16.2	0.0018	16
2.2	2.55	90 L	2890	7.3	IE2	83.2	83.2	82.2	0.87	4.4	3.5	7.0	3.5	60	72	1LA9096-2KA ■■-Z	18.6	0.0022	16
3	3.45	100 L	2880	9.9	IE2	84.6	84.6	83.6	0.88	5.8	3.1	7.0	3.2	62	74	1LA9106-2KA ■■-Z	25	0.0044	16
4	4.55	112 M	2905	13	IE2	85.8	85.8	84.8	0.89	7.6	2.6	7.0	3.2	63	75	1LA9113-2KA ■■-Z	36.7	0.0077	16
5.5	6.3	132 S	2930	18	IE2	87.0	87.0	86.0	0.90	10.1	2.4	7.0	3.2	68	80	1LA9130-2KA ■■-Z	46.2	0.019	16
7.5	8.6	132 S	2930	24	IE2	88.1	88.1	87.1	0.92	13.4	2.5	7.0	3.1	68	80	1LA9131-2KA ■■-Z	58.1	0.024	16
11	12.6	160 M	2945	36	IE2	89.4	89.4	88.4	0.90	19.7	2.3	7.0	3.1	70	82	1LA9163-2KA ■■-Z	78.6	0.044	16
15	17.3	160 M	2945	49	IE2	90.3	90.3	89.3	0.90	26.5	2.3	7.0	3.1	70	82	1LA9164-2KA ■■-Z	87.6	0.051	16
18.5	21.3	160 L	2940	60	IE2	90.9	90.9	89.9	0.92	32	2.3	7.0	3.1	70	82	1LA9166-2KA ■■-Z	110.4	0.065	16
22	25.3	180 M	2945	71	IE2	91.3	91.3	90.3	0.89	39 ²⁾	2.5	7.2	3.3	70	83	1LA9183-2WA ■■-Z	131	0.090	16
30	34.5	200 L	2950	97	IE2	92.0	92.0	91.0	0.89	53	2.4	7.0	3.2	71	84	1LA9206-2WA ■■-Z	182	0.16	16
37	42.5	200 L	2950	120	IE2	92.5	92.5	91.0	0.89	65 ²⁾	2.4	7.0	3.3	71	84	1LA9207-2WA ■■-Z	211	0.20	16

Voltages	No. of poles	Motor type	Version	Order code(s)
50 Hz 230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	2	1LA9060 ... 207 Standard	1 –
50 Hz 400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	2	1LA9060 ... 207 Standard	6 –
50 Hz 500 VY		2	1LA9060 ... 207 Without additional charge	3 –
50 Hz 500 VΔ		2	1LA9106 ... 207 Without additional charge	5 –
Further voltages ¹⁾	For additional charges, code numbers, order codes and descriptions, see from Page 4/64.			9 ...

Types of construction	No. of poles	Motor type	Version	Order code(s)
Without flange	IM B3/6/7/8, IM V6 ³⁾	2	1LA9060 ... 207 Standard	0 –
With flange	IM B5 ³⁾	2	1LA9060 ... 207 With additional charge	1 –
	IM V3 ³⁾	2	1LA9060 ... 166 With additional charge	1 –
		2	1LA9183 ... 207 With additional charge	9 M1G
	IM V1 with protective cover ³⁾⁴⁾	2	1LA9060 ... 207 With additional charge	4 –
With standard flange	IM B35	2	1LA9060 ... 207 With additional charge	6 –
	IM B14, IM V19 ³⁾	2	1LA9060 ... 166 With additional charge	2 –
	IM B34	2	1LA9060 ... 166 With additional charge	7 –
With special flange	IM B14, IM V19 ³⁾	2	1LA9060 ... 166 With additional charge	3 –
Further types of construction	For additional charges, code numbers, order codes and descriptions, see from Page 4/72.			9 ...

Design according to ATEX	No. of poles	Motor type	Version	Order code(s)
Zone 2	Mains-fed operation	2	1LA9060 ... 166 With add. charge	1LA9 ... ■■-Z M72
	Converter-fed operation (FC)	2	1LA9060 ... 166 With add. charge	1LA9 ... ■■-Z M73
VIK (includes Zone 2) ⁵⁾	Mains-fed operation	2	1LA9060 ... 166 With add. charge	1LA9 ... ■■-Z K30
	Converter-fed operation (FC)	2	1LA9060 ... 166 On request	–
Zone 21	Mains-fed operation	2	1LA9060 ... 207 With add. charge	1LA9 ... ■■-Z M34
	Converter-fed operation (FC)	2	1LA9060 ... 207 With add. charge	1LA9 ... ■■-Z M38
Zone 22	Mains-fed operation	2	1LA9060 ... 207 With add. charge	1LA9 ... ■■-Z M35
	Converter-fed operation (FC)	2	1LA9060 ... 207 With add. charge	1LA9 ... ■■-Z M39
Zone 2/22 (IP55)	Mains-fed operation	2	1LA9060 ... 207 With add. charge	1LA9 ... ■■-Z M74
	Converter-fed operation (FC)	2	1LA9060 ... 207 With add. charge	1LA9 ... ■■-Z M75

Special versions	Options	Order code(s)
	For additional charges, order codes and descriptions, see from Page 4/86.	1LA9 ... ■■-Z ...+...+...+...

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/64. Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary.
³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing

upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
⁴⁾ The "Second shaft extension" option, order code K16 is not possible.
⁵⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with High Efficiency IE2
Aluminum series 1LA9 with order code for explosion protection

Selection and ordering data (continued)

P _{rated} , 50 Hz kW	P _{rated} , 60 Hz kW	Frame size FS	Operating values at rated output												Aluminum series 1LA9 – IE2 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	m _{IM B3 J}		Torque class CL
			n _{rated} , 50 Hz rpm	T _{rated} , 50 Hz Nm	IE class	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	η _{rated} , 50 Hz, 2/4	cos-φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 400 V A	T _{LR} , T _{rated}	I _{LR} , I _{rated}	T _B , T _{rated}	L _{pFA} , 50 Hz dB(A)		L _{WA} , 50 Hz dB(A)	Order No. with order code for Ex prot.	

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2 in accordance with IEC 60034-30
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾

0.12	0.14	63 M	1395	0.82	–	53.6	52.1	47.6	0.65	0.50	2.6	3.5	2.6	42	53	1LA9060-4KA ■■■-Z	4.0	0.00037	16
0.18	0.21	63 M	1395	1.2	–	72.1	72.1	68.1	0.68	0.53	2.8	3.6	2.7	42	53	1LA9063-4KA ■■■-Z	4.7	0.00045	16
0.25	0.29	71 M	1410	1.7	–	74.0	74.0	71.0	0.64	0.76	3.2	4.3	3.1	44	55	1LA9070-4KA ■■■-Z	6.0	0.00076	16
0.37	0.43	71 M	1385	2.6	–	76.1	76.1	73.1	0.73	0.96	2.8	4.2	3.0	44	55	1LA9073-4KA ■■■-Z	7.0	0.00095	16
0.55	0.63	80 M	1410	3.7	–	78.1	78.6	75.6	0.77	1.32	2.8	5.6	2.9	47	58	1LA9080-4KA ■■■-Z	10.7	0.0017	16
0.75	0.86	80 M	1400	5.1	IE2	79.6	79.6	78.6	0.75	1.81	3.6	5.8	3.5	47	58	1LA9083-4KA ■■■-Z	12.4	0.0024	16
1.1	1.27	90 S	1440	7.3	IE2	81.4	81.4	80.4	0.77	2.55	2.7	6.4	3.2	48	60	1LA9090-4KA ■■■-Z	16.2	0.0033	16
1.5	1.75	90 L	1440	9.9	IE2	82.8	82.8	81.8	0.77	3.4	3.1	6.7	3.4	48	60	1LA9096-4KA ■■■-Z	18.6	0.0040	16
2.2	2.55	100 L	1435	15	IE2	84.3	84.3	83.3	0.82	4.6	3.1	7.0	3.6	53	65	1LA9106-4KA ■■■-Z	26	0.0052	16
3	3.45	100 L	1435	20	IE2	85.5	85.5	84.5	0.81	6.3	3.5	7.0	3.9	53	65	1LA9107-4KA ■■■-Z	31	0.0077	16
4	4.55	112 M	1440	27	IE2	86.6	86.6	85.6	0.81	8.2	2.8	6.9	3.2	53	65	1LA9113-4KA ■■■-Z	38.7	0.014	16
5.5	6.3	132 S	1455	36	IE2	87.7	87.7	86.7	0.84	10.8	2.9	7.0	3.6	62	74	1LA9130-4KA ■■■-Z	49.2	0.023	16
7.5	8.6	132 M	1455	49	IE2	88.7	88.7	87.7	0.84	14.5	3.0	7.0	3.6	62	74	1LA9133-4KA ■■■-Z	62.1	0.029	16
11	12.6	160 M	1460	72	IE2	89.8	89.8	88.8	0.85	21	2.7	6.9	3.2	66	78	1LA9163-4KA ■■■-Z	86.6	0.055	16
15	17.3	160 L	1460	98	IE2	90.6	90.6	89.6	0.86	28	2.9	7.0	3.3	66	78	1LA9166-4KA ■■■-Z	115.4	0.072	16
18.5	21.3	180 M	1465	121	IE2	91.2	91.2	90.2	0.84	35 ²⁾	2.5	7.0	3.2	63	76	1LA9183-4WA ■■■-Z	126	0.15	16
22	25.3	180 L	1470	143	IE2	91.6	91.6	90.6	0.84	41.5 ²⁾	2.6	7.3	3.4	63	76	1LA9186-4WA ■■■-Z	146	0.19	16
30	34.5	200 L	1465	196	IE2	92.3	92.3	91.3	0.87	54	2.6	7.0	3.2	65	78	1LA9207-4WA ■■■-Z	196	0.32	16

Voltages		No. of poles	Motor type	Version	Order code(s)				
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	4	1LA9060 ... 207	Standard	1	–	
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	4	1LA9060 ... 207	Standard	6	–	
50 Hz	500 VY			4	1LA9060 ... 207	Without additional charge	3	–	
	500 VΔ			4	1LA9106 ... 207	Without additional charge	5	–	
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 4/64.						9	...

Types of construction		No. of poles	Motor type	Version	Order code(s)				
Without flange	IM B3/6/7/8, IM V6 ³⁾	4	1LA9060 ... 207	Standard	0 –				
With flange	IM B5 ³⁾	4	1LA9060 ... 207	With additional charge	1 –				
	IM V3 ³⁾	4	1LA9060 ... 166	With additional charge	1 –				
With standard flange		4	1LA9183 ... 207	With additional charge	9 M1G				
	IM V1 with protective cover ^{3) 4)}	4	1LA9060 ... 207	With additional charge	4 –				
	IM B35	4	1LA9060 ... 207	With additional charge	6 –				
	IM B14, IM V19 ³⁾	4	1LA9060 ... 166	With additional charge	2 –				
With special flange	IM B34	4	1LA9060 ... 166	With additional charge	7 –				
	IM B14, IM V19 ³⁾	4	1LA9060 ... 166	With additional charge	3 –				
Further types of construction		For additional charges, code numbers, order codes and descriptions, see from Page 4/72.						9	...

Design according to ATEX		No. of poles	Motor type	Version	Order code(s)
Zone 2	Mains-fed operation	4	1LA9060 ... 166	With add. charge	1LA9 ... ■■■-Z M72
	Converter-fed operation (FC)	4	1LA9060 ... 166	With add. charge	1LA9 ... ■■■-Z M73
VIK (includes Zone 2) ⁵⁾	Mains-fed operation	4	1LA9060 ... 166	With add. charge	1LA9 ... ■■■-Z K30
	Converter-fed operation (FC)	4	1LA9060 ... 166	On request	–
Zone 21	Mains-fed operation	4	1LA9060 ... 207	With add. charge	1LA9 ... ■■■-Z M34
	Converter-fed operation (FC)	4	1LA9060 ... 207	With add. charge	1LA9 ... ■■■-Z M38
Zone 22	Mains-fed operation	4	1LA9060 ... 207	With add. charge	1LA9 ... ■■■-Z M35
	Converter-fed operation (FC)	4	1LA9060 ... 207	With add. charge	1LA9 ... ■■■-Z M39
Zone 2/22 (IP55)	Mains-fed operation	4	1LA9060 ... 207	With add. charge	1LA9 ... ■■■-Z M74
	Converter-fed operation (FC)	4	1LA9060 ... 207	With add. charge	1LA9 ... ■■■-Z M75

Special versions		Order code(s)
Options	For additional charges, order codes and descriptions, see from Page 4/86.	1LA9 ... ■■■-Z ...+...+...+...

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/64. Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing

upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

⁵⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

4.4

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

**Self-ventilated motors with High Efficiency IE2
Aluminum series 1LA9 with order code for explosion protection**

IE2

Selection and ordering data (continued)

$P_{rated, 50 Hz}$ kW	$P_{rated, 60 Hz}$ kW	Frame size FS	Operating values at rated output													Aluminum series		$m_{IM B3}$ kg	J kgm ²	Torque class CL
			n_{rated} rpm	T_{rated} Nm	IE class	$\eta_{rated, 50 Hz, 4/4}$ %	$\eta_{rated, 50 Hz, 3/4}$ %	$\eta_{rated, 50 Hz, 2/4}$ %	COS- $\varphi_{rated, 50 Hz, 4/4}$	$I_{rated, 50 Hz, 400 V}$ A	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	L_{pFA} dB(A)	L_{WA} dB(A)	1LA9 – IE2 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	Order No. with order code for Ex prot.			
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Efficiency: High Efficiency IE2 in accordance with IEC 60034-30 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																				
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																				
0.75	0.86	90 S	925	7.7	IE2	75.9	75.9	72.9	0.72	1.98	2.5	4.4	2.5	43	55	1LA9090-6KA	16.9	0.0033	16	
1.1	1.27	90 L	940	11	IE2	78.1	78.6	75.6	0.70	2.9	3.2	5.7	3.2	43	55	1LA9096-6KA	19.6	0.0050	16	
1.5	1.75	100 L	935	15	IE2	79.8	79.8	78.8	0.73	3.7	3.4	6.2	3.4	47	59	1LA9106-6KA	26	0.0055	16	
2.2	2.55	112 M	955	22	IE2	81.8	81.8	80.8	0.70	5.5	2.7	6.2	3.0	52	64	1LA9113-6KA	38.7	0.014	16	
4	4.55	132 M	950	40	IE2	84.6	84.6	83.6	0.81	8.4	2.5	6.3	2.7	63	75	1LA9133-6KA	53.2	0.025	16	
5.5	6.3	132 M	960	55	IE2	86.0	86.0	85.0	0.77	12	3.3	7.3	3.6	63	75	1LA9134-6KA	66.1	0.034	16	
7.5	8.6	160 M	965	74	IE2	87.2	87.2	86.2	0.72	17.2	2.2	5.5	2.5	66	78	1LA9163-6KA	103.6	0.063	16	
11	12.6	160 L	960	109	IE2	88.7	88.7	87.7	0.78	23	2.9	6.9	3.2	66	78	1LA9166-6KA	113.4	0.072	16	
15	18	180 L	970	148	IE2	89.7	89.7	88.7	0.75	32	2.0	6.5	2.5	66	78	1LA9186-6WA	144	0.19	16	
18.5	22	200 L	975	181	IE2	90.4	90.4	89.4	0.77	38.5	2.5	6.2	2.5	66	78	1LA9206-6WA	183	0.28	16	
22	26.5	200 L	975	215	IE2	90.9	90.9	89.9	0.77	45.5	2.5	6.2	2.5	66	78	1LA9207-6WA	214	0.36	16	
Voltages					No. of poles	Motor type		Version				Order code(s)								
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	6	1LA9090 ... 207	Standard		1			-									
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	6	1LA9090 ... 207	Standard		6			-									
50 Hz	500 VY			6	1LA9090 ... 207	Without additional charge		3			-									
50 Hz	500 VΔ			6	1LA9106 ... 207	Without additional charge		5			-									
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 4/64.									9	...							
Types of construction			No. of poles	Motor type		Version				Order code(s)										
Without flange			6	1LA9090 ... 207		Standard		0			-									
With flange			6	1LA9090 ... 207		With additional charge		1			-									
			6	1LA9090 ... 166		With additional charge		1			-									
			6	1LA9186 ... 207		With additional charge		9			M1G									
			6	1LA9090 ... 207		With additional charge		4			-									
			6	1LA9090 ... 207		With additional charge		6			-									
With standard flange			6	1LA9090 ... 166		With additional charge		2			-									
			6	1LA9090 ... 166		With additional charge		7			-									
With special flange			6	1LA9090 ... 166		With additional charge		3			-									
Further types of construction			For additional charges, code numbers, order codes and descriptions, see from Page 4/72.									9	...							
Design according to ATEX			No. of poles	Motor type		Version				Order code(s)										
Zone 2			6	1LA9090 ... 166		With add. charge		1LA9 ...	M72											
			6	1LA9090 ... 166		With add. charge		1LA9 ...	M73											
VIK (includes Zone 2) ⁴⁾			6	1LA9090 ... 166		With add. charge		1LA9 ...	K30											
			6	1LA9090 ... 166		On request		-												
Zone 21			6	1LA9090 ... 207		With add. charge		1LA9 ...	M34											
			6	1LA9090 ... 207		With add. charge		1LA9 ...	M38											
Zone 22			6	1LA9090 ... 207		With add. charge		1LA9 ...	M35											
			6	1LA9090 ... 207		With add. charge		1LA9 ...	M39											
Zone 2/22 (IP55)			6	1LA9090 ... 207		With add. charge		1LA9 ...	M74											
			6	1LA9090 ... 207		With add. charge		1LA9 ...	M75											
Special versions										Order code(s)										
Options			For additional charges, order codes and descriptions, see from Page 4/86.							1LA9+...+...+...									

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/64. Operating values at rated output for 60 Hz are available on request.

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

⁴⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors NEMA Energy Efficient MG1 Table 12-11
Aluminum series 1LA9 with order code D42 and explosion protection

Selection and ordering data (continued)

Operating values at 60 Hz rated output													Aluminum series		$m_{IM\ B3}$ J		Torque class							
$P_{rated, 50\ Hz}$	$P_{rated, 60\ Hz}$	Frame size	$n_{rated, 60\ Hz}$	$T_{rated, 60\ Hz}$	EISA CC No. CC032A	$\eta_{rated, 60\ Hz, 4/4}$	$\eta_{rated, 60\ Hz, 3/4}$	$\eta_{rated, 60\ Hz, 2/4}$	cos-φ _{rated, 4/4}	$I_{rated, 60\ Hz, 460\ V}$	T_{LR}/I_{rated}	I_{FR}/I_{rated}	T_B/I_{rated}	$L_{pFA, 60\ Hz}$	$L_{WA, 60\ Hz}$	1LA9 – NEMA Energy Efficient version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	Order No. with order code for Ex prot.	kg	kgm ²	CL				
kW	hp	FS	rpm	Nm		%	%	%	A															
• Cooling: Self-ventilated (IC 411)																								
• Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11 and service factor (SF) 1.15																								
• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)																								
2-pole: 3600 rpm at 60 Hz																								
0.18	0.25	63 M	3460	0.5	–	69.5	69.5	65.5	0.78	0.42	2.8	4.9	3.3	53	64	1LA9060-2KA ■■■-Z D42+		4.0	0.00022	16				
0.25	0.33	63 M	3460	0.69	–	71.0	71.0	67.0	0.76	0.58	2.5	5.0	2.7	53	64	1LA9063-2KA ■■■-Z D42+		4.7	0.00026	16				
0.37	0.5	71 M	3445	1.0	–	71.0	71.0	67.0	0.75	0.87	3.3	7.5	3.4	56	67	1LA9070-2KA ■■■-Z D42+		6.0	0.00041	16				
0.56	0.75	71 M	3445	1.6	–	72.0	72.0	68.0	0.73	1.34	3.6	7.2	3.7	56	67	1LA9073-2KA ■■■-Z D42+		7.2	0.00050	16				
0.75	1	80 M	3485	2.1	–	75.5	75.5	72.5	0.82	1.52	4.4	9.6	4.4	60	71	1LA9080-2KA ■■■-Z D42+		10.7	0.0010	16				
1.1	1.5	80 M	3480	3.0	–	82.5	82.5	81.5	0.89	1.88	3.8	8.6	3.2	60	71	1LA9083-2KA ■■■-Z D42+		12.4	0.0013	16				
1.5	2	90 S	3510	4.1	✓	84.0	84.0	83.0	0.87	2.6	4.1	8.6	4.1	64	76	1LA9090-2KA ■■■-Z D42+		16.2	0.0018	16				
2.2	3	90 L	3500	6.0	✓	85.5	85.5	84.5	0.87	3.7	4.1	8.5	5.1	64	76	1LA9096-2KA ■■■-Z D42+		18.6	0.0022	16				
3	4	100 L	3510	8.2	–	87.5	87.5	86.5	0.87	4.95	3.4	8.6	3.7	66	78	1LA9106-2KA ■■■-Z D42+		25	0.0044	16				
4	5	112 M	3525	10	✓	88.5	88.5	87.5	0.88	6.0	2.8	9.2	4.0	67	79	1LA9113-2KA ■■■-Z D42+		36.7	0.0077	16				
5.5	7.5	132 S	3540	15	✓	88.5	88.5	87.5	0.90	8.7	2.7	8.5	3.8	72	84	1LA9130-2KA ■■■-Z D42+		46.2	0.019	16				
7.5	10	132 S	3540	20	✓	89.5	89.5	88.5	0.92	11.4	2.8	8.3	3.7	72	84	1LA9131-2KA ■■■-Z D42+		58.1	0.024	16				
11	15	160 M	3555	30	✓	90.2	90.2	89.2	0.90	17	2.5	8.5	3.7	74	86	1LA9163-2KA ■■■-Z D42+		78.6	0.044	16				
15	20	160 M	3555	40	✓	90.2	90.2	89.2	0.90	23	2.5	8.5	3.7	74	86	1LA9164-2KA ■■■-Z D42+		87.6	0.051	16				
18.5	25	160 L	3550	50	✓	91.0	91.0	90.0	0.92	27.5	2.4	8.5	3.5	74	86	1LA9166-2KA ■■■-Z D42+		110.4	0.065	16				
22	30	180 M	3545	59	✓	91.0	91.0	90.0	0.86	35.5	2.6	8.6	3.5	74	86	1LA9183-2WA ■■■-Z D42+		131	0.090	16				
30	40	200 L	3555	81	✓	91.7	91.7	90.7	0.88	46.5	2.5	8.4	3.6	75	88	1LA9206-2WA ■■■-Z D42+		182	0.16	16				
37	50	200 L	3555	99	✓	92.4	92.4	91.4	0.88	57	2.7	8.4	3.7	75	88	1LA9207-2WA ■■■-Z D42+		211	0.20	16				
Voltagess																								
50 Hz		230 VΔ/400 VY		60 Hz		460 VY		2		1LA9060 ... 207		Standard		1		–		–		–				
50 Hz		400 VΔ/690 VY		60 Hz		460 VΔ		2		1LA9060 ... 207		Standard		6		–		–		–				
50 Hz		500 VY						2		1LA9060 ... 207		Without additional charge		3		–		–		–				
		500 VΔ						2		1LA9106 ... 207		Without additional charge		5		–		–		–				
Further voltagess		For additional charges, code numbers, order codes and descriptions, see from Page 4/64.																			9		...	
Types of construction 1)																								
								No. of poles		Motor type		Version				Order code(s)								
With flange		IM B5 2)						2		1LA9060 ... 207		With additional charge		1		–		–		–				
		IM V3 2)						2		1LA9060 ... 166		With additional charge		1		–		–		–				
								2		1LA9183 ... 207		With additional charge		9		M1G								
		IM V1 with protective cover 2) 3)						2		1LA9060 ... 207		With additional charge		4		–		–		–				
With standard flange		IM B14, IM V19						2		1LA9060 ... 166		With additional charge		2		–		–		–				
With special flange		IM B14, IM V19 2)						2		1LA9060 ... 166		With additional charge		3		–		–		–				
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/72.																			9		...	
Design according to ATEX																								
								No. of poles		Motor type		Version				Order code(s)								
Zone 2		Mains-fed operation						2		1LA9060 ... 166		With add. charge		1LA9 ■■■-Z D42		+ M72								
		Converter-fed operation (FC)						2		1LA9060 ... 166		With add. charge		1LA9 ■■■-Z D42		+ M73								
VIK (includes Zone 2) 4)		Mains-fed operation						2		1LA9060 ... 166		With add. charge		1LA9 ■■■-Z D42		+ K30								
		Converter-fed operation (FC)						2		1LA9060 ... 166		On request				–								
Zone 21		Mains-fed operation						2		1LA9060 ... 207		With add. charge		1LA9 ■■■-Z D42		+ M34								
		Converter-fed operation (FC)						2		1LA9060 ... 207		With add. charge		1LA9 ■■■-Z D42		+ M38								
Zone 22		Mains-fed operation						2		1LA9060 ... 207		With add. charge		1LA9 ■■■-Z D42		+ M35								
		Converter-fed operation (FC)						2		1LA9060 ... 207		With add. charge		1LA9 ■■■-Z D42		+ M39								
Zone 2/22 (IP55)		Mains-fed operation						2		1LA9060 ... 207		With add. charge		1LA9 ■■■-Z D42		+ M74								
		Converter-fed operation (FC)						2		1LA9060 ... 207		With add. charge		1LA9 ■■■-Z D42		+ M75								
Special versions																								
Options		For additional charges, order codes and descriptions, see from Page 4/86.																			1LA9 ■■■-Z D42		+ . . . + . . . + . . .	

4.4

1) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

2) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

3) The "Second shaft extension" option, order code K16 is not possible.

4) If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors NEMA Energy Efficient MG1 Table 12-11
Aluminum series 1LA9 with order code D42 and explosion protection

Selection and ordering data (continued)

Operating values at 60 Hz rated output														Aluminum series			m _{IM B3} J		Torque class
P _{rated} , ed, 50 Hz	P _{rated} , ed, 60 Hz	Frame size	n _{rated} , ed, 60 Hz	T _{rated} , ed, 60 Hz	EISA CC No. CC032A	η _{rated} , 60 Hz, 4/4	η _{rated} , 60 Hz, 3/4	η _{rated} , 60 Hz, 2/4	COS-φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pfA} , 60 Hz	L _{WA} , 60 Hz	1LA9 – NEMA Energy Efficient version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	kg	kgm ²	
kW	hp	FS	rpm	Nm	%	%	%	%	A							Order No. with order code for Ex prot.			CL

- Cooling: Self-ventilated (IC 411)
- Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11 and service factor (SF) 1.15
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

4-pole: 1800 rpm at 60 Hz

0.12	0.16	63 M	1710	0.67	–	68.0	67.5	64.0	0.60	0.37	2.7	3.9	2.8	46	57	1LA9060-4KA	■ ■ ■ -Z D42+	4.0	0.00037	16
0.19	0.25	63 M	1705	1.1	–	64.0	63.0	59.0	0.63	0.59	3.0	3.6	3.1	46	57	1LA9063-4KA	■ ■ ■ -Z D42+	4.7	0.00045	16
0.25	0.33	71 M	1730	1.4	–	68.5	68.5	64.5	0.60	0.76	3.6	4.9	3.4	48	59	1LA9070-4KA	■ ■ ■ -Z D42+	6.0	0.00076	16
0.37	0.5	71 M	1725	2.0	–	69.0	69.0	65.0	0.68	0.99	3.3	4.9	3.4	48	59	1LA9073-4KA	■ ■ ■ -Z D42+	7.0	0.0010	16
0.56	0.75	80 M	1725	3.1	–	74.3	74.3	71.3	0.71	1.33	3.4	6.8	3.6	51	62	1LA9080-4KA	■ ■ ■ -Z D42+	10.7	0.0017	16
0.75	1	80 M	1720	4.2	–	82.5	82.5	81.5	0.72	1.58	4.0	7.3	3.9	51	62	1LA9083-4KA	■ ■ ■ -Z D42+	12.4	0.0024	16
1.1	1.5	90 S	1755	6.0	✓	84.0	84.0	83.0	0.76	2.15	3.1	7.7	3.9	52	64	1LA9090-4KA	■ ■ ■ -Z D42+	16.2	0.0033	16
1.5	2	90 L	1755	8.2	✓	84.0	84.0	83.0	0.76	2.95	3.6	8.1	4.2	52	64	1LA9096-4KA	■ ■ ■ -Z D42+	18.6	0.0040	16
2.2	3	100 L	1750	12	–	87.5	87.5	86.5	0.79	4.0	3.4	8.4	4.3	57	69	1LA9106-4KA	■ ■ ■ -Z D42+	26	0.0052	16
3	4	100 L	1750	16	–	87.5	87.5	86.5	0.79	5.4	3.8	8.7	4.6	57	69	1LA9107-4KA	■ ■ ■ -Z D42+	31	0.0077	16
4	5	112 M	1755	20	✓	87.5	87.5	86.5	0.79	6.7	3.2	8.6	3.9	57	69	1LA9113-4KA	■ ■ ■ -Z D42+	38.7	0.014	16
5.5	7.5	132 S	1760	30	✓	89.5	89.5	88.5	0.81	9.5	3.2	8.7	4.1	66	78	1LA9130-4KA	■ ■ ■ -Z D42+	49.2	0.023	16
7.5	10	132 M	1760	41	✓	89.5	89.5	88.5	0.82	12.8	3.4	8.7	4.1	66	78	1LA9133-4KA	■ ■ ■ -Z D42+	62.1	0.029	16
11	15	160 M	1765	60	✓	91.0	91.0	90.0	0.85	17.8	2.7	8.1	3.2	70	82	1LA9163-4KA	■ ■ ■ -Z D42+	86.6	0.055	16
15	20	160 L	1765	81	✓	91.0	91.0	90.0	0.85	24.5	2.8	8.5	3.5	70	82	1LA9166-4KA	■ ■ ■ -Z D42+	115.4	0.072	16
18.5	25	180 M	1770	100	✓	92.4	92.4	91.4	0.83	30.5	2.8	8.4	3.6	67	80	1LA9183-4WA	■ ■ ■ -Z D42+	126	0.15	16
22	30	180 L	1775	118	✓	92.4	92.4	91.4	0.83	36	3.1	8.8	3.9	67	80	1LA9186-4WA	■ ■ ■ -Z D42+	146	0.19	16
30	40	200 L	1770	162	✓	93.0	93.0	91.5	0.86	47	3.0	8.3	3.6	69	82	1LA9207-4WA	■ ■ ■ -Z D42+	196	0.32	16

Voltages		No. of poles	Motor type	Version	Order code(s)			
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	4	1LA9060 ... 207	Standard	1	–
50 Hz	400 VΔ/690 VY	60 Hz	460 VΔ	4	1LA9060 ... 207	Standard	6	–
50 Hz	500 VY			4	1LA9060 ... 207	Without additional charge	3	–
	500 VΔ			4	1LA9106 ... 207	Without additional charge	5	–
Further voltages		For additional charges, code numbers, order codes and descriptions, see from Page 4/64.				9	...	
Types of construction ¹⁾		No. of poles	Motor type	Version	Order code(s)			
With flange	IM B5 ²⁾	4	1LA9060 ... 207	With additional charge	1	–		
	IM V3 ²⁾	4	1LA9060 ... 166	With additional charge	1	–		
		4	1LA9183 ... 207	With additional charge	9	M1G		
	IM V1 with prot. cover ^{2) 3)}	4	1LA9060 ... 207	With additional charge	4	–		
With standard flange	IM B14, IM V19 ²⁾	4	1LA9060 ... 166	With additional charge	2	–		
With special flange	IM B14, IM V19 ²⁾	4	1LA9060 ... 166	With additional charge	3	–		
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/72.				9	...	
Design according to ATEX		No. of poles	Motor type	Version	Order code(s)			
Zone 2	Mains-fed operation	4	1LA9060 ... 166	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M72		
	Converter-fed operation (FC)	4	1LA9060 ... 166	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M73		
VIK (includes Zone 2) ⁴⁾	Mains-fed operation	4	1LA9060 ... 166	With add. charge	1LA9 ■ ■ ■ -Z D42	+ K30		
	Converter-fed operation (FC)	4	1LA9060 ... 166	On request		–		
Zone 21	Mains-fed operation	4	1LA9060 ... 207	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M34		
	Converter-fed operation (FC)	4	1LA9060 ... 207	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M38		
Zone 22	Mains-fed operation	4	1LA9060 ... 207	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M35		
	Converter-fed operation (FC)	4	1LA9060 ... 207	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M39		
Zone 2/22 (IP55)	Mains-fed operation	4	1LA9060 ... 207	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M74		
	Converter-fed operation (FC)	4	1LA9060 ... 207	With add. charge	1LA9 ■ ■ ■ -Z D42	+ M75		
Special versions						Order code(s)		
Options		For additional charges, order codes and descriptions, see from Page 4/86.				1LA9 ■ ■ ■ -Z D42	+ . . . + . . . + . . .	

¹⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.
²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ The "Second shaft extension" option, order code K16 is not possible.
⁴⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

4.4

SIMOTICS XP 1LA Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors NEMA Energy Efficient MG1 Table 12-11
Aluminum series 1LA9 with order code D42 and explosion protection

Selection and ordering data (continued)

Operating values at 60 Hz rated output															Aluminum series		m _M B3 J		Torque class	
P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{rated} , 60 Hz, 4/4	η _{rated} , 60 Hz, 3/4	η _{rated} , 60 Hz, 2/4	COS-φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _{pFA} , 60 Hz	L _{WA} , 60 Hz	1LA9 – NEMA Energy Efficient version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	Order No. with order code for Ex prot.	kg	kgm ²	CL
kW	hp	FS	rpm	Nm		%	%	%		A										
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11 and service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																				
6-pole: 1200 rpm at 60 Hz																				
0.75	1	90 S	1140	6.3	✓	80.0	80.0	79.0	0.66	1.78	3.0	5.6	3.0	47	59	1LA9090-6KA ■■-Z D42+	16.9	0.0033	16	
1.1	1.5	90 L	1150	9.1	✓	85.5	85.5	84.5	0.64	2.5	3.7	6.4	3.7	47	59	1LA9096-6KA ■■-Z D42+	19.6	0.0050	16	
1.5	2	100 L	1150	12	–	86.5	86.5	85.5	0.70	3.1	3.5	7.2	3.8	51	63	1LA9106-6KA ■■-Z D42+	26	0.0055	16	
2.2	3	112 M	1160	18	✓	87.5	87.5	86.5	0.66	4.8	2.9	7.5	3.7	56	68	1LA9113-6KA ■■-Z D42+	38.7	0.014	16	
4	5	132 M	1160	30	✓	87.5	87.5	86.5	0.77	6.9	3.0	7.9	3.6	67	79	1LA9133-6KA ■■-Z D42+	53.2	0.025	16	
5.5	7.5	132 M	1160	45	✓	89.5	89.5	88.5	0.73	10.6	3.7	8.4	4.3	67	79	1LA9134-6KA ■■-Z D42+	66.1	0.034	16	
7.5	10	160 M	1165	61	✓	89.5	89.5	88.5	0.70	15	2.4	6.4	2.8	70	82	1LA9163-6KA ■■-Z D42+	103.6	0.063	16	
11	15	160 L	1165	90	✓	90.2	90.2	89.2	0.77	19.9	3.1	8.3	3.8	70	82	1LA9166-6KA ■■-Z D42+	113.4	0.072	16	
15	20	180 L	1175	122	✓	90.2	90.2	89.2	0.75	28	2.8	7.1	2.8	70	82	1LA9186-6WA ■■-Z D42+	144	0.19	16	
18.5	25	200 L	1175	150	✓	91.7	91.7	90.7	0.75	34	2.8	7.1	2.8	70	82	1LA9206-6WA ■■-Z D42+	183	0.28	16	
22	30	200 L	1175	179	✓	91.7	91.7	90.7	0.75	40	2.8	7.2	2.8	70	82	1LA9207-6WA ■■-Z D42+	214	0.36	16	
Voltages					No. of poles	Motor type	Version			Order code(s)										
50 Hz	230 VΔ/400 VY	60 Hz	460 VY		6	1LA9090 ... 207	Standard			1	–									
50 Hz	400 VΔ/690 VY	60 Hz	460 VΔ		6	1LA9090 ... 207	Standard			6	–									
50 Hz	500 VY				6	1LA9090 ... 207	Without additional charge			3	–									
	500 VΔ				6	1LA9106 ... 207	Without additional charge			5	–									
Further voltages					For additional charges, code numbers, order codes and descriptions, see from Page 4/64.					9	...									
Types of construction ¹⁾					No. of poles	Motor type	Version			Order code(s)										
With flange		IM B5 ²⁾			6	1LA9090 ... 207	With additional charge			1	–									
		IM V3 ²⁾			6	1LA9090 ... 166	With additional charge			1	–									
		IM V1 with protective cover ^{2) 3)}			6	1LA9186 ... 207	With additional charge			9	M1G									
					6	1LA9090 ... 207	With additional charge			4	–									
With standard flange		IM B14, IM V19 ²⁾			6	1LA9090 ... 166	With additional charge			2	–									
With special flange		IM B14, IM V19 ²⁾			6	1LA9090 ... 166	With additional charge			3	–									
Further types of constr.					For additional charges, code numbers, order codes and descriptions, see from Page 4/72.					9	...									
Design according to ATEX					No. of poles	Motor type	Version			Order code(s)										
Zone 2		Mains-fed operation			6	1LA9090 ... 166	With add. charge	1LA9 ... - ... ■■-Z D42			+ M72									
		Converter-fed operation (FC)			6	1LA9090 ... 166	With add. charge	1LA9 ... - ... ■■-Z D42			+ M73									
VIK (includes Zone 2) ⁴⁾		Mains-fed operation			6	1LA9090 ... 166	With add. charge	1LA9 ... - ... ■■-Z D42			+ K30									
		Converter-fed operation (FC)			6	1LA9090 ... 166	On request				–									
Zone 21		Mains-fed operation			6	1LA9090 ... 207	With add. charge	1LA9 ... - ... ■■-Z D42			+ M34									
		Converter-fed operation (FC)			6	1LA9090 ... 207	With add. charge	1LA9 ... - ... ■■-Z D42			+ M38									
Zone 22		Mains-fed operation			6	1LA9090 ... 207	With add. charge	1LA9 ... - ... ■■-Z D42			+ M35									
		Converter-fed operation (FC)			6	1LA9090 ... 207	With add. charge	1LA9 ... - ... ■■-Z D42			+ M39									
Zone 2/22 (IP55)		Mains-fed operation			6	1LA9090 ... 207	With add. charge	1LA9 ... - ... ■■-Z D42			+ M74									
		Converter-fed operation (FC)			6	1LA9090 ... 207	With add. charge	1LA9 ... - ... ■■-Z D42			+ M75									
Special versions										Order code(s)										
Options					For additional charges, order codes and descriptions, see from Page 4/86.					1LA9 ... - ... ■■-Z D42	+ . . . + . . . + . . .									

4.4

¹⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.
²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ The "Second shaft extension" option, order code K16 is not possible.
⁴⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with High Efficiency IE2
Cast-iron series 1LG6 with order code for explosion protection

IE2

Selection and ordering data

Operating values at rated output																Cast-iron series			$m_{IM\ B3}$	J	Torque class
$P_{rated, 50\ Hz}$	$P_{rated, 60\ Hz}$	Frame size	$n_{rated, 50\ Hz}$	$T_{rated, 50\ Hz}$	IE class	$\eta_{rated, 50\ Hz}$	$\eta_{rated, 50\ Hz}$	$\eta_{rated, 50\ Hz}$	$\cos\phi_{rated, 50\ Hz}$	$I_{rated, 50\ Hz}$	T_{LR}/I_{rated}	I_{LR}/I_{rated}	T_B/I_{rated}	L_{pFA}	L_{WA}	Order No. with order code for Ex prot.	$m_{IM\ B3}$	J			
kW	kW	FS	rpm	Nm	%	%	%	A									kg	kgm ²	CL		
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Efficiency: High Efficiency IE2 in accordance with IEC 60034-30 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																					
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz ¹⁾																					
22	24.5	180 M	2955	71	IE2	91.3	91.7	91.6	0.88	39.5 ²⁾	2.5	7.2	3.4	67	80		1LG6183-2AA	180	0.086	16	
30	33.5	200 L	2960	97	IE2	92.0	91.9	91.0	0.88	53 ²⁾	2.4	7.0	3.3	71	84		1LG6206-2AA	225	0.15	16	
37	41.5	200 L	2960	119	IE2	92.5	92.4	91.7	0.89	65 ²⁾	2.5	7.2	3.3	71	84		1LG6207-2AA	255	0.18	16	
45	51	200 L	2960	145	IE2	92.9	92.9	92.3	0.89	79 ²⁾	2.6	7.3	3.3	71	84		1LG6208-2AA	300	0.22	16	
45	51	225 M	2965	145	IE2	92.9	93.1	92.8	0.89	79 ²⁾	2.5	7.3	3.2	71	84		1LG6223-2AA	330	0.27	16	
55	62	225 M	2965	177	IE2	93.2	93.3	92.9	0.89	96	3.0	7.9	3.3	70	83		1LG6228-2AA	390	0.32	16	
55	62	250 M	2975	177	IE2	93.2	93.2	92.8	0.90	95	2.4	6.8	3.0	71	84		1LG6253-2AA	420	0.47	16	
75	84	250 M	2975	241	IE2	93.8	94.0	93.4	0.89	130 ²⁾	2.5	7.6	3.1	76	89		1LG6258-2AA	470	0.57	16	
75	84	280 S	2975	241	IE2	93.8	93.8	93.0	0.89	130 ²⁾	2.5	7.0	3.0	73	86		1LG6280-2AB	530	0.83	13	
90	101	280 M	2978	289	IE2	94.1	94.2	93.6	0.90	153 ²⁾	2.6	7.6	3.1	73	86		1LG6283-2AB	615	1.0	13	
110	123	280 M	2978	353	IE2	94.3	94.6	94.3	0.90	187 ²⁾	2.8	7.8	3.3	73	86		1LG6288-2AA	660	1.2	16	
110	123	315 S	2982	352	IE2	94.3	94.2	93.3	0.91	185 ²⁾	2.4	6.9	2.8	76	89		1LG6310-2AB	790	1.4	13	
132	148	315 M	2982	423	IE2	94.6	94.5	93.9	0.91	220 ²⁾	2.6	7.1	2.9	76	89		1LG6313-2AB	915	1.6	13	
160	180	315 L	2982	512	IE2	94.8	94.8	94.4	0.92	265	2.5	7.1	2.9	76	89		1LG6316-2AB	1055	2.1	13	
200	224	315 L	2982	641	IE2	95.0	95.0	94.7	0.93	325	2.5	6.9	2.8	76	89		1LG6317-2AB	1245	2.5	13	
250	280	315 L	2985	800	IE2	95.0	95.0	94.4	0.92	415	3.0	8.0	3.2	79	92		1LG6318-2AA	1330	2.7	16	
Voltages			No. of poles		Motor type 1LG6		Version				Order code(s)										
50 Hz	230 VΔ/400 VY	60 Hz ¹⁾	460 VY	2	1LG6183 ... 313	Standard		1		-											
50 Hz	400 VΔ/690 VY	60 Hz ¹⁾	460 VΔ	2	1LG6183 ... 318	Standard		6		-											
50 Hz	500 VY			2	1LG6183 ... 313	Without additional charge		3		-											
	500 VΔ			2	1LG6183 ... 318	Without additional charge		5		-											
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 4/65.									9		...							
Types of construction			No. of poles		Motor type 1LG6		Version				Order code(s)										
Without flange			IM B3/6/7/8 ^{3) 4)}		2		1LG6183 ... 318		Standard		0		-								
			IM V6 ^{3) 4)}		2		1LG6183 ... 313		Standard		0		-								
With flange			IM B5 ^{3) 5)}		2		1LG6316 ... 318		With additional charge		9		M1E								
			IM V3 ^{3) 5)}		2		1LG6183 ... 313		With additional charge		1		-								
			IM V1 with prot. cover ^{3) 5) 6)}		2		1LG6183 ... 313		With additional charge		9		M1G								
			IM B35		2		1LG6183 ... 318		With additional charge		4		-								
Further types of constr.			For additional charges, code numbers, order codes and descriptions, see from Page 4/74.									6		-							
											9		...								
Design according to ATEX			No. of poles		Motor type 1LG6		Version				Order code(s)										
Zone 2			Mains-fed operation		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M72								
			Converter-fed operation (FC)		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M73								
VIK (includes Zone 2) ⁸⁾			Mains-fed operation		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		K30								
			Converter-fed operation (FC)		2		1LG6183 ... 318		On request				-								
Zone 21			Mains-fed operation		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M34								
			Converter-fed operation (FC)		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M38								
Zone 22			Mains-fed operation		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M35								
			Converter-fed operation (FC)		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M39								
Zone 2/22 (IP55)			Mains-fed operation		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M74								
			Converter-fed operation (FC)		2		1LG6183 ... 318		With add. charge		1LG6 A . . . -Z		M75								
Special versions											Order code(s)										
Options			For additional charges, order codes and descriptions, see from Page 4/91.									1LG6 A . . . -Z		...+.+.+.+.+.+							

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.

²⁾ For connection to 230 V, parallel feeders are necessary.

³⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

⁴⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁵⁾ 1LG6223 to 1LG6318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁶⁾ The "Second shaft extension" option, order code K16 is not possible.

⁷⁾ 2-pole motors 1LG6316-... to 1LG6317-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.

⁸⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD



Self-ventilated motors with High Efficiency IE2
Cast-iron series 1LG6 with order code for explosion protection

Selection and ordering data (continued)

P _{rated} , P _{rated} , Frame			Operating values at rated output												Cast-iron series		m _{IM} B3 J Torque			
50 Hz	60 Hz	size	n _{rated}	T _{rated}	IE	η _{rated}	η _{rated}	η _{rated}	COS-φ _{rated}	I _{rated}	T _{LR} /I _{rated}	I _{LR} /I _{rated}	T _B /I _{rated}	L _p fA	L _{WA}	1LG6 – IE2 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	Order No. with order code for Ex prot.	kg	kgm ²	CL
kW	kW	FS	rpm	Nm	class	%	%	%		A										

- Cooling: Self-ventilated (IC 411)
 - Efficiency: High Efficiency IE2 in accordance with IEC 60034-30
 - Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)
- 4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz ¹⁾

18.5	21.3	180 M	1470	120	IE2	91.2	91.8	91.4	0.83	35.5 ²⁾	2.5	6.4	3.0	60	73	1LG6183-4AA	155	0.12	16
22	25.3	180 L	1470	143	IE2	91.6	91.9	91.6	0.84	41.5 ²⁾	2.5	6.7	3.1	60	73	1LG6186-4AA	180	0.14	16
30	34.5	200 L	1470	195	IE2	92.3	92.4	91.8	0.85	55 ²⁾	2.6	6.7	3.3	62	75	1LG6207-4AA	225	0.23	16
37	42.5	225 S	1480	239	IE2	92.7	93.1	92.8	0.85	68 ²⁾	2.7	6.8	3.0	60	73	1LG6220-4AA	290	0.40	16
45	52	225 M	1480	290	IE2	93.1	93.3	93.1	0.85	82 ²⁾	2.8	6.9	3.0	60	73	1LG6223-4AA	330	0.49	16
55	63	225 M	1482	354	IE2	93.5	93.9	93.7	0.86	99 ²⁾	2.8	7.0	3.0	60	73	1LG6228-4AA	355	0.66	16
55	63	250 M	1485	354	IE2	93.5	93.7	93.4	0.87	98	2.6	7.5	3.0	65	78	1LG6253-4AA	460	0.86	16
75	86	250 M	1485	482	IE2	94.0	94.4	94.1	0.87	132	2.6	7.3	2.9	65	78	1LG6258-4AA	495	0.99	16
75	86	280 S	1485	482	IE2	94.0	94.1	93.5	0.87	132 ²⁾	2.5	6.8	2.9	67	80	1LG6280-4AA	575	1.4	16
90	104	280 M	1486	578	IE2	94.2	94.3	93.8	0.86	160 ²⁾	2.7	7.5	3.1	67	80	1LG6283-4AA	675	1.7	16
110	127	280 M	1486	707	IE2	94.5	94.6	94.0	0.86	195 ²⁾	2.7	7.5	3.1	68	81	1LG6288-4AA	710	1.9	16
110	127	315 S	1488	706	IE2	94.5	94.6	94.2	0.87	193 ²⁾	2.7	7.1	2.9	68	81	1LG6310-4AA	810	2.3	16
132	152	315 M	1488	847	IE2	94.7	94.8	94.5	0.88	230 ²⁾	2.7	7.3	2.9	68	81	1LG6313-4AA	965	2.9	16
160	184	315 L	1490	1026	IE2	94.9	95.0	94.7	0.88	275 ³⁾	3.0	7.4	3.0	68	81	1LG6316-4AA	1105	3.5	16
200	230	315 L	1490	1282	IE2	95.1	95.2	94.9	0.88	345 ³⁾	3.2	7.6	3.0	68	81	1LG6317-4AA	1305	4.2	16
250	288	315 L	1490	1602	IE2	95.1	95.1	94.8	0.88	430	3.0	7.3	2.8	75	88	1LG6318-4AA	1345	4.5	16

Voltages		No. of poles	Motor type 1LG6	Version		Order code(s)
50 Hz 230 VΔ/400 VY	60 Hz ¹⁾ 460 VY	4	1LG6183 ... 313	Standard	1	–
50 Hz 400 VΔ/690 VY	60 Hz ¹⁾ 460 VΔ	4	1LG6183 ... 318	Standard	6	–
50 Hz 500 VY		4	1LG6183 ... 313	Without additional charge	3	–
50 Hz 500 VΔ		4	1LG6183 ... 318	Without additional charge	5	–
Further voltages ¹⁾	For additional charges, code numbers, order codes and descriptions, see from Page 4/65.				9	...
Types of construction		No. of poles	Motor type 1LG6	Version		Order code(s)
Without flange	IM B3/6/7/8 ^{4) 5)}	4	1LG6183 ... 318	Standard	0	–
	IM V6 ^{4) 5)}	4	1LG6183 ... 313	Standard	0	–
		4	1LG6316 ... 318	Without additional charge	9	M1E
With flange	IM B5 ^{4) 6)}	4	1LG6183 ... 313	With additional charge	1	–
	IM V3 ^{4) 6)}	4	1LG6183 ... 313	With additional charge	9	M1G
	IM V1 with prot. cover ^{4) 6) 7)}	4	1LG6183 ... 318 ⁸⁾	With additional charge	4	–
	IM B35	4	1LG6183 ... 318	With additional charge	6	–
Further types of constr.	For additional charges, code numbers, order codes and descriptions, see from Page 4/74.				9	...
Design according to ATEX		No. of poles	Motor type 1LG6	Version		Order code(s)
Zone 2	Mains-fed operation	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M72
	Converter-fed operation (FC)	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M73
VIK (includes Zone 2) ⁹⁾	Mains-fed operation	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	K30
	Converter-fed operation (FC)	4	1LG6183 ... 318	On request		–
Zone 21	Mains-fed operation	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M34
	Converter-fed operation (FC)	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M38
Zone 22	Mains-fed operation	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M35
	Converter-fed operation (FC)	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M39
Zone 2/22 (IP55)	Mains-fed operation	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M74
	Converter-fed operation (FC)	4	1LG6183 ... 318	With add. charge	1LG6 ... - A . ■ ■ ■ - Z	M75
Special versions		No. of poles	Motor type 1LG6	Version		Order code(s)
Options	For additional charges, order codes and descriptions, see from Page 4/91.				1LG6 ... - A . ■ ■ ■ - Z	...+...+...+...

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.
²⁾ For connection to 230 V, parallel feeders are necessary.
³⁾ For connection to 400 V, parallel feeders are necessary.
⁴⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

⁵⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
⁶⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
⁷⁾ The "Second shaft extension" option, order code K16 is not possible.
⁸⁾ 2-pole motors 1LG6316-... to 1LG6317-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.
⁹⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

4.4

SIMOTICS XP 1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors with High Efficiency IE2
Cast-iron series 1LG6 with order code for explosion protection



Selection and ordering data (continued)

P_{rated} 50 Hz kW	P_{rated} 60 Hz kW	Frame size FS	Operating values at rated output										Cast-iron series 1LG6 – IE2 version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	$m_{IM B3}$ kg	J kgm ²	Torque class CL
			n_{rated} 50 Hz rpm	T_{rated} 50 Hz Nm	IE class	η_{rated} 50 Hz, 4/4	η_{rated} 50 Hz, 3/4	η_{rated} 50 Hz, 2/4	COS- φ_{rated} 50 Hz, 4/4	I_{rated} 50 Hz, 400 V	T_{LR}/I_{rated}	L_{LR}/I_{rated}				

- Cooling: Self-ventilated (IC 411)
- Efficiency: High Efficiency IE2 in accordance with IEC 60034-30
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾

15	18	180 L	975	147	IE2	89.7	90.5	90.4	0.81	30	2.4	5.5	2.5	56	69	1LG6186-6AA	175	0.20	16
18.5	22	200 L	978	181	IE2	90.4	91.0	90.6	0.81	36.5	2.4	5.6	2.4	59	72	1LG6206-6AA	210	0.29	16
22	26.5	200 L	978	215	IE2	90.9	91.5	91.5	0.82	42.5	2.4	5.6	2.4	59	72	1LG6207-6AA	240	0.36	16
30	36	225 M	980	292	IE2	91.7	92.2	92.2	0.83	57 ²⁾	2.8	6.5	2.9	59	72	1LG6223-6AA	325	0.63	16
37	44.5	225 M	980	361	IE2	92.2	93.1	93.1	0.84	69	2.8	6.7	2.9	59	72	1LG6228-6AA	355	0.76	16
37	44.5	250 M	985	359	IE2	92.2	92.6	92.4	0.83	70	2.9	6.8	2.5	60	73	1LG6253-6AA	405	0.93	16
45	54	250 M	985	436	IE2	92.7	93.6	93.8	0.83	84	2.9	6.9	2.5	60	73	1LG6258-6AA	435	1.1	16
45	54	280 S	988	435	IE2	92.7	92.9	92.7	0.85	82	3.0	6.8	2.7	58	71	1LG6280-6AA	520	1.4	16
55	66	280 M	988	532	IE2	93.1	93.3	93.0	0.85	100	3.3	7.3	2.9	59	71	1LG6283-6AA	570	1.6	16
75	90	280 M	988	725	IE2	93.7	94.3	94.2	0.85	137	3.3	7.3	2.8	58	71	1LG6288-6AA	615	1.9	16
75	90	315 S	990	723	IE2	93.7	93.7	93.3	0.83	139	2.8	7.3	3.0	61	74	1LG6310-6AA	760	2.5	16
90	108	315 M	990	868	IE2	94.0	94.1	93.7	0.85	163 ²⁾	2.7	7.3	2.9	61	74	1LG6313-6AA	935	3.2	16
110	132	315 L	990	1061	IE2	94.3	94.4	94.2	0.85	198	2.9	7.4	2.9	61	74	1LG6316-6AA	1010	4.0	16
132	158	315 L	990	1273	IE2	94.6	94.6	94.2	0.85	235	3.1	7.8	3.1	61	74	1LG6317-6AA	1180	4.7	16
160	192	315 L	990	1543	IE2	94.6	94.6	94.3	0.86	285 ³⁾	3.2	7.8	3.1	64	74	1LG6318-6AA	1245	5.4	16

Voltages		No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	6	1LG6186 ... 313	Standard	1
50 Hz	400 VΔ/690 VY	6	1LG6186 ... 318	Standard	6
50 Hz	500 VY	6	1LG6186 ... 313	Without additional charge	3
	500 VΔ	6	1LG6186 ... 318	Without additional charge	5
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 4/65.		9

Types of construction		No. of poles	Motor type	Version	Order code(s)
Without flange	IM B3/6/7/8 ^{4) 5)}	6	1LG6186 ... 318	Standard	0
	IM V6 ^{4) 5)}	6	1LG6186 ... 313	Standard	0
		6	1LG6316 ... 318	Without additional charge	9
With flange	IM B5 ^{4) 6)}	6	1LG6186 ... 313	With additional charge	1
	IM V3 ^{4) 6)}	6	1LG6186 ... 313	With additional charge	9
	IM V1 with prot. cover ^{4) 6) 7)}	6	1LG6186 ... 318	With additional charge	4
	IM B35	6	1LG6186 ... 318	With additional charge	6
Further types of construction			For additional charges, code numbers, order codes and descriptions, see from Page 4/74.		9

Design according to ATEX		No. of poles	Motor type	Version	Order code(s)
Zone 2	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M72
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M73
VIK (includes Zone 2) ⁸⁾	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z K30
	Converter-fed operation (FC)	6	1LG6186 ... 318	On request	-
Zone 21	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M34
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M38
Zone 22	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M35
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M39
Zone 2/22 (IP55)	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M74
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 A . . . -Z M75

Special versions		No. of poles	Motor type	Version	Order code(s)
Options			For additional charges, order codes and descriptions, see from Page 4/91.		1LG6 A . . . -Z . . . + . . . + . . . + . . .

- ¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.
- ²⁾ For connection to 230 V, parallel feeders are necessary.
- ³⁾ For connection to 400 V, parallel feeders are necessary.
- ⁴⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
- ⁵⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.
- ⁶⁾ 1LG6223 to 1LG6318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- ⁷⁾ The "Second shaft extension" option, order code K16 is not possible.
- ⁸⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

IE2

Self-ventilated motors with High Efficiency IE2 Cast-iron series 1LG6 with order code for explosion protection

Selection and ordering data (continued)

Operating values at rated output																Cast-iron series				
P_{rated} 50 Hz	P_{rated} 60 Hz ¹⁾	Frame size	n_{rated} 50 Hz	T_{rated} 50 Hz	IE class	η_{rated} 50 Hz, 4/4	η_{rated} 50 Hz, 3/4	η_{rated} 50 Hz, 2/4	COS- φ_{rated} 50 Hz, 4/4	I_{rated} 50 Hz, 400 V	$\frac{T_{LR}}{T_{rated}}$	$\frac{I_{LR}}{I_{rated}}$	$\frac{T_B}{T_{rated}}$	L_{pFA} 50 Hz	L_{WA} 50 Hz	m_{IM} B3	J	Torque class		
kW	kW	FS	rpm	Nm		%	%	%		A				dB(A)	dB(A)	kg	kgm ²	CL		
<ul style="list-style-type: none"> Cooling: Self-ventilated (IC 411) Efficiency: High Efficiency IE2 in accordance with IEC 60034-30 Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																				
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																				
11	13.2	180 L	725	145	–	87.9	88.8	88.7	0.76	24	1.9	4.6	2.2	66	79	1LG6186-8AB	165	0.21	13	
15	18	200 L	725	198	–	89.0	89.5	89.5	0.80	30.5	2.3	5.3	2.6	66	79	1LG6207-8AB	235	0.37	13	
18.5	22	225 S	730	242	–	89.8	90.5	90.5	0.81	36.5	2.3	5.6	2.6	54	67	1LG6220-8AB	295	0.55	13	
22	26.5	225 M	730	288	–	90.3	90.8	90.8	0.81	43.5	2.4	5.8	2.8	58	71	1LG6223-8AB	335	0.66	13	
30	36	250 M	735	390	–	91.2	91.7	91.6	0.82	58	2.5	6.0	2.8	57	70	1LG6253-8AB	435	1.1	13	
37	44.5	280 S	738	479	–	91.8	92.0	91.7	0.81	72	2.3	5.7	2.3	58	71	1LG6280-8AB	510	1.4	13	
45	54	280 M	738	582	–	92.3	92.5	92.2	0.81	87	2.6	6.1	2.5	58	71	1LG6283-8AB	560	1.6	13	
55	66	315 S	740	710	–	92.8	92.9	92.4	0.82	104	2.5	6.3	2.9	64	77	1LG6310-8AB	750	2.5	13	
75	90	315 M	740	968	–	93.4	93.6	93.2	0.83	140	2.5	6.7	2.9	64	77	1LG6313-8AB	840	3.1	13	
90	108	315 L	740	1162	–	93.7	94.1	94.0	0.84	165	2.4	6.3	2.8	64	77	1LG6316-8AB	1005	4.0	13	
110	132	315 L	740	1420	–	94.1	94.4	94.3	0.84	200	2.4	6.4	2.6	64	77	1LG6317-8AB	1100	4.5	13	
132	158	315 L	740	1704	–	94.4	94.7	94.6	0.84	240	2.5	6.7	2.9	64	77	1LG6318-8AB	1270	5.3	13	
Voltages					No. of poles	Motor type		Version											Order code(s)	
50 Hz	230 VΔ/400 VY		60 Hz ¹⁾	460 VY	8	1LG6186 ... 313		Standard											1	–
50 Hz	400 VΔ/690 VY		60 Hz ¹⁾	460 VΔ	8	1LG6186 ... 318		Standard											6	–
50 Hz	500 VY				8	1LG6186 ... 313		Without additional charge											3	–
	500 VΔ				8	1LG6186 ... 318		Without additional charge											5	–
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see from Page 4/65.																9	...
Types of construction					No. of poles	Motor type		Version											Order code(s)	
Without flange			IM B3/6/7/8 ^{2) 3)}		8	1LG6186 ... 318		Standard											0	–
			IM V6 ^{2) 3)}		8	1LG6186 ... 313		Standard											0	–
					8	1LG6316 ... 318		Without additional charge											9	M1E
With flange			IM B5 ^{2) 4)}		8	1LG6186 ... 313		With additional charge											1	–
			IM V3 ^{2) 4)}		8	1LG6186 ... 313		With additional charge											9	M1G
			IM V1 with prot. cover ^{2) 4) 5)}		8	1LG6186 ... 318		With additional charge											4	–
			IM B35		8	1LG6186 ... 318		With additional charge											6	–
Further types of construction			For additional charges, code numbers, order codes and descriptions, see from Page 4/74.																9	...
Design according to ATEX					No. of poles	Motor type		Version											Order code(s)	
Zone 2			Mains-fed operation		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M72	
			Converter-fed operation (FC)		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M73	
VIK (includes Zone 2) ⁶⁾			Mains-fed operation		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									K30	
			Converter-fed operation (FC)		8	1LG6186 ... 318		On request											–	
Zone 21			Mains-fed operation		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M34	
			Converter-fed operation (FC)		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M38	
Zone 22			Mains-fed operation		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M35	
			Converter-fed operation (FC)		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M39	
Zone 2/22 (IP55)			Mains-fed operation		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M74	
			Converter-fed operation (FC)		8	1LG6186 ... 318		With add. charge		1LG6 A . . . -Z									M75	
Special versions																		Order code(s)		
Options			For additional charges, order codes and descriptions, see from Page 4/91.																1LG6 A . . . -Z	...+...+...+...

4.4

¹⁾ Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code – see "Voltages" from Page 4/65. Operating values at rated output for 60 Hz are available on request.

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ If 1LG6 motors in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

⁴⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁵⁾ The "Second shaft extension" option, order code K16 is not possible.

⁶⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

**Self-ventilated motors NEMA Energy Efficient MG1 Table 12-11
Cast-iron series 1LG6 with order code D42 and explosion protection**

Selection and ordering data (continued)

Operating values at 60 Hz rated output																		Cast-iron series					Torque class	
P_{rated} ed, 50 Hz	P_{rated} ed, 60 Hz	Frame size	n_{rated} ed, 60 Hz	T_{rated} ed, 60 Hz	EISA CC No. CC032A	η_{rated} 60 Hz, 4/4	η_{rated} 60 Hz, 3/4	η_{rated} 60 Hz, 2/4	COS- ϕ_{rated} 60 Hz, 4/4	I_{rated} 60 Hz, 460 V	T_{LR} I_{rated}	I_{LR} I_{rated}	T_p I_{rated}	L_{pfa} 60 Hz	L_{WA} 60 Hz	Order No. with order code for Ex prot.	$m_{IM B3}$	J	Torque class					
kW	hp	FS	rpm	Nm		%	%	%	A					dB(A)	dB(A) ▲ New	kg	kgm ²	CL						
<ul style="list-style-type: none"> • Cooling: Self-ventilated (IC 411) • Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11 and service factor (SF) 1.15 • Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) 																		2-pole: 3600 rpm at 60 Hz						
22	30	180 M	3560	60	✓	91.0	91.1	90.4	0.88	35	2.7	7.8	3.7	72	85	1LG6183-2AA -Z D42+	180	0.086	16					
30	40	200 L	3565	80	✓	91.7	91.2	89.5	0.88	46.5	2.7	7.7	3.7	75	88	1LG6206-2AA -Z D42+	225	0.15	16					
37	50	200 L	3565	100	✓	92.4	92.1	90.7	0.89	57	2.8	7.8	3.7	75	88	1LG6207-2AA -Z D42+	255	0.18	16					
45	60	200 L	3565	120	✓	93.0	92.6	91.3	0.89	68	2.8	7.9	3.6	75	88	▲ 1LG6208-2AA -Z D42+	300	0.22	16					
45	60	225 M	3570	120	✓	93.0	93.0	92.2	0.89	68	2.8	8.3	3.6	74	87	1LG6223-2AA -Z D42+	330	0.27	16					
55	75	225 M	3570	150	✓	93.0	93.0	92.2	0.90	84	3.3	8.7	3.7	74	87	1LG6228-2AA -Z D42+	390	0.32	16					
55	75	250 M	3578	149	-	93.0	93.1	92.3	0.89	85	2.7	7.5	3.2	75	88	1LG6253-2AA -Z D42+	420	0.47	16					
75	100	250 M	3580	199	✓	93.6	93.3	92.0	0.89	112	2.8	8.4	3.5	79	92	1LG6258-2AA -Z D42+	470	0.57	16					
75	100	280 S	3580	199	-	93.6	93.3	92.0	0.89	112	2.8	7.8	3.4	77	90	1LG6280-2AB -Z D42+	530	0.83	13					
90	125	280 M	3580	249	✓	94.5	94.3	93.3	0.90	138	2.9	8.3	3.4	77	90	1LG6283-2AB -Z D42+	615	1.0	13					
110	150	280 M	3580	299	✓	94.5	94.4	93.6	0.90	165	3.1	8.5	3.6	77	90	1LG6288-2AA -Z D42+	660	1.2	16					
110	150	315 S	3585	298	✓	94.5	94.0	92.6	0.91	163	2.6	7.5	3.1	81	94	1LG6310-2AB -Z D42+	790	1.4	13					
132	175	315 M	3586	348	-	95.0	94.7	93.5	0.91	190	3.0	8.3	3.3	81	94	1LG6313-2AB -Z D42+	915	1.6	13					
160	200	315 L	3588	397	✓	95.0	94.7	93.6	0.91	215	3.0	8.4	3.5	81	94	1LG6316-2AB -Z D42+	1055	2.1	13					
200	250	315 L	3588	500	✓	95.4	95.2	94.3	0.93	265	3.2	8.6	3.4	81	94	1LG6317-2AB -Z D42+	1245	2.5	13					
250	300	315 L	3591	600	✓	95.4	95.1	94.0	0.92	320	4.1	10.0	3.9	83	96	1LG6318-2AA -Z D42+	1330	2.7	16					
Voltages				No. of poles	Motor type	Version													Order code(s)					
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	2	1LG6183 ... 313	Standard													1	-				
50 Hz	400 VΔ/690 VY	60 Hz	460 VΔ	2	1LG6183 ... 318	Standard													6	-				
50 Hz	500 VY			2	1LG6183 ... 313	Without additional charge													3	-				
	500 VΔ			2	1LG6183 ... 318	Without additional charge													5	-				
Further voltages				For additional charges, code numbers, order codes and descriptions, see from Page 4/65.												9	...							
Types of construction ¹⁾				No. of poles	Motor type	Version													Order code(s)					
Without flange		IM B3/6/7/8		2	1LG6317, 1LG6318	Standard													0	-				
		IM V6		2	1LG6317, 1LG6318	With additional charge													9	M1E				
With flange		IM B5 ²⁾³⁾		2	1LG6183 ... 313	With additional charge													1	-				
		IM V3 ²⁾³⁾		2	1LG6183 ... 313	With additional charge													9	M1G				
		IM V1 with protective cover ²⁾³⁾⁴⁾		2	1LG6183 ... 318 ⁵⁾	With additional charge													4	-				
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/74.												9	...									
Design according to ATEX				No. of poles	Motor type	Version													Order code(s)					
Zone 2		Mains-fed operation		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M72					
		Converter-fed operation (FC)		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M73					
VIK (includes Zone 2) ⁶⁾		Mains-fed operation		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ K30					
		Converter-fed operation (FC)		2	1LG6183 ... 318	On request															-			
Zone 21		Mains-fed operation		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M34					
		Converter-fed operation (FC)		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M38					
Zone 22		Mains-fed operation		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M35					
		Converter-fed operation (FC)		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M39					
Zone 2/22 (IP55)		Mains-fed operation		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M74					
		Converter-fed operation (FC)		2	1LG6183 ... 318	With add. charge	1LG6 ... - A . - - - Z D42												+ M75					
Special versions																		Order code(s)						
Options				For additional charges, order codes and descriptions, see from Page 4/91.												1LG6 ... - A . - - - Z D42		+ . . . + . . . + . . .						

1) Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.
 2) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

3) 1LG6223 to 1LG6318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
 4) The "Second shaft extension" option, order code K16 is not possible.
 5) 2-pole motors 1LG6316-... to 1LG6317-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.
 6) If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

**Self-ventilated motors NEMA Energy Efficient MG1 Table 12-11
Cast-iron series 1LG6 with order code D42 and explosion protection**

Selection and ordering data (continued)

P _{rated} , 50 Hz kW	P _{rated} , 60 Hz hp	Frame size FS	Operating values at 60 Hz rated output								Cast-iron series				m _{IM} B3 kg	J kgm ²	Torque class CL		
			n _{rated} , 60 Hz rpm	T _{rated} , 60 Hz Nm	EISA CC No. CC032A	η _{rated} , 60 Hz, 4/4	η _{rated} , 60 Hz, 3/4	η _{rated} , 60 Hz, 2/4	COS- φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{LR} / I _{LR} T _{rated} / I _{rated}	T _B / I _B T _{rated} / I _{rated}	L _{pFA} , 60 Hz dB(A)	L _{WA} , 60 Hz dB(A)				1LG6 – NEMA Energy Efficient version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	
														Order No. with order code for Ex prot.					
<p>• Cooling: Self-ventilated (IC 411)</p> <p>• Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11 and service factor (SF) 1.15</p> <p>• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)</p>																			
4-pole: 1800 rpm at 60 Hz																			
18.5	25	180 M	1775	100	✓	92.4	92.6	91.8	0.82	31	2.9	7.1	3.3	65	78	1LG6183-4AA ■■■-Z D42+	155	0.12	16
22	30	180 L	1775	120	✓	92.6	92.6	91.9	0.83	36.5	2.8	7.4	3.4	65	78	1LG6186-4AA ■■■-Z D42+	180	0.14	16
30	40	200 L	1775	161	✓	92.6	92.9	91.7	0.84	48	3.0	7.7	3.7	66	79	1LG6207-4AA ■■■-Z D42+	225	0.23	16
37	50	225 S	1785	200	–	92.9	93.1	92.3	0.84	60	3.1	7.5	3.4	65	78	1LG6220-4AA ■■■-Z D42+	290	0.40	16
45	60	225 M	1785	239	✓	93.1	93.7	93.1	0.85	71	3.3	7.9	3.5	65	78	1LG6223-4AA ■■■-Z D42+	330	0.49	16
55	75	225 M	1785	299	✓	94.1	94.3	93.8	0.85	88	3.0	7.8	3.3	65	78	1LG6228-4AA ■■■-Z D42+	355	0.66	16
55	75	250 M	1790	298	–	94.1	94.1	93.3	0.86	87	2.9	8.2	3.4	68	81	1LG6253-4AA ■■■-Z D42+	460	0.86	16
75	100	250 M	1788	398	✓	94.5	94.6	94.0	0.86	115	3.0	8.1	3.3	68	81	1LG6258-4AA ■■■-Z D42+	495	0.99	16
75	100	280 S	1788	398	–	94.5	94.3	93.3	0.86	115	2.9	7.5	3.2	71	84	1LG6280-4AA ■■■-Z D42+	575	1.4	16
90	125	280 M	1790	500	✓	94.3	94.4	93.5	0.86	144	3.0	8.2	3.4	71	84	1LG6283-4AA ■■■-Z D42+	675	1.7	16
110	150	280 M	1788	598	✓	95.0	94.9	94.1	0.86	172	3.1	8.4	3.5	71	84	1LG6288-4AA ■■■-Z D42+	710	1.9	16
110	150	315 S	1791	600	✓	94.9	94.8	93.9	0.87	170	3.1	7.8	3.2	75	88	1LG6310-4AA ■■■-Z D42+	810	2.3	16
132	175	315 M	1791	700	–	94.8	94.9	94.1	0.87	198	3.2	8.4	3.3	75	88	1LG6313-4AA ■■■-Z D42+	965	2.9	16
160	200	315 L	1792	800	✓	94.9	94.9	94.1	0.87	225	3.7	9.0	3.6	75	88	1LG6316-4AA ■■■-Z D42+	1105	3.5	16
200	250	315 L	1792	990	✓	94.9	94.9	94.3	0.87	285	4.0	9.1	3.7	75	88	1LG6317-4AA ■■■-Z D42+	1305	4.2	16
250	300	315 L	1791	1190	✓	94.9	95.4	94.8	0.87	340	4.0	9.3	3.7	81	94	1LG6318-4AA ■■■-Z D42+	1345	4.5	16
Voltages		No. of poles		Motor type		Version								Order code(s)					
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	4	1LG6183 ... 313	Standard		1	–										
50 Hz	400 VΔ/690 VY	60 Hz	460 VΔ	4	1LG6183 ... 318	Standard		6	–										
50 Hz	500 VY			4	1LG6183 ... 313	Without additional charge		3	–										
	500 VΔ			4	1LG6183 ... 318	Without additional charge		5	–										
Further voltages ¹⁾		For additional charges, code numbers, order codes and descriptions, see from Page 4/65.											9	...					
Types of construction ¹⁾		No. of poles		Motor type		Version								Order code(s)					
Without flange		IM B3/6/7/8		4		1LG6317, 1LG6318 Standard		0						–					
		IM V6		4		1LG6317, 1LG6318 With additional charge		9						M1E					
With flange		IM B5 ^{2) 3)}		4		1LG6183 ... 313 With additional charge		1						–					
		IM V3 ^{2) 3)}		4		1LG6183 ... 313 With additional charge		9						M1G					
		IM V1 with protective cover ^{2) 3) 4)}		4		1LG6183 ... 318 ⁵⁾ With additional charge		4						–					
		IM B35		4		1LG6317, 1LG6318 With additional charge		6						–					
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/74.											9	...					
Design according to ATEX		No. of poles		Motor type		Version								Order code(s)					
Zone 2		Mains-fed operation		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M72					
		Converter-fed operation (FC)		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M73					
VIK (includes Zone 2) ⁶⁾		Mains-fed operation		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ K30					
		Converter-fed operation (FC)		4		1LG6183 ... 318 On request								–					
Zone 21		Mains-fed operation		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M34					
		Converter-fed operation (FC)		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M38					
Zone 22		Mains-fed operation		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M35					
		Converter-fed operation (FC)		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M39					
Zone 2/22 (IP55)		Mains-fed operation		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M74					
		Converter-fed operation (FC)		4		1LG6183 ... 318 With add. charge		1LG6 A . ■■■-Z D42						+ M75					
Special versions													Order code(s)						
Options		For additional charges, order codes and descriptions, see from Page 4/91.											1LG6 A . ■■■-Z D42		+ . . . + . . . + . . .				

¹⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ 1LG6220 to 1LG6318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

⁵⁾ 2-pole motors 1LG6316-... to 1LG6317-... (motor series 1LG6 frame size 315 L) in 60 Hz version available on request.

⁶⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1LG Explosion-Proof Motors

Motors for Zone 2 or 21/22 in type of protection Ex n or Ex tD

Self-ventilated motors NEMA Energy Efficient MG1 Table 12-11
Cast-iron series 1LG6 with order code D42 and explosion protection

Selection and ordering data (continued)

P _{rated} , 50 Hz	P _{rated} , 60 Hz	Frame size	Operating values at 60 Hz rated output											Cast-iron series 1LG6 – NEMA Energy Efficient version for Zone 2 or 21/22 in type of protection Ex n or Ex tD	m _{IM B3}	J	Torque class	
			n _{rated} , 60 Hz	T _{rated} , 60 Hz	EISA CC No. CC032A	η _{rated} , 60 Hz, 4/4	η _{rated} , 60 Hz, 3/4	η _{rated} , 60 Hz, 2/4	COS- φ _{rated} , 60 Hz, 4/4	I _{rated} , 60 Hz, 460 V	T _{LR} / T _{rated}	I _{LR} / I _{rated}	T _B / T _{rated}					L _{pfA} , 60 Hz
kW	hp	FS	rpm	Nm	%	%	%	A							Order No. with order code for Ex prot.	kg	kgm ²	CL

- Cooling: Self-ventilated (IC 411)
- Efficiency: NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11 and service factor (SF) 1.15
- Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B)

6-pole: 1200 rpm at 60 Hz

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15	20	180 L	1178	121	✓	90.2	90.6	89.9	0.80	26	2.9	6.5	3.0	57	70	1LG6186-6AA	175	0.20	16
18.5	25	200 L	1180	151	✓	90.6	92.0	91.2	0.79	32.5	2.9	6.5	2.7	65	78	1LG6206-6AA	210	0.29	16
22	30	200 L	1180	181	✓	92.0	92.1	91.5	0.80	38.5	2.9	6.5	2.7	65	78	1LG6207-6AA	240	0.36	16
30	40	225 M	1184	241	✓	92.1	93.3	92.7	0.82	49	3.4	7.2	3.4	62	75	1LG6223-6AA	325	0.63	16
37	50	225 M	1184	301	✓	93.0	94.1	93.7	0.83	61	3.2	7.6	3.4	62	75	1LG6228-6AA	355	0.76	16
37	50	250 M	1186	300	-	93.2	93.2	92.5	0.82	61	2.8	6.3	2.4	63	76	1LG6253-6AA	405	0.93	16
45	60	250 M	1186	360	✓	93.2	93.8	93.4	0.82	73	3.4	7.7	2.9	63	76	1LG6258-6AA	435	1.1	16
45	60	280 S	1190	359	-	93.8	93.7	93.0	0.83	72	3.6	7.7	3.1	62	75	1LG6280-6AA	520	1.4	16
55	75	280 M	1190	449	-	93.7	93.6	92.9	0.83	90	3.9	8.3	3.3	62	75	1LG6283-6AA	570	1.7	16
75	100	280 M	1190	599	✓	93.6	94.1	93.5	0.84	118	4.0	8.4	3.3	62	75	1LG6288-6AA	615	1.9	16
75	100	315 S	1191	600	✓	94.1	94.0	93.2	0.82	121	3.3	8.4	3.4	66	79	1LG6310-6AA	760	2.5	16
90	125	315 M	1191	750	✓	94.0	94.1	93.5	0.84	148	3.0	7.9	3.1	66	79	1LG6313-6AA	935	3.2	16
110	150	315 L	1192	900	✓	94.1	95.1	94.5	0.84	176	3.3	8.5	3.3	66	79	1LG6316-6AA	1010	4.0	16
132	175	315 L	1192	1050	-	95.1	95.0	94.3	0.84	205	3.8	8.9	3.6	66	79	1LG6317-6AA	1180	4.7	16
160	200	315 L	1192	1200	✓	95.0	94.8	93.9	0.84	235	4.0	9.4	4.0	69	82	1LG6318-6AA	1245	5.4	16

Voltages		No. of poles	Motor type	Version		Order code(s)		
50 Hz	230 VΔ/400 VY	60 Hz	460 VY	6	1LG6186 ... 313	Standard	1	-
50 Hz	400 VΔ/690 VY	60 Hz	460 VΔ	6	1LG6186 ... 318	Standard	6	-
50 Hz	500 VY			6	1LG6186 ... 313	Without additional charge	3	-
	500 VΔ			6	1LG6186 ... 318	Without additional charge	5	-
Further voltages		For additional charges, code numbers, order codes and descriptions, see from Page 4/65.					9	...
Types of construction ¹⁾		No. of poles	Motor type	Version		Order code(s)		
With flange								
	IM B5 ^{2) 3)}	6	1LG6186 ... 313	With additional charge		1	-	
	IM V3 ^{2) 3)}	6	1LG6186 ... 313	With additional charge		9	M1G	
	IM V1 with prot. cover ^{2) 3) 4)}	6	1LG6186 ... 318	With additional charge		4	-	
Further types of constr.		For additional charges, code numbers, order codes and descriptions, see from Page 4/74.					9	...
Design according to ATEX		No. of poles	Motor type	Version		Order code(s)		
Zone 2	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M72		
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M73		
VIK (includes Zone 2) ⁵⁾	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ K30		
	Converter-fed operation (FC)	6	1LG6186 ... 318	On request		-		
Zone 21	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M34		
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M38		
Zone 22	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M35		
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M39		
Zone 2/22 (IP55)	Mains-fed operation	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M74		
	Converter-fed operation (FC)	6	1LG6186 ... 318	With add. charge	1LG6 ... - A. ■■-Z D42	+ M75		
Special versions							Order code(s)	
Options		For additional charges, order codes and descriptions, see from Page 4/91.					1LG6 ... - A. ■■-Z D42	+...+...+...+...+...

¹⁾ Types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp in accordance with MG1 Table 12-11.

²⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

³⁾ 1LG6223 to 1LG6318 motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁴⁾ The "Second shaft extension" option, order code K16 is not possible.

⁵⁾ If the identification Ex nA II is required in addition to VIK on the rating plate, this must be ordered using order code C27. The VIK version is not possible in combination with Zone 21 and 22.

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Voltages
Aluminum series 1MA7

Standard delivery times:

10 working days	20 working days	On request
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Selection and ordering data

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (alum.)	Motor type – Frame size										
			Zone 1 Ex e II	1MA7	1MA7	63	71	80	90	100	112	132	160	180	200
1MA7			Motor version	Motor type	Frame size										
Voltage at 50 Hz and 50 Hz output					63	71	80	90	100	112	132	160	180	200	225
230 VΔ/400 VY	1	–	All	All	□	□	□	□	□	□	□	□			
400 VΔ/690 VY	6	–	All	All	–	□	□	□	□	□	□	□			
500 VY ¹⁾	3	–	All	All	○	○	○	○	○	○	○	○			
500 VΔ	5	–	All	All	–	–	–	–	○	○	○	○			
220 VΔ/380 VY	9	L1R	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
230 VΔ	9	L1E	All	All	○	○	○	○	○	○	○	○			
380 VΔ/660 VY	9	L1L	All	All	–	✓	✓	✓	✓	✓	✓	✓			
415 VY ¹⁾	9	L1C	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
415 VΔ	9	L1D	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Voltage at 60 Hz and required output at 60 Hz ²⁾															
220 VΔ/380 VY; 50 Hz output	9	L2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
380 VΔ/660 VY; 50 Hz output ³⁾	9	L2C	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
440 VY; 50 Hz output	9	L2Q	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
440 VΔ; 50 Hz output	9	L2R	All	All	–	✓	✓	✓	✓	✓	✓	✓			
460 VY; 50 Hz output ¹⁾	9	L2S	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
460 VΔ; 50 Hz output	9	L2T	All	All	–	✓	✓	✓	✓	✓	✓	✓			
575 VY; 50 Hz output ³⁾	9	L2U	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
575 VΔ; 50 Hz output	9	L2V	All	All	–	✓	✓	✓	✓	✓	✓	✓			
Non-standard voltage and/or frequencies															
Non-standard winding ⁴⁾	9	L1Y • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓			

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

4.5

¹⁾ For motors 1MA7060-4 (motor series 1MA7 frame size 63, 4-pole) not possible.

²⁾ Special certification is required for 60 Hz.

³⁾ For motors 1MA7060-2, 1MA7060-4 and 1MA7063-4 (motor series 1MA7 frame size 63, 2-pole and 4-pole) not possible.

⁴⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz in addition required rated output in kW.

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
request

Voltages
Cast-iron series 1MA6

Selection and ordering data

Voltages	Voltage code code 11th position of the Order No.	Additional identifica- tion code with order code and plain text if required	Motor category		Standard delivery time (colored area)												
			Motor version	Motor type (cast-iron)	Motor type – Frame size												
			Zone 1 Ex e II	1MA6	71	80	90	100	112	132	160	180	200	225	250	280	315
1MA6 ■ .			Motor version	Motor type	Frame size												
					71	80	90	100	112	132	160	180	200	225	250	280	315
Voltage at 50 Hz and 50 Hz output																	
230 VΔ/400 VY ¹⁾	1	–	All	All		□	□	□	□	□	□	□	□	□	□	□	□
400 VΔ/690 VY	6	–	All	All		□	□	□	□	□	□	□	□	□	□	□	□
500 VY	3	–	All	All		○	○	○	○	○	○	○	○	○	○	○	○
500 VΔ	5	–	All	All		○	○	○	○	○	○	○	○	○	○	○	○
220 VΔ/380 VY	9	L1R	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
230 VΔ	9	L1E	All	All		○	○	○	○	○	○	○	○	○	○	○	○
380 VΔ/660 VY	9	L1L	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY	9	L1C	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
415 VΔ	9	L1D	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage at 60 Hz and required output at 60 Hz ²⁾																	
220 VΔ/380 VY; 50 Hz output	9	L2A	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output	9	L2C	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VΔ; 50 Hz output	9	L2R	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	All	All		✓	✓	✓	✓	✓	○	○	○	○	○	○	–
460 VΔ; 50 Hz output	9	L2T	All	All		✓	✓	✓	✓	✓	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	All	All		✓	✓	✓	✓	✓	○	○	○	○	○	○	–
575 VΔ; 50 Hz output	9	L2V	All	All		✓	✓	✓	✓	✓	○	○	○	○	○	○	○
Non-standard voltage and/or frequencies																	
Non-standard winding ³⁾	9	L1Y • and identification code	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

¹⁾ Not possible for 1MA6 motors in frame size 315 L.

²⁾ Special certification is required for 60 Hz.

³⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz in addition required rated output in kW.

SIMOTICS XP 1MJ Explosion-Proof Motors

Supplements to order numbers and special versions

Voltages
Cast-iron series 1MJ6, 1MJ7

Standard delivery times:

10 working days	20 working days	On request
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Selection and ordering data

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)													
			Motor version	Motor type (cast-iron)	Motor type – Frame size													
					71	80	90	100	112	132	160	180	200	225	250	280	315	
			Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6										1MJ7			
1MJ.....			Motor version	Motor type	Frame size													
					71	80	90	100	112	132	160	180	200	225	250	280	315	
Voltage at 50 Hz and 50 Hz output																		
230 VΔ/400 VY	1	–	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	
400 VΔ/690 VY	6	–	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	
500 VY	3	–	All	All	○	○	○	○	○	○	○	○	○	○	○	○	○	
500 VΔ	5	–	All	All	–	○	○	○	○	○	○	○	○	○	○	○	○	
220 VΔ/380 VY	9	L1R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
230 VΔ	9	L1E	All	All	○	○	○	○	○	○	○	○	○	○	○	○	○	
380 VΔ/660 VY	9	L1L	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
415 VY	9	L1C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
415 VΔ	9	L1D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Voltage at 60 Hz and required output at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
220 VΔ/380 VY; 60 Hz output	9	L2B	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
380 VΔ/660 VY; 50 Hz output	9	L2C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
380 VΔ/660 VY; 60 Hz output	9	L2D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
440 VY; 50 Hz output	9	L2Q	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
440 VY; 60 Hz output	9	L2W	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
440 VΔ; 50 Hz output	9	L2R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
440 VΔ; 60 Hz output	9	L2X	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
460 VY; 50 Hz output	9	L2S	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
460 VY; 60 Hz output	9	L2E	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	
460 VΔ; 50 Hz output	9	L2T	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
460 VΔ; 60 Hz output	9	L2F	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	
575 VY; 50 Hz output	9	L2U	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
575 VY; 60 Hz output	9	L2L	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
575 VΔ; 50 Hz output	9	L2V	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
575 VΔ; 60 Hz output	9	L2M	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○	○	○	
Non-standard voltage and/or frequencies																		
Non-standard winding ¹⁾	9	L1Y • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

4.5

¹⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz in addition required rated output in kW.

SIMOTICS XP 1LA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Voltages
Aluminum series 1LA7, 1LA5, 1LA9

Selection and ordering data

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (alum.)	Motor type – Frame size										
					63	71	80	90	100	112	132	160	180	200	225
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7 ①							1LA5 ② ①			
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LA9	1LA9 ③										
			Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LA9	1LA9 ④										
			Motor version	Motor type	Frame size										
					63	71	80	90	100	112	132	160	180	200	225
1LA ■ .															
Voltage at 50 Hz or 60 Hz															
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	1	–	All	All	□	□	□	□	□	□	□	□	□	□	□
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ	6	–	All	All	□	□	□	□	□	□	□	□	□	□	□
Voltage at 50 Hz and 50 Hz output															
500 VY	3	–	All	All	○	○	○	○	○	○	○	○	○	○	○
500 VΔ	5	–	All	All	–	–	–	–	○	○	○	○	○	○	○
220 VΔ/380 VY (440 VY at 60 Hz)	9	L1R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔ	9	L1E	All	All	○	○	○	○	○	○	○	○	○	○	○
380 VΔ/660 VY (440 VΔ at 60 Hz)	9	L1L	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY	9	L1C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VΔ	9	L1D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY	9	L1A	All	All	○	○	○	○	○	○	○	○	○	○	○
400 VΔ	9	L1B	All	All	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz)	9	L1U	All	All	○	○	○	○	○	○	○	○	○	○	○
Voltage at 87 Hz and 87 Hz output															
400 VΔ ②	9	L3A	All; for ① and ② without additional charge	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	○
Voltage at 60 Hz and required output at 60 Hz															
220 VΔ/380 VY; 50 Hz output	9	L2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz output	9	L2B	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz output	9	L2C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz output	9	L2W	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz output	9	L2R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz output	9	L2E	All	All	○	○	○	○	○	○	○	○	○	○	○
460 VΔ; 50 Hz output	9	L2T	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F	All	All	○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz output	9	L2L	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz output	9	L2V	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies															
Non-standard winding ③	9	L1Y • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

1) Zone 2 is not possible for motor series 1LA5.

2) Only possible for 4-pole, 6-pole and 8-pole motors. The operating data for converter-fed operation is also provided in a table on the rating plate. Only possible in combination with order codes M38, M39, M73 and M75. For motors 1LA5 and 1LA7 without additional charge.

3) Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz in addition required rated output in kW.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Voltages

Cast-iron series 1LA6, 1LG4, 1LG6

Standard delivery times:

10 working days	20 working days	On request
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Selection and ordering data

Voltages	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (cast-iron)	Motor type – Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6				1LG4						
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6					1LG6						
			Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6					1LG6						
			Motor version	Motor type	Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L
1L -															
Voltage at 50 Hz or 60 Hz															
50 Hz 230 VΔ/400 VY, 60 Hz 460 VY	1	–	All	All	□	□	□	□	□	□	□	□	□	□	□
50 Hz 400 VΔ/690 VY, 60 Hz 460 VΔ	6	–	All	All	□	□	□	□	□	□	□	□	□	□	□
Voltage at 50 Hz and 50 Hz output															
500 VY	3	–	All	All	○	○	○	○	○	○	○	○	○	○	○
500 VΔ	5	–	All	All	–	–	–	–	○	○	○	○	○	○	○
220 VΔ/380 VY (440 VY at 60 Hz)	9	L1R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
230 VΔ	9	L1E	All	All	○	○	○	○	○	○	○	○	○	○	–
380 VΔ/660 VY (440 VΔ at 60 Hz)	9	L1L	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY	9	L1C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
415 VΔ	9	L1D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY	9	L1A	All	All	○	○	○	○	○	○	○	○	○	○	–
400 VΔ	9	L1B	All	All	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz)	9	L1U	All	All	○	○	○	○	○	○	○	○	○	○	○
Voltage at 87 Hz and 87 Hz output															
400 VΔ ¹⁾	9	L3A	All	All	○	○	○	○	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–
Voltage at 60 Hz and required output at 60 Hz															
220 VΔ/380 VY; 50 Hz output	9	L2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
220 VΔ/380 VY; 60 Hz output	9	L2B	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output	9	L2C	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VY; 60 Hz output	9	L2W	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VΔ; 50 Hz output	9	L2R	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
460 VY; 60 Hz output	9	L2E	All	All	○	○	○	○	○	○	○	○	○	○	–
460 VΔ; 50 Hz output	9	L2T	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F	All	All	○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VY; 60 Hz output	9	L2L	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VΔ; 50 Hz output	9	L2V	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M	All	All	○	○	○	○	○	○	○	○	○	○	○
Non-standard voltage and/or frequencies															
Non-standard winding ²⁾	9	L1Y • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

¹⁾ Only possible for 4-pole, 6-pole and 8-pole motors. The operating data for converter-fed operation is also provided in a table on the rating plate. Only possible in combination with order codes M38, M39, M73 and M75.

²⁾ Plain text must be specified in the order: Voltage between 200 and 690 V (voltages outside this range are available on request), frequency, circuit, for 60 Hz in addition required rated output in kW.

4.5


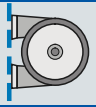

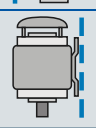

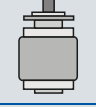
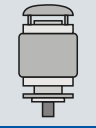


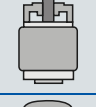
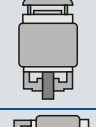

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
requestTypes of construction
Aluminum series 1MA7

Selection and ordering data

Types of construction	Type of construction code 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)										
			Motor version	Motor type (alum.)	Motor type – Frame size										
					63	71	80	90	100	112	132	160	180	200	225
1MA7 ■			Zone 1 Ex e II	1MA7	1MA7										
			Motor version	Motor type	Frame size										
					63	71	80	90	100	112	132	160	180	200	225
Without flange															
IM B3		0	–	All	All	□	□	□	□	□	□	□	□	□	□
IM B6, IM B7, IM B8, IM V6 ¹⁾		0	–	All	All	□	□	□	□	□	□	□	□	□	□
IM V6 ¹⁾		0	–	All	All	□	□	□	□	□	□	□	□	□	□
IM V5 with protective cover ^{1) 2)}		9	M1F	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With flange			acc. to DIN EN 50347 acc. to DIN 42948		FF115 A 140	FF130 A 160	FF165 A 200	FF165 A 200	FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350			
IM B5		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM V3 ¹⁾		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM V1 with protective cover ^{1) 2)}		4	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM B35		6	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With standard flange			acc. to DIN EN 50347 acc. to DIN 42948		FT75 C 90	FT85 C 105	FT100 C 120	FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT215 C 250			
IM B14, IM V19 ¹⁾		2	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM B14, IM V19 ¹⁾		2	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM V18 with protective cover ^{1) 2)}		9	M2A	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM B34		7	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/67.



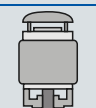

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Aluminum series 1MA7

Types of construction	Type of construction code 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)											
			Motor version	Motor type (alum.)	Motor type – Frame size											
			Zone 1 Ex e II	1MA7	63	71	80	90	100	112	132	160	180	200	225	
1MA7			Motor version	Motor type	Frame size											
With special flange	acc. to DIN EN 50347 acc. to DIN 42948					FT100 C 120	FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT165 C 200	FT215 C 250	FT265 C 300			
IM B14, IM V19 1)		3	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
IM B14, IM V19 1)		3	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
IM V18 with protective cover 1) 2)		9	M2B	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
IM B34		9	M2C	All	All	✓	✓	✓	✓	✓	✓	✓	✓			

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

4.5

1) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

2) The "Second shaft extension" option, order code K16 is not possible.

SIMOTICS XP 1MA Explosion-Proof Motors













Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1MA6

Selection and ordering data

Types of construction	Type of construction code 12th position of Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)															
			Motor version	Motor type (cast-iron)	Motor type – Frame size															
			Zone 1 Ex e II	1MA6	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole	
1MA6...-....			Motor version	Motor type	Frame size															
					71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole	
Without flange																				
IM B3		0	–	All	All															
IM B6, IM B7, IM B8 1) 2)		0	–	All	All															
IM V6 1) 2) 4)		0	–	All	All													–	–	
		9	M1E	All	All													✓	○	
IM V5 with protective cover 1) 2) 3) 4)		9	M1F	All	All													✓	✓	
With flange		acc. to DIN EN 50347 acc. to DIN 42948				FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350	FF300 A 350	FF350 A 400	FF400 A 450	FF500 A 550	FF500 A 550	FF600 A 660	FF600 A 660	FF600 A 660	FF600 A 660	FF600 A 660	
IM B5		1	–	All	All													–	–	
IM V3 1) 5)		1	–	All	All													–	–	
		9	M1G	All	All													–	–	
IM V1 with protective cover 1) 3) 4) 5)		4	–	All	All													✓	✓	
IM B35		6	–	All	All													✓	✓	
With standard flange		acc. to DIN EN 50347 acc. to DIN 42948				FT130 C 160	FT130 C 160	FT165 C 200	FT215 C 250											
IM B14, IM V19 1)		2	–	All	All													–	–	
IM B14, IM V19 1)		2	–	All	All													–	–	
IM V18 with protective cover 1) 3)		9	M2A	All	All													–	–	
IM B34		7	–	All	All													–	–	

For legends and footnotes, see Page 4/69.



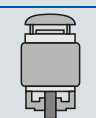

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1MA6

Types of construction	Type of construction code 12th position of Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)												
			Motor version	Motor type (cast-iron)	Motor type – Frame size												
			Zone 1 Ex e II	1MA6	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M
1MA6 ■		Motor version	Motor type	Frame size													
With special flange		acc. to DIN EN 50347 acc. to DIN 42948	FT165 C 200	FT165 C 200	FT215 C 250	FT265 C 300											
IM B14, IM V19 ¹⁾		3	–	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–	–
IM B14, IM V19 ¹⁾		3	–	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–	–
IM V18 with protective cover ^{1) 3)}		9	M2B	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–	–
IM B34		9	M2C	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–	–

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

4.5

¹⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

²⁾ If motors of frame sizes 180 M to 315 L are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

⁴⁾ 60 Hz version is available on request for 2-pole 1MA6 motors of frame size 315 L.

⁵⁾ 1MA6 motors of frame sizes 225 S to 315 M are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.


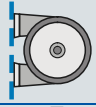
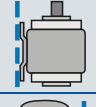
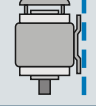

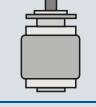
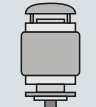
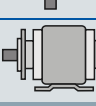

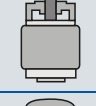
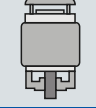

SIMOTICS XP 1MJ Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
requestTypes of construction
Cast-iron series 1MJ6, 1MJ7

Selection and ordering data

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)													
			Motor version	Motor type (cast-iron)	Motor type – Frame size													
					71	80	90	100	112	132	160	180	200	225	250	280	315	
		Zone 1 Ex de IIC		1MJ6/1MJ7	1MJ6										1MJ7			
1MJ			Motor version	Motor type	Frame size													
					71	80	90	100	112	132	160	180	200	225	250	280	315	
Without flange																		
IM B3		0	–	All	All	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
IM B6, IM B7, IM B8 ¹⁾²⁾		0	–	All	All	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
IM V6 ¹⁾²⁾		0	–	All	All	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
IM V5 with protective cover ¹⁾²⁾³⁾		9	M1F	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With flange																		
		acc. to DIN EN 50347 acc. to DIN 42948				FF130	FF165	FF165	FF215	FF215	FF265	FF300	FF300	FF350	FF400	FF500	FF500	FF600
						A 160	A 200	A 200	A 250	A 250	A 300	A 350	A 350	A 400	A 450	A 550	A 550	A 660
IM B5		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IM V3 ¹⁾⁴⁾		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	
		9	M1G	All	All	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	
IM V1 with protective cover ¹⁾³⁾⁴⁾		4	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
IM B35		6	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With standard flange																		
		acc. to DIN EN 50347 acc. to DIN 42948				FT85	FT100	FT115										
						C 105	C 120	C 140										
IM B14, IM V19 ¹⁾		2	–	All	All	✓	✓	✓	–	–	–	–	–	–	–	–	–	
IM B14, IM V19 ¹⁾		2	–	All	All	✓	✓	✓	–	–	–	–	–	–	–	–	–	
IM V18 with protective cover ¹⁾³⁾		9	M2A	All	All	✓	✓	✓	–	–	–	–	–	–	–	–	–	
IM B34		7	–	All	All	✓	✓	✓	–	–	–	–	–	–	–	–	–	

For legends and footnotes, see Page 4/71.

SIMOTICS XP 1MJ Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1MJ6, 1MJ7

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)															
			Motor version	Motor type (cast-iron)	Motor type – Frame size															
			Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6	71	80	90	100	112	132	160	180	200	225	250	280	315		
With special flange					acc. to DIN EN 50347 acc. to DIN 42948		FT115 FT130 C 140 C 160													
1MJ.....			Motor version	Motor type	Frame size															
					71	80	90	100	112	132	160	180	200	225	250	280	315			
IM B14, IM V19 ¹⁾		3	–	All	All	✓	✓	–	–	–	–	–	–	–	–	–	–			
IM B14, IM V19 ¹⁾		3	–	All	All	✓	✓	–	–	–	–	–	–	–	–	–	–			
IM V18 with protective cover ^{1) 3)}		9	M2B	All	All	✓	✓	–	–	–	–	–	–	–	–	–	–			
IM B34		9	M2C	All	All	✓	✓	–	–	–	–	–	–	–	–	–	–			

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

4.5

¹⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

²⁾ If motors of frame sizes 180 M to 315 L are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

⁴⁾ 1MJ7 motors of frame sizes 225 S to 315 M are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

SIMOTICS XP 1LA Explosion-Proof Motors













Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Aluminum series 1LA7, 1LA5, 1LA9

Selection and ordering data

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category	Standard delivery time (colored area)												
				Motor version	Motor type (alum.)	Motor type – Frame size										
				63	71	80	90	100	112	132	160	180	200	225		
				Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7 ①										1LA5 ② ①
				Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LA9	1LA9 ③										
				Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LA9	1LA9 ④										
1LA				Motor version	Motor type	Frame size										
				63	71	80	90	100	112	132	160	180	200	225		
Without flange																
IM B3 ⑤		0	–	All except for ④	□	□	□	□	□	□	□	□	□	□		
IM B6, IM B7, IM B8, IM V6 2) ⑤		0	–	All except for ④	□	□	□	□	□	□	□	□	□	□		
IM V6 2) ⑤		0	–	All except for ④	□	□	□	□	□	□	□	□	□	□		
IM V5 with protective cover 2) 3) ⑤		9	M1F	All except for ④	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
With flange		acc. to DIN EN 50347 acc. to DIN 42948		FF115 A 140 FF130 A 160 FF165 A 200 FF165 A 200 FF215 A 250 FF215 A 250 FF265 A 300 FF300 A 350 FF300 A 350 FF350 A 400 FF400 A 450												
IM B5		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓		
IM V3 2) ④		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	–	–		
		9	M1G	All	All	–	–	–	–	–	–	–	✓	✓		
IM V1 with protective cover 2) 3) ④		4	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓		
IM B35 ⑤		6	–	All except for ④	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
With standard flange		acc. to DIN EN 50347 acc. to DIN 42948		FT75 C 90 FT85 C 105 FT100 C 120 FT115 C 140 FT130 C 160 FT130 C 160 FT165 C 200 FT215 C 250												
IM B14, IM V19 ②		2	–	All	All	✓	✓	✓	✓	✓	✓	✓	–	–		
IM B14, IM V19 ②		2	–	All	All	✓	✓	✓	✓	✓	✓	✓	–	–		
IM V18 with protective cover 2) 3)		9	M2A	All	All	✓	✓	✓	✓	✓	✓	✓	–	–		
IM B34 ⑤		7	–	All except for ④	✓	✓	✓	✓	✓	✓	✓	✓	–	–		

For legends and footnotes, see Page 4/73.

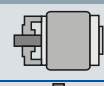
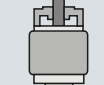
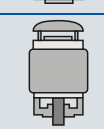
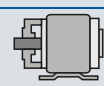
SIMOTICS XP 1LA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Aluminum series 1LA7, 1LA5, 1LA9

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)											
			Motor version	Motor type (alum.)	Motor type – Frame size											
					63	71	80	90	100	112	132	160	180	200	225	
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7 ①										1LA5 ② ①	
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LA9	1LA9 ③											
			Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LA9	1LA9 ④											
1LA ■			Motor version	Motor type	Frame size											
With special flange			acc. to DIN EN 50347 acc. to DIN 42948		63	71	80	90	100	112	132	160	180	200	225	
					FT100 C 120	FT115 C 140	FT130 C 160	FT130 C 160	FT165 C 200	FT165 C 200	FT215 C 250	FT265 C 300				
IM B14, IM V19 ②)		3	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–
IM B14, IM V19 ②)		3	–	All	All	✓	✓	✓	✓	✓	✓	✓	–	–	–	
IM V18 with protective cover ② ③)		9	M2B	All	All	✓	✓	✓	✓	✓	✓	✓	–	–	–	
IM B34 ⑤)		9	M2C	All except for ④		✓	✓	✓	✓	✓	✓	✓	–	–	–	

4.5

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

1) Zone 2 is not possible for motor series 1LA5.

2) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

3) The "Second shaft extension" option, order code K16 is not possible.

4) For frame sizes 180 M to 225 M, the 1LA5 motors can be supplied with two additional eyebolts; state identification code "-Z" and order code K32.

5) For the North America export version of 1LA9 motors with order code D42, types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors









Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1LA6, 1LG4, 1LG6

Selection and ordering data

Types of construction	Type of construction code	Additional identification code with order code and plain text if required	Motor category	Standard delivery time (colored area)												
				Motor version	Motor type (cast-iron)	Motor type – Frame size										
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6 ①				1LG4 ②							
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6					1LG6 ③							
			Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6					1LG6 ④							
			Motor version	Motor type	Frame size											
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole
1L.....-.....■																
Without flange																
IM B3 ⁶⁾		0	–	All except for ④ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	□	□
IM B6, IM B7, IM B8 ^{1) 2) 6)}		0	–	All except for ④ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	□	□
IM V6 ^{1) 2) 4) 6)}		0	–	All except for ④ ≤ 200 hp	□	□	□	□	□	□	□	□	□	□	–	–
		9	M1E	All except for ④ ≤ 200 hp	–	–	–	–	–	–	–	–	–	–	✓	○
IM V5 with protective cover ^{1) 2) 3) 4) 6)}		9	M1F	All except for ④ ≤ 200 hp	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With flange																
		acc. to DIN EN 50347 acc. to DIN 42948			FF215 A 250	FF215 A 250	FF265 A 300	FF300 A 350	FF300 A 350	FF350 A 400	FF400 A 450	FF500 A 550	FF500 A 550	FF600 A 660	FF600 A 660	FF600 A 660
IM B5		1	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–
IM V3 ^{1) 5)}		1	–	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–
		9	M1G	All	All	–	–	–	–	✓	✓	✓	✓	✓	–	–
IM V1 with protective cover ^{1) 3) 4) 5)}		4	–	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM B35 ⁶⁾		6	–	All except for ④ ≤ 200 hp		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/75.









SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Types of construction
Cast-iron series 1LA6, 1LG4, 1LG6

Types of construction	Type of construction code 12th position of Order No.	Additional identification code with order code and plain text if required	Motor category		Standard delivery time (colored area)												
			Motor version	Motor type (cast-iron)	Motor type – Frame size												
					100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole	
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6 ①				1LG4 ②								
			Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6					1LG6 ③								
			Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6					1LG6 ④								
			Motor version	Motor type	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	315 L 4-pole, 6-pole, 8-pole	
1L.....																	
With standard flange			acc. to DIN EN 50347 acc. to DIN 42948		FT130 C 160	FT130 C 160	FT165 C 200	FT215 C 250									
IM B14, IM V19 ¹⁾		2	-	All	All	✓	✓	✓	✓	-	-	-	-	-	-	-	
IM B14, IM V19 ¹⁾		2	-	All	All	✓	✓	✓	✓	-	-	-	-	-	-	-	
IM V18 with protective cover ^{1) 3)}		9	M2A	All	All	✓	✓	✓	✓	-	-	-	-	-	-	-	
IM B34 ⁶⁾		7	-	All except for ④ ≤ 200 hp	All	✓	✓	✓	✓	-	-	-	-	-	-	-	
With special flange			acc. to DIN EN 50347 acc. to DIN 42948		FT165 C 200	FT165 C 200	FT215 C 250	FT265 C 300									
IM B14, IM V19 ¹⁾		3	-	All	All	✓	✓	✓	✓	-	-	-	-	-	-	-	
IM B14, IM V19 ¹⁾		3	-	All	All	✓	✓	✓	✓	-	-	-	-	-	-	-	
IM V18 with protective cover ^{1) 3)}		9	M2B	All	All	✓	✓	✓	✓	-	-	-	-	-	-	-	
IM B34 ⁶⁾		9	M2C	All except for ④ ≤ 200 hp	All	✓	✓	✓	✓	-	-	-	-	-	-	-	

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

¹⁾ The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

²⁾ If motors of frame sizes 180 M to 315 L are fixed to the wall, it is recommended that the motor feet are supported.

³⁾ The "Second shaft extension" option, order code K16 is not possible.

⁴⁾ 60 Hz version is available on request for 2-pole 1LG4/1LG6 motors of frame size 315 L.

⁵⁾ 1LG4/1LG6 motors of frame sizes 225 S to 315 M are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

⁶⁾ For the North America export version of 1LG6 motors with order code D42, types of construction with feet are not possible for 2-pole, 4-pole and 6-pole motors ≤ 200 hp NEMA Energy Efficient in accordance with NEMA MG1 Table 12-11.

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SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Aluminum series 1MA7

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (alum.)	Motor type – Frame size										
1MA7-Z		Zone 1 Ex e II	1MA7	63	71	80	90	100	112	132	160	180	200	225
		Motor version	Motor type	Frame size										
				63	71	80	90	100	112	132	160	180	200	225
Design for Zones according to ATEX														
T1/T2 on rating plate ¹⁾	C30	All	All	–	–	–	–	–	–	○	○			
Motor protection														
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ²⁾	A11	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ²⁾	A12	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Motor connection and connection box														
Connection box on RHS	K09	All	All	–	–	✓	✓	✓	✓	✓	✓			
Connection box on LHS	K10	All	All	–	–	✓	✓	✓	✓	✓	✓			
Rotation of the connection box through 90°, entry from DE	K83	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Rotation of the connection box through 90°, entry from NDE	K84	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Rotation of the connection box through 180°	K85	All	All	✓	✓	✓	✓	○	○	○	○			
Windings and insulation														
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ³⁾	C22	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ³⁾	C23	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ³⁾	C24	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % ³⁾	C25	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Colors and paint finish														
Special finish in RAL 7030 stone gray		All	All	□	□	□	□	□	□	□	□			
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" in Catalog D 81.1 · 2008 Part 0 "Introduction"	Y51 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Special paint for use offshore	M91	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.			
Unpainted (only cast-iron parts primed)	K23	All	All	○	○	○	○	○	○	○	○			
Unpainted, only primed	K24	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Mechanical design and degrees of protection														
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar (not possible for IM V3 type of construction)	K17	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Low-noise version for 2-pole motors with clockwise direction of rotation ⁴⁾	K37	All	All	–	–	–	–	–	–	✓	✓			
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ⁴⁾	K38	All	All	–	–	–	–	–	–	✓	✓			
IP65 degree of protection	K50	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
IP56 degree of protection	K52	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Vibration-proof version	L03	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Condensation drainage holes ⁵⁾	L12	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Rust-resistant screws (externally)	M27	All	All	–	–	✓	✓	✓	✓	✓	✓			

For legends and footnotes, see Page 4/78.

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Aluminum series 1MA7

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (alum.)	Motor type – Frame size										
				63	71	80	90	100	112	132	160	180	200	225
		Zone 1 Ex e II	1MA7	1MA7										
	1MA7 -Z	Motor version	Motor type	63	71	80	90	100	112	132	160	180	200	225
Coolant temperature and site altitude														
Coolant temperature -40 to +40 °C for Ex motor ⁶⁾	D19	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Designs in accordance with standards and specifications														
CCC China Compulsory Certification ⁷⁾	D01	All	All	✓	✓	✓	✓	-	-	-	-			
Ex certification for Russia	D35 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VIK version	K30	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication														
Bearing design for increased cantilever forces	K20	All	All	-	-	-	-	✓	✓	✓	✓			
Regreasing device	K40	All	All	-	-	-	-	✓	✓	✓	✓			
Located bearing DE	K94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	
Balance and vibration quantity														
Vibration quantity level A		All	All	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B	K02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	L68	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor														
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ⁸⁾	K04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension ⁹⁾	K16	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with standard dimensions, without feather keyway	K42	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ¹⁰⁾	Y55 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation														
Metal external fan	K35	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates														
Second lubrication plate, loose	B06	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates														
Acceptance test certificate 3.1 in accordance with EN 10204 ¹¹⁾	B02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed German/English Operating Instructions enclosed	B23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in English and German ¹²⁾	<i>New!</i>	All	All	□	□	□	□	□	□	□	□	□	□	□
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in French, Spanish, Italian and Czech ¹²⁾	B25 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in Swedish, Danish, Dutch and Finnish ¹²⁾	B26 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in other official EU languages ¹²⁾	Y98 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	All	All	○	○	○	○	○	○	○	○	○	○	○

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For legends and footnotes, see Page 4/78.

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Options Aluminum series 1MA7

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

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- 1) 2-pole 1MA motors of frame size 132 to 160 are designed as standard with double rating plate (T1/T2 and T3). If the motors are designed to order codes A11/A12 or voltage code "9", the T3 output will be stamped on the rating plate as standard. Alternatively, the "T1/T2 output on the rating plate when ordered with order code C30" can be stamped.
- 2) Evaluation with appropriate 3RN1 tripping unit (see Catalog IC 10) is recommended. A certified tripping unit is necessary for use in hazardous areas. Motor protection by means of PTC thermistor as sole protection available on request.
- 3) The maximum possible certified output will be supplied. In the case of motors with T2/T3 output, T3 output will be supplied. The T2 output must be ordered with the order code C30.
- 4) 1MA7 motors are up to 80 mm longer than normal. A second shaft extension is not possible.
- 5) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE for IP55, IP56 and IP65 degrees of protection. If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.
- 6) Not possible in combination with vibration-proof version, order code L03.
- 7) CCC certification is required for:
 - 2-pole motors ≤ 2.2 kW
 - 4-pole motors ≤ 1.1 kW
 - 6-pole motors ≤ 0.75 kW
 - 8-pole motors ≤ 0.55 kW
- 8) Can be combined with deep-groove bearings of series 60... 62... and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20).
- 9) Not possible for low-noise version (2-pole) for frame sizes 132 S to 160 L. Version with protective cover not possible.
- 10) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and K16:
 - Dimensions D and DA \leq internal diameter of roller bearing (see dimension tables under "Dimensions")
 - Dimensions E and EA $\leq 2 \times$ length E (normal) of the shaft extension
 For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".
- 11) The delivery time for the factory test certificate may differ from the delivery time for the motor.
- 12) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1MA6

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)												
		Motor version	Motor type (cast-iron)	Motor type – Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
1MA6 ... -Z		Motor version	Motor type	Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
Design for Zones according to ATEX																
T1/T2 on rating plate ¹⁾	C30	All	All					○	○							
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ²⁾	A11	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ²⁾	A12	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings ²⁾	A72	All	All									O. R.	O. R.	O. R.	O. R.	
Installation of 2 PT100 screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings ²⁾	A78	All	All									O. R.	O. R.	O. R.	O. R.	
Motor connection and connection box																
Connection box on RHS	K09	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15	All	All		□	□	□	□	□	□	□	□	□	□	□	□
Rotation of the connection box through 90°, entry from DE	K83	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 180°	K85	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Next larger connection box	L00	All	All							✓	✓	✓	✓	✓	✓	✓
Auxiliary connection box 1XB3020	L97	All	All									✓	✓	✓	✓	✓
Windings and insulation																
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ³⁾	C22	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ³⁾	C23	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ³⁾	C24	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % ³⁾	C25	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Colors and paint finish																
Standard finish in RAL 7030 stone gray		All	All										□	□	□	□
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y53 • and standard finish RAL	All	All										✓	✓	✓	✓
Special finish in RAL 7030 stone gray ⁴⁾	K26	All	All		□	□	□	□	□	□	□	□	✓	✓	✓	✓
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends and footnotes, see Page 4/81.

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options Cast-iron series 1MA6

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)												
		Motor version	Motor type (cast-iron)	Motor type – Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
1MA6 ... -Z		Zone 1 Ex e II	1MA6	1MA6												
		Motor version	Motor type	Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
Colors and paint finish (continued)																
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" in Catalog D 81.1 · 2008 Part 0 "Introduction"	Y51 • and special finish RAL	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special paint for use offshore	M91	All	All				O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Special finish sea air resistant	M94	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unpainted (only cast-iron parts primed)	K23	All	All				○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar (not possible for IM V3 type of construction; frame size 180 M and above only available for 4-pole to 6-pole motors)	K17	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation ⁵⁾	K37	All	All				–	–	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ⁵⁾	K38	All	All				–	–	✓	✓	✓	✓	✓	✓	✓	✓
IP65 degree of protection	K50	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection	K52	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	All	All				✓	✓	✓	–	–	–	–	–	–	–
Condensation drainage holes ⁶⁾	L12	All	All				✓	✓	✓	✓	✓	✓	□	□	□	□
Rust-resistant screws (externally)	M27	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature and site altitude																
Coolant temperature –40 to +40 °C for Ex motor ⁷⁾	D19	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
Ex certification for Russia	D35 <i>New!</i>	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VIK version	K30	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	All	All				–	–	–	–	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces ⁸⁾	K20	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regreasing device	K40	All	All				✓	✓	✓	✓	✓	✓	✓	✓	□	□
Located bearing DE	K94	All	All				✓	✓	✓	✓	✓	✓	–	–	–	–
Located bearing NDE	L04	All	All				✓	✓	✓	□	–	–	–	–	–	–
Balance and vibration quantity																
Vibration quantity level A		All	All				□	□	□	□	□	□	□	□	□	□
Vibration quantity level B	K02	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	L68	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ⁹⁾	K04	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension ¹⁰⁾	K16	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with standard dimensions, without feather keyway	K42	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ¹¹⁾	Y55 • and identification code	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																
Metal external fan	K35	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 230 V	K45	All	All				–	–	–	–	–	–	✓	✓	✓	✓
Anti-condensation heating for 115 V	K46	All	All				–	–	–	–	–	–	✓	✓	✓	✓
Rating plate and extra rating plates																
Second lubrication plate, loose	B06	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/81.

SIMOTICS XP 1MA Explosion-Proof Motors

Supplements to order numbers and special versions

Options
Cast-iron series 1MA6

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)												
		Motor version	Motor type (cast-iron)	Motor type – Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
1MA6 ... -Z		Zone 1 Ex e II	1MA6	1MA6												
		Motor version	Motor type	Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
Rating plate and extra rating plates (continued)																
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates																
Acceptance test certificate 3.1 in accordance with EN 10204 12)	B02	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed German/English Operating Instructions enclosed	B23	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in English and German 13)	<i>New!</i>	All	All		□	□	□	□	□	□	□	□	□	□	□	□
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in French, Spanish, Italian and Czech 13)	B25 <i>New!</i>	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in Swedish, Danish, Dutch and Finnish 13)	B26 <i>New!</i>	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in other official EU languages 13)	Y98 • <i>New!</i> and identification code	All	All		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	All	All		○	○	○	○	○	○	○	○	○	○	○	○

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- . R. Possible on request
- ✓ With additional charge
- Not possible

- 1) 2-pole 1MA motors of frame size 132 to 160 are designed as standard with a double rating plate (T1/T2 and T3). If the motors are designed to order codes A11/A12 or voltage code "9", the T3 output will be stamped on the rating plate as standard. Alternatively, the "T1/T2 output on the rating plate when ordered with order code C30" can be stamped.
- 2) Evaluation with appropriate 3RN1 tripping unit (see Catalog IC 10) is recommended. A certified tripping unit is necessary for use in hazardous areas. Motor protection with PTC thermistors is available as sole protection up to frame size 160 L on request. With frame size 180 M and above, it is not permitted as sole protection; motor protection switch is required.
- 3) The maximum possible certified output will be supplied. In the case of motors with T2/T3 output, T3 output will be supplied. The T2 output must be ordered with the order code C30.
- 4) For frame sizes 100 to 200, do not specify an order code. Order code is only necessary for frame sizes 225 to 315.
- 5) 1MA6 motors are up to 80 mm longer than normal. A second shaft extension is not possible.
- 6) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE for IP55, IP56 and IP65 degrees of protection. If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.
- 7) Not possible in combination with vibration-proof version, order code L03.
- 8) Not possible for 2-pole 1MA6 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level B are available on request for 1MA6 motors of frame size 225 M and above. Not possible for 1MA6 motors of frame size 225 M and above in combination with concentricity of shaft extension, coaxiality and linear movement according to DIN 42955 Tolerance R for flange-mounting types.
- 9) Can be combined with deep-groove bearings of series 60... 62... and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20).
- 10) For motors of frame size 180 M and above in vertical type of construction in version with second shaft extension on request. Not possible for low-noise version (2-pole) for frame sizes 132 S to 160 L. Version with protective cover not possible.
- 11) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and K16:
 - Dimensions D and DA ≤ internal diameter of roller bearing (see dimension tables under "Dimensions")
 - Dimensions E and EA ≤ 2 x length E (normal) of the shaft extension
 For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".
- 12) The delivery time for the factory test certificate may differ from the delivery time for the motor.
- 13) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WW/view/en/10803948/133300>

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SIMOTICS XP 1MJ Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1MJ6, 1MJ7

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category	Standard delivery time (colored area)																	
			Motor version	Motor type (cast-iron)	Motor type – Frame size															
				71	80	90	100	112	132	160	180	200	225	250	280	315				
		Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6													1MJ7			
	1MJ.....-Z	Motor version	Motor type	Frame size																
				71	80	90	100	112	132	160	180	200	225	250	280	315				
Design for Zones according to ATEX																				
Design (IP65) for Zone 1 and 21, as well as Zone 22 for conductive dust, for mains-fed operation ¹⁾	M76	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Design (IP65) for Zone 1 and 21, as well as Zone 22 for conductive dust, for converter-fed operation – with derating ¹⁾	M77	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor protection																				
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ²⁾³⁾	A11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ²⁾³⁾⁴⁾	A12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor protection with PTC thermistors for converter-fed operation with 4 embedded temperature sensors for tripping ²⁾³⁾	A15	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor protection with PTC thermistors for converter-fed operation with 8 embedded temperature sensors for alarm and tripping ²⁾³⁾⁴⁾	A16	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings ²⁾	A72	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.
Installation of 2 PT100 screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings ²⁾	A78	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	O. R.	O. R.	O. R.	O. R.
Motor connection and connection box																				
Connection box on RHS	K09	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□
Explosion-proof connection box, Ex d IIC type of protection ⁶⁾	K53	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 180°	K85	All	All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Auxiliary connection box 1XB3020 ⁷⁾	L97	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
Saddle terminal for connection without cable lug, accessories pack (3 items of high saddle terminals)	M47	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓
Windings and insulation																				
Increased air humidity/temperature with 30 to 60 g water per m ³ of air ⁸⁾⁹⁾¹⁰⁾	C19	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ¹¹⁾	C22	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ¹¹⁾	C23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/85.

SIMOTICS XP 1MJ Explosion-Proof Motors

Supplements to order numbers and special versions

Options
Cast-iron series 1MJ6, 1MJ7

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)													
		Motor version	Motor type (cast-iron)	Motor type – Frame size													
				71	80	90	100	112	132	160	180	200	225	250	280	315	
		Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6										1MJ7			
	1MJ.....-Z	Motor version	Motor type	Frame size													
				71	80	90	100	112	132	160	180	200	225	250	280	315	
Windings and insulation (continued)																	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ¹¹⁾	C24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Increased air humidity/temperature, with 60 to 100 g water per m ³ of air ^{9) 10)}	C26	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA ... m above sea level	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Colors and paint finish																	
Standard finish in RAL 7030 stone gray		All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y53 • and standard finish RAL	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	
Special finish in RAL 7030 stone gray ¹²⁾	K26	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□	
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" in Catalog D 81.1 · 2008 Part 0 "Introduction"	Y51 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special paint for use offshore	M91	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	
Special finish sea air resistant	M94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Unpainted (only cast-iron parts primed)	K23	All	All	○	○	○	○	○	○	○	○	○	○	○	○	○	
Unpainted, only primed	K24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special technology																	
Mounting of explosion-proof rotary pulse encoder for use on motors Ex d/de in Zone 1 ¹³⁾	H87	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of explosion-proof separately driven fan Ex de for use in Zone 1 ¹⁴⁾	M98	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	
Mechanical design and degrees of protection																	
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar (not possible for IM V3 type of construction; frame sizes 180 M and above only available for 4-pole to 8-pole motors)	K17	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Low-noise version for 2-pole motors with clockwise direction of rotation ¹⁵⁾	K37	All	All	–	–	–	–	–	–	–	–	–	–	–	–	–	

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For legends and footnotes, see Page 4/85.

SIMOTICS XP 1MJ Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1MJ6, 1MJ7

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)												
		Motor version	Motor type (cast-iron)	Motor type – Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
		Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6									1MJ7			
	1MJ.....-Z	Motor version	Motor type	Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
Mechanical design and degrees of protection (continued)																
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ¹⁵⁾	K38	All	All	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
IP65 degree of protection ¹⁶⁾	K50	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection ¹⁷⁾	K52	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	All	All	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-
Mechanical protection for encoder ¹⁸⁾	M68	All	All	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
CCC China Compulsory Certification ²⁰⁾	D01	All	All	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
Ex certification for China ²⁰⁾	D32	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
China Energy Efficiency Label ²⁰⁾	D34 <i>New!</i>	All	All	○	○	○	○	○	○	○	○	○	○	○	○	○
Ex certification for Russia	D35 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VIK version	K30	Only possible for 8-pole motors and motors < 0.75 kW		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	All	All	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces ²¹⁾	K20	All	All	-	-	-	-	-	-	-	✓	✓	✓	-	-	-
Regreasing device	K40	All	All	-	-	-	-	-	-	-	✓	✓	✓	□	□	□
Insulated bearing cartridge	L27	All	All	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
Balance and vibration quantity																
Vibration quantity level A		All	All	□	□	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B	K02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	L68	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ²²⁾	K04	All	All	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
Second standard shaft extension ²³⁾	K16	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	All	All	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ²⁴⁾	Y55 • and identification code	All	All	-	-	-	-	-	-	-	-	-	O. R.	O. R.	O. R.	O. R.
Heating and ventilation																
Metal external fan	K35	All	All	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 230 V ^{8) 9)}	K45	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heating for 115 V ^{8) 9)}	K46	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code	All	All	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓
Rating plate and extra rating plates																
Second lubrication plate, loose	B06	All	All	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓
Second rating plate, loose	K31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/85.

SIMOTICS XP 1MJ Explosion-Proof Motors

Supplements to order numbers and special versions

Options

Cast-iron series 1MJ6, 1MJ7

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)												
		Motor version	Motor type (cast-iron)	Motor type – Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
		Zone 1 Ex de IIC	1MJ6/1MJ7	1MJ6										1MJ7		
1MJ.....-Z		Motor version	Motor type	Frame size												
				71	80	90	100	112	132	160	180	200	225	250	280	315
Packaging, safety notes, documentation and test certificates																
Acceptance test certificate 3.1 in acc. with EN 10204 ²⁵⁾	B02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed German/English Operating Instructions enclosed	B23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in English and German ²⁶⁾	<i>New!</i>	All	All	□	□	□	□	□	□	□	□	□	□	□	□	□
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in French, Spanish, Italian and Czech ²⁶⁾	B25 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in Swedish, Danish, Dutch and Finnish ²⁶⁾	B26 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in other official EU languages ²⁶⁾	Y98 • <i>New!</i> and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	All	All	○	○	○	○	○	○	○	○	○	○	○	○	○

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.

- . R. Possible on request
- ✓ With additional charge
- Not possible

- 1) Please inquire regarding combination with order code M98. Not possible in combination with order codes D32, K50 and K52.
- 2) Evaluation with appropriate 3RN1 tripping unit (see Catalog IC 10) is recommended. A certified tripping unit is necessary for use in hazardous areas.
- 3) For 1MJ6 motors, for a version with PTC thermistors, an anti-condensation heater (order code K45, K46) up to frame size 160 L is not possible.
- 4) For 1MJ6 motors frame sizes 180 to 200 and 1MJ7 motors, for a version with PTC thermistors, an anti-condensation heater (order code K45, K46) is not possible. Exception: 1MJ7 frame size 315.
- 5) For 1MJ6 motors frame size 160 L standard version.
- 6) Drilled holes for the cable glands are sealed with Ex d plugs for 1MJ motors as standard. On request, the Ex d cable entries can be supplied for 1MJ7 motors. When ordering, the number of cables and outer diameters must be specified so that the appropriate cable glands can be supplied.
- 7) Not possible in combination with order code K53, because the auxiliary connection box is only approved for Ex de.
- 8) For 1MJ6 motors, version with 3 or 4 PTC thermistors (order codes A11, A15) is only possible up to frame size 160 L with a star winding.
- 9) Not possible for version with 6 or 8 PTC thermistors (order codes A12, A16). Exception: 1MJ7 frame size 315.
- 10) Order codes C26 and C19 include order code K45 anti-condensation heating for 230 V.
- 11) There is no derating in combination with order codes L2A, L2C, L2Q, L2R, L2S, L2T, L2U and L2V.
- 12) For frame sizes 71 to 200, do not specify an order code. Order code is only necessary for frame sizes 225 to 315.
- 13) Please inquire regarding combination with order codes C19, C26 and M98. Not possible in combination with order codes C22 to C25 (frame sizes 90 to 160), D19, K16, K50, L27, M77. Combination with a protective cover is not possible. In the case of a vertical mounting position, therefore, a suitable cover must be implemented by the customer to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 14) Please inquire regarding combinations with order codes C19, C22 to C26, D19, H87, K50, K52, M76 and M77. Not possible in combination with order code K16.
- 15) The motors are up to 80 mm longer than normal. A second shaft extension is not possible.
- 16) Order code K50 (IP65 degree of protection) can only be ordered for Zone 1. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 17) Combination of order code K52, IP56 degree of protection, with M76 or M77 is not admissible.

- 18) 1MJ6 motors of frame sizes 90 to 160 feature the rugged, flange-mounted rotary pulse encoder Ex OG 9 which offers a high level of mechanical protection for itself. Mechanical protection for the encoder is not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.
- 19) CCC certification is required for:
 - 2-pole motors ≤ 2.2 kW
 - 4-pole motors ≤ 1.1 kW
 - 6-pole motors ≤ 0.75 kW
 - 8-pole motors ≤ 0.55 kW
- 20) Only admissible for converter-fed operation in combination with order codes A15, A16 or M77.
- 21) Bearings for increased cantilever forces at vibration quantity level B on request.
- 22) Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20).
- 23) For 1MJ6/1MJ7 motors of frame size 180 M and above in vertical type of construction in version with second shaft extension on request. Not possible for low-noise version (2-pole). Version with protective cover not possible.
- 24) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and K16:
 - Dimensions D and DA ≤ internal diameter of roller bearing (see dimension tables under "Dimensions")
 - Dimensions E and EA ≤ 2 x length E (normal) of the shaft extension
 For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".
- 25) The delivery time for the factory test certificate may differ from the delivery time for the motor.
- 26) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>

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SIMOTICS XP 1LA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Aluminum series 1LA7, 1LA5, 1LA9

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7 ①								1LA5 ② ①			
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LA9	1LA9 ③											
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LA9	1LA9 ④											
		Motor version	Motor type	Frame size											
		1LA.....-Z		63	71	80	90	100	112	132	160	180	200	225	
Design for Zones according to ATEX ②)															
Design for Zone 2 for mains-fed operation Ex nA II T3 according to IEC/EN 60079-15 ③)	M72	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Design for Zone 2 for converter-fed operation, with derating Ex nA II T3 according to IEC/EN 60079-15 ③)4)5)	M73	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Design (IP55) for Zone 2 and 22, for non-conductive dust, for mains-fed operation ⑥)	M74	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Design (IP55) for Zone 2 and 22, for non-conductive dust, for converter-fed operation, with derating ④)5)6)	M75	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for mains-fed operation ⑦)	M34	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for converter-fed operation, with derating ③)5)7)	M38	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Design for Zone 22 for non-conductive dust (IP55), for mains-fed operation	M35	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Design for Zone 22 for non-conductive dust (IP55), for converter-fed operation, with derating ③)5)	M39	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
VIK version (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate) ⑧)	K30	Only possible for ③, ④, 8-pole motors and motors < 0.75 kW		✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Ex nA II on VIK rating plate	C27	Only possible for ③, ④, 8-pole motors and motors < 0.75 kW		✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Alternative converter (SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS G120, SINAMICS S120 or ET 200S FC)	Y68 • and converter type	All	All	○	○	○	○	○	○	○	○	○	○	○	
Motor protection															
With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22 ⑨)	A10	Only possible for ①, ③ and ④		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ⑨)	A11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping ⑨)	A12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor temperature detection with embedded temperature sensor KTY 84-130 ⑨)	A23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ⑨)	A25	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Installation of 3 PT 100 resistance thermometers ⑨) ⑩)	A60	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	

For legends and footnotes, see Page 4/90.

SIMOTICS XP 1LA Explosion-Proof Motors

Supplements to order numbers and special versions

10 working days	20 working days	On request
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Options
Aluminum series 1LA7, 1LA5, 1LA9

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7 ①								1LA5 ② 1)			
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LA9	1LA9 ③											
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LA9	1LA9 ④											
1LA -Z		Motor version	Motor type	Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
Motor connection and connection box															
Connection box on RHS	K09	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Connection box on LHS	K10	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
One metal cable gland 11)	K54	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
One metal cable gland, certified according to ATEX 8)	J04 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Cable gland, max. configuration, certified according to ATEX	K55	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	
Rotation of the connection box through 90°, entry from DE	K83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 90°, entry from NDE	K84	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 180°	K85	All	All	✓	✓	✓	✓	○	○	○	○	✓	✓	✓	
Next larger connection box	L00	All	All	–	–	–	–	–	–	–	–	✓	✓	✓	
External grounding	L13	All	All	□	□	□	□	□	□	□	□	□	□	□	
Windings and insulation															
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % 12)	C22	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % 12)	C23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % 12)	C24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA m above sea level	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Colors and paint finish															
Special finish in RAL 7030 stone gray		All	All	□	□	□	□	□	□	□	□	□	□	□	
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" in Catalog D 81.1 · 2008 Part 0 "Introduction"	Y51 • and special finish RAL	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special finish sea air resistant	M94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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For legends and footnotes, see Page 4/90.

SIMOTICS XP 1LA Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Aluminum series 1LA7, 1LA5, 1LA9

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (alum.)	Motor type – Frame size										
				63	71	80	90	100	112	132	160	180	200	225
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7 ①							1LA5 ② ①			
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LA9	1LA9 ③										
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LA9	1LA9 ④										
1LA -Z		Motor version	Motor type	63	71	80	90	100	112	132	160	180	200	225
Colors and paint finish (continued)														
Unpainted (only cast-iron parts primed)	K23	All	All	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special technology														
Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22 ⑬)	H86	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Mounting of explosion-proof separately driven fan II 3D for use in Zone 22 ⑭)	M97	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection														
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar (not possible for IM V3 type of construction)	K17	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With two additional eyebolts for IM V1/IM V3	K32	Only possible for ②		-	-	-	-	-	-	-	-	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation	K37	All	All	-	-	-	-	-	-	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38	All	All	-	-	-	-	-	-	✓	✓	✓	✓	✓
IP65 degree of protection ⑮)	K50	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection ⑯)	K52	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Condensation drainage holes ⑰)	L12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rust-resistant screws (externally)	M27	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical protection for encoder ⑱)	M68	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Coolant temperature and site altitude														
Coolant temperature -40 to +40 °C for explosion-proof motor ⑲)	D19	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications														
CCC China Compulsory Certification ⑳)	D01	All	All	✓	✓	✓	✓	-	-	-	-	-	-	-
Electrical according to NEMA MG1-12	D30	All; for ④ standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex certification for China (only valid for Zone 2)	D32	Only possible for ③ and ④		✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
China Energy Efficiency Label	D34	Only possible for ③ and ④		○	○	○	○	○	○	○	○	○	○	○
Ex certification for Russia	D35	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEMA Energy Efficient, North America version according to NEMA MG1, Table 12-11	D42	Only possible for ④		O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	-
Bearings and lubrication														
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces	K20	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Regreasing device	K40	All	All	-	-	-	-	✓	✓	✓	✓	✓	✓	✓
Located bearing DE	K94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□
Balance and vibration quantity														
Vibration quantity level A		All	All	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B	K02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	L68	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/90.

SIMOTICS XP 1LA Explosion-Proof Motors

Supplements to order numbers and special versions

Options

Aluminum series 1LA7, 1LA5, 1LA9

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)											
		Motor version	Motor type (alum.)	Motor type – Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA7	1LA7 ①								1LA5 ② 1)			
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LA9	1LA9 ③											
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LA9	1LA9 ④											
1LA -Z		Motor version	Motor type	Frame size											
				63	71	80	90	100	112	132	160	180	200	225	
Shaft and rotor															
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors 21)	K04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Second standard shaft extension	K16	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Shaft extension with standard dimensions, without feather keyway	K42	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Standard shaft made of stainless steel	M65	Only possible for ① and ②		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Non-standard cylindrical shaft extension 22)	Y55 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Heating and ventilation															
Fan cover for textile industry 23)	H17	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Metal external fan 24)	K35	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Anti-condensation heating, Ex. 115 V	M14	All	All	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	
Anti-condensation heating, Ex. 230 V	M15	All	All	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	
Rating plate and extra rating plates															
Second lubrication plate, loose	B06	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	
Second rating plate, loose	K31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rating plate, stainless steel	M40 <i>New!</i>	Only possible for ③ and ④		✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Extra rating plate with identification codes	Y82 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Packaging, safety notes, documentation and test certificates															
Acceptance test certificate 3.1 in acc. with EN 10204 25)	B02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Printed German/English Operating Instructions enclosed	B23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in English and German 26)	<i>New!</i>	All	All	□	□	□	□	□	□	□	□	□	□	□	
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in French, Spanish, Italian and Czech 26)	B25 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in Swedish, Danish, Dutch and Finnish 26)	B26 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in other official EU languages 26)	Y98 • and identification code <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Type test with heat run for horizontal motors, with acceptance	F83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Wire-lattice pallet	L99	All	All	○	○	○	○	○	○	○	○	○	–	–	
Connected in star for dispatch	M32	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Connected in delta for dispatch	M33	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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For legends and footnotes, see Page 4/90.

SIMOTICS XP 1LA Explosion-Proof Motors

Supplements to order numbers and special versions

Options

Aluminum series 1LA7, 1LA5, 1LA9

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

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- 1) Zone 2 is not possible for motor series 1LA5. For Zone 2, instead of 1LA5 motors, 1LG4 motors are used.
- 2) Anti-condensation heating not possible up to frame size 71 M.
- 3) These motors do not have a rated voltage range stamped on the rating plate.
- 4) According to the standard, the motor and converter must be tested as a unit. A "Manufacturer test certificate" is available for a defined spectrum of Siemens motors (frame sizes 63 M to 315 L)/converters. Please inquire in the case of a non-Siemens converter (additional charge).
- 5) With this option, PTC thermistors for temperature class 130 (B) are included. For compliance with the admissible temperature class 130 (B), derating is necessary in the case of converter-fed operation in Zones 2, 21 and 22. The operating data for the MICROMASTER converter series from Siemens are specified on the rating plate as standard. Derating information is available on request. For converter-fed operation, voltage codes/ order codes are only admissible with one voltage only.
- 6) Please inquire regarding combination with order codes D19, K30 and M97. Not possible in combination with order codes D32, K50 and K52.
- 7) Zone 21 includes conductive and non-conductive dust.
- 8) Order code J04 cannot be combined with order codes M34, M38, M72, M73, M74 and M75, because they are already included as standard.
- 9) Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended. A certified tripping unit is necessary for use in hazardous areas. KTY 84-130 and PT100 are not admissible as sole protection. For full motor protection under mains-fed operation implemented only with PTC thermistors, please inquire. Up to frame size 160 the combination A11 + A25 is available on request.
- 10) In combination with order code A60, for frame sizes 100 to 160 order codes A11, A12, A22, A25, M14 and M15 are not possible. It can only be supplied with a star or delta winding for direct switch-on (3 terminals).
- 11) For 1LA7, 1LA5 and 1LA9 motors, additional charge only applies to Zone 22. Designs for Zones 2 and 21 already have a certified metal cable gland in the standard version. For 1LA9 motors only possible for frame size 80 and above.
- 12) There is no derating in combination with order codes L2A, L2C, L2Q, L2R, L2S, L2T, L2U and L2V.
- 13) Please inquire regarding combination with order codes C19, C26, L27 and M97. Not possible in combination with order code K16. Combination with a protective cover is not possible. In the case of a vertical mounting position, therefore, a suitable cover must be implemented by the customer to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 14) Please inquire regarding combinations with order codes C19, C22, C23, C24, C25, C26, C27, D19, H86, K30, K50 and K52. Not possible in combination with order codes C27, K16, K30, M72, M73, M34, M38, M74 and M75.
- 15) Order code K50 (IP65 degree of protection) can only be ordered for Zone 2. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 16) Order code K52 IP56 degree of protection is only possible for Zone 2. Not admissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).
- 17) Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE for IP55, IP56 and IP65 degrees of protection. If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.
- 18) Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.
- 19) Not possible in combination with order code L03. The mechanical limit speed for the 2-pole motors 1LA5 and 1LA9 in the version for Zone 21/22 is reduced for frame size 180 and above as compared to the values for converter-fed operation in Catalog section 2.7:

Frame size	2-pole, n_{\max} in rpm	f_{\max} in Hz
180	3300	55
200	3100	51
225	3000	50

This is especially important to consider for converter-fed operation and operation on 60 Hz line supplies. Alternative: 1LG4 and 1LG6 motors in the version for Zone 21/22.
- 20) CCC certification is required for:
 - 2-pole motors: ≤ 2.2 kW
 - 4-pole motors: ≤ 1.1 kW
 - 6-pole motors: ≤ 0.75 kW
 - 8-pole motors: ≤ 0.55 kW
- 21) Can be combined with deep-groove bearings of series 60.., 62.. and 63... Not possible with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20).
- 22) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case. For order codes Y55 and K16:
 - Dimensions D and DA \leq internal diameter of roller bearing (see dimension tables under "Dimensions")
 - Dimensions E and EA $\leq 2 \times$ length E (normal) of the shaft extension
For an explanation of the order codes, see Catalog D 81.1 - 2008 Part 0 "Introduction".
- 23) The special requirements of the textile industry regarding the sheet metal cover open up the possibility that a finger may be inserted between the cover and enclosure. The customer must implement appropriate measures to ensure that the installed system is "finger-safe". For 1LA9 motors only possible for frame sizes 112 and 132.
- 24) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is standard for these motors in the version for Zone 21/22. The metal external fan is not possible in combination with the low-noise version – Order code K37 or K38.
- 25) The delivery time for the factory test certificate may differ from the delivery time for the motor.
- 26) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA6, 1LG4, 1LG6

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6 ①				1LG4 ②						
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6					1LG6 ③						
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6					1LG6 ④						
		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
1L.....-Z														
Design for Zones according to ATEX 1)														
Design for Zone 2 for mains-fed operation Ex nA II T3 according to IEC/EN 60079-15 2)	M72	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 2 for converter-fed operation, with derating Ex nA II T3 according to IEC/EN 60079-15 2)3)4)	M73	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design (IP55) for Zone 2 and 22, for non-conductive dust, for mains-fed operation 5)	M74	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design (IP55) for Zone 2 and 22, for non-conductive dust, for converter-fed operation, with derating 3) 4) 5)	M75	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for mains-fed operation 6)	M34	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for converter-fed operation, with derating 2) 4) 6)	M38	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Design for Zone 22 for non-conductive dust (IP55), for mains-fed operation	M35	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 22 for non-conductive dust (IP55), for converter-fed operation, with derating 2) 4)	M39	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VIK version (comprises Zone 2 for mains-fed operation, without Ex nA II marking on rating plate) 7)	K30	Only possible for ③, ④ and 8-pole motors		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex nA II on VIK rating plate	C27	Only possible for ③, ④ and 8-pole motors		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alternative converter (SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS G120 (for 1LA motors), SINAMICS S120 or ET 200S FC)	Y68 • and converter type	All	All	○	○	○	○	○	○	○	○	○	○	○
Motor protection														
With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22 8)	A10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping 8)	A11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping 8)	A12	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 8)	A23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 8)	A25	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT100 resistance thermometers 8) 9)	A60	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 6 PT100 resistance thermometers in stator winding 8)	A61	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓

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For legends and footnotes, see Page 4/96.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10
working
days20
working
daysOn
request
Options
Cast-iron series 1LA6, 1LG4, 1LG6

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6 ①				1LG4 ②						
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6					1LG6 ③						
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6					1LG6 ④						
1L.....-Z		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
Motor protection (continued)														
Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings ^{8) 10)}	A72	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings ^{8) 10)}	A78	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Installation of 2 PT100 double screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings ⁸⁾	A80	All	All	–	–	–	–	–	–	–	–	✓	✓	✓
Motor connection and connection box														
Connection box on RHS	K09	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15	All	All	–	–	–	–	✓	✓	✓	□	□	□	□
One metal cable gland ¹¹⁾	K54	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
One metal cable gland, certified according to ATEX ¹⁾	J04 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cable gland, max. configuration, certified according to ATEX	K55	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Rotation of the connection box through 90°, entry from DE	K83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 180°	K85	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Next larger connection box	L00	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
External grounding	L13	All	All	□	□	□	□	□	□	□	□	□	□	□
Auxiliary connection box 1XB3020	L97	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Saddle terminal for connection without cable lug, accessories pack (6 items) ¹²⁾	M47	All	All	–	–	–	–	–	–	–	✓	✓	✓	✓
Windings and insulation														
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	C22	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	C23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	C24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/96.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Options

Cast-iron series 1LA6, 1LG4, 1LG6

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6 ①				1LG4 ②						
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6					1LG6 ③						
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6					1LG6 ④						
1L.....-Z		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
Windings and insulation (continued)														
Increased air humidity/temperature, with 60 to 100 g water per m ³ of air	C26	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA ... m above sea level	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Colors and paint finish														
Standard finish in RAL 7030 stone gray		All	All	–	–	–	–	□	□	□	□	□	□	□
Standard finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y53 • and standard finish RAL ...	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Special finish in RAL 7030 stone gray ¹³⁾	K26	All	All	□	□	□	□	✓	✓	✓	✓	✓	✓	✓
Special finish in other standard RAL colors: RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005 (see Catalog D 81.1 · 2008 Part 0 "Introduction")	Y54 • and special finish RAL ...	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" in Catalog D 81.1 · 2008 Part 0 "Introduction"	Y51 • and special finish RAL ...	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special paint for use offshore	M91	All	All	O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓	✓	✓
Special finish sea air resistant	M94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unpainted (only cast-iron parts primed)	K23	All	All	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special technology														
Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22 ¹⁴⁾	H86	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of explosion-proof separately driven fan Ex nA for use in Zone 2 ¹⁵⁾	M95	All	All	–	–	–	–	–	–	✓	✓	✓	✓	✓
Mounting of explosion-proof separately driven fan II 2D for use in Zone 21 ¹⁵⁾	M96	All	All	–	–	–	–	–	–	✓	✓	✓	✓	✓
Mounting of explosion-proof separately driven fan II 3D for use in Zone 22 ¹⁵⁾	M97	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection														
Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar (not possible for IM V3 type of construction) ¹⁶⁾	K17	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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For legends and footnotes, see Page 4/96.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA6, 1LG4, 1LG6

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (cast-iron)	Motor type – Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6 ①				1LG4 ②						
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6					1LG6 ③						
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6					1LG6 ④						
		Motor version	Motor type	Frame size										
				100	112	132	160	180	200	225	250	280	315 S/M	315 L
1L.....-Z														
Mechanical design and degrees of protection (continued)														
Low-noise version for 2-pole motors with clockwise direction of rotation 17)	K37	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation 17)	K38	All	All	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP65 degree of protection 18)	K50	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection 19)	K52	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–
Condensation drainage holes 20)	L12	All	All	✓	✓	✓	✓	□	□	□	□	□	□	□
Rust-resistant screws (externally)	M27	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical protection for encoder 21)	M68	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature and site altitude														
Coolant temperature –40 to +40 °C for explosion-proof motor 19)	D19	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications														
Electrical according to NEMA MG1-12	D30	All; for ① standard version		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex certification for China (only valid for Zone 2)	D32	Only possible for ③ and ④		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
China Energy Efficiency Label	D34 <i>New!</i>	Only possible for ③ and ④		○	○	○	○	○	○	○	○	○	○	○
Ex certification for Russia	D35 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEMA Energy Efficient, North America version according to NEMA MG1, Table 12-11	D42 <i>New!</i>	Only possible for ④		–	–	–	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	–
Bearings and lubrication														
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces 23)	K20	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size 63 24)	K36			–	–	–	–	✓	✓	✓	✓	✓	✓	✓
Regreasing device	K40	All	All	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□
Located bearing DE	K94	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	All	All	✓	✓	✓	□	□	□	□	□	□	□	□
Insulated bearing cartridge 33)	L27			–	–	–	–	–	–	✓	✓	✓	✓	✓
Balance and vibration quantity														
Vibration quantity level A		All	All	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity level B 25)	K02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	L68	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor														
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors 26)	K04	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension 27)	K16	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with standard dimensions, without feather keyway	K42	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see Page 4/96.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Standard delivery times:

10 working days	20 working days	On request
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Options
Cast-iron series 1LA6, 1LG4, 1LG6

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)													
		Motor version	Motor type (cast-iron)	Motor type – Frame size													
				100	112	132	160	180	200	225	250	280	315 S/M	315 L			
1L.....-Z		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1 Standard Efficiency	1LA6/1LG4	1LA6 ①					1LG4 ②								
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2 High Efficiency	1LG6						1LG6 ③								
		Zone 2 Ex nA II, Zone 21/22 Ex tD NEMA Energy Efficient	1LG6						1LG6 ④								
		Motor version	Motor type	Frame size													
				100	112	132	160	180	200	225	250	280	315 S/M	315 L			
Shaft and rotor (continued)																	
Standard shaft made of stainless steel	M65	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Non-standard cylindrical shaft extension ²⁸⁾	Y55 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Heating and ventilation																	
Fan cover for textile industry ²⁹⁾	H17	All	All	✓	✓	✓	✓	–	–	–	–	–	–	–	–		
Metal external fan ³⁰⁾	K35	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Anti-condensation heating, Ex. 115 V ³¹⁾	M14	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
Anti-condensation heating, Ex. 230 V ³¹⁾	M15	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code	All	All	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓		
Rating plate and extra rating plates																	
Second lubrication plate, loose	B06	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Second rating plate, loose	K31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Rating plate, stainless steel	M40 <i>New!</i>	All	All	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓		
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Extra rating plate with identification codes	Y82 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Additional information on rating plate and on package label (max. 20 characters)	Y84 • and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Packaging, safety notes, documentation and test certificates																	
Acceptance test certificate 3.1 in acc. with EN 10204 ³²⁾	B02	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Printed German/English Operating Instructions enclosed	B23	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in English and German ³³⁾	<i>New!</i>	All	All	□	□	□	□	□	□	□	□	□	□	□	□		
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in French, Spanish, Italian and Czech ³³⁾	B25 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in Swedish, Danish, Dutch and Finnish ³³⁾	B26 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Printed Operating Instructions (Compact) for explosion-proof motors enclosed in other official EU languages ³³⁾	Y98 • <i>New!</i> and identification code	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Type test with heat run for horizontal motors, with acceptance	F83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Wire-lattice pallet	L99	All	All	○	○	○	○	–	–	–	–	–	–	–	–		
Connected in star for dispatch	M32	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Connected in delta for dispatch	M33	All	All	✓	✓	✓	✓	✓	✓	□	□	□	□	□	□		

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For legends and footnotes, see Page 4/96.

SIMOTICS XP 1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Options

Cast-iron series 1LA6, 1LG4, 1LG6

- Standard version
- Without additional charge
- This order code only determines the price of the version – Additional plain text is required.
- O. R. Possible on request
- ✓ With additional charge
- Not possible

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- 1) Only permitted for use in accordance with temperature class 130 (B).
- 2) These motors do not have a rated voltage range stamped on the rating plate.
- 3) According to the standard, the motor and converter must be tested as a unit. A "Manufacturer test certificate" is available for a defined spectrum of Siemens motors (frame sizes 63 M to 315 L)/converters. Please inquire in the case of a non-Siemens converter (additional charge).
- 4) With this option, PTC thermistors for temperature class 130 (B) are included. For compliance with the admissible temperature class 130 (B), derating is necessary in the case of converter-fed operation in Zones 2, 21 and 22. The operating data for the MICROMASTER converter series from Siemens are specified on the rating plate as standard. Derating information is available on request. For converter-fed operation, voltage codes/ order codes are only admissible with one voltage only.
- 5) Please inquire regarding combination with order codes D19, K30, M95, M96 and M97. Not possible in combination with order codes D32, K50 and K52.
- 6) Zone 21 includes conductive and non-conductive dust.
- 7) Order code J04 cannot be combined with order codes M34, M38, M72, M73, M74 and M75, because they are already included as standard.
- 8) Evaluation with appropriate tripping unit (see Catalog IC 10) is recommended. A certified tripping unit is necessary for use in hazardous areas. KTY 84-130 and PT100 are not admissible as sole protection. For full motor protection under mains-fed operation implemented only with PTC thermistors, please inquire. Up to frame size 160 the combination A11 + A25 is available on request.
- 9) In combination with order code A60, for frame sizes 100 to 160 order codes A11, A12, A22, A25, M14 and M15 are not possible. It can only be supplied with a star or delta winding for direct switch-on (3 terminals).
- 10) Order codes A72 or A78 are not possible in combination with order code L27.
- 11) For 1LA6, 1LG4 and 1LG6 motors, additional charge only applies to Zone 22. Designs for Zones 2 and 21 already have a certified metal cable gland in the standard version. Standard with designs for Zone 2, Zone 21 and VIK.
- 12) Standard with designs for Zone 2, 21 and VIK.
- 13) For frame sizes 100 to 160, do not specify an order code. Order code is only necessary for frame sizes 180 to 315.
- 14) Please inquire regarding combination with order codes C19, C26, L27, M95, M96 and M97. Not possible in combination with order code K16. Combination with a protective cover is not possible. In the case of a vertical mounting position, therefore, a suitable cover must be implemented by the customer to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0).
- 15) Please inquire regarding combinations with order codes C19, C22, C23, C24, C25, C26, C27, D19, H86, K30, K50 and K52. Not possible in combination with order code K16. The type of protection of the separately driven fan must be selected to comply with that of the motor.
- 16) Not possible for motor series 1LG4 for 2-pole motors.
- 17) For 1LG4 motors, in the low-noise version, a second shaft extension is not possible. Not necessary for 1LG6 motors because these motors are already noise optimized.
- 18) Order code K50 (IP65 degree of protection) can only be ordered for Zone 2. For Zone 21, IP65 degree of protection is standard. Not possible for Zone 22, because only IP55 degree of protection is required.
- 19) Order code K52 IP56 degree of protection is only possible for Zone 2. Not admissible for Zone 21 (IP65 degree of protection) and Zone 22 (IP55 degree of protection).
- 20) For 1LA6 motors: Supplied with the condensation drainage holes sealed at the drive end DE and non-drive end NDE for IP55, IP56 and IP65 degrees of protection. If condensation drainage holes are required in motors of the IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to relocate the bearing plates at the drive end (DE) and non-drive end (NDE) so that the condensation drainage holes situated between the feet on delivery are underneath.
- 21) Not necessary when a rotary pulse encoder is combined with a separately driven fan, because in this case the rotary pulse encoder is installed under the fan cover.
- 22) Not possible in combination with order code L03.
- 23) Not possible for 2-pole 1LG4 and 1LG6 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level B are available on request for 1LG4 motors. Not possible for 1LG4 and 1LG6 motors in the combination "Concentricity of the shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors" – Order code K04.
- 24) With 4-pole to 8-pole motors of frame size 280 and above, standard version.
- 25) Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20).
- 26) Can be combined with deep-groove bearings of series 60... 62... and 63... Not possible in combination with parallel roller bearings (e.g. bearings for increased cantilever forces, order code K20).
- 27) Possible for motors of frame size 315 and above in vertical types of construction or 2-pole for version with second shaft extension on request. Version with protective cover not possible.
- 28) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the feather keyway must be specified in a sketch. It must be ensured that only feather keys in accordance with DIN 6885, Form A are permitted to be used. The feather keyway is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The feather keys are supplied in every case.
For order codes Y55 and K16:
– Dimensions D and DA \leq internal diameter of roller bearing (see dimension tables under "Dimensions")
– Dimensions E and EA \leq 2 x length E (normal) of the shaft extension
For an explanation of the order codes, see Catalog D 81.1 · 2008 Part 0 "Introduction".
- 29) The special requirements of the textile industry regarding the sheet metal cover open up the possibility that a finger may be inserted between the cover and enclosure. The customer must implement appropriate measures to ensure that the installed system is "finger-safe".
- 30) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is standard for these motors in the version for Zone 21/22. The metal external fan is not possible in combination with the low-noise version – Order code K37 or K38.
- 31) For 1LG4/1LG6 motors in Zones 2, 21 and 22, order codes K45 and K46 for an anti-condensation heater are also possible.
- 32) The delivery time for the factory test certificate may differ from the delivery time for the motor.
- 33) The Operating Instructions (Compact) are available in PDF format for all official EU languages at <http://support.automation.siemens.com/WWW/view/en/10803948/133300>

SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

Supplements to order numbers and special versions

Accessories

Overview

Slide rails with fixing bolts and tensioning screws according to DIN 42923

Slide rails are used to tension the belt of a machine easily and conveniently when a belt tightener is not available. They are fixed to the base using stone bolts or foundation blocks.

The assignment of slide rails to motor size can be found in DIN 42923. For motors of frame sizes 355 to 450, there are no standardized slide rails (please inquire).

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Foundation block according to DIN 799

The foundation blocks are inserted into the stone foundation and embedded in concrete. They are used for fixing machines of medium size, slide rails, pedestal bearings, baseframes, etc. After the fixing bolts have been unscrewed, the machine can be dragged without it having to be lifted.

When the machine is initially installed, the foundation block that is bolted to the machine (without washers) and fitted with tapered pins is not embedded with concrete until the machine has been fully aligned. The machine is set 2 to 3 mm deeper in this case. The difference in shaft height is compensated by inserting shims on final installation. The tapered pins safeguard the exact position of the machine when it is repeatedly removed and replaced without the need for realignment.

Source of supply:

Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-74 07-0
Fax +49 (0)5241-74 07-90

www.luetgert-antriebe.de
E-mail: info@luetgert-antriebe.de

Taper pins to DIN 258 with threaded ends and constant taper lengths

Taper pins are used for components that are repeatedly removed. The drilled hole is ground conical using a conical reamer until the pin can be pushed in by hand until the cone shoulder lies approx. 3 to 4 mm above the rim of the hole.

It can then be driven in using a hammer until it is correctly seated. The pin is removed from the drilled hole by screwing on the nut and tightening it.

Standardized taper pins are available from general engineering suppliers.

Source of supply, for example:

Otto Roth GmbH & Co. KG
Rutesheimer Straße 22
70499 Stuttgart, Germany
Tel. +49 (0)711-13 88-0
Fax. +49 (0)711-13 88-233

www.ottoroth.de
E-mail: info@ottoroth.de

Couplings for use in hazardous areas

The motor from Siemens is connected to the machine or gear unit through a coupling. Siemens is an important coupling manufacturer with a wide range of products.

For standard applications, Siemens recommends that elastic couplings of types N-EUPEX and RUPEX or torsionally rigid couplings of types ARPEX and ZAPEX are used. For special applications, FLUDEX and ELPEX-S couplings are recommended. These coupling types are suitable for use in areas subject to explosion hazards and are offered with declaration of conformity and type test certificate according to Directive 94/9/EC.

Source of supply:

Siemens contact partner - Ordering from Catalog
Siemens MD 10.1 "FLENDER Standard Couplings"

or

SIEMENS AG
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Tel. +49 (0)2871-92 21 85
Fax +49 (0)2871-92 25 79

www.siemens.com
E-mail: flendercouplings@siemens.com

More information

Spare motors and repair parts

- Supply commitment for spare motors and repair parts following delivery of the motor:
 - For up to 5 years, in the event of total motor failure, Siemens will supply a comparable motor with regard to the mounting dimensions and functions.
 - Spare parts will generally be available for up to 5 years.
 - After 5 years and up to 10 years, Siemens will provide information about spare parts and will, if necessary, supply documentation for acquiring spare parts.
- When repair parts are ordered, the following details must be provided:
 - Designation and part number
 - Order No. and factory number of the motor.

Example for ordering a fan cover 1LA7, frame size 160 L, 6-pole:

**Fan cover No. 7.40,
1LA7 166-6AA60-Z, factory No. E0912/5229221_01_001**

- For bearing assignment, see Catalog D 81.1 · 2008, Part "Introduction".
- Repair parts for 1MJ6, 1MJ7, 1MJ8, 1MJ1, 1ME8, 1ML8 motors are available on request.
- For standard components, a supply commitment does not apply.
- Support – Hotline
In Germany
Tel. +49 (0)1 80/5 05 04 48

You will find telephone numbers for other countries on our Internet site:

www.siemens.com/automation/service&support

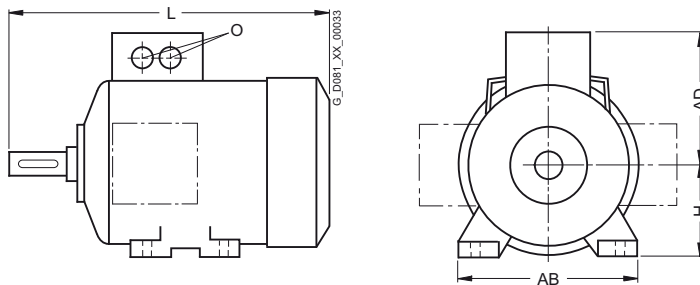
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SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

Dimensions

Overall dimensions

Overview



Frame size	Type	Number of poles	Dimension					O	Frame size	Type	Number of poles	Dimension				
			L	AD	H	AB						L	AD	H	AB	O
63 M	1LA7		202.5	101	63	120	1 x M16 x 1.5 1 x M25 x 1.5	112 M	1LA6		393	178	112	226	2 x M32 x 1.5	
	1LA9063		202.5	101	63	120	1 x M16 x 1.5 1 x M25 x 1.5		1LA7		393	148	112	226	2 x M32 x 1.5	
	1LA9061		228.5	101	63	120	1 x M16 x 1.5 1 x M25 x 1.5		1LA9		431	148	112	226	2 x M32 x 1.5	
	1MA7		202.5	135	63	120	1 x M16 x 1.5 1 x M25 x 1.5		1MA6		393	178	112	226	2 x M32 x 1.5	
71 M	1LA7		240	111	71	132	1 x M16 x 1.5 1 x M25 x 1.5	132 S/ 132 M	1MA7		393	148	112	226	2 x M32 x 1.5	
	1LA9		240	111	71	132	1 x M16 x 1.5 1 x M25 x 1.5		1MJ6		428	238	112	226	2 x M32 x 1.5 1 x M16 x 1.5	
	1MA7		240	145	71	132	1 x M16 x 1.5 1 x M25 x 1.5		1LA6	4	453	194	132	256	2 x M32 x 1.5	
	1MJ6		299	201	71	140	1 x M25 x 1.5 1 x M25 x 1.5		1LA7		452.5	167	132	256	2 x M32 x 1.5	
80 M	1LA7		273.5	120	80	150	1 x M16 x 1.5 1 x M25 x 1.5	160 M/ 160 L	1LA9		452.5	167	132	256	2 x M32 x 1.5	
	1LA9080		273.5	120	80	150	1 x M16 x 1.5 1 x M25 x 1.5		1LA9131		490.5	167	132	256	2 x M32 x 1.5	
	1LA9083		308.5	120	80	150	1 x M16 x 1.5 1 x M25 x 1.5		1LA9133		490.5	167	132	256	2 x M32 x 1.5	
	1MA7		273.5	154	80	150	1 x M16 x 1.5 1 x M25 x 1.5		1LA9134		490.5	167	132	256	2 x M32 x 1.5	
	1MA7083-6.		308.5	154	80	150	1 x M16 x 1.5 1 x M25 x 1.5		1MA6		453	194	132	256	2 x M32 x 1.5	
	1MJ6		336	209	80	160	1 x M25 x 1.5 1 x M25 x 1.5		1MA7		452.5	167	132	256	2 x M32 x 1.5	
90 S/ 90 L	1LA7		331	128	90	165	1 x M16 x 1.5 1 x M25 x 1.5	180 M/ 180 L	1MA7133-4		490	167	132	256	2 x M32 x 1.5	
	1LA9		331	128	90	165	1 x M16 x 1.5 1 x M25 x 1.5		1MJ6		515	258	132	256	2 x M32 x 1.5 1 x M16 x 1.5	
	1LA9096-6K.		376	128	90	165	1 x M16 x 1.5 1 x M25 x 1.5		1LA6		588	226	160	300	2 x M40 x 1.5	
	1LA9096-2..		358	128	90	165	1 x M16 x 1.5 1 x M25 x 1.5		1LA7		588	197	160	300	2 x M40 x 1.5	
	1LA9096-4..		358	128	90	165	1 x M16 x 1.5 1 x M25 x 1.5		1LA9		588	197	160	300	2 x M40 x 1.5	
	1MA7		331	162	90	165	1 x M16 x 1.5 1 x M25 x 1.5		1LA9166		628	197	160	300	2 x M40 x 1.5	
	1MJ6		383	218	90	168	1 x M25 x 1.5 1 x M25 x 1.5		1MA6		588	226	160	300	2 x M40 x 1.5	
									1MA7		588	197	160	300	2 x M40 x 1.5	
100 L	1LA6		372	164	100	196	2 x M32 x 1.5	200 L	1MA7166-4		628	197	160	300	2 x M40 x 1.5	
	1LA7		372	135	100	196	2 x M32 x 1.5		1MA7166-6		628	197	160	300	2 x M40 x 1.5	
	1LA9		407	135	100	196	2 x M32 x 1.5		1MJ6		641	280	160	300	2 x M40 x 1.5 1 x M16 x 1.5	
	1LA9107-4KA.		442	135	100	196	2 x M32 x 1.5		1LA5		712	258	180	339	2 x M40 x 1.5	
	1MA6		372	164	100	196	2 x M32 x 1.5		1LA9		712	258	180	339	2 x M40 x 1.5	
	1MA7		372	135	100	196	2 x M32 x 1.5		1LG4		669	262	180	339	2 x M40 x 1.5	
	1MJ6		426	223	100	196	2 x M32 x 1.5 1 x M16 x 1.5		1LG4188		720	262	180	339	2 x M40 x 1.5	
									1LG6183	2	720	262	180	339	2 x M40 x 1.5	
							1LG6186	4, 6, 8	669	262	180	339	2 x M40 x 1.5			
							1MJ6		715	306	180	339	2 x M40 x 1.5			
								1LA5		769.5	305	200	388	2 x M50 x 1.5		
								1LA9		768.5	305	200	388	2 x M50 x 1.5		
								1LG4	2, 6	720	300	200	378	2 x M50 x 1.5		
								1LG4208		777	300	200	378	2 x M50 x 1.5		
								1LG6206		754	300	200	378	2 x M50 x 1.5		
								1LG6207	2, 6	811	300	200	378	2 x M50 x 1.5		
								1LG6208	4, 8	720	300	200	378	2 x M50 x 1.5		
								1MJ6	2	871	300	200	378	2 x M50 x 1.5		
										771.5	349	200	398	2 x M50 x 1.5		

Overview (continued)

Frame size	Type	Number of poles	Dimension					
			L	AD	H	AB	O	
225 S/ 225 M	1LA5	2	806	305	225	426	2 x M50 x 1.5	
			776	305	225	426	2 x M50 x 1.5	
	1LG4	2	789	325	225	436	2 x M50 x 1.5	
	1LG4223		759	325	225	436	2 x M50 x 1.5	
	1LG4228		819	325	225	436	2 x M50 x 1.5	
			4, 6, 8	849	325	225	436	2 x M50 x 1.5
	1LG6220	4, 8	789	325	225	436	2 x M50 x 1.5	
	1LG6223		853	325	225	436	2 x M50 x 1.5	
			4, 6, 8	849	325	225	436	2 x M50 x 1.5
	1LG6228	2	903	325	225	436	2 x M50 x 1.5	
	4, 6		899	325	225	436	2 x M50 x 1.5	
	1MJ7	2	839	377	225	436	2 x M50 x 1.5	
	1MJ7223		809	377	225	436	2 x M50 x 1.5	
250 M	1LG4	4	887	392	250	490	2 x M63 x 1.5	
	1LG4258		957	392	250	490	2 x M63 x 1.5	
	1LG6253	2	924	392	250	490	2 x M63 x 1.5	
			4	957	392	250	490	2 x M63 x 1.5
			4, 6	887	392	250	490	2 x M63 x 1.5
			6, 8	957	392	250	490	2 x M63 x 1.5
	1LG6258	2	994	392	250	490	2 x M63 x 1.5	
	1MJ7		930	466	250	506	2 x M63 x 1.5	
280 S/ 280 M	1LG4	2, 4	960	432	280	540	2 x M63 x 1.5	
	1LG4288		1070	432	280	540	2 x M63 x 1.5	
	1LG6280	2	998	432	280	540	2 x M63 x 1.5	
			4, 6, 8	960	432	280	540	2 x M63 x 1.5
	1LG6283		2	1108	432	280	540	2 x M63 x 1.5
			6, 8	960	432	280	540	2 x M63 x 1.5
			4	1070	432	280	540	2 x M63 x 1.5
	1LG6288	2, 4, 6	1108	432	280	540	2 x M63 x 1.5	
			4, 6	1070	432	280	540	2 x M63 x 1.5
	1MJ7		1010	491	280	557	2 x M63 x 1.5	
315 S/ 315 M/ 315 L	1LG4	4, 6, 8	1072	500	315	610	2 x M63 x 1.5	
	1LG4310		1102	500	315	610	2 x M63 x 1.5	
	1LG4313	2	1102	500	315	610	2 x M63 x 1.5	
	1LG4316		1232	500	315	610	2 x M63 x 1.5	
			4, 6, 8	1262	500	315	610	2 x M63 x 1.5
	1LG4317	2	1232	500	315	610	2 x M63 x 1.5	
			4, 6, 8	1262	500	315	610	2 x M63 x 1.5
	1LG4318	8	1262	500	315	610	2 x M63 x 1.5	
			6	1402	500	315	610	2 x M63 x 1.5
	1LG6310	2	1142	500	315	610	2 x M63 x 1.5	
			4, 6, 8	1102	500	315	610	2 x M63 x 1.5
	1LG6313		2	1302	500	315	610	2 x M63 x 1.5
			4, 6	1262	500	315	610	2 x M63 x 1.5
			8	1102	500	315	610	2 x M63 x 1.5
	1LG6316	2	1302	500	315	610	2 x M63 x 1.5	
			4, 6, 8	1262	500	315	610	2 x M63 x 1.5
	1LG6317	2	1442	500	315	610	2 x M63 x 1.5	
			4, 6	1402	500	315	610	2 x M63 x 1.5
			8	1262	500	315	610	2 x M63 x 1.5
	1LG6318	2	1442	651	315	610	2 x M63 x 1.5	
			4	1402	651	315	610	2 x M63 x 1.5
			6, 8	1402	500	315	610	2 x M63 x 1.5
		1MJ7	2	1114	558	315	628	2 x M63 x 1.5
				4, 6, 8	1140	558	315	628

Notes on the dimensions

- Dimension designations according to DIN EN 50347 and IEC 60072.
- Fits

The shaft extensions specified in the dimension tables (DIN 748) and centering spigot diameters (DIN EN 50347) are machined with the following fits:

Dimension designation	ISO fit DIN ISO 286-2
D, DA	to 30 over 30 to 50 over 50
N	to 250 over 250
F, FA	
K	
S	flange (FF)

The drilled holes of couplings and belt pulleys should have an ISO fit of at least H7.

- Dimension tolerances

For the following dimension designations, the admissible deviations are given below:

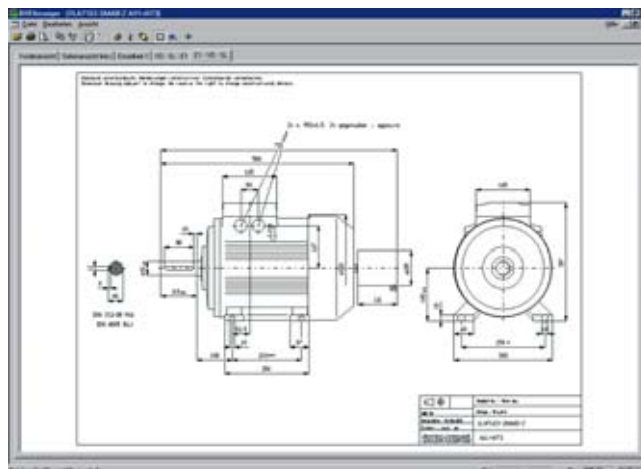
Dimension designation	Dimension	Admissible deviation
H	to 250 over 250	- 0.5 - 1.0
E, EA		- 0.5

Keyways and feather keyways (dimensions GA, GC, F and FA) are made in compliance with DIN 6885 Part 1.

- All dimensions are specified in mm.

Dimension sheet generator
(part of the DT Configurator)

A dimension drawing can be created in the DT Configurator for every configurable motor. A dimension drawing can be requested for every other motor.



When a complete Order No. is entered with or without order codes, a dimension drawing can be called up under the "Documentation" tab.

These dimension drawings can be presented in different views and sections and printed.

The corresponding dimension sheets can be exported, saved and processed further in DXF format (interchange/import format for CAD systems) or as bitmap graphics.

Online access in the Siemens Industry Mall

The DT Configurator is integrated into the Siemens Industry Mall and can be used on the Internet without installation.

German: www.siemens.de/dt-konfigurator
English: www.siemens.com/dt-configurator

Offline access in the Interactive Catalog CA 01

The DT Configurator is also integrated on the DVD of the Interactive Catalog CA 01, the offline version of the Siemens Industry Mall. You can order the CA 01 with your respective Siemens sales person or in the Internet: www.siemens.com/automation/ca01

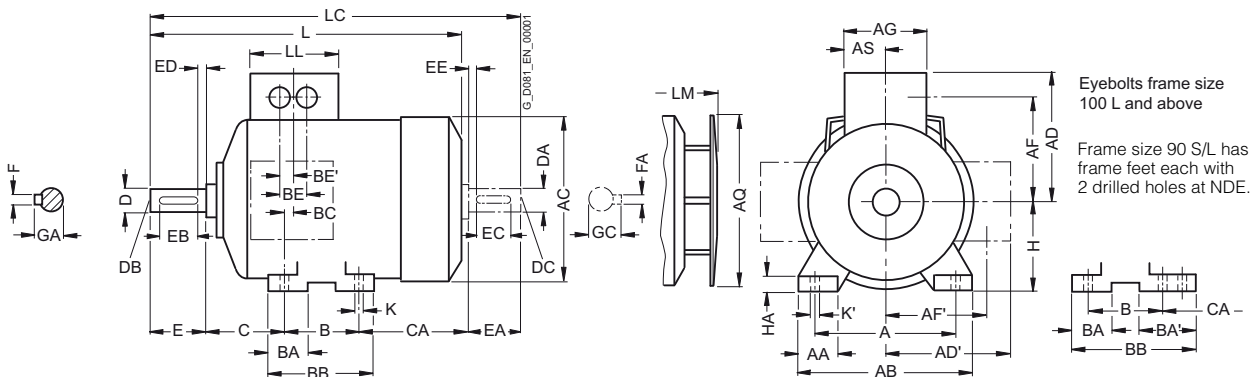
SIMOTICS XP 1MA Explosion-Proof Motors

Dimensions

Aluminum series 1MA7
Frame sizes 63 M to 160 L

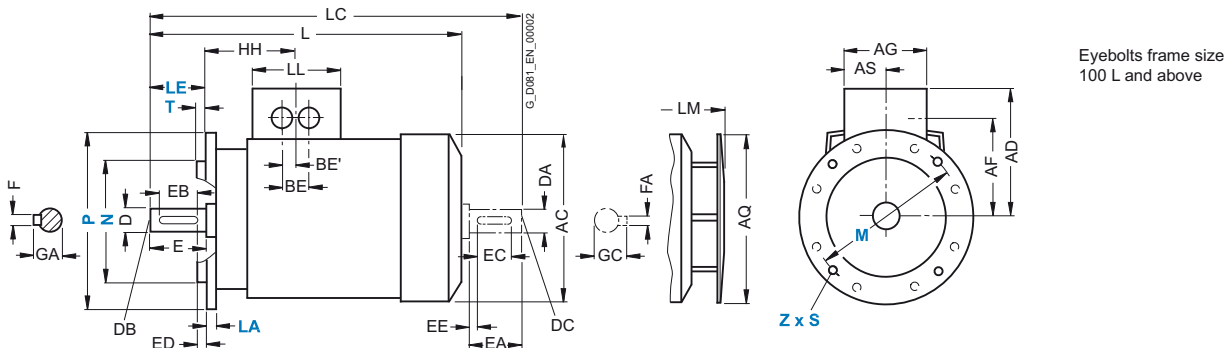
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor			Dimension designation acc. to IEC																					
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C	CA*	H	HA
63 M	1MA7060 1MA7063	2, 4, 6	100	27	120	124	135	101	95	78	120	124	60	80	28	-	96	52.5	32	16	40	66	63	7
71 M	1MA7070 1MA7073	2, 4, 6, 8	112	27	132	145	145	111	105	88	120	124	60	90	27	-	106	41.5	32	16	45	83	71	7
80 M	1MA7080 1MA7083	2, 4, 6, 8	125	30.5	150	163	154	154	114	114	120	124	60	100	32	-	118	36	32	16	50	94 134 ²⁾	80	8
90 S 90 L	1MA7090 1MA7096	2, 4, 6, 8	140	30.5	165	180	162	162	122	122	120	170	60	100 125	33	54	143	46	32	16	56	143 118	90	10
100 L	1MA7106 1MA7107	2, 4, 6, 8 4, 8	160	42	196	203	135	163	78	123	120	170	60	140	47	-	176	39	42	21	63	125	100	12
112 M	1MA7113	2, 4, 6, 8	190	46	226	227	148	176	91	136	120	170	60	140	47	-	176	32	42	21	70	141	112	12
132 S	1MA7130 1MA7131 2	2, 4, 6, 8	216	53	256	267	167	194	107	154	140	250	70	140	49	-	180	39	42	21	89	162.5	132	15
132 M	1MA7133 1MA7134 6	4, 6, 8	216	53	256	267	167	194	107	154	140	250	70	178	49	-	218	39	42	21	89	124.5 162.5 ³⁾	132	15
160 M	1MA7163 1MA7164 2, 8	2, 4, 6, 8	254	60	300	320	197	226	127	183	165	250	82.5	210	57	-	256	52.5	54	27	108	183	160	18
160 L	1MA7166	2, 4, 6, 8	254	60	300	320	197	226	127	183	165	250	82.5	254	57	-	300	52.5	54	27	108	139 179 ⁴⁾	160	18

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Measured across the bolt heads.

2) Only for 1MA7083-6.

3) Only for 1MA7133-4.

4) Only for 1MA7166-4 and 1MA7166-6.

SIMOTICS XP 1MA Explosion-Proof Motors

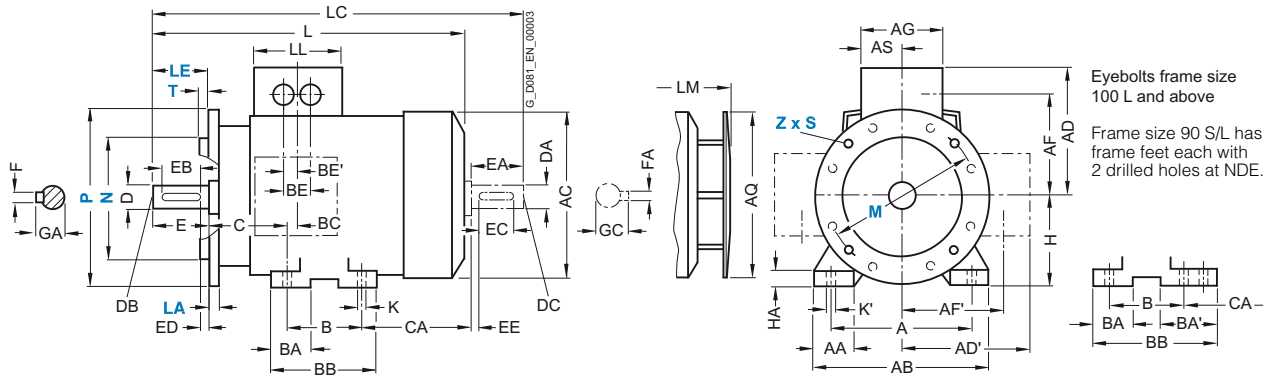
Dimensions

Aluminum series 1MA7
Frame sizes 63 M to 160 L

Dimensional drawings (continued)

Type of construction IM B35

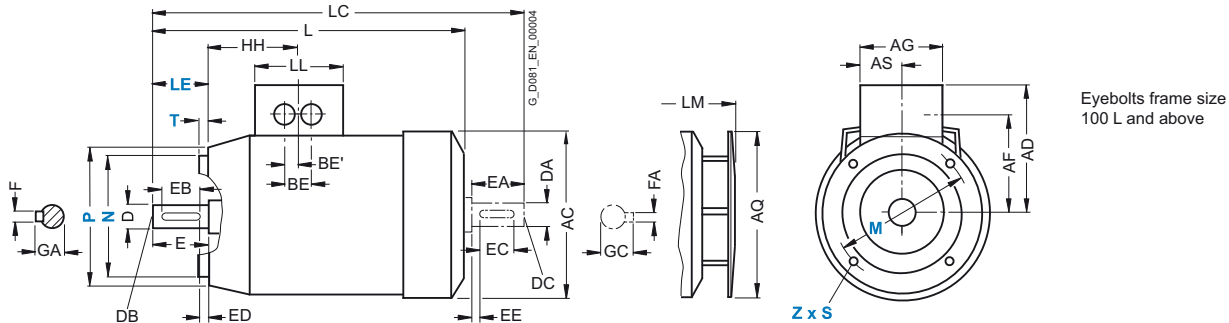
For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



Eyebolts frame size 100 L and above
Frame size 90 S/L has frame feet each with 2 drilled holes at NDE.

Type of construction IM B14

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



Eyebolts frame size 100 L and above

4.6

For motor Frame size	Type	Number of poles	Dimension designation acc. to IEC					DE shaft extension					NDE shaft extension										
			HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
63 M	1MA7060 1MA7063	2, 4, 6	92.5	7	10	202.5 ¹⁾	232 ¹⁾	120	231.5 ¹⁾	11	M4	23	16	3.5	4	12.5	11	M4	23	16	3.5	4	12.5
71 M	1MA7070 1MA7073	2, 4, 6, 8	86.5	7	10	240	278	120	268	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 M	1MA7080 1MA7083	2, 4, 6, 8	86	9.5	13.5	273.5 308.5 ²⁾	324 364	120	299.5 334.5 ²⁾	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S 90 L	1MA7090 1MA7096	2, 4, 6, 8	101.5	10	14	331	389	120	382.5	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	1MA7106 1MA7107	2, 4, 6, 8 4, 8	102	12	16	372	438	120	423.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1MA7113	2, 4, 6, 8	102	12	16	393	461	120	444.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1MA7130 1MA7131 2	2, 4, 6, 8	128	12	16	452.5 ³⁾	551.5	140	505 ³⁾	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1MA7133 1MA7134 6	4, 6, 8	128	12	16	452.5 ³⁾ 490.5 ⁴⁾	551.5 589.5 ⁴⁾	140	505 ³⁾ 543 ⁴⁾	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1MA7163 1MA7164 2, 8	2, 4, 6, 8	160.5	15	19	588	721	165	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1MA7166	2, 4, 6, 8	160.5	15	19	588 628 ⁵⁾	721 761 ⁵⁾	165	640.5 680.5 ⁵⁾	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

¹⁾ For 1MA7063 in the case of type of construction code 1 (IM B5, IM V3), dimensions L, LC and LM are 26 mm longer.
²⁾ Only for 1MA7083-6.
³⁾ In a low-noise version, the dimension L is 8 mm greater and the dimension LM is 11.5 mm greater.

⁴⁾ Only for 1MA7133-4.
⁵⁾ Only for 1MA7166-4 and 1MA7166-6.

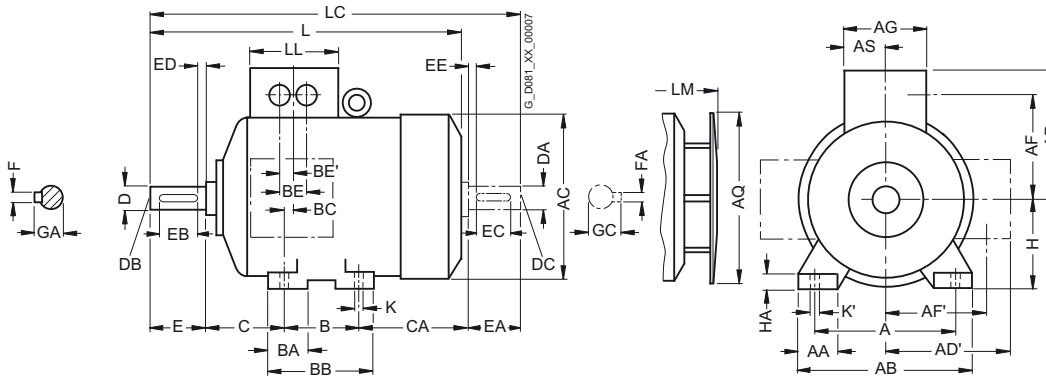
SIMOTICS XP 1MA Explosion-Proof Motors

Dimensions

Cast-iron series 1MA6
Frame sizes 100 L to 160 L

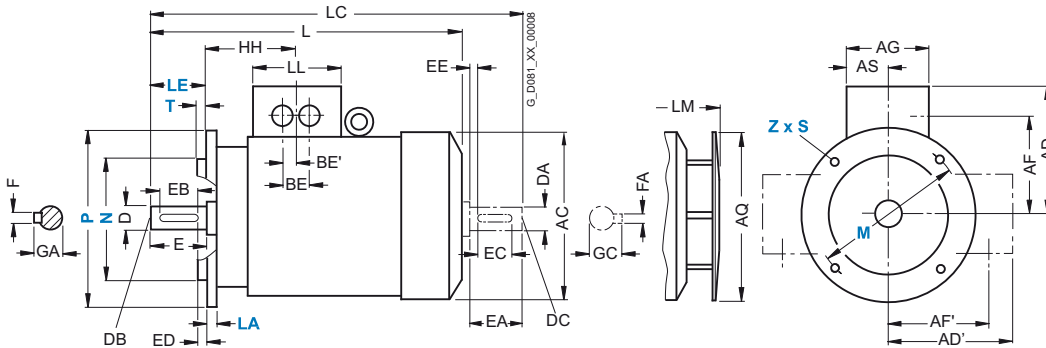
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																						
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AQ	AS	B	BA	BB	BC	BE	BE'	C	CA	H	HA	
100 L	1MA6106	2, 4, 6, 8	160	40	196	201	164	164	124	124	121	170	60.5	140	46	180	42	44	22	63	125	100	12	
	1MA6107	4, 8																						
112 M	1MA6113	2, 4, 6, 8	190	42.5	226	225.5	178	178	138	138	121	170	60.5	140	46	180	34	44	22	70	141	112	15	
132 S	1MA6130	2, 4, 6, 8	216	50	256	265	194	194	154	154	141	250	70.5	140	47	180	42	44	22	89	162.5	132	17	
	1MA6131	2																						
132 M	1MA6133	4, 6, 8	216	50	256	265	194	194	154	154	141	250	70.5	178	49	218	42	44	22	89	124.5	132	17	
	1MA6134	6																						
160 M	1MA6163	2, 4, 6, 8	254	60	300	320	226	226	183	183	166	250	83	210	63	256	52	54	27	108	183	160	18	
	1MA6164	2, 8																						
160 L	1MA6166	2, 4, 6, 8	254	60	300	320	226	226	183	183	166	250	83	254	63	300	52	54	27	108	139	160	18	

¹⁾ Measured across the bolt heads.

SIMOTICS XP 1MA Explosion-Proof Motors

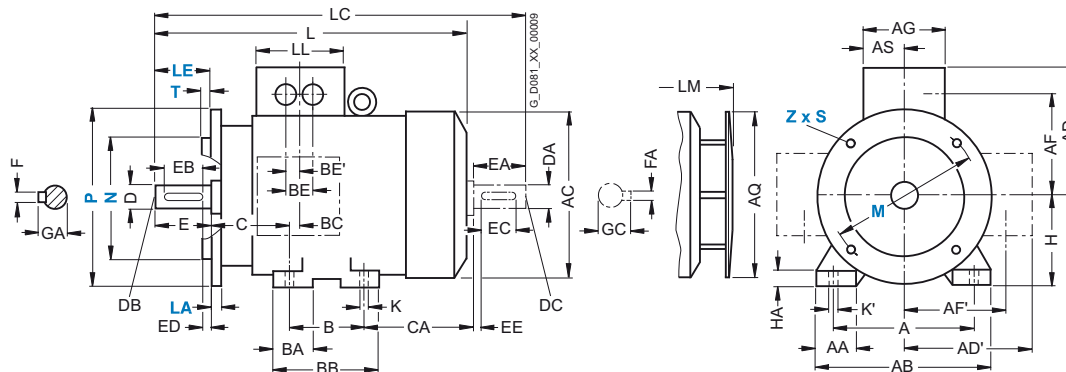
Dimensions

Cast-iron series 1MA6
Frame sizes 100 L to 160 L

Dimensional drawings (continued)

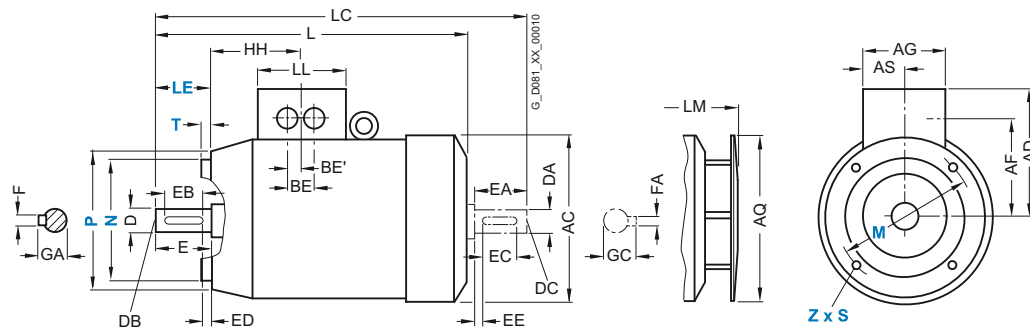
Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



Type of construction IM B14

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor Frame size	Type	Number of poles	Dimension designation acc. to IEC								DE shaft extension					NDE shaft extension							
			HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	1MA6106 1MA6107	2, 4, 6, 8 4, 8	104.5	12	16	372	438	121	423.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1MA6113	2, 4, 6, 8	104.5	12	16	393	461	121	444.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1MA6130 1MA6131	2, 4, 6, 8 2	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1MA6133 1MA6134	4, 6, 8 6	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1MA6163 1MA6164	2, 4, 6, 8 2, 8	160	14.5	18	588	721	166	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1MA6166	2, 4, 6, 8	160	14.5	18	588	721	166	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

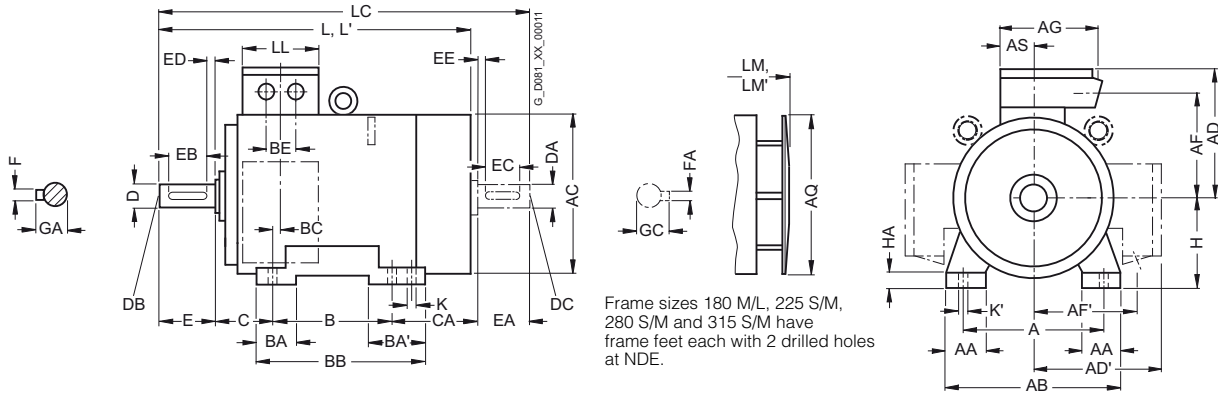
SIMOTICS XP 1MA Explosion-Proof Motors

Dimensions

Cast-iron series 1MA6
Frame sizes 180 M to 315 L

Dimensional drawings

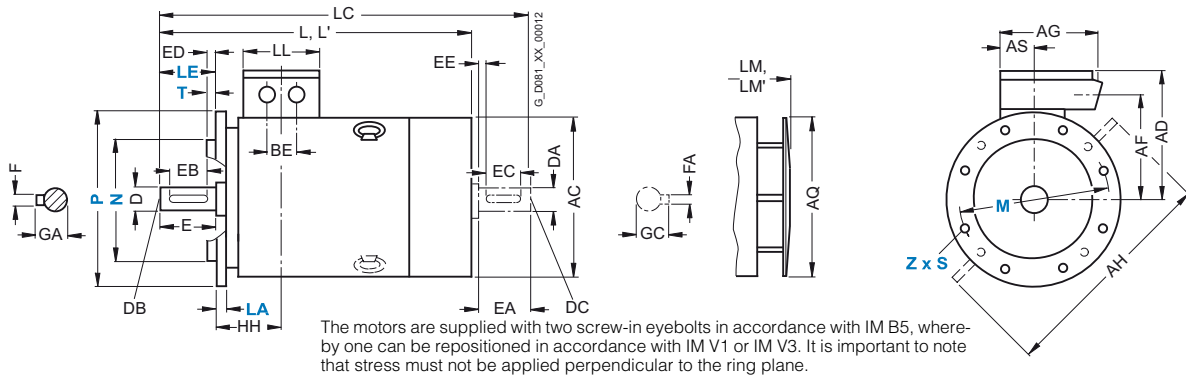
Type of construction IM B3



4.6

Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor		Number of poles	Dimension designation acc. to IEC																					
Frame size	Type		A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
180 M	1MA6183	2	279	65	344	375	274	274	227	227	220	470	340	82	241	70	108	319	35	75	121	259	180	26
		4																						
180 L	1MA6186	4, 6, 8	279	65	344	375	274	274	227	227	220	470	340	82	279	70	108	319	35	75	121	221	180	26
200 L	1MA6206	2	318	80	398	402	308	308	248	248	262	530	340	99	305	85	85	355	42	85	133	239	200	34
		6																						
	1MA6207	2	318	80	398	402	308	308	248	248	262	530	340	99	305	85	85	355	42	85	133	239	200	34
		4, 6, 8																						
225 S	1MA6220	4, 8	356	80	436	442	339	339	269	269	264	580	425	100	286	85	110	361	25	85	149	269	225	34
225 M	1MA6223	2	356	80	436	442	339	339	269	269	264	580	425	100	311	85	110	361	25	85	149	244	225	34
		4, 6, 8																						
250 M	1MA6253	2	406	100	506	505	427	427	333	333	338	645	470	120	349	100	100	409	39	95	168	283	250	42
		4, 6, 8																						
280 S	1MA6280	2	457	100	557	555	452	452	358	358	338	700	525	120	368	100	151	471	30	95	190	317	280	42
		4, 6, 8																						
280 M	1MA6283	2	457	100	557	555	452	452	358	358	338	700	525	120	419	100	151	471	30	95	190	366	280	42
		4, 6, 8																						
315 S	1MA6310	2	508	120	628	620	515	515	395	395	405	805	590	134	406	125	171	527	32	90	216	358	315	52
		4, 6, 8																						
315 M	1MA6313	2	508	120	628	620	515	515	395	395	405	805	590	134	457	125	171	527	32	90	216	307	315	52
		4, 6, 8																						
315 L	1MA6316	2	508	120	628	620	515	515	395	395	405	805	590	134	508	120	120	578	32	90	216	396	315	52
	1MA6317	4, 6, 8																						
	1MA6318	6, 8																						

Dimensions for 9-terminal connection box available on request.

¹⁾ Measured across the bolt heads.

* This dimension is assigned in DIN EN 50347 to the frame size listed.

SIMOTICS XP 1MA Explosion-Proof Motors

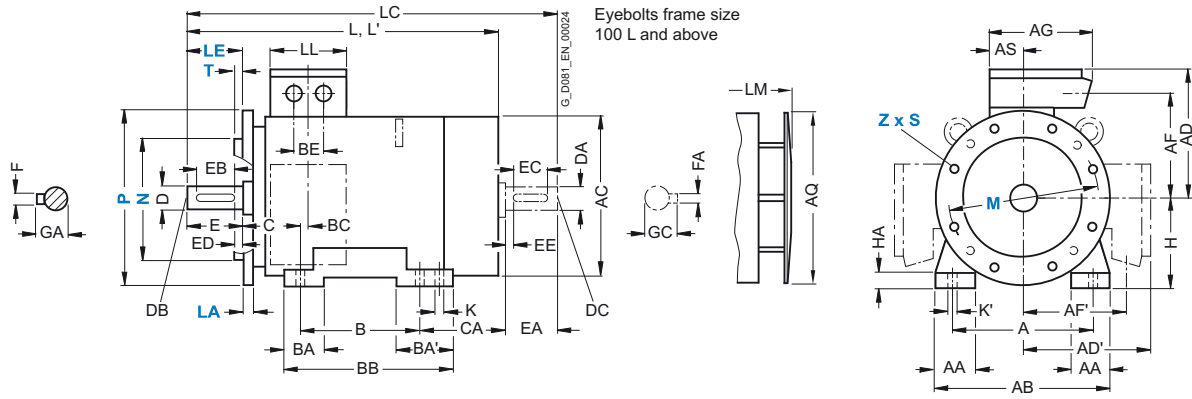
Dimensions

Cast-iron series 1MA6
Frame sizes 180 M to 315 L

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor		Dimension designation acc. to IEC							DE shaft extension							NDE shaft extension									
Frame size	Type	Number of poles	HH	K	K'	L	L ⁽¹⁾	LC ⁽²⁾	LL	LM	LM ⁽¹⁾	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1MA6183	2	156	15	20	715	770	841	164	796.5	855	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1MA6186	4, 6, 8	156	15	20	715	-	841	164	796.5	-	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1MA6206	2	175	19	25	771.5	819.5	897	197	853	901	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
	1MA6207	2				771.5	819.5	897	197	853	901	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
225 S	1MA6220	4, 8	174	19	25	839	-	954	200	935	-	60	M20	140	125	10	18	64	55	M20	110	100	10	16	59
225 M	1MA6223	2	174	19	25	809	855	924	200	909	955	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6, 8				839	-	954	935	-	60	140	125	10	18	64	55	M20	100	10	16	59			
250 M	1MA6253	2	207	24	30	935	1010	1050	234	1035	1110	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4, 6, 8				-	1080	-	65	69	60	140	125	10	18	69	60	140	125	18	64				
280 S	1MA6280	2	220	24	30	1010	1080	1155	234	1120	1230	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
280 M	1MA6283	2	220	24	30	1010	1080	1155	234	1120	1230	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		20																79.5	65						
315 S	1MA6310	2	248	28	35	1114	1185	1260	266	1224	1295	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				1144	-	1290	1254	-	80	170	140	22	85	70									
315 M	1MA6313	2	248	28	35	1114	1185	1260	266	1224	1295	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				1144	-	1290	1254	-	80	170	140	22	85	70									
315 L	1MA6316	2	248	28	35	1254	1325	1400	266	1364	1435	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1MA6317	4, 6, 8				1284	-	1430	1394	-	80	170	140	22	85	70									
	1MA6318	6, 8				1284	-	1430	1394	-	80	170	140	22	85	70									

1) For version with low-noise fan.

2) In the low-noise version, a second shaft extension is not possible.

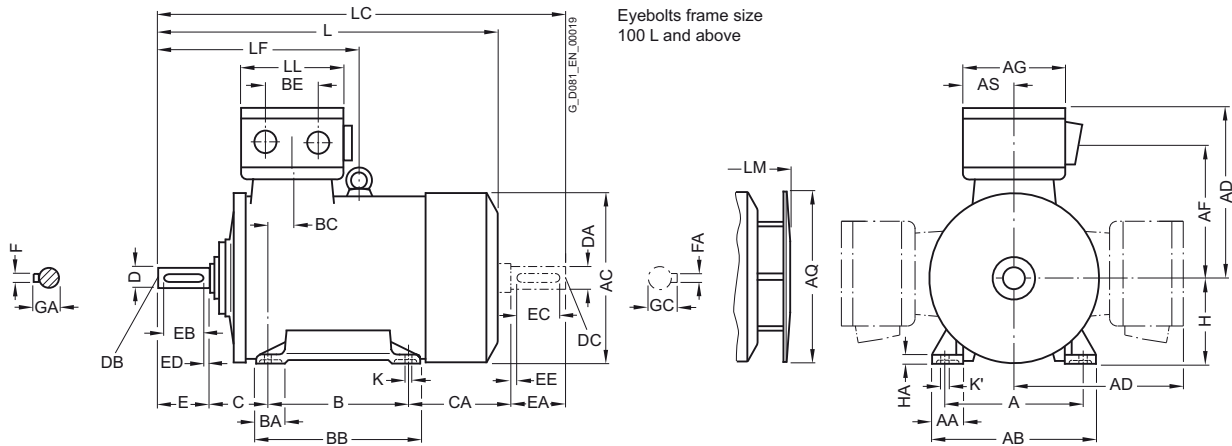
SIMOTICS XP 1MJ Explosion-Proof Motors

Dimensions

Cast-iron series 1MJ6
Frame sizes 71 M to 160 L

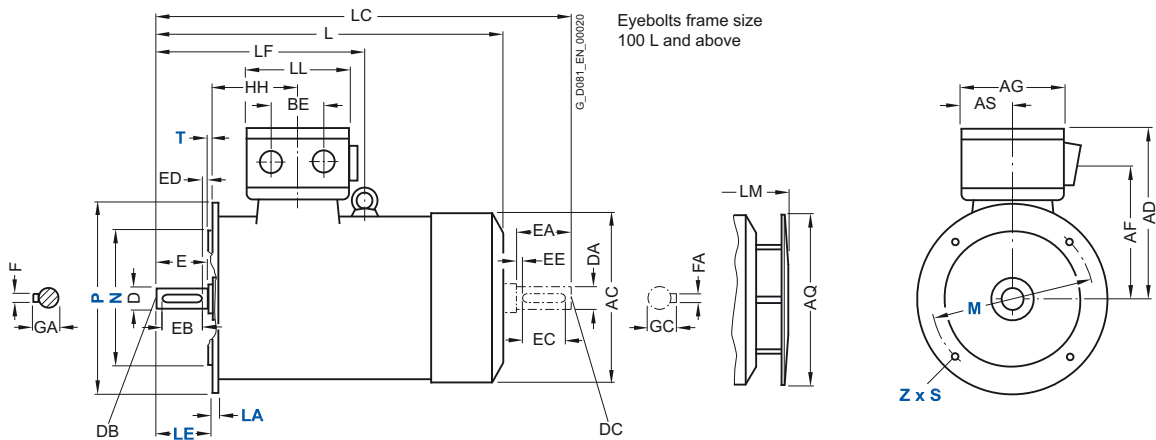
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor Frame size	Type	Number of poles	Dimension designation acc. to IEC																					
			A	AA	AB	AC ¹⁾	AD	AF	AG	AQ	AS	B	BA	BB	BC	BE	C	CA	H	HA	HH	K	K'	L
71 M	1MJ6070	2, 4	112	34	140	148.5	201 ²⁾	162	152	124	71	90	30	110	58	54	45	144	71	8	103	7	10	299
	1MJ6073	2, 4, 6																						
80 M	1MJ6080	2, 4, 6	125	36	160	165.5	209 ²⁾	170	152	125	71	100	35	125	44	54	50	156	80	10	93.5	9.5	13.5	336
	1MJ6083	2, 4, 6																						
90 L	1MJ6096	2, 4, 6, 8	140	37	168	183	218	177	162	170	81	125	35	156	54	54	56	177	90	13	109.5	10	14	383
	1MJ6097	2, 4, 6, 8																						
100 L	1MJ6106	2, 4, 6, 8	160	45	196	202.5	223	182	162	170	81	140	45	176	50	54	63	185	100	14	112.5	12	16	426
	1MJ6107	4, 8																						
112 M	1MJ6113	2, 4, 6, 8	190	50	226	228.5	238	197	162	170	81	140	45	176	52	54	70	180	112	15	121.5	12	16	428
132 S	1MJ6130	2, 4, 6, 8	216	53	256	267.5	258	217	162	250	81	140	49	180	55	54	89	228	132	17	144	12	16	515
	1MJ6131	2																						
132 M	1MJ6133	4, 6, 8	216	53	256	267.5	258	217	162	250	81	178	49	218	55	54	89	190	132	17	144	12	16	515
	1MJ6134	6																						
160 M	1MJ6163	2, 4, 6, 8	254	60	300	323	280	239	162	250	81	210	57	256	40	54	108	238	160	20	148	15	19	641
	1MJ6164	2, 8																						
160 L	1MJ6166	2, 4, 6, 8	254	60	300	323	314	246	216	250	95	254	57	300	40	96	108	194	160	20	148	15	19	641

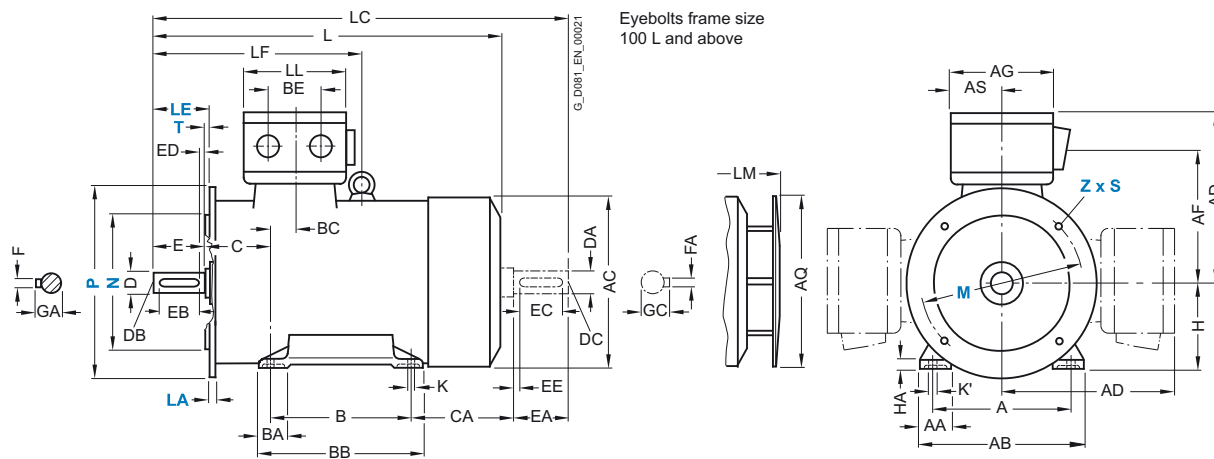
1) Measured across the bolt heads.

2) K09 and K10 frame size 90 and above.

Dimensional drawings (continued)

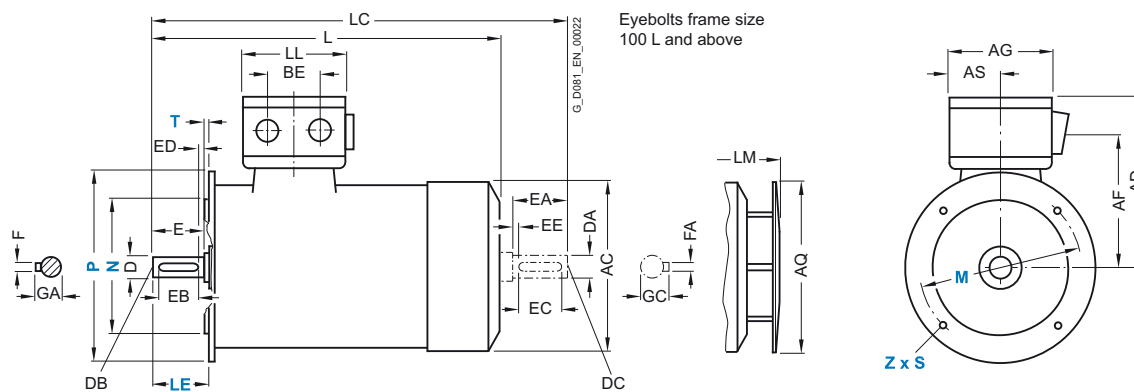
Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



Type of construction IM B14 – only for frame sizes 71 M to 90 L

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor			Dimension designation acc. to IEC										DE shaft extension							NDE shaft extension						
Frame size	Type	Number of poles	LC	LF	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC						
71 M	1MJ6070	2, 4	339	-	132	327	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16						
	1MJ6073	2, 4, 6																								
80 M	1MJ6080	2, 4, 6	386	-	132	362	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5						
	1MJ6083	2, 4, 6																								
90 L	1MJ6096	2, 4, 6, 8	458	-	162	434.5	24	M8	50	40	5	8	27	24	M8	50	40	5	8	27						
	1MJ6097	2, 4, 6, 8																								
100 L	1MJ6106	2, 4, 6, 8	508	-	162	477.5	28	M10	60	50	5	8	31	28	M10	60	50	5	8	31						
	1MJ6107	4, 8																								
112 M	1MJ6113	2, 4, 6, 8	510	-	162	479.5	28	M10	60	50	5	8	31	28	M10	60	50	5	8	31						
132 S	1MJ6130	2, 4, 6, 8	617	-	162	567.5	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41						
	1MJ6131	2																								
132 M	1MJ6133	4, 6, 8	617	-	162	567.5	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41						
	1MJ6134	6																								
160 M	1MJ6163	2, 4, 6, 8	776	383	162	693.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45						
	1MJ6164	2, 8																								
160 L	1MJ6166	2, 4, 6, 8	776	383	190	693.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45						

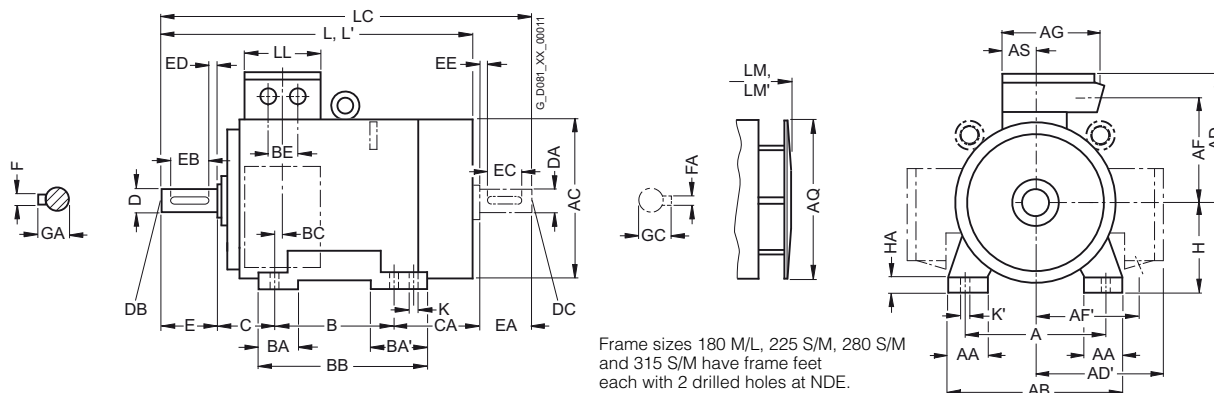
SIMOTICS XP 1MJ Explosion-Proof Motors

Dimensions

Cast-iron series 1MJ6, 1MJ7
Frame sizes 180 M to 315 M

Dimensional drawings

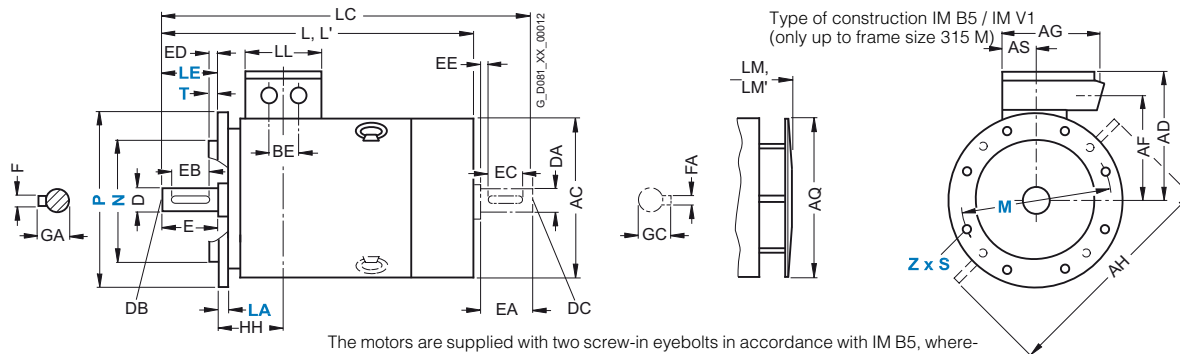
Type of construction IM B3



4.6

Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



The motors are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

For motor		Number of poles	Dimension designation acc. to IEC																						
Frame size	Type		A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HH	HA
180 M	1MJ6183	2, 4	279	65	344	375	306	306	259	259	220	470	340	82	241	70	108	319	35	75	121	259	180	156	26
180 L	1MJ6186	4, 6, 8	279	65	344	375	306	306	259	259	220	470	340	82	279	70	108	319	35	75	121	221	180	156	26
200 L	1MJ6206	2	318	80	398	415	349	349	289	289	262	530	340	98.5	305	85	85	355	42	85	133	239	200	175	34
	1MJ6207	2	318	80	398	415	349	349	289	289	262	530	340	98.5	305	85	85	355	42	85	133	239	200	175	34
		4, 6, 8	318	80	398	415	349	349	289	289	262	530	340	98.5	305	85	85	355	42	85	133	239	200	175	34
225 S	1MJ7220	4, 8	356	80	436	442	377	377	315	315	262	580	425	100	286	85	110	361	25	90	149	269	225	174	34
225 M	1MJ7223	2	356	80	436	442	377	377	315	315	262	580	425	100	311	85	110	361	25	90	149	244	225	174	34
		4, 6, 8	356	80	436	442	377	377	315	315	262	580	425	100	311	85	110	361	25	90	149	244	225	174	34
250 M	1MJ7253	2	406	100	506	505	466	466	353	353	336	645	470	120	349	100	100	409	39	95	168	283	250	207	42
		4, 6, 8	406	100	506	505	466	466	353	353	336	645	470	120	349	100	100	409	39	95	168	283	250	207	42
280 S	1MJ7280	2	457	100	557	555	491	491	395	395	336	700	525	120	368	100	151	479	30	95	190	317	280	220	42
		4, 6, 8	457	100	557	555	491	491	395	395	336	700	525	120	368	100	151	479	30	95	190	317	280	220	42
280 M	1MJ7283	2	457	100	557	555	491	491	395	395	336	700	525	120	419	100	151	479	30	95	190	266	280	220	42
		4, 6, 8	457	100	557	555	491	491	395	395	336	700	525	120	419	100	151	479	30	95	190	266	280	220	42
315 S	1MJ7310	2	508	120	628	620	558	558	448	448	410	805	590	135	406	125	171	527	32	90	216	358	315	248	56
		4, 6, 8	508	120	628	620	558	558	448	448	410	805	590	135	406	125	171	527	32	90	216	358	315	248	56
315 M	1MJ7313	2	508	120	628	620	558	558	448	448	410	805	590	135	457	125	171	527	32	90	216	307	315	248	56
		4, 6, 8	508	120	628	620	558	558	448	448	410	805	590	135	457	125	171	527	32	90	216	307	315	248	56

* This dimension is assigned in DIN EN 50347 to the frame size listed.

¹⁾ Measured across the bolt heads.

SIMOTICS XP 1MJ Explosion-Proof Motors

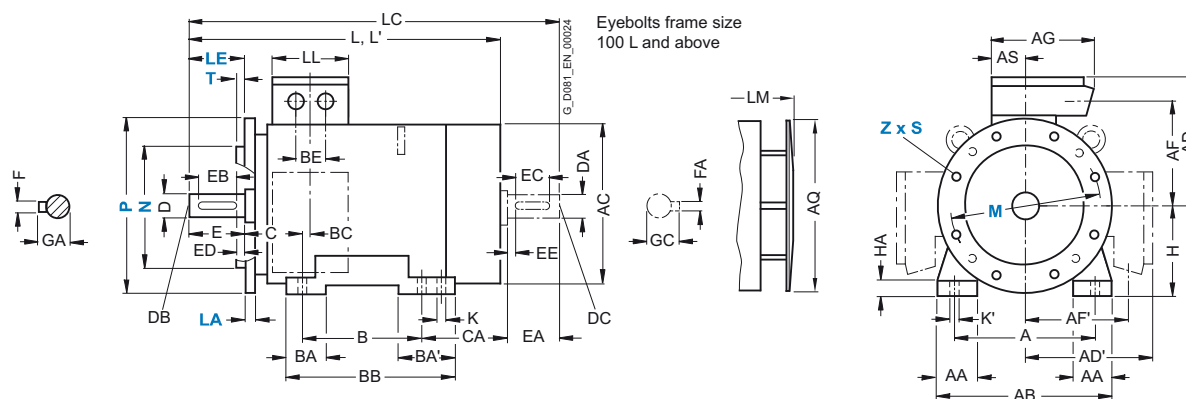
Dimensions

Cast-iron series 1MJ6, 1MJ7
Frame sizes 180 M to 315 M

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor		Number of poles	Dimension designation acc. to IEC										DE shaft extension				NDE shaft extension								
Frame size	Type		K	K'	L	L ¹⁾	LC ²⁾	LL	LM	LM ¹⁾	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC	
180 M	1MJ6183	2, 4	15	20	715	770	841	164	796.5	885	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5	
180 L	1MJ6186	4, 6, 8	15	20	715	-	841	164	796.5	-	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5	
200 L	1MJ6206	2	19	25	771.5	825	897	197	853	910	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5	
	1MJ6207	6	19	25	771.5	825	897	197	853	910	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5	
		4, 6, 8															55	M20						16	59
225 S	1MJ7220	4, 8	19	25	839	-	954	197	939	-	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59	
225 M	1MJ7223	2	19	25	809	855	924	197	909	955	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5	
		4, 6, 8			839	-	954	197	939	-	60	140	125	10	18	64	55	M20						16	59
250 M	1MJ7253	2	24	30	930	1010	1050	234	1035	1110	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59	
		4, 6, 8				-	1080			-	65						69	60		140	125	10	18	64	
280 S	1MJ7280	2	24	30	1010	1080	1155	234	1120	1230	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
		4, 6, 8				-				-	75						20	79.5	65					69	
280 M	1MJ7283	2	24	30	1010	1080	1155	234	1120	1230	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
		4, 6, 8				-				-	75						20	79.5	65					69	
315 S	1MJ7310	2	28	35	1114	1185	1260	266	1224	1295	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
		4, 6, 8			1140	-	1290		1250	-	80		170	140			22	85	70					20	74.5
315 M	1MJ7313	2	28	35	1114	1185	1260	266	1224	1295	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64	
		4, 6, 8			1140	-	1290		1250	-	80		170	140			22	85	70					20	74.5

1) For version with low-noise fan.

2) In the low-noise version, a second shaft extension is not possible.

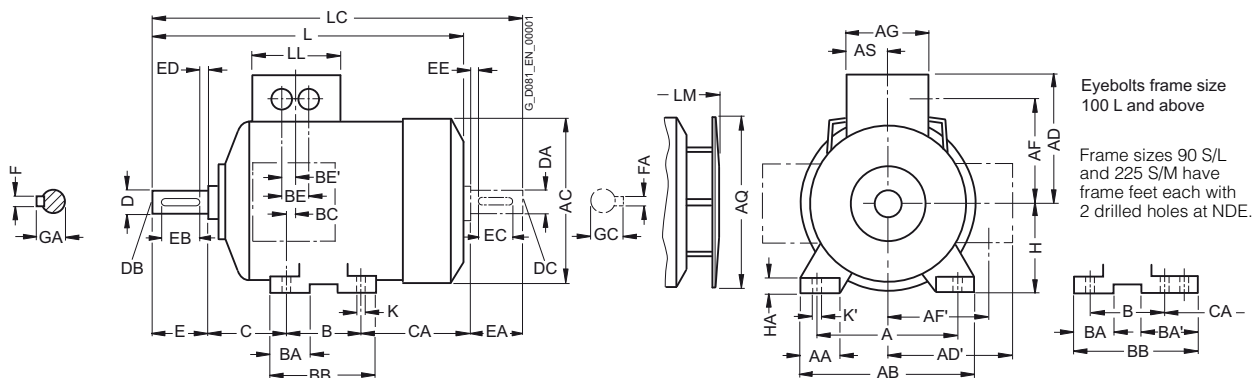
SIMOTICS XP 1LA Explosion-Proof Motors

Dimensions

Aluminum series 1LA7, 1LA5
Frame sizes 63 M to 225 M

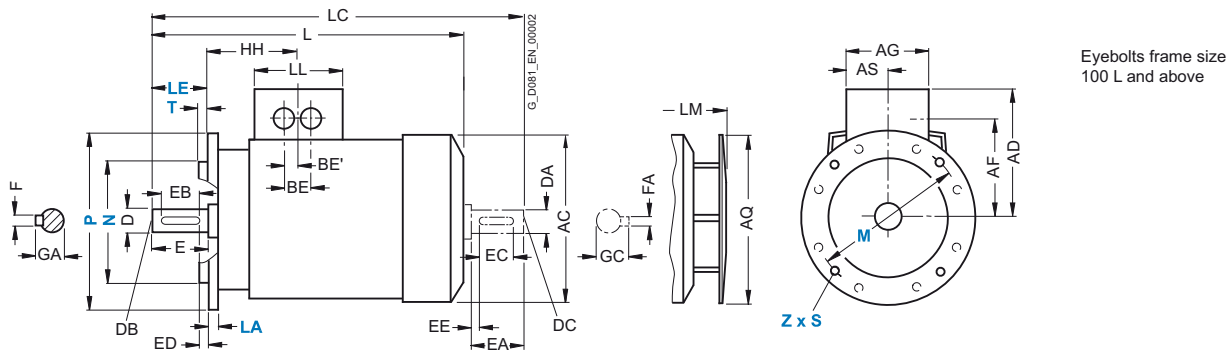
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																						
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C	CA*	H	HA
63 M	1LA7060 1LA7063	2, 4, 6	100	27	120	124	135	135	95	95	120	124	37	80	28	-	96	52	32	18	40	66	63	7
71 M	1LA7070 1LA7073	2, 4, 6, 8	112	27	132	145	145	145	105	105	120	124	37	90	27	-	106	41	32	18	45	83	71	7
80 M	1LA7080 1LA7083	2, 4, 6, 8	125	30.5	150	163	154	154	114	114	120	124	37.5	100	32	-	118	36	32	18	50	94	80	8
90 S 90 L	1LA7090 1LA7096	2, 4, 6, 8	140	30.5	165	180	162	162	122	122	120	170	37.5	100 125	33	54	143	45.5	32	18	56	143 118	90	10
100 L	1LA7106 1LA7107	2, 4, 6, 8 4, 8	160	42	196	203	135	163	78	123	120	170	60	140	47	-	176	39	42	21	63	125	100	12
112 M	1LA7113	2, 4, 6, 8	190	46	226	227	148	176	91	136	120	170	60	140	47	-	176	32	42	21	70	141	112	12
132 S	1LA7130 1LA7131	2, 4, 6, 8 2	216	53	256	267	167	194	107	154	140	250	70	140	49	-	180	39	42	21	89	162.5	132	15
132 M	1LA7133 1LA7134	4, 6, 8 6	216	53	256	267	167	194	107	154	140	250	70	178	49	-	218	39	42	21	89	124.5	132	15
160 M	1LA7163 1LA7164	2, 4, 6, 8 2, 8	254	60	300	320	197	226	127	183	165	250	82.5	210	57	-	256	52.5	54	27	108	183	160	18
160 L	1LA7166	2, 4, 6, 8	254	60	300	320	197	226	127	183	165	250	82.5	254	57	-	300	52.5	54	27	108	139	160	18
180 M	1LA5183	2, 4	279	69.5	339	363	258	258	216	216	152	340	71	241	50	-	287	38	54	27	121	259	180	18
180 L	1LA5186	4, 6, 8	279	69.5	339	363	258	258	216	216	152	340	71	279	50	-	325	38	54	27	121	221	180	18
200 L	1LA5206 1LA5207	2, 6 2, 4, 6, 8	318	83	388	402	305	305	252	252	260	340	96	305	58.5	-	355	45	85	42.5	133	239	200	24
225 S	1LA5220	4, 8	356	103	426	402	305	305	252	252	260	340	96	286	58	83	361	36	85	42.5	149	248.5	225	24
225 M	1LA5223	2 4, 6, 8	356	103	426	402	305	305	252	252	260	340	96	311	58	83	361	36	85	42.5	149	223.5	225	24

* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Measured across the bolt heads.

SIMOTICS XP 1LA Explosion-Proof Motors

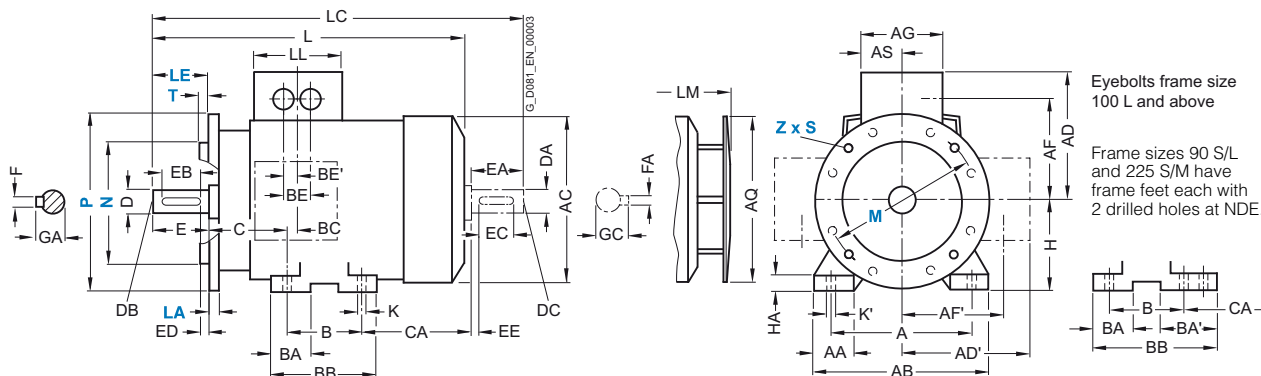
Dimensions

Aluminum series 1LA7, 1LA5
Frame sizes 63 M to 225 M

Dimensional drawings (continued)

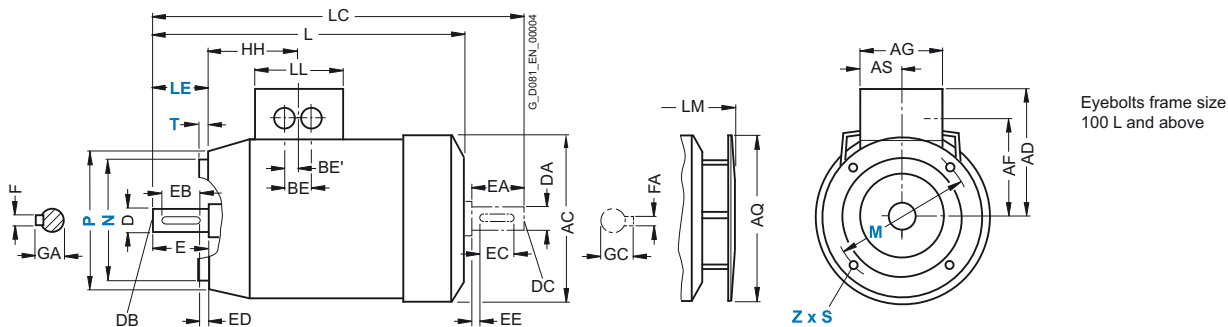
Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



Type of construction IM B14

Type of construction IM B14 not possible for 1LA5 motors, frame sizes 180 M to 225 M
For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor		Number of poles	Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension								
Frame size	Type		HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
63 M	1LA7060 1LA7063	2, 4, 6	69.5	7	10	202.5 ¹⁾	232 ¹⁾	120	231.5 ²⁾	11	M4	23	16	3.5	4	12.5	11	M4	23	16	3.5	4	12.5
71 M	1LA7070 1LA7073	2, 4, 6, 8	63.5	7	10	240	278	120	268	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
80 M	1LA7080 1LA7083	2, 4, 6, 8	63.5	9.5	13.5	273.5	324 364	120	299.5	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
90 S 90 L	1LA7090 1LA7096	2, 4, 6, 8	79	10	14	331	389	120	382.5	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
100 L	1LA7106 1LA7107	2, 4, 6, 8 4, 8	102	12	16	372	438	120	423.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1LA7113	2, 4, 6, 8	102	12	16	393	461	120	444.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1LA7130 1LA7131 1LA7131 2	2, 4, 6, 8	128	12	16	452.5 ²⁾	551.5	140	505 ²⁾	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1LA7133 1LA7134 6	4, 6, 8	128	12	16	452.5 ²⁾	551.5	140	505 ²⁾	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1LA7163 1LA7164 2, 8	2, 4, 6, 8	160.5	15	19	588	721	165	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1LA7166	2, 4, 6, 8	160.5	15	19	588	721	165	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
180 M	1LA5183	2, 4	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LA5186	4, 6, 8	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LA5206 1LA5207	2, 6 2, 4, 6, 8	178	19	25	769.5	897	192	850	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S	1LA5220	4, 8	184.5	19	25	806	933.5	192	887.5	60	M20	140	125	7.5	18	64	55	M20	110	100	5	16	59
225 M	1LA5223	2 4, 6, 8	184.5	19	25	776 806	903.5 933.5	192	857.5 887.5	55 60	M20	110 140	100 125	5 7.5	16 18	59 64	55	M20	110	100	5	16	59

¹⁾ For 1LA7063 in the case of type of construction code 1 (IM B5, IM V3), dimensions L, LC and LM are 26 mm longer.

²⁾ In a low-noise version, the dimension L is 8 mm greater and the dimension LM is 11.5 mm greater.

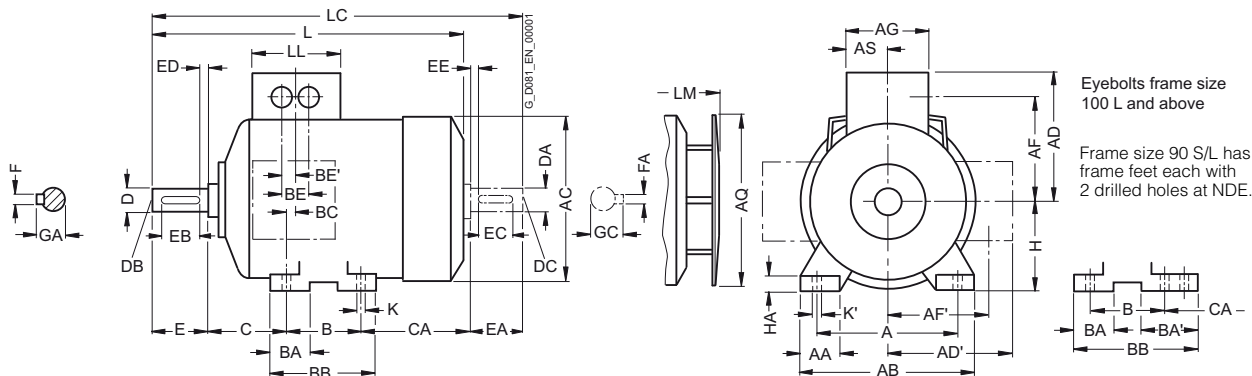
SIMOTICS XP 1LA Explosion-Proof Motors

Dimensions

Aluminum series 1LA9
Frame sizes 63 M to 200 L

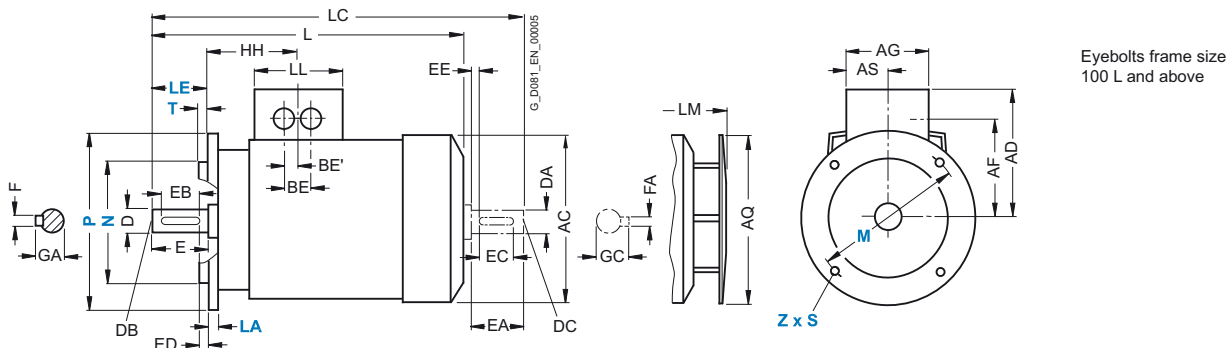
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																						
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AQ	AS	B*	BA	BA'	BB	BC	BE	BE'	C	CA*	H	HA
63 M	1LA9060 1LA9063	2, 4	100	27	120	124	135	135	95	95	120	124	37	80	28	-	96	52	32	18	40	66 92	63	7
71 M	1LA9070 1LA9073	2, 4	112	30.5	132	145	145	145	105	105	120	124	37	90	27	-	106	41	32	18	45	83	71	7
80 M	1LA9080 1LA9083	2, 4	125	30.5	150	163	154	154	114	114	120	124	37.5	100	32	-	118	36	32	18	50	94 134	80	8
90 S 90 L	1LA9090 1LA9096	2, 4, 6	140	30.5	165	180	162	162	122	122	120	170	37.5	100 125	33	54	143	45.5	32	18	56	143 118	90	10
100 L	1LA9106 1LA9107	2, 4, 6	160	42	196	203	135	163	78	123	120	170	60	140	47	-	176	39	42	21	63	160 195 ²⁾	100	12
112 M	1LA9113	2, 4, 6	190	46	226	227	148	176	91	136	120	170	60	140	47	-	176	32	42	21	70	179	112	12
132 S	1LA9130	2, 4	216	53	256	267	167	194	107	154	140	250	70	140	49	-	180	39	42	21	89	162.5	132	15
132 M	1LA9133 1LA9133 1LA9133 1LA9134	6 2 4 6	216	53	256	267	167	194	107	154	140	250	70	178	49	-	218	39	42	21	89	124.5 162.5	132	15
160 M	1LA9163 1LA9164	2, 4, 6 2	254	60	300	320	197	226	127	183	165	250	82.5	210	57	-	256	52.5	54	27	108	183	160	18
160 L	1LA9166	2, 4, 6	254	60	300	320	197	226	127	183	165	250	82.5	254	57	-	300	52.5	54	27	108	179	160	18
180 M	1LA9183	2, 4	279	69.5	339	363	258	258	216	216	152	340	71	241	50	-	287	38	54	27	121	259	180	18
180 L	1LA9186	4, 6	279	69.5	339	363	258	258	216	216	152	340	71	279	50	-	325	38	54	27	121	221	180	18
200 L	1LA9206 1LA9207	2, 6 2, 4, 6	318	83	388	402	305	305	252	252	260	340	96	305	58.5	-	355	45	85	42.5	133	239	200	24

* This dimension is assigned in DIN EN 50347 to the frame size listed.

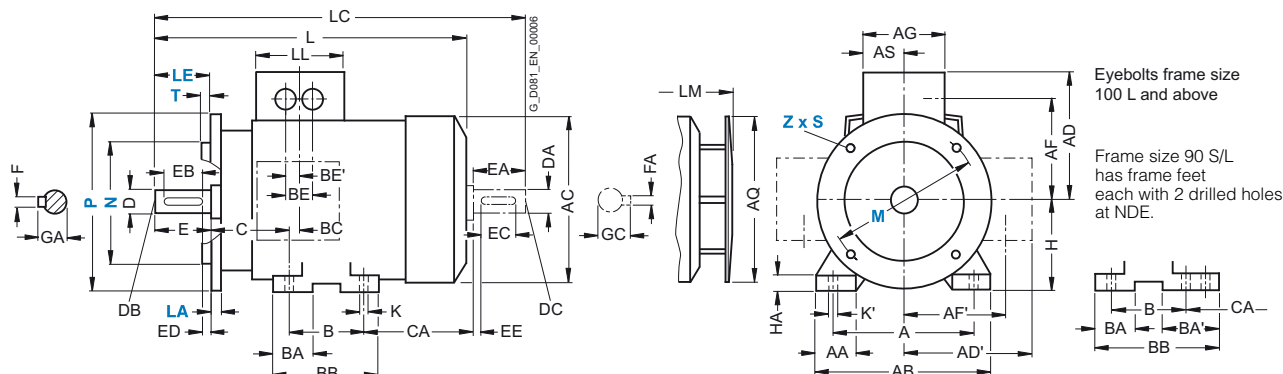
¹⁾ Measured across the bolt heads.

²⁾ Only for 1LA9107-4KA.

Dimensional drawings (continued)

Type of construction IM B35

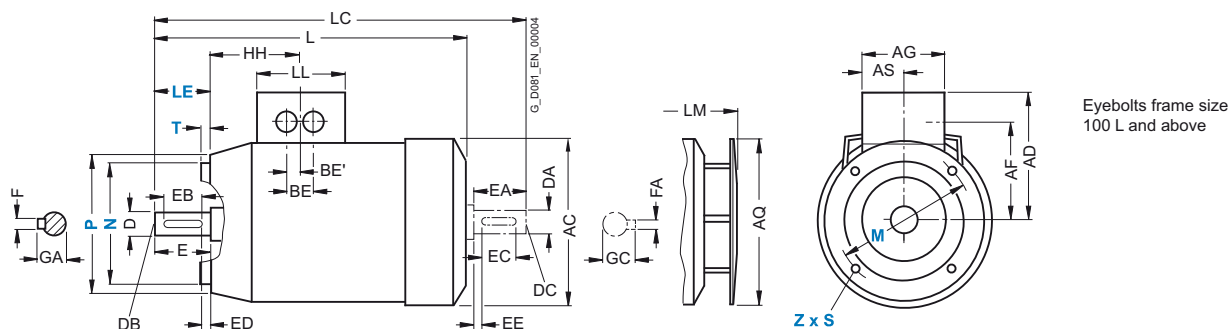
For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



Type of construction IM B14

Type of construction IM B14 not possible for 1LA9 motors, frame sizes 180 M to 200 L

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor Frame size	Type	Number of poles	Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension								
			HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
63 M	1LA9060	2, 4	69.5	7	10	202.5 ¹⁾	232 ¹⁾	120	231.5	11	M4	23	16	3.5	4	12.5	11	M4	23	16	3.5	4	12.5
	228.5					258	257.5																
71 M	1LA9070	2, 4	63.5	7	10	240	278	120	268	14	M5	30	22	4	5	16	14	M5	30	22	4	5	16
	1LA9073																						
80 M	1LA9080	2, 4	63.5	9.5	13.5	273.5	324	120	299.5	19	M6	40	32	4	6	21.5	19	M6	40	32	4	6	21.5
	1LA9083					308.5	364		334.5														
90 S	1LA9090	2, 4, 6	79	10	14	331	389	120	382.5	24	M8	50	40	5	8	27	19	M6	40	32	4	6	21.5
90 L	1LA9096					376 ²⁾	434 ²⁾		427.5 ³⁾														
						358 ³⁾	414 ³⁾		409.5 ³⁾														
100 L	1LA9106	2, 4, 6	102	12	16	407	473	120	458.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
	1LA9107					442 ⁴⁾	508 ⁴⁾		493 ⁴⁾														
112 M	1LA9113	2, 4, 6	102	12	16	431	499	120	482.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1LA9130	2, 4	128	12	16	452.5	551.5	140	505	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
	1LA9131					490.5	589.5		543														
132 M	1LA9133	6	128	12	16	452.5	551.5	140	505	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
	1LA9133	4																					
	1LA9134	6																					
160 M	1LA9163	2, 4, 6	160.5	15	19	588	721	165	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
	1LA9164								2														
160 L	1LA9166	2, 4, 6	160.5	15	19	628	761	165	680.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
180 M	1LA9183	2, 4	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LA9186	4, 6	159	15	19	712	841	132	793.5	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LA9206	2, 6	178	19	25	768.5	897	192	850	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LA9207																						

1) For 1LA9060 in the case of type of construction code 1 (IM B5, IM V3), dimensions L, LC and LM are 26 mm longer.
 2) Only for 1LA9096-6KA.
 3) Only for 1LA9096-2 and 1LA9096-4.
 4) Only for 1LA9107-4KA.

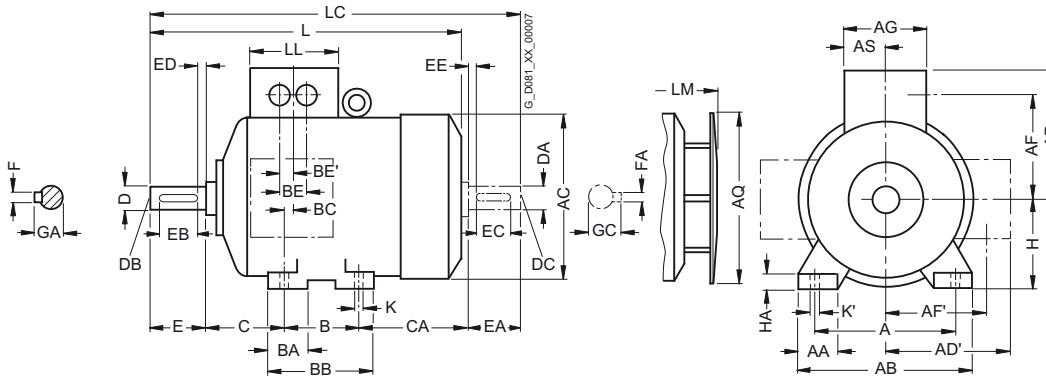
SIMOTICS XP 1LA Explosion-Proof Motors

Dimensions

Cast-iron series 1LA6
Frame sizes 100 L to 160 L

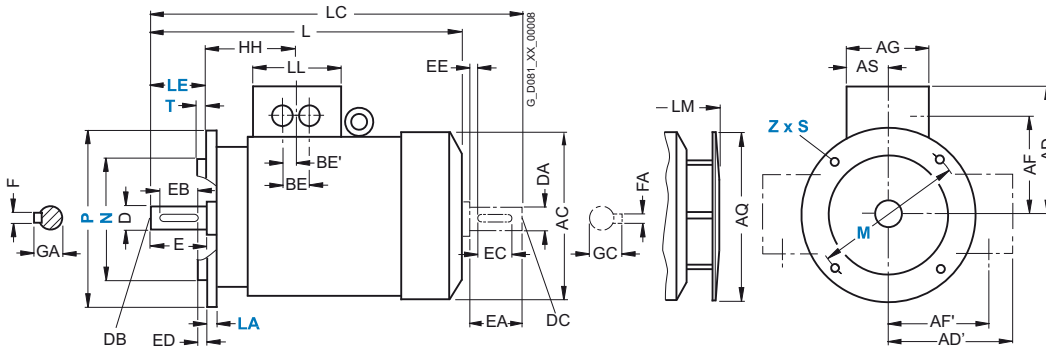
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



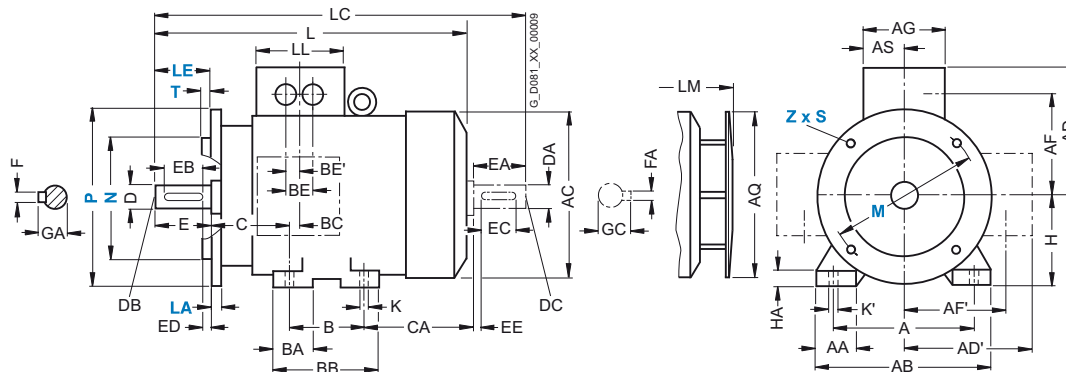
For motor		Dimension designation acc. to IEC																					
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AQ	AS	B	BA	BB	BC	BE	BE'	C	CA	H	HA
100 L	1LA6106	2, 4, 6, 8	160	40	196	201	164	164	124	124	121	170	60.5	140	46	180	42	44	22	63	125	100	12
	1LA6107	4, 8																					
112 M	1LA6113	2, 4, 6, 8	190	42.5	226	225.5	178	178	138	138	121	170	60.5	140	46	180	34	44	22	70	141	112	15
132 S	1LA6130	2, 4, 6, 8	216	50	256	265	194	194	154	154	141	250	70.5	140	47	180	42	44	22	89	162.5	132	17
	1LA6131	2																					
132 M	1LA6133	4, 6, 8	216	50	256	265	194	194	154	154	141	250	70.5	178	49	218	42	44	22	89	124.5	132	17
	1LA6134	6																					
160 M	1LA6163	2, 4, 6, 8	254	60	300	320	226	226	183	183	166	250	83	210	63	256	52	54	27	108	183	160	18
	1LA6164	2, 8																					
160 L	1LA6166	2, 4, 6, 8	254	60	300	320	226	226	183	183	166	250	83	254	63	300	52	54	27	108	139	160	18

¹⁾ Measured across the bolt heads.

Dimensional drawings (continued)

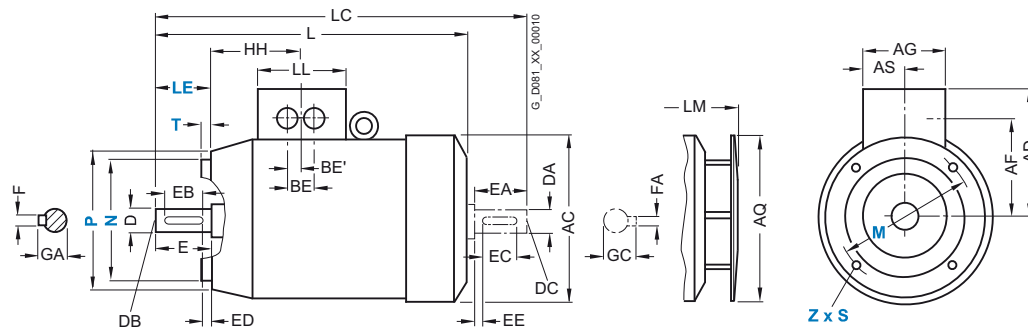
Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



Types of construction IM B14

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor		Dimension designation acc. to IEC										DE shaft extension					NDE shaft extension						
Frame size	Type	Number of poles	HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
100 L	1LA6106 1LA6107	2, 4, 6, 8 4, 8	104.5	12	16	372	438	121	423.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
112 M	1LA6113	2, 4, 6, 8	104.5	12	16	393	461	121	444.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
132 S	1LA6130 1LA6131	2, 4, 6, 8 2	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
132 M	1LA6133 1LA6134	4, 6, 8 6	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
160 M	1LA6163 1LA6164	2, 4, 6, 8 2, 8	160	14.5	18	588	721	166	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45
160 L	1LA6166	2, 4, 6, 8	160	14.5	18	588	721	166	640.5	42	M16	110	90	10	12	45	42	M16	110	90	10	12	45

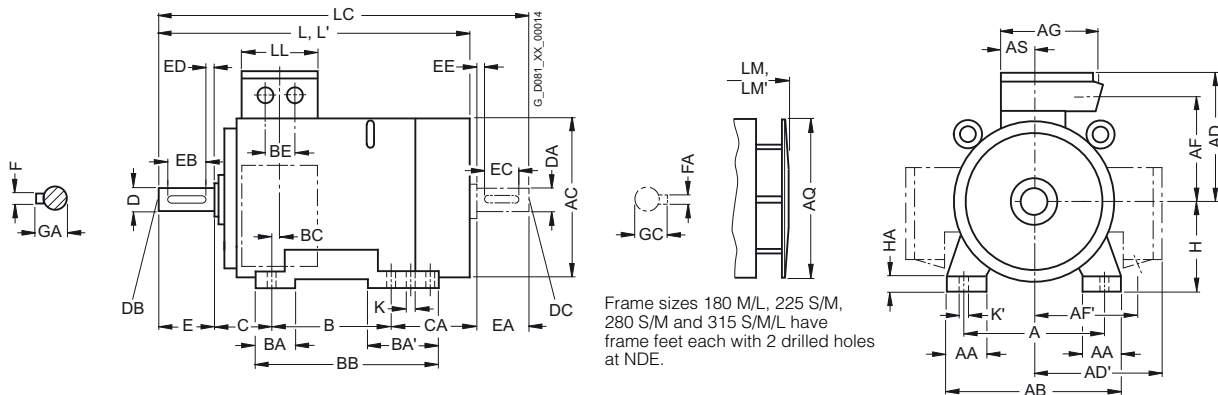
SIMOTICS XP 1LG Explosion-Proof Motors

Dimensions

Cast-iron series 1LG4
Frame sizes 180 M to 315 L

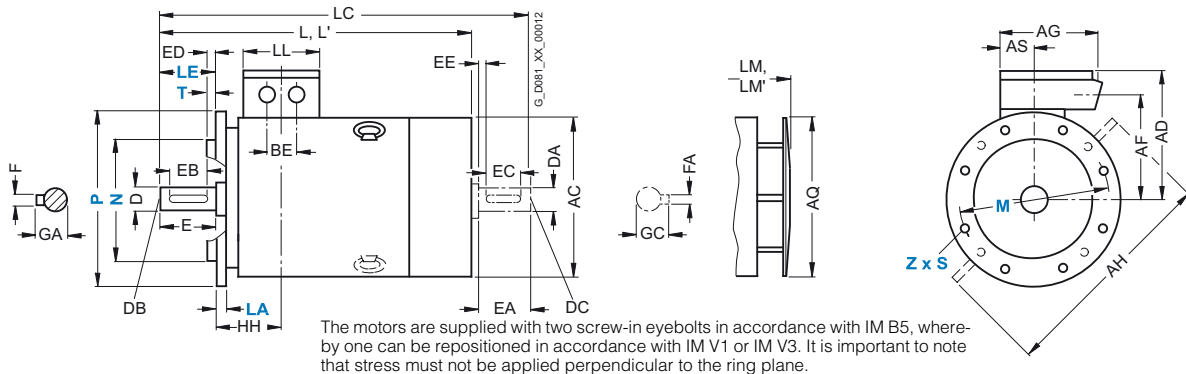
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor		Dimension designation acc. to IEC																						
Frame size	Type	Number of poles	A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
180 M	1LG4183	2, 4	279	65	339	363	262	262	220	220	152	452	340	71	241	70	111	328	36	54	121	202	180	20
	1LG4186	4, 6, 8	279	65	339	363	262	262	220	220	152	452	340	71	279	70	111	328	36	54	121	164	180	20
	1LG4188	2, 4, 6, 8	279	65	339	363	262	262	220	220	152	452	340	71	279	70	111	328	36	54	121	215	180	20
200 L	1LG4206	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25
	1LG4207	2, 4, 6, 8	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25
	1LG4208	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	234	200	25
		4, 8																				177		
225 S	1LG4220	4, 8	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	218	225	34
	1LG4223	2	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	193	225	34
	1LG4228	4, 6, 8	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	253	225	34
250 M	1LG4253	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	235	250	40
	1LG4258	4, 6, 8	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	235	250	40
		4																				305		
		6, 8																				235		
280 S	1LG4280	2	457	100	540	555	432	432	348	348	300	672	525	118	368	100	151	479	62	110	190	267	280	40
280 M	1LG4283	4, 6, 8	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	216	280	40
	1LG4288	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
		4, 6, 8																				216		
315 S	1LG4310	2	508	120	610	610	500	500	400	400	380	780	590	154	406	125	176	527	69	110	216	315	315	50
	1LG4310	4, 6, 8	508	120	610	610	500	500	400	400	380	780	590	154	406	125	176	527	69	110	216	315	315	50
315 M ²⁾	1LG4313	2	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	527	69	110	216	264	315	50
	1LG4313	4, 6, 8	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	527	69	110	216	264	315	50
315 L ²⁾	1LG4316/317	2	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
	1LG4316/317	4, 6, 8	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
	1LG4318	8	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	513	315	50
	1LG4318	6	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	513	315	50

* This dimension is assigned in DIN EN 50347 to the frame size listed.

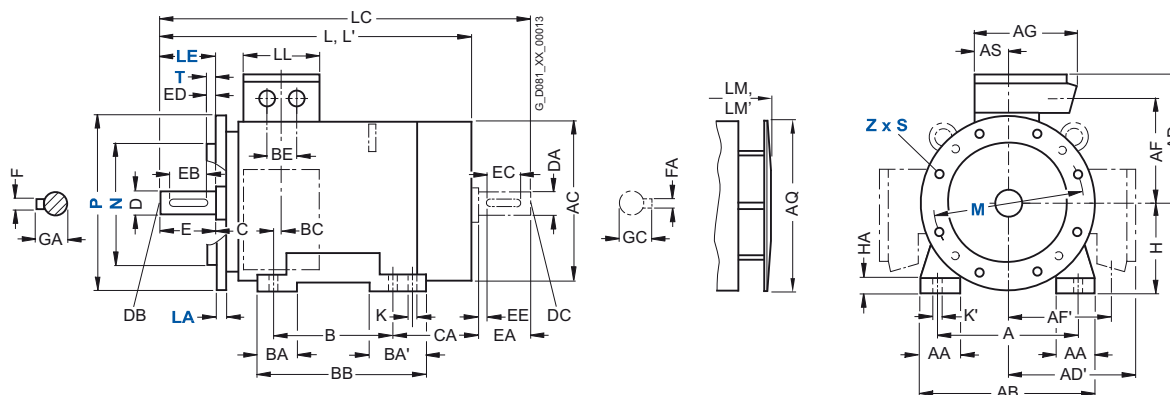
1) Measured across the bolt heads.

2) With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 508 mm). BB will then be 666 mm.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor			Dimension designation acc. to IEC									DE shaft extension				NDE shaft extension									
Frame size	Type	Number of poles	HH	K	K'	L	L ⁽¹⁾	LC ⁽²⁾	LL	LM	LM ⁽¹⁾	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1LG4183	2, 4	157	15	19	669	669	784	132	759	759	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
180 L	1LG4186	4, 6, 8	157	15	19	669	-	784	132	759	-	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
	1LG4188	2, 4, 6, 8	157	15	19	720	720	835	132	810	810	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LG4206	2, 6	196	19	25	720	754	835	192	810	844	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LG4207	2, 4, 6, 8	196	19	25	720	754	835	192	810	844	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LG4208	2, 6	196	19	25	777	811	892	192	867	901	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
		4, 8				720	-	835		810	-														
225 S	1LG4220	4, 8	196	19	25	789	-	903	192	889	-	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1LG4223	2	196	19	25	759	793	873	192	859	893	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6, 8				789	-	903		889	-	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
	1LG4228	2	196	19	25	819	853	933	192	919	953	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6, 8				849	-	963		949	-	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
250 M	1LG4253	2	237	24	30	887	924	1002	236	987	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4, 6, 8				-	-	1032		-	-	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG4258	2	237	24	30	887	924	1002	236	987	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4				957	-	1102		1057	-	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		6, 8				887	-	1032		987	-	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
280 S	1LG4280	2	252	24	30	960	998	1105	236	1070	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				-	-	-		-	-	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
280 M	1LG4283	2	252	24	30	960	998	1105	236	1070	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				-	-	-		-	-	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
	1LG4288	2	252	24	30	1070	1108	1215	236	1180	1218	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4				-	-	-		-	-	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
		6, 8				960	-	1105		1070	-	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
315 S	1LG4310	2	285	28	35	1072	1142	1217	307	1182	1252	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG4310	4, 6, 8				1102	-	1247		1212	-	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 M ⁽³⁾	1LG4313	2	285	28	35	1072	1142	1217	307	1182	1252	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG4313	4, 6, 8				1102	-	1247		1212	-	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 L ⁽³⁾	1LG4316/317	2	285	28	35	1232	1302	1377	307	1342	1412	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG4316/317	4, 6, 8				1262	-	1407		1372	-	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG4318	8				-	-	-		-	-	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG4318	6	285	28	35	1402	-	1547	307	1512	-	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5

1) For version with low-noise fan for 2-pole motors.

2) In the low-noise version, a second shaft extension is not possible.

3) With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 508 mm). BB will then be 666 mm.

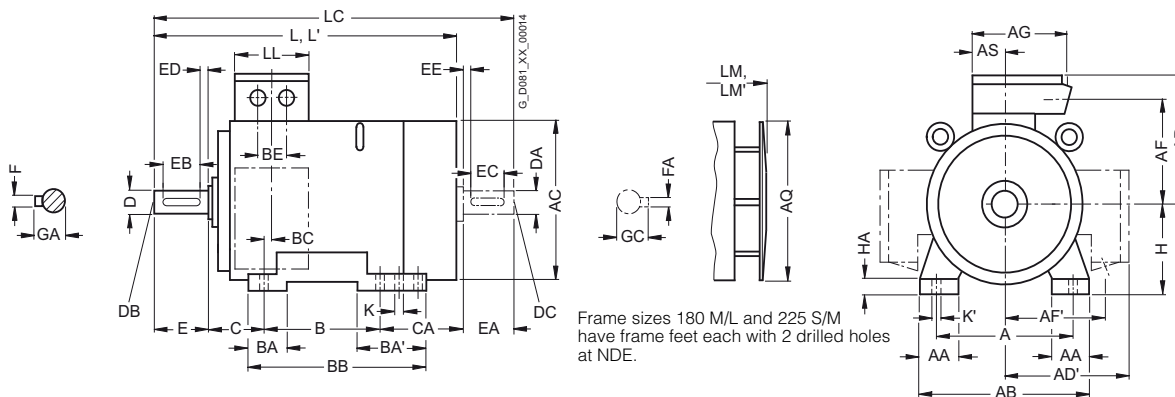
SIMOTICS XP 1LG Explosion-Proof Motors

Dimensions

Cast-iron series 1LG6
Frame sizes 180 M to 250 M

Dimensional drawings

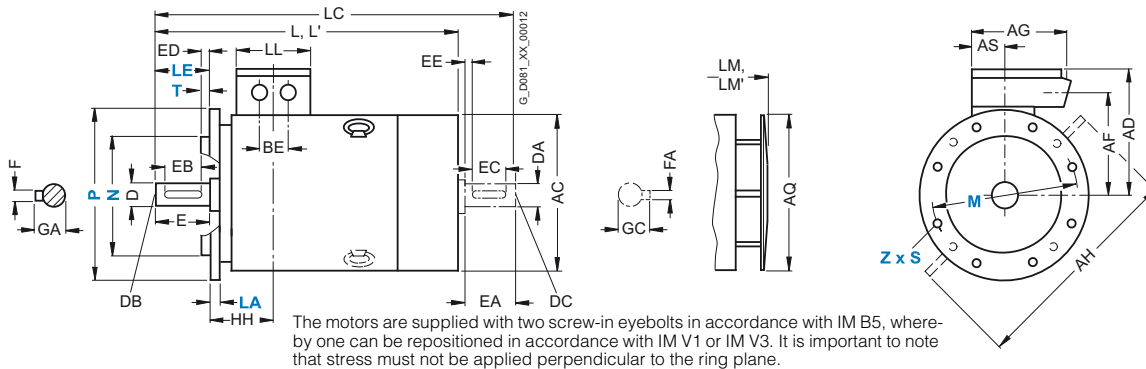
Type of construction IM B3



4.6

Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



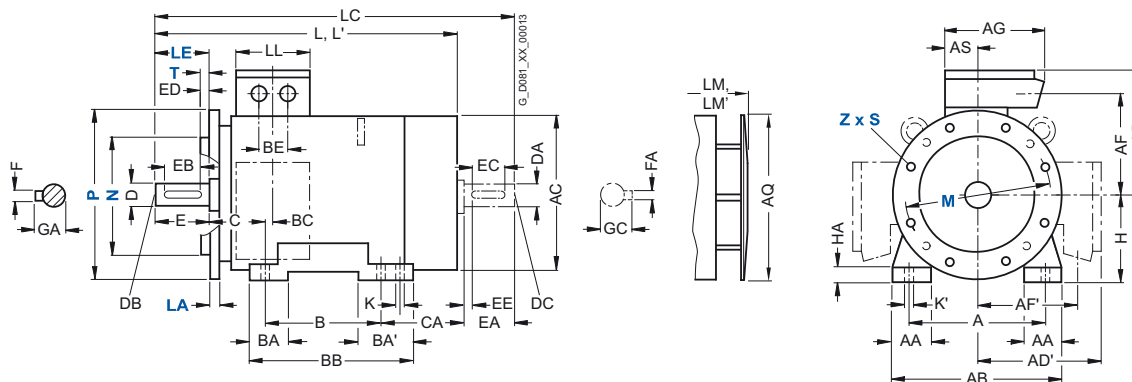
For motor		Number of poles	Dimension designation acc. to IEC																					
Frame size	Type		A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
180 M	1LG6183	2	279	65	339	363	262	262	220	220	152	452	340	71	241	70	111	328	36	54	121	253	180	20
		4																				202		
180 L	1LG6186	4, 6, 8	279	65	339	363	262	262	220	220	152	452	340	71	279	70	111	328	36	54	121	215	180	20
		2																						
200 L	1LG6206	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25
		4, 8																						
	1LG6207	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	234	200	25
225 S	1LG6220	2	318	70	378	402	300	300	247	247	164	486	340	96	305	80	80	355	63	85	133	294	200	25
		4, 8																						
		2																						
225 M	1LG6223	4, 6, 8	356	80	436	442	325	325	272	272	260	556	425	96	286	85	110	361	47	85	149	218	225	34
		2																						
		4, 6																						
250 M	1LG6228	2	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	303	225	34
		4, 6																						
		2																						
250 M	1LG6253	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	235	250	40
		4																						
		6, 8																						
250 M	1LG6258	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	305	250	40
		4																						
		6, 8																						

* This dimension is assigned in DIN EN 50347 to the frame size listed.
1) Measured across the bolt heads.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor Frame size	Type	Number of poles	Dimension designation acc. to IEC							DE shaft extension					NDE shaft extension								
			HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
180 M	1LG6183	2	157	15	19	720	835	132	810	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
		4					669	784		759													
180 L	1LG6186	4, 6, 8	157	15	19	720	835	132	810	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14	51.5
200 L	1LG6206	2, 6	196	19	25	754	835	192	844	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
		2, 6	196	19	25	811	892	192	901	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	4, 8					720	835		810														
	1LG6208	2	196	19	25	871	952	192	961	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
225 S	1LG6220	4, 8	196	19	25	789	903	192	889	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1LG6223	2	196	19	25	853	933	192	953	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
		4, 6, 8					849	963		949	60	M20	140	125	10	18	64	55	M20	110	100	5	16
	2	196	19	25	903	983	192	1003	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5	
		4, 6				899	1013		999	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
250 M	1LG6253	2	237	24	30	924	1002	236	1024	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4					957	1102		1057	65	M20	140	125	10	18	69	60	M20	140	125	10	18
	6, 8					887	1032		987	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	2	237	24	30	994	1102	236	1094	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59	
	4, 6					957			1057	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64

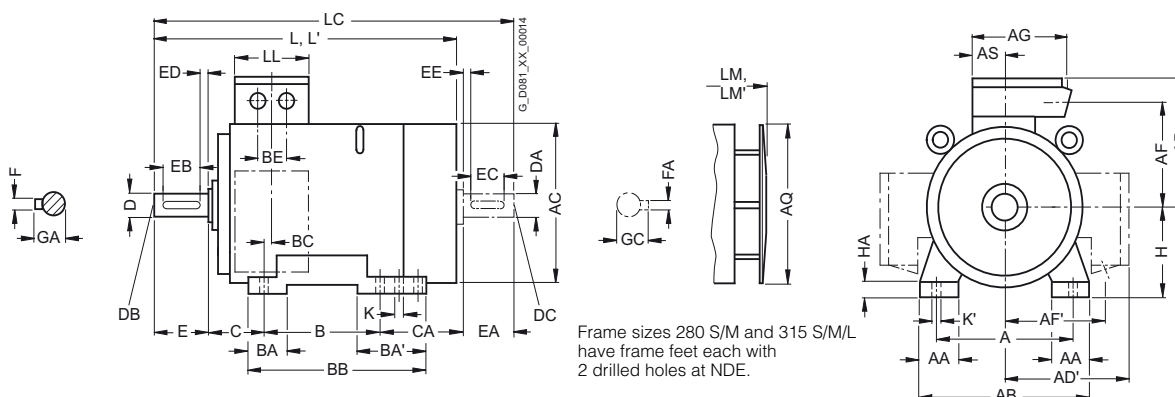
SIMOTICS XP 1LG Explosion-Proof Motors

Dimensions

Cast-iron series 1LG6
Frame sizes 280 S to 315 L

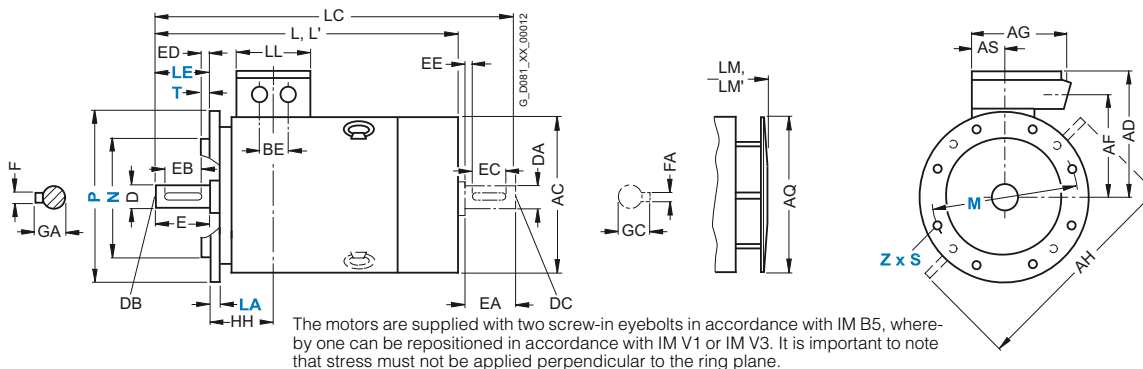
Dimensional drawings

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



For motor		Number of poles	Dimension designation acc. to IEC																					
Frame size	Type		A	AA	AB	AC ¹⁾	AD	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
280 S	1LG6280	2	457	100	540	555	432	432	348	348	300	672	525	118	368	100	151	479	62	110	190	267	280	40
		4, 6, 8	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
280 M	1LG6283	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	267	280	40
		4, 6, 8	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
280 L	1LG6288	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	267	280	40
		4, 6	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
315 S	1LG6310	2	508	120	610	610	500	500	400	400	380	780	590	154	406	125	176	527	69	110	216	315	315	50
		4, 6, 8	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	527	69	110	216	264	315	50
315 M ²⁾	1LG6313	8	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	578	69	110	216	424	315	50
		2	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	578	69	110	216	424	315	50
315 L ²⁾	1LG6316	2	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
		4, 6	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
315 L ²⁾	1LG6316	8	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	513	315	50
		2	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	513	315	50
315 L ²⁾	1LG6317	4, 6	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	513	315	50
		8	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	513	315	50
315 L ²⁾	1LG6318	2	508	120	610	610	651	651	524	524	470	780	590	165	508	125	176	648	69	135	216	513	315	50
		4	508	120	610	610	651	651	524	524	470	780	590	165	508	125	176	648	69	135	216	513	315	50
315 L ²⁾	1LG6318	6, 8	508	120	610	610	500	500	400	400	380	780	590	165	508	125	176	648	69	110	216	513	315	50
		2	508	120	610	610	500	500	400	400	380	780	590	165	508	125	176	648	69	110	216	513	315	50

* This dimension is assigned in DIN EN 50347 to the frame size listed.

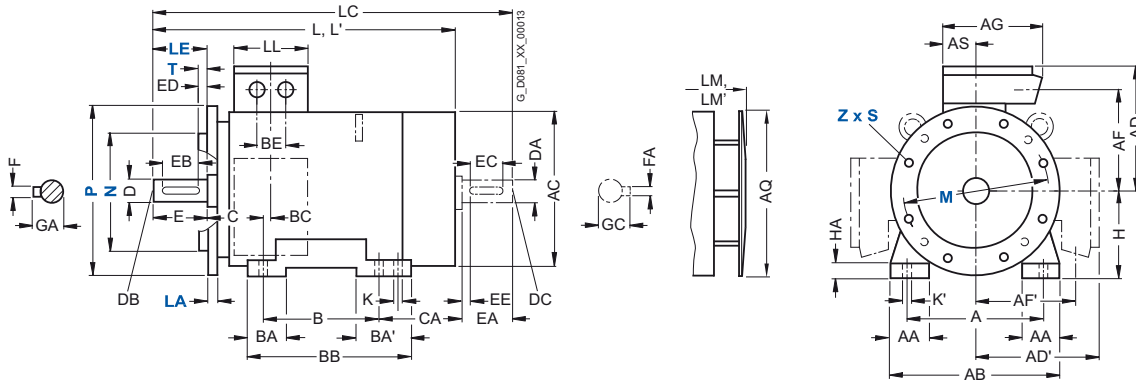
1) Measured across the bolt heads.

2) With order codes for connection box positions (K09, K10, K11) only fitted feet with 3 drilled holes with dimension "B" (406, 457 and 508 mm). BB will then be 666 mm.

Dimensional drawings (continued)

Type of construction IM B35

For flange dimensions, see Page 4/122 (Z = the number of retaining holes)



4.6

For motor		Number of poles	Dimension designation acc. to IEC										DE shaft extension			NDE shaft extension							
Frame size	Type		HH	K	K'	L	LC	LL	LM	D	DB	E	EB	ED	F	GA	DA	DC	EA	EC	EE	FA	GC
280 S	1LG6280	2	252	24	30	998	1105	236	1108	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6, 8				960			1070	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
280 M	1LG6283	2	252	24	30	1108	1215	236	1218	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4				1070			1180	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
		6, 8				960	1105		1070	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
		2	252	24	30	1108	1215	236	1218	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6							1070	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
315 S	1LG6310	2	285	28	35	1142	1217	307	1252	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6310	4, 6, 8				1102	1247		1212	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 M	1LG6313	8	285	28	35	1102	1247	307	1212	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6313	2	285	28	35	1302	1377	307	1412	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
315 L	1LG6313	4, 6				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6316	2	285	28	35	1302	1377	307	1412	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6316	4, 6				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6316	8								80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6317	2	285	28	35	1442	1517	307	1552	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6317	4, 6				1402	1547		1512	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6317	8				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6318	2	285	28	35	1442	1517	330	1552	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
1LG6318	4				1402	1547		1512	80 ¹⁾	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5	
	1LG6318	6, 8						307		80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5

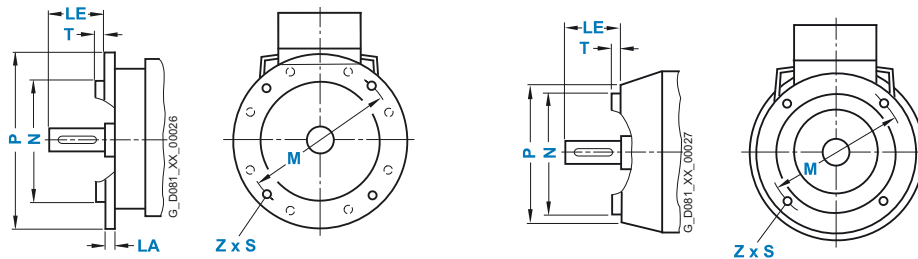
¹⁾ Diameters up to 90 are possible.

SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors

Dimensions

Flange dimensions

Dimensional drawings



In DIN EN 50347, the frame sizes are allocated flange FF with through holes and flange FT with tapped holes. The designation of flange A and C according to DIN 42948 (invalid since September 2003) are also listed for information purposes. See the table below. (Z = the number of retaining holes)

Frame size	Type of construction	Flange type	Flange with		Dimension designation acc. to IEC							
			through holes (FF/A)	tapped holes (FT/C)	LA	LE	M	N	P	S	T	Z
63 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 115	A 140	8	23	115	95	140	10	3	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 75	C 90	–	23	75	60	90	M5	2.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 100	C 120	–	23	100	80	120	M6	3	4
71 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 130	A 160	9	30	130	110	160	10	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 85	C 105	–	30	85	70	105	M6	2.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 115	C 140	–	30	115	95	140	M8	3	4
80 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 165	A 200	10	40	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 100	C 120	–	40	100	80	120	M6	3	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 130	C 160	–	40	130	110	160	M8	3.5	4
90 S, 90 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 165	A 200	10	50	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 115	C 140	–	50	115	95	140	M8	3	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 130	C 160	–	50	130	110	160	M8	3.5	4
100 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 165	C 200	–	60	165	130	200	M10	3.5	4
112 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 165	C 200	–	60	165	130	200	M10	3.5	4
132 S, 132 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 265	A 300	12	80	265	230	300	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 165	C 200	–	80	165	130	200	M10	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 215	C 250	–	80	215	180	250	M12	4	4
160 M, 160 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 300	A 350	13	110	300	250	350	18.5	5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 215	C 250	–	110	215	180	250	M12	4	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 265	C 300	–	110	265	230	300	M12	4	4
180 M, 180 L	IM B5, IM V1, IM V3	Flange	FF 300	A 350	13	110	300	250	350	18.5	5	4
200 L	IM B5	Flange	FF 350	A 400	15	110	350	300	400	18.5	5	4
225 S, 225 M 2-pole 4-pole to 8-pole	IM B5, IM V1, IM V3	Flange	FF 400	A 450	16	110	400	350	450	18.5	5	8
250 M	IM B5, IM V1, IM V3	Flange	FF 500	A 550	18	140	500	450	550	18.5	5	8
280 S, 280 M	IM B5, IM V1, IM V3	Flange	FF 500	A 550	18	140	500	450	550	18.5	5	8
315 S, 315 M, 315 L 2-pole 4-pole to 8-pole	IM B5, IM V1, IM V3	Flange	FF 600	A 660	22	140	600	550	660	24	6	8

SIMOTICS DP

Application-specific Motors



	Orientation – In preparation
	Loher motors – In preparation
	Pump motors – In preparation
	Fan motors – In preparation
	Compressor motors – In preparation
	Smoke extraction motors – In preparation

5/2	Marine motors
5/2	<u>Orientation</u>
5/2	Overview
5/3	Benefits
5/3	Application
5/3	Technical specifications
5/7	Additional notes
5/8	<u>Special versions</u>
5/8	SIMOTICS GP Standard Motors, aluminum series 1LA7/5/9, 1LP7/5, 1PP7/5
5/9	SIMOTICS SD Standard Motors, cast-iron series 1LA6, 1LG4/6, 1LP4, 1PP4
5/10	SIMOTICS XP Explosion-Proof Motors, aluminum series 1MA7
5/11	SIMOTICS XP Explosion-Proof Motors, aluminum series 1LA7/5/9
5/12	SIMOTICS XP Explosion-Proof Motors, cast-iron series 1MA6, 1MJ6/7
5/13	SIMOTICS XP Explosion-Proof Motors, cast-iron series 1LA6, 1LG4/6
5/14	SIMOTICS N-compact Non-Standard Motors, cast-iron series 1LA8, 1LL8, 1PQ8
5/20	Ordering example

	Crane motors – In preparation
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	Roller table motors – In preparation
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SIMOTICS DP Application-specific Motors

Marine motors

Orientation

Overview



Low-voltage motors in the marine version can be used below deck on ships and in the offshore industry. The thermal utilization of the motors is matched to the generally higher ambient temperatures on board ship. If the application demands compliance with additional regulations, e.g. protection against explosion hazards, the appropriate motor series must be chosen.

The motors on board ships are generally subdivided into three classes of importance by the marine classification societies in cooperation with customers, depending on the field of application:

- **Essential Service for Propulsion** or also referred to as Primary Essential Service
- **Essential Service** or also referred to as Secondary Essential Service or Important Service
- **Non-Essential Service** or also referred to as Non-Important Service

The class of importance must be specified by the customer (ordering party).

The categories include the following requirements of the classification societies:

	Class of importance		
	Essential Service for Propulsion	Essential Service	Non-Essential Service
Typical applications	Propeller drive, thruster	Thrusters, lateral thrust units, anchor winches, bilge and ballast pumps, fire-fighting pumps	Pumps for industrial water
Version	In accordance with regulations of the classification society		In accordance with ambient conditions of the classification society
Acceptance test certificate	Acceptance test certificate 3.2 according to EN 10204	Acceptance test certificate 3.1 according to EN 10204	None
Individual acceptance by classification society	Necessary if no type test certificate exists or the rated power lies above the limit defined by the classification society		Not necessary
Type test	Not a requirement of the classification societies For standard motors up to frame size 315 L, a type test certificate is supplied. These motors can only be ordered with options E11 to E51 in accordance with the classification society.		
Ordering several identical motors	In the order, the first motor must be distinguished from the additional motors using an option code		No distinction
Rating plate data	Information about ambient conditions of the classification society		
Stamp of the classification society	Stamp on shaft and housing		No stamp

Type test (type approval)

All motors (with the exception of 1LA8, 1PQ8, 1LL8 and 1LH8 motors) are manufactured and type tested in accordance with the regulations of the following international classification societies:

- GL (Germanischer Lloyd, Germany)



Germanischer Lloyd

- DNV (Det Norske Veritas, Norway)



- LR (Lloyds Register, Great Britain)



- BV (Bureau Veritas, France)



As an option, we can manufacture motors in accordance with the following classification societies:

- ABS (American Bureau of Shipping, USA)
- RINA (Registro Italiano Navale, Italy)
- CCS (Chinese Classification Society, China)

A type test certificate will however only be issued following individual acceptance testing.

Special versions that differ from the range defined in the Catalog are possible on request.

Benefits

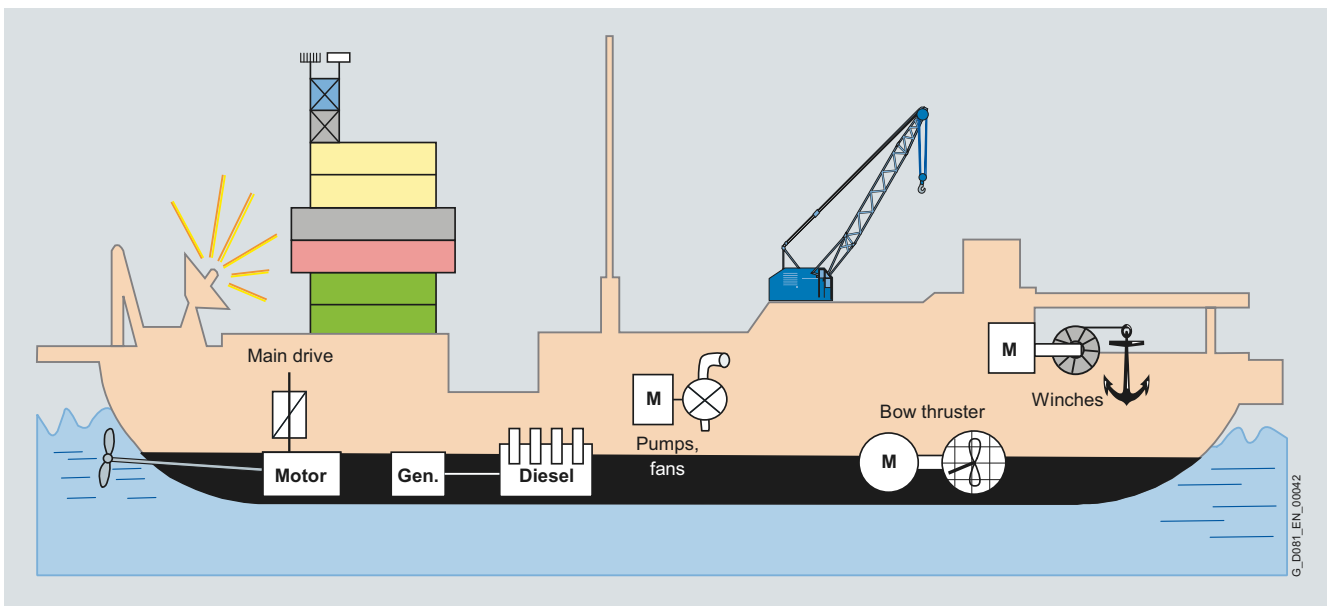
The marine motors offer the user a number of advantages:

- Cast-iron versions can be supplied for corrosive atmospheres especially for high humidity levels and salty air
- Increased corrosion protection using specially designed paint finishes is available
- Certified marine motors can be supplied for use in areas to be protected against explosion
- Due to the existing type test, individual acceptance test in output ranges below the power limits defined by the classification societies is not required which means short delivery times
- Distinctive expertise for customer requirements
- Worldwide service network with 24 h service hotline for motors and converters

Application

Our type tested marine motors are specially designed for use on board ship below deck and for the offshore industry:

- Applications on board ship as main and auxiliary drives below deck, e.g.:
 - Fans (air conditioning, refrigeration plants)
 - Pumps (for fire-extinguishing water, fuels, oils)
- Winches (anchor winches, warping winches, lifting gear)
- Compressors
- Bow thruster drives
- Ex motors for areas subject to explosion hazards
- Application in the offshore industry
 - Coastal areas, e.g. production platforms, production ships



Typical areas of application

Technical specifications

Frame design

Motors can be supplied depending on the motor series in a corrosion-resistant aluminum housing and in a rugged low-vibration cast-iron version.

Motor connection

Cable glands are not included in the standard scope of supply with the exception of explosion-proof motors (see "Special versions").

All marine motors generally have an external grounding terminal.

SIMOTICS DP Application-specific Motors

Marine motors

Orientation

Technical specifications (continued)

Regulations of the individual classification societies with order codes (options) for motors up to frame size 315 L

Classification society	Coolant temperature CT	Admissible temperature rise limit of the classification society		Rated power limit for individual acceptance test	Rated power limit for building inspection	Order codes for surface-cooled motors up to frame size 315L	
		Temperature class 130 (B)	155 (F)			With type test certificate	Without type test certificate
GL	45	75	100	≥ 50	–	E11	–
LR	45	70	95	≥ 100	≥ 100	E21	–
BV	45	75	100	≥ 100	–	E31	–
DNV	45	75	100	≥ 300	–	E51	–
ABS	50	70	95	≥ 100	≥ 100	–	E00
RINA	45	75	95	≥ 100	–	–	E00
CCS	45	75	100	All power ratings	All power ratings	–	E00

Type test certificates



5.6

Technical specifications (continued)

Regulations of the individual classification societies with order codes for ordering SIMOTICS N-compact Non-Standard Motors frame size 315 and above in marine version

SIMOTICS N-compact Non-Standard Motors frame size 315 and above in marine version

	Frame size – Motor type			
	315	355	400	450
Self-ventilated motors for mains-fed and converter-fed operation	1LA8 (cast-iron)			
Forced-air cooled motors with mounted separately driven fan for converter-fed operation	1PQ8 (cast-iron)			
Self-ventilated motors with through ventilation for mains-fed and converter-fed operation	1LL8 (cast-iron)			
Self-ventilated motors in Zone 22 with type of protection "n" or protection against dust explosions	1LA8 (cast-iron)			

Classification societies

Society	Abbreviation	Domicile
American Bureau Of Shipping	ABS	USA
Bureau Veritas	BV	France
China Classification Society	CCS	China
Det Norske Veritas	DNV	Norway
Germanischer Lloyd	GL	Germany
Korean Register	KR	Korea
Lloyds Register	LR	Great Britain

SIMOTICS N-compact Non-Standard Motors for marine applications must be ordered with classification-specific options. This ensures that both the mechanical design of the motor, and the tests are performed exactly in accordance with the instructions provided by the respective classification society.

There are 4 categories of classification-specific options:

- **Design options** define the marine-compatible technical design in accordance with the definitions of the classification society
- **Certification options** define the scope of the test certificates
- **Test options** define the scope of the individual tests
- **Additional options** for variations and special conditions: specify the customer's request for participation in the tests at the factory, or define coolant temperatures that differ from the requirements of the classification society (additional plain text required)

The options of the categories listed above are combined with each other depending on the class of importance, classification society and other conditions.

If motors are to be designed according to the specifications of several classification societies, a special inquiry is necessary.

Non-standard motors for Non-Essential Services

The technical design is in accordance with the ambient operating conditions specified by the classification society. The order option Marine version X00 to X06 must be specified depending on the classification society. Acceptance inspections are not required. There is no distinction between ordering an individual motor or several motors.

Non-Essential Service	Options according to classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical design	X00	X01	- ¹⁾	X03	X04	X05	X06

¹⁾ Non-Essential Service must be handled by CCS as an Essential Service.

Non-standard motors for Essential Services

The technical design is in accordance with regulations of the classification society: Order option X10 to X16. A "simple" acceptance test certificate 3.1 according to EN 10204 is included. Depending on the classification society, the test steps are controlled by options X30 to X42 for the first motor (even numbers) and X31 to X43 for the additional motors (uneven numbers). The options J70 to J82 or J71 to J83 define the scope of the test certificates.

Essential Service	Options according to classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical design	X10	X11	X12	X13	X14	X15	X16
Certification	<ul style="list-style-type: none"> • First motor • Additional motors 						
	J70	J72	J74	J76	J78	J80	J82
	J71	J73	J75	J77	J79	J81	J83
Scope of the tests and presence of representatives of the classification society	<ul style="list-style-type: none"> • First motor • Additional motors 						
	X30	X32	X34	X36	X38	X40	X42
	X31	X33	X35	X37	X39	X41	X43
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99						
Conditions deviating from classification requirements must be fulfilled	E80						

Non-standard motors for Essential Services for Propulsion

The technical design is in accordance with regulations of the classification society: Order option X20 to X26. An acceptance test certificate 3.2 according to EN 10204 is included. Depending on the classification society, the test steps are controlled by options X60 to X72 for the first motor (even numbers) and X61 to X73 for the additional motors (uneven numbers). The options N40 to N52 or N41 to N53 define the scope of the test certificates.

Essential Service for Propulsion	Options according to classification society						
	ABS	BV	CCS	DNV	GL	KR	LR
Technical design	X20	X21	X22	X23	X24	X25	X26
Certification	<ul style="list-style-type: none"> • First motor • Additional motors 						
	N40	N42	N44	N46	N48	N50	N52
	N41	N43	N45	N47	N49	N51	N53
Scope of the tests and presence of representatives of the classification society	<ul style="list-style-type: none"> • First motor • Additional motors 						
	X60	X62	X64	X66	X68	X70	X72
	X61	X63	X65	X67	X69	X71	X73
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99						
Conditions deviating from classification requirements must be fulfilled	E80						

The option E80 is used if a different coolant temperature CT is required. The CT must also be specified in plain text, e.g. CT55.

SIMOTICS DP Application-specific Motors

Marine motors

Orientation

Technical specifications (continued)

Temperature class and coolant temperature

SIMOTICS GP/SD Standard Motors and SIMOTICS XP Explosion-Proof Motors up to frame size 315 L

In general, marine motors are designed for a coolant temperature CT 45 °C in temperature class 155 (F) – used according to 155 (F) – with thermal reserve. When motors are used according to temperature class 130 (B) order code C22, derating is required. For standard motors up to frame size 315 L, the derating is approx. 4 % (for E00 and E21 approx. 8 %).

1MA and 1MJ motors as well as motors in Zone 2, 21 and 22 are designed for temperature class 155 (F) – used according to temperature class 130 (B) – with derating of approx. 4 % (with order code E00 approx. 8 %). 1MA motors are designed for the maximum possible and certified output.

1LA9 motors with increased output in temperature class 155 (F) – used according to temperature class 155 (F) – are also derated by approx. 4 % (with order code E00/E21 approx. 8 %). If temperature class 155 (F) is to be used according to 130 (B), further derating of approximately 10 % is required.

Coolant temperatures that exceed CT 45 °C require derating in accordance with the following table:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
Temperature class 155 (F) used according to 155 (F)				
Derating factor for mains-fed operation	1.00	0.96	0.92	0.87

SIMOTICS N-compact Non-Standard Motors

For the non-standard motors 1LA8, 1PQ8 the following derating factors apply for increased coolant temperatures and with mains-fed operation:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
Temperature class 155 (F) used according to 155 (F)				
Derating factor for mains-fed operation	1.00	0.96	0.92	0.87
Temperature class 155 (F) used according to 130 (B)				
Derating factor for mains-fed operation	0.90	0.86	0.83	0.78

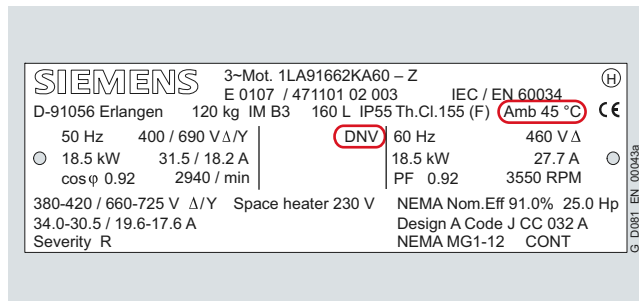
For the non-standard motors 1LA8, 1PQ8 the following derating factors apply for increased coolant temperatures and with converter-fed operation:

	Coolant temperature CT			
	45 °C	50 °C	55 °C	60 °C
Temperature class 155 (F) used according to 155 (F)				
Derating factor for converter-fed operation	0.96	0.92	0.87	0.82
Temperature class 155 (F) used according to 130 (B)				
Derating factor for converter-fed operation	0.82	0.78	0.74	0.70

More detailed information is available on request.

Rating plate and acceptance test certificate

The metal rating plate indicates the relevant classification society and the associated coolant temperature (exception: Non-Essential Services).



Rating plate for a marine motor according to DNV

Degree of protection

The protection classes are applicable here as specified in catalog sections 1 to 4. With IP56, icing must be avoided.

Winding and motor protection

For monitoring the winding and bearings, the motors can be equipped with thermistors, temperature sensors and resistance thermometers. Anti-condensation heaters can also be fitted to the marine motors to prevent condensation building up on the winding.

Paint finish

The standard paint finish is suitable for indoor installations or outdoor installations which are roof-protected against weathering.

When installing the standard motors in sea air or in rooms with permanent moisture, the special paint type climate group "world-wide" according to DIN IEC 60721-2-1 is appropriate, because this ensures a higher degree of corrosion protection. Most marine motors are finished in this special paint type as standard (see "Special versions").

With particularly corrosive atmospheres, the sea-air-resistant special finish (order code M94) or the offshore special paint type (order code M91) is recommended.

Special paint colors and increased layer thicknesses are available on request.

Technical specifications (continued)**Recommended special versions**

- Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping – Order code A11
- Mounting of PT100 resistance thermometers for winding temperature monitoring – Order codes A60, A61
- Specially for motor series 1LA8, 1PQ8 and 1LL8: Mounting of 2 screw-in PT100 resistance thermometers in basic circuit for roller bearings – Order code A72
- Anti-condensation heating for 230 V – Order code K45
- Anti-condensation heating for 115 V – Order code K46
- IP56 degree of protection (non-heavy-sea) for protection against harmful dust deposits, protection against water jets from any direction – Order code K52
- IP65 degree of protection for complete protection against dust deposits, protection against water jets from any direction – Order code K50
not possible for 1LA8, 1PQ8 and 1LL8 non-standard motors
- Special bearing for drive-end (DE) and non-drive-end (NDE), bearing size 63 – Order code K36,
for non-standard motors on request
- Metal external fan for self-ventilated motors – Order code K35

Additional notes**Ordering notes**

The fees levied by the classification societies for individual acceptance testing are included in order code E09/E10 for motor types 1LG4, 1LG6 and 1PP4.

For the other motor types, 1LA5, 1LA6, 1LA7, 1LA9, 1MA, 1MJ, 1PP5, 1PP7, individual acceptance testing must be ordered in plain text and will be invoiced separately (please inquire).

When ordering, add the supplement "-Z" to the Order No. as well as plain text details. For 1LA8 motors, supplement the Order No. with order code E80 and plain text.

For other special versions, see the relevant sections under "SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors", "SIMOTICS N-compact Non-Standard Motors" and "SIMOTICS XP 1MA/1MJ/1LA/1LG Explosion-Proof Motors". In addition to this, for marine motors, the following special versions are the Standard version and therefore included in the order codes for the basic marine version.

Standard version:

Designation	Order code
Acceptance test certificate 3.1 according to EN 10204 (not included for order code E00) ¹⁾	B02
External grounding terminal	L13

¹⁾ The delivery time for the factory test certificate may differ from the delivery time for the motor.

SIMOTICS DP Application-specific Motors

Marine motors

Special versions – SIMOTICS GP Standard Motors
Aluminum series 1LA7/5/9, 1LP7/5, 1PP7/5

Standard delivery times:

10
working
days20
working
daysOn
request

Selection and ordering data

Options

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)													
		Motor version	Motor type (alum.)	Motor type – Frame size													
				63	71	80	90	100	112	132	160	180	200	225			
		IE2/NEMA Energy Efficient	1LA9	1LA9													
		IE1	1LA7/1LA5	1LA7							1LA5						
			1LA9	1LA9 with increased output													
			1PP7/1PP5	1PP7							1PP5						
		Pole-changing	1LP7/1LP5	1LP7							1LP5						
			1LA7/1LA5	1LA7							1LA5						
		For converter-fed operation only	1LA7/1LA5	1LA7					1LA5								
		1PP	-Z	Motor version	Motor type	Frame size	63	71	80	90	100	112	132	160	180	200	225
		1L	-Z														
Marine version – Basic version ¹⁾																	
Without type test certificate according to ABS 50 °C/CCS 45 °C/RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02) ²⁾	E00	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F) ³⁾	E11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F) ³⁾	E21	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F) ³⁾	E31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F) ³⁾	E46 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F) ³⁾	E51	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification																	
Individual acceptance by marine classification society	E10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for horizontal motors, with acceptance ⁴⁾	F83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for vertical motors, with acceptance ⁴⁾	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

O. R. Possible on request

✓ With additional charge

¹⁾ Motor for use in shipping for higher ambient temperature and/or used as 155 (F) according to 130 (B), order with details in plain text. The order codes for the basic marine version (E00, E11, E21, E31, E51) cannot be combined with each other. For the 1LA9 motor series with increased output, for order codes E11, E31 and E51 derating of 4 % is required and for order codes E00 and E21 derating of 8 % is required.

²⁾ The delivery time for the factory test certificate may differ from the delivery time for the motor.

³⁾ For 1LP7 and 1LP5 motors, certification is possible on request in accordance with the classification societies GL, LR, BV, RS and DNV.

⁴⁾ Option or plain text data only necessary for one motor when ordering several motors of the same type.

SIMOTICS DP Application-specific Motors

Marine motors

Standard delivery times:

10 working days	20 working days	On request
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Special versions – SIMOTICS SD Standard Motors
Cast-iron series 1LA6, 1LG4/6, 1LP4, 1PP4

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)																	
		Motor version	Motor type (cast-iron)	Motor type – Frame size																	
				100	112	132	160	180	200	225	250	280	315								
		IE2/NEMA Energy Efficient	1LG6							1LG6 ¹⁾											
		IE3	1LG6																		1LG6 ¹⁾
		IE1	1LA6/1LG4	1LA6							1LG4										
			1PP4								1PP4										
			1LP4								1LP4										
		Pole-changing	1LG4								1LG4										
		For converter-fed operation only	1LG6								1LG6										
		Motor version	Motor type	Frame size	100	112	132	160	180	200	225	250	280	315							
Marine version – Basic version²⁾																					
Without type test certificate according to ABS 50 °C/CCS 45 °C/RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02) ³⁾	E00	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F) ⁴⁾	E11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F) ⁴⁾	E21	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F) ⁴⁾	E31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F) ⁴⁾	E46 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F) ⁴⁾	E51	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification																					
Individual acceptance by marine classification society	E10	All	All	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	–	–	–	–	–	–	–	–	–	–	–	–	–
Type test with warm run for horizontal motors, with acceptance ⁵⁾	F83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for vertical motors, with acceptance ⁵⁾	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

- O. R. Possible on request
- ✓ With additional charge
- Not possible

¹⁾ Identically priced predecessor type for 2-pole motors 1LG6...2AA../1LG6...2AB.. or 4-pole motors 1LG6...4AA.. to be ordered using options for marine certificates. For increased output of motors 1LG6 ■■■-■M■ .. from 160 kW to 315 kW, a marine version is not possible.

²⁾ Motor for use in shipping for higher ambient temperature and/or used as 155 (F) according to 130 (B), order with details in plain text. The order codes for the basic marine version (E00, E11, E21, E31, E51) cannot be combined with each other.

³⁾ The delivery time for the factory test certificate may differ from the delivery time for the motor.

⁴⁾ For 1LP4 motors, certification is possible on request in accordance with the classification societies GL, LR, BV, RS and DNV.

⁵⁾ Option or plain text data only necessary for one motor when ordering several motors of the same type.

5.6

SIMOTICS DP Application-specific Motors

Marine motors

Special versions – SIMOTICS XP Explosion-Proof Motors Aluminum series 1MA7

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (alum.)	Motor type – Frame size										
				63	71	80	90	100	112	132	160	180	200	225
		Zone 1 Ex e II	1MA7	1MA7										
		Motor version	Motor type	Frame size										
		1MA7		63	71	80	90	100	112	132	160	180	200	225
Marine version – Basic version ¹⁾														
Without type test certificate according to ABS 50 °C/CCS 45 °C/RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02) ²⁾	E00	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E11	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E21	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E31	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E46 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E51	All	All	✓	✓	✓	✓	✓	✓	✓	✓			
Marine version – Acceptance/certification														
Individual acceptance by marine classification society	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
Type test with warm run for horizontal motors, with acceptance ³⁾	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		
Type test with warm run for vertical motors, with acceptance ³⁾	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.		

O. R. Possible on request
 ✓ With additional charge

¹⁾ Motor for use in shipping for higher ambient temperature and/or used as 155 (F) according to 130 (B), order with details in plain text. The order codes for the basic marine version (E00, E11, E21, E31, E51) cannot be combined with each other. For the 1LA9 motor series with increased output, for order codes E11, E31 and E51 derating of 4 % is required and for order codes E00 and E21 derating of 8 % is required.

²⁾ The delivery time for the factory test certificate may differ from the delivery time for the motor.

³⁾ Option or plain text data only necessary for one motor when ordering several motors of the same type.

SIMOTICS DP Application-specific Motors

Marine motors

Standard delivery times:

10 working days	20 working days	On request
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**Special versions – SIMOTICS XP Explosion-Proof Motors
Aluminum series 1LA7/5/9**

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)										
		Motor version	Motor type (alum.)	Motor type – Frame size										
				63	71	80	90	100	112	132	160	180	200	225
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1	1LA7	1LA7									1LA5 ¹⁾	
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2/ NEMA Energy Efficient	1LA9	1LA9 ²⁾										
1LA -Z		Motor version	Motor type	Frame size										
				63	71	80	90	100	112	132	160	180	200	225
Marine version – Basic version ³⁾														
Without type test certificate according to ABS 50 °C/ CCS 45 °C/RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02) ⁴⁾	E00	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E21	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E46 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E51	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification														
Individual acceptance by marine classification society	E10	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for horizontal motors, with acceptance ⁵⁾	F83	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for vertical motors, with acceptance ⁵⁾	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

5.6

O. R. Possible on request
 ✓ With additional charge

¹⁾ Zone 2 Ex nA II is not possible for 1LA5 motors; for Zone 2 Ex nA II, 1LG4 motors are available.
²⁾ Zone 2 Ex nA II is not possible for 1LA9 motors in frame sizes 180 and 200.
³⁾ Motor for use in shipping for higher ambient temperature and/or used as 155 (F) according to 130 (B), order with details in plain text. The order codes for the basic marine version (E00, E11, E21, E31, E51) cannot be combined with each other. For the 1LA9 motor series with increased output, for order codes E11, E31 and E51 derating of 4 % is required and for order codes E00 and E21 derating of 8 % is required.

⁴⁾ The delivery time for the factory test certificate may differ from the delivery time for the motor.
⁵⁾ Option or plain text data only necessary for one motor when ordering several motors of the same type.

SIMOTICS DP Application-specific Motors

Marine motors

Special versions – SIMOTICS XP Explosion-Proof Motors Cast-iron series 1MA6, 1MJ6/7

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)															
		Motor version	Motor type (cast-iron)	Motor type – Frame size															
				71	80	90	100	112	132	160	180	200	225	250	280	315			
		Zone 1 Ex e II	1MA6						1MA6										
		Zone 1 Ex de IIC	1MJ6/ 1MJ7	1MJ6											1MJ7				
		Motor version	Motor type	Frame size															
				71	80	90	100	112	132	160	180	200	225	250	280	315			
Marine version – Basic version ¹⁾																			
Without type test certificate according to ABS 50 °C/CCS 45 °C/ RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02) ²⁾	E00	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E11	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E21	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E31	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E46 <i>New!</i>	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E51	All	All	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification																			
Individual acceptance by marine classification society	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Type test with warm run for horizontal motors, with acceptance ³⁾	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Type test with warm run for vertical motors, with acceptance ³⁾	Plain text data	All	All	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

O. R. Possible on request
✓ With additional charge

¹⁾ Motor for use in shipping for higher ambient temperature and/or used as 155 (F) according to 130 (B), order with details in plain text. The order codes for the basic marine version (E00, E11, E21, E31, E51) cannot be combined with each other.

²⁾ The delivery time for the factory test certificate may differ from the delivery time for the motor.

³⁾ Option or plain text data only necessary for one motor when ordering several motors of the same type.

SIMOTICS DP Application-specific Motors

Marine motors

Standard delivery times:

10 working days	20 working days	On request
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Special versions – SIMOTICS XP Explosion-Proof Motors
Cast-iron series 1LA6, 1LG4/6

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)														
		Motor version	Motor type (cast-iron)	Motor type – Frame size														
				71	80	90	100	112	132	160	180	200	225	250	280	315		
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE1	1LA6/1LG4					1LA6 ¹⁾						1LG4				
		Zone 2 Ex nA II, Zone 21/22 Ex tD IE2/NEMA Energy Efficient	1LG6											1LG6 ²⁾				
1L.....-Z		Motor version	Motor type	Frame size														
				71	80	90	100	112	132	160	180	200	225	250	280	315		
Marine version – Basic version³⁾																		
Without type test certificate according to ABS 50 °C/CCS 45 °C/RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02) ⁴⁾	E00	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E11	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E21	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E31	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E46 <i>New!</i>	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F)	E51	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine version – Acceptance/certification																		
Individual acceptance by marine classification society	E10	All	All				–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
	Plain text data	All	All				O. R.	O. R.	O. R.	O. R.	–	–	–	–	–	–	–	–
Type test with warm run for horizontal motors, with acceptance ⁵⁾	F83	All	All				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with warm run for vertical motors, with acceptance ⁵⁾	Plain text data	All	All				O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

O. R. Possible on request
 ✓ With additional charge
 – Not possible

1) Zone 21 Ex tD is not possible for 1LA6 motors.
 2) Identically priced predecessor type for 2-pole motors 1LG6...2AA../1LG6...2AB.. or 4-pole motors 1LG6...4AA.. to be ordered using options for marine certificates and Ex-version. For increased output of motors 1LG6 ■■■-■M■... from 160 kW to 315 kW, a marine version and Ex-version are not possible.
 3) Motor for use in shipping for higher ambient temperature and/or used as 155 (F) according to 130 (B), order with details in plain text. The order codes for the basic marine version (E00, E11, E21, E31, E51) cannot be combined with each other.
 4) The delivery time for the factory test certificate may differ from the delivery time for the motor.
 5) Option or plain text data only necessary for one motor when ordering several motors of the same type.

5.6

SIMOTICS DP Application-specific Motors

Marine motors

Special versions – SIMOTICS N-compact Non-Standard Motors
Cast-iron series 1LA8, 1LL8, 1PQ8

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)				
		Motor version	Motor type (cast-iron)	Motor type – Frame size				
				315	355	400	450	
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8				
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8				
		Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	1LA8				
	1PQ8 -Z 1L -Z	Motor version	Motor type	Frame size				
				315	355	400	450	
Marine version – Non-Essential Service								
Technical design								
Designed in accordance with ABS (American Bureau of Shipping), USA, Non-Essential Service	X00	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Designed in accordance with BV (Bureau Veritas), France, Non-Essential Service	X01	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Designed in accordance with CCS (Chinese Classification Society), China, Non-Essential Service <i>Note: Non-Essential Service must be handled by CCS as an Essential Service.</i>	–		Mains-fed operation	1LA8 1LL8	– –	– –	– –	– –
			Converter-fed operation	1LA8 1LL8 1PQ8	– – –	– – –	– – –	– – –
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	–	–	–	–
Designed in accordance with DNV (Det Norske Veritas), Norway, Non-Essential Service	X03	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Designed in accordance with GL (Germanischer Lloyd), Germany, Non-Essential Service	X04	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Designed in accordance with KR (Korean Register of Shipping), Korea, Non-Essential Service	X05	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Designed in accordance with LR (Lloyds Register), Great Britain, Non-Essential Service	X06	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓

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For legend, see Page 5/19.

SIMOTICS DP Application-specific Motors

Marine motors

Standard delivery times:

10 working days	20 working days	On request
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Special versions – SIMOTICS N-compact Non-Standard Motors
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type (cast-iron)	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
		Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	1LA8			
		Motor version	Motor type	Frame size			
				315	355	400	450
Marine version – Essential Service							
Technical design							
Designed in accordance with ABS (American Bureau of Shipping), USA, Essential Service	X10	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with BV (Bureau Veritas), France, Essential Service	X11	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with CCS (Chinese Classification Society), China, Essential Service	X12	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with DNV (Det Norske Veritas), Norway, Essential Service	X13	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with GL (Germanischer Lloyd), Germany, Essential Service	X14	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with KR (Korean Register of Shipping), Korea, Essential Service	X15	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with LR (Lloyds Register), Great Britain, Essential Service	X16	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Certification							
Certification for first motor according to ABS (American Bureau of Shipping), USA, Essential Service	J70	<i>New!</i>	All	All	✓	✓	✓
Certification for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service	J71	<i>New!</i>	All	All	✓	✓	✓
Certification for first motor according to BV (Bureau Veritas), France, Essential Service	J72	<i>New!</i>	All	All	✓	✓	✓
Certification for additional motors according to BV (Bureau Veritas), France, Essential Service	J73	<i>New!</i>	All	All	✓	✓	✓
Certification for first motor according to CCS (Chinese Classification Society), China, Essential Service	J74	<i>New!</i>	All	All	✓	✓	✓

5.6

For legend, see Page 5/19.

SIMOTICS DP Application-specific Motors

Marine motors

Special versions – SIMOTICS N-compact Non-Standard Motors
Cast-iron series 1LA8, 1LL8, 1PQ8

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)				
		Motor version	Motor type (cast-iron)	Motor type – Frame size				
				315	355	400	450	
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8				
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8				
		Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	1LA8				
		Motor version	Motor type	Frame size	315	355	400	450
		1PQ8 -Z						
		1L -Z						
Marine version – Essential Service (continued)								
Certification (continued)								
Certification for additional motors according to CCS (Chinese Classification Society), China, Essential Service	J75	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for first motor according to DNV (Det Norske Veritas), Norway, Essential Service	J76	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service	J77	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for first motor according to GL (Germanischer Lloyd), Germany, Essential Service	J78	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service	J79	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for first motor according to KR (Korean Register of Shipping), Korea, Essential Service	J80	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service	J81	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for first motor according to LR (Lloyds Register), Great Britain, Essential Service	J82	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for additional motors according to LR (Lloyds Register), Great Britain, Essential Service	J83	<i>New!</i>	All	All	✓	✓	✓	✓
Tests								
Tests for first motor according to ABS (American Bureau of Shipping), USA, Essential Service	X30	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service	X31	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for first motor according to BV (Bureau Veritas), France, Essential Service	X32	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for additional motors according to BV (Bureau Veritas), France, Essential Service	X33	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for first motor according to CCS (Chinese Classification Society), China, Essential Service	X34	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for additional motors according to CCS (Chinese Classification Society), China, Essential Service	X35	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for first motor according to DNV (Det Norske Veritas), Norway, Essential Service	X36	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service	X37	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for first motor according to GL (Germanischer Lloyd), Germany, Essential Service	X38	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service	X39	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for first motor according to KR (Korean Register of Shipping), Korea, Essential Service	X40	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service	X41	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for first motor according to LR (Lloyds Register), Great Britain, Essential Service	X42	<i>New!</i>	All	All	✓	✓	✓	✓
Tests for additional motors according to LR (Lloyds Register), Great Britain, Essential Service	X43	<i>New!</i>	All	All	✓	✓	✓	✓
Marine version – Essential Service for Propulsion								
Technical design								
Designed in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	X20	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
			Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
Designed in accordance with BV (Bureau Veritas), France, Essential Service for Propulsion	X21	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
			Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓

For legend, see Page 5/19.

SIMOTICS DP Application-specific Motors

Marine motors

Standard delivery times:

10 working days	20 working days	On request
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Special versions – SIMOTICS N-compact Non-Standard Motors
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)			
		Motor version	Motor type (cast-iron)	Motor type – Frame size			
				315	355	400	450
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8			
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8			
		Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	1LA8			
		Motor version	Motor type	Frame size			
				315	355	400	450
1PQ8 -Z							
1L -Z							
Marine version – Essential Service for Propulsion (continued)							
Technical design (continued)							
Designed in accordance with CCS (Chinese Classification Society), China, Essential Service for Propulsion	X22	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	X23	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	X24	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	X25	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Designed in accordance with LR (Lloyds Register), Great Britain, Essential Service for Propulsion	X26	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Certification							
Certification for first motor according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	N40	<i>New!</i>	All	All	✓	✓	✓
Certification for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	N41	<i>New!</i>	All	All	✓	✓	✓
Certification for first motor according to BV (Bureau Veritas), France, Essential Service for Propulsion	N42	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓
Certification for additional motors according to BV (Bureau Veritas), France, Essential Service for Propulsion	N43	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓ ✓	✓ ✓	✓ ✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓

5.6

SIMOTICS DP Application-specific Motors

Marine motors

Special versions – SIMOTICS N-compact Non-Standard Motors
Cast-iron series 1LA8, 1LL8, 1PQ8

Standard delivery times:

10 working days	20 working days	On request
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Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)				
		Motor version	Motor type (cast-iron)	Motor type – Frame size				
				315	355	400	450	
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8				
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8				
		Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	1LA8				
		Motor version	Motor type	Frame size	315	355	400	450
Marine version – Essential Service for Propulsion (continued)								
Certification (continued)								
Certification for first motor according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	N44	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for additional motors according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	N45	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for first motor according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	N46	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Certification for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	N47	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Certification for first motor according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	N48	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Certification for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	N49	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Certification for first motor according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	N50	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	N51	<i>New!</i>	All	All	✓	✓	✓	✓
Certification for first motor according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	N52	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓
Certification for additional motors according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	N53	<i>New!</i>	Mains-fed operation	1LA8 1LL8	✓	✓	✓	✓
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓	✓
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓	✓

For legend, see Page 5/19.

Standard delivery times:

10 working days	20 working days	On request
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Special versions – SIMOTICS N-compact Non-Standard Motors
Cast-iron series 1LA8, 1LL8, 1PQ8

Special versions	Additional identification code -Z with order code and plain text if required	Motor category		Standard delivery time (colored area)				
		Motor version	Motor type (cast-iron)	Motor type – Frame size				
				315	355	400	450	
		Mains-fed operation	1LA8 1LL8	1LA8 1LL8				
		Converter-fed operation	1LA8 1LL8 1PQ8	1LA8 1LL8 1PQ8				
		Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	1LA8				
		Motor version	Motor type	Frame size	315	355	400 450	
		1PQ8 -Z						
		1L -Z						
Marine version – Essential Service for Propulsion (continued)								
Tests								
Tests for first motor according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	X60	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	X61	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for first motor according to BV (Bureau Veritas), France, Essential Service for Propulsion	X62	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for additional motors according to BV (Bureau Veritas), France, Essential Service for Propulsion	X63	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for first motor according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	X64	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for additional motors according to CCS (Chinese Classification Society), China, Essential Service for Propulsion	X65	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for first motor according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	X66	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion	X67	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for first motor according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	X68	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion	X69	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for first motor according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	X70	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	X71	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for first motor according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	X72	<i>New!</i>	All	All	✓	✓	✓ ✓	
Tests for additional motors according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	X73	<i>New!</i>	All	All	✓	✓	✓ ✓	
Marine version – Additional options for Essential Service and Essential Service for Propulsion								
Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	X99	<i>New!</i>	All	All	✓	✓	✓ ✓	
Motor for use in shipping, higher ambient temperature and/or use of temperature class 155 (F) according to 130 (B)	E80 • and identification code		Mains-fed operation	1LA8 1LL8	✓	✓	✓ ✓	
			Converter-fed operation	1LA8 1LL8 1PQ8	✓	✓	✓ ✓	
			Zone 2 Ex nA II, Zone 22 Ex tD	1LA8	✓	✓	✓ ✓	

- This order code only determines the price of the version – Additional plain text is required.
- ✓ With additional charge
- Not possible

SIMOTICS DP Application-specific Motors

Marine motors

Special versions – SIMOTICS N-compact Non-Standard Motors Cast-iron series 1LA8, 1LL8, 1PQ8

Ordering example:

Selection criteria	Requirement	Structure of the Order No.
1st ordering example: 5 motors for Non-Essential Service according to GL (Germanischer Lloyd), Germany		
Motor type	Non-standard motor specially designed for mains-fed operation, self-ventilated, cast-iron version, IP55 degree of protection	1LA8■■■■-■■■■■
Motor frame size/No. of poles/Speed	400/8-pole/750 rpm	1LA8405-8AB■■■
Rated output	400 kW	
Voltage and frequency	500 VΔ, 50 Hz	1LA8405-8AB5■
Type	IM B3	1LA8405-8AB50
Special versions	Technical design in accordance with GL (Germanischer Lloyd), Germany, Non-Essential Service	1LA8405-8AB50-Z X04
	Order No. for each of the 5 motors	1LA8405-8AB50-Z X04
2nd ordering example: 7 motors for Essential Service according to BV (Bureau Veritas), France		
Motor type	Non-standard motor especially for converters, self-ventilated with through-ventilation, cast-iron version, IP23 degree of protection	1LL8■■■■-■■■■■
Motor frame size/No. of poles/Speed	400/2-pole/3000 rpm	1LL8405-2PD■■■
Rated output	1000 kW	
Voltage and frequency	400 VΔ/690 VY, 50 Hz	1LL8405-2PD8■
Type	IM V1 with canopy	1LL8405-2PD84
Special versions		
1st motor	Technical design in accordance with BV (Bureau Veritas), France, Essential Service	1LL8405-2PD84-Z X11
	Necessary certification for first motor ordered in accordance with BV (Bureau Veritas), France, Essential Service	1LL8405-2PD84-Z X11+J72
	Necessary tests for first motor ordered in accordance with BV (Bureau Veritas), France, Essential Service	1LL8405-2PD84-Z X11+J72+X32
	Order No. for 1st motor	1LL8405-2PD84-Z X11+J72+X32
Additional 6 motors (additional motors)	Technical design in accordance with BV (Bureau Veritas), France, Essential Service	1LL8405-2PD84-Z X11
	Necessary certification for additional motors ordered in accordance with BV (Bureau Veritas), France, Essential Service	1LL8405-2PD84-Z X11+J73
	Necessary tests for additional motors ordered in accordance with BV (Bureau Veritas), France, Essential Service	1LL8405-2PD84-Z X11+J73+X33
	Order No. for the additional 6 motors	1LL8405-2PD84-Z X11+J73+X33
3rd ordering example: 3 motors for Essential Service for Propulsion according to ABS (American Bureau of Shipping), USA		
Motor type	Non-standard motor specially designed for mains-fed operation, self-ventilated, cast-iron version, IP55 degree of protection	1LA8■■■■-■■■■■
Motor frame size/No. of poles/Speed	400/8-pole/750 rpm	1LA8405-8AB■■■
Rated output	400 kW	
Voltage and frequency	500 VΔ, 50 Hz	1LA8405-8AB5■
Type	IM B3	1LA8405-8AB50
Special versions		
1st motor	Technical design in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	1LA8405-8AB50-Z X20
	Necessary certification for first motor ordered in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	1LA8405-8AB50-Z X20+N40
	Necessary tests for first motor ordered in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	1LA8405-8AB50-Z X20+N40+X60
	Order No. for 1st motor	1LA8405-8AB50-Z X20+N40+X60
Additional 2 motors (additional motors)	Technical design in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	1LA8405-8AB50-Z X20
	Necessary certification for additional motors ordered in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	1LA8405-8AB50-Z X20+N41
	Necessary tests for additional motors ordered in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	1LA8405-8AB50-Z X20+N41+X61
	Order No. for the additional 2 motors	1LA8405-8AB50-Z X20+N41+X61
4th ordering example: 1 motor for Essential Service according to ABS (American Bureau of Shipping), USA, coolant temperature 60 °C:		
Motor type	Non-standard motor specially designed for mains-fed operation, self-ventilated, cast-iron version, IP55 degree of protection	1LA8■■■■-■■■■■
Motor frame size/No. of poles/Speed	400/8-pole/750 rpm	1LA8405-8AB■■■
Rated output	400 kW	
Voltage and frequency	500 VΔ, 50 Hz	1LA8405-8AB5■
Type	IM B3	1LA8405-8AB50
Special versions		
	Technical design in accordance with ABS (American Bureau of Shipping), USA, Essential Service	1LA8405-8AB50-Z X10
	Necessary certification for first motor ordered in accordance with ABS (American Bureau of Shipping), USA, Essential Service	1LA8405-8AB50-Z X10+J70
	Necessary tests for first motor ordered in accordance with ABS (American Bureau of Shipping), USA, Essential Service	1LA8405-8AB50-Z X10+J70+X30
	Motor for use in shipping, higher ambient temperature and/or use of temperature class 155 (F) according to 130 (B) - coolant temperature 60 °C	1LA8405-8AB50-Z X10+J70+X30+E80 Plain text: COOLANT TEMP CT60
	Order No. for the motor	1LA8405-8AB50-Z X10+J70+X30+E80 Plain text: COOLANT TEMP CT60

Appendix



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Appendix

NEMA motors

Motors according to NEMA



NEMA motors (National Electrical Manufacturers Association) for the North American market distinguish themselves as a result of their new design – and especially as a result of their efficiency. Siemens offers a complete line of General Purpose (aluminum and cast-iron design), Severe Duty, IEEE 841 and XP motors with NEMA Premium or higher efficiencies. Energy-saving motors with efficiency class NEMA Premium comply with the US EISA legislation (Energy Independence and Security Act) for minimum efficiencies. Our NEMA Premium + efficiency class exceeds the efficiencies specified in the EISA standards. The motors are mechanically and electrically compliant with NEMA MG1. In addition to the minimum efficiencies specified in the US, these motors also fulfill the minimum efficiency requirements for Canada (CSA) and Mexico (NOM).

General technical data

Voltage and power range	208 ... 230 / 460 V, 575 V, 60 Hz 1 ... 400 hp (0.75 ... 300 kW)
Frame sizes and types	NEMA frame sizes 140 ... 440
Pole number and frequencies	2-, 4-, 6- and 8-pole, 60 Hz
Ambient conditions	Surface-cooled with degrees of protection IP54/IP55

Customer benefits

Copper die-cast rotors optimize the efficiency

Copper die-cast rotors reduce the power loss and slightly reduce the motor length. This version reduces the motor life cycle costs as a result of the lower energy consumption.

Can be easily modified for high versatility

The mounting feet can be changed-over (aluminum frame) and they have 8-hole mounting feet (gray cast iron frame). These features make it easier to modify the motors – ensuring a high degree of versatility. They also reduce the inventory costs – both for the OEM as well as also for service and maintenance.

A design that fulfills each and every requirement

We have motors with light aluminum frames or with rugged gray cast iron frames – the optimum motor for each and every application. Both of these versions are available with NEMA Premium or NEMA Premium + efficiency. They are a precise fit for each operating period.

Typical applications

NEMA motors are suitable in all types of industries, in sectors such as the automobile, textile, printing, chemical branches as well as in cross-industry applications – for example in conveyor technology. The HVAC sector (Heating, Ventilating & Air Conditioning), which requires extremely light motors are typical applications for our so-called General Purpose motors – either with gray cast iron or aluminum frames. Severe Duty motors in a full gray cast iron design are suitable for use in tough ambient conditions – for instance in the pulp and paper industry. The Severe Duty SD100 IEEE 841 motor version even exceeds the stringent IEEE 841 Standards applicable in the crude oil and chemical industries.

More information




The complete product spectrum with all ordering data and technical informations contains the Catalog D 81.2, US/Canada www.sea.siemens.com/motors.

General Purpose



GP100A




Power range	1 ... 20 hp (0.75 ... 15 kW)	FS 140 ... 250
Frame size (FS)	140 ... 250	
Degree of protection NEMA MG1	TEFC (totally enclosed fan cooled)	
Frame	Die-cast aluminum	6-hole bolt-on feet
Efficiency	NEMA Premium NEMA Premium +	FS 140 ... 250 FS 140 ... 250
Power supply	3-phase, 60 Hz	
Voltage	208 ... 230/460 V 575 V	FS 140 ... 250 FS 140 ... 250
Service factor	1.15	Sine wave
Electrical design	NEMA design B	
Hazardous classification	NA	
Insulation	Class F	NEMA MG1 Part 31
Utilization	Class B at 1.0 SF, Class F at 1.15 SF	Sine wave
Connection box (oversized)	Die-cast aluminum	FS 140 ... 250
Fan cover	Plastic	FS 140 ... 250
Fan	Bi-directional – polypropylene	
Lead seal gasket	O-ring	FS 140 ... 250
Rotor	Die-cast aluminum Die-cast copper	FS 140 ... 250 FS 140 ... 250
Stator winding	Copper – random wound	
Shaft	High strength carbon steel	C1045
Shaft seal/slinger	V-ring slinger meets IP54	(DE only)
Bearing housing	Cast aluminum	FS 140 ... 250
Bearing type	Double shielded	FS 140 ... 250
Bearing inner cap	No	
Lubrication	Polyurea	Base grease
Lube inlet fittings	NA	
Lube relief fittings	NA	
Vibration	0.15 IPS	
Nameplate	Aluminum	Engraved
Condensation drain	Drain holes – lowest point (2)	
Hardware	Rust resistant	
Lifting eyebolt	Cast-in	
Paint	ALKYED MODIFIED	RAL7030
Warranty	18 months	
Converter-fed operation	VT 20:1 CT 4:1 CT 10:1	FS 140 ... 250 FS 140 ... 250 FS 140 ... 250 (Cu)
Catalog	D 81.2, US/Canada	




		Severe Duty			
					
GP100		SD100		SD100 IEE8 841	
1 ... 200 hp (0.75 ... 132 kW)	FS 140 ... 440	1 ... 400 hp (0.75 ... 300 kW)	FS 140 ... S440	1 ... 400 hp (0.75 ... 300 kW)	FS 140 ... S440
140 ... 440		140 ... S449		140 ... S449	
TEFC (totally enclosed fan cooled)		TEFC (totally enclosed fan cooled)		TEFC (totally enclosed fan cooled)	
Cast iron	6-hole feet	Cast iron	8-hole feet	Cast iron	8-hole feet
NEMA Premium NEMA Premium +	FS 140 ... 440 FS 140 ... 250	NEMA Premium NEMA Premium +	FS 140 ... S440 FS 140 ... 250	NEMA Premium NEMA Premium +	FS 140 ... S440 FS 140 ... 250
3-phase, 60 Hz		3-phase, 60 Hz		3-phase, 60 Hz	
208 ... 230/460 V 230/460 V 460 V 575 V	FS 140 ... 250 FS 280 ... 360 100 ... 200 hp 1 ... 200 hp	208 ... 230/460 V 460 V 575 V	1 ... 20 hp 25 ... 400 hp 1 ... 400 hp	460 V 575 V	FS 140 ... S440 FS 140 ... S440
1.15	Sine wave	1.15	Sine wave	1.15	Sine wave
NEMA design B		NEMA design B		NEMA design B	
NA		CL I Gr. C&D Div. 2		Optional	
Class F	NEMA MG1 Part 31	Class F	NEMA MG1 Part 31	Class F	NEMA MG1 Part 31
Class B at 1.0 SF, Class F at 1.15 SF	Sine wave	Class B at 1.0 SF, Class F at 1.15 SF	Sine wave	Class B at 1.0 SF, Class F at 1.15 SF	Sine wave
Die-cast aluminum Steel Cast iron	FS 140 ... 250 FS 280 ... 400 FS 440	Cast iron		Cast iron	
Plastic Cast iron	FS 140 ... 250 FS 280 ... 440	Cast iron	FS 140 ... S440	Cast iron	FS 140 ... S440
Bi-directional - polypropylene		Bi-directional - polypropylene - bronze counter clockwise	FS 140 ... 440 FS S440 300 ... 400 hp 2P/4P	Bi-directional - polypropylene - bronze counter clockwise	FS 140 ... 440 FS S440 300 ... 400 hp 2P/4P
O-ring Neoprene	FS 140 ... 250 FS 280 ... 440	Neoprene		Neoprene	
Die-cast aluminum Die-cast copper	FS 140 ... 440 FS 140 ... 250	Die-cast aluminum Die-cast copper	FS 140 ... S440 FS 140 ... 250	Die-cast aluminum Die-cast copper	FS 140 ... S440 FS 140 ... 250
Copper – random wound		Copper – random wound		Copper – random wound	
High strength carbon steel	C1045	High strength carbon steel	C1045	High strength carbon steel	C1045
V-ring slinger meets IP54	(DE only)	V-ring slinger meets IP54	(DE, NDE)	Inpro/Seal bearing isolator meets IP55	(DE, NDE)
Cast iron	FS 140 ... 440	Cast iron	FS 140 ... S440	Cast iron	FS 140 ... S440
Double shielded Regreasable inlet and outlet	(FS 440 only)	Double shielded Single shielded Regreasable inlet and outlet	FS 140 ... 250 FS 280 ... S440	Double shielded Single shielded Regreasable inlet and outlet	FS 140 ... 250 FS 280 ... S440
No		Cast iron		Cast iron	
Polyurea	Base grease	Polyurea	Base grease	Polyurea	Base grease
Alemite	FS 440 only	Alemite		Alemite	
Plug	FS 440 only	Plug		Pressure relief (auto)	
0.15 IPS		0.08 IPS		0.06 IPS	
Aluminum	Engraved	Stainless steel	Engraved	Stainless steel	Embossed
Drain holes – lowest point (2)		T-drains – lowest point (2)		T-drains – lowest point (2)	
Rust resistant		Rust resistant		Rust resistant	
Included	> 75 Lb (> 34.0 kg)	Included	> 75 Lb (> 34.0 kg)	Included	
ALKYED MODIFIED	RAL7030	ALKYED MODIFIED	RAL7030	ALKYED MODIFIED	RAL7030
18 months		36 months		60 months	
VT 20:1 CT 4:1 CT 10:1	FS 140 ... 440 FS 140 ... 440 FS 140 ... 250 (Cu)	VT 20:1 CT 4:1 CT 10:1	FS 140 ... 440 FS 140 ... 440 FS 140 ... 250 (Cu)	VT 20:1 CT 4:1 CT 10:1	FS 140 ... 440 FS 140 ... 440 FS 140 ... 250 (Cu)
D 81.2, US/Canada		D 81.2, US/Canada		D 81.2, US/Canada	

Appendix

NEMA motors

Motors according to NEMA

	Explosion Proof				Definite Purpose	
						
	XP100		XP100 ID1		SD10 MS	
Power range	1 ... 300 hp (0.75 ... 200 kW)	FS 140 ... 440	1 ... 300 hp (0.75 ... 200 kW)	FS 140 ... 440	1 ... 250 hp (0.75 ... 160 kW)	4-/8-pole – 1W VT
Frame size (FS)	140 ... 440		140 ... 440		140 ... 440	
Degree of protection NEMA MG1	TEFC (totally enclosed fan cooled)		TEFC (totally enclosed fan cooled)		TEFC (totally enclosed fan cooled)	
Frame	Cast iron	8-hole feet	Cast iron	8-hole feet	Cast iron	8-hole feet
Efficiency	NEMA Premium	FS 140 ... 440	NEMA Premium	FS 140 ... 440	Standard	FS 140 ... 440
Power supply	3-phase, 60 Hz		3-phase, 60 Hz		3-phase, 60 Hz	
Voltage	208 ... 230/460 V 230/460 V 460 V 575 V	1 ... 20 hp 25 ... 100 hp 125 ... 300 hp 1 ... 300 hp	208 ... 230/460 V 230/460 V 460 V 575 V	1 ... 20 hp FS 280 ... 100 hp 125 ... 300 hp 1 ... 300 hp	460 V 575 V	FS 140 ... 440 FS 140 ... 440
Service factor	1.0	Sine wave	1.0	Sine wave	1.0	Sine wave
Electrical design	NEMA design B		NEMA design B		NA	
Hazardous classification	CL I Gr. C&D, CL II F&G Div 1	Max. code T3C	CL I Gr. D, Div 1	Max. code T2A	CL I Gr. C&D Div. 2	Optional
Insulation	Class F	NEMA MG1 Part 31	Class F	NEMA MG1 Part 31	Class F	NEMA MG1 Part 31
Utilization	Class B at 1.0 SF, Class F at 1.15 SF	Sine wave	Class B at 1.0 SF, Class F at 1.15 SF	Sine wave Not for 300, 250 hp, 4-pole	Class B at 1.0 SF, Class F at 1.15 SF	Sine wave Not for 300, 250 hp, 4-pole
Connection box (oversized)	Cast iron		Cast iron	FS 140 ... 440	Cast iron	
Fan cover	Cast iron		Cast iron	FS 140 ... 440	Cast iron	
Fan	Bi-directional - polypropylene	FS 140 ... 440	Bi-directional - polypropylene	FS 140 ... 440	Bi-directional - polypropylene	FS 140 ... 440
Lead seal gasket	NA	(sealed leads)	NA	(sealed leads)	Neoprene	
Rotor	Die-cast aluminum		Die-cast aluminum		Die-cast aluminum	
Stator winding	Copper – random wound NC protective devices	FS 140 – 440 Included	Copper – random wound NC protective devices	FS 140 – 440 NA	Copper – random wound FS 140 ... 440	
Shaft	High strength carbon steel	C1045	High strength carbon steel	C1045	High strength carbon steel C1045	
Shaft seal/ slinger	V-ring slinger meets IP54	(DE, NDE)	V-ring slinger meets IP54	(DE, NDE)	V-ring slinger meets IP54 (DE, NDE)	
Bearing housing	Cast iron		Cast iron		Cast iron	
Bearing type	Double shielded Regreasable inlet and outlet	FS 140 ... 440	Double shielded Regreasable inlet and outlet	FS 140 ... 440	Double shielded Single shielded Regreasable inlet and outlet	FS 140 ... 250 FS 280 ... S440
Bearing inner cap	Cast iron		Cast iron		Cast iron	
Lubrication	Polyurea	Base grease	Polyurea	Base grease	Polyurea Base grease	
Lube inlet fittings	Alemite		Alemite		Alemite	
Lube relief fittings	Plug		Plug		Plug	
Vibration	0.08 IPS		0.08 IPS		0.08 IPS	
Nameplate	Stainless steel	Engraved	Stainless steel	Engraved	Stainless steel Engraved	
Condensation drain	UL approved	FS 280 ... 440	UL approved	FS 280 ... 440	T-drains – lowest point (2)	
Hardware	Rust resistant		Rust resistant		Rust resistant	
Lifting eyebolt	Provisions included	FS 140 ... 180 FS 250 ... 440	Provisions included	FS 140 ... 180 FS 250 ... 440	Included	> 75 Lb (> 34.0 kg)
Paint	ALKYED MODIFIED	RAL7030	ALKYED MODIFIED	RAL7030	ALKYED MODIFIED RAL7030	
Warranty	36 months		36 months		36 months	
Converter-fed operation	VT 20:1 CT 4:1	FS 140 ... 440 FS 140 ... 320	VT 20:1 CT 4:1	FS 140 ... 440 FS 140 ... 440	NA	
Catalog	D 81.2, US/Canada		D 81.2, US/Canada		D 81.2, US/Canada	

					
RGZESDI		RGZVESD		RGZVILESD	
1 ... 400 hp (0.75 ... 300 kW)	FS 140 ... S440	1 ... 250 hp (0.75 ... 160 kW)	FS 140 ... 440	1 ... 250 hp (0.75 ... 160 kW)	FS 180 ... 440
140 ... S440		140 ... 440		140 ... 440	
TEFC (totally enclosed fan cooled)		TEFC (totally enclosed fan cooled)		TEFC (totally enclosed fan cooled)	
Cast iron	8-hole feet	NA		NA	
NA		EPAAct	FS 140 ... 440	EPAAct	FS 180 ... 440
3-phase, 60 Hz		3-phase, 60 Hz		3-phase, 60 Hz	
460 V 575 V	FS 140 ... S440 FS 140 ... S440	230/460 V 460 V 575 V	1 ... 20 hp 25 ... 250 hp 1 ... 250 hp	230/460 V 460 V 575 V	1 ... 20 hp 25 ... 250 hp 1 ... 250 hp
NA		1.15	Sine wave	1.15	Sine wave
NA		NEMA design B		NEMA design B	
CL I Gr. C&D Div. 2	Optional	CL I Gr. C&D Div. 2	Optional	CL I Gr. C&D Div. 2	Optional
Class F	NEMA MG1 Part 31	Class F	NEMA MG1 Part 31	Class F	NEMA MG1 Part 31
VFD		Class B at 1.0 SF, Class F at 1.15 SF	Sine wave	Class B at 1.0 SF, Class F at 1.15 SF	Sine wave
Cast iron	FS 140 ... S440	Cast iron	FS 140 ... 440	Cast iron	FS 180 ... 440
Cast iron	FS 140 ... S440	Cast iron	FS 140 ... 440	Cast iron	FS 180 ... 440
Bi-directional - polypropylene	FS 140 ... S440	Bi-directional - polypropylene	FS 140 ... 440	Bi-directional - polypropylene	FS 180 ... 440
Neoprene		Neoprene		Neoprene	
Die-cast aluminum	FS 140 ... S440	Die-cast aluminum	FS 140 ... 440	Die-cast aluminum	FS 180 ... 440
Copper – random wound NC protective devices	Included	Copper – random wound	FS 140 ... 440	Copper – random wound	FS 180 ... 440
High strength carbon steel	C1045	High strength carbon steel	C1045	High strength carbon steel	C1045
Shaft seal (meets IP54) V-ring slinger (meets IP54)	FS 140 ... 250 (DE) FS 280 ... 440 (DE)	Shaft seal (meets IP54) V-ring slinger (meets IP54)	FS 140 ... 250 (DE) FS 400 ... 440 (DE)	V-ring slinger (meets IP54)	(DE, NDE)
Cast iron	FS 140 ... S440	Cast iron		Cast iron	
Single shielded Regreasable inlet and outlet	FS 140 ... S440	Open Single shielded Double shielded	FS 140 ... 250, 440 (DE) FS 140 ... 360 (NDE) FS 280-360 (DE) FS 440 (NDE) FS 400 (DE, NDE)	Open Double shielded Duplex angular contact (thrust bearing)	FS 180 ... 250 (DE) FS 280 ... 440 (DE) FS 180 ... 440 (NDE)
Cast iron	FS 140 ... S440	Cast iron	FS 140 ... 440	Cast iron	FS 180 ... 440
Polyurea	Base grease	Polyurea	Base grease	Polyurea	Base grease
Alemite		Alemite		Alemite	
Plug		Plug		Plug	
0.08 IPS		0.08 IPS		0.08 IPS	
Stainless steel	Engraved	Stainless steel	Engraved	Stainless steel	Engraved
T-drain		T-drain		T-drain	
Rust resistant		Rust resistant		Rust resistant	
Provisions	FS 140 ... 180	NA		NA	
ALKYED MODIFIED	RAL7030	ALKYED MODIFIED	RAL7030	ALKYED MODIFIED	RAL7030
36 months		36 months		36 months	
CT 10:1 CT 1000:1	FS 140 ... S440 FS 140 ... S440	VT 10:1 CT 4:1	FS 140 ... 440 FS 140 ... 440	VT 10:1 CT 4:1	FS 180 ... 440 FS 180 ... 440
D 81.2, US/Canada		D 81.2, US/Canada		D 81.2, US/Canada	

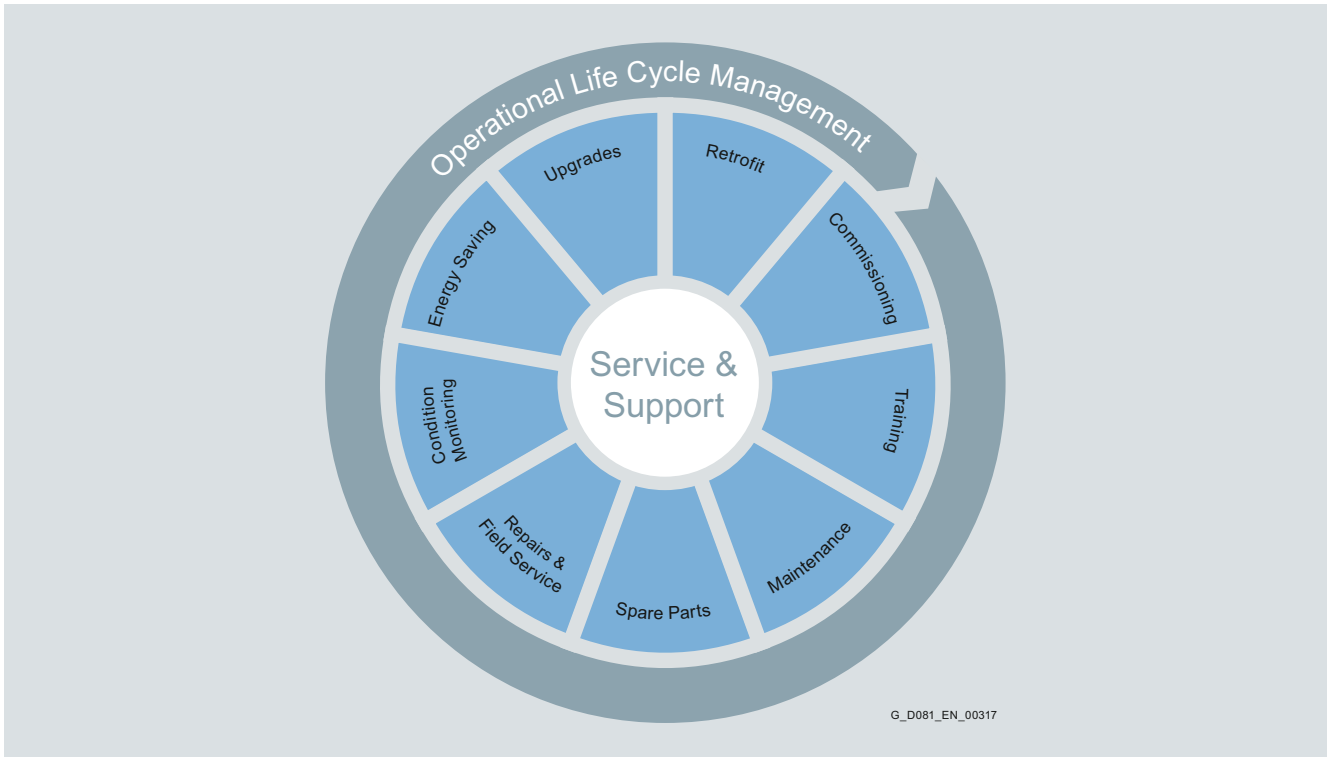
Appendix Service & Support

Perfectly organized for worldwide service over the complete life cycle

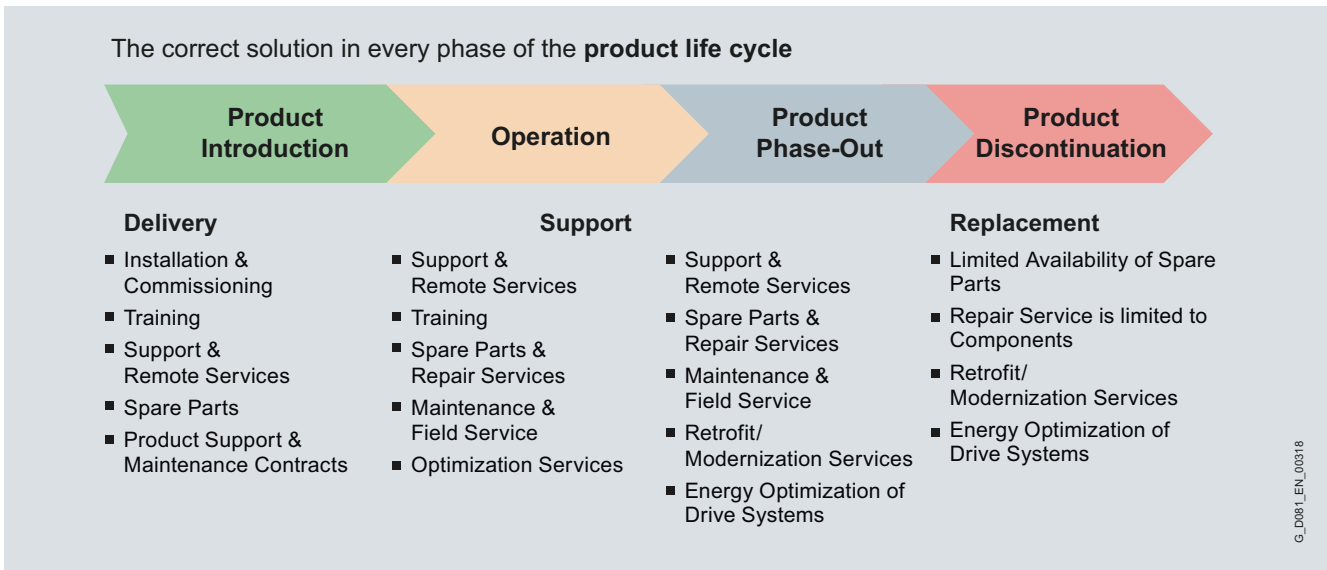
Overview

Our Service & Support is at your disposal worldwide and supports you in all areas of Siemens drive technology. Directly on

site in over 100 countries – throughout the entire life cycle of your machines and plants – around the clock.



You will find your regional contact partner as well as further information under:
www.siemens.com/automation/partner
www.siemens.com/id-service



Perfectly organized for worldwide service
over the complete life cycle

Commissioning of drive systems



Our services:

Commissioning and on-site servicing of motors including auxiliary equipment/built-on components for constant-speed and variable-speed motors up to 1,000 kW in low-voltage applications.

Services for ordering → see Page A/11.

With a focus on the following sectors

- Oil and gas
- Chemical industry
- Energy
- Steel
- Paper
- Shipbuilding
- Mining
- Cement
- Water/waste water
- Wind power

The advantages at a glance:

- High flexibility and cost benefits thanks to global network of qualified servicing personnel
- Direct contact between the customer and the manufacturer in close collaboration with local service center
- Short communication paths across all organizational levels
- "Global resource management" for worldwide applications with observation of statutory and tax provisions
- Cross-sector drive know-how through to the complete system
- Highly qualified converter and motor specialists

Customer-specific training for electric motors



Our training courses:

- Basic technical training (SITRAIN™)
- User and operator training (SITRAIN™)
- Maintenance training (internal training courses)

Training locations:

- On-site training at customer site as workshop training
- Training in the Siemens factory
- Length of training according to requirements and necessity

The advantages at a glance:

- Build-up of expertise of the customer's own maintenance and operating personnel
- Adherence to and correct implementation of motor-specific maintenance work internally → cost and time savings
- Quick and competent recording and calculation of fault causes → realtime troubleshooting
- In the event of a fault, the customer's own maintenance personnel are able to make the correct decisions quickly and reliably
- Targeted contact with Siemens Service with competent error description
- Experienced selection and stockkeeping of a basic assortment of specific spare parts → quick replacement and restart in the case of a plant standstill

Appendix

Service & Support

Perfectly organized for worldwide service over the complete life cycle

Maintenance and inspection of electric motors



Our services:

Inspection:

- Recording and determining the current status values of electric motors
- Checking extensive motor-specific points according to checklist
- Definition of other necessary measures, including report
- Services for ordering → see Page A/11.

Maintenance contracts:

- Definition of the desired maintenance intervals
- Remote support and availability of a technical contact
- Negotiation of deadlines
- Spare parts, service materials and tools
- Training of customer service personnel, specification by means of customer training modules

The advantages at a glance:

Inspection:

- Inventory and taking measurements/diagnostics according to checklist
- Determining the maintenance requirement
- Recommendations for the optimum spare parts inventory
- Detection of possibilities for improving the operating conditions

Maintenance:

- Maximizing the service life
- Minimizing the wear of components
- Avoiding unplanned production downtimes and the associated costs
- Monitoring the product life cycle, and advising on alternative action

Spare parts for electric motors



Our services:

Spare parts packages on site:

For large electric motors, it is beneficial to stock important spare parts and components (core components), such as rotor and stator winding, bearing shells and other parts on-site to cover failures.

For general industrial motors, we offer you appropriately designed spare part kits. We are also pleased to provide our customers with individual spare parts packages or individual spare parts for special use cases.

Spare motors and spare parts:

Supply commitment for spare motors and spare parts following delivery of the motor

- For up to 5 years, in the event of total motor failure, Siemens will supply a comparable motor with regard to the mounting dimensions and functions.
- Spare parts will generally be available for up to 5 years.
- After 5 years and up to 10 years, Siemens will provide information about spare parts and will, if necessary, supply documentation for acquiring spare parts.

When spare parts are ordered, the following details must be provided:

- Designation and part number
- Order No. and factory number of the motor

Example for ordering a fan cover 1LA7, size 160 L, 6-pole: Fan cover No. 7.40 , 1LA7 166-6AA60-Z, factory No. E0912/5229221_01_001

Spare parts for 1MJ6, 1MJ7, 1MJ8, 1MJ1, 1ME8, 1ML8, 1LG8 motors and smoke-extraction motors are available on request. For standard components, a supply commitment does not apply.

Spare parts information and database:

Using the Siemens order number and the associated serial number you can download spare parts information from a database for almost all current motors → **Spares On Web** https://b2b-extern.automation.siemens.com/spares_on_web

The advantages at a glance:

- Minimization of fault downtimes
- No additional waiting times for delivery of spare parts in the event of a fault
- Increased availability for the drive units
- Cost advantages for assembling spare parts packages
- Individual assembly of package contents depending on customer requirements and plant requirements over the entire life cycle

Repair of electric motors

Our services:

An essential component, in addition to many other qualified service activities, is the professional repair of electrical machines. Our repair services are completely tailored to your requirements.

All-round repair service for all your electrical machine types:

- Three-phase machines for industry and traction
- Three-phase servo machines
- High-voltage machines
- DC machines for industry and traction
- DC servo machines
- Emergency power generators
- Generators

The essential services for this are as follows:

- Checking bearing and winding temperatures in the case of special machines
- Checking the entire mechanical drive train
- Bearing inspections with regard to functionality
- Frequency, vibration and noise analyses
- Checks for oil or water leakage from lubrication and cooling equipment
- Winding diagnostics using state-of-the-art methods, such as partial discharge and tan Δ measurement, insulation measurement, resistance measurement and high-voltage tests
- Optical laser alignment
- Key stability checks
- Inspection of built-on components such as encoders, separately driven fans, signal evaluators

Should further measures be necessary in the investigations, the appropriate overhauling and repair activities will naturally also be provided, such as:

- Disassembly and reassembly
- Cleaning with special processes, e.g. with dry ice
- Special drying processes
- Renewal of stator and rotor cores
- Rewinding of stators and rotors
- Total impregnation with Micalastic and vacuum techniques
- Dynamic balancing of rotors according to VDI 2056/2060
- Painting, repainting, touching up
- Tests, acceptance measurements

All this is supplemented by other necessary special services such as:

- Special designs and redesigning for add-ons, conversions and reconstructions
- Preparation of special components, such as base plates, base frames, etc.
- Special built-on units for special applications and adaptations

The repair service is backed up with integrated documentation for diagnosis, verification and reports as well as quality assurance.

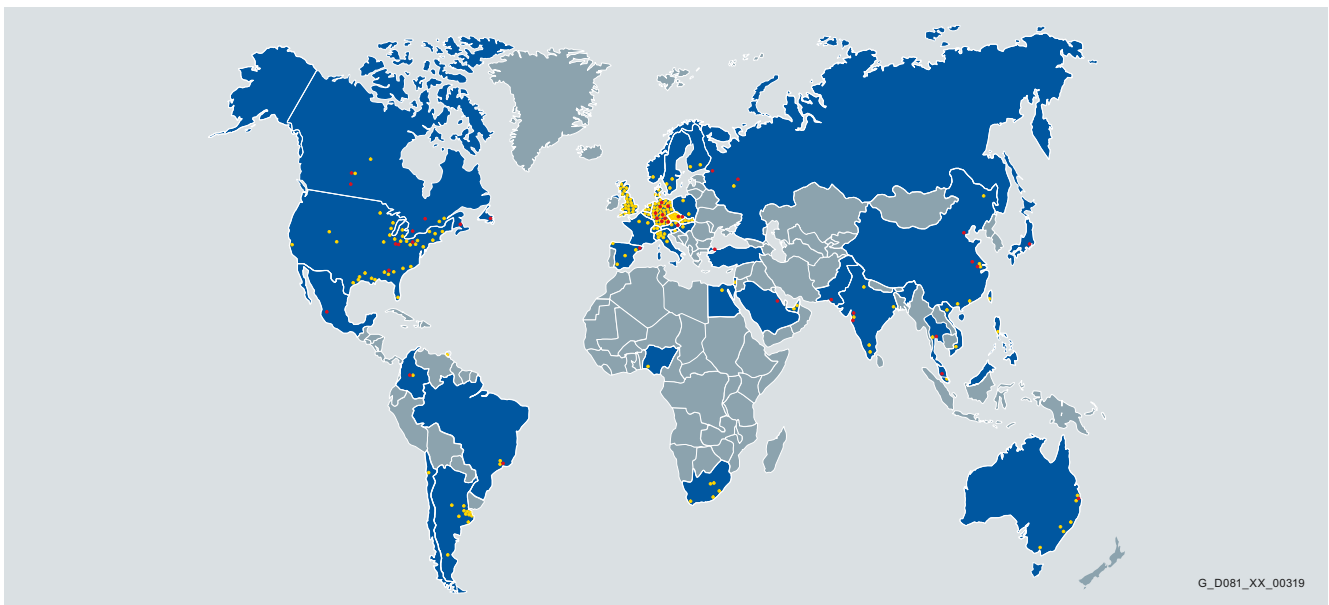
The advantages at a glance:

- Utilization of wide experience from our own machine production facilities
- Short downtimes for machines and plants
- Partners worldwide close to the customer
- High quality standards
- Exclusive use of original parts

The essential factor: Repairs are independent of manufacturer, make and sizes

Global network of repairs

We have more than 244 service partners in 45 countries. Our workshops are certified in accordance with market requirements. We therefore provide professional repairs at the highest possible level with a global presence for local repairs in the shortest possible time.



G_D081_XX_00319

You will find your regional contact partner as well as further information under:
<https://support.automation.siemens.com/WW/view/en/16610214> (spare parts/repairs)

Appendix

Service & Support

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Remote services – Expert knowledge within your grasp



Our remote services:

- Online condition monitoring
- Fault-tolerant data storage
- Trend/analysis, archiving and comparison of the saved data
- Support for on-site services from experts
- Video collaboration
- Vibration signals for bearing status monitoring and for detecting unbalance
- Winding temperatures
- Bearing temperatures
- Definition of other necessary measures, including report

The advantages at a glance:

Remote service:

- Best technology on the market for highly secure connections with maximum availability
- Large number of supported software applications
- Best practice remote service platform in industry
- Support desk available 24/7
- Transparency through monitoring and reporting of all connections

Condition monitoring:

- Minimization of unplanned plant downtimes and reduction of consequential damage
- Increased motor and plant availability
- Provides the basis for status-oriented maintenance
- Optimization and planning of maintenance and service activities
- Utilization of components up to their wear limit
- Resource-saving handling of materials as an important contribution to environmental protection
- Optimization of spare parts inventories
- Graded, flexible hardware and software concept → scalable and allows flexible adaptation to the respective drive system

Energy savings in drive technology



Our services:

Energy optimization measures:

1) Identification of potential savings

The energy requirement is determined and potentials for energy savings are highlighted.

2) Evaluation of the data obtained

The savings potentials identified are evaluated using various methods, so that a stable basis for decision-making is created.

3) Implementation of the energy optimization measures

The right products and targeted implementation measures are determined and implemented.

The advantages at a glance:

- Efficient use of energy, by use of modern energy-saving motors
- Efficient use of energy, through conversion to variable-speed drives
- Less line-side reactive-power demand
- Improved startup characteristics of the motor
- Reduced harmonic loading of the supply
- Reduced noise
- Optimized production conditions
- Reduced wear due to matched speeds

Calculate your potential for savings with the energy efficiency software SinaSave

It is available here as a free download:

www.siemens.com/sinasave

More information about energy saving:

www.siemens.com/energysaving

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Modernization of electric motors



Our services:

Modernization of electric motors –also known as retrofitting – is a major component of the product life cycle.

The old technologies are replaced with state-of-the-art drives and motors from our current product range. Function or plant expansions or changes to the drive concept are not normally necessary.

Retrofit measures for electric motors:

- Replacement of constant-speed motors with variable-speed drives
 - + Energy savings
 - + Increased productivity and profitability
- Functional replacement using new products
 - + Low-cost adaptation to the existing equipment
 - + Energy savings to be made through improved efficiency
- Reproduction of older motors
 - + No complex requalification necessary
 - + 1:1 implementation

The advantages at a glance:

- Reduced maintenance outlay in later part of life cycle
- Improved efficiency
- Optimization of your processes
- Increased energy efficiency, and adaptation to the current environmental requirements
- Reduced risks associated with failures

Available services for SIMOTICS N-compact Non-Standard Motors

The following services for SIMOTICS N-compact Non-Standard Motors can be directly ordered:

1) Standard commissioning of low-voltage motor

Number	Time	Order No.
1 motor	1 day	9LD1110-0AA01

2) Standard inspection of low-voltage motor

Number	Time	Order No.
1 motor	1 day	9LD1210-0AA01

At the time of ordering, the name of the product complete with the order number and the associated serial number must be specified in the item text (SAP).

Extension of the liability for defects for SIMOTICS N-compact Non-Standard Motors

For SIMOTICS N-compact Non-Standard Motors, it is possible to obtain an extension of the liability for defects beyond the standard liability period.

The standard warranty period is quoted in the standard conditions of supply and delivery and is 12 months.

1) For the case of a new product order

With the following optional order suffixes listed in the table, extension of the liability for defects beyond the standard liability period is possible in conjunction with a new order for a product.

The markup on the product price is graded according to the duration of the extension.

Extension of the liability for defects for motors

Additional identification code
 –Z with order code

Q80	Extension of liability for defects, by 12 months to a total of 24 months (2 years) from delivery
Q81	Extension of liability for defects, by 18 months to a total of 30 months (2½ years) from delivery
Q82	Extension of liability for defects, by 24 months to a total of 36 months (3 years) from delivery
Q83	Extension of liability for defects, by 30 months to a total of 42 months (3½ years) from delivery
Q84	Extension of liability for defects, by 36 months to a total of 48 months (4 years) from delivery
Q85	Extension of liability for defects, by 48 months to a total of 60 months (5 years) from delivery

Appendix

Service & Support

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Extension of liability for defects for SIMOTICS N-compact Non-Standard Motors (continued)

2) For the case of re-ordering after product delivery

A re-order for an extension of the liability for defects after delivery can only be processed during the standard period of liability for defects (< 12 months).

The price is staggered according to the duration of the extension and takes into account the previously ordered options.

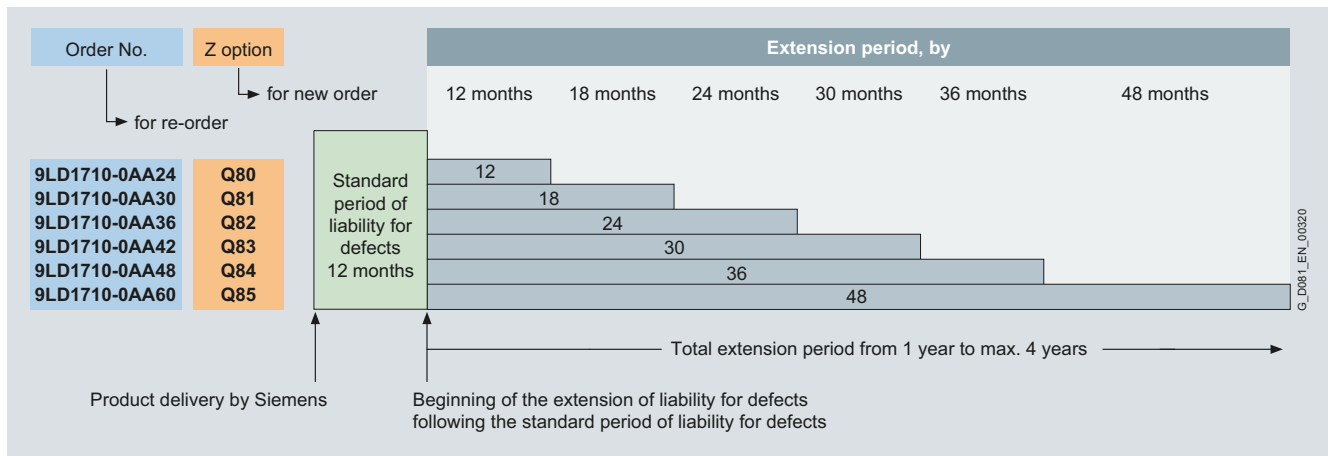
At the time of ordering, the name of the product complete with the order number and the associated serial number must be specified in the item text (SAP).

After expiry of the standard liability for defects (> 12 months) an extension is only available under a special agreement.

This is ordered with the following order numbers:

Extension of the liability for defects for motors	
Order No.	Text
9LD1710-0AA24	Extension of liability for defects, by 12 months to a total of 24 months (2 years) from delivery
9LD1710-0AA30	Extension of liability for defects, by 18 months to a total of 30 months (2½ years) from delivery
9LD1710-0AA36	Extension of liability for defects, by 24 months to a total of 36 months (3 years) from delivery
9LD1710-0AA42	Extension of liability for defects, by 30 months to a total of 42 months (3½ years) from delivery
9LD1710-0AA48	Extension of liability for defects, by 36 months to a total of 48 months (4 years) from delivery
9LD1710-0AA60	Extension of liability for defects, by 48 months to a total of 60 months (5 years) from delivery

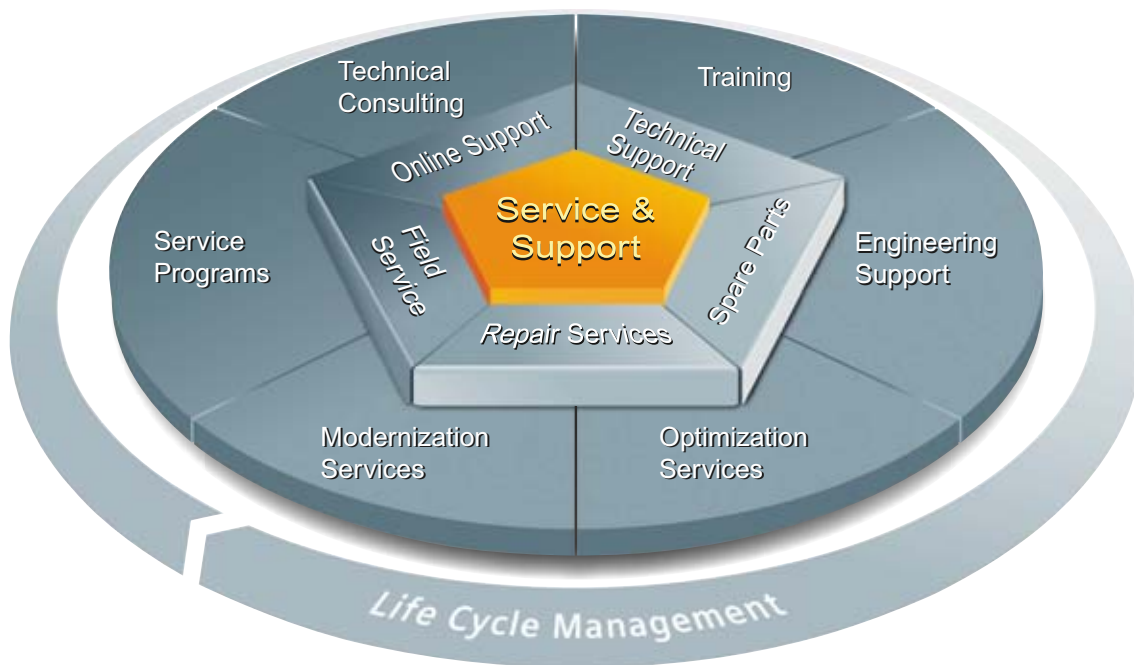
Overview of the extension of liability for defects



Conditions for an extension of liability for defects:

- For all durations of the extension of liability for defects in the case of a new order and reordering after delivery, the final destination of the product must be specified. The process EUNA is available at www.siemens.com/euna for the purpose of this notification process, which must be performed by your Siemens sales contact.
- For all durations of the extension of liability for defects of 4 and 5 years (Q84, Q85/9LD1710-0AA48, 9LD1710-0AA60) this can only be agreed in conjunction with a corresponding service contract with regular inspection. This maintenance contract must be agreed via the responsible service center. The process EUNA is available at www.siemens.com/euna for the purpose of documenting this, which must be performed by your Siemens sales contact.
- The general storage conditions described in the operating instructions must be adhered to, especially the specifications for long-term storage.
- Commissioning must be performed by appropriately qualified personnel. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding commissioning report to the deciding party.
- Periodic maintenance must be performed in accordance with the specifications of the operating instructions. When claiming under liability for defects, it is necessary under certain circumstances to supply the corresponding maintenance records.
- The operating conditions must correspond to the specifications in the operating instructions, configuration manual, or special conditions specified in the contract.
- The extension of liability for defects excludes wear parts, such as carbon brushes or rolling-contact bearings. An exception applies if irrefutable evidence of their premature failure is provided.
- Otherwise the general liability for defects conditions apply.

The unmatched complete service
for the entire life cycle



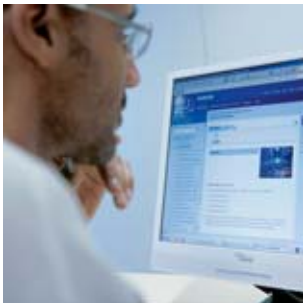
For machine constructors, solution providers and plant operators: The service offering from Siemens Industry, Automation and Drive Technologies includes comprehensive services for a wide range of different users in all sectors of the manufacturing and process industry

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

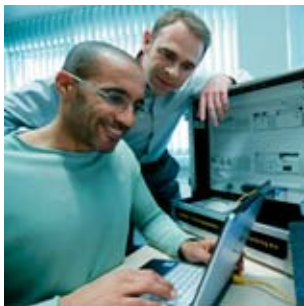
Contact information is available in the Internet at:
www.siemens.com/automation/partner

Appendix

Service & Support

The 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.

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.

Field Service



Our Field Service offers you services for commissioning and maintenance – to ensure that your machines and plants are always available.

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 other 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.

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.

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

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.

Contact information is available in the Internet at:
www.siemens.com/automation/partner

**Faster and more applicable know-how:
Hands-on training from the manufacturer**

SITRAIN® – the Siemens Training for Industry – provides you with comprehensive support in solving your tasks.

Training by the market leader in automation and plant engineering enables you to make independent decisions with confidence. Especially where the optimum and efficient use of products and plants are concerned. You can eliminate deficiencies in existing plants, and exclude expensive faulty planning right from the beginning.



First-class know-how directly pays for itself: In shorter startup times, high-quality end products, faster troubleshooting and reduced downtimes. In other words, increased profits and lower costs.

Achieve more with SITRAIN

- Shorter times for startup, maintenance and servicing
- Optimized production operations
- Reliable configuration and startup
- Minimization of plant downtimes
- Flexible plant adaptation to market requirements
- Compliance with quality standards in production
- Increased employee satisfaction and motivation
- Shorter familiarization times following changes in technology and staff

Contact

Visit our site on the Internet at:

www.siemens.com/sitrain

or let us advise you personally.

SITRAIN Customer Support Germany:

Phone: +49 (911) 895-7575

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.

Practical experience

The practical experience of our trainers enables them to teach theory effectively. But since theory can be pretty drab, we attach great importance to practical exercises which can comprise up to half of the course time. You can therefore immediately implement your new knowledge in practice. We train you on state-of-the-art methodically/didactically designed training equipment. This training approach will give you all the confidence you need.

Wide variety

With a total of about 300 local attendance courses, we train the complete range of Siemens Industry products as well as interaction of the products in systems.

Tailor-made training

We are only a short distance away. You can find us at more than 50 locations in Germany, and in 62 countries worldwide. You wish to have individual training instead of one of our 300 courses? Our solution: We will provide a program tailored exactly to your personal requirements. Training can be carried out in our Training Centers or at your company.

The right mixture: Blended learning

"Blended learning" means a combination of various training media and sequences. For example, a local attendance course in a Training Center can be optimally supplemented by a teach-yourself program as preparation or follow-up. Additional effect: Reduced traveling costs and periods of absence.



Appendix

Service & Support

Training

SITRAIN training courses for low-voltage motors

Course "Configuring Asynchronous Motors" (DR-ASM-PRJ)

Description/learning objective

This course is suitable for project engineers and sales personnel who will be responsible for planning and calculating the implementation of asynchronous low-voltage motors. Basic knowledge of electrical engineering is required.

The course will explain the fundamental physical relationships involved in the correct selection of the motor. The focus lies on starting and operation on the supply system for standard applications such as pumps, fans, compressors and conveyor systems. The special features of the motors for converter-fed operation are also part of the course.

Calculations will be performed for different applications using the configuration programs SIZER for Siemens Drives, DT Configurator, MOTOX configurator as well as the technical data of the catalogs.

Contents:

- Design and method of operation of asynchronous motors
- Overview of SIMOTICS 1L, 1P, N-compact Low-Voltage Motors
- Electrical and mechanical data for the selection of:
 - Starting current, breakdown torque, power factor, efficiency
 - Cantilever forces, vibrations, types of construction
- Types of starting: Direct, star/delta, soft starter, converter, operating modes
- Efficiency classes, calculation of the amortization time using the PC program SinaSave
- Explosion-proof motors, ATEX guideline
- Special features for converter-fed operation: insulation, stamping, characteristic, bearing currents
- Gear unit: design, types, data, features
- Selection of geared motors according to the type of application
- Options, brakes, built-on components, bearings
- Couplings: types and correct selection
- Load characteristics of pumps, fans, compressors, hoisting and traction drives
- Motors for special applications and pole-changing motors
- Exercises for selection of motors on the basis of the Catalogs D 81.1 and D 87.1
- Exercises using the PC programs SinaSave, SIZER for Siemens Drives, DT Configurator and MOTOX configurator



For configuring variable-speed drives with frequency converters, the course "Configuring SINAMICS G150/G130/S150" (code: DR-SNG-PRJ) is offered.

Partner at Industry Automation and Drive Technologies



At Siemens Industry Automation and Drive Technologies, more than 85 000 people are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry Automation and Drive Technologies range.

Your personal contact can be found in our Contacts Database at: www.siemens.com/automation/partner

You start by selecting a

- Product group,
- Country,
- City,
- Service.



Appendix Tools and Engineering

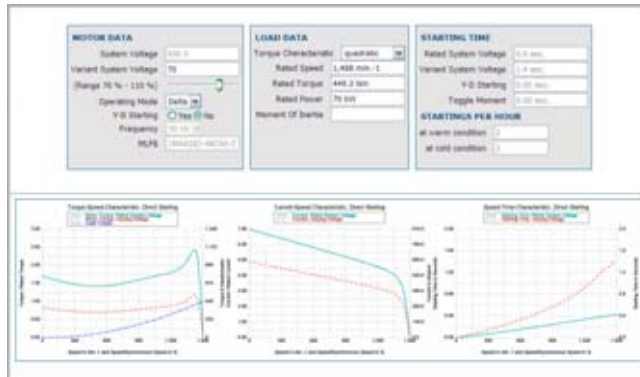
DT Configurator selection tool

Overview

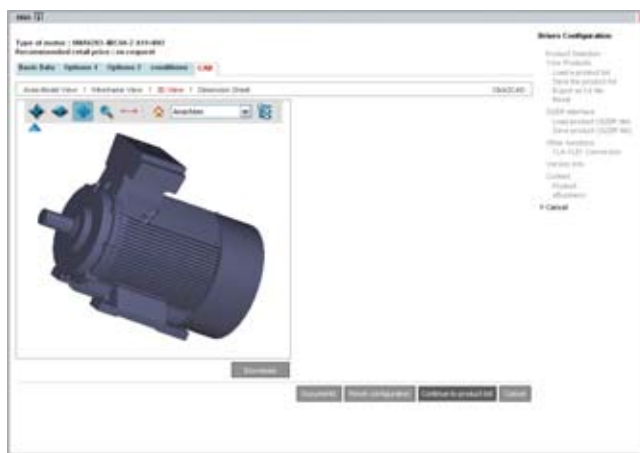
Product description



The DT Configurator has been developed to facilitate the selection of a correct motor and/or converter from the wide spectrum of drives. It is integrated as an offline "selection tool" in the Interactive Catalog CA 01 on DVD and is also available online in the Siemens Industry Mall. The DT Configurator is used to find the correct drive solution and delivers both the correct order number and relevant documentation.



3D models in a wide variety of 3D formats are also available.



The comprehensive help system not only explains the program functions, but also provides access to detailed technical background knowledge.

Product range

The DT Configurator covers the product range of low-voltage motors and MICROMASTER 4 / SINAMICS inverters and converters as well as frequency converters for SIMATIC ET 200 distributed I/O. The range of available products is being continuously expanded.

The following information is provided for the individual products:

- 2D/3D model generator for motors and converters
- Data sheet generator
- Start-up calculation for motors
- Comprehensive product-specific documentation

Online access in the Siemens Industry Mall

The DT Configurator is integrated into the Siemens Industry Mall and can be used in the Internet without installation.

German: www.siemens.de/dt-konfigurator
English: www.siemens.com/dt-configurator

Offline access in the Interactive Catalog CA 01

The DT Configurator is also integrated on the DVD of the Interactive Catalog CA 01, the offline version of the Siemens Industry Mall. You can order the CA 01 with your respective Siemens sales person or in the Internet: www.siemens.com/automation/ca01

Datasheet for three-phase Squirrel-Cage-Motors

Ordering data **1MA223-4BC00-Z**
A11-B03

Client order no. ()
Order no. ()
Option no. ()
Remarks ()

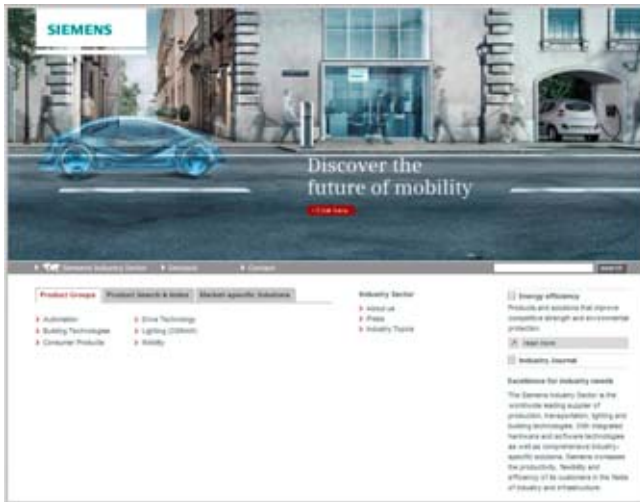
Item no. ()
Consignment no. ()
Project ()

Electrical data ()		General data ()	
Rated motor voltage	(3) 400 V(50/60 Hz, 50 Hz)	Frame size	280 M
Frequency	50 Hz	Type of construction	(1) M 80 / 90 / 97 / 98
Temperature class	T2	Weight in kg, without optional accessories	488.0 kg
Rated motor power	75.0 kW	Frame material	Gray cast iron
Rated motor speed	1488 min ⁻¹	Degree of protection	IP55
Rated motor torque	449.0 Nm	Method of cooling, TEFC	(C) 411
Rated motor current	VD 77 A VV 79.4 A	Vibration class	A
Starting / I rated motor current	7.9 8.9	Insulation	100F to 130B
Breakdown / I rated motor torque	2.9 3.2	Duty type	S1
Starting / I rated motor torque	1.7 1.9	Direction of rotation	Bi-directional
IE Efficiency class in acc. to 60034-20			
Partial load P _{0.5}	44 34 24 14 24	Terminal box ()	
Efficiency η %	89.9 89.1 88.1 86.9 86.9	Material of terminal box	cast iron
Power factor cos φ	0.85 0.84 0.76 0.87 0.86	Type	100T 400
Mechanical data ()			
Motor SI No/Hz/Hz	87/50/60	Terminal screw thread	M20
Moment of inertia	1.80000 kg m ²	Max. cable cross-sectional area	100.0 mm ²
Bearing AS / BS	6211 C2 / 6211 C3	Cable diameter from ... to ...	24.0 mm - 42.0 mm
Locating bearing	Locating bearing, NDE (optional)	Cable entry	2-Ø16/3-Ø16/3-Ø16
Drain holes	Yes (optional)	Cable gland	3 gland with sealing washer, 1 gnd
Regreasing device	Yes (optional)	Special configurations ()	
Type of lubrication	Shell Alvania C2	A11	IP55 (necessary for rigging)
Relubrication interval at 40°C	9000 h	B02	IP55 (necessary for rigging)
Quantity of grease for relubrication at 40°C	30.0 g		factory test in acc. with IEC 60034-2-1
External earthing	Yes		factory test in acc. with IEC 60034-2-1
Paintwork	Standard paint finish RAL 7035 gray		
Explosion protection ()			
Type of protection	Ex e B		
Temperature class T1, T2 / T3 / T Temp.	20.0 °C	8.0 s	
Temperature class T1, T2 / T3 / T Temp.	20.0 °C	20.0 s	
Site conditions ()			
Ambient temperature	-20.0 °C - +40.0 °C		
Altitude above sea level	1000 m		
Standards and specifications	IEC, DIN, ISO, VDE, EN		

Technical specification data are subject to change. Please refer to description between catalogue and IEC 60034-2-1.

It can display operating instructions, factory test certificates, connection box documentation, etc. and generates data sheets, dimensional drawings and a start-up calculation for the relevant products.

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.

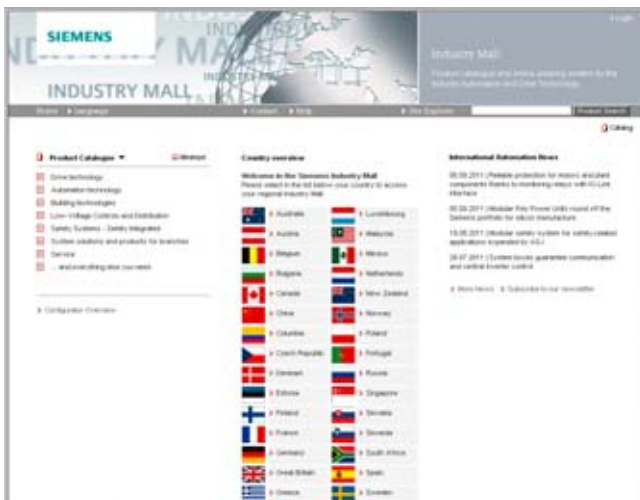
After selecting the product of your choice you can order at the press of a button, by fax or by online link.

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:

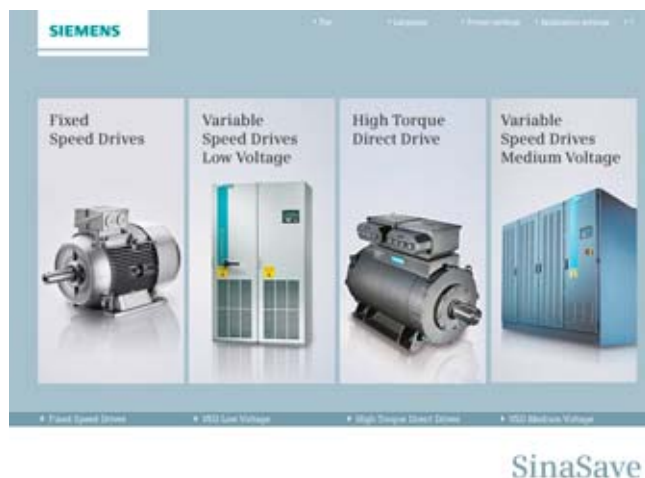
www.siemens.com/industrymall

Appendix

Tools and Engineering

Energy-saving program SinaSave

Overview



Endless philosophizing is possible over potentials for savings, but the software tool SinaSave produces facts:

SinaSave calculates the possible potential for savings for the specific application from the characteristic values of the plant. From the total monthly savings for the application and the purchase price and installation costs for the motor or frequency converter, the amortization time is calculated – frequently just a few months.

Function

SinaSave is designed for selecting an energy-efficient motor for mains-fed operation or a frequency converter for variable-speed and thus energy-saving operation.

In mains-fed operation, you can calculate the cost savings as well as the amortization time of the Siemens energy-saving motors of classes IE2 or NEMA Premium with three bases of comparison: In comparison to motors IE1 or EISA; individually selected and known motors; or in comparison to known motors within an overall plant analysis.

In converter-fed operation, SinaSave takes into account all the necessary plant-specific parameters as well as the values required for the process; such as pumping flowrate, the density of the transported medium and the efficiencies of the pumps, fans and compressors of the complete plant. Other basic data for the program include the number of working days and work shifts as well as the transport profile that decides the extent of the energy-saving effect throughout the day and the year.

From the plant-specific data, the program obtains the appropriate drive system, calculates the price of the corresponding frequency converter and determines the energy requirements of the variable-speed drive system in comparison to all alternative concepts that could be considered.

Apart from highly efficient motors (IE2), SinaSave also covers low-voltage and medium-voltage frequency converters that are predestined for pump and fan applications.

A mechanical system analysis has also been added to the motor section. The high-torque motors are a recent addition. Convenient functions such as an automatic update function, an up-to-date currency table and improved export functions (e.g. PDF mailing) round off the contents of the energy-saving tool.

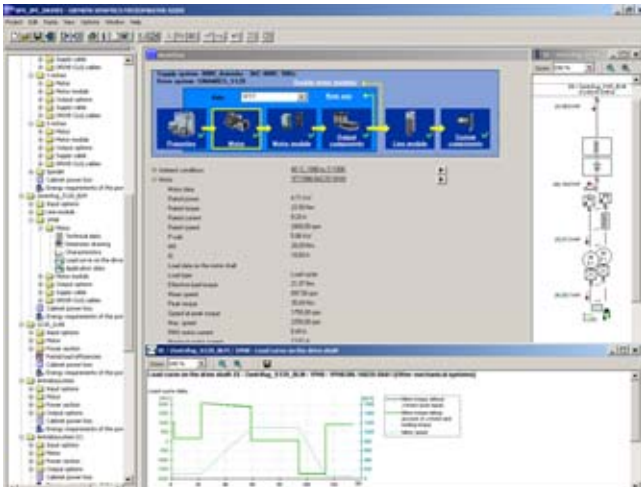
More information

More information about services for energy saving is available on the Internet:

www.siemens.com/sinasave

www.siemens.com/energysaving

Overview



The configuration tool SIZER for Siemens Drives provides an easy-to-use means for configuring the following drives and controls:

- SINAMICS Low Voltage, MICROMASTER 4, DYNAVERT T, SIMATIC ET 200S FC and SIMATIC ET 200pro FC drive systems
- Motor starters for network configuring
- CNC control SINUMERIK solution line
- SIMOTION Motion Control system
- SIMATIC technology

It provides support when setting up the technologies involved in the hardware and firmware components required for a drive task. SIZER for Siemens Drives supports the configuration of the complete drive system, from simple individual drives to complex multi-axis applications.

SIZER for Siemens Drives supports all of the engineering steps in one workflow:

- Configuring the power supply
- Motor and gearbox design, including calculation of mechanical transmission elements
- Configuring the drive components
- Selecting the required accessories
- Selecting the line-side and motor-side power options, e.g. cables, filters, and reactors

When SIZER for Siemens Drives was being designed, particular importance was placed on a high degree of usability and a universal, function-based approach to the drive application. The extensive user guidance makes using the tool easy. Status information keeps you continually informed about the progress of the configuration process.

The SIZER for Siemens Drives user interface is available in German, English, French and Italian.

The drive configuration is saved in a project. In the project, the components and functions used are displayed in a hierarchical tree structure.

The project view permits the configuration of drive systems and the copying/inserting/modifying of drives already configured.

The configuration process produces the following results:

- A parts list of the components required (export to Excel, use of the Excel data sheet for import to VSR)
- Technical specifications of the system
- Characteristic curves
- Comments on system reactions
- Location diagram of drive and control components and dimensional drawings of motors

These results are displayed in a results tree and can be reused for documentation purposes.

Support is provided by the technological online help menu:

- Detailed technical data
- Information about the drive systems and their components
- Decision-making criteria for the selection of components
- Online help in German, English, French, Italian, Chinese and Japanese

Minimum system requirements

- PG or PC with Pentium III 500 MHz (Windows XP)
- 512 MB RAM (1024 MB RAM recommended)
- At least 4.1 GB of free hard disk space
- An additional 100 MB of free hard disk space on Windows system drive
- Screen resolution 1024 x 768 pixels
- Windows XP Professional SP2 / XP Home Edition SP2 / Windows Vista Business
- Microsoft Internet Explorer 5.5 SP2

Selection and ordering data

	Order No.
Configuration tool SIZER for Siemens Drives	6SL3070-0AA00-0AG0
For SINAMICS and MICROMASTER	
German, English, French, Italian	

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1MA6283...	4/17, 4/30, 4/32 ... 4/35

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Order codes for motors 1LE, 1PC, 1LA, 1LG, 1LL, 1LP, 1MA, 1MJ, 1PP, 1PQ

All options are alphanumerically listed according to order codes in the following table.

A list of all available options according to categories can be found in Catalog Section 0.1 "Introduction", "Guide to selecting and ordering the motors".

Order code	Special versions	Category	For further information, see Page
The order codes with blue background apply exclusively to Catalog Section 1 "SIMOTICS GP/SD 1LE1/1PC1 Standard Motors".			
The order codes with gray background apply to Catalog Section 1 "SIMOTICS GP/SD 1LE1/1PC1 Standard Motors" as well as to Catalog Section 2 "SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors" or to Catalog Section 3 "SIMOTICS N-compact Non-Standard Motors".			
The meaning of the order codes however varies depending on the catalog section!			
15th position of the Order No. Letter A	Without motor protection	Motor protection	1/56, 1/57
15th position of the Order No. Letter B	Motor protection with PTC thermistors with 1 (for motors 1LE10 FS 80 and 90) or 3 embedded temperature sensors for tripping		1/56, 1/57
15th position of the Order No. Letter C	Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping		1/56, 1/57
15th position of the Order No. Letter F	Motor temperature detection with embedded temperature sensor KTY 84-130		1/56, 1/57
15th position of the Order No. Letter G	Motor temperature detection with embedded temperature sensors 2 x KTY 84-130		1/56, 1/57
15th position of the Order No. Letter H	Installation of 3 PT100 resistance thermometers		1/56, 1/57
15th position of the Order No. Letter J	Installation of 6 PT100 resistance thermometers in stator winding		1/57
15th position of the Order No. Letter Z Q2A	NTC thermistors for tripping		1/56, 1/57
15th position of the Order No. Letter Z Q3A	Temperature detectors for tripping		1/56, 1/57
16th position of the Order No. Digit 4	Connection box top	Motor connection and connection box	1/58, 1/59
16th position of the Order No. Digit 5	Connection box on RHS		1/58, 1/59
16th position of the Order No. Digit 6	Connection box on LHS		1/58, 1/59
16th position of the Order No. Digit 7	Connection box bottom		1/58, 1/59
A10	With PTC thermistors for alarm for converter-fed operation in Zones 2, 21, 22	Motor protection	4/86, 4/91
A11	Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping		2/87, 2/94, 4/76, 4/79, 4/82, 4/86, 4/91
A12	Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping		2/87, 2/94, 3/34, 4/76, 4/79, 4/82, 4/86, 4/91
A15	Motor protection with PTC thermistors for converter-fed operation with 4 embedded temperature sensors for tripping		4/82
A16	Motor protection with PTC thermistors for converter-fed operation with 8 embedded temperature sensors for alarm and tripping		4/82
A23	Motor temperature detection with embedded temperature sensor KTY 84-130		2/87, 2/94, 3/34, 4/86, 4/91
A25	Motor temperature detection with embedded temperature sensors 2 x KTY 84-130		2/87, 2/94, 4/86, 4/91
A31	Temperature detectors for tripping		2/87, 2/94
A60	Installation of 3 PT100 resistance thermometers		2/87, 2/94, 4/86, 4/91

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The meaning of the order codes however varies depending on the catalog section!			
A61	Installation of 6 PT100 resistance thermometers in stator winding	Motor protection	2/94, 3/34, 4/91
A64	Installation of 6 PT100 resistance thermometers in stator winding, 3-wire circuit from auxiliary terminal box (Option M50 or M88)		3/34
A72	Installation of 2 PT100 screw-in resistance thermometers in basic circuit for rolling-contact bearings		2/94, 3/34, 4/79, 4/82, 4/92
A78	Installation of 2 PT100 screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings		2/94, 3/34, 4/79, 4/82, 4/92
A80	Installation of 2 PT100 double screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings		2/94, 3/34, 4/92
B01	With one safety and start-up guide per box pallet	Packaging, safety notes, documentation and test certificates	1/63, 2/92, 2/102
B02	Acceptance test certificate 3.1 in accordance with EN 10204		1/63, 1/68, 2/92, 2/102, 4/77, 4/81, 4/85, 4/89, 4/95
B04	Printed German/English Operating Instructions enclosed		1/63
B06	Second lubrication plate, loose	Rating plate and extra rating plates	2/92, 2/102, 4/77, 4/80, 4/84, 4/89, 4/95
B07	Extra rating plate for voltage tolerance		1/63, 1/67, 2/92, 2/102
B19	Short delivery time – Express (only for 1LE1 motors)	Preferred and Express motors	0/26 ... 0/31
B20	Standardline version (only for 1LA8 motors)	Standardline (only for 1LA8 motors)	3/34
B23	Printed German/English Operating Instructions enclosed	Packaging, safety notes, documentation and test certificates	2/92, 2/102, 4/77, 4/81, 4/85, 4/89, 4/95
B25	Printed Operating Instructions (Compact) for explosion-proof motors enclosed in French, Spanish, Italian and Czech		4/77, 4/81, 4/85, 4/89, 4/95
B26	Printed Operating Instructions (Compact) for explosion-proof motors enclosed in Swedish, Danish, Dutch and Finnish		4/77, 4/81, 4/85, 4/89, 4/95
B31	Document – Electrical data sheet		3/42
B32	Document – Order dimension drawing		3/42
B34	Document – Standard test schedule		3/42
B37	Document – Load characteristics		3/42
B43	Document – Production schedule: Generated once		3/42
B44	Document – Production schedule: Updated every two weeks		3/42
B45	Document – Production schedule: Updated monthly		3/42
B83	Type test with heat run for horizontal motors, with acceptance		1/63
B99	Wire-lattice pallet		1/63
C00	Brake supply voltage 24 V DC	Modular technology – Additional versions	2/90, 2/98
C01	Brake supply voltage 400 V AC		2/90, 2/98
C02	Brake supply voltage 180 V DC, for operation on MICROMASTER 411 – ECOFAST		2/90
C11	Temperature class 155 (F), used acc. to 155 (F), with service factor	Windings and insulation	2/88, 2/95, 3/35
C12	Temperature class 155 (F), used acc. to 155 (F), with increased output		2/88, 2/95, 3/35
C13	Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature		2/88, 2/95, 3/35
C14	Temperature class 180 (H), used acc. to 155 (F), with service factor (SF 1.1)		3/35
C18	Temperature class 180 (H) at rated output and max. CT 60 °C		2/88, 2/96
C19	Increased air humidity/temperature with 30 to 60 g water per m ³ of air		2/88, 2/96, 4/76, 4/79, 4/82, 4/87, 4/92
C22	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %		2/88, 2/96, 4/76, 4/79, 4/82, 4/87, 4/92
C23	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %		2/88, 2/96, 4/76, 4/79, 4/82, 4/87, 4/92
C24	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %		2/88, 2/96, 4/76, 4/79, 4/83, 4/87, 4/92
C25	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %		2/88, 2/96, 4/76, 4/79, 4/83, 4/87, 4/92

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The meaning of the order codes however varies depending on the catalog section!			
C26	Increased air humidity/temperature with 60 to 100 g water per m ³ of air	Windings and insulation	2/88, 2/96, 4/76, 4/79, 4/83, 4/87, 4/93
C27	Ex nA II on VIK rating plate	Designs in accordance with standards and specifications	2/91, 2/100
C30	T1/T2 on rating plate	Design for Zones according to ATEX	3/40, 4/86, 4/91 4/76, 4/79
D01	CCC China Compulsory Certification	Designs in accordance with standards and specifications	1/62, 2/91, 4/77, 4/84, 4/88
D02	Coolant temperature -50 to +40 °C	Coolant temperature and site altitude	2/100, 3/39
D03	Coolant temperature -40 to +40 °C		1/62, 1/66, 2/90, 2/100, 3/39
D04	Coolant temperature -30 to +40 °C		1/62, 2/90, 2/100, 3/39
D11	Coolant temperature 45 °C, derating 4 %		3/39
D12	Coolant temperature 50 °C, derating 8 %		3/39
D13	Coolant temperature 55 °C, derating 13 %		3/39
D14	Coolant temperature 60 °C, derating 18 %		3/39
D19	Coolant temperature -40 to +40 °C for Ex motor		4/77, 4/80, 4/88, 4/94
D22	IE1 motor without CE marking for export outside EEA (see EU Directive 640/2009)	Designs in accordance with standards and specifications	1/62, 2/91, 2/100
D25	Premium Efficiency IE3		2/100
D30	Electrical according to NEMA MG1-12		1/62, 1/67, 2/91, 2/100, 3/39, 4/88, 4/94
D31	Design according to UL with "Recognition Mark"		1/62, 1/67, 2/91, 2/100, 3/39
D32	Ex certification for China		4/84, 4/88, 4/94
D33	Certified for Korea according to KS C4202		2/91, 2/100
D34	China Energy Efficiency Label		1/62, 2/91, 2/100, 3/39, 4/84, 4/88, 4/94
D35	Ex certification for Russia		3/39, 4/77, 4/80, 4/84, 4/88, 4/94
D36	Conformity statement in accordance with 94/9/EC (ATEX) of an independent body for Zone 2 motors (Ex nA)		3/39
D37	IEC Ex certificate – only in combination with order codes M72 and M73		3/39
D40	Canadian regulations (CSA)		1/62, 1/67, 2/91, 2/100, 3/39
D41	NEMA Premium Efficient, North America version acc. to NEMA MG1, Table 12-12, incl. UL and CSA		2/100
D42	NEMA Energy Efficient, North America version acc. to NEMA MG1, Table 12-11, incl. UL and CSA (for Ex motors without UL and CSA)		2/91, 2/100, 4/88, 4/94
D46	PSE mark for Japan		2/91, 2/100
E00	Without type test certificate according to ABS 50 °C/CCS 45 °C/RINA 45 °C, temperature class 155 (F) used according to 155 (F) (if acceptance test certificate 3.1 according to EN 10204 is required, this must be ordered with order code B02)	Marine version – Basic version	5/8, 5/9, 5/10, 5/11, 5/12, 5/13
E10	Individual acceptance by marine classification society	Marine version – Acceptance/certification	5/8, 5/9, 5/11, 5/13
E11	With type test certificate according to GL (Germanischer Lloyd), Germany, CT 45 °C, temperature class 155 (F), used according to 155 (F)	Marine version – Basic version	5/8, 5/9, 5/10, 5/11, 5/12, 5/13
E21	With type test certificate according to LR (Lloyds Register), Great Britain, CT 45 °C, temperature class 155 (F), used according to 155 (F)		5/8, 5/9, 5/10, 5/11, 5/12, 5/13
E31	With type test certificate according to BV (Bureau Veritas), France, CT 45 °C, temperature class 155 (F), used according to 155 (F)		5/8, 5/9, 5/10, 5/11, 5/12, 5/13
E46	With type test certificate according to RS (Russian Maritime Register of Shipping), Russia, CT 45 °C, temperature class 155 (F), used according to 155 (F) ³⁾		5/8, 5/9, 5/10, 5/11, 5/12, 5/13

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The meaning of the order codes however varies depending on the catalog section!			
E51	With type test certificate according to DNV (Det Norske Veritas), Norway, CT 45 °C, temperature class 155 (F), used according to 155 (F)	Marine version – Basic version	5/8, 5/9, 5/10, 5/11, 5/12, 5/13
E80	Motor for use in shipping, higher ambient temperature and/or use of temperature class 155 (F) according to 130 (B)	Marine version – Additional options for Essential Service and Essential Service for Propulsion	5/19
E88	Commissioning of the classification society by Siemens	Pump drives for sea water	3/39
E89	Commissioning of the classification society by third party	desalination plants	3/39
E90	Pump drive for sea water desalination plants certified according to Lloyd's Register		3/39
F01	Mounting of brake	Modular technology – Basic versions	1/61, 1/66
F01	Standard test (routine test) with acceptance	Packaging, safety notes, documentation and test certificates	3/42
F03	Visual acceptance and report handover with acceptance		3/42
F04	Temperature-rise test, without acceptance		3/42
F05	Temperature-rise test with acceptance		3/42
F10	Brake supply voltage 24 V DC	Modular technology – Additional versions	1/61, 1/66
F11	Brake supply voltage 230 V AC		1/61, 1/66
F12	Brake supply voltage 400 V AC		1/61, 1/66
F28	Noise measurement in no-load operation, no noise analysis, without acceptance	Packaging, safety notes, documentation and test certificates	3/42
F29	Noise measurement in no-load operation, no noise analysis, with acceptance		3/42
F34	Recording of current and torque curves with torque metering shaft during starting, without acceptance		3/42
F35	Recording of current and torque curves with torque metering shaft during starting, with acceptance		3/42
F50	Mechanical manual brake release with lever (no locking)	Modular technology – Additional versions	1/61, 1/66
F52	Measurement of locked-rotor torque and current, without acceptance	Packaging, safety notes, documentation and test certificates	3/42
F53	Measurement of locked-rotor torque and current, with acceptance		3/42
F62	Noise measurement in no-load operation, with noise analysis, without acceptance		3/42
F63	Noise measurement in no-load operation, with noise analysis, without acceptance		3/42
F70	Mounting of separately driven fan	Modular technology – Basic versions	1/61, 1/66
F74	Sheet metal fan cover	Heating and ventilation	1/63, 1/67
F75	Fan cover for textile industry		1/63
F76	Metal external fan		1/63, 1/67
F77	Low-noise version for 2-pole motors with clockwise direction of rotation	Mechanical design and degrees of protection	1/61
F78	Low-noise version for 2-pole motors with counter-clockwise direction of rotation		1/61
F82	Type test with heat run for horizontal motors, without acceptance	Packaging, safety notes, documentation and test certificates	3/42
F83	Type test with heat run for horizontal motors, with acceptance	Packaging, safety notes, documentation and test certificates	2/92, 2/102, 3/42, 4/89, 4/95
		Marine version – Acceptance/certification	5/8, 5/9, 5/11, 5/13
F90	Without external fan and without fan cover	Heating and ventilation	1/63
F92	Type test with heat run for vertical motors, without acceptance	Packaging, safety notes, documentation and test certificates	3/42
F93	Type test with heat run for vertical motors, with acceptance		3/42
G01	Mounting of 1XP8012-10 (HTL) rotary pulse encoder	Modular technology – Basic versions	1/61, 1/66
G02	Mounting of 1XP8012-20 (TTL) rotary pulse encoder		1/61, 1/66
G04	Mounting of LL 861 900 220 rotary pulse encoder	Special technology	1/61, 1/66
G05	Mounting of HOG 9 D 1024 I rotary pulse encoder		1/61, 1/66
G06	Mounting of HOG 10 D 1024 I rotary pulse encoder		1/61, 1/66
G17	Mounting of separately driven fan	Modular technology – Basic versions	2/89, 2/97
G26	Mounting of brake		2/89, 2/97
G40	Prepared for mountings, center hole only	Mechanical design and degrees of protection	1/62
G41	Prepared for mountings with shaft D12		1/62
G42	Prepared for mountings with shaft D16		1/62
G43	Protective cover for encoder (supplied loose – only for mountings with order codes G40, G41 and G42)		1/62

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The meaning of the order codes however varies depending on the catalog section!			
G50	Measuring nipple for SPM shock pulse measurement for bearing inspection	Bearings and lubrication	2/91, 2/101, 3/40, 4/80, 4/84, 4/88, 4/94
G55	ECOFAST motor connector Han-Drive 10e for 230 VΔ/400 VY	Motor connection and connection box	2/87
G56	ECOFAST motor connector EMC Han-Drive 10e for 230 VΔ/400 VY	Motor connection and connection box	2/87
H00	Protective cover	Mechanical design and degrees of protection	1/61, 1/66
H01	Screwed-on (instead of cast) feet		1/61, 1/66
H02	Vibration-proof version		1/61
H03	Condensation drainage holes		1/61, 1/66
H04	External grounding		Motor connection and connection box
H05	Shock pulse measurement, fixed sensor and distributor box	Bearings and lubrication	3/40
H07	Rust-resistant screws (externally)	Mechanical design and degrees of protection	1/62, 1/66
H07	Shock pulse measurement, complete alarm box	Bearings and lubrication	3/40
H08	Connection box on NDE	Motor connection and connection box	1/60
H15	Prepared for mounting of MMI	Special technology	2/90
H16	Mounting of LL861900 222 rotary pulse encoder with Advanced Diagnostic System		3/37
H17	Fan cover for textile industry	Heating and ventilation	2/92, 2/101, 4/89, 4/95
H20	IP65 degree of protection	Mechanical design and degrees of protection	1/61, 1/66
H22	IP56 degree of protection		1/61, 1/66
H23	Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar		1/61, 1/66
H47	Mounting of brake (incl. the brake from Stromag)	Special technology	3/35
H57	Mounting of 1XP8001-1 (HTL) rotary pulse encoder	Modular technology – Basic versions	2/89, 2/97
H58	Mounting of 1XP8001-2 (TTL) rotary pulse encoder		2/89, 2/97
H61	Mounting of separately driven fan and 1XP8001-1 rotary pulse encoder	Modular technology – Combinations of basic versions	2/89, 2/98
H62	Mounting of brake and 1XP8001-1 rotary pulse encoder		2/89, 2/98
H63	Mounting of brake and separately driven fan		2/89, 2/98
H64	Mounting of brake, separately driven fan and 1XP8001-1 rotary pulse encoder		2/89, 2/98
H70	Mounting of LL 861 900 220 rotary pulse encoder	Special technology	2/90, 2/98, 3/37
H72	Mounting of HOG 9 D 1024 I rotary pulse encoder		2/90, 2/98
H73	Mounting of HOG 10 D 1024 I rotary pulse encoder		2/90, 2/98, 3/37
H78	Prepared for mounting of LL 861 900 220		2/90, 2/98, 3/37
H79	Prepared for mounting of HOG 9 D 1024 I		2/90, 2/98
H80	Prepared for mounting of HOG 10 D 1024 I		2/90, 2/98, 3/37
H83	Mounting of HOG10 DN 2048 incremental encoder		3/37
H84	Mounting of HOG11 DN 2048 incremental encoder		3/37
H85	Mounting of LL861 incremental encoder (2048 pulses)		3/37
H86	Mounting of explosion-proof rotary pulse encoder for use in Zones 2, 21, 22		4/88, 4/93
H87	Mounting of explosion-proof rotary pulse encoder for use on motors Ex d/de in Zone 1		4/83
H88	HOG 11 DN 1024 I rotary pulse encoder (16 mm) with special anti-corrosion protection		3/37
H97	Mounting of separately driven fan and 1XP8001-2 rotary pulse encoder	Modular technology – Combinations of basic versions	2/89, 2/98
H98	Mounting of brake and 1XP8001-2 rotary pulse encoder		2/89, 2/98
H99	Mounting of brake, separately driven fan and 1XP8001-2 rotary pulse encoder		2/89, 2/98
J04	One metal cable gland, certified according to ATEX	Motor connection and connection box	4/87, 4/92
J06	Prepared for mounting of the holding brake SFB for shaft height 315	Special technology	3/36
J07	Prepared for mounting of the holding brake SFB for shaft height 355		3/36
J08	Prepared for mounting of the holding brake SFB for shaft height 400		3/37
J09	Prepared for mounting of the holding brake SFB for shaft height 450		3/37
J12	Subsequently rotatable main connection box	Motor connection and connection box	3/35
J15	Mounting of HOG 10 DN 1024 I rotary pulse encoder, terminal box protection against humidity	Special technology	2/98

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The meaning of the order codes however varies depending on the catalog section!			
J16	Mounting of HOG 10 DN 1024 I rotary pulse encoder, terminal box protection against dust	Special technology	2/99
J48	Mounting of the holding brake SFB 160, 1600 Nm, 230 V, Pintsch-Bubenzler		3/35
J49	Mounting of the holding brake SFB 160 SH, 2100 Nm, 230 V, Pintsch-Bubenzler		3/36
J56	Mounting of the holding brake SFB 160 H, 2500 Nm, 230 V, Pintsch-Bubenzler		3/36
J57	Mounting of the holding brake SFB 250 SH, 3300 Nm, 230 V, Pintsch-Bubenzler		3/36
J58	Mounting of the holding brake SFB 250 H, 4000 Nm, 230 V, Pintsch-Bubenzler		3/36
J59	Mounting of the holding brake SFB 250 H, 4000 Nm, 400 V, Pintsch-Bubenzler		3/36
J66	Mounting of the holding brake SFB 400 SH, 5200 Nm, 400 V, Pintsch-Bubenzler		3/36
J67	Mounting of the holding brake SFB 400 H, 6300 Nm, 400 V, Pintsch-Bubenzler		3/36
J68	Mounting of the holding brake SFB 630 SH, 8000 Nm, 400 V, Pintsch-Bubenzler		3/36
J69	Mounting of the holding brake SFB 630 H, 10000 Nm, 400 V, Pintsch-Bubenzler		3/36
J70	Certification for first motor according to ABS (American Bureau of Shipping), USA, Essential Service	Marine version – Essential Service	5/15
J71	Certification for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service		5/15
J72	Certification for first motor according to BV (Bureau Veritas), France, Essential Service		5/15
J73	Certification for additional motors according to BV (Bureau Veritas), France, Essential Service		5/15
J74	Certification for first motor according to CCS (Chinese Classification Society), China, Essential Service		5/15
J75	Certification for additional motors according to CCS (Chinese Classification Society), China, Essential Service		5/16
J76	Certification for first motor according to DNV (Det Norske Veritas), Norway, Essential Service		5/16
J77	Certification for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service		5/16
J78	Certification for first motor according to GL (Germanischer Lloyd), Germany, Essential Service		5/16
J79	Certification for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service		5/16
J80	Certification for first motor according to KR (Korean Register of Shipping), Korea, Essential Service		5/16
J81	Certification for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service		5/16
J82	Certification for first motor according to LR (Lloyds Register), Great Britain, Essential Service		5/16
J83	Certification for additional motors according to LR (Lloyds Register), Great Britain, Essential Service		5/16
K02	Vibration quantity level B	Balance and vibration quantity	2/91, 2/101, 3/41, 4/77, 4/80, 4/84, 4/88, 4/94
K04	Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors	Shaft and rotor	2/91, 2/101, 4/77, 4/80, 4/84, 4/89, 4/94
K06	Two-part plate on connection box	Motor connection and connection box	2/94, 3/34
K09	Connection box on RHS		2/87, 2/94, 3/34, 4/76, 4/79, 4/82, 4/87, 4/92
K10	Connection box on LHS		2/87, 2/94, 3/34, 4/76, 4/79, 4/82, 4/87, 4/92
K11	Connection box on top, feet screwed on		2/95, 4/92
	Connection box on top (1XB1634 connection box)		3/34
K15	Connection box in cast-iron version		2/95, 4/79, 4/82, 4/92

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The meaning of the order codes however varies depending on the catalog section!			
K16	Second standard shaft extension	Shaft and rotor	2/91, 2/101, 3/41, 4/77, 4/80, 4/84, 4/89, 4/94
K17	Drive-end seal for flange-mounting motors, oil-tight to 0.1 bar	Mechanical design and degrees of protection	2/90, 2/99, 4/76, 4/80, 4/83, 4/88, 4/93
K20	Bearing design for increased cantilever forces	Bearings and lubrication	2/91, 2/101, 3/40, 4/77, 4/80, 4/84, 4/88, 4/94
K23	Unpainted (only cast-iron parts primed)	Colors and paint finish	2/89, 2/97, 3/35, 4/76, 4/80, 4/83, 4/88, 4/93
K24	Unpainted, only primed		2/89, 2/97, 4/76, 4/80, 4/83, 4/88, 4/93
K26	Special finish in RAL 7030 stone gray		2/97, 3/35, 4/79, 4/83, 4/93
K30	VIK version	Designs in accordance with standards and specifications Design for Zones according to ATEX	2/91, 2/100, 4/77, 4/80, 4/84 3/40, 4/86, 4/91
K31	Second rating plate, loose	Rating plate and extra rating plates	2/92, 2/102, 3/41, 4/77, 4/80, 4/84, 4/89, 4/95
K32	With two additional eyebolts for IM V1/IM V3	Mechanical design and degrees of protection	2/90, 4/88
K35	Metal external fan	Heating and ventilation	2/92, 2/101, 3/41, 4/77, 4/80, 4/84, 4/89, 4/95
K36	Special bearing for DE and NDE, bearing size 63	Bearings and lubrication	2/101, 4/94
K37	Low-noise version for 2-pole motors with clockwise direction of rotation	Mechanical design and degrees of protection	2/90, 2/99, 3/38, 4/76, 4/80, 4/83, 4/88, 4/94
K38	Low-noise version for 2-pole motors with counter-clockwise direction of rotation		2/90, 2/99, 3/38, 4/76, 4/80, 4/84, 4/88, 4/94
K40	Regreasing device	Bearings and lubrication	2/91, 2/101, 4/77, 4/80, 4/84, 4/88, 4/94
K42	Shaft extension with standard dimensions, without feather keyway	Shaft and rotor	2/91, 2/101, 3/41, 4/77, 4/80, 4/89, 4/94
K45	Anti-condensation heating for 230 V	Heating and ventilation	2/92, 2/101, 3/41, 4/80, 4/84
K46	Anti-condensation heating for 115 V		2/92, 2/101, 3/41, 4/80, 4/84
K50	IP65 degree of protection	Mechanical design and degrees of protection	2/90, 2/99, 3/38, 4/76, 4/80, 4/84, 4/88, 4/94
K52	IP56 degree of protection	Mechanical design and degrees of protection	2/90, 2/99, 4/76, 4/80, 4/84, 4/88, 4/94
	IP56 degree of protection (non-heavy-sea)		3/38
K53	Explosion-proof connection box, Ex d IIC type of protection	Motor connection and connection box	4/82
K54	One metal cable gland		2/87, 2/95, 4/87, 4/92
K55	Cable gland, max. configuration		2/87, 2/95
	Cable gland, max. configuration, certified according to ATEX		4/87, 4/92
K57	DIN 89280 cable gland, maximum configuration		3/34
K82	Mechanical manual brake release with lever (no locking)	Modular technology – Additional versions	2/90, 2/98

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The meaning of the order codes however varies depending on the catalog section!			
K83	Rotation of the connection box through 90°, entry from DE	Motor connection and connection box	2/87, 2/95, 3/34, 4/76, 4/79, 4/82, 4/87, 4/92
K84	Rotation of the connection box through 90°, entry from NDE		2/87, 2/95, 3/34, 4/76, 4/79, 4/82, 4/87, 4/92
K85	Rotation of the connection box through 180°		2/87, 2/95, 3/34, 4/76, 4/79, 4/82, 4/87, 4/92
K94	Located bearing DE	Bearings and lubrication	2/91, 2/101, 4/77, 4/80, 4/88, 4/94
L00	Vibration quantity level B	Balance and vibration quantity	1/62, 1/67
	Next larger connection box	Motor connection and connection box	2/87, 2/95, 4/79, 4/87, 4/92
	Larger connection box (1XB1631 connection box)		3/34
L01	Balancing without key	Balance and vibration quantity	1/62
L01	Undrilled entry plate	Motor connection and connection box	2/94, 3/34
L02	Full-key balancing	Balance and vibration quantity	1/62
L03	Vibration-proof version	Mechanical design and degrees of protection	2/90, 2/99, 4/76, 4/80, 4/84, 4/88, 4/94
L04	Shaft extension with standard dimensions, without feather keyway	Shaft and rotor	1/62
L04	Located bearing NDE	Bearings and lubrication	2/91, 2/101, 4/77, 4/80, 4/88, 4/94
L05	Second standard shaft extension	Shaft and rotor	1/62, 1/67
L06	Standard shaft made of stainless steel		1/62, 1/67
L07	Concentricity of shaft extension in accordance with DIN 42955 Tolerance R		1/62, 1/67
L08	Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors		1/62, 1/67
L08	Anti-condensation heating for 400 V	Heating and ventilation	3/41
L09	Anti-condensation heating for 500 V		3/41
L12	Condensation drainage holes	Mechanical design and degrees of protection	2/90, 2/99, 4/76, 4/80, 4/88, 4/94
L13	External grounding	Motor connection and connection box	2/87, 2/95, 4/87, 4/92
L20	Located bearing DE	Bearings and lubrication	1/62, 1/67
L21	Located bearing NDE		1/62
L22	Bearing design for increased cantilever forces		1/62, 1/67
L23	Regreasing device		1/62, 1/67
L25	Special bearing for DE and NDE, bearing size 63		1/62, 1/67
L27	Insulated bearing cartridge		2/101, 4/84, 4/94
L36	Sheet metal fan cover	Heating and ventilation	2/101, 3/41
L39	Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	Shaft and rotor	2/91, 2/101, 4/77, 4/80, 4/84, 4/89, 4/94
L44	3 cables protruding, 0.5 m long	Motor connection and connection box	2/87
L45	3 cables protruding, 1.5 m long		2/87
L47	6 cables protruding, 0.5 m long		2/87
L48	6 cables protruding, 1.5 m long		2/87, 2/95, 3/35
L49	6 cables protruding, 3 m long		2/87, 2/95, 3/35
L50	Bearing insulation DE	Bearings and lubrication	1/67
L51	Bearing insulation NDE		1/67
L51	Protruding cable ends – right side	Motor connection and connection box	2/95
L52	Protruding cable ends – left side		2/95

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L68	Full-key balancing	Balance and vibration quantity	2/91, 2/101, 3/41, 4/77, 4/80, 4/84, 4/88, 4/94
L97	Auxiliary connection box 1XB3020	Motor connection and connection box	2/95, 3/35, 4/79, 4/82, 4/92
L99	Wire-lattice pallet	Packaging, safety notes, documentation and test certificates	2/92, 2/102, 4/77, 4/81, 4/85, 4/89, 4/95
M01	Connected in star for dispatch		1/63
M02	Connected in delta for dispatch		1/63
M10	Second rating plate, loose	Rating plate and extra rating plates	1/63, 1/67
M11	Rating plate, stainless steel		1/63, 1/67
M14	Anti-condensation heating, Ex. 115 V	Heating and ventilation	4/89, 4/95
M15	Anti-condensation heating, Ex. 230 V		4/89, 4/95
M27	Rust-resistant screws (externally)	Mechanical design and degrees of protection	2/90, 2/99, 3/38, 4/76, 4/80, 4/88, 4/94
M32	Connected in star for dispatch	Packaging, safety notes, documentation and test certificates	2/92, 2/102, 4/89, 4/95
M33	Connected in delta for dispatch		2/92, 2/102, 4/89, 4/95
M34	Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for mains-fed operation	Design for Zones according to ATEX	4/86, 4/91
M35	Design for Zone 22 for non-conductive dust (IP55) for mains-fed operation		3/40, 4/86, 4/91
M37	Balancing without key	Balance and vibration quantity	2/91, 2/101, 4/77, 4/80, 4/84, 4/88, 4/94
M38	Design for Zone 21, as well as Zone 22 for conductive dust (IP65) for converter-fed operation, with derating	Design for Zones according to ATEX	4/86, 4/91
M39	Design for Zone 22 for non-conductive dust (IP55) for converter-fed operation, with derating		3/40, 4/86, 4/91
M40	Rating plate, stainless steel	Rating plate and extra rating plates	2/92, 2/102, 4/89, 4/95
M44	Grounding brush for converter-fed operation	Mechanical design and degrees of protection	2/99
M46	Stud terminal for cable connection, accessories pack	Motor connection and connection box	2/95
M47	Saddle terminal for connection without cable lug, accessories pack		2/95, 4/82, 4/92
M50	Auxiliary connection box 1XB9016 (cast-iron)		3/35
M51	Auxiliary connection box 1XB9015 (stainless steel)		3/35
M58	Larger connection box (1XB1621 connection box)		3/34
M61	Flange version A660 instead of standard version		3/35
M62	6x PT100 Smart transmitter –40 to +140 °C Rosemount	Motor protection	3/34
M63	Larger connection box (1XB9600 connection box)	Motor connection and connection box	3/35
M64	Connection box on NDE		2/88, 3/35
M65	Standard shaft made of stainless steel	Shaft and rotor	2/92, 2/101, 4/89, 4/95
M68	Mechanical protection for encoder	Mechanical design and degrees of protection	2/90, 2/99, 4/84, 4/88, 4/94
M69	Terminal strip for main and auxiliary terminals	Motor connection and connection box	2/88
M72	Design for Zone 2 for mains-fed operation Ex nA II T3 according to IEC/EN 60079-15	Design for Zones according to ATEX	3/40, 4/86, 4/91
M73	Design for Zone 2 for converter-fed operation, with derating Ex nA II T3 according to IEC/EN 60079-15		3/40, 4/86, 4/91
M74	Design (IP55) for Zone 2 and 22, for non-conductive dust, for mains-fed operation	Design for Zones according to ATEX	4/86, 4/91
M75	Design (IP55) for Zone 2 and 22, for non-conductive dust, for converter-fed operation, with derating		4/86, 4/91
M76	Design (IP65) for Zone 1 and 21, as well as Zone 22 for conductive dust, for mains-fed operation		4/82
M77	Design (IP65) for Zone 1 and 21, as well as Zone 22 for conductive dust, for converter-fed operation – with derating		4/82
M88	Auxiliary connection box 1XB9014 (aluminum)	Motor connection and connection box	3/35

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The meaning of the order codes however varies depending on the catalog section!			
M91	Special paint for use offshore	Colors and paint finish	2/97, 4/76, 4/80, 4/83, 4/93
M94	Special finish sea air resistant		2/89, 2/97, 4/80, 4/83, 4/88, 4/93
M95	Mounting of explosion-proof separately driven fan Ex nA for use in Zone 2	Special technology	4/93
M96	Mounting of explosion-proof separately driven fan II 2D for use in Zone 21		4/93
M97	Mounting of explosion-proof separately driven fan II 3D for use in Zone 22		4/88, 4/93
M98	Mounting of explosion-proof separately driven fan Ex de for use in Zone 1		4/83
N01	Temperature class 155 (F), used acc. to 155 (F), with service factor	Windings and insulation	1/60
N02	Temperature class 155 (F), used acc. to 155 (F), with increased output		1/60
N03	Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature		1/60, 1/65
N05	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %		1/60
N05	Mounting of HOG 10 D 1024 I with terminal box/protection against dust	Special technology	3/38
N06	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	Windings and insulation	1/60, 1/65
N06	Mounting of HOG 10 DN 1024 I with terminal box/protection against dust (zero signal)	Special technology	3/38
N07	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	Windings and insulation	1/60
N08	Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %		1/60
N08	Mounting of HOG 10 DN 1024 I with terminal box/protection against humidity (zero signal)	Special technology	3/38
N11	Temperature class 180 (H) at rated output and max. CT 60 °C	Windings and insulation	1/60, 1/65
N20	Increased air humidity/temperature with 30 to 60 g water per m ³ of air		1/60, 1/65
N21	Increased air humidity/temperature with 60 to 100 g water per m ³ of air		1/60, 1/65
N30	Automatic re-lubricating device EasyMatic	Bearings and lubrication	3/40
N31	Automatic re-lubricating device STAR CONTROL TIME M120		3/40
N32	Automatic re-lubricating device STAR CONTROL IMPULSE L250		3/40
N40	Certification for first motor according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	Marine version – Essential Service for Propulsion	5/17
N41	Certification for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion		5/17
N42	Certification for first motor according to BV (Bureau Veritas), France, Essential Service for Propulsion		5/17
N43	Certification for additional motors according to BV (Bureau Veritas), France, Essential Service for Propulsion		5/17
N44	Certification for first motor according to CCS (Chinese Classification Society), China, Essential Service for Propulsion		5/18
N45	Certification for additional motors according to CCS (Chinese Classification Society), China, Essential Service for Propulsion		5/18
N46	Certification for first motor according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion		5/18
N47	Certification for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion		5/18
N48	Certification for first motor according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion		5/18
N49	Certification for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion		5/18
N50	Certification for first motor according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion		5/18
N51	Certification for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion	Marine version – Essential Service for Propulsion	5/18
N52	Certification for first motor according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion		5/18
N53	Certification for additional motors according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion		5/18
N81	Cable entry in direction of NDE with rotation of the terminal box console through 180°	Motor connection and connection box	3/34
N82	Cable entry in direction of DE with rotation of the terminal box console through 180°		3/34
N83	Cable entry from the top		3/34

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The meaning of the order codes however varies depending on the catalog section!			
N84	Rotation of the terminal box console through 180°	Motor connection and connection box	3/34
N85	Connection box on NDE		3/34
P01	Next larger standard flange	Mechanical design and degrees of protection	1/61, 1/66
Q00	PE connection without cable lug	Motor connection and connection box	3/34
Q01	Measuring nipple for SPM shock pulse measurement for bearing inspection	Bearings and lubrication	1/62, 1/67
Q02	Anti-condensation heating for 230 V	Heating and ventilation	1/63, 1/67
Q03	Anti-condensation heating for 115 V		1/63, 1/67
Q72	Installation of 2 PT 100 screw-in resistance thermometers in basic circuit for rolling-contact bearings	Motor protection	1/65
Q80	Extension of liability for defects by 12 to 24 months	Extension of liability for defects	3/41
Q81	Extension of liability for defects by 18 to 30 months		3/41
Q82	Extension of liability for defects by 24 to 36 months		3/41
Q83	Extension of liability for defects by 30 to 42 months		3/41
Q84	Extension of liability for defects by 36 to 48 months		3/41
Q85	Extension of liability for defects by 48 to 60 months		3/41
R10	Rotation of the connection box through 90°, entry from DE	Motor connection and connection box	1/60, 1/65
R11	Rotation of the connection box through 90°, entry from NDE		1/60, 1/65
R12	Rotation of the connection box through 180°		1/60, 1/65
R15	One metal cable gland		1/60, 1/65
R17	Stud terminal for cable connection, accessories pack		1/65
R18	Cable gland, max. configuration		1/65
R20	3 cables protruding, 0.5 m long		1/60
R21	3 cables protruding, 1.5 m long		1/60
R22	6 cables protruding, 0.5 m long		1/60
R23	6 cables protruding, 1.5 m long		1/60
R24	6 cables protruding, 3 m long		1/60
R30	Reduction piece for M cable gland in accordance with British Standard, both cable entries mounted		1/60
R50	Larger connection box		1/60, 1/65
R74	Silicone-free version		1/65
S00	Unpainted (only cast-iron parts primed)	Colors and paint finish	1/61, 1/66
S01	Unpainted, only primed		1/61, 1/66
S03	Special finish sea air resistant		1/61
S04	Special paint for use offshore		1/61
S10	Special finish in RAL 7030 stone gray		1/65
X00	Designed in accordance with ABS (American Bureau of Shipping), USA, Non-Essential Service	Marine version – Non-Essential Service	5/14
X01	Designed in accordance with BV (Bureau Veritas), France, Non-Essential Service		5/14
X03	Designed in accordance with DNV (Det Norske Veritas), Norway, Non-Essential Service		5/14
X04	Designed in accordance with GL (Germanischer Lloyd), Germany, Non-Essential Service		5/14
X05	Designed in accordance with KR (Korean Register of Shipping), Korea, Non-Essential Service		5/14
X06	Designed in accordance with LR (Lloyds Register), Great Britain, Non-Essential Service		5/14
X10	Designed in accordance with ABS (American Bureau of Shipping), USA, Essential Service	Marine version – Essential Service	5/15
X11	Designed in accordance with BV (Bureau Veritas), France, Essential Service		5/15
X12	Designed in accordance with CCS (Chinese Classification Society), China, Essential Service		5/15
X13	Designed in accordance with DNV (Det Norske Veritas), Norway, Essential Service		5/15
X14	Designed in accordance with GL (Germanischer Lloyd), Germany, Essential Service		5/15
X15	Designed in accordance with KR (Korean Register of Shipping), Korea, Essential Service		5/15
X16	Designed in accordance with LR (Lloyds Register), Great Britain, Essential Service		5/15

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Order code	Special versions	Category	For further information, see Page
The order codes with blue background apply exclusively to Catalog Section 1 "SIMOTICS GP/SD 1LE1/1PC1 Standard Motors".			
The order codes with gray background apply to Catalog Section 1 "SIMOTICS GP/SD 1LE1/1PC1 Standard Motors" as well as to Catalog Section 2 "SIMOTICS GP/SD 1LA/1LG/1LP/1PP Standard Motors" or to Catalog Section 3 "SIMOTICS N-compact Non-Standard Motors".			
The meaning of the order codes however varies depending on the catalog section!			
X20	Designed in accordance with ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	Marine version – Essential Service for Propulsion	5/16
X21	Designed in accordance with BV (Bureau Veritas), France, Essential Service for Propulsion		5/16
X22	Designed in accordance with CCS (Chinese Classification Society), China, Essential Service for Propulsion	Marine version – Essential Service for Propulsion	5/17
X23	Designed in accordance with DNV (Det Norske Veritas), Norway, Essential Service for Propulsion		5/17
X24	Designed in accordance with GL (Germanischer Lloyd), Germany, Essential Service for Propulsion		5/17
X25	Designed in accordance with KR (Korean Register of Shipping), Korea, Essential Service for Propulsion		5/17
X26	Designed in accordance with LR (Lloyds Register), Great Britain, Essential Service for Propulsion		5/17
X30	Tests for first motor according to ABS (American Bureau of Shipping), USA, Essential Service	Marine version – Essential Service	5/16
X31	Tests for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service		5/16
X32	Tests for first motor according to BV (Bureau Veritas), France, Essential Service		5/16
X33	Tests for additional motors according to BV (Bureau Veritas), France, Essential Service		5/16
X34	Tests for first motor according to CCS (Chinese Classification Society), China, Essential Service		5/16
X35	Tests for additional motors according to CCS (Chinese Classification Society), China, Essential Service		5/16
X36	Tests for first motor according to DNV (Det Norske Veritas), Norway, Essential Service		5/16
X37	Tests for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service		5/16
X38	Tests for first motor according to GL (Germanischer Lloyd), Germany, Essential Service		5/16
X39	Tests for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service		5/16
X40	Tests for first motor according to KR (Korean Register of Shipping), Korea, Essential Service		5/16
X41	Tests for additional motors according to KR (Korean Register of Shipping), Korea, Essential Service		5/16
X42	Tests for first motor according to LR (Lloyds Register), Great Britain, Essential Service		5/16
X43	Tests for additional motors according to LR (Lloyds Register), Great Britain, Essential Service		5/16
X60	Tests for first motor according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion	Marine version – Essential Service for Propulsion	5/19
X61	Tests for additional motors according to ABS (American Bureau of Shipping), USA, Essential Service for Propulsion		5/19
X62	Tests for first motor according to BV (Bureau Veritas), France, Essential Service for Propulsion		5/19
X63	Tests for additional motors according to BV (Bureau Veritas), France, Essential Service for Propulsion		5/19
X64	Tests for first motor according to CCS (Chinese Classification Society), China, Essential Service for Propulsion		5/19
X65	Tests for additional motors according to CCS (Chinese Classification Society), China, Essential Service for Propulsion		5/19
X66	Tests for first motor according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion		5/19
X67	Tests for additional motors according to DNV (Det Norske Veritas), Norway, Essential Service for Propulsion		5/19
X68	Tests for first motor according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion		5/19
X69	Tests for additional motors according to GL (Germanischer Lloyd), Germany, Essential Service for Propulsion		5/19
X70	Tests for first motor according to KR (Korean Register of Shipping), Korea, Essential Service for Propulsion		5/19
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The meaning of the order codes however varies depending on the catalog section!			
X72	Tests for first motor according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion	Marine version – Essential Service for Propulsion	5/19
X73	Tests for additional motors according to LR (Lloyds Register), Great Britain, Essential Service for Propulsion		5/19
X99	Tests in presence of representatives of the customer (in addition to the inspector of the classification society)	Marine version – Additional options for Essential Service and Essential Service for Propulsion	5/19
Y50	Temperature class 155 (F), used acc. to 130 (B), with higher coolant temperature and/or site altitude	Windings and insulation	1/60, 2/88, 2/96, 4/83, 4/87, 4/93
Y51	Special finish in special RAL colors	Colors and paint finish	1/61, 1/66, 2/89, 2/97, 4/76, 4/80, 4/83, 4/87, 4/93
Y52	Temperature class 155 (F), used acc. to 155 (F), other requirements	Windings and insulation	1/60, 2/88, 2/96
Y53	Standard finish in other standard RAL colors	Colors and paint finish	1/65, 2/97, 4/79, 4/83, 4/93
	Standard paint finish in other colors		3/35
Y54	Special finish in other standard RAL colors		1/61, 1/66, 2/89, 2/97, 4/76, 4/79, 4/83, 4/87, 4/93
	Special finish in other colors		3/35
Y55	Non-standard cylindrical shaft extension	Shaft and rotor	1/62, 1/67, 2/92, 2/101, 3/41, 4/77, 4/80, 4/84, 4/89, 4/95
Y58	Non-standard shaft extension, DE		1/63
Y59	Non-standard shaft extension, NDE		1/63
Y68	Alternative converter (SIMOVERT MASTERDRIVES, SINAMICS G110, SINAMICS G120 (for 1LA motors up to FS 225), SINAMICS S120 or ET 200S FC)	Design for Zones according to ATEX	4/86, 4/91
Y70	Mounting a special type of rotary pulse encoder	Special technology	3/38
Y74	Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against humidity		2/99, 3/38
Y76	Mounting of HOG 10 DN 1024 I rotary pulse encoder + centrifugal switch, (speed rpm), terminal box protection against dust		2/99, 3/38
Y79	Mounting of HOG 10 DN 1024 I rotary pulse encoder + ESL 93, (speed rpm), terminal box protection against dust		2/99
Y80	Extra rating plate or rating plate with deviating rating plate data	Rating plate and extra rating plates	1/63, 1/67, 2/92, 2/102, 3/41, 4/77, 4/81, 4/84, 4/89, 4/95
Y81	Separately driven fan with non-standard voltage and/or frequency	Heating and ventilation	2/101, 3/41, 4/84, 4/95
Y82	Extra rating plate with identification codes	Rating plate and extra rating plates	1/63, 1/68, 2/92, 2/102, 3/41, 4/77, 4/81, 4/84, 4/89, 4/95
Y84	Additional information on rating plate and on package label (max. 20 characters)		1/63, 1/68, 2/92, 2/102, 4/77, 4/81, 4/84, 4/89, 4/95
Y85	Adhesive label, supplied loose		1/63
Y98	Printed Operating Instructions (Compact) for explosion-proof motors enclosed in other official EU languages	Packaging, safety notes, documentation and test certificates	4/77, 4/81, 4/85, 4/89, 4/95

Explanation of the metal factor

Surcharges will be added to the prices of products that contain silver, copper, aluminum, lead and/or gold if the respective basic official prices for these metals are exceeded.

The surcharges will be determined based on the following criteria:

- Official price of the metal
- Official price on the day prior to receipt of the order or prior to the release order (=daily price) for
 - silver (sale price of the processed material),
 - gold (sale price of the processed material)

Source: Umicore, Hanau
(<http://www.metalsmanagement.umicore.com>)

and for

- copper (low DEL notation + 1 %),
- aluminum (aluminum in cables) and
- lead (lead in cables)

Source: German Trade Association for Cables and Conductors (<http://www.kabelverband.org>)

- Metal factor of the products
- Certain products are assigned a metal factor. The metal factor determines the official price as of which the metal surcharges are charged and the calculation method used (weight or percentage method). An exact explanation is given below.

Structure of the metal factor

The metal factor consists of several digits; the first digit indicates whether the method of calculation refers to the list price or a discounted price (customer net price) (L = list price / N = customer net price).

The remaining digits indicate the method of calculation used for the respective metal. If no surcharge is added, a "-" is used.

1st digit	List or customer net price using the percentage method
2nd digit	for silver (AG)
3rd digit	for copper (CU)
4th digit	for aluminum (AL)
5th digit	for lead (PB)
6th digit	for gold (AU)

Weight method

The weight method uses the basic official price, the daily price and the raw material weight. In order to calculate the surcharge, the basic official price must be subtracted from the daily price. The result is then multiplied by the raw material weight.

The basic official price can be found in the table below using the number (2 to 9) of the respective digit of the metal factor. The raw material weight can be found in the respective product descriptions.

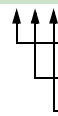
Percentage method

Use of the percentage method is indicated by the letters A-Z at the respective digit of the metal factor.

The surcharge is increased – dependent on the deviation of the daily price compared with the basic official price – using the percentage method in "steps" and consequently offers surcharges that remain constant within the framework of this "step range". A higher percentage rate is charged for each new step. The respective percentage level can be found in the table below.

Metal factor examples

LEA---



Basis for % surcharge: List price
Silver: basis 150 €, step range 50 €, 0.5 %
Copper: basis 150 €, step range 50 €, 0.1 %
No surcharge for aluminum
No surcharge for lead
No surcharge for gold

N-A6--



Basis for % surcharge: Customer net price
No surcharge for silver
Copper: basis 150 €, step range 50 €, 0.1 %
Aluminum acc. to weight, basic offic. price 225 €
No surcharge for lead
No surcharge for gold

--3---



No basis necessary
No surcharge for silver
Copper acc. to weight, basic official price 150 €
No surcharge for aluminum
No surcharge for lead
No surcharge for gold

Appendix

Metal surcharges

Values of the metal factor

Percentage method	Basic official price	Step range	% surcharge 1st step	% surcharge 2nd step	% surcharge 3rd step	% surcharge 4th step	% surcharge per additional step
			Official price 151 € – 200 €	Official price 201 € – 250 €	Official price 251 € – 300 €	Official price 301 € – 350 €	
A	150	50	0.1	0.2	0.3	0.4	0.1
B	150	50	0.2	0.4	0.6	0.8	0.2
C	150	50	0.3	0.6	0.9	1.2	0.3
D	150	50	0.4	0.8	1.2	1.6	0.4
E	150	50	0.5	1.0	1.5	2.0	0.5
F	150	50	0.6	1.2	1.8	2.4	0.6
H	150	50	1.2	2.4	3.6	4.8	1.2
J	150	50	1.8	3.6	5.4	7.2	1.8
			176 € – 225 €	226 € – 275 €	276 € – 325 €	326 € – 375 €	
O	175	50	0.1	0.2	0.3	0.4	0.1
P	175	50	0.2	0.4	0.6	0.8	0.2
R	175	50	0.5	1.0	1.5	2.0	0.5
			226 € – 275 €	276 € – 325 €	326 € – 375 €	376 € – 425 €	
S	225	50	0.2	0.4	0.6	0.8	0.2
U	225	50	1.0	2.0	3.0	4.0	1.0
V	225	50	1.0	1.5	2.0	3.0	1.0
W	225	50	1.2	2.5	3.5	4.5	1.0
			151 € – 175 €	176 € – 200 €	201 € – 225 €	226 € – 250 €	
Y	150	25	0.3	0.6	0.9	1.2	0.3
			401 € – 425 €	426 € – 450 €	451 € – 475 €	476 € – 500 €	
Z	400	25	0.1	0.2	0.3	0.4	0.1
Price basis (1st digit)							
L	Charged on the list price						
N	Charged on the customer net price or discounted list price						
Weight method	Basic official price						
2	100						
3	150						
4	175						
5	200	Calculation based on raw material weight					
6	225						
7	300						
8	400						
9	555						
Misc.							
-	No metal surcharge						

Conditions of sale and delivery, Export regulations

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Surcharges will be added to the prices of products that contain silver, copper, aluminium, lead and/or gold, if the respective basic official prices for these metals are exceeded. These surcharges will be determined based on the official price and the metal factor of the respective product.

The surcharge will be calculated on the basis of the official price on the day prior to receipt of the order or prior to the release order.

The metal factor determines the official price as of which the metal surcharges are charged and the calculation method used. The metal factor, provided it is relevant, is included with the price information of the respective products. An exact explanation of the metal factor can be found on the page entitled "Metal surcharges".

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