

Standard motors up to frame size 315 L



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IEC Squirrel-Cage Motors

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Orientation

Overview



Standard motors from Siemens are characterised by their flexibility, ruggedness and energy efficiency. In general, all motors are suitable for converter-fed operation with mains 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 0.06 to 200 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 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

Low-voltage motors are manufactured to the NEMA standard for compliance with the local specifications of the NAFTA markets (USA, Canada and Mexico). This includes motors designed in accordance with the US act, EPACT (specified minimum efficiency levels), as well as motors with NEMA premium efficiency levels. The NEMA motor series provide the highest operating reliability for maximum service life.

Further information regarding NEMA motors is available on the Internet:

<http://www.sea.siemens.com/motors>

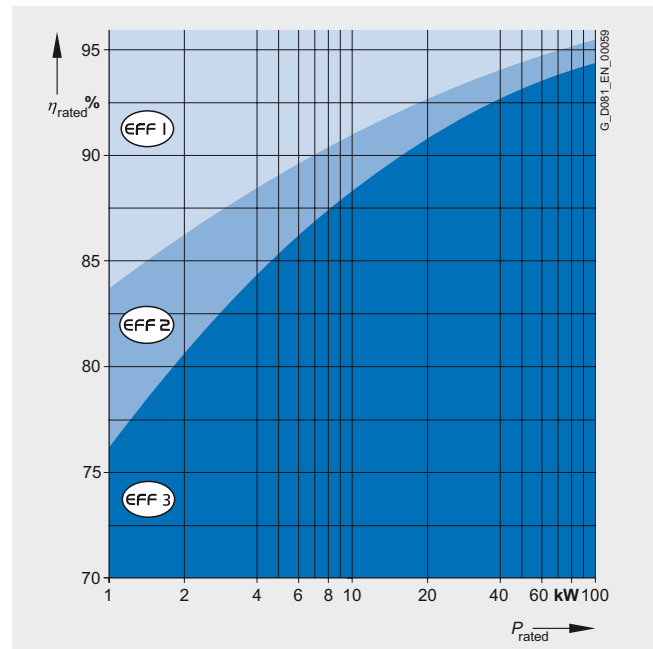
Classified energy-saving motors for an efficient energy balance

Depending on requirements, energy-saving motors are available for an efficient energy balance – for EU requirements in accordance with CEMEP (European Committee of Manufacturers of Electrical Machines and Power Electronics) and for the North American market in accordance with EPACT (US Energy Policy Act).

Efficiency requirements according to CEMEP

CEMEP classifies efficiency levels for 2-pole and 4-pole motors with outputs of 1.1 to 90 kW. Three efficiency classes are defined:

- **EFF1** (High Efficiency motors – referred to below as “Motors with high efficiency”)
- **EFF2** (Improved Efficiency motors – referred to below as “Motors with improved efficiency”)
- **EFF3** (Conventional Efficiency motors)



At a glance: EU/CEMEP for Europe

- Status
Voluntary compliance with efficiency classification
- Covers
2-pole, 4-pole squirrel-cage motors from 1.1 to 90 kW (at 400 V and 50 Hz)
- Required marking
Efficiency class on the motor rating plate
 η_N , $\eta_{3/4}$ load and efficiency class in the documentation

IEC Squirrel-Cage Motors

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Overview (continued)

Efficiency requirements according to EPACT

In 1997, an act was passed in the US to define minimum efficiencies for low-voltage three-phase motors (EPACT).

An act is in force in Canada that is largely identical, although it is based on different verification methods. The efficiency is verified for these motors for the USA using IEEE 112, Test Method B and for Canada using CSA-C390. Apart from a few exceptions, all three-phase low-voltage motors imported into the USA or Canada must comply with the legal efficiency requirements. The law demands minimum efficiency levels for motors with a voltage of 230 and 460 V at 60 Hz, in the output range of 1 to 200 HP (0.75 to 150 kW) with 2, 4 and 6 poles. Explosion-proof motors must also be included.

The EPACT efficiency requirements exclude, for example:

- Motors whose frame size output classification does not correspond with the standard series according to NEMA MG1-12.
- Flange-mounting motors
- Brake motors
- Converter-fed motors
- Motors with design letter C and higher

EPACT 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 EPACT motors which must be marked by law:

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

At a glance: EPACT/CSA for North America

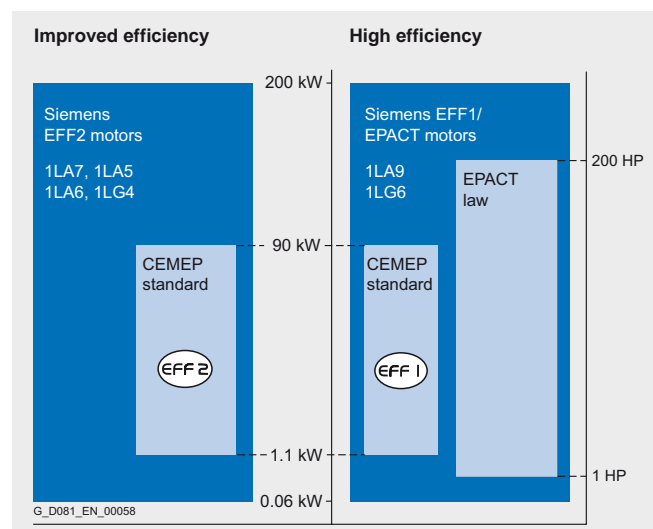
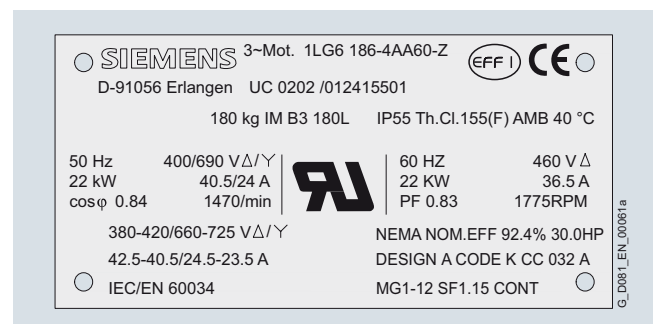
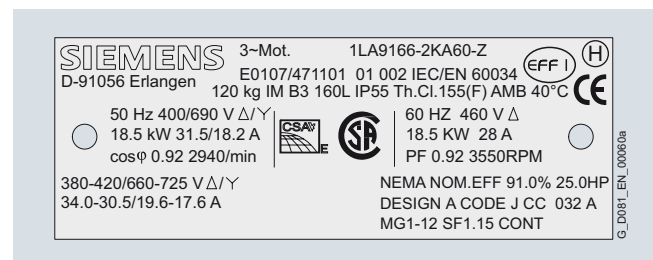
- Status
Minimum efficiencies required by law
- Covers
2-, 4- and 6-pole 60 Hz squirrel-cage motors from 1 to 200 HP (0.75 to 150 kW) for 230 V and/or 460 V 60 Hz
- Required marking
Efficiency η_N on the motor rating plate

Energy-saving motors from Siemens according to CEMEP or EPACT

The product range of standard motors exclusively comprises motors in the EU efficiency classes EFF1 "High Efficiency" or EFF2 "Improved Efficiency". The active parts of the motor have been optimized so that the requirements of the CEMEP efficiency classes EFF1 and EFF2 are fulfilled. The procedure for determining the efficiency is based on the summation of losses in accordance with IEC 60034-2. With these energy-saving motors a significant reduction in energy costs can be achieved as compared to conventional motors according to EFF3.

EPACT motors from Siemens are available CC certified, marked with the number CC032A on the rating plate and optionally also according to UL with the recognition mark. Siemens offers motors with the CSA Energy Efficiency Verification Mark specially for the Canadian market.

At a glance: Energy-saving motors from Siemens according to CEMEP EFF1/EFF2, EPACT and CSA



IEC Squirrel-Cage Motors

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Overview (continued)

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 optimised for efficiency and therefore reduce the operating costs.

Standard motors with reduced output without external fan

Self-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 under which an external fan has an adverse effect (e.g. simple cleaning in the food industry, textile industry)

Standard motors that can be supplied from stock with an extremely short delivery time

The most commonly used basic versions of standard motor series 1LA7, 1LA5 and 1LG4 can be supplied from stock – some of these are already marked with “CCC” (China Compulsory Certification) for export to China. Apart from these, a so-called “Sector version” is available for some of the motors available from stock. These include a located bearing at the drive end (DE), PTC thermistor and screwed on feet for the IM B35 type of construction.

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

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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 CSA ¹⁾, UL ²⁾, EXAM ³⁾, PTB ⁴⁾, CQC ⁵⁾)
- The ruggedness and lack of complexity of the components guarantee an extremely long service life
- Complete product spectrum for energy-saving motors according to EU/CEMEP and EPACT
- Extremely easy selection of energy-saving motors due to the efficiency classification (EFF1/EFF2)
- Energy-saving motors in motor series 1LA9 and 1LG6 meet both the EFF1 and EPACT efficiency levels.
- Reduction in operating costs thanks to a high degree of efficiency with EFF1
- Higher motor service life thanks to lower winding temperature in EFF1 and EPACT 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
- Short delivery times for motors from stock
- 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 mains 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 Zertifier GmbH (previously BVS = Bergbau Versuchsstrecke)

⁴⁾ Physikalisch-Technische Bundesanstalt

⁵⁾ China Quality Certification

Integration

MICROMASTER 411/ COMBIMASTER 411 distributed drive solutions

The MICROMASTER 411/COMBIMASTER 411 series is included in Catalog DA 51.3 which contains the complete product spectrum with ordering data, technical details and explanations.

Application

MICROMASTER 411 and COMBIMASTER 411 are the ideal solution for distributed drive applications that require a high degree of protection. The devices are designed for a wide drive range – for simple individual applications for pumps and fans through to multiple drives for conveyor systems in networked control systems. The ECOFAST versions of the MICROMASTER 411/COMBIMASTER 411 frequency converter series contain plug-in cables for the power supply, communications interface and motor connections. They support fast and problem-free replacement in time-critical applications and are completely compatible with the ECOFAST technology systems. They are based on the universal MICROMASTER 420 converter series and are characterised by customer-oriented performance and ease of use.

Structure

The modular structure allows MICROMASTER 411/COMBIMASTER 411 products and their accessories to be individually selected, e.g. electromechanical brake control module or PROFIBUS module.

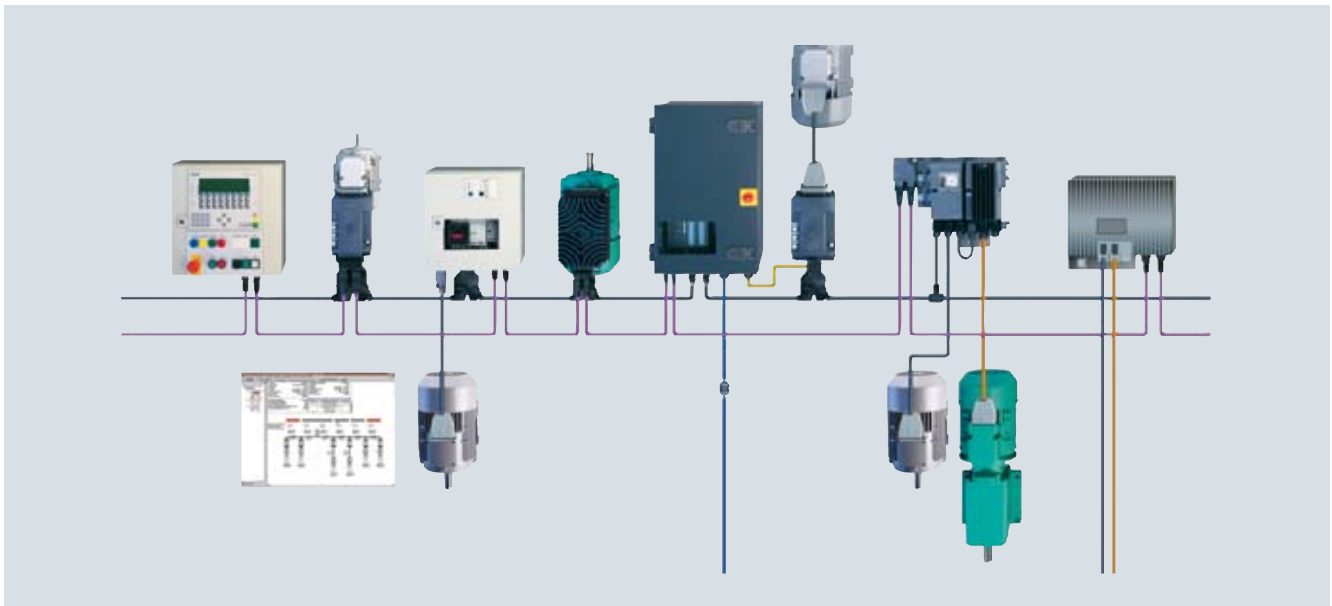
Main features:

- Output range: 0.37 to 3.0 kW, 400 V, 3AC
- IP66 degree of protection (MICROMASTER 411), self-cooling
- Electrical isolation between the electronics and the connection terminals
- Parameter sets for fast startup and cost savings
- Modular structure with numerous accessories
- Operation without operator panel possible (using jumpers and/or control potentiometer)
- Integrated control potentiometer accessible from outside.

Accessories (overview):

- Basic Operator Panel (BOP) for parameterising the converter
- Plain text Advanced Operator Panel (AOP) for MICROMASTER 411 and COMBIMASTER 411 with multiple-language display
- PROFIBUS module
- AS-Interface module
- DeviceNet module
- REM module (dynamic brake and control module for electro-mechanical brake)
- EM module (electromechanical brake control module)
- PC connection kit
- Mounting kits for installing the operator panels
- PC startup programs

ECOFAST system



ECOFAST is a system which permits extensive decentralisation and a modular structure for installation elements on the component level.

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Integration (continued)

Advantages

The main advantages of the ECOFAST motor connector over a terminal strip are as follows:

- Fast assembly of I/O devices (e.g. motor starters) from the ECOFAST system
- Reduction of assembly and repair times at the end user
- No wiring errors due to connector technology
- Replacement of motor without intervention in the electronics

Main features of the ECOFAST motor connector (with separate MICROMASTER 411 frequency converter)

The motor connector is mounted in the factory and replaces the connection box with terminal board. The connector is mounted towards the non-drive end (NDE). It comprises an angled motor connection casing that can be rotated by $4 \times 90^\circ$. A 10-pole (+ earth) male insert is used in the housing. In the plug-in connector, the winding connections are connected and optionally the power supply for the brake and the signal leads for the temperature sensors.

The ECOFAST motor connector is compatible with the products of the ECOFAST field device system. Further information can be found in Catalog IK PI.

The mounting dimensions of this casing match those of standard industrial connectors, so it is possible to use a complete series of different standard inserts (such as Han E, ES, ESS from Harting). The motor circuit (star or delta connection) is selected in the mating connector for motor connection. The relevant jumpers are inserted by the customer in the mating connector. As a casing for the mating connector, all standard sleeve casings with lengthwise locking, frame size 10B (e.g. from Harting) can be used.

Only one sensor (temperature sensor or PTC thermistor) can be connected.

Maximum admissible mains voltage on motor connector: ≤ 500 V

Availability of the ECOFAST motor connector

The ECOFAST motor connector can be supplied for the following motor versions with the exception of the explosion-proof motors:

- Frame sizes 56 M to 132 M
- Output range 0.06 to 5.5 kW (7.5 kW on request)
- Direct on-line starting: Voltage code 1 for 230 V Δ /400 VY, 50 Hz
- Star-delta starting: Voltage code **9** with order code **L1U** 400 V Δ , 50 Hz

More information

Further information is available in the Catalogs IK PI and DA 51.3 "MICROMASTER 411/COMBIMASTER 411 distributed drive solutions" as well as on the Internet at:

<http://www.siemens.com/ecofast>

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

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Technical specifications

The following table lists the most important technical specifications. For further information and details, see catalog part 0 "Introduction".

Technical specifications at a glance

Type of motor	IEC squirrel-cage motor
Connection types	Star connection/delta connection You can establish the connection type used from the Order No. supplements in the selection and ordering data for the required motor.
Number of poles	2, 4, 6, 8, pole-changing for constant load torque (pole-changing for fans, see catalog part 7 "Fan motors")
Rated speed (synchronous speed)	750 ... 3000 rpm
Rated output	0.06 ... 200 kW
Rated torque	0.25 ... 1700 Nm
Insulation of the stator winding to EN 60034-1 (IEC 60034-1)	Temperature class 155 (F), used acc. 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)	Self-ventilated (motor series 1LA, 1LG) Frame sizes 63 to 315 (IC 411), Frame size 56 (IC 410) Self-cooled (motor series 1LP) Frame sizes 63 to 315 (IC 410)
Admissible coolant temperature and site altitude	-20 °C ... +40 °C as standard, site altitude 1000 mm above sea level. See "Coolant temperature and site altitude" in catalog part 0 "Introduction".
Standard voltages according to EN 60038 (IEC 60038)	50 Hz: 230 V, 400 V, 500 V, 690 V The voltage 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):	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 part 0 "Introduction".
Vibration quantity level according to EN 60034-14 (IEC 60034-14)	Level A (standard – without special vibration requirements) Level B (with special vibration requirements) See "Balance and vibration quantity" in catalog part 0 "Introduction".
Shaft extension according to DIN 748 (IEC 60072)	Balance type: Half-key balancing See "Balance and vibration quantity" in catalog part 0 "Introduction".
Sound pressure level to DIN EN ISO 1680 (tolerance +3dB)	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.
Mechanical limit speeds	The limit speed for the required motor can be found on Page 5/6.
Packaging weights and dimensions	See "Packing weights and packing dimensions" in catalog part 0 "Introduction".
Rating plates	Fixed to the motor See "Rating plate" in catalog part 0 "Introduction".
Connection and connection boxes	See "Connection, circuit and connection box" in catalog part 0 "Introduction".
Bearing design	See "Bearings" in catalog part 0 "Introduction".
Cantilever forces	See "Admissible cantilever forces" in catalog part 0 "Introduction".
Options	See the selection and ordering data for "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.

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IEC Squirrel-Cage Motors

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Selection and ordering data

Preliminary selection of the motor according to motor type/series, speed or number of poles, frame size, rated output, rated torque, rated speed and rated current

Self-ventilated energy-saving motors with improved efficiency

Speed	Frame size	Rated output	Rated speed	Rated torque	Rated current at 400 V	Detailed selection and ordering data Page
rpm		kW	rpm	Nm	A	
Aluminum series 1LA7 and 1LA5 (motors with external fan)						
3000, 2-pole	56 M ... 225 M	0.09 ... 45	2830 ... 2960	0.30 ... 145	0.26 ... 78	2/10 ... 2/11
1500, 4-pole	56 M ... 225 M	0.06 ... 45	1350 ... 1470	0.42 ... 292	0.2 ... 80	2/12 ... 2/13
1000, 6-pole	63 M ... 225 M	0.09 ... 30	850 ... 978	1 ... 293	0.44 ... 61	2/14 ... 2/15
750, 8-pole	71 M ... 225 M	0.09 ... 22	630 ... 724	1.4 ... 290	0.36 ... 44.5	2/16 ... 2/17
1500/3000, 4/2-pole	63 M ... 200 L	0.1 ... 26	1330 ... 1465	0.72 ... 169	0.41 ... 48.5	2/18 ... 2/19
750/1500, 8/4-pole	90 S ... 200 L	0.35 ... 17	675 ... 730	5.1 ... 223	1.19 ... 40.5	2/20 ... 2/21
Cast-iron series 1LA6 and 1LG4 (motors with external fan)						
3000, 2-pole	100 L ... 315 L	3 ... 200	2890 ... 2982	9.9 ... 641	6.1 ... 325	2/38 ... 2/39
1500, 4-pole	100 L ... 315 L	2.2 ... 200	1420 ... 1496	15 ... 1285	4.7 ... 340	2/40 ... 2/41
1000, 6-pole	100 L ... 315 L	1.5 ... 160	925 ... 988	15 ... 1547	3.9 ... 285	2/42 ... 2/43
750, 8-pole	100 L ... 315 L	0.75 ... 132	679 ... 738	11 ... 1708	2.15 ... 245	2/44 ... 2/45

Self-ventilated energy-saving motors with high efficiency

Speed	Frame size	Rated output	Rated speed	Rated torque	Rated current at 400 V	Detailed selection and ordering data Page
rpm		kW/HP	rpm	Nm	A	
Aluminum series 1LA9 (motors with external fan)						
For use according to CEMEP						
3000, 2-pole	56 M ... 200 L	0.09 ... 37	2830 ... 2950	0.3 ... 120	0.24 ... 64	2/22 ... 2/23
1500, 4-pole	56 M ... 200 L	0.06 ... 30	1380 ... 1465	0.42 ... 196	0.22 ... 53	2/24 ... 2/25
1000, 6-pole	90 S ... 200 L	0.75 ... 22	925 ... 975	7.7 ... 215	2 ... 45	2/26 ... 2/27
For use in the North American market according to EPACT						
3600, 2-pole	56 M ... 200 L	0.12 ... 50	3440 ... 3555	0.25 ... 100	0.23 ... 57	2/28 ... 2/29
1800, 4-pole	56 M ... 200 L	0.08 ... 40	1715 ... 1770	0.33 ... 161	0.18 ... 47	2/30 ... 2/31
1200, 6-pole	90 S ... 200 L	1 ... 30	1140 ... 1175	6.2 ... 182	1.78 ... 40	2/32 ... 2/33
Cast-iron series 1LG6 (motors with external fan)						
For use according to CEMEP						
3000, 2-pole	180 M ... 315 L	22 ... 200	2955 ... 2982	71 ... 641	38.5 ... 320	2/48 ... 2/49
1500, 4-pole	180 M ... 315 L	18.5 ... 200	1470 ... 1490	120 ... 1282	34.5 ... 340	2/48 ... 2/49
1000, 6-pole	180 M ... 315 L	15 ... 160	975 ... 990	147 ... 1543	29.5 ... 280	2/50 ... 2/51
750, 8-pole	180 M ... 315 L	11 ... 132	725 ... 740	145 ... 1704	23.5 ... 240	2/50 ... 2/51
For use in the North American market according to EPACT						
3600, 2-pole	180 M ... 315 L	30 ... 300	3560 ... 3591	60 ... 595	34 ... 320	2/52 ... 2/53
1800, 4-pole	180 M ... 315 L	25 ... 300	1775 ... 1792	100 ... 1193	31 ... 335	2/54 ... 2/55
1200, 6-pole	180 M ... 315 L	20 ... 200	1178 ... 1192	121 ... 1195	25.5 ... 235	2/56 ... 2/57

Self-ventilated motors with increased output

Speed	Frame size	Rated output	Rated speed	Rated torque	Rated current at 400 V	Detailed selection and ordering data Page
rpm		kW	rpm	Nm	A	
Aluminum series 1LA9 (motors with external fan)						
3000, 2-pole	56 M ... 200 L	0.2 ... 53	2830 ... 2944	0.67 ... 172	0.51 ... 95	2/34 ... 2/35
1500, 4-pole	56 M ... 200 L	0.14 ... 43	1384 ... 1465	0.97 ... 280	0.44 ... 80	2/36 ... 2/37
Cast-iron series 1LG4 (motors with external fan)						
3000, 2-pole	180 M ... 280 M	30 ... 110	2950 ... 2975	97 ... 353	54 ... 184	2/46 ... 2/47
1500, 4-pole	180 L ... 280 M	30 ... 110	1465 ... 1488	196 ... 706	59 ... 198	2/46 ... 2/47
1000, 6-pole	180 L ... 280 M	18.5 ... 75	970 ... 985	182 ... 727	37.5 ... 136	2/46 ... 2/47
750, 8-pole	180 L ... 280 M	15 ... 55	720 ... 735	199 ... 715	34 ... 106	2/46 ... 2/47

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Selection and ordering data (continued)

Self-cooled motors without external fan

Speed	Frame size	Rated output	Rated speed	Rated torque	Rated current at 400 V	Detailed selection and ordering data Page
rpm		kW	rpm	Nm	A	
Aluminum series 1LP7 and 1LP5 (motors without external fan)						
3000, 2-pole	63 M ... 200 L	0.12 ... 16.5	The electrical data can be calculated and supplied on receipt of order.			2/58
1500, 4-pole	63 M ... 200 L	0.07 ... 12				2/59
1000, 6-pole	63 M ... 200 L	0.045 ... 8.5				2/60
750, 8-pole	63 M ... 200 L	0.045 ... 7.5				2/61
Cast-iron series 1LP4 (motors with external fan)						
3000, 2-pole	180 M ... 315 L	7.3 ... 67	2945 ... 2984	24 ... 214	0.068 ... 2.09	2/62
1500, 4-pole	180 M ... 315 L	6.2 ... 67	1465 ... 1488	40 ... 430	0.099 ... 3.46	2/63
1000, 6-pole	180 L ... 315 L	5 ... 44	970 ... 990	49 ... 424	0.175 ... 4.02	2/64
750, 8-pole	180 L ... 315 L	3.7 ... 37	725 ... 740	49 ... 477	0.169 ... 3.95	2/65

More information

For more information, please contact your local Siemens contact – see “Siemens Contacts Worldwide” in the Appendix.

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IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data

Rated output at		Frame size	Operating values at rated output							Order No.	Price	Weight
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz			
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	EFF2	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	Phase-out model	m kg	
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection												
0.09	0.11	56 M	2830	0.3		63	62	0.81	0.26	1LA7 050-2AA□□	3	
0.12	0.14	56 M	2800	0.41		65	64	0.83	0.32	1LA7 053-2AA□□	3	
0.18	0.21	63 M	2820	0.61		64	63	0.79	0.51	1LA7 060-2AA□□	3.5	
0.25	0.29	63 M	2830	0.84		65	65	0.80	0.69	1LA7 063-2AA□□	4.1	
0.37	0.43	71 M	2740	1.3		66	65	0.82	1	1LA7 070-2AA□□	5	
0.55	0.63	71 M	2800	1.9		71	70	0.82	1.36	1LA7 073-2AA□□	6	
0.75	0.86	80 M	2855	2.5		73	72	0.86	1.73	1LA7 080-2AA□□	9	
1.1	1.3	80 M	2845	3.7	EFF2	77	77	0.87	2.4	1LA7 083-2AA□□	11	
1.5	1.75	90 S	2860	5	EFF2	79	80	0.85	3.25	1LA7 090-2AA□□	12.9	
2.2	2.55	90 L	2880	7.3	EFF2	82	82	0.85	4.55	1LA7 096-2AA□□	15.7	
3	3.45	100 L	2890	9.9	EFF2	84	84	0.85	6.1	1LA7 106-2AA□□	22	
4	4.6	112 M	2905	13	EFF2	86	86	0.86	7.8	1LA7 113-2AA□□	29	
5.5	6.3	132 S	2925	18	EFF2	86.5	86.5	0.89	10.4	1LA7 130-2AA□□	39	
7.5	8.6	132 S	2930	24	EFF2	88	88	0.89	13.8	1LA7 131-2AA□□	48	
11	12.6	160 M	2930	36	EFF2	89.5	89.5	0.88	20	1LA7 163-2AA□□	68	
15	17.3	160 M	2930	49	EFF2	90	90.2	0.9	26.5	1LA7 164-2AA□□	77	
18.5	21.3	160 L	2940	60	EFF2	91	91.2	0.91	32	1LA7 166-2AA□□	86	
22	24.5	180 M	2940	71	EFF2	91.7	91.7	0.88	39.5 ¹⁾	1LA5 183-2AA□□	113	
30	33.5	200 L	2945	97	EFF2	92.3	92.3	0.89	53	1LA5 206-2AA□□	159	
37	41.5	200 L	2945	120	EFF2	92.8	92.8	0.89	65 ¹⁾	1LA5 207-2AA□□	179	
45	51	225 M	2960	145	EFF2	93.6	93.6	0.89	78 ¹⁾	1LA5 223-2AA□□	209	

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code						
	50 Hz		60 Hz				Without flange	With flange		With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ²⁾	IM V1 with protective cover ²⁾³⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	4	6	2	7	3
1LA7 05 □□	○	○	○	–	○	○	□	✓	–	✓	✓	✓	✓
1LA7 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA5 18 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–
1LA5 20 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–
1LA5 22 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").

²⁾ 1LA5 183-... to 1LA5 223-... motors (motor series 1LA5, frame size 180 M to 225 M) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

³⁾ The "Second shaft extension" option, order code **K16** is not possible.

⁴⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting torque	as multiple of rated current	torque			Measuring surface sound pressure level at 50 Hz	Sound pressure level at 50 Hz
▶ Phase-out model	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	L_{pFA} dB(A)	L_{WA} dB(A)
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA7 050-2AA□□	2	3.7	2.3	16	0.00015	41	52
1LA7 053-2AA□□	2.1	3.7	2.4	16	0.00015	41	52
1LA7 060-2AA□□	2	3.7	2.2	16	0.00018	49	60
1LA7 063-2AA□□	2	4	2.2	16	0.00022	49	60
1LA7 070-2AA□□	2.3	3.5	2.3	16	0.00029	52	63
1LA7 073-2AA□□	2.5	4.3	2.6	16	0.00041	52	63
1LA7 080-2AA□□	2.3	5.6	2.4	16	0.00079	56	67
1LA7 083-2AA□□	2.6	6.1	2.7	16	0.001	56	67
1LA7 090-2AA□□	2.4	5.5	2.7	16	0.0014	62	74
1LA7 096-2AA□□	2.8	6.3	3.1	16	0.0018	62	74
▶ 1LA7 106-2AA□□	2.8	6.8	3	16	0.0035	62	74
▶ 1LA7 113-2AA□□	2.6	7.2	2.9	16	0.0059	63	75
▶ 1LA7 130-2AA□□	2	5.9	2.8	16	0.015	68	80
▶ 1LA7 131-2AA□□	2.3	6.9	3	16	0.019	68	80
▶ 1LA7 163-2AA□□	2.1	6.5	2.9	16	0.034	70	82
▶ 1LA7 164-2AA□□	2.2	6.6	3	16	0.043	70	82
▶ 1LA7 166-2AA□□	2.4	7	3.1	16	0.051	70	82
1LA5 183-2AA□□	2.5	6.9	3.2	16	0.077	70	83
1LA5 206-2AA□□	2.4	7.2	2.8	16	0.14	71	84
1LA5 207-2AA□□	2.4	7.7	2.8	16	0.16	71	84
1LA5 223-2AA□□	2.8	7.7	3.4	16	0.2	71	84

- ▶ The Order No. for 1LA7 motors marked with this symbol are phase-out models.

1LE1 motors are the successors.

For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-ventilated energy-saving motors with improved efficiency" Pages 1/18 to 1/21 or under "General Line motors with shorter delivery time" (defined versions - voltages, types of construction, motor protection and location of the connection boxes) Pages 1/8 to 1/17.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Rated output at		Frame size	Operating values at rated output							Rated current at 400 V, 50 Hz	Order No.	Price	Weight
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load					
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	EFF2	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	For Order No. supplements for voltage and type of construction see table below		IM B3 type of construction approx. m kg	
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection													
0.06	0.07	56 M	1350	0.42		56	55	0.77	0.2		1LA7 050-4AB□□	3	
0.09	0.11	56 M	1350	0.64		58	57	0.77	0.29		1LA7 053-4AB□□	3	
0.12	0.14	63 M	1350	0.85		55	54	0.75	0.42		1LA7 060-4AB□□	3.5	
0.18	0.21	63 M	1350	1.3		59	60	0.76	0.58		1LA7 063-4AB□□	4.1	
0.25	0.29	71 M	1350	1.8		60	60	0.78	0.77		1LA7 070-4AB□□	4.8	
0.37	0.43	71 M	1370	2.6		65	65	0.78	1.06		1LA7 073-4AB□□	6	
0.55	0.63	80 M	1395	3.8		67	67	0.81	1.46		1LA7 080-4AA□□	9	
0.75	0.86	80 M	1395	5.1		72	72	0.8	1.91		1LA7 083-4AA□□	10	
1.1	1.3	90 S	1415	7.4		77	77	0.81	2.55		1LA7 090-4AA□□	13	
1.5	1.75	90 L	1420	10	EFF2	79	79	0.81	3.4		1LA7 096-4AA□□	15.6	
2.2	2.55	100 L	1420	15	EFF2	82	82.5	0.82	4.7	▶	1LA7 106-4AA□□	21	
3	3.45	100 L	1420	20	EFF2	83	83.5	0.82	6.4	▶	1LA7 107-4AA□□	24	
4	4.6	112 M	1440	27	EFF2	85	85.5	0.83	8.2	▶	1LA7 113-4AA□□	31	
5.5	6.3	132 S	1455	36	EFF2	86	86	0.81	11.4	▶	1LA7 130-4AA□□	41	
7.5	8.6	132 M	1455	49	EFF2	87	87.5	0.82	15.2	▶	1LA7 133-4AA□□	49	
11	12.6	160 M	1460	72	EFF2	88.5	89	0.84	21.5	▶	1LA7 163-4AA□□	73	
15	17.3	160 L	1460	98	EFF2	90	90.2	0.84	28.5	▶	1LA7 166-4AA□□	85	
18.5	21.3	180 M	1460	121	EFF2	90.5	90.5	0.83	35.5 ¹⁾		1LA5 183-4AA□□	113	
22	25.3	180 L	1460	144	EFF2	91.2	91.2	0.84	41.5 ¹⁾		1LA5 186-4AA□□	123	
30	34.5	200 L	1465	196	EFF2	91.8	91.8	0.86	55		1LA5 207-4AA□□	157	
37	42.5	225 NO	1470	240	EFF2	92.9	92.9	0.87	66 ¹⁾		1LA5 220-4AA□□	206	
45	52	225 M	1470	292	EFF2	93.4	93.4	0.87	80 ¹⁾		1LA5 223-4AA□□	232	

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code						
	50 Hz			60 Hz			Without flange	With flange		With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ²⁾	IM V1 with protective cover ²⁾³⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	4	6	2	7	3
1LA7 05 □□	○	○	○	–	○	○	□	✓	–	✓	✓	✓	✓
1LA7 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA5 18 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–
1LA5 20 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–
1LA5 22 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
²⁾ 1LA5 183-... to 1LA5 223-... motors (motor series 1LA5, frame size 180 M to 225 M) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

³⁾ The "Second shaft extension" option, order code **K16** is not possible.
⁴⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting as multiple of rated torque	as multiple of rated current	torque	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}				
▶ Phase-out model							
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA7 050-4AB□□	1.9	2.6	1.9	13	0.00027	42	53
1LA7 053-4AB□□	1.9	2.6	1.9	13	0.00027	42	53
1LA7 060-4AB□□	1.9	2.8	2	13	0.00029	42	53
1LA7 063-4AB□□	1.9	3	1.9	13	0.00037	42	53
1LA7 070-4AB□□	1.9	3	1.9	13	0.00052	44	55
1LA7 073-4AB□□	1.9	3.3	2.1	13	0.00077	44	55
1LA7 080-4AA□□	2.2	3.9	2.2	16	0.0014	47	58
1LA7 083-4AA□□	2.3	4.2	2.3	16	0.0017	47	58
1LA7 090-4AA□□	2.3	4.6	2.4	16	0.0024	50	62
1LA7 096-4AA□□	2.4	5.3	2.6	16	0.0033	50	62
▶ 1LA7 106-4AA□□	2.5	5.6	2.8	16	0.0047	56	68
▶ 1LA7 107-4AA□□	2.7	5.6	3	16	0.0055	56	68
▶ 1LA7 113-4AA□□	2.7	6	3	16	0.012	53	65
▶ 1LA7 130-4AA□□	2.5	6.3	3.1	16	0.018	62	74
▶ 1LA7 133-4AA□□	2.7	6.7	3.2	16	0.023	62	74
▶ 1LA7 163-4AA□□	2.2	6.2	2.7	16	0.043	66	78
▶ 1LA7 166-4AA□□	2.6	6.5	3	16	0.055	66	78
1LA5 183-4AA□□	2.3	7.5	3	16	0.13	63	76
1LA5 186-4AA□□	2.3	7.5	3	16	0.15	63	76
1LA5 207-4AA□□	2.6	7	3.2	16	0.24	65	78
1LA5 220-4AA□□	2.8	7	3.2	16	0.32	65	78
1LA5 223-4AA□□	2.8	7.7	3.3	16	0.36	65	78

- ▶ The Order No. for 1LA7 motors marked with this symbol are phase-out models.
1LE1 motors are the successors.
For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-ventilated energy-saving motors with improved efficiency" Pages 1/18 to 1/21 or under "General Line motors with shorter delivery time" (defined versions - voltages, types of construction, motor protection and location of the connection boxes) Pages 1/8 to 1/17.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Rated output at		Frame size	Operating values at rated output						Order No.	Price	Weight
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load			
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	► Phase-out model	m kg	
6-pole, 1000 rpm at 50 Hz, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection											
0.09	0.1	63 M	850	1	45	41.5	0.66	0.44	1LA7 063-6AB□□	4.1	
0.18	0.21	71 M	850	2	53	54.5	0.68	0.72	1LA7 070-6AA□□	5	
0.25	0.29	71 M	830	2.8	60	58.5	0.76	0.79	1LA7 073-6AA□□	6.3	
0.37	0.43	80 M	920	3.8	62	60.5	0.72	1.2	1LA7 080-6AA□□	9	
0.55	0.63	80 M	910	5.8	67	66.5	0.74	1.6	1LA7 083-6AA□□	10	
0.75	0.86	90 S	915	7.8	69	69	0.76	2.05	1LA7 090-6AA□□	12.5	
1.1	1.3	90 L	915	11	72	72	0.77	2.85	1LA7 096-6AA□□	15.7	
1.5	1.75	100 L	925	15	74	74	0.75	3.9	► 1LA7 106-6AA□□	21	
2.2	2.55	112 M	940	22	78	78.5	0.78	5.2	► 1LA7 113-6AA□□	26	
3	3.45	132 S	950	30	79	79.5	0.76	7.2	► 1LA7 130-6AA□□	38	
4	4.6	132 M	950	40	80.5	80.5	0.76	9.4	► 1LA7 133-6AA□□	44	
5.5	6.3	132 M	950	55	83	83	0.76	12.6	► 1LA7 134-6AA□□	52	
7.5	8.6	160 M	960	75	86	86	0.74	17	► 1LA7 163-6AA□□	74	
11	12.6	160 L	960	109	87.5	87.5	0.74	24.5	► 1LA7 166-6AA□□	95	
15	18	180 L	970	148	89.5	89.5	0.77	31.5	1LA5 186-6AA□□	126	
18.5	22	200 L	975	181	90.2	90.2	0.77	38.5	1LA5 206-6AA□□	161	
22	26.5	200 L	975	215	90.8	90.8	0.77	45.5	1LA5 207-6AA□□	183	
30	36	225 M	978	293	91.8	91.8	0.77	61 ¹⁾	1LA5 223-6AA□□	214	

Order No. supplements

Motor type	Penultimate position: Voltage code					Final position: Type of construction code							
	50 Hz		60 Hz			Without flange	With flange		With standard flange		With special flange		
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY (see "Introduction" for outputs at 60 Hz)	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ²⁾	IM V1 with protective cover ²⁾³⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover	
	1	6	3	5	1	6	0	1	4	6	2	7	3
1LA7 05 □□	○	○	○	–	○	○	□	✓	–	✓	✓	✓	✓
1LA7 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA5 18 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–
1LA5 20 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–
1LA5 22 □□	○	○	○	○	○	○	□	✓ ⁴⁾	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
²⁾ 1LA5 183-... to 1LA5 223-... motors (motor series 1LA5, frame size 180 M to 225 M) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

³⁾ The "Second shaft extension" option, order code **K16** is not possible.
⁴⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting as multiple of rated torque	as multiple of rated current	torque	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}				
▶ Phase-out model							
6-pole, 1000 rpm at 50 Hz, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA7 063-6AB□□	1.8	2	1.9	13	0.00037	39	50
1LA7 070-6AA□□	2.1	2.3	1.9	16	0.00055	39	50
1LA7 073-6AA□□	2.2	2.7	2	16	0.0008	39	50
1LA7 080-6AA□□	1.9	3.1	2.1	16	0.0014	40	51
1LA7 083-6AA□□	2.1	3.4	2.2	16	0.0017	40	51
1LA7 090-6AA□□	2.2	3.7	2.2	16	0.0024	43	55
1LA7 096-6AA□□	2.3	3.8	2.3	16	0.0033	43	55
▶ 1LA7 106-6AA□□	2.3	4	2.3	16	0.0047	47	59
▶ 1LA7 113-6AA□□	2.2	4.6	2.5	16	0.0091	52	64
▶ 1LA7 130-6AA□□	1.9	4.2	2.2	16	0.015	63	75
▶ 1LA7 133-6AA□□	2.1	4.5	2.4	16	0.019	63	75
▶ 1LA7 134-6AA□□	2.3	5	2.6	16	0.025	63	75
▶ 1LA7 163-6AA□□	2.1	4.6	2.5	16	0.044	66	78
▶ 1LA7 166-6AA□□	2.3	4.8	2.6	16	0.063	66	78
1LA5 186-6AA□□	2	5.2	2.4	16	0.15	66	78
1LA5 206-6AA□□	2.7	5.5	2.8	16	0.24	66	78
1LA5 207-6AA□□	2.8	5.5	2.9	16	0.28	66	78
1LA5 223-6AA□□	2.8	5.7	2.9	16	0.36	66	78

- ▶ The Order No. for 1LA7 motors marked with this symbol are phase-out models.

1LE1 motors are the successors.

For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-ventilated energy-saving motors with improved efficiency" Pages 1/18 to 1/21 or under "General Line motors with shorter delivery time" (defined versions - voltages, types of construction, motor protection and location of the connection boxes) Pages 1/8 to 1/17.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Rated output at		Frame size	Operating values at rated output						Order No.	Price	Weight
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load			
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	► Phase-out model	m kg	
8-pole, 750 rpm at 50 Hz, 900 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection											
0.09	0.1	71 M	630	1.4	53	54.5	0.68	0.36	1LA7 070-8AB□□	6.3	
0.12	0.14	71 M	645	1.8	53	49.5	0.64	0.51	1LA7 073-8AB□□	6.3	
0.18	0.21	80 M	675	2.5	51	49.5	0.68	0.75	1LA7 080-8AB□□	9	
0.25	0.29	80 M	685	3.5	55	50.5	0.64	1.02	1LA7 083-8AB□□	10	
0.37	0.43	90 S	675	5.2	63	62	0.75	1.14	1LA7 090-8AB□□	10.5	
0.55	0.63	90 L	675	7.8	66	65	0.76	1.58	1LA7 096-8AB□□	13.2	
0.75	0.86	100 L	680	11	66	65	0.76	2.15	► 1LA7 106-8AB□□	19	
1.1	1.3	100 L	680	15	72	72	0.76	2.9	► 1LA7 107-8AB□□	22	
1.5	1.75	112 M	705	20	74	74	0.76	3.85	► 1LA7 113-8AB□□	24	
2.2	2.55	132 S	700	30	75	75	0.74	5.7	► 1LA7 130-8AB□□	38	
3	3.45	132 M	700	41	77	77.5	0.74	7.6	► 1LA7 133-8AB□□	44	
4	4.6	160 M	715	53	80	80	0.72	10	► 1LA7 163-8AB□□	64	
5.5	6.3	160 M	710	74	83.5	83.5	0.73	13	► 1LA7 164-8AB□□	74	
7.5	8.6	160 L	715	100	85.5	85.5	0.72	17.6	► 1LA7 166-8AB□□	94	
11	13.2	180 L	725	145	87	87	0.75	24.5	1LA5 186-8AB□□	128	
15	18	200 L	725	198	87.5	87.5	0.78	31.5	1LA5 207-8AB□□	176	
18.5	22	225 NO	725	244	89.2	89.2	0.79	38	1LA5 220-8AB□□	184	
22	26.5	225 M	725	290	90.6	90.6	0.79	44.5	1LA5 223-8AB□□	214	

Order No. supplements

Motor type	Penultimate position: Voltage code					Final position: Type of construction code							
	50 Hz		60 Hz			Without flange	With flange		With standard flange		With special flange		
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY (see "Introduction" for outputs at 60 Hz)	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ¹⁾	IM V1 with protective cover ^{1) 2)}	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover	
	1	6	3	5	1	6	0	1	4	6	2	7	3
1LA7 05 □□	○	○	○	–	○	○	□	✓	–	✓	✓	✓	✓
1LA7 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA7 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓
1LA5 18 □□	○	○	○	○	○	○	□	✓ ³⁾	✓	✓	–	–	–
1LA5 20 □□	○	○	○	○	○	○	□	✓ ³⁾	✓	✓	–	–	–
1LA5 22 □□	○	○	○	○	○	○	□	✓ ³⁾	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ 1LA5 183-... to 1LA5 223-... motors (motor series 1LA5, frame size 180 M to 225 M) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

²⁾ The "Second shaft extension" option, order code **K16** is not possible.

³⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting as multiple of rated torque	as multiple of rated current	torque			Measuring surface sound pressure level at 50 Hz	Sound pressure level at 50 Hz
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	L_{pA} dB(A)	L_{WA} dB(A)
▶ Phase-out model							
8-pole, 750 rpm at 50 Hz, 900 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA7 070-8AB□□	1.9	2.2	1.7	13	0.0008	36	47
1LA7 073-8AB□□	2.2	2.2	2	13	0.0008	36	47
1LA7 080-8AB□□	1.7	2.3	1.9	13	0.0014	41	52
1LA7 083-8AB□□	2	2.6	2.2	13	0.0017	41	52
1LA7 090-8AB□□	1.6	2.9	1.8	13	0.0023	41	53
1LA7 096-8AB□□	1.7	3	1.9	13	0.0031	41	53
▶ 1LA7 106-8AB□□	1.6	3	1.9	13	0.0051	45	57
▶ 1LA7 107-8AB□□	1.8	3.3	2.1	13	0.0063	45	57
▶ 1LA7 113-8AB□□	1.8	3.7	2.1	13	0.013	49	61
▶ 1LA7 130-8AB□□	1.9	3.9	2.3	13	0.014	53	65
▶ 1LA7 133-8AB□□	2.1	4.1	2.4	13	0.019	53	65
▶ 1LA7 163-8AB□□	2.2	4.5	2.6	13	0.036	63	75
▶ 1LA7 164-8AB□□	2.3	4.7	2.7	13	0.046	63	75
▶ 1LA7 166-8AB□□	2.7	5.3	3	13	0.064	63	75
1LA5 186-8AB□□	2	5	2.2	13	0.21	60	73
1LA5 207-8AB□□	2.1	5	2.2	13	0.37	58	71
1LA5 220-8AB□□	2.1	4.5	2.2	13	0.37	58	71
1LA5 223-8AB□□	2.2	4.8	2.3	13	0.45	58	71

- ▶ The Order No. for 1LA7 motors marked with this symbol are phase-out models.
1LE1 motors are the successors.
For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-ventilated energy-saving motors with improved efficiency" Pages 1/18 to 1/21.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Rated output at 50 Hz, 1500 rpm		Frame size		Rated speed at 50 Hz, 1500 rpm		Rated torque at 50 Hz, 1500 rpm		Efficiency at 50 Hz 4/4-load		Power factor at 50 Hz 4/4-load		Rated current at 400 V, 50 Hz		Order No.	Price	Weight motor
1500 rpm	3000 rpm			1500 rpm	3000 rpm	1500 rpm	3000 rpm	1500 rpm	3000 rpm	1500 rpm	3000 rpm	1500 rpm	3000 rpm			
P_{rated} kW	kW	FS		n_{rated} rpm	rpm	T_{rated} Nm	Nm	η_{rated} %	%	$\cos\phi_{rated}$		I_{rated} A	A			m kg
4/2-pole, 1500/3000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, double pole-changing for constant load torque with one winding connected in Dahlander circuit																
0.1	0.15	63 M		1330	2650	0.72	0.54	45	52	0.79	0.82	0.41	0.51	1LA7 060-0AAQQ		3.5
0.15	0.2	63 M		1330	2750	1.1	0.7	45	57	0.71	0.73	0.68	0.7	1LA7 063-0AAQQ		4.1
0.21	0.28	71 M		1375	2770	1.5	0.97	59	48	0.73	0.76	0.7	1.1	1LA7 070-0AAQQ		4.8
0.3	0.43	71 M		1390	2780	2.1	1.5	64	58	0.76	0.82	0.89	1.3	1LA7 073-0AAQQ		7
0.48	0.6	80 M		1390	2810	3.3	2	66	64	0.82	0.84	1.25	1.6	1LA7 080-0AAQQ		9
0.7	0.85	80 M		1390	2810	4.8	2.9	69	70	0.84	0.83	1.75	2.1	1LA7 083-0AAQQ		10
1.1	1.4	90 S		1390	2810	7.6	4.8	69	66	0.85	0.85	2.7	3.6	1LA7 090-0AAQQ		13
1.5	1.9	90 L		1410	2860	10	6.4	74	72	0.86	0.85	3.4	4.5	1LA7 096-0AAQQ		15.6
2	2.4	100 L		1410	2870	14	8	81	75	0.84	0.84	4.25	5.5	1LA7 106-0AAQQ		21
2.6	3.1	100 L		1400	2850	18	10	79	74	0.86	0.8	5.5	7.6	1LA7 107-0AAQQ		24
3.7	4.4	112 M		1420	2885	25	15	79	76	0.85	0.8	8	10.5	1LA7 113-0AAQQ		31
4.7	5.9	132 S		1450	2920	31	19	83	80	0.84	0.85	9.7	12.5	1LA7 130-0AAQQ		41
6.5	8	132 M		1450	2930	43	26	82	82.5	0.84	0.84	13.6	16.7	1LA7 133-0AAQQ		50
9.3	11.5	160 M		1455	2930	61	37	86.5	80	0.85	0.89	18.3	23.4	1LA7 163-0AAQQ		74
13	17	160 L		1455	2930	85	55	87.5	87	0.84	0.88	25.6	32	1LA7 166-0AAQQ		92
15	18	180 M		1470	2950	97	58	90	86.5	0.83	0.8	29	37.5	1LA5 183-0AAQQ		113
18	21.5	180 L		1465	2950	117	70	90	87	0.84	0.85	34.5	42	1LA5 186-0AAQQ		123
26	31	200 L		1465	2940	169	101	90.9	86.5	0.86	0.85	48.5	61	1LA5 207-0AAQQ		157

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz, direct online starting				Without flange		With flange			With standard flange		With special flange
	230 V	400 V	500 V	690 V	IM B3, IM B6/7/8, IM V6/5 without protective cover	IM B5, IM V1 without protective cover ¹⁾	IM V1 with protective cover ¹⁾²⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover	
1	6	5	0	0	1	4	6	2	7	3		
1LA7 06 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA7 07 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA7 08 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA7 09 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA7 10 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA7 11 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA7 13 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA7 16 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
1LA5 18 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> ³⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1LA5 20 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> ³⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

- Standard version
- Without additional charge
- With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ 1LA5 183-... to 1LA5 207-... motors (motor series 1LA5, frame size 180 M to 200 L) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

²⁾ The "Second shaft extension" option, order code **K16** is not possible.

³⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting 1500 rpm T_{LR}/T_{rated}	Locked-rotor torque as multiple of torque 3000 rpm T_{LR}/T_{rated}	Locked-rotor current 1500 rpm I_{LR}/I_{rated}	Locked-rotor current 3000 rpm I_{LR}/I_{rated}	Breakdown torque 1500 rpm T_B/T_{rated}	Breakdown torque 3000 rpm T_B/T_{rated}	Torque class CL	Moment of inertia J kgm ²
4/2-pole, 1500/3000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, double pole-changing for constant load torque with one winding connected in Dahlander circuit								
1LA7 060-0AA□□	1.8	1.8	2.7	2.9	1.8	1.8	10	0.00029
1LA7 063-0AA□□	2	2	3	3.3	2	2	10	0.0004
1LA7 070-0AA□□	1.6	1.6	3	3.1	1.8	1.8	10	0.00052
1LA7 073-0AA□□	1.8	1.8	3.7	3.8	2	2	10	0.00076
1LA7 080-0AA□□	1.7	1.7	3.9	4	2	2	10	0.0014
1LA7 083-0AA□□	1.8	1.8	4.3	4.3	2.1	2.1	10	0.0017
1LA7 090-0AA□□	1.6	1.8	4.2	4.3	1.9	2	13	0.0024
1LA7 096-0AA□□	1.9	1.9	4.9	5.3	2	2.1	13	0.0033
1LA7 106-0AA□□	1.8	1.8	5	5.5	2	2.1	13	0.0048
1LA7 107-0AA□□	2.3	2.4	5.6	5.6	2.4	2.4	13	0.0055
1LA7 113-0AA□□	2	2.2	5.6	5.8	2.2	2.3	13	0.011
1LA7 130-0AA□□	1.7	1.6	6.3	6.5	2.2	2.2	10	0.018
1LA7 133-0AA□□	2	2.1	6.9	7.5	2.5	2.6	10	0.023
1LA7 163-0AA□□	2	1.8	6.7	7.4	2.6	2.4	10	0.043
1LA7 166-0AA□□	2.5	2.8	7.6	8.5	3	3	10	0.06
1LA5 183-0AA□□	2.1	2.2	6.7	7.5	2.7	3.2	13	0.13
1LA5 186-0AA□□	2	2.2	6.4	7.3	2.6	3.1	13	0.15
1LA5 207-0AA□□	2.6	2.6	6.7	7.5	2.8	3.3	13	0.24

See catalog part "Fan motors" for pole-changing motors for quadratic load torque for driving fans.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Rated output at 50 Hz, 750 rpm		Frame size	Rated speed at 50 Hz, 750 rpm		Rated torque at 50 Hz, 750 rpm		Efficiency at 50 Hz 4/4-load		Power factor at 50 Hz 4/4-load		Rated current at 400 V, 50 Hz		Order No.	Price	Weight motor
P_{rated} kW	1500 rpm	FS	n_{rated} rpm	1500 rpm	T_{rated} Nm	Nm	η_{rated} %	%	$\cos\phi_{rated}$	I_{rated} A	750 rpm	1500 rpm			
8/4-pole, 750/1500 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, double pole-changing for constant load torque with one winding connected in Dahlander circuit															
0.35	0.5	90 S	675	1365	5.1	3.6	60	65	0.71	0.79	1.19	1.41	1LA7 090-0ABQQ		11
0.5	0.7	90 L	675	1380	7.1	4.9	63	62	0.72	0.78	1.6	2.1	1LA7 096-0ABQQ		13.2
0.7	1.1	100 L	690	1380	9.8	7.7	65	61	0.74	0.8	2.1	3.25	1LA7 106-0ABQQ		20
0.9	1.5	100 L	690	1380	13	10	69	67	0.70	0.8	2.7	4.0	1LA7 107-0ABQQ		22
1.4	1.9	112 M	690	1410	19	13	69	70	0.73	0.75	4	5.2	1LA7 113-0ABQQ		25
1.8	3.6	132 S	720	1430	24	24	72	80	0.57	0.9	6.3	7.2	1LA7 130-0ABQQ		41
2.5	5	132 M	720	1430	33	33	73	80	0.6	0.9	8.2	10	1LA7 133-0ABQQ		49
3.5	7	160 M	725	1450	46	46	77	81.5	0.56	0.89	11.7	13.9	1LA7 163-0ABQQ		73
5.6	11	160 L	725	1450	74	72	78	83	0.56	0.89	18.5	21.5	1LA7 166-0ABQQ		91
11	18	180 L	725	1455	144	118	83.5	83.5	0.69	0.87	27.5	35	1LA5 186-0ABQQ		123
17	27	200 L	730	1465	223	177	89	89.5	0.68	0.86	40.5	50.5	1LA5 207-0ABQQ		157

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code						
	50 Hz, direct online starting				Without flange	With flange		With standard flange		With special flange	
	230 V	400 V	500 V	690 V	IM B3, IM B6/7/8, IM V6/5 without protective cover	IM B5, IM V1 without protective cover ¹⁾	IM V1 with protective cover ^{1) 2)}	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	5	0	0	1	4	6	2	7	3
1LA7 06 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA7 07 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA7 08 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA7 09 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA7 10 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA7 11 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA7 13 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA7 16 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA5 18 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> ³⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1LA5 20 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> ³⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Standard version
- Without additional charge
- With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ 1LA5 183-... to 1LA5 207-... motors (motor series 1LA5, frame size 180 M to 200 L) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

²⁾ The "Second shaft extension" option, order code **K16** is not possible.

³⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7/1LA5

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting at 750 rpm T_{LR}/T_{rated}	Locked-rotor torque as multiple of current at 1500 rpm T_{LR}/T_{rated}	Locked-rotor current at 750 rpm I_{LR}/I_{rated}	Locked-rotor current at 1500 rpm I_{LR}/I_{rated}	Breakdown torque at 750 rpm T_B/T_{rated}	Breakdown torque at 1500 rpm T_B/T_{rated}	Torque class CL	Moment of inertia J kgm ²
8/4-pole, 750/1500 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, double pole-changing for constant load torque with one winding connected in Dahlander circuit								
1LA7 090-0AB□□	1.3	1.3	2.5	3.2	1.6	1.6	10	0.0023
1LA7 096-0AB□□	1.4	1.5	3	3.5	1.7	1.8	10	0.0031
1LA7 106-0AB□□	1.7	1.6	3.3	3.5	2	1.9	10	0.0051
1LA7 107-0AB□□	1.8	1.6	3.5	3.6	2	1.9	10	0.0063
1LA7 113-0AB□□	1.4	1.5	3.6	4.4	1.7	1.8	10	0.013
1LA7 130-0AB□□	2	1.3	4.3	5.4	2.3	1.8	10	0.018
1LA7 133-0AB□□	2	1.3	4.3	5.4	2.3	1.8	10	0.023
1LA7 163-0AB□□	2	1.4	4	5.4	2.3	1.8	10	0.043
1LA7 166-0AB□□	2.2	1.7	4.2	5.9	2.4	2	10	0.06
1LA5 186-0AB□□	1.9	2	5.2	6.2	2.2	2.2	13	0.21
1LA5 207-0AB□□	2.4	2.3	5.4	6.6	2.5	2.5	13	0.37


See catalog part "Fan motors" for pole-changing motors for quadratic load torque for driving fans.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data

Rated output at 50 Hz	Frame size	Operating values at rated output							Order No.	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz			
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm		η_{rated} %	η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		
2-pole, 3000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP											
0.09	56 M	2830	0.3		70	70	0.76	0.24	1LA9 050-2KAQQ	3	
0.12	56 M	2830	0.4		70	70	0.81	0.31	1LA9 053-2KAQQ	3.8	
0.18	63 M	2840	0.61		70	70	0.78	0.48	1LA9 060-2KAQQ	4.1	
0.25	63 M	2840	0.84		72	72	0.8	0.63	1LA9 063-2KAQQ	5.1	
0.37	71 M	2840	1.2		74	74	0.77	0.94	1LA9 070-2KAQQ	6	
0.55	71 M	2835	1.9		75	75	0.75	1.42	1LA9 073-2KAQQ	7.2	
0.75	80 M	2870	2.5		80	80	0.82	1.66	1LA9 080-2KAQQ	9.8	
1.1	80 M	2860	3.7	EFF1	84	84	0.89	2.1	1LA9 083-2KAQQ	12.3	
1.5	90 S	2890	5	EFF1	85	85	0.87	2.95	1LA9 090-2KAQQ	15	
2.2	90 L	2890	7.3	EFF1	86.5	86.5	0.87	4.2	1LA9 096-2KAQQ	18.6	
3	100 L	2890	9.9	EFF1	87	87	0.88	5.7	1LA9 106-2KAQQ	24	
4	112 M	2905	13	EFF1	88.5	88.5	0.89	7.3	1LA9 113-2KAQQ	35	
5.5	132 S	2930	18	EFF1	89.5	89.5	0.9	9.9	1LA9 130-2KAQQ	43	
7.5	132 S	2930	24	EFF1	90.5	90.5	0.92	13	1LA9 131-2KAQQ	56	
11	160 M	2945	36	EFF1	91	91	0.9	19.4	1LA9 163-2KAQQ	73	
15	160 M	2945	49	EFF1	91.5	91.5	0.9	26.5	1LA9 164-2KAQQ	82	
18.5	160 L	2940	60	EFF1	92.3	92.5	0.92	31.5	1LA9 166-2KAQQ	102	
22	180 M	2945	71	EFF1	93	93.2	0.89	38.5 ¹⁾	1LA9 183-2WAQQ	131	
30	200 L	2950	97	EFF1	93.5	93.5	0.89	52	1LA9 206-2WAQQ	185	
37	200 L	2950	120	EFF1	94	94.1	0.89	64 ¹⁾	1LA9 207-2WAQQ	214	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange		With flange		With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover	IM V1 with protective cover ²⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover	
	1	6	3	5	0	1	4	6	2	7	3	
1LA9 05 □□	○	○	○	–	□	✓	–	–	✓	✓	✓	
1LA9 06 □□	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 07 □□	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 08 □□	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 09 □□	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 10 □□	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 11 □□	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 13 □□	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 16 □□	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 18 □□	○	○	○	○	□	✓ ³⁾	✓	✓	–	–	–	
1LA9 20 □□	○	○	○	○	□	✓ ³⁾	✓	✓	–	–	–	

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").

²⁾ The "Second shaft extension" option, order code **K16** is not possible.

³⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz L_{pFA} dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
2-pole, 3000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP							
1LA9 050-2KA□□	3.6	4.5	3	16	0.00015	41	52
1LA9 053-2KA□□	3.2	4.3	2.8	16	0.0002	41	52
1LA9 060-2KA□□	2.8	4.8	3.1	16	0.00022	49	60
1LA9 063-2KA□□	2.5	4.9	2.5	16	0.00026	49	60
1LA9 070-2KA□□	3.3	6.5	3.1	16	0.00041	52	63
1LA9 073-2KA□□	3.6	6.3	2.9	16	0.0005	52	63
1LA9 080-2KA□□	4.4	8.3	3.2	16	0.001	56	67
1LA9 083-2KA□□	3.8	7	3.2	16	0.0013	56	67
1LA9 090-2KA□□	4.1	7	3.5	16	0.0018	60	72
1LA9 096-2KA□□	4.1	7	3.5	16	0.0022	60	72
1LA9 106-2KA□□	3.4	7	3.2	16	0.0044	62	74
1LA9 113-2KA□□	2.8	7	3.2	16	0.0077	63	75
1LA9 130-2KA□□	2.7	7	3.2	16	0.019	68	80
1LA9 131-2KA□□	2.8	7	3.1	16	0.024	68	80
1LA9 163-2KA□□	2.5	7	3.1	16	0.044	70	82
1LA9 164-2KA□□	2.5	7	3.1	16	0.051	70	82
1LA9 166-2KA□□	2.4	7	3.1	16	0.065	70	82
1LA9 183-2WA□□	2.6	7.2	3.3	16	0.09	70	83
1LA9 206-2WA□□	2.5	7	3.2	16	0.16	71	84
1LA9 207-2WA□□	2.7	7	3.3	16	0.2	71	84


The motors can also be used for 60 Hz according to EPACT, see Pages 2/28 to 2/33.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Rated output at 50 Hz	Frame size	Operating values at rated output							Order No.	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz			
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm		η_{rated} %	η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		
4-pole, 1500 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP											
0.06	56 M	1380	0.42		61	61	0.66	0.22	1LA9 050-4KAQQ	3	
0.09	56 M	1390	0.62		62	62	0.68	0.31	1LA9 053-4KAQQ	3.8	
0.12	63 M	1395	0.82		66	66	0.65	0.41	1LA9 060-4KAQQ	4.1	
0.18	63 M	1395	1.3		65	65	0.68	0.59	1LA9 063-4KAQQ	5.1	
0.25	71 M	1410	1.7		70	70	0.64	0.81	1LA9 070-4KAQQ	6	
0.37	71 M	1385	2.6		71	71	0.73	1.04	1LA9 073-4KAQQ	7.2	
0.55	80 M	1410	3.7		77	77	0.78	1.32	1LA9 080-4KAQQ	9.8	
0.75	80 M	1400	5.1		81	81	0.75	1.78	1LA9 083-4KAQQ	12.3	
1.1	90 S	1440	7.3	EFF1	84	84	0.77	2.45	1LA9 090-4KAQQ	15	
1.5	90 L	1440	9.9	EFF1	85	85	0.77	3.3	1LA9 096-4KAQQ	18	
2.2	100 L	1435	15	EFF1	86.5	86.5	0.82	4.5	1LA9 106-4KAQQ	25	
3	100 L	1435	20	EFF1	87.5	87.7	0.81	6.1	1LA9 107-4KAQQ	30	
4	112 M	1440	27	EFF1	88.5	89	0.81	8.1	1LA9 113-4KAQQ	37	
5.5	132 S	1455	36	EFF1	89.5	89.5	0.84	10.6	1LA9 130-4KAQQ	45	
7.5	132 M	1455	49	EFF1	90.3	90.5	0.84	14.2	1LA9 133-4KAQQ	60	
11	160 M	1460	72	EFF1	91.5	92	0.85	20.5	1LA9 163-4KAQQ	81	
15	160 L	1460	98	EFF1	92	92.3	0.86	27.5	1LA9 166-4KAQQ	107	
18.5	180 M	1465	121	EFF1	92.5	93	0.84	34.5 ¹⁾	1LA9 183-4WAQQ	126	
22	180 L	1465	143	EFF1	93	93.4	0.84	40.5 ¹⁾	1LA9 186-4WAQQ	146	
30	200 L	1465	196	EFF1	93.5	94	0.87	53	1LA9 207-4WAQQ	199	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange	With flange			With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover	IM V1 with protective cover ²⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover	
	1	6	3	5	0	1	4	6	2	7	3	
1LA9 05 QQ	○	○	○	–	□	✓	–	–	✓	✓	✓	
1LA9 06 QQ	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 07 QQ	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 08 QQ	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 09 QQ	○	○	○	–	□	✓	✓	✓	✓	✓	✓	
1LA9 10 QQ	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 11 QQ	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 13 QQ	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 16 QQ	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 18 QQ	○	○	○	○	□	✓ ³⁾	✓	✓	–	–	–	
1LA9 20 QQ	○	○	○	○	□	✓ ³⁾	✓	✓	–	–	–	

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").

²⁾ The "Second shaft extension" option, order code **K16** is not possible.

³⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
4-pole, 1500 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP							
1LA9 050-4KA□□	2.7	3.1	2.8	16	0.00027	42	53
1LA9 053-4KA□□	2.8	3.2	2.8	16	0.00035	42	53
1LA9 060-4KA□□	2.7	3.5	2.6	16	0.00037	42	53
1LA9 063-4KA□□	3	3.6	2.5	16	0.00045	42	53
1LA9 070-4KA□□	3.6	4.3	3.1	16	0.00076	44	55
1LA9 073-4KA□□	3.3	4.2	3	16	0.00095	44	55
1LA9 080-4KA□□	3.4	5.6	2.9	16	0.0017	47	58
1LA9 083-4KA□□	4	5.8	3.5	16	0.0024	47	58
1LA9 090-4KA□□	3.1	6.4	3.2	16	0.0033	48	60
1LA9 096-4KA□□	3.6	6.7	3.4	16	0.004	48	60
1LA9 106-4KA□□	3.4	7	3.6	16	0.0062	53	65
1LA9 107-4KA□□	3.8	7	3.9	16	0.0077	53	65
1LA9 113-4KA□□	3.2	6.9	3.2	16	0.014	53	65
1LA9 130-4KA□□	3.2	7	3.6	16	0.023	62	74
1LA9 133-4KA□□	3.4	7	3.6	16	0.029	62	74
1LA9 163-4KA□□	2.6	6.9	3.2	16	0.055	66	78
1LA9 166-4KA□□	2.8	7	3.3	16	0.072	66	78
1LA9 183-4WA□□	2.8	7	3.2	16	0.15	63	76
1LA9 186-4WA□□	3.1	7.3	3.4	16	0.19	63	76
1LA9 207-4WA□□	3	7	3.2	16	0.32	65	78

The motors can also be used for 60 Hz according to EPACT, see Pages 2/28 to 2/33.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Rated output at 50 Hz	Frame size	Operating values at rated output						Rated current at 400 V, 50 Hz	Order No.	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load				
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below			
6-pole, 1000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP											
0.75	90 S	925	7.7	75.5	75.5	0.72	2	1LA9 090-6KAQQ		15.7	
1.1	90 L	940	11	82	82	0.7	2.75	1LA9 096-6KAQQ		19	
1.5	100 L	935	15	85	85	0.73	3.6	1LA9 106-6KAQQ		25	
2.2	112 M	955	22	84	84	0.7	5.4	1LA9 113-6KAQQ		37	
4	132 M	950	40	84	84	0.81	8.5	1LA9 133-6KAQQ		49	
5.5	132 M	960	55	86	86	0.77	12	1LA9 134-6KAQQ		64	
7.5	160 M	965	74	88	88	0.72	17	1LA9 163-6KAQQ		98	
11	160 L	960	109	88.5	88.5	0.78	23	1LA9 166-6KAQQ		105	
15	180 L	970	148	91	91	0.75	31.5	1LA9 186-6WAQQ		144	
18.5	200 L	975	181	91	91	0.77	38	1LA9 206-6WAQQ		186	
22	200 L	975	215	91.5	91.5	0.77	45	1LA9 207-6WAQQ		217	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code						
	50 Hz				Without flange	With flange			With standard flange		With special flange
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover	IM V1 with protective cover ¹⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
1	6	3	5	0	1	4	6	2	7	3	
1LA9 05 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	–	<input type="checkbox"/>	<input checked="" type="checkbox"/>	–	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 06 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	–	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 07 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	–	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 08 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	–	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 09 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	–	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 10 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 11 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 13 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 16 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1LA9 18 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	–	–	–
1LA9 20 <input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	–	–	–

- Standard version
- Without additional charge
- With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ The "Second shaft extension" option, order code **K16** is not possible.

²⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
6-pole, 1000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP							
1LA9 090-6KA□□	3	4.4	2.5	16	0.0033	43	55
1LA9 096-6KA□□	3.7	5.7	3.2	16	0.005	43	55
1LA9 106-6KA□□	3.5	6.2	3.4	16	0.0065	47	59
1LA9 113-6KA□□	2.9	6.2	3	16	0.014	52	64
1LA9 133-6KA□□	3	6.3	2.7	16	0.025	63	75
1LA9 134-6KA□□	3.7	7.3	3.6	16	0.03	63	75
1LA9 163-6KA□□	2.4	5.5	2.5	16	0.063	66	78
1LA9 166-6KA□□	3.1	6.9	3.2	16	0.072	66	78
1LA9 186-6WA□□	2.2	6.5	2.5	16	0.19	66	78
1LA9 206-6WA□□	2.8	6.2	2.5	16	0.28	66	78
1LA9 207-6WA□□	2.8	6.2	2.5	16	0.36	66	78

The motors can also be used for 60 Hz according to EPACT, see Pages 2/28 to 2/33.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Rated output at 60 Hz	Frame size	Operating values at rated output					Power factor at 60 Hz 4/4-load	Rated current at 460 V, 60 Hz	Order No. For Order No. supplements for voltage and type of construction, see table below	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 60 Hz	Rated torque at 60 Hz	EPACT with CC No. CC 032A	Nominal efficiency at 60 Hz						
P_{rated} HP	FS	n_{rated} rpm	T_{rated} Nm		η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A				
2-pole, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT											
0.12	56 M	3440	0.25	No	70	0.74	0.23	1LA9 050-2KA00		3	
0.16	56 M	3440	0.33	No	71	0.76	0.28	1LA9 053-2KA00		3.8	
0.25	63 M	3440	0.53	No	71	0.79	0.4	1LA9 060-2KA00		4.1	
0.33	63 M	3460	0.69	No	72	0.76	0.56	1LA9 063-2KA00		5.1	
0.5	71 M	3445	1	No	72	0.75	0.86	1LA9 070-2KA00		6	
0.75	71 M	3445	1.6	No	73	0.73	1.3	1LA9 073-2KA00		7.2	
1	80 M	3485	2	Yes	75.5	0.82	1.52	1LA9 080-2KA00		9.8	
1.5	80 M	3480	3.1	Yes	82.5	0.88	1.9	1LA9 083-2KA00		12.3	
2	90 S	3510	4.1	Yes	84	0.86	2.6	1LA9 090-2KA00		15	
3	90 L	3510	6.1	Yes	85.5	0.85	3.8	1LA9 096-2KA00		18.6	
4	100 L	3510	8.1	No	86.5	0.87	5	1LA9 106-2KA00		24	
5	112 M	3540	10	Yes	87.5	0.88	6	1LA9 113-2KA00		35	
7.5	132 S	3540	15	Yes	88.5	0.9	8.7	1LA9 130-2KA00		43	
10	132 S	3540	20	Yes	89.5	0.92	11.4	1LA9 131-2KA00		56	
15	160 M	3555	30	Yes	90.2	0.9	17	1LA9 163-2KA00		73	
20	160 M	3555	40	Yes	90.2	0.9	23.2	1LA9 164-2KA00		82	
25	160 L	3550	50	Yes	91	0.92	27.7	1LA9 166-2KA00		102	
30	180 M	3545	60	Yes	91	0.86	36	1LA9 183-2WA00		131	
40	200 L	3555	80	Yes	91.7	0.88	46.5	1LA9 206-2WA00		185	
50	200 L	3555	100	Yes	92.4	0.88	57	1LA9 207-2WA00		214	

Order No. supplements

Motor type	Penultimate position: Voltage code		Final position: Type of construction code						
	60 Hz		Without flange		With flange		With standard flange		With special flange
	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover IM V3	IM V1 with protective cover ¹⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	
1	6	0	1	4	6	2	7	3	
1LA9 05 □□	○	○	□	✓	–	–	✓	✓	✓
1LA9 06 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 07 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 08 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 09 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 10 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 11 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 13 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 16 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 18 □□	○	○	□	✓ ²⁾	✓	✓	–	–	–
1LA9 20 □□	○	○	□	✓ ²⁾	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ The "Second shaft extension" option, order code **K16** is not possible.

²⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 60 Hz L_{pFA} dB(A)	Sound pressure level at 60 Hz L_{WA} dB(A)
2-pole, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT							
1LA9 050-2KA□□	3.6	5.5	3.8	16	0.00015	45	56
1LA9 053-2KA□□	3.2	5.4	3.4	16	0.0002	45	56
1LA9 060-2KA□□	2.8	4.9	3.3	16	0.00022	53	64
1LA9 063-2KA□□	2.5	5	2.7	16	0.00026	53	64
1LA9 070-2KA□□	3.3	7.5	3.4	16	0.00041	56	67
1LA9 073-2KA□□	3.4	7.2	3.7	16	0.0005	56	67
1LA9 080-2KA□□	4.4	9.6	4.4	16	0.001	60	71
1LA9 083-2KA□□	3.8	8.6	3.2	16	0.0013	60	71
1LA9 090-2KA□□	4.1	8.6	4.1	16	0.0018	64	76
1LA9 096-2KA□□	4.1	8.5	5.1	16	0.0022	64	76
1LA9 106-2KA□□	3.4	8.6	3.7	16	0.0044	66	78
1LA9 113-2KA□□	2.8	9.2	4	16	0.0077	67	79
1LA9 130-2KA□□	2.7	8.5	3.8	16	0.019	72	84
1LA9 131-2KA□□	2.8	8.3	3.7	16	0.024	72	84
1LA9 163-2KA□□	2.5	8.5	3.7	16	0.044	74	86
1LA9 164-2KA□□	2.5	8.5	3.7	16	0.051	74	86
1LA9 166-2KA□□	2.4	8.5	3.5	16	0.065	74	86
1LA9 183-2WA□□	2.6	8.6	3.5	16	0.09	74	87
1LA9 206-2WA□□	2.5	8.4	3.6	16	0.16	75	88
1LA9 207-2WA□□	2.7	8.4	3.7	16	0.2	75	88

The motors can also be used for 50 Hz according to CEMEP, see Pages 2/22 to 2/27.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Rated output at 60 Hz	Frame size	Operating values at rated output				Nominal efficiency at 60 Hz	Power factor at 60 Hz 4/4-load	Rated current at 460 V, 60 Hz	Order No.	Price	Weight IM B3 type of construction approx.
		Rated speed at 60 Hz	Rated torque at 60 Hz	EPACT with CC No. CC 032A	EPACT with CC No. CC 032A						
P_{rated} HP	FS	n_{rated} rpm	T_{rated} Nm		η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		m kg	
4-pole, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT											
0.08	56 M	1715	0.33	No	63	0.65	0.18	1LA9 050-4KA00		3	
0.12	56 M	1725	0.5	No	64	0.6	0.29	1LA9 053-4KA00		3.8	
0.16	63 M	1710	0.66	No	68	0.6	0.37	1LA9 060-4KA00		4.1	
0.25	63 M	1705	1.1	No	66	0.63	0.54	1LA9 063-4KA00		5.1	
0.33	71 M	1730	1.4	No	69	0.6	0.76	1LA9 070-4KA00		6	
0.5	71 M	1725	2.1	No	70	0.68	0.98	1LA9 073-4KA00		7.2	
0.75	80 M	1725	3.1	No	75.5	0.74	1.24	1LA9 080-4KA00		9.8	
1	80 M	1720	4.1	Yes	82.5	0.75	1.59	1LA9 083-4KA00		12.3	
1.5	90 S	1755	6.1	Yes	84	0.76	2.15	1LA9 090-4KA00		15	
2	90 L	1755	8.1	Yes	84	0.76	2.95	1LA9 096-4KA00		18	
3	100 L	1750	12	No	87.5	0.79	4	1LA9 106-4KA00		25	
4	100 L	1750	16	No	87.5	0.79	5.5	1LA9 107-4KA00		30	
5	112 M	1755	20	Yes	87.5	0.79	6.7	1LA9 113-4KA00		37	
7.5	132 S	1760	30	Yes	89.5	0.81	9.5	1LA9 130-4KA00		45	
10	132 M	1760	40	Yes	89.5	0.82	12.8	1LA9 133-4KA00		60	
15	160 M	1765	61	Yes	91	0.85	17.9	1LA9 163-4KA00		81	
20	160 L	1765	81	Yes	91	0.85	24.5	1LA9 166-4KA00		107	
25	180 M	1770	101	Yes	92.4	0.83	30.5	1LA9 183-4WA00		126	
30	180 L	1770	121	Yes	92.4	0.83	36	1LA9 186-4WA00		146	
40	200 L	1770	161	Yes	93	0.86	47	1LA9 207-4WA00		199	

Order No. supplements

Motor type	Penultimate position: Voltage code		Final position: Type of construction code						
	60 Hz	460 VΔ	Without flange	With flange	IM V1 with protective cover ¹⁾	IM B35	With standard flange	With special flange	
	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover IM V3			IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	0	1	4	6	2	7	3
1LA9 05 □□	○	○	□	✓	–	–	✓	✓	✓
1LA9 06 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 07 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 08 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 09 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 10 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 11 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 13 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 16 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 18 □□	○	○	□	✓ ²⁾	✓	✓	–	–	–
1LA9 20 □□	○	○	□	✓ ²⁾	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ The "Second shaft extension" option, order code **K16** is not possible.

²⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 60 Hz L_{pFA} dB(A)	Sound pressure level at 60 Hz L_{WA} dB(A)
4-pole, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT							
1LA9 050-4KA□□	2.7	3.4	3	16	0.00027	46	57
1LA9 053-4KA□□	2.8	3.5	3	16	0.00035	46	57
1LA9 060-4KA□□	2.7	3.9	2.8	16	0.00037	46	57
1LA9 063-4KA□□	3	3.6	3.1	16	0.00045	46	57
1LA9 070-4KA□□	3.6	4.9	3.4	16	0.00076	48	59
1LA9 073-4KA□□	3.3	4.9	3.4	16	0.00095	48	59
1LA9 080-4KA□□	3.4	6.8	3.6	16	0.0017	51	62
1LA9 083-4KA□□	4	7.3	3.9	16	0.0024	51	62
1LA9 090-4KA□□	3.1	7.7	3.9	16	0.0033	52	64
1LA9 096-4KA□□	3.6	8.1	4.2	16	0.004	52	64
1LA9 106-4KA□□	3.4	8.4	4.3	16	0.0062	57	69
1LA9 107-4KA□□	3.8	8.7	4.6	16	0.0077	57	69
1LA9 113-4KA□□	3.2	8.6	3.9	16	0.014	57	69
1LA9 130-4KA□□	3.2	8.7	4.1	16	0.023	66	78
1LA9 133-4KA□□	3.4	8.7	4.1	16	0.029	66	78
1LA9 163-4KA□□	2.6	8.1	3.2	16	0.055	70	82
1LA9 166-4KA□□	2.8	8.5	3.5	16	0.072	70	82
1LA9 183-4WA□□	2.8	8.4	3.6	16	0.15	67	80
1LA9 186-4WA□□	3.1	8.8	3.9	16	0.19	67	80
1LA9 207-4WA□□	3	8.3	3.6	16	0.32	69	82

The motors can also be used for 50 Hz according to CEMEP, see Pages 2/22 to 2/27.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Rated output at 60 Hz	Frame size	Operating values at rated output					Power factor at 60 Hz 4/4-load	Rated current at 460 V, 60 Hz	Order No. For Order No. supplements for voltage and type of construction, see table below	Price	Weight IM B3 type of construction approx. <i>m</i> kg
		Rated speed at 60 Hz	Rated torque at 60 Hz	EPACT with CC No. CC 032A	Nominal efficiency at 60 Hz						
P_{rated} HP	FS	n_{rated} rpm	T_{rated} Nm		η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A				
6-pole, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT											
1	90 S	1140	6.2	Yes	80	0.66	1.78	1LA9 090-6KA□□		15.7	
1.5	90 L	1150	9.3	Yes	85.5	0.64	2.55	1LA9 096-6KA□□		19	
2	100 L	1150	12	No	86.5	0.70	3.1	1LA9 106-6KA□□		25	
3	112 M	1160	18	Yes	87.5	0.66	4.8	1LA9 113-6KA□□		37	
5	132 M	1160	31	Yes	87.5	0.77	6.9	1LA9 133-6KA□□		49	
7.5	132 M	1160	46	Yes	89.5	0.73	10.6	1LA9 134-6KA□□		64	
10	160 M	1165	61	Yes	89.5	0.7	15	1LA9 163-6KA□□		98	
15	160 L	1165	92	Yes	90.2	0.77	19	1LA9 166-6KA□□		105	
20	180 L	1175	121	Yes	90.2	0.75	28	1LA9 186-6WA□□		144	
25	200 L	1175	152	Yes	91.7	0.75	34	1LA9 206-6WA□□		186	
30	200 L	1175	182	Yes	91.7	0.75	40	1LA9 207-6WA□□		217	

Order No. supplements

Motor type	Penultimate position: Voltage code		Final position: Type of construction code						
	60 Hz	460 VΔ	Without flange	With flange		IM B35	With standard flange		With special flange
	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover	IM V1 with protective cover ¹⁾	IM V3	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	0	1	4	6	2	7	3
1LA9 05 □□	○	○	□	✓	–	–	✓	✓	✓
1LA9 06 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 07 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 08 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 09 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 10 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 11 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 13 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 16 □□	○	○	□	✓	✓	✓	✓	✓	✓
1LA9 18 □□	○	○	□	✓ ²⁾	✓	✓	–	–	–
1LA9 20 □□	○	○	□	✓ ²⁾	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ The "Second shaft extension" option, order code **K16** is not possible.
²⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 60 Hz L_{pFA} dB(A)	Sound pressure level at 60 Hz L_{WA} dB(A)
6-pole, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT							
1LA9 090-6KA□□	3	5.6	3	16	0.0033	47	59
1LA9 096-6KA□□	3.7	6.4	3.7	16	0.005	47	59
1LA9 106-6KA□□	3.5	7.2	3.8	16	0.0065	51	63
1LA9 113-6KA□□	2.9	7.5	3.7	16	0.014	56	68
1LA9 133-6KA□□	3	7.9	3.6	16	0.025	67	79
1LA9 134-6KA□□	3.7	8.4	4.3	16	0.03	67	79
1LA9 163-6KA□□	2.4	6.4	2.8	16	0.063	70	82
1LA9 166-6KA□□	3.1	8.3	3.8	16	0.072	70	82
1LA9 186-6WA□□	2.8	7.1	2.8	16	0.19	70	82
1LA9 206-6WA□□	2.8	7.1	2.8	16	0.28	70	82
1LA9 207-6WA□□	2.8	7.2	2.8	16	0.36	70	82

The motors can also be used for 50 Hz according to CEMEP, see Pages 2/22 to 2/27.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated motors with increased output –
Aluminum series 1LA9

Selection and ordering data

Rated output at		Frame size	Operating values at rated output						Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz	Order No. For Order No. supplements for voltage and type of construction, see table below	Price	Weight IM B3 type of construction approx. <i>m</i> kg
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	$\cos\phi$ rated	I rated					
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi$ rated	I rated A					
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used as temperature class 155 (F)													
0.2	0.23	56 M	2830	0.67	69	69	0.82	0.51	1LA9 053-2LAQQ		3.8		
0.33	0.38	63 M	2775	1.1	68	67.5	0.8	0.88	1LA9 060-2LAQQ		4.1		
0.45	0.52	63 M	2720	1.6	68	67.5	0.84	1.14	1LA9 063-2LAQQ		5.1		
0.65	0.75	71 M	2720	2.3	72	72	0.83	1.56	1LA9 070-2LAQQ		6		
0.94	1.08	71 M	2735	3.3	73	73	0.82	2.25	1LA9 073-2LAQQ		7.2		
1.45	1.67	80 M	2820	4.9	76	76	0.83	3.3	1LA9 080-2LAQQ		9.8		
1.75	2.01	80 M	2840	5.9	77	77.5	0.82	4	1LA9 083-2LAQQ		12.3		
2.9	3.34	90 S	2825	9.8	81	81	0.82	6.3	1LA9 090-2LAQQ		15		
3.8	4.37	90 L	2810	13	81	81	0.85	8	1LA9 096-2LAQQ		18.6		
4.4	5.06	100 L	2880	15	82	82	0.83	9.3	1LA9 106-2LAQQ		24		
6.5	7.48	112 M	2900	21	85	85	0.83	13.2	1LA9 113-2LAQQ		35		
9	10.35	132 S	2895	29	87	87	0.9	16.6	1LA9 130-2LAQQ		43		
12	13.8	132 S	2905	39	87	87	0.89	22.5	1LA9 131-2LAQQ		56		
18	20.7	160 M	2910	59	89	89	0.87	33.5	1LA9 163-2LAQQ		73		
21	24.15	160 M	2910	68	90	90	0.91	37	1LA9 164-2LAQQ		82		
26	29.9	160 L	2920	85	91	91	0.91	45.5	1LA9 166-2LAQQ		102		
33	37.95	180 M	2940	107	92	92	0.86	60	1LA9 183-2AAQQ		131		
44	50.6	200 L	2945	143	92	92	0.86	80	1LA9 206-2AAQQ		182		
53	60.95	200 L	2945	172	92.5	92.5	0.87	95	1LA9 207-2AAQQ		211		

Order No. supplements

Motor type	Penultimate position: Voltage code					Final position: Type of construction code								
	50 Hz					60 Hz		Without flange		With flange		With standard flange		With special flange
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover IM V3	IM V1 with protective cover ¹⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover	
1	6	3	5	1	6	0	1	4	6	2	7	3		
1LA9 05 □□	○	○	○	–	○	○	□	✓	–	–	✓	✓	✓	
1LA9 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 18 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	✓	–	–	–	
1LA9 20 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	✓	–	–	–	

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see “Special versions” in the “Selection and ordering data” under “Voltages”).

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see “Special versions” in the “Selection and ordering data” under “Types of construction”).

¹⁾ The “Second shaft extension” option, order code **K16** is not possible.

²⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated motors with increased output –
Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz L_{pFA} dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used as temperature class 155 (F)							
1LA9 053-2LA□□	2.1	4.5	2.3	16	0.0002	41	52
1LA9 060-2LA□□	2.3	4.4	2.2	16	0.00022	49	60
1LA9 063-2LA□□	2.2	4.2	2.3	16	0.00026	49	60
1LA9 070-2LA□□	2.4	4.5	2.5	16	0.00041	52	63
1LA9 073-2LA□□	2.5	4.8	2.4	16	0.0005	52	63
1LA9 080-2LA□□	3.1	6.7	3.1	16	0.001	56	67
1LA9 083-2LA□□	3.7	7.4	3.5	16	0.0013	56	67
1LA9 090-2LA□□	3.2	6.5	3	16	0.0018	60	72
1LA9 096-2LA□□	3.1	6.5	2.7	16	0.0022	60	72
1LA9 106-2LA□□	3	7.8	3.2	16	0.0044	62	74
1LA9 113-2LA□□	3	8.6	3.8	16	0.0077	63	75
1LA9 130-2LA□□	2	6.4	2.6	16	0.019	68	80
1LA9 131-2LA□□	3	7.4	3.2	16	0.024	68	80
1LA9 163-2LA□□	2.2	7	3.1	16	0.044	70	82
1LA9 164-2LA□□	2	6.9	2.7	16	0.051	70	82
1LA9 166-2LA□□	2.2	7.7	3.2	16	0.065	70	82
1LA9 183-2AA□□	2.5	7.4	3.3	16	0.09	70	83
1LA9 206-2AA□□	2.4	7.8	3.2	16	0.16	71	84
1LA9 207-2AA□□	2.6	8.2	3.3	16	0.2	71	84

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated motors with increased output –
Aluminum series 1LA9

Selection and ordering data (continued)

Rated output at		Frame size	Operating values at rated output						Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz	Order No. For Order No. supplements for voltage and type of construction, see table below	Price	Weight IM B3 type of construction approx. m kg
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	$\cos\phi$ rated	I rated					
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi$ rated	I rated A					
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used as temperature class 155 (F)													
0.14	0.16	56 M	1385	0.97	62	60.5	0.74	0.44	1LA9 053-4LAQQ			3.8	
0.21	0.24	63 M	1335	1.5	60	58.5	0.77	0.66	1LA9 060-4LAQQ			4.1	
0.29	0.33	63 M	1330	2.1	60	58.5	0.71	0.98	1LA9 063-4LAQQ			5.1	
0.45	0.52	71 M	1340	3.2	64	63	0.71	1.42	1LA9 070-4LAQQ			6	
0.6	0.69	71 M	1340	4.3	70	70	0.75	1.64	1LA9 073-4LAQQ			7.2	
0.9	1.04	80 M	1340	6.4	70	70	0.81	2.3	1LA9 080-4LAQQ			9.8	
1.25	1.44	80 M	1340	8.9	70	70	0.83	3.1	1LA9 083-4LAQQ			12.3	
1.8	2.07	90 S	1380	12	77	77.5	0.83	4.05	1LA9 090-4LAQQ			15	
2.5	2.88	90 L	1390	17	76	76	0.81	5.9	1LA9 096-4LAQQ			18	
4	4.6	100 L	1410	27	77	77.5	0.81	9.3	1LA9 107-4LAQQ			25	
5.5	6.33	112 M	1440	36	82	82	0.8	12.2	1LA9 113-4LAQQ			37	
8.6	9.89	132 S	1440	57	84	84	0.83	17.8	1LA9 130-4LAQQ			45	
11	12.65	132 M	1450	72	86	86	0.82	22.5	1LA9 133-4LAQQ			60	
17	19.55	160 M	1455	112	88	88	0.84	33	1LA9 163-4LAQQ			81	
22	25.3	160 L	1455	144	88	88	0.82	44	1LA9 166-4LAQQ			107	
26	30	180 M	1460	170	90.5	90.5	0.83	50	1LA9 183-4AAQQ			126	
32	38	180 L	1465	209	91.3	91.3	0.84	60	1LA9 186-4AAQQ			146	
43	49.6	200 L	1465	280	91.7	91.7	0.85	80	1LA9 207-4AAQQ			196	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code									
	50 Hz				60 Hz				Without flange		With flange		With standard flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover 1)	IM V1 with protective cover 1)	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover	
	1	6	3	5	1	6	0	1	4	6	2	7	3	
1LA9 05 □□	○	○	○	–	○	○	□	✓	–	–	✓	✓	✓	
1LA9 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓	✓	
1LA9 18 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	✓	–	–	–	
1LA9 20 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	✓	–	–	–	

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

1) The "Second shaft extension" option, order code **K16** is not possible.

2) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated motors with increased output –
Aluminum series 1LA9

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz L_{pFA} dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used as temperature class 155 (F)							
1LA9 053-4LA□□	2.3	3.5	2.2	16	0.00035	42	53
1LA9 060-4LA□□	2.1	2.9	2.1	16	0.00037	42	53
1LA9 063-4LA□□	2.3	2.9	2.3	16	0.00045	42	53
1LA9 070-4LA□□	2.3	3.4	2.3	16	0.00076	44	55
1LA9 073-4LA□□	2.3	3.6	2.3	16	0.00095	44	55
1LA9 080-4LA□□	2.3	4.1	2.4	16	0.0017	47	58
1LA9 083-4LA□□	2.7	4.5	2.4	16	0.0024	47	58
1LA9 090-4LA□□	2.4	5.1	2.4	16	0.0033	48	60
1LA9 096-4LA□□	2.5	5.1	2.3	16	0.004	48	60
1LA9 107-4LA□□	2.7	6	3	16	0.0062	53	65
1LA9 113-4LA□□	3	6.8	3	16	0.014	53	65
1LA9 130-4LA□□	2.3	6.8	2.7	16	0.023	62	74
1LA9 133-4LA□□	2.8	7.4	3.1	16	0.029	62	74
1LA9 163-4LA□□	2.9	7.5	2.8	16	0.055	66	78
1LA9 166-4LA□□	3.1	8.3	3.4	16	0.072	66	78
1LA9 183-4AA□□	2.4	7.5	3.2	16	0.15	63	76
1LA9 186-4AA□□	2.5	7.9	3.4	16	0.19	63	76
1LA9 207-4AA□□	2.7	7.8	3.5	16	0.32	65	78

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data

Rated output at		Frame size	Operating values at rated output							Rated current at 400 V, 50 Hz	Order No. supplements for voltage and type of construction, see table below	Price	Weight IM B3 type of construction approx. m kg
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load					
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	EFF2	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A				
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection													
3	3.45	100 L	2890	9.9	EFF2	84	84	0.85	6.1	1LA6 106-2AA□□		34	
4	4.6	112 M	2905	13	EFF2	86	86	0.86	7.8	1LA6 113-2AA□□		43	
5.5	6.3	132 S	2925	18	EFF2	86.5	86.5	0.89	10.4	1LA6 130-2AA□□		53	
7.5	8.6	132 S	2930	24	EFF2	88	88	0.89	13.8	1LA6 131-2AA□□		58	
11	12.6	160 M	2940	36	EFF2	89.5	89.5	0.88	20	1LA6 163-2AA□□		96	
15	17.3	160 M	2940	49	EFF2	90	90.2	0.9	26.5	1LA6 164-2AA□□		105	
18.5	21.3	160 L	2940	60	EFF2	91	91.2	0.91	32	1LA6 166-2AA□□		115	
22	24.5	180 M	2945	71	EFF 2	91.6	91.6	0.86	40.5 ¹⁾	1LG4 183-2AA□□		145	
30	33.5	200 L	2950	97	EFF 2	91.8	91.9	0.88	54 ¹⁾	1LG4 206-2AA□□		205	
37	41.5	200 L	2955	120	EFF 2	92.9	93.2	0.89	65 ¹⁾	1LG4 207-2AA□□		225	
45	51	225 M	2960	145	EFF 2	93.6	93.9	0.88	79 ¹⁾	1LG4 223-2AA□□		285	
55	62	250 M	2970	177	EFF 2	93.6	93.8	0.88	96	1LG4 253-2AB□□		375	
75	84	280 S	2975	241	EFF 2	94.5	94.3	0.88	130 ¹⁾	1LG4 280-2AB□□		500	
90	101	280 M	2975	289	EFF 2	95.1	95.2	0.89	154 ¹⁾	1LG4 283-2AB□□		540	
110	123	315 S	2982	352		94.6	93.8	0.88	190 ¹⁾	1LG4 310-2AB□□		720	
132	148	315 M	2982	423		95.1	94.8	0.9	225 ¹⁾	1LG4 313-2AB□□		775	
160	180	315 L	2982	512		95.5	95.3	0.91	265 ²⁾	1LG4 316-2AB□□		900	
200	224	315 L	2982	641		95.9	95.8	0.92	325 ²⁾	1LG4 317-2AB□□		1015	

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code							
	50 Hz		60 Hz				Without flange	With flange			With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover ³⁾	IM B5, IM V1 without protective cover IM V3 ⁴⁾	IM V1 without protective cover ⁴⁾	IM V1 with protective cover ⁴⁾⁵⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	4	6	2	7	3
1LA6 10 □□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LA6 11 □□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LA6 13 □□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LA6 16 □□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LG4 18 □□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 20 □□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 22 □□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 25 □□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 28 □□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 310 □□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 313 □□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 316 □□	–	○	–	○	–	○	□ ⁷⁾	–	✓ ⁸⁾	✓ ⁸⁾	✓	–	–	–
1LG4 317 □□	–	○	–	○	–	○	□ ⁷⁾	–	✓ ⁸⁾	✓ ⁸⁾	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

For footnotes, see Page 2/39 bottom.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting torque	as multiple of rated current	torque	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz L_{pA} dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}				
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA6 106-2AA□□	2.8	6.8	3	16	0.0035	62	74
1LA6 113-2AA□□	2.6	7.2	2.9	16	0.0059	63	75
1LA6 130-2AA□□	2	5.9	2.8	16	0.015	68	80
1LA6 131-2AA□□	2.3	6.9	3	16	0.019	68	80
1LA6 163-2AA□□	2.1	6.5	2.9	16	0.034	70	82
1LA6 164-2AA□□	2.2	6.6	3	16	0.043	70	82
1LA6 166-2AA□□	2.4	7	3.1	16	0.051	70	82
1LG4 183-2AA□□	2.5	6.4	3.4	16	0.068	67	80
1LG4 206-2AA□□	2.3	6.5	3	16	0.13	73	86
1LG4 207-2AA□□	2.5	7.2	3.3	16	0.15	73	86
1LG4 223-2AA□□	2.4	6.7	3.1	16	0.22	73	86
1LG4 253-2AB□□	2.1	6.7	3.1	13	0.4	75	88
1LG4 280-2AB□□	2.5	7.5	3.1	13	0.72	74	87
1LG4 283-2AB□□	2.6	7.2	3.1	13	0.83	74	87
1LG4 310-2AB□□	2.4	7.2	3.1	13	1.2	80	94
1LG4 313-2AB□□	2.4	6.9	3	13	1.4	80	94
1LG4 316-2AB□□	2.4	7	3	13	1.6	80	94
1LG4 317-2AB□□	2.3	6.7	2.9	13	2.1	80	94

- 1) For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 2) For connection to 400 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 3) If motors 1LG4 183-... to 1LG4 318-... (motor series 1LG4 frame sizes 180 M to 315 L) 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) 1LG4 220-... to 1LG4 318-... motors (motor series 1LG4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 7) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.
- 8) 2-pole motors in 60 Hz version available on request.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data (continued)

Rated output at		Frame size	Operating values at rated output							Order No.	Price	Weight IM B3 type of construction approx. m kg
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz			
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	EFF2	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection												
2.2	2.55	100 L	1420	15	EFF2	82	82.5	0.82	4.7	1LA6 106-4AA□□	33	
3	3.45	100 L	1420	20	EFF2	83	83.5	0.82	6.4	1LA6 107-4AA□□	36	
4	4.6	112 M	1440	27	EFF2	85	85.5	0.83	8.2	1LA6 113-4AA□□	45	
5.5	6.3	132 S	1455	36	EFF2	86	86	0.81	11.4	1LA6 130-4AA□□	55	
7.5	8.6	132 M	1455	49	EFF2	87	87.5	0.82	15.2	1LA6 133-4AA□□	62	
11	12.6	160 M	1460	72	EFF2	88.5	89	0.84	21.5	1LA6 163-4AA□□	100	
15	17.3	160 L	1460	98	EFF2	90	90.2	0.84	28.5	1LA6 166-4AA□□	114	
18.5	21.3	180 M	1465	121	EFF 2	90.4	90.8	0.84	35 ¹⁾	1LG4 183-4AA□□	140	
22	25.3	180 L	1465	143	EFF 2	91	91.5	0.84	41.5 ¹⁾	1LG4 186-4AA□□	155	
30	34.5	200 L	1465	196	EFF 2	91.6	92	0.85	56 ¹⁾	1LG4 207-4AA□□	205	
37	42.5	225 S	1475	240	EFF 2	92.2	92.6	0.85	68 ¹⁾	1LG4 220-4AA□□	265	
45	52	225 M	1475	291	EFF 2	93.1	93.6	0.86	81 ¹⁾	1LG4 223-4AA□□	300	
55	63	250 M	1480	355	EFF 2	93.5	93.8	0.85	100	1LG4 253-4AA□□	390	
75	86	280 S	1485	482	EFF 2	94.2	94.1	0.85	136 ¹⁾	1LG4 280-4AA□□	535	
90	104	280 M	1485	579	EFF 2	94.6	94.6	0.86	160 ¹⁾	1LG4 283-4AA□□	580	
110	127	315 S	1488	706		94.6	94.6	0.85	198 ¹⁾	1LG4 310-4AA□□	730	
132	152	315 M	1488	847		95.2	95.2	0.85	235 ¹⁾	1LG4 313-4AA□□	810	
160	184	315 L	1486	1028		95.7	95.8	0.86	280 ²⁾	1LG4 316-4AA□□	955	
200	230	315 L	1486	1285		95.9	96.2	0.88	340 ²⁾	1LG4 317-4AA□□	1060	

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code							
	50 Hz		60 Hz				Without flange	With flange		With standard flange		With special flange		
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover 3)	IM B5, IM V1 without protective cover 4)	IM V1 without protective cover 4)	IM V1 with protective cover 4)5)	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	4	6	2	7	3
1LA6 10...□□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LA6 11...□□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LA6 13...□□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LA6 16...□□	○	○	○	○	○	○	□	✓	–	✓	✓	✓	✓	✓
1LG4 18...□□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 20...□□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 22...□□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 25...□□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 28...□□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 310...□□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 313...□□	○	○	○	○	○	○	□	✓ ⁶⁾	–	✓	✓	–	–	–
1LG4 316...□□	–	○	–	○	–	○	□ ⁷⁾	–	✓	✓	✓	–	–	–
1LG4 317...□□	–	○	–	○	–	○	□ ⁷⁾	–	✓	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see “Special versions” in the “Selection and ordering data” under “Voltages”).

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see “Special versions” in the “Selection and ordering data” under “Types of construction”).

For footnotes, see Page 2/41 bottom.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting torque	as multiple of rated current	torque	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}				
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA6 106-4AA□□	2.5	5.6	2.8	16	0.0047	53	65
1LA6 107-4AA□□	2.7	5.6	3	16	0.0055	53	65
1LA6 113-4AA□□	2.7	6	3	16	0.012	53	65
1LA6 130-4AA□□	2.5	6.3	3.1	16	0.018	62	74
1LA6 133-4AA□□	2.7	6.7	3.2	16	0.023	62	74
1LA6 163-4AA□□	2.2	6.2	2.7	16	0.043	66	78
1LA6 166-4AA□□	2.6	6.5	3	16	0.055	66	78
1LG4 183-4AA□□	2.4	6.7	3.1	16	0.099	65	78
1LG4 186-4AA□□	2.5	6.9	3.2	16	0.12	65	78
1LG4 207-4AA□□	2.5	6.7	3.4	16	0.19	66	79
1LG4 220-4AA□□	2.3	6.7	3.1	16	0.37	66	79
1LG4 223-4AA□□	2.6	7.2	3.2	16	0.45	66	79
1LG4 253-4AA□□	2.4	6.1	2.8	16	0.69	65	78
1LG4 280-4AA□□	2.5	7.1	3	16	1.2	70	84
1LG4 283-4AA□□	2.5	7.4	3	16	1.4	70	84
1LG4 310-4AA□□	2.5	6.4	2.8	16	1.9	70	84
1LG4 313-4AA□□	2.7	6.8	2.9	16	2.3	71	85
1LG4 316-4AA□□	2.7	6.8	2.8	16	2.9	71	85
1LG4 317-4AA□□	2.6	6.5	2.8	16	3.5	71	85

- 1) For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 2) For connection to 400 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 3) If motors 1LG4 183-... to 1LG4 318-... (motor series 1LG4 frame sizes 180 M to 315 L) 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) 1LG4 220-... to 1LG4 318-... motors (motor series 1LG4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 7) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data (continued)

Rated output at		Frame size	Operating values at rated output						Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz	Order No.	Price	Weight IM B3 type of construction approx. m kg
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load						
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below				
6-pole, 1000 rpm at 50 Hz, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection													
1.5	1.75	100 L	925	15	74	74	0.75	3.9	1LA6 106-6AA□□		33		
2.2	2.55	112 M	940	22	78	78.5	0.78	5.2	1LA6 113-6AA□□		40		
3	3.45	132 S	950	30	79	79.5	0.76	7.2	1LA6 130-6AA□□		50		
4	4.6	132 M	950	40	80.5	80.5	0.76	9.4	1LA6 133-6AA□□		57		
5.5	6.3	132 M	950	55	83	83	0.76	12.6	1LA6 134-6AA□□		66		
7.5	8.6	160 M	960	75	86	86	0.74	17	1LA6 163-6AA□□		103		
11	12.6	160 L	960	109	87.5	87.5	0.74	24.5	1LA6 166-6AA□□		122		
15	18	180 L	965	148	88.9	90.3	0.83	29.5	1LG4 186-6AA□□		150		
18.5	22	200 L	975	181	89.8	90.2	0.81	36.5	1LG4 206-6AA□□		195		
22	26.5	200 L	975	215	90.3	91	0.81	43.5	1LG4 207-6AA□□		205		
30	36	225 M	978	293	91.8	92.8	0.83	57 ¹⁾	1LG4 223-6AA□□		280		
37	44.5	250 M	980	361	92.3	93	0.83	70	1LG4 253-6AA□□		370		
45	54	280 S	985	436	92.4	93.1	0.85	83	1LG4 280-6AA□□		475		
55	66	280 M	985	533	92.7	93.3	0.86	100	1LG4 283-6AA□□		510		
75	90	315 S	988	725	93.5	93.7	0.84	138	1LG4 310-6AA□□		685		
90	108	315 M	988	870	93.9	94.2	0.84	164 ¹⁾	1LG4 313-6AA□□		750		
110	132	315 L	988	1063	94.3	94.6	0.86	196	1LG4 316-6AA□□		890		
132	158	315 L	988	1276	94.8	95	0.86	235	1LG4 317-6AA□□		980		
160	192	315 L	988	1547	95	95.1	0.86	285 ²⁾	1LG4 318-6AA□□		1180		

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code							
	50 Hz			60 Hz			Without flange	With flange			With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover ³⁾	IM B5, IM V1 without protective cover ⁴⁾	IM V1 without protective cover ⁴⁾	IM V1 with protective cover ⁴⁾⁵⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	4	6	2	7	3
1LA6 10 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LA6 11 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LA6 13 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LA6 16 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LG4 18 - . . . □□	○	○	○	○	○	○	□	✓ ⁶⁾	-	✓	✓	-	-	-
1LG4 20 - . . . □□	○	○	○	○	○	○	□	✓ ⁶⁾	-	✓	✓	-	-	-
1LG4 22 - . . . □□	○	○	○	○	○	○	□	✓ ⁶⁾	-	✓	✓	-	-	-
1LG4 25 - . . . □□	○	○	○	○	○	○	□	✓ ⁶⁾	-	✓	✓	-	-	-
1LG4 28 - . . . □□	○	○	○	○	○	○	□	✓ ⁶⁾	-	✓	✓	-	-	-
1LG4 310 - . . . □□	○	○	○	○	○	○	□	✓ ⁶⁾	-	✓	✓	-	-	-
1LG4 313 - . . . □□														
1LG4 316 - . . . □□	-	○	-	○	-	○	□ ⁷⁾	-	✓	✓	✓	-	-	-
1LG4 317 - . . . □□														
1LG4 318 - . . . □□														

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

For footnotes, see Page 2/43 bottom.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting torque	as multiple of rated current	torque	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}				
6-pole, 1000 rpm at 50 Hz, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA6 106-6AA□□	2.3	4	2.3	16	0.0047	47	59
1LA6 113-6AA□□	2.2	4.6	2.5	16	0.0091	52	64
1LA6 130-6AA□□	1.9	4.2	2.2	16	0.015	63	75
1LA6 133-6AA□□	2.1	4.5	2.4	16	0.019	63	75
1LA6 134-6AA□□	2.3	5	2.6	16	0.025	63	75
1LA6 163-6AA□□	2.1	4.6	2.5	16	0.044	66	78
1LA6 166-6AA□□	2.3	4.8	2.6	16	0.063	66	78
1LG4 186-6AA□□	2.3	5.3	2.5	16	0.18	57	73
1LG4 206-6AA□□	2.5	5.6	2.5	16	0.24	58	73
1LG4 207-6AA□□	2.6	5.7	2.5	16	0.29	58	73
1LG4 223-6AA□□	2.7	5.6	2.5	16	0.49	59	73
1LG4 253-6AA□□	2.7	6	2.3	16	0.76	60	75
1LG4 280-6AA□□	2.4	6.1	2.4	16	1.1	61	75
1LG4 283-6AA□□	2.5	6.3	2.5	16	1.4	61	75
1LG4 310-6AA□□	2.5	6.5	2.8	16	2.1	63	77
1LG4 313-6AA□□	2.6	6.8	2.9	16	2.5	63	77
1LG4 316-6AA□□	2.5	6.8	2.9	16	3.2	64	78
1LG4 317-6AA□□	3.1	7.3	3	16	4	64	78
1LG4 318-6AA□□	3	7.5	3	16	4.7	65	79

- 1) For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 2) For connection to 400 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 3) If motors 1LG4 183-... to 1LG4 318-... (motor series 1LG4 frame sizes 180 M to 315 L) 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) 1LG4 220-... to 1LG4 318-... motors (motor series 1LG4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 7) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data (continued)

Rated output at		Frame size	Operating values at rated output						Order No.	Price	Weight
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load			
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A		m kg	
8-pole, 750 rpm at 50 Hz, 900 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection											
0.75	0.86	100 L	680	11	66	65	0.76	2.15	1LA6 106-8AB□□	29	
1.1	1.3	100 L	680	15	72	72	0.76	2.9	1LA6 107-8AB□□	32	
1.5	1.75	112 M	705	20	74	74	0.76	3.85	1LA6 113-8AB□□	39	
2.2	2.55	132 S	700	30	75	75	0.74	5.7	1LA6 130-8AB□□	50	
3	3.45	132 M	700	41	77	77.5	0.74	7.6	1LA6 133-8AB□□	57	
4	4.6	160 M	715	53	80	80	0.72	10	1LA6 163-8AB□□	91	
5.5	6.3	160 M	710	74	83.5	83.5	0.73	13	1LA6 164-8AB□□	102	
7.5	8.6	160 L	715	100	85.5	85.5	0.72	17.6	1LA6 166-8AB□□	122	
11	13.2	180 L	725	145	87.5	88.3	0.73	25	1LG4 186-8AB□□	150	
15	18	200 L	725	198	87.7	88.4	0.76	32.5	1LG4 207-8AB□□	205	
18.5	22	225 S	730	242	89.4	90.4	0.78	38.5	1LG4 220-8AB□□	270	
22	26.5	225 M	730	288	89.7	90.7	0.79	45	1LG4 223-8AB□□	290	
30	36	250 M	730	392	91.4	92.2	0.81	58	1LG4 253-8AB□□	385	
37	44.5	280 S	735	481	92	92.8	0.81	72	1LG4 280-8AB□□	475	
45	54	280 M	735	585	92.4	93.3	0.81	87	1LG4 283-8AB□□	515	
55	66	315 S	740	710	93	93.4	0.81	106	1LG4 310-8AB□□	680	
75	90	315 M	738	971	93.3	94	0.83	140	1LG4 313-8AB□□	745	
90	108	315 L	738	1165	93.4	94	0.83	168	1LG4 316-8AB□□	865	
110	132	315 L	738	1423	94	94.4	0.83	205	1LG4 317-8AB□□	1020	
132	158	315 L	738	1708	94.2	94.6	0.83	245	1LG4 318-8AB□□	1100	

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code							
	50 Hz			60 Hz			Without flange	With flange			With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover 1)	IM B5, IM V1 without protective cover 2)	IM V1 without protective cover 2)	IM V1 with protective cover 2)3)	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	4	6	2	7	3
1LA6 10 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LA6 11 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LA6 13 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LA6 16 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	✓	✓	✓	✓
1LG4 18 - . . . □□	○	○	○	○	○	○	□	✓ ⁴⁾	-	✓	✓	-	-	-
1LG4 20 - . . . □□	○	○	○	○	○	○	□	✓ ⁴⁾	-	✓	✓	-	-	-
1LG4 22 - . . . □□	○	○	○	○	○	○	□	✓ ⁴⁾	-	✓	✓	-	-	-
1LG4 25 - . . . □□	○	○	○	○	○	○	□	✓ ⁴⁾	-	✓	✓	-	-	-
1LG4 28 - . . . □□	○	○	○	○	○	○	□	✓ ⁴⁾	-	✓	✓	-	-	-
1LG4 310 - . . . □□	○	○	○	○	○	○	□	✓ ⁴⁾	-	✓	✓	-	-	-
1LG4 313 - . . . □□														
1LG4 316 - . . . □□	-	○	-	○	-	○	□ ⁵⁾	-	✓	✓	✓	-	-	-
1LG4 317 - . . . □□														
1LG4 318 - . . . □□														

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

For footnotes, see Page 2/45 bottom.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6/1LG4

Selection and ordering data (continued)

Order No.	Locked-rotor torque	Locked-rotor current	Breakdown torque	Torque class	Moment of inertia	Noise at rated output	
	with direct starting torque	as multiple of rated current	torque	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}				
8-pole, 750 rpm at 50 Hz, 900 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection							
1LA6 106-8AB□□	1.6	3	1.9	13	0.0051	45	57
1LA6 107-8AB□□	1.8	3.3	2.1	13	0.0063	45	57
1LA6 113-8AB□□	1.8	3.7	2.1	13	0.013	49	61
1LA6 130-8AB□□	1.9	3.9	2.3	13	0.014	53	65
1LA6 133-8AB□□	2.1	4.1	2.4	13	0.019	53	65
1LA6 163-8AB□□	2.2	4.5	2.6	13	0.036	63	75
1LA6 164-8AB□□	2.3	4.7	2.7	13	0.046	63	75
1LA6 166-8AB□□	2.7	5.3	3	13	0.064	63	75
1LG4 186-8AB□□	1.7	4.2	2.1	13	0.17	66	79
1LG4 207-8AB□□	2.2	4.9	2.6	13	0.29	67	70
1LG4 220-8AB□□	2.3	5.5	2.7	13	0.48	57	70
1LG4 223-8AB□□	2.3	5.6	2.8	13	0.55	54	73
1LG4 253-8AB□□	2.3	5.5	2.6	13	0.84	55	73
1LG4 280-8AB□□	2.2	5	2.1	13	1.1	56	74
1LG4 283-8AB□□	2.2	5.1	2.1	13	1.4	58	74
1LG4 310-8AB□□	2.2	5.8	2.6	13	2.1	64	78
1LG4 313-8AB□□	2.2	5.7	2.6	13	2.5	64	78
1LG4 316-8AB□□	2.2	5.8	2.7	13	3.1	64	78
1LG4 317-8AB□□	2.4	6.1	2.8	13	3.9	64	78
1LG4 318-8AB□□	2.5	6.5	2.9	13	4.5	64	78

2

- 1) If motors 1LG4 183-... to 1LG4 318-... (motor series 1LG4 frame sizes 180 M to 315 L) 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) 1LG4 220-... to 1LG4 318-... motors (motor series 1LG4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated in accordance with 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.
- 4) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 5) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated motors with increased output –
Cast-iron series 1LG4

Selection and ordering data

Rated output at		Frame size	Operating values at rated output						Order No.	Price	Weight IM B3 type of construction approx. m kg
50 Hz	60 Hz		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz			
P_{rated} kW	P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)											
30	33.5	180 L	2950	97	92.8	92.9	0.86	54 ¹⁾	1LG4 188-2AA□□	175	
45	51	200 L	2955	145	93.6	93.7	0.89	78 ¹⁾	1LG4 208-2AA□□	255	
55	62	225 M	2960	177	94.8	95	0.89	94 ¹⁾	1LG4 228-2AA□□	335	
75	84	250 M	2970	241	94.5	94.5	0.88	130 ¹⁾	1LG4 258-2AA□□	420	
110	123	280 M	2975	353	95.5	95.6	0.9	184 ¹⁾	1LG4 288-2AB□□	630	
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)											
30	34.5	180 L	1465	196	91.7	91.9	0.8	59 ¹⁾	1LG4 188-4AA□□	180	
37	42.5	200 L	1465	241	92.5	92.8	0.83	70 ¹⁾	1LG4 208-4AA□□	230	
55	63	225 M	1475	356	93.4	93.9	0.86	99 ¹⁾	1LG4 228-4AA□□	330	
75	86	250 M	1482	483	94.3	94.4	0.85	136 ¹⁾	1LG4 258-4AA□□	460	
110	127	280 M	1488	706	95.2	94.9	0.84	198 ¹⁾	1LG4 288-4AA□□	680	
6-pole, 1000 rpm at 50 Hz, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)											
18.5	22	180 L	970	182	89.6	90.3	0.8	37.5 ¹⁾	1LG4 188-6AA□□	175	
30	36	200 L	975	294	90.9	91.3	0.8	60 ¹⁾	1LG4 208-6AA□□	245	
37	44.5	225 M	978	361	92.2	93	0.83	70 ¹⁾	1LG4 228-6AA□□	325	
45	54	250 M	982	438	93.3	93.8	0.83	84	1LG4 258-6AA□□	405	
75	90	280 M	985	727	93.8	94.3	0.85	136 ¹⁾	1LG4 288-6AA□□	570	
8-pole, 750 rpm at 50 Hz, 900 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)											
15	18	180 L	720	199	87.8	88.5	0.73	34 ¹⁾	1LG4 188-8AB□□	165	
18.5	22	200 L	725	244	88.3	89.2	0.78	39	1LG4 208-8AB□□	230	
30	36	225 M	730	392	90.4	91.2	0.79	61 ¹⁾	1LG4 228-8AB□□	340	
37	44.5	250 M	730	484	91.9	92.8	0.82	71	1LG4 258-8AB□□	430	
55	66	280 M	735	715	92.9	93.7	0.81	106	1LG4 288-8AB□□	565	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code								
	50 Hz		60 Hz		Without flange	With flange		With standard flange		With special flange			
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover ²⁾	IM B5, IM V1 without protective cover ³⁾⁴⁾	IM V1 with protective cover ³⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	4	6	2	7	3
1LG4 18 - . . . □□	○	○	○	○	○	○	□	✓ ⁵⁾	✓	✓	-	-	-
1LG4 20 - . . . □□	○	○	○	○	○	○	□	✓ ⁵⁾	✓	✓	-	-	-
1LG4 22 - . . . □□	○	○	○	○	○	○	□	✓ ⁵⁾	✓	✓	-	-	-
1LG4 25 - . . . □□	○	○	○	○	○	○	□	✓ ⁵⁾	✓	✓	-	-	-
1LG4 28 - . . . □□	○	○	○	○	○	○	□	✓ ⁵⁾	✓	✓	-	-	-

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- ¹⁾ For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- ²⁾ If motors 1LG4 188-... to 1LG4 288-... (motor series 1LG4 frame sizes 180 L to 280 M) 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⁾ 1LG4 220-... to 1LG4 288-... motors (motor series 1LG4 frame sizes 225 M to 280 M) are supplied with two screw-in eyebolts in accordance with IM B 5, whereby one can be rotated 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⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated motors with increased output –
Cast-iron series 1LG4

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz L_{pFA} dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)							
1LG4 188-2AA□□	2.4	7.1	3.4	16	0.09	71	84
1LG4 208-2AA□□	2.5	6.9	3.2	16	0.18	73	86
1LG4 228-2AA□□	2.6	7.3	3.2	16	0.27	73	86
1LG4 258-2AA□□	2.4	7.1	3.1	16	0.48	74	87
1LG4 288-2AB□□	2.5	7	3	13	1	74	87
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)							
1LG4 188-4AA□□	2.6	6.3	2.9	16	0.14	65	78
1LG4 208-4AA□□	2.6	6.5	3	16	0.23	66	79
1LG4 228-4AA□□	2.5	6.5	2.7	16	0.49	66	79
1LG4 258-4AA□□	2.5	7	3	16	0.86	68	81
1LG4 288-4AA□□	2.8	7.9	3.3	16	1.71	70	84
6-pole, 1000 rpm at 50 Hz, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)							
1LG4 188-6AA□□	2.3	4.9	2.4	16	0.2	60	73
1LG4 208-6AA□□	2.6	5.8	2.6	16	0.36	61	74
1LG4 228-6AA□□	2.5	5.9	2.8	16	0.62	61	74
1LG4 258-6AA□□	2.7	6.3	2.3	16	0.93	61	74
1LG4 288-6AA□□	3	6.8	2.8	16	1.65	61	74
8-pole, 750 rpm at 50 Hz, 900 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)							
1LG4 188-8AB□□	2	4.5	2.4	13	0.21	69	82
1LG4 208-8AB□□	2.4	5.2	2.6	13	0.37	58	71
1LG4 228-8AB□□	2.6	5.6	2.8	13	0.66	61	74
1LG4 258-8AB□□	2.4	5.6	2.6	13	1.06	55	68
1LG4 288-8AB□□	2.4	5.6	2.3	13	1.63	58	71

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data

Rated output at 50 Hz	Frame size	Operating values at rated output							Order No.	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz			
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	EFF I	η_{rated} %	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		
2-pole, 3000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP											
22	180 M	2955	71	EFF 1	94.1	94.5	0.88	38.5 ¹⁾	1LG6 183-2AA00	180	
30	200 L	2960	97	EFF 1	93.5	93.4	0.88	53 ¹⁾	1LG6 206-2AA00	225	
37	200 L	2960	119	EFF 1	94.1	94	0.89	64 ¹⁾	1LG6 207-2AA00	255	
45	225 M	2965	145	EFF 1	94.9	95.1	0.89	77 ¹⁾	1LG6 223-2AA00	330	
55	250 M	2975	177	EFF 1	95.3	95.3	0.9	93	1LG6 253-2AA00	420	
75	280 S	2975	241	EFF 1	95.2	95.2	0.89	128 ¹⁾	1LG6 280-2AB00	530	
90	280 M	2978	289	EFF 1	95.6	95.7	0.9	150 ¹⁾	1LG6 283-2AB00	615	
110	315 S	2982	352		95.8	95.7	0.91	182 ¹⁾	1LG6 310-2AB00	790	
132	315 M	2982	423		96	95.9	0.91	220 ¹⁾	1LG6 313-2AB00	915	
160	315 L	2982	512		96.4	96.4	0.92	260	1LG6 316-2AB00	1055	
200	315 L	2982	641		96.5	96.5	0.93	320	1LG6 317-2AB00	1245	
4-pole, 1500 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP											
18.5	180 M	1470	120	EFF 1	92.6	93.2	0.83	34.5 ¹⁾	1LG6 183-4AA00	155	
22	180 L	1470	143	EFF 1	93.2	93.5	0.84	40.5 ¹⁾	1LG6 186-4AA00	180	
30	200 L	1470	195	EFF 1	93.3	93.4	0.85	55 ¹⁾	1LG6 207-4AA00	225	
37	225 S	1480	239	EFF 1	94	94.4	0.85	67 ¹⁾	1LG6 220-4AA00	290	
45	225 M	1480	290	EFF 1	94.5	94.7	0.85	81 ¹⁾	1LG6 223-4AA00	330	
55	250 M	1485	354	EFF 1	95.1	95.3	0.87	96	1LG6 253-4AA00	460	
75	280 S	1485	482	EFF 1	95.1	95.2	0.87	130 ¹⁾	1LG6 280-4AA00	575	
90	280 M	1486	578	EFF 1	95.4	95.5	0.86	158 ¹⁾	1LG6 283-4AA00	675	
110	315 S	1488	706		95.9	96	0.87	190 ¹⁾	1LG6 310-4AA00	810	
132	315 M	1488	847		96.1	96.2	0.88	225 ¹⁾	1LG6 313-4AA00	965	
160	315 L	1490	1026		96.3	96.4	0.88	275 ²⁾	1LG6 316-4AA00	1105	
200	315 L	1490	1282		96.4	96.5	0.88	340 ²⁾	1LG6 317-4AA00	1305	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange	With flange			With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover ³⁾	IM B5, IM V1 without protective cover ⁴⁾ IM V3 ⁴⁾⁵⁾	IM V1 without protective cover ⁴⁾	IM V1 with protective cover ⁴⁾⁶⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	0	1	8	4	6	2	7	3
1LG6 18 - ... □□	○	○	○	○	□	✓	-	✓	✓	-	-	-
1LG6 20 - ... □□	○	○	○	○	□	✓	-	✓	✓	-	-	-
1LG6 22 - ... □□	○	○	○	○	□	✓	-	✓	✓	-	-	-
1LG6 25 - ... □□	○	○	○	○	□	✓	-	✓	✓	-	-	-
1LG6 28 - ... □□	○	○	○	○	□	✓	-	✓	✓	-	-	-
1LG6 310 - ... □□	○	○	○	○	□	✓	-	✓	✓	-	-	-
1LG6 313 - ... □□	○	○	○	○	□	✓	-	✓	✓	-	-	-
1LG6 316 - ... □□	-	○	-	○	□ ⁷⁾	-	✓ ⁸⁾	✓ ⁸⁾	✓	-	-	-
1LG6 317 - ... □□	-	-	-	-	-	-	-	-	-	-	-	-

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

For footnotes, see Page 2/49 bottom.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz L_{pFA} dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
2-pole, 3000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP							
1LG6 183-2AA□□	2.5	7.2	3.4	16	0.086	67	80
1LG6 206-2AA□□	2.4	7	3.3	16	0.15	71	84
1LG6 207-2AA□□	2.5	7.2	3.3	16	0.18	71	84
1LG6 223-2AA□□	2.5	7.3	3.2	16	0.27	71	84
1LG6 253-2AA□□	2.4	6.8	3	16	0.47	71	84
1LG6 280-2AB□□	2.5	7	3	13	0.83	73	86
1LG6 283-2AB□□	2.6	7.6	3.1	13	1	73	86
1LG6 310-2AB□□	2.4	6.9	2.8	13	1.4	76	89
1LG6 313-2AB□□	2.6	7.1	2.9	13	1.6	76	89
1LG6 316-2AB□□	2.5	7.1	2.9	13	2.1	76	89
1LG6 317-2AB□□	2.5	6.9	2.8	13	2.5	76	89
4-pole, 1500 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP							
1LG6 183-4AA□□	2.5	6.4	3	16	0.12	60	73
1LG6 186-4AA□□	2.5	6.7	3.1	16	0.14	60	73
1LG6 207-4AA□□	2.6	6.7	3.3	16	0.23	62	75
1LG6 220-4AA□□	2.7	6.8	3	16	0.4	60	73
1LG6 223-4AA□□	2.8	6.9	3	16	0.49	60	73
1LG6 253-4AA□□	2.6	7.5	3	16	0.86	65	78
1LG6 280-4AA□□	2.5	6.8	2.9	16	1.4	67	80
1LG6 283-4AA□□	2.7	7.5	3.1	16	1.7	68	82
1LG6 310-4AA□□	2.7	7.1	2.9	16	2.3	68	82
1LG6 313-4AA□□	2.7	7.3	2.9	16	2.9	69	83
1LG6 316-4AA□□	3	7.4	3	16	3.5	69	83
1LG6 317-4AA□□	3.2	7.6	3	16	4.2	69	83

The motors can also be used for 60 Hz according to EPACT, see Pages 2/52 to 2/57.

- For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- For connection to 400 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- If motors 1LG6 183-... to 1LG6 317-... (motor series 1LG6 frame sizes 180 M to 315 L) 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.
- 1LG6 220-... to 1LG6 317-... motors (motor series 1LG6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- The "Second shaft extension" option, order code **K16** is not possible.
- Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.
- 2-pole motors in 60 Hz version available on request.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Rated output at 50 Hz	Frame size	Operating values at rated output						Power factor at 50 Hz 4/4-load	Rated current at 400 V, 50 Hz	Order No.	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency Class according to CEMEP	Efficiency at 50 Hz 4/4-load	Efficiency at 50 Hz 3/4-load	Efficiency at 50 Hz 2/4-load					
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	η_{rated} %	η_{rated} %	$\cos \varphi_{\text{rated}}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below			
6-pole, 1000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP												
15	180 L	975	147		90.9	91.7	0.81	29.5	1LG6 186-6AA□□		175	
18.5	200 L	978	181		91.2	91.8	0.81	36	1LG6 206-6AA□□		210	
22	200 L	978	215		91.9	92.5	0.82	42	1LG6 207-6AA□□		240	
30	225 M	980	292		93.2	93.7	0.83	56 ¹⁾	1LG6 223-6AA□□		325	
37	250 M	985	359		93.7	94.1	0.83	69	1LG6 253-6AA□□		405	
45	280 S	988	435		94.4	94.6	0.85	81	1LG6 280-6AA□□		520	
55	280 M	988	532		94.6	94.8	0.85	99	1LG6 283-6AA□□		570	
75	315 S	990	723		95	95	0.83	138	1LG6 310-6AA□□		760	
90	315 M	990	868		95.3	95.4	0.85	160 ¹⁾	1LG6 313-6AA□□		935	
110	315 L	990	1061		95.6	95.7	0.85	196	1LG6 316-6AA□□		1010	
132	315 L	990	1273		95.8	95.8	0.85	235	1LG6 317-6AA□□		1180	
160	315 L	990	1543		95.8	95.9	0.86	280 ²⁾	1LG6 318-6AA□□		1245	
8-pole, 750 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP												
11	180 L	725	145		88.7	89.6	0.76	23.5	1LG6 186-8AB□□		165	
15	200 L	725	198		89.3	89.8	0.8	30.5	1LG6 207-8AB□□		235	
18.5	225 S	730	242		91.1	91.8	0.81	36	1LG6 220-8AB□□		295	
22	225 M	730	288		91.6	92.1	0.81	43	1LG6 223-8AB□□		335	
30	250 M	735	390		92.8	93.3	0.82	57	1LG6 253-8AB□□		435	
37	280 S	738	479		93.1	93.3	0.81	71	1LG6 280-8AB□□		510	
45	280 M	738	582		93.7	94	0.81	86	1LG6 283-8AB□□		560	
55	315 S	740	710		94.3	94.4	0.82	102	1LG6 310-8AB□□		750	
75	315 M	740	968		94.5	94.7	0.83	138	1LG6 313-8AB□□		840	
90	315 L	740	1161		94.7	95.1	0.84	164	1LG6 316-8AB□□		1005	
110	315 L	740	1420		94.8	95.1	0.84	200	1LG6 317-8AB□□		1100	
132	315 L	740	1704		94.9	95.2	0.84	240	1LG6 318-8AB□□		1270	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange	With flange			With standard flange	With special flange		
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover ³⁾	IM B5, IM V1 without protective cover IM V3 ^{4) 5)}	IM V1 without protective cover ⁴⁾	IM V1 with protective cover ^{4) 6)}	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	0	1	8	4	6	2	7	3
1LG6 18 - . . . □□	○	○	○	○	□	✓	–	✓	✓	–	–	–
1LG6 20 - . . . □□	○	○	○	○	□	✓	–	✓	✓	–	–	–
1LG6 22 - . . . □□	○	○	○	○	□	✓	–	✓	✓	–	–	–
1LG6 25 - . . . □□	○	○	○	○	□	✓	–	✓	✓	–	–	–
1LG6 28 - . . . □□	○	○	○	○	□	✓	–	✓	✓	–	–	–
1LG6 310 - . . . □□	○	○	○	○	□	✓	–	✓	✓	–	–	–
1LG6 313 - . . . □□	○	○	○	○	□	✓	–	✓	✓	–	–	–
1LG6 316 - . . . □□	–	○	–	○	□ ⁷⁾	–	✓	✓	✓	–	–	–
1LG6 317 - . . . □□	–	○	–	○	□ ⁷⁾	–	✓	✓	✓	–	–	–
1LG6 318 - . . . □□	–	○	–	○	□ ⁷⁾	–	✓	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

For footnotes, see Page 2/51 bottom.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 50 Hz L_{pFA} dB(A)	Sound pressure level at 50 Hz L_{WA} dB(A)
6-pole, 1000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP							
1LG6 186-6AA□□	2.4	5.5	2.5	16	0.2	56	69
1LG6 206-6AA□□	2.4	5.6	2.4	16	0.29	59	72
1LG6 207-6AA□□	2.4	5.6	2.4	16	0.36	59	72
1LG6 223-6AA□□	2.8	6.5	2.9	16	0.63	59	72
1LG6 253-6AA□□	2.9	6.8	2.5	16	0.93	59	72
1LG6 280-6AA□□	3	6.8	2.7	16	1.4	58	71
1LG6 283-6AA□□	3.3	7.3	2.9	16	1.6	58	71
1LG6 310-6AA□□	2.8	7.3	3	16	2.5	61	74
1LG6 313-6AA□□	2.7	7.3	2.9	16	3.2	61	74
1LG6 316-6AA□□	2.9	7.4	2.9	16	4	61	74
1LG6 317-6AA□□	3.1	7.8	3.1	16	4.7	61	74
1LG6 318-6AA□□	3.2	7.8	3.1	16	5.4	64	77
8-pole, 750 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection, for use according to CEMEP							
1LG6 186-8AB□□	1.7	4.6	2.2	13	0.21	62	75
1LG6 207-8AB□□	2.3	5.3	2.6	13	0.37	62	75
1LG6 220-8AB□□	2.3	5.6	2.6	13	0.55	54	67
1LG6 223-8AB□□	2.4	5.8	2.8	13	0.66	58	71
1LG6 253-8AB□□	2.5	6	2.8	13	1.1	57	70
1LG6 280-8AB□□	2.3	5.7	2.3	13	1.4	58	71
1LG6 283-8AB□□	2.6	6.1	2.5	13	1.6	58	71
1LG6 310-8AB□□	2.5	6.3	2.9	13	2.5	61	75
1LG6 313-8AB□□	2.5	6.7	2.9	13	3.1	60	74
1LG6 316-8AB□□	2.4	6.3	2.8	13	3.9	64	77
1LG6 317-8AB□□	2.4	6.4	2.6	13	4.5	64	77
1LG6 318-8AB□□	2.5	6.7	2.9	13	5.3	64	77

The motors can also be used for 60 Hz according to EPACT, see Pages 2/52 to 2/57.

- 1) For connection to 230 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 2) For connection to 400 V, parallel supply cables are necessary (see catalog part 0 "Introduction", "Connection, circuit and connection box").
- 3) If motors 1LG6 183-... to 1LG6 318-... (motor series 1LG6 frame sizes 180 M to 315 L) 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) 1LG6 220-... to 1LG6 318-... motors (motor series 1LG6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 6) The "Second shaft extension" option, order code **K16** is not possible.
- 7) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Rated output at 60 Hz	Frame size	Operating values at rated output						Order No.	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 60 Hz	Rated torque at 60 Hz	EPACT with CC No. CC 032A	Nominal efficiency at 60 Hz	Power factor at 60 Hz 4/4-load	Rated current at 460 V, 60 Hz			
P_{rated} HP	FS	n_{rated} rpm	T_{rated} Nm		η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		
2-pole, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT										
30	180 M	3560	60	Yes	93	0.88	34	1LG6 183-2AA□□		180
40	200 L	3565	80	Yes	91.7	0.88	46	1LG6 206-2AA□□		225
50	200 L	3565	100	Yes	92.4	0.89	57	1LG6 207-2AA□□		255
60	225 M	3570	120	Yes	93.6	0.89	67	1LG6 223-2AA□□		330
75	225 M	3570	150	Yes	94.5	0.9	83	1LG6 228-2AA□□ ¹⁾		390
75	250 M	3578	149	No	93.6	0.89	84	1LG6 253-2AA□□		420
100	250 M	3580	199	Yes	94.1	0.89	112	1LG6 258-2AA□□ ¹⁾		470
100	280 S	3580	199	No	95	0.89	110	1LG6 280-2AB□□		530
125	280 M	3580	249	Yes	95	0.9	136	1LG6 283-2AB□□		615
150	280 M	3580	299	Yes	95	0.9	164	1LG6 288-2AA□□ ¹⁾		660
150	315 S	3585	298	Yes	94.5	0.91	164	1LG6 310-2AB□□		790
175	315 M	3586	348	Yes	95	0.91	190	1LG6 313-2AB□□		915
200	315 L	3588	397	Yes	95.4	0.91	215	1LG6 316-2AB□□		1055
250	315 L	3588	496	No	95.4	0.93	265	1LG6 317-2AB□□		1245
300	315 L	3591	595	No	95.4	0.92	320	1LG6 318-2AA□□ ¹⁾		1330

Order No. supplements

Motor type	Penultimate position: Voltage code		Final position: Type of construction code							
	60 Hz		Without flange	With flange			With standard flange		With special flange	
	460 VY	460 VA (see "Introduction" for outputs at 60 Hz)	IM B3/6/7/8, IM V6, IM V5 without protective cover ²⁾	IM B5, IM V1 without protective cover ^{3) 4)}	IM V1 without protective cover ^{3) 5)}	IM V1 with protective cover ^{3) 5)}	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	0	1	8	4	6	2	7	3
1LG6 18 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 20 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 22 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 25 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 28 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 310 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 313 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 316 - . . . □□	–	○	□ ⁶⁾	–	✓ ⁷⁾	✓ ⁷⁾	✓	–	–	–
1LG6 317 - . . . □□	–	○	□ ⁶⁾	–	✓ ⁷⁾	✓ ⁷⁾	✓	–	–	–
1LG6 318 - . . . □□	–	○	□ ⁶⁾	–	✓ ⁷⁾	✓ ⁷⁾	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- 1) Only 60 Hz data according to EPACT on the rating plate.
- 2) If motors 1LG6 183-... to 1LG6 318-... (motor series 1LG6 frame sizes 180 M to 315 L) 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) 1LG6 220-... to 1LG6 318-... motors (motor series 1LG6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 5) The "Second shaft extension" option, order code **K16** is not possible.
- 6) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.
- 7) 2-pole motors in 60 Hz version available on request.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 60 Hz L_{pFA} dB(A)	Sound pressure level at 60 Hz L_{WA} dB(A)
2-pole, 3600 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT							
1LG6 183-2AA□□	2.7	7.9	3.7	16	0.086	72	85
1LG6 206-2AA□□	2.7	7.8	3.7	16	0.15	75	88
1LG6 207-2AA□□	2.8	7.8	3.7	16	0.18	75	88
1LG6 223-2AA□□	2.8	8.3	3.6	16	0.27	74	87
1LG6 228-2AA□□	3.3	8.7	3.7	16	0.32	74	87
1LG6 253-2AA□□	2.7	7.5	3.2	16	0.47	75	88
1LG6 258-2AA□□	2.8	8.4	3.5	16	0.57	79	92
1LG6 280-2AB□□	2.8	7.9	3.4	13	0.83	77	90
1LG6 283-2AB□□	2.9	8.3	3.4	13	1	77	90
1LG6 288-2AA□□	3.1	8.5	3.6	16	1.16	77	90
1LG6 310-2AB□□	2.6	7.5	3.1	13	1.4	81	94
1LG6 313-2AB□□	3	8.3	3.3	13	1.6	81	94
1LG6 316-2AB□□	3	8.4	3.5	13	2.1	81	94
1LG6 317-2AB□□	3.2	8.6	3.4	13	2.5	81	94
1LG6 318-2AA□□	4.1	10	3.9	16	2.74	83	96

The motors can also be used for 50 Hz according to CEMEP, see Pages 2/48 to 2/51.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Rated output at 60 Hz	Frame size	Operating values at rated output					Power factor at 60 Hz 4/4-load	Rated current at 460 V, 60 Hz	Order No.	Price	Weight IM B3 type of construction approx. m kg
		Rated speed at 60 Hz	Rated torque at 60 Hz	EPACT with CC No. CC 032A	Nominal efficiency at 60 Hz	EPACT with CC No. CC 032A					
P_{rated} HP	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A					
4-pole, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT											
25	180 M	1775	100	Yes	92.4	0.82	31	1LG6 183-4AA□□		155	
30	180 L	1775	120	Yes	92.4	0.83	36.5	1LG6 186-4AA□□		180	
40	200 L	1775	160	Yes	93	0.84	48	1LG6 207-4AA□□		225	
50	225 S	1785	199	No	93.6	0.84	60	1LG6 220-4AA□□		290	
60	225 M	1785	239	Yes	94.1	0.85	70	1LG6 223-4AA□□		330	
75	225 M	1785	299	Yes	94.1	0.85	88	1LG6 228-4AA□□¹⁾		355	
75	250 M	1790	298	No	94.5	0.86	86	1LG6 253-4AA□□		460	
100	250 M	1788	398	Yes	94.5	0.86	116	1LG6 258-4AA□□¹⁾		495	
100	280 S	1788	398	No	94.5	0.86	114	1LG6 280-4AA□□		575	
125	280 M	1790	497	Yes	95	0.86	144	1LG6 283-4AA□□		675	
150	280 M	1788	598	Yes	95	0.86	172	1LG6 288-4AA□□¹⁾		710	
150	315 S	1791	596	Yes	95	0.87	170	1LG6 310-4AA□□		810	
175	315 M	1791	696	Yes	95.4	0.87	198	1LG6 313-4AA□□		965	
200	315 L	1792	795	Yes	95.4	0.87	225	1LG6 316-4AA□□		1105	
250	315 L	1792	994	No	95.8	0.87	280	1LG6 317-4AA□□		1305	
300	315 L	1792	1193	No	95.8	0.87	335	1LG6 318-4AA□□¹⁾		1345	

Order No. supplements

Motor type	Penultimate position: Voltage code		Final position: Type of construction code							
	60 Hz		Without flange	With flange			With standard flange		With special flange	
	460 VY	460 VΔ (see "Introduction" for outputs at 60 Hz)	IM B3/6/7/8, IM V6, IM V5 without protective cover ²⁾	IM B5, IM V1 without protective cover ³⁾⁴⁾	IM V1 without protective cover ³⁾	IM V1 with protective cover ³⁾⁵⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	0	1	8	4	6	2	7	3
1LG6 18-...□□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 20-...□□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 22-...□□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 25-...□□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 28-...□□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 310-...□□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 313-...□□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 316-...□□	–	○	□ ⁶⁾	–	✓	✓	✓	–	–	–
1LG6 317-...□□	–	○	□	–	–	–	–	–	–	–
1LG6 318-...□□	–	○	□	–	–	–	–	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- 1) Only 60 Hz data according to EPACT on the rating plate.
- 2) If motors 1LG6 183-... to 1LG6 318-... (motor series 1LG6 frame sizes 180 M to 315 L) 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) 1LG6 220-... to 1LG6 318-... motors (motor series 1LG6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 5) The "Second shaft extension" option, order code **K16** is not possible.
- 6) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 60 Hz L_{pFA} dB(A)	Sound pressure level at 60 Hz L_{WA} dB(A)
4-pole, 1800 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT							
1LG6 183-4AA□□	2.9	7.1	3.3	16	0.12	65	78
1LG6 186-4AA□□	2.8	7.4	3.4	16	0.14	65	78
1LG6 207-4AA□□	3	7.7	3.7	16	0.23	66	79
1LG6 220-4AA□□	3.1	7.5	3.4	16	0.4	65	78
1LG6 223-4AA□□	3.3	7.9	3.5	16	0.49	65	78
1LG6 228-4AA□□	3	7.8	3.3	16	0.66	64	78
1LG6 253-4AA□□	2.9	8.2	3.4	16	0.86	68	81
1LG6 258-4AA□□	3	8.1	3.3	16	0.99	72	86
1LG6 280-4AA□□	2.9	7.6	3.2	16	1.4	71	84
1LG6 283-4AA□□	3	8.2	3.4	16	1.7	71	84
1LG6 288-4AA□□	3.1	8.4	3.5	16	1.88	71	85
1LG6 310-4AA□□	3.1	7.8	3.2	16	2.3	75	88
1LG6 313-4AA□□	3.2	8.4	3.3	16	2.9	75	88
1LG6 316-4AA□□	3.7	9	3.6	16	3.5	75	88
1LG6 317-4AA□□	4	9.1	3.7	16	4.2	75	88
1LG6 318-4AA□□	4	9.3	3.7	16	4.5	81	94

The motors can also be used for 50 Hz according to CEMEP, see Pages 2/48 to 2/51.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Rated output at 60 Hz	Frame size	Operating values at rated output				Nominal efficiency at 60 Hz	Power factor at 60 Hz 4/4-load	Rated current at 460 V, 60 Hz	Order No.	Price	Weight
P_{rated} HP	FS	n_{rated} rpm	T_{rated} Nm	EPACT with CC No. CC 032A	η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A	For Order No. supplements for voltage and type of construction, see table below		IM B3 type of construction approx. m kg	
6-pole, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT											
20	180 L	1178	121	Yes	91	0.8	25.5	1LG6 186-6AA□□		175	
25	200 L	1180	151	Yes	91.7	0.79	32.5	1LG6 206-6AA□□		210	
30	200 L	1180	181	Yes	91.7	0.8	38.5	1LG6 207-6AA□□		240	
40	225 M	1184	241	Yes	93	0.82	49	1LG6 223-6AA□□		325	
50	225 M	1184	301	Yes	93	0.83	61	1LG6 228-6AA□□ ¹⁾		355	
50	250 M	1186	300	No	93	0.82	61	1LG6 253-6AA□□		405	
60	250 M	1186	361	Yes	93.6	0.82	73	1LG6 258-6AA□□ ¹⁾		435	
60	280 S	1190	359	No	94.1	0.83	72	1LG6 280-6AA□□		520	
75	280 M	1190	449	No	94.5	0.83	89	1LG6 283-6AA□□		570	
100	280 M	1190	599	Yes	94.5	0.84	118	1LG6 288-6AA□□ ¹⁾		615	
100	315 S	1191	598	Yes	94.5	0.82	120	1LG6 310-6AA□□		760	
125	315 M	1191	747	Yes	94.5	0.84	148	1LG6 313-6AA□□		935	
150	315 L	1192	896	Yes	95	0.84	176	1LG6 316-6AA□□		1010	
175	315 L	1192	1046	Yes	95	0.84	205	1LG6 317-6AA□□		1180	
200	315 L	1192	1195	Yes	95.4	0.84	235	1LG6 318-6AA□□		1245	

Order No. supplements

Motor type	Penultimate position: Voltage code		Final position: Type of construction code							
	60 Hz		Without flange	With flange			With standard flange		With special flange	
	460 VY	460 VA (see "Introduction" for outputs at 60 Hz)	IM B3/6/7/8, IM V6, IM V5 without protective cover ²⁾	IM B5, IM V1 without protective cover ^{3) 4)}	IM V1 without protective cover ^{3) 5)}	IM V1 with protective cover ^{3) 5)}	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	0	1	8	4	6	2	7	3
1LG6 18 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 20 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 22 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 25 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 28 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 310 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 313 - . . . □□	○	○	□	✓	–	✓	✓	–	–	–
1LG6 316 - . . . □□	–	○	□ ⁶⁾	–	✓	✓	✓	–	–	–
1LG6 317 - . . . □□	–	○	□ ⁶⁾	–	✓	✓	✓	–	–	–
1LG6 318 - . . . □□	–	○	□ ⁶⁾	–	✓	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- 1) Only 60 Hz data according to EPACT on the rating plate.
- 2) If motors 1LG6 183-... to 1LG6 318-... (motor series 1LG6 frame sizes 180 M to 315 L) 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) 1LG6 220-... to 1LG6 318-... motors (motor series 1LG6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.
- 5) The "Second shaft extension" option, order code **K16** is not possible.
- 6) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6

Selection and ordering data (continued)

Order No.	Locked-rotor torque with direct starting torque	Locked-rotor current as multiple of rated current	Breakdown torque torque	Torque class	Moment of inertia	Noise at rated output	
	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kgm ²	Measuring surface sound pressure level at 60 Hz $L_{p(A)}$ dB(A)	Sound pressure level at 60 Hz L_{WA} dB(A)
6-pole, 1200 rpm at 60 Hz, temperature class 155 (F), IP55 degree of protection, for use in the North American market according to EPACT							
1LG6 186-6AA□□	2.9	6.5	3	16	0.2	57	70
1LG6 206-6AA□□	2.9	6.5	2.7	16	0.29	65	78
1LG6 207-6AA□□	2.9	6.4	2.7	16	0.36	65	78
1LG6 223-6AA□□	3.4	7.2	3.4	16	0.63	62	75
1LG6 228-6AA□□	3.2	7.6	3.4	16	0.76	61	74
1LG6 253-6AA□□	3.4	7.4	2.9	16	0.93	63	76
1LG6 258-6AA□□	3.4	7.4	2.9	16	1.07	65	79
1LG6 280-6AA□□	3.6	7.7	3.1	16	1.4	62	75
1LG6 283-6AA□□	3.9	8.3	3.3	16	1.6	62	75
1LG6 288-6AA□□	4	8.4	3.3	16	1.94	64	78
1LG6 310-6AA□□	3.3	8.4	3.4	16	2.5	66	79
1LG6 313-6AA□□	3	7.9	3.1	16	3.2	66	79
1LG6 316-6AA□□	3.3	8.5	3.3	16	4	66	79
1LG6 317-6AA□□	3.6	8.9	3.6	16	4.7	66	79
1LG6 318-6AA□□	4	9.4	4	16	5.4	69	82

The motors can also be used for 50 Hz according to CEMEP, see Pages 2/48 to 2/51.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Aluminum series 1LP7/1LP5

Selection and ordering data

Rated output with		Frame size	Order No.	Price	Weight
			For Order No. supplements for voltage and type of construction, see table below		For IM B3 type of construction approx.
50 Hz P_{rated} kW	60 Hz P_{rated} kW	FS			m kg
2-pole, 3000 rpm at 50 Hz, 3600 rpm at 60 Hz, temperature class 155 (F), used acc. to temperature class 130 (B), IP55 degree of protection, with reduced output					
0.12	0.14	63 M	1LP7 060-2AA□□		3.4
0.16	0.18	63 M	1LP7 063-2AA□□		3.9
0.19	0.22	71 M	1LP7 070-2AA□□		4.9
0.27	0.3	71 M	1LP7 073-2AA□□		6.4
0.35	0.40	80 M	1LP7 080-2AA□□		8.0
0.55	0.6	80 M	1LP7 083-2AA□□		9.6
0.82	0.95	90 S	1LP7 090-2AA□□		12.5
1.1	1.25	90 L	1LP7 096-2AA□□		15.2
1.3	1.5	100 L	▶ 1LP7 106-2AA□□		22.3
1.8	2.1	112 M	▶ 1LP7 113-2AA□□		29.0
2.5	2.9	132 S	▶ 1LP7 130-2AA□□		42.0
3.4	3.9	132 S	▶ 1LP7 131-2AA□□		51.0
5	5.7	160 M	▶ 1LP7 163-2AA□□		70.0
6	6.9	160 M	▶ 1LP7 164-2AA□□		82.0
7	8	160 L	▶ 1LP7 166-2AA□□		99.0
10	11.5	180 M	1LP5 183-2AA□□		112.0
13.5	15.5	200 L	1LP5 206-2AA□□		160.0
16.5	19	200 L	1LP5 207-2AA□□		182.0

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.

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz		60 Hz		Without flange	With flange		With standard flange		With special flange		
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ¹⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	6	2	7	3
1LP7 06 . - . . . □□	○	○	○	-	○	○	□	✓	✓	✓	✓	✓
1LP7 07 . - . . . □□	○	○	○	-	○	○	□	✓	✓	✓	✓	✓
1LP7 08 . - . . . □□	○	○	○	-	○	○	□	✓	✓	✓	✓	✓
1LP7 09 . - . . . □□	○	○	○	-	○	○	□	✓	✓	✓	✓	✓
1LP7 10 . - . . . □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 11 . - . . . □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 13 . - . . . □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 16 . - . . . □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP5 18 . - . . . □□	○	○	○	○	○	○	□	✓ ²⁾	✓	-	-	-
1LP5 20 . - . . . □□	○	○	○	○	○	○	□	✓ ²⁾	✓	-	-	-

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

▶ The Order No. for 1LP7 motors marked with this symbol are phase-out models.
1PC1 motors are the successors.
For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-cooled motors without external fan and fan cover with improved efficiency" Pages 1/46 to 1/49.

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

1) 1LP5 183-... to 1LP5 207-... motors (motor series 1LA5, frame sizes 180 M to 200 L) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

2) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Aluminum series 1LP7/1LP5

Selection and ordering data (continued)

Rated output with		Frame size	Order No.	Price	Weight
50 Hz P_{rated} kW	60 Hz P_{rated} kW	FS	For Order No. supplements for voltage and type of construction, see table below		For IM B3 type of construction approx. m kg
4-pole, 1500 rpm at 50 Hz, 1800 rpm at 60 Hz, temperature class 155 (F), used acc. to temperature class 155 (F), IP55 degree of protection, with reduced output					
0.07	0.08	63 M	1LP7 060-4AB□□		3.4
0.12	0.14	63 M	1LP7 063-4AB□□		3.9
0.13	0.15	71 M	1LP7 070-4AB□□		4.7
0.19	0.22	71 M	1LP7 073-4AB□□		5.8
0.22	0.25	80 M	1LP7 080-4AA□□		7.8
0.38	0.45	80 M	1LP7 083-4AA□□		9.1
0.55	0.63	90 S	1LP7 090-4AA□□		11.9
0.65	0.75	90 L	1LP7 096-4AA□□		15.1
0.88	1.00	100 L	▶ 1LP7 106-4AA□□		23.0
1.2	1.4	100 L	▶ 1LP7 107-4AA□□		25.0
1.6	1.85	112 M	▶ 1LP7 113-4AA□□		30.0
2.5	2.9	132 S	▶ 1LP7 130-4AA□□		44.0
3.1	3.6	132 M	▶ 1LP7 133-4AA□□		54.0
4.8	5.5	160 M	▶ 1LP7 163-4AA□□		74.0
5.4	6.2	160 L	▶ 1LP7 166-4AA□□		90.0
7.5	8.5	180 M	1LP5 183-4AA□□		109.0
9	10.5	180 L	1LP5 186-4AA□□		122.0
12	14	200 L	1LP5 207-4AA□□		165.0

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.

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz		60 Hz		Without flange	With flange	With standard flange	With special flange				
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ¹⁾ IM V3	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	6	2	7	3
1LP7 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP5 18 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	–	–	–
1LP5 20 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

▶ The Order No. for 1LP7 motors marked with this symbol are phase-out models.
1PC1 motors are the successors.
For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-cooled motors without external fan and fan cover with improved efficiency" Pages 1/46 to 1/49.

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

1) 1LP5 183-... to 1LP5 207-... motors (motor series 1LA5, frame sizes 180 M to 200 L) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

2) Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Aluminum series 1LP7/1LP5

Selection and ordering data (continued)

Rated output with		Frame size	Order No.	Price	Weight
			For Order No. supplements for voltage and type of construction, see table below		For IM B3 type of construction approx.
50 Hz P_{rated} kW	60 Hz P_{rated} kW	FS	► Phase-out model		m kg
6-pole, 1000 rpm at 50 Hz, 1200 rpm at 60 Hz, temperature class 155 (F), used acc. to temperature class 155 (F), IP55 degree of protection, with reduced output					
0.045	0.05	63 M	1LP7 063-6AA□□		4.0
0.09	0.105	71 M	1LP7 070-6AA□□		6.1
0.13	0.15	71 M	1LP7 073-6AA□□		6.1
0.18	0.2	80 M	1LP7 080-6AA□□		7.3
0.27	0.3	80 M	1LP7 083-6AA□□		9.1
0.37	0.4	90 S	1LP7 090-6AA□□		12.1
0.5	0.57	90 L	1LP7 096-6AA□□		15.2
0.7	0.8	100 L	► 1LP7 106-6AA□□		23.3
1.0	1.15	112 M	► 1LP7 113-6AA□□		26.0
1.7	1.9	132 S	► 1LP7 130-6AA□□		40.0
2	2.3	132 M	► 1LP7 133-6AA□□		45.0
2.3	2.65	132 M	► 1LP7 134-6AA□□		52.0
3.3	3.8	160 M	► 1LP7 163-6AA□□		74.0
4	4.6	160 L	► 1LP7 166-6AA□□		99.0
6.5	7.5	180 L	1LP5 186-6AA□□		122.0
8.5	10	200 L	1LP5 207-6AA□□		165.0

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.

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code					
	50 Hz			60 Hz			Without flange	With flange		With standard flange		With special flange
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ¹⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	6	2	7	3
1LP7 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP5 18 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	–	–	–
1LP5 20 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

► The Order No. for 1LP7 motors marked with this symbol are phase-out models.

1PC1 motors are the successors.

For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-cooled motors without external fan and fan cover with improved efficiency" Pages 1/46 to 1/49.

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ 1LP5 183-... to 1LP5 207-... motors (motor series 1LA5, frame sizes 180 M to 200 L) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

²⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Aluminum series 1LP7/1LP5

Selection and ordering data (continued)

Rated output with		Frame size	Order No.	Price	Weight
50 Hz P_{rated} kW	60 Hz P_{rated} kW	FS	For Order No. supplements for voltage and type of construction, see table below ▶ Phase-out model		For IM B3 type of construction approx. m kg
8-pole, 750 rpm at 50 Hz, 900 rpm at 60 Hz, temperature class 155 (F), used acc. to temperature class 155 (F), IP55 degree of protection, with reduced output					
0.045	0.05	71 M	1LP7 070-8AB□□		6.1
0.06	0.07	71 M	1LP7 073-8AB□□		6.1
0.09	0.105	80 M	1LP7 080-8AB□□		7.3
0.13	0.15	80 M	1LP7 083-8AB□□		9.1
0.25	0.29	90 S	1LP7 090-8AB□□		10.2
0.35	0.4	90 L	1LP7 096-8AB□□		12.8
0.45	0.5	100 L	▶ 1LP7 106-8AB□□		19.4
0.65	0.75	100 L	▶ 1LP7 107-8AB□□		21.3
0.8	0.9	112 M	▶ 1LP7 113-8AB□□		23.3
1.2	1.4	132 S	▶ 1LP7 130-8AB□□		40.0
1.45	1.7	132 M	▶ 1LP7 133-8AB□□		48.0
1.8	2.1	160 M	▶ 1LP7 163-8AB□□		59.0
2.4	2.8	160 L	▶ 1LP7 164-8AB□□		68.0
3	3.45	160 L	▶ 1LP7 166-8AB□□		88.0
5.5	6.5	180 L	1LP5 186-8AB□□		122.0
7.5	9	200 L	1LP5 207-8AB□□		180.0

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.

Order No. supplements

Motor type	Penultimate position: Voltage code						Final position: Type of construction code					
	50 Hz		60 Hz		Without flange	With flange	With standard flange		With special flange			
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover	IM B5, IM V1 without protective cover ¹⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	6	2	7	3
1LP7 06 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 07 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 08 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 09 □□	○	○	○	–	○	○	□	✓	✓	✓	✓	✓
1LP7 10 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 11 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 13 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP7 16 □□	○	○	○	○	○	○	□	✓	✓	✓	✓	✓
1LP5 18 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	–	–	–
1LP5 20 □□	○	○	○	○	○	○	□	✓ ²⁾	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

▶ The Order No. for 1LP7 motors marked with this symbol are phase-out models.

1PC1 motors are the successors.

For additional information see catalog part 1 "New Generation 1LE1/1PC1" under "Self-cooled motors without external fan and fan cover with improved efficiency" Pages 1/46 to 1/49.

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

¹⁾ 1LP5 183-... to 1LP5 207-... motors (motor series 1LA5, frame sizes 180 M to 200 L) can be supplied with two additional eyebolts; specify supplement **-Z** and order code **K32**.

²⁾ Type of construction IM V3 is only possible using type of construction code **9** and order code **M1G**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Cast-iron series 1LP4

Selection and ordering data

Rated output at 50 Hz	Frame size	Operating values at rated output					Rated current at 50 Hz 400 V	Locked-rotor torque with direct starting torque	Locked-rotor current starting as multiple current	Break-down torque	Torque class	Moment of inertia	Order No.	Price	Weight
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency at 50 Hz 4/4-load	Power factor at 50 Hz 4/4-load	Rated current at 50 Hz 400 V									
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	$\cos\phi_{\text{rated}}$	I_{rated} A	$T_{\text{LR}}/T_{\text{rated}}$	$I_{\text{LR}}/I_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	CL	J kg m ²	For Order No. supplements for voltage and type of construction, see table below		IM B3 type of construction approx. m kg	
2-pole, 3000 rpm at 50 Hz, temperature class 155 (F), used acc. to temperature class 130 (B), IP55 degree of protection, with reduced output															
7.3	180 M	2945	24	91.0	0.89	13	2.4	6.5	3.4	16	0.068	1LP4 183-2FA□□		140	
10	200 L	2950	32	90.9	0.89	17.8	2.3	6.4	2.9	16	0.129	1LP4 206-2FA□□		195	
12.5	200 L	2955	40	91.9	0.90	22	2.5	7.1	3.2	16	0.153	1LP4 207-2FA□□		215	
15	225 M	2960	48	93.2	0.90	26	2.3	6.7	3.0	16	0.217	1LP4 223-2FA□□		275	
18.5	250 M	2970	59	92.6	0.89	32.5	2.0	6.6	3.0	13	0.403	1LP4 253-2FB□□		360	
25	280 S	2975	80	93.8	0.90	42.5	2.5	7.6	3.0	13	0.715	1LP4 280-2FB□□		480	
30	280 M	2975	96	94.4	0.90	51	2.6	7.2	2.9	13	0.832	1LP4 283-2FB□□		520	
37	315 S	2984	118	94.5	0.90	63	2.3	7.3	3.0	13	1.19	1LP4 310-2FB□□		700	
44	315 M	2982	141	94.0	0.91	74	2.3	6.8	2.8	13	1.39	1LP4 313-2FB□□		755	
53	315 L	2982	170	94.6	0.91	89	2.3	6.9	2.9	13	1.62	1LP4 316-2FB□□		880	
67	315 L	2984	214	95.1	0.92	110	2.1	6.5	2.8	13	2.09	1LP4 317-2FB□□		995	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code								
	50 Hz				60 Hz		Without flange	With flange		With standard flange		With special flange	
	230 V Δ /400 VY	400 V Δ /690 VY	500 VY	500 V Δ	460 VY	460 V Δ	IM B3/6/7/8, IM V6, IM V5 without protective cover ¹⁾	IM B5, IM V1 without protective cover ²⁾	IM V1 without protective cover ²⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	6	2	7	3
1LP4 18 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 20 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 22 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 25 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 28 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 310 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 313 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 316 - . . . □□	-	○	-	○	-	○	□ ³⁾	-	✓ ⁴⁾	✓	-	-	-
1LP4 317 - . . . □□	-	○	-	○	-	○	□ ³⁾	-	✓ ⁴⁾	✓	-	-	-

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- 1) If motors 1LP4 183-... to 1LP4 317-... (motor series 1LP4 frame sizes 180 M to 315 L) 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) 1LP4 220-... to 1LP4 317-... motors (motor series 1LP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

- 3) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.
- 4) 2-pole motors in 60 Hz version available on request.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Cast-iron series 1LP4

Selection and ordering data (continued)

Rated output at 50 Hz	Frame size	Operating values at rated output					Locked-rotor torque with direct starting torque	Locked-rotor current starting as multiple current	Break-down torque	Torque class	Moment of inertia	Order No.	Price	Weight
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency at 50 Hz 4/4-load	Power factor at 50 Hz 4/4-load	Rated current at 50 Hz 400 V								
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kg m ²		m kg	
4-pole, 1500 rpm at 50 Hz, temperature class 155 (F), used acc. to temperature class 130 (B), IP55 degree of protection, with reduced output														
6.2	180 M	1465	40	90.6	0.87	11.4	2.1	6.6	3.0	16	0.099	1LP4 183-4FA□□	135	
7.3	180 L	1470	47	91.2	0.87	13.2	2.1	6.9	3.1	16	0.117	1LP4 186-4FA□□	150	
10	200 L	1465	65	90.5	0.88	18.2	2.3	6.6	3.2	16	0.191	1LP4 207-4FA□□	195	
12.5	225 S	1475	81	92.2	0.86	23	2.3	6.6	3.0	16	0.374	1LP4 220-4FA□□	255	
15	225 M	1475	97	93.1	0.87	26.5	2.4	7.1	3.1	16	0.447	1LP4 223-4FA□□	290	
18.5	250 M	1480	119	93.5	0.87	33	2.2	6.0	2.6	16	0.688	1LP4 253-4FA□□	375	
25	280 S	1485	161	93.9	0.87	44	2.4	7.0	2.9	16	1.19	1LP4 280-4FA□□	515	
30	280 M	1485	193	94.4	0.88	52	2.4	7.2	2.9	16	1.39	1LP4 283-4FA□□	560	
37	315 S	1488	237	94.4	0.87	65	2.2	6.2	2.6	16	1.94	1LP4 310-4FA□□	710	
44	315 M	1488	282	95.2	0.87	77	2.4	6.7	2.7	16	2.31	1LP4 313-4FA□□	790	
53	315 L	1488	340	95.5	0.87	92	2.5	6.7	2.7	16	2.88	1LP4 316-4FA□□	935	
67	315 L	1488	430	95.7	0.88	114	2.3	6.2	2.6	16	3.46	1LP4 317-4FA□□	1040	

Order No. supplements

Motor type	Penultimate position: Voltage code				60 Hz		Final position: Type of construction code							
	50 Hz						Without flange	With flange		With standard flange		With special flange		
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover ¹⁾	IM B5, IM V1 without protective cover ²⁾	IM V1 without protective cover ²⁾	IM V3	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	6	2	7	3	
1LP4 18 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-	
1LP4 20 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-	
1LP4 22 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-	
1LP4 25 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-	
1LP4 28 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-	
1LP4 310 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-	
1LP4 313 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-	
1LP4 316 - . . . □□	-	○	-	○	-	○	□ ³⁾	-	✓	✓	-	-	-	
1LP4 317 - . . . □□	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- 1) If motors 1LP4 183-... to 1LP4 317-... (motor series 1LP4 frame sizes 180 M to 315 L) 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) 1LP4 220-... to 1LP4 317-... motors (motor series 1LP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

- 3) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Cast-iron series 1LP4

Selection and ordering data (continued)

Rated output at 50 Hz	Frame size	Operating values at rated output					Rated current at 50 Hz 400 V	Locked-rotor torque with direct starting torque	Locked-rotor current	Break-down torque	Torque class	Moment of inertia	Order No.	Price	Weight
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency at 50 Hz 4/4-load	Power factor at 50 Hz 4/4-load	η_{rated}									
6-pole, 1000 rpm at 50 Hz, temperature class 155 (F), used acc. to temperature class 130 (B), IP55 degree of protection, with reduced output															
5	180 L	970	49	89.4	0.83	10	2.1	5.3	2.4	16	0.175	1LP4 186-6FA□□		145	
6.2	200 L	975	61	90.4	0.83	12	2.2	5.7	2.4	16	0.238	1LP4 206-6FA□□		185	
7.3	200 L	975	71	90.8	0.82	14.2	2.3	5.8	2.4	16	0.287	1LP4 207-6FA□□		195	
10	225 M	980	97	92.1	0.84	18.6	2.3	5.5	2.4	16	0.492	1LP4 223-6FA□□		270	
12.5	250 M	982	122	92.5	0.84	23	2.3	5.8	2.2	16	0.762	1LP4 253-6FA□□		355	
15	280 S	986	145	92.5	0.86	27	2.1	6.0	2.3	16	1.12	1LP4 280-6FA□□		455	
18.5	280 M	986	179	92.9	0.86	33.5	2.1	6.0	2.4	16	1.37	1LP4 283-6FA□□		490	
25	315 S	990	241	93.9	0.87	44	2.2	6.6	2.7	16	2.10	1LP4 310-6FA□□		665	
30	315 M	988	290	94.2	0.86	53	2.3	6.8	2.8	16	2.50	1LP4 313-6FA□□		730	
37	315 L	988	358	94.5	0.87	65	2.2	6.6	2.7	16	3.20	1LP4 316-6FA□□		870	
44	315 L	990	424	94.9	0.87	77	2.7	7.2	2.9	16	4.02	1LP4 317-6FA□□		960	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code								
	50 Hz				60 Hz		Without flange		With flange		With standard flange		With special flange
	230 V Δ /400 VY	400 V Δ /690 VY	500 VY	500 V Δ	460 VY	460 V Δ	IM B3/6/7/8, IM V6, IM V5 without protective cover ¹⁾	IM B5, IM V1 without protective cover ²⁾	IM V1 without protective cover ²⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	6	2	7	3
1LP4 18 □□	○	○	○	○	○	○	□	✓	–	✓	–	–	–
1LP4 20 □□	○	○	○	○	○	○	□	✓	–	✓	–	–	–
1LP4 22 □□	○	○	○	○	○	○	□	✓	–	✓	–	–	–
1LP4 25 □□	○	○	○	○	○	○	□	✓	–	✓	–	–	–
1LP4 28 □□	○	○	○	○	○	○	□	✓	–	✓	–	–	–
1LP4 310 □□	○	○	○	○	○	○	□	✓	–	✓	–	–	–
1LP4 313 □□	○	○	○	○	○	○	□	✓	–	✓	–	–	–
1LP4 316 □□	–	○	–	○	–	○	□ ³⁾	–	✓	✓	–	–	–
1LP4 317 □□	–	○	–	○	–	○	□ ³⁾	–	✓	✓	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- 1) If motors 1LP4 183... to 1LP4 317... (motor series 1LP4 frame sizes 180 M to 315 L) 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) 1LP4 220... to 1LP4 317... motors (motor series 1LP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

- 3) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Self-cooled motors without external fan
Cast-iron series 1LP4

Selection and ordering data (continued)

Rated output at 50 Hz	Frame size	Operating values at rated output					Rated current at 50 Hz 400 V	Locked-rotor torque with direct starting torque	Locked-rotor current starting as multiple current	Break-down torque	Torque class	Moment of inertia	Order No.	Price	Weight
		Rated speed at 50 Hz	Rated torque at 50 Hz	Efficiency at 50 Hz 4/4-load	Power factor at 50 Hz 4/4-load	Rated current at 50 Hz 400 V									
P_{rated} kW	FS	n_{rated} rpm	T_{rated} Nm	η_{rated} %	$\cos\phi_{rated}$	I_{rated} A	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kg m ²	For Order No. supplements for voltage and type of construction, see table below		IM B3 type of construction approx. m kg	
8-pole, 750 rpm at 50 Hz, temperature class 155 (F), used acc. to temperature class 130 (B), IP55 degree of protection, with reduced output															
3.7	180 L	725	49	88.4	0.76	10	1.5	4.4	2.0	13	0.169	1LP4 186-8FB□□		145	
5	200 L	730	65	88.3	0.78	10.4	2.0	5.1	2.5	13	0.290	1LP4 207-8FB□□		195	
6.2	225 S	735	81	89.8	0.80	12.4	2.1	5.6	2.6	13	0.482	1LP4 220-8FB□□		260	
7.3	225 M	735	95	90.2	0.81	14.4	2.1	5.7	2.7	13	0.551	1LP4 223-8FB□□		280	
10	250 M	735	130	91.6	0.82	19.2	2.0	5.4	2.5	13	0.837	1LP4 253-8FB□□		370	
12.5	280 S	735	162	92.3	0.82	24	1.9	4.9	2.1	13	1.11	1LP4 280-8FB□□		455	
15	280 M	735	195	92.6	0.81	29	1.9	5.0	2.0	13	1.35	1LP4 283-8FB□□		495	
18.5	315 S	740	239	93.2	0.83	34.5	2.0	5.8	2.5	13	2.08	1LP4 310-8FB□□		660	
25	315 M	738	323	93.5	0.84	46	2.0	5.7	2.5	13	2.48	1LP4 313-8FB□□		725	
30	315 L	740	387	93.6	0.84	55	2.0	5.8	2.6	13	3.14	1LP4 316-8FB□□		845	
37	315 L	740	477	94.1	0.84	68	2.2	6.0	2.7	13	3.95	1LP4 317-8FB□□		1000	

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code								
	50 Hz				60 Hz		Without flange	With flange		With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	460 VY	460 VΔ	IM B3/6/7/8, IM V6, IM V5 without protective cover ¹⁾	IM B5, IM V1 without protective cover ²⁾	IM V1 without protective cover ²⁾	IM B35	IM B14, IM V19, IM V18 without protective cover	IM B34	IM B14, IM V19, IM V18 without protective cover
	1	6	3	5	1	6	0	1	8	6	2	7	3
1LP4 18 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 20 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 22 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 25 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 28 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 310 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 313 - . . . □□	○	○	○	○	○	○	□	✓	-	✓	-	-	-
1LP4 316 - . . . □□	-	○	-	○	-	○	□ ³⁾	-	✓	✓	-	-	-
1LP4 317 - . . . □□	-	○	-	○	-	○	□ ³⁾	-	✓	✓	-	-	-

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages").

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Types of construction").

- 1) If motors 1LP4 183-... to 1LP4 317-... (motor series 1LP4 frame sizes 180 M to 315 L) 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) 1LP4 220-... to 1LP4 317-... motors (motor series 1LP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

- 3) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Overview

Category	Explanation
Voltages	For standard voltages, see the corresponding Order No. supplements in the selection and ordering data. For other voltages with voltage code 9 and the required order code, see "Special versions", "Selection and ordering data". For further information and details, see catalog part 0 "Introduction".
Types of construction	For standard construction types, see the corresponding Order No. supplements in the selection and ordering data. For other types of construction using type of construction code 9 and the required order code, see "Special versions", "Selection and ordering data". For further information and details, see catalog part 0 "Introduction".
Motor protection	For an overview of the relevant order codes, see "Special versions", "Selection and ordering data".
Motor connection and connection box	For further information and details, see catalog part 0 "Introduction".
Windings and insulation	
Colors and paint finish	
Modular technology – Basic versions	
Modular technology – Combinations of basic versions	
Modular technology – Additional versions	
Special technology	
Mechanical design and degrees of protection	
Coolant temperature and site altitude	
Designs in accordance with standards and specifications	
Bearings and lubrication	
Balance and vibration quantity	
Shaft and rotor	
Heating and ventilation	
Rating plate and extra rating plates	
Packaging, safety notes, documentation and test certificates	
Design for Zones 1, 2, 21 and 22 according to ATEX	See catalog part 4 "Explosion-proof motors"
Ship version	See catalog part 10 "Marine motors"

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Selection and ordering data

Voltages

Additional order codes for other voltages or voltage codes
(without **-Z** supplement)

For some non-standard voltages at 50 or 60 Hz, order codes are specified. They are ordered by specifying the code digit **9** for voltage in the 11th position of the Order No. and the appropriate order code.

Special versions	Voltage code 11th position of the Order No.	Additional identifica- tion code with order code and plain text if required	Motor type frame size													
			56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5																
			1LA7 (aluminum)						1LA5 (aluminum)							
Voltage at 50 Hz																
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9	L1R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9	L1E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9	L1L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9	L1C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9	L1D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9	L1A	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1B	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1U	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Voltage at 60 Hz																
220 VΔ/380 VY; 50 Hz output	9	L2A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz output	9	L2B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz output	9	L2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz output	9	L2W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz output	9	L2R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz output	9	L2E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
460 VΔ; 50 Hz output	9	L2T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F	○	○	○	○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz output	9	L2L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz output	9	L2V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage changeover at 60 Hz																
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA ³⁾	9	L3E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA ³⁾	9	L3F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9	L3G	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	-	-
230 VΔΔ/460 VΔ 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9	L3H	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	-	-
Non-standard voltages and/or frequencies																
Non-standard winding for vol- tages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9	L1Y •	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend and footnotes, see Page 2/68.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code 11th position of the Order No.	Additional identifica- tion code with order code and plain text if required	Motor type frame size														
			56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency in pole-changing version – Aluminum series 1LA7 and 1LA5																	
			1LA7 (aluminum)								1LA5 (aluminum)						
Voltage 60 Hz																	
220 V; 50 Hz output	9	L4A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 V; 60 Hz output	9	L4B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 V; 50 Hz output	9	L4C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 V; 60 Hz output	9	L4D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 V; 50 Hz output	9	L4G	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 V; 60 Hz output	9	L4E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 V; 50 Hz output	9	L4J	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 V; 60 Hz output	9	L4H	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 V; 50 Hz output	9	L4N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 V; 60 Hz output	9	L4M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies																	
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9	L1Y •	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard winding for Y/Δ starting at low speed ²⁾	9	L3Y •	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

¹⁾ With order codes **L1A, L1B, L1C, L1D, L1E, L1L, L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

²⁾ Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

³⁾ When ordered with option brake (order code **G26**) only 6 motor connection terminals are possible for frame size 56 to 90.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code	Additional identification code with order code and plain text if required	Motor type frame size													
			56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9																
1LA9 (aluminum)																
Voltage at 50 Hz																
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9	L1R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9	L1E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9	L1L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9	L1C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9	L1D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9	L1A	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1B	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1U	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Voltage at 60 Hz																
220 VΔ/380 VY; 50 Hz output	9	L2A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz output	9	L2B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz output	9	L2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz output	9	L2W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz output	9	L2R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz output	9	L2E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
460 VΔ; 50 Hz output	9	L2T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F	○	○	○	○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz output	9	L2L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz output	9	L2V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage changeover at 60 Hz																
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA	9	L3E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA	9	L3F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9	L3G	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔΔ/460 VΔ 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9	L3H	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies																
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9	L1Y •	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code	11th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size													
				56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated motors with increased output – Aluminum series 1LA9																	
				1LA9 (aluminum)													
Voltage at 50 Hz																	
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9		L1R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9		L1E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9		L1L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9		L1C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9		L1D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9		L1A	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9		L1B	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9		L1U	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Voltage at 60 Hz																	
220 VΔ/380 VY; 50 Hz output	9		L2A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz output	9		L2B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz output	9		L2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9		L2D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9		L2Q	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz output	9		L2W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz output	9		L2R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9		L2X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9		L2S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz output	9		L2E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
460 VΔ; 50 Hz output	9		L2T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9		L2F	○	○	○	○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9		L2U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz output	9		L2L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz output	9		L2V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9		L2M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage changeover at 60 Hz																	
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA	9		L3E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA	9		L3F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9		L3G	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔΔ/460 VΔ 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9		L3H	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies																	
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9		L1Y •	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

¹⁾ With order codes **L1A**, **L1B**, **L1C**, **L1D**, **L1E**, **L1L**, **L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

²⁾ Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size													
			56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																
			1LA6 (cast-iron)						1LG4 (cast-iron)							
Voltage at 50 Hz																
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9	L1R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9	L1E	○	○	○	○	○	○	○	○	○	○	○	○	○	–
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9	L1L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9	L1C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9	L1D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9	L1A	○	○	○	○	○	○	○	○	○	○	○	○	○	–
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1B	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1U	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Voltage at 60 Hz																
220 VΔ/380 VY; 50 Hz output	9	L2A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
220 VΔ/380 VY; 60 Hz output	9	L2B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
380 VΔ/660 VY; 50 Hz output	9	L2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VY; 60 Hz output	9	L2W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
440 VΔ; 50 Hz output	9	L2R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
460 VY; 60 Hz output	9	L2E	○	○	○	○	○	○	○	○	○	○	○	○	○	–
460 VΔ; 50 Hz output	9	L2T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F	○	○	○	○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VY; 60 Hz output	9	L2L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
575 VΔ; 50 Hz output	9	L2V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Non-standard voltage and/or frequencies																
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9	L1Y •	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

¹⁾ With order codes **L1A, L1B, L1C, L1D, L1E, L1L, L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

²⁾ Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size															
			56	63	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L
Self-ventilated motors with increased output – Cast-iron series 1LG4																		
1LG4 (cast-iron)																		
Voltage at 50 Hz																		
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9	L1R												✓	✓	✓	✓	✓
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9	L1E												○	○	○	○	○
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9	L1L												✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9	L1C												✓	✓	✓	✓	✓
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9	L1D												✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9	L1A												○	○	○	○	○
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1B												○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1U												○	○	○	○	○
Voltage at 60 Hz																		
220 VΔ/380 VY; 50 Hz output	9	L2A												✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz output	9	L2B												✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz output	9	L2C												✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D												✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q												✓	✓	✓	✓	✓
440 VY; 60 Hz output	9	L2W												✓	✓	✓	✓	✓
440 VΔ; 50 Hz output	9	L2R												✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X												✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S												✓	✓	✓	✓	✓
460 VY; 60 Hz output	9	L2E												○	○	○	○	○
460 VΔ; 50 Hz output	9	L2T												✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F												○	○	○	○	○
575 VY; 50 Hz output	9	L2U												✓	✓	✓	✓	✓
575 VY; 60 Hz output	9	L2L												✓	✓	✓	✓	✓
575 VΔ; 50 Hz output	9	L2V												✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M												○	○	○	○	○
Non-standard voltage and/or frequencies																		
Non-standard winding for voltages between 200 and 690 V (other voltages are available on request) ²⁾	9	L1Y												✓	✓	✓	✓	✓

- Without additional charge
 ✓ With additional charge
 – Not possible

¹⁾ With order codes **L1A, L1B, L1C, L1D, L1E, L1L, L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

²⁾ Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code 11th position of the Order No.	Additional identifica- tion code with order code and plain text if required	Motor type frame size														
			56	63	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6																	
																	1LG6 (cast-iron)
Voltage at 50 Hz																	
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9	L1R															✓
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9	L1E															○
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9	L1L															✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9	L1C															✓
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9	L1D															✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9	L1A															○
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1B															○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1U															○
Voltage at 60 Hz																	
220 VΔ/380 VY; 50 Hz output	9	L2A															✓
220 VΔ/380 VY; 60 Hz output	9	L2B															✓
380 VΔ/660 VY; 50 Hz output	9	L2C															✓
380 VΔ/660 VY; 60 Hz output	9	L2D															✓
440 VY; 50 Hz output	9	L2Q															✓
440 VY; 60 Hz output	9	L2W															✓
440 VΔ; 50 Hz output	9	L2R															✓
440 VΔ; 60 Hz output	9	L2X															✓
460 VY; 50 Hz output	9	L2S															✓
460 VY; 60 Hz output	9	L2E															○
460 VΔ; 50 Hz output	9	L2T															✓
460 VΔ; 60 Hz output	9	L2F															○
575 VY; 50 Hz output	9	L2U															✓
575 VY; 60 Hz output	9	L2L															✓
575 VΔ; 50 Hz output	9	L2V															✓
575 VΔ; 60 Hz output	9	L2M															○
Non-standard voltage and/or frequencies																	
Non-standard winding for vol- tages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9	L1Y															✓

- Without additional charge
 ✓ With additional charge
 – Not possible

¹⁾ With order codes **L1A, L1B, L1C, L1D, L1E, L1L, L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

²⁾ Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code 11th position of the Order No.	Additional identifica- tion code with order code and plain text if required	Motor type frame size													
			56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-cooled motors without external fan – Aluminum series 1LP7 and 1LP5																
			1LP7 (aluminum)										1LP5 (aluminum)			
Voltage at 50 Hz																
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9	L1R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9	L1E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9	L1L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9	L1C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9	L1D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9	L1A	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1B	○	○	○	○	○	○	○	○	○	○	○	○	○	○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1U	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Voltage at 60 Hz																
220 VΔ/380 VY; 50 Hz output	9	L2A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
220 VΔ/380 VY; 60 Hz output	9	L2B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 50 Hz output	9	L2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
380 VΔ/660 VY; 60 Hz output	9	L2D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 50 Hz output	9	L2Q	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VY; 60 Hz output	9	L2W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 50 Hz output	9	L2R	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
440 VΔ; 60 Hz output	9	L2X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 50 Hz output	9	L2S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VY; 60 Hz output	9	L2E	○	○	○	○	○	○	○	○	○	○	○	○	○	○
460 VΔ; 50 Hz output	9	L2T	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
460 VΔ; 60 Hz output	9	L2F	○	○	○	○	○	○	○	○	○	○	○	○	○	○
575 VY; 50 Hz output	9	L2U	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VY; 60 Hz output	9	L2L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 50 Hz output	9	L2V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
575 VΔ; 60 Hz output	9	L2M	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Voltage changeover at 60 Hz																
230 VYY/460 VY 60 Hz; 50 Hz output, 9 main terminals and electrical design to NEMA	9	L3E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VYY/460 VY 60 Hz; 60 Hz output, 9 main terminals and electrical design to NEMA	9	L3F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔΔ/460 VΔ 60 Hz; 50 Hz output, 12 main terminals and electrical design to NEMA	9	L3G	○	○	○	○	○	✓	✓	✓	✓	✓	✓	✓	✓	✓
230 VΔΔ/460 VΔ 60 Hz; 60 Hz output, 12 main terminals and electrical design to NEMA	9	L3H	○	○	○	○	○	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard voltage and/or frequencies																
Non-standard winding for vol- tages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9	L1Y •	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend and footnotes, see Page 2/75.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Voltage code 11th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size														
			56	63	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M
Self-cooled motors without external fan – Cast-iron series 1LP4																	
1LP4 (cast-iron)																	
Voltage at 50 Hz																	
220 VΔ/380 VY (440 VY at 60 Hz) (210 ... 230 VΔ/360 ... 400 VY); 50 Hz output ¹⁾	9	L1R															✓
230 VΔ (220 ... 240 VΔ); 50 Hz output ¹⁾	9	L1E															○
380 VΔ/660 VY (440 VΔ at 60 Hz) (360 ... 400 VΔ/625 ... 695 VY); 50 Hz output ¹⁾	9	L1L															✓
415 VY (395 ... 435 VY); 50 Hz output ¹⁾	9	L1C															✓
415 VΔ (395 ... 435 VΔ); 50 Hz output ¹⁾	9	L1D															✓
400 VY (380 ... 420 VY); 50 Hz output ¹⁾	9	L1A															○
400 VΔ (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1B															○
400 VΔ (460 VΔ at 60 Hz) (380 ... 420 VΔ); 50 Hz output ¹⁾	9	L1U															○
Voltage at 60 Hz																	
220 VΔ/380 VY; 50 Hz output	9	L2A															✓
220 VΔ/380 VY; 60 Hz output	9	L2B															✓
380 VΔ/660 VY; 50 Hz output	9	L2C															✓
380 VΔ/660 VY; 60 Hz output	9	L2D															✓
440 VY; 50 Hz output	9	L2Q															✓
440 VY; 60 Hz output	9	L2W															✓
440 VΔ; 50 Hz output	9	L2R															✓
440 VΔ; 60 Hz output	9	L2X															✓
460 VY; 50 Hz output	9	L2S															✓
460 VY; 60 Hz output	9	L2E															○
460 VΔ; 50 Hz output	9	L2T															✓
460 VΔ; 60 Hz output	9	L2F															○
575 VY; 50 Hz output	9	L2U															✓
575 VY; 60 Hz output	9	L2L															✓
575 VΔ; 50 Hz output	9	L2V															✓
575 VΔ; 60 Hz output	9	L2M															○
Non-standard voltage and/or frequencies																	
Non-standard winding for voltages between 200 and 690 V (voltages outside this range are available on request) ²⁾	9	L1Y •															✓

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

¹⁾ With order codes **L1A, L1B, L1C, L1D, L1E, L1L, L1R** and **L1U**, a rated voltage range is also specified on the rating plate.

²⁾ Plain text must be specified in the order: Voltage, frequency, circuit, required rated output in kW.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Types of construction

Additional order codes for other types of construction or type of construction codes (without **-Z** supplement)

Order codes have been defined for some special types of construction. They are ordered by specifying the code digit **9** for the type of construction in the 12th position of the Order No. and the appropriate order code.

Special versions	Type of construction code 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size														
			56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5																	
			1LA7 (aluminum)									1LA5 (aluminum)					
Without flange																	
IM V5 with protective cover ¹⁾	9	M1F	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With flange																	
IM V3 ²⁾	9	M1G	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	-	
With standard flange																	
IM V18 with protective cover ¹⁾	9	M2A	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	
With special flange																	
IM V18 with protective cover ¹⁾	9	M2B	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	
IM B34	9	M2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	
Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9																	
Self-ventilated motors with increased output – Aluminum series 1LA9																	
			1LA9 (aluminum)														
Without flange																	
IM V5 with protective cover ¹⁾	9	M1F	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
With flange																	
IM V3	9	M1G	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	
With standard flange																	
IM V18 with protective cover ¹⁾	9	M2A	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	
With special flange																	
IM V18 with protective cover ¹⁾	9	M2B	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	
IM B34	9	M2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	

- ✓ With additional charge
 – Not possible

¹⁾ The "Second shaft extension" option, order code **K16** is not possible.

²⁾ 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**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

	Type of construction code 12th position of the Order No.	Additional identification code with order code and plain text if required	Motor type frame size																
			56	63	71	80	90	100	112	132	160	180	200	225	250	280	315 S/M	315 L 2-pole	4-, 6-, 8-pole
Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																			
													1LA6 (cast-iron)			1LG4 (cast-iron)			
Without flange																			
IM V5 without protective cover ¹⁾	9	M1D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓ ²⁾	○
IM V6 ¹⁾	9	M1E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓ ²⁾	○
IM V5 with protective cover ^{1) 3)}	9	M1F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²⁾	✓
With flange																			
IM V3 ⁴⁾	9	M1G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
With standard flange																			
IM V18 with protective cover ³⁾	9	M2A	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–	–
With special flange																			
IM V18 with protective cover ³⁾	9	M2B	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–	–
IM B34	9	M2C	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–	–
Self-ventilated motors with increased output – Cast-iron series 1LG4																			
													1LG4 (cast-iron)						
Without flange																			
IM V5 with protective cover ^{1) 3)}	9	M1F	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
With flange																			
IM V3 ⁴⁾	9	M1G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6																			
													1LG6 (cast-iron)						
Without flange																			
IM V5 without protective cover ¹⁾	9	M1D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓ ²⁾	○
IM V6 ¹⁾	9	M1E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓ ²⁾	○
IM V5 with protective cover ^{1) 3)}	9	M1F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²⁾	✓
With flange																			
IM V3 ⁴⁾	9	M1G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Self-cooled motors without external fan – Aluminum series 1LP7 and 1LP5																			
													1LP7 (aluminum)			1LP5 (aluminum)			
With flange																			
IM V3 ⁵⁾	9	M1G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Special flange																			
IM B34	9	M2C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–
Self-cooled motors without external fan – Cast-iron series 1LP4																			
													1LP4 (cast-iron)						
Without flange																			
IM V5 without protective cover ¹⁾	9	M1D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓ ²⁾	○
IM V6 ¹⁾	9	M1E	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓ ²⁾	○
With flange																			
IM V3 ⁴⁾	9	M1G	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

- Without additional charge
- ✓ With additional charge
- Not possible

¹⁾ If motors of frame sizes 180 M to 315 L are mounted on the wall, it is recommended that the motor feet are supported.

²⁾ 60 Hz version is possible on request.

³⁾ The "Second shaft extension" option, order code **K16** is not possible.

⁴⁾ 1LG4/1LG6/1LP4 motors of frame sizes 225 S to 315 L are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be rotated 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⁾ For frame sizes 180 M to 200 L, the 1LA5 motors can be supplied with two additional eyebolts; state identification code **-Z** and order code **K32**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Options

Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size															
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315	
Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5																	
		1LA7 (aluminum)						1LA5 (aluminum)									
Motor protection																	
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Temperature detectors for tripping ¹⁾	A31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Installation of 3 PT 100 resistance thermometers ¹⁾	A60	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Motor connection and connection box																	
ECOFAST motor plug Han-Drive 10e for 230 VΔ/400 VY ²⁾	G55	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	
ECOFAST motor plug EMC Han-Drive 10e for 230 VΔ/400 VY ³⁾	G56	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	
Connection box on RHS	K09	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Connection box on LHS	K10	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
One cable gland, metal	K54	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cable gland, maximum configuration	K55	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 90°, entry from DE	K83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of the connection box through 90°, entry from NDE	K84	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Rotation of connection box through 180°	K85	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓	✓	✓	✓	
Next larger connection box	L00	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓	
External earthing	L13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3 cables protruding, 0.5 m long ⁴⁾⁵⁾	L44	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.	O. R.	
3 cables protruding, 1.5 m long ⁴⁾⁵⁾	L45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.	O. R.	
6 cables protruding, 0.5 m long ⁴⁾	L47	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.	O. R.	O. R.	
6 cables protruding, 1.5 m long ⁴⁾	L48	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6 cables protruding, 3 m long ⁴⁾	L49	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Connection box on NDE	M64	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Terminal strip for main and auxiliary terminals	M69	–	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	

For legend, see Page 2/82, for footnotes, see Page 2/83.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5															
		1LA7 (aluminum)						1LA5 (aluminum)							
Windings and insulation															
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 180 (H) at rated output and max. CT 60 °C ⁶⁾	C18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ⁷⁾	C22	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ⁷⁾	C23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ⁷⁾	C24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 • and specified output, CT ... °C or SA m above sea level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT ... °C or SA m above sea level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Colors and paint finish															
Special finish in RAL 7030 stone gray		□	□	□	□	□	□	□	□	□	□	□	□	□	□
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 Page 0/18	Y54 • and special finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sea air resistant special finish	M94	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.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5																
		1LA7 (aluminum)							1LA5 (aluminum)							
Colors and paint finish (continued)																
Unpainted (only cast iron parts primed)	K23	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modular technology – Basic versions ⁸⁾																
Mounting of separately driven fan	G17	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of brake ⁹⁾	G26	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modular technology – Combinations of basic versions ⁸⁾																
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder	H61	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-1 rotary pulse encoder ⁹⁾	H62	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of brake and separately driven fan ⁹⁾	H63	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder ⁹⁾	H64	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-2 rotary pulse encoder ⁹⁾	H98	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder ⁹⁾	H99	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modular technology – Additional versions																
Brake supply voltage 24 V DC	C00	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Brake supply voltage 400 V AC	C01	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Brake supply voltage 180 V DC, for operation on MICROMASTER 411-ECOFAS ¹⁰⁾	C02	–	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–
Mechanical manual brake release with lever (no locking)	K82	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special technology ⁸⁾																
Prepared for mounting MMI ¹¹⁾	H15	O. R.	O. R.	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–
Mounting of LL 861 900 220 rotary pulse encoder	H70	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for mounting LL 861 900 220	H78	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for mounting HOG 9 D 1024 I	H79	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for mounting HOG 10 D 1024 I	H80	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend, see Page 2/82, for footnotes, see Page 2/83.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5																
		1LA7 (aluminum)						1LA5 (aluminum)								
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors, oil resistant to 0.1 bar ¹²⁾	K17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With two additional eyebolts for IM V1/IM V3	K32	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Low-noise version for 2-pole motors with clockwise direction of rotation ¹⁰⁾	K37	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ¹⁰⁾	K38	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IP65 degree of protection ¹³⁾	K50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea) ¹⁴⁾	K52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Condensation drainage holes ¹⁵⁾	L12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-rusting screws (externally)	M27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical protection for encoder ¹⁶⁾	M68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Coolant temperature and site altitude																
Coolant temperature –40 to +40 °C	D03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature –30 to +40 °C	D04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
CCC China Compulsory Certification ¹⁷⁾	D01	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–
Electrical according to NEMA MG1-12	D30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to UL with "Recognition Mark" ¹⁸⁾	D31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ¹⁹⁾	D40	✓	✓	✓	✓	✓	○	○	○	○	○	○	○	○	○	○
PSE Mark Japan ²⁰⁾	D46	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–
VIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate) ²¹⁾	K30	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection ²²⁾	G50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bearing design for increased cantilever forces	K20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Regreasing device ²²⁾	K40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Located bearing DE	K94	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□	□
Balance and vibration quantity																
Vibration quantity A		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity B	K02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full key balancing	L68	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Aluminum series 1LA7 and 1LA5																
		1LA7 (aluminum)									1LA5 (aluminum)					
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ²³⁾	K04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension	K16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with standard dimensions without featherkey way	K42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard shaft made of non-rusting steel	M65	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ²⁴⁾	Y55 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																
Fan cover for textile industry	H17	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Metal external fan ²⁵⁾	K35	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 230 V	K45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes and test certificates																
Without safety and commissioning note. Customer's declaration of renouncement required.	B00	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
With one safety and startup guide per box pallet	B01	○	○	○	○	○	○	○	○	○	○	○	○	–	–	–
Acceptance test certificate 3.1 according to EN 10204	B02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operating instructions German/English in print	B23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	○	○	○	○	○	○	○	○	○	○	○	○	–	–	–
Connected in star for dispatch	M32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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

For footnotes, see Page 2/83.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions
2

- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) 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 V Δ /400 VY and special voltage with voltage code **9** and order code **L1U** (400 V Δ). 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 V Δ /400 VY and special voltage with voltage code **9** and order code **L1U** (400 V Δ). 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 only be used in combination with the ECOFAST plugs, order code **G56** only with order code **C01** (AC 400 V) or **C02** (DC 180 V): **G26, H62, H63, H64, H98, H99.**
- 4) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 5) Not possible for pole-changing motors and/or for voltage codes **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 motor series 1LA5 frame size 180 to 225. The grease lifetime specified in catalog part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease 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) A second shaft extension is not possible. Please inquire for mounted brakes. 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"
 - Combination of special 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 DA 51.3 type is specified for 230 V Δ /400 VY.
- 12) Not possible for type of construction IM V3.
- 13) Not possible in combination with rotary pulse encoder HOG 9 D 10241 (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 cowl.
- 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
 The order code **D01** for frame sizes 100 and 112 is only valid for pole-changing motors 1LA7.
- 18) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.
- 19) The rated voltage is indicated on the rating plate without voltage range.
- 20) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- 21) Not possible for pole-changing motors.
- 22) Not possible when brake is mounted.
- 23) 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.
- 24) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 part 0 "Introduction".
- 25) 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**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9																
1LA9 (aluminum)																
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers ¹⁾	A60	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor connection and connection box																
ECOFAST motor plug Han-Drive 10e for 230 VΔ/400 VY ²⁾	G55	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-
ECOFAST motor plug EMC Han-Drive 10e for 230 VΔ/400VY ³⁾	G56	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-
Connection box on RHS	K09	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
One cable gland, metal	K54	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-
Cable gland, maximum configuration	K55	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85	✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓	✓	✓	✓
Next larger connection box	L00	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓
External earthing	L13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 cables protruding, 0,5 m long ⁴⁾⁵⁾	L44	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.
3 cables protruding, 1,5 m long ⁴⁾⁵⁾	L45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.
6 cables protruding, 0,5 m long ⁴⁾	L47	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	O. R.
6 cables protruding, 1,5 m long ⁴⁾	L48	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 cables protruding, 3 m long ⁴⁾	L49	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on NDE	M64	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windings and insulation																
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ⁶⁾	C22	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend and footnotes, see Page 2/87.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9																
1LA9 (aluminum)																
Windings and insulation (continued)																
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ⁶⁾	C23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ⁶⁾	C24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 • and specified output, CT... °C or SA m above sea level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT... °C or SA m above sea level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Colors and paint finish																
Special finish in RAL 7030 stone gray		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
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 Page 0/18	Y54 • and special finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sea air resistant special finish	M94	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.
Unpainted (only cast iron parts primed)	K23	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors, oil-resistant to 0,1 bar Not possible for IM V3 type of construction.	K17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation	K37	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓
IP65 degree of protection	K50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea)	K52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Condensation drainage holes ⁷⁾	L12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-rusting screws (externally)	M27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend and footnotes, see Page 2/87.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9																
1LA9 (aluminum)																
Coolant temperature and site altitude																
Coolant temperature –40 to +40 °C	D03	–	–	–	✓	✓	✓	✓	✓	✓	–	–				
Coolant temperature –30 to +40 °C	D04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
CCC China Compulsory Certification ⁸⁾	D01	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–
Electrical according to NEMA MG1-12 ⁹⁾	D30	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Design according to UL with "Recognition Mark" ¹⁰⁾	D31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certified for Korea according to KS C4202 ¹¹⁾	D33	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ¹²⁾	D40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PSE Mark Japan ¹³⁾	D46	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–
VIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate)	K30	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces	K20	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regreasing device	K40	–	–	–	–	–	✓	✓	✓ ¹⁴⁾	✓	✓	✓	✓	✓	✓	✓
Located bearing DE	K94	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□	□	□
Balance and vibration quantity																
Vibration quantity A		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity B	K02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full key balancing	L68	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ¹⁵⁾	K04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension	K16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with normal dimensions without featherkey way	K42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ¹⁶⁾	Y55 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																
Fan cover for textile industry	H17	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–	–
Metal external fan ¹⁷⁾	K35	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 230 V	K45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend and footnotes, see Page 2/87.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with high efficiency – Aluminum series 1LA9																
		1LA9 (aluminum)														
Packaging, safety notes, documentation and test certificates																
Without safety and commissioning note. Customer's declaration of renouncement required.	B00	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
With one safety and startup guide per box pallet	B01	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–
Acceptance test certificate 3.1 according to EN 10204	B02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operating instructions German/English in print	B23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–
Connected in star for dispatch	M32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- 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) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) 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, G26, 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) 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 codes **G56: A12, A23, A31, D31, D40, G50, H17, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, L03, L44, L45, L47, L48, L49, L51, L52.**
- 4) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 5) Not possible for voltage code **1** or **6**.
- 6) No derating in combination with the following order codes: **L2A, L2C, L2Q, L2R, L2S, L2T, L2U, L2V, L3E** and **L3G**.
- 7) 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.
- 8) 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
- 9) Possible up to 600 V max. For EPACT version or UL standard version (no order code necessary). The rated voltage is indicated on the rating plate without voltage range.
- 10) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.
- 11) For Korea are certified:
 - 2-pole motors ≤0.75 kW
 - 4-pole motors ≤0.75 kW
 - 6-pole motors ≤0.75 kW
- 12) The rated voltage is indicated on the rating plate without voltage range.
- 13) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- 14) Not possible for 1LA9 134-6. □□.
- 15) 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.
- 16) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 part 0 "Introduction").
- 17) For 1LA5/6/7/9 motors and 1LG with metal external fan, converter-fed operation is permitted. The metal external fan is already included (standard version) in combination with the low-noise version.



IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size															
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315	
Self-ventilated motors with increased output – Aluminum series 1LA9																	
1LA9 (aluminum)																	
Motor protection																	
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers ¹⁾	A60	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor connection and connection box																	
ECOFAST motor plug Han-Drive 10e for 230 VΔ/400 VY ²⁾	G55	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–
Connection box on RHS	K09	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
One cable gland, metal	K54	–	–	–	–	–	–	✓	✓	✓	✓	✓	–	–	–	–	–
Cable gland, maximum configuration	K55	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85	✓	✓	✓	✓	✓	✓	○	○	○	○	○	○	✓	✓	✓	✓
Next larger connection box	L00	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
External earthing	L13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 cables protruding, 0.5 m long ³⁾⁴⁾	L44	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.
3 cables protruding, 1.5 m long ³⁾⁴⁾	L45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.
6 cables protruding, 0.5 m long ³⁾	L47	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.
6 cables protruding, 1.5 m long ³⁾	L48	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 cables protruding, 3 m long ³⁾	L49	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on NDE	M64	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windings and insulation																	
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend, see Page 2/90, for footnotes, see Page 2/91.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with increased output – Aluminum series 1LA9																
1LA9 (aluminum)																
Colors and paint finish																
Special finish in RAL 7030 stone gray		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
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 Page 0/18	Y54 • and special finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sea air resistant special finish	M94	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.
Unpainted (only cast iron parts primed)	K23	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for IM V3 type of construction.	K17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation	K37	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	
Low-noise version for 2-pole motors with counter-clockwise direction of rotation	K38	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	
IP65 degree of protection	K50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea)	K52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Condensation drainage holes	L12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-rusting screws (externally)	M27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature and site altitude																
Coolant temperature -40 to +40 °C	D03	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
Coolant temperature -30 to +40 °C	D04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
CCC China Compulsory Certification ⁵⁾	D01	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-
Electrical according to NEMA MG1-12 ⁶⁾	D30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to UL with "Recognition Mark" ⁷⁾	D31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ⁸⁾	D40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PSE Mark Japan ⁹⁾	D46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces	K20	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regreasing device	K40	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing DE	K94	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□	□	□
Balance and vibration quantity																
Vibration quantity A		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Full key balancing	L68	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend, see Page 2/90, for footnotes, see Page 2/91.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated motors with increased output – Aluminum series 1LA9																
1LA9 (aluminum)																
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ¹⁰⁾	K04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension	K16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with normal dimensions without featherkey way	K42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ¹¹⁾	Y55 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																
Fan cover for textile industry	H17	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–	–
Metal external fan ¹²⁾	K35	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 230 V	K45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06	–	–	–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates																
Without safety and commissioning note. Customer's declaration of renouncement required.	B00	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
With one safety and startup guide per box pallet	B01	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–
Acceptance test certificate 3.1 according to EN 10204	B02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operating instructions German/English in print	B23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99	○	○	○	○	○	○	○	○	○	○	○	○	○	○	–
Connected in star for dispatch	M32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- 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 2/91.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions
2

- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) 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 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, G26, 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) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 4) Not possible for voltage codes **1** or **6**.
- 5) 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
- 6) Possible up to 600 V max. For EPACT version or UL standard version (no order code necessary).
- 7) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.
- 8) The rated voltage is indicated on the rating plate without voltage range.
- 9) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- 10) 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.
- 11) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 part 0 "Introduction".
- 12) 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**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																
										1LA6 (cast-iron)				1LG4 (cast-iron)		
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11									✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12									✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23									✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25									✓	✓	✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31									✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers ¹⁾	A60									✓	✓	✓	✓	✓	✓	✓
Installation of 6 PT 100 resistance thermometers in stator winding ¹⁾	A61									–	–	–	–	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings ¹⁾	A72									–	–	–	–	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A78									–	–	–	–	✓	✓	✓
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A80									–	–	–	–	✓	✓	✓
Motor connection and connection box																
Two-part plate on connection box	K06									–	–	–	–	–	✓	✓
Connection box on RHS	K09									✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10									✓	✓	✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11									–	–	–	–	✓	✓	✓
Connection box in cast-iron version	K15									□	□	□	□	✓	✓	✓
One cable gland, metal	K54									✓	✓	✓	✓	✓	✓	✓
Cable gland, maximum configuration	K55									✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83									✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84									✓	✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85									✓	✓	✓	✓	✓	✓	✓
Next larger connection box	L00									–	–	–	–	✓	✓	✓
External earthing	L13									✓	✓	✓	✓	□	□	□

For legend, see Page 2/97, for footnotes, see Page 2/98.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																
Motor connection and connection box (continued)																
Undrilled entry plate	L01											○	○	○	○	○
6 cables protruding, 1.5 m long ²⁾	L48											✓	✓	✓	O. R.	O. R.
6 cables protruding, 3 m long ²⁾	L49											✓	✓	✓	O. R.	O. R.
Protruding cable ends – right side ³⁾	L51											O. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – left side ³⁾	L52											O. R.	O. R.	O. R.	O. R.	O. R.
Auxiliary connection box 1XB3 020	L97											✓	✓	✓	✓	✓
Stud terminal for cable connection, accessories pack (3 items)	M46														✓	✓
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47														✓	✓
Windings and insulation																
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11											✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output	C12											✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13											✓	✓	✓	✓	✓
Temperature class 180 (H) at rated output and max. CT 60 °C ⁵⁾	C18											✓	✓	✓	✓	✓
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19											✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 %	C22											✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 %	C23											✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 %	C24											✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 %	C25											✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾	✓ ⁴⁾
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26											✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 • and specified output, CT... °C or SA m above sea level											✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT... °C or SA m above sea level											✓	✓	✓	✓	✓

For legend, see Page 2/97, for footnotes, see Page 2/98.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																
Colors and paint finish																
Standard finish in RAL 7030 stone gray												□	□	□	□	□
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 Page 0/18	Y53 • and standard finish RAL											✓	✓	✓	✓	✓
Special finish in RAL 7030 stone gray ⁹⁾	K26											□	□	□	□	□
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, 9002, 9005 Page 0/18	Y54 • and special finish RAL											✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL											✓	✓	✓	✓	✓
Offshore special finish	M91											O. R.	O. R.	O. R.	O. R.	O. R.
Sea air resistant special finish	M94											O. R.	O. R.	O. R.	O. R.	O. R.
Unpainted (only cast iron parts primed)	K23											○	○	○	○	○
Unpainted, only primed	K24											✓	✓	✓	✓	✓
Modular technology – Basic versions ⁷⁾																
Mounting of separately driven fan ⁸⁾	G17											✓	✓	✓	✓	✓
Mounting of brake ^{8) 9)}	G26											–	–	–	–	–
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57											✓	✓	✓	✓	✓
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58											✓	✓	✓	✓	✓
Modular technology – Combinations of basic versions ⁷⁾																
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder	H61											✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-1 rotary pulse encoder ⁹⁾	H62											–	–	–	–	–
Mounting of brake and separately driven fan ^{8) 9)}	H63											–	–	–	–	–
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder ⁹⁾	H64											–	–	–	–	–
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97											✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-2 rotary pulse encoder ⁹⁾	H98											–	–	–	–	–
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder ⁹⁾	H99											–	–	–	–	–

For legend, see Page 2/97, for footnotes, see Page 2/98.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																
			1LA6 (cast-iron)				1LG4 (cast-iron)									
Modular technology – Additional versions																
Brake supply voltage 24 V DC	C00						–	–	–	–	✓	✓	✓	✓	✓	✓
Brake supply voltage 400 V AC	C01						–	–	–	–	✓	✓	✓	✓	✓	✓
Mechanical manual brake release with lever (no locking)	K82						–	–	–	–	✓	✓	✓	✓	✓	✓
Special technology ⁷⁾																
Mounting of LL 861 900 220 rotary pulse encoder	H70						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72						O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73						–	–	–	–	✓	✓	✓	✓	✓	✓
Prepared for mounting LL 861 900 220	H78						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepared for mounting HOG 9 D 1024 I	H79						O. R.	O. R.	O. R.	O. R.	✓	✓	✓	✓	✓	✓
Prepared for mounting HOG 10 D 1024 I	H80						–	–	–	–	✓	✓	✓	✓	✓	✓
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against moisture	J15						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against dust	J16						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against moisture	Y74 • and specified speed rpm						–	–	–	–	✓	✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against dust	Y76 • and specified speed rpm						–	–	–	–	✓	✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + ESL 93, (speed rpm), connection box protection against dust	Y79 • and specified speed (max. 3) rpm						–	–	–	–	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for IM V3 type of construction ¹⁰⁾	K17						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation ¹¹⁾	K37						–	–	✓	✓	✓	✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ¹¹⁾	K38						–	–	✓	✓	✓	✓	✓	✓	✓	✓
IP65 degree of protection ¹²⁾	K50						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea) ¹³⁾	K52						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03						✓	✓	✓	✓	–	–	–	–	–	–
Condensation drainage holes ¹⁴⁾	L12						✓	✓	✓	✓	□	□	□	□	□	□
Non-rusting screws (externally)	M27						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Earth brushes for converter-fed operation	M44						–	–	–	–	–	–	–	–	O. R.	O. R.
Mechanical protection for encoder ¹⁵⁾	M68						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																
Coolant temperature and site altitude																
Coolant temperature –50 to +40 °C	D02										✓	✓	✓	✓	✓	✓
Coolant temperature –40 to +40 °C	D03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature –30 to +40 °C	D04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
Electrical according to NEMA MG1-12	D30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to UL with "Recognition Mark" ¹⁶⁾	D31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ¹⁷⁾	D40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PSE Mark Japan ¹⁸⁾	D46	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–
VIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate)	K30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces ¹⁹⁾	K20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size	K36	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Regreasing device	K40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	□	□
Located bearing DE	K94	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04	✓	✓	✓	□	□	□	□	□	□	□	□	□	□	□	□
Insulated bearing cartridge	L27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Balance and vibration quantity																
Vibration quantity A		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Vibration quantity B	K02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full key balancing	L68	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ²¹⁾	K04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension ²²⁾	K16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with normal dimensions without featherkey way	K42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard shaft made of non-rusting steel	M65	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–
Non-standard cylindrical shaft extension ²³⁾	Y55 • and identification code	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																
Fan cover for textile industry	H17	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–
Metal external fan ²⁴⁾	K35	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 230 V	K45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sheet metal fan cover	L36	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

For legend, see Page 2/97, for footnotes, see Page 2/98.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with improved efficiency – Cast-iron series 1LA6 and 1LG4																
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06															
Second rating plate, loose	K31															
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code															
Extra rating plate with identification codes	Y82 • and identification code															
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code															
Packaging, safety notes, documentation and test certificates																
Without safety and commissioning note. Customer's declaration of renouncement required.	B00															
With one safety and startup guide per box pallet	B01															
Acceptance test certificate 3.1 according to EN 10204	B02															
Operating instructions German/English in print	B23															
Type test with heat run for vertical motors, with acceptance	F83															
Wire-lattice pallet	L99															
Connected in star for dispatch	M32															
Connected in delta for dispatch	M33															

- 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

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

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- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 3) Possible in combination with order code **L44** to **L49** or length specification in plain text.
- 4) Only the 50 Hz data are indicated on the rating plate.
- 5) Cannot be used for motors in UL version (order code **D31**). Cannot be used for motors according to CSA approval (order code **D40**) for motor serie 1LG4. The grease lifetime specified in catalog part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease lifetime or relubrication interval is halved.
- 6) For frame sizes 100 to 160, do not specify an order code. Order code is only necessary for frame sizes 180 to 315.
- 7) A second shaft extension is not possible. Please inquire for mounted brakes. 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"
 - Combination of special versions "Special technology"
- 8) 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.
- 9) The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake supply voltages are possible with order codes **C00** and **C01**.
- 10) Not possible for motor series 1LG4 for 2-pole motors.
- 11) For 1LG4 motors in low-noise version a second shaft extension and/or mounting of an encoder are not possible.)
- 12) Not possible in combination with rotary pulse encoder HOG 9 D 10241 (order code **H72**, **H79**) and/or brake 2LM8 (used for motors up to and including frame size 225, order code **G26**).
- 13) Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code **G26**).
- 14) 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.
- 15) 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 cowl.
- 16) 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.
- 17) Order with voltage code **9** and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- 18) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- 19) Not possible for 2-pole 1LG4 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level A available on request for 1LG4 motors. Not possible for 1LG4 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**.
- 20) Additional charge for 2-pole motors. With 4-pole to 8-pole motors, standard version.
- 21) 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.
- 22) 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.
- 23) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 part 0 "Introduction".
- 24) 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**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions
Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated motors with increased output – Cast-iron series 1LG4															
1LG4 (cast-iron)															
Motor protection															
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11										✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12										✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23										✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25										✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31										✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers ¹⁾	A60										✓	✓	✓	✓	✓
Installation of 6 PT 100 resistance thermometers in stator winding ¹⁾	A61										✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings ¹⁾	A72										✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A78										✓	✓	✓	✓	✓
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A80										✓	✓	✓	✓	✓
Motor connection and connection box															
Two-part plate on connection box	K06										–	✓	✓	✓	✓
Connection box on RHS	K09										✓	✓	✓	✓	✓
Connection box on LHS	K10										✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11										✓	✓	✓	✓	✓
Connection box in cast-iron version	K15										✓	✓	✓	□	□
One cable gland, metal	K54										✓	✓	✓	✓	✓
Cable gland, maximum configuration	K55										✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83										✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84										✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85										✓	✓	✓	✓	✓
Next larger connection box	L00										✓	✓	✓	✓	✓
Undrilled entry plate	L01										○	○	○	○	○
External earthing	L13										□	□	□	□	□
6 cables protruding, 1.5 m long ²⁾	L48										✓	✓	✓	O. R.	O. R.
6 cables protruding, 3 m long ²⁾	L49										✓	✓	✓	O. R.	O. R.
Protruding cable ends – right side ³⁾	L51										O. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – left side ³⁾	L52										O. R.	O. R.	O. R.	O. R.	O. R.
Auxiliary connection box 1XB3 020	L97										✓	✓	✓	✓	✓

For legend, see Page 2/103, for footnotes, see Page 2/104.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated motors with increased output – Cast-iron series 1LG4															
1LG4 (cast-iron)															
Motor connection and connection box (continued)															
Stud terminal for cable connection, accessories pack (3 items)	M46													✓	✓
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47													✓	✓
Windings and insulation															
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11										✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output ⁵⁾	C12										✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13										✓	✓	✓	✓	✓
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19										✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ⁴⁾	C22										✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ⁴⁾	C23										✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ⁴⁾	C24										✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % ⁴⁾	C25										✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26										✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 • and specified output, CT... °C or SA m above sea level										✓	✓	✓	✓	✓
Colors and paint finish															
Standard finish in RAL 7030 stone gray											□	□	□	□	□
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 Page 0/18	Y53 • and standard finish RAL										✓	✓	✓	✓	✓
Special finish in RAL 7030 stone gray	K26										✓	✓	✓	✓	✓
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 Page 0/18	Y54 • and special finish RAL										✓	✓	✓	✓	✓

For legend, see Page 2/103, for footnotes, see Page 2/104.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated motors with increased output – Cast-iron series 1LG4															
1LG4 (cast-iron)															
Colors and paint finish (continued)															
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL										✓	✓	✓	✓	✓
Offshore special finish	M91										✓	✓	✓	✓	✓
Sea air resistant special finish	M94										O. R.	O. R.	O. R.	O. R.	O. R.
Unpainted (only cast iron parts primed)	K23										○	○	○	○	○
Unpainted, only primed	K24										✓	✓	✓	✓	✓
Modular technology – Basic versions ⁵⁾															
Mounting of separately driven fan ⁶⁾	G17										✓	✓	✓	✓	✓
Mounting of brake ^{6) 7)}	G26										✓	✓	✓	✓	✓
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57										✓	✓	✓	✓	✓
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58										✓	✓	✓	✓	✓
Modular technology – Combinations of basic versions ⁶⁾															
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder	H61										✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-1 rotary pulse encoder ⁷⁾	H62										✓	✓	✓	✓	✓
Mounting of brake and separately driven fan ^{6) 7)}	H63										✓	✓	✓	✓	✓
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder ⁷⁾	H64										✓	✓	✓	✓	✓
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97										✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-2 rotary pulse encoder ⁷⁾	H98										✓	✓	✓	✓	✓
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder ⁷⁾	H99										✓	✓	✓	✓	✓
Modular technology – Additional versions															
Brake supply voltage 24 V DC	C00										✓	✓	✓	✓	✓
Brake supply voltage 400 V AC	C01										✓	✓	✓	✓	✓
Mechanical manual brake release with lever (no locking)	K82										✓	✓	✓	✓	✓
Special technology ⁵⁾															
Mounting of LL 861 900 220 rotary pulse encoder	H70										✓	✓	✓	✓	✓
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72										✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73										✓	✓	✓	✓	✓
Prepared for mounting LL 861 900 220	H78										✓	✓	✓	✓	✓
Prepared for mounting HOG 9 D 1024 I	H79										✓	✓	✓	✓	✓
Prepared for mounting HOG 10 D 1024 I	H80										✓	✓	✓	✓	✓
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against moisture	J15										✓	✓	✓	✓	✓
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against dust	J16										✓	✓	✓	✓	✓

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated motors with increased output – Cast-iron series 1LG4															
1LG4 (cast-iron)															
Special technology ⁵⁾ (continued)															
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against moisture	Y74 • and specified speed rpm										✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against dust	Y76 • and specified speed rpm										✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + ESL 93, (speed rpm), connection box protection against dust	Y79 • and specified speed (max. 3) rpm										✓	✓	✓	✓	✓
Mechanical design and degrees of protection															
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for IM V3 type of construction ⁸⁾	K17										✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation ⁹⁾	K37										✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with counter-clockwise direction of rotation ⁹⁾	K38										✓	✓	✓	✓	✓
IP65 degree of protection ¹⁰⁾	K50										✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea) ¹¹⁾	K52										✓	✓	✓	✓	✓
Condensation drainage holes ¹²⁾	L12										□	□	□	□	□
Non-rusting screws (externally)	M27										✓	✓	✓	✓	✓
Earth brushes for converter-fed operation	M44										–	–	–	–	O. R.
Mechanical protection for encoder ¹³⁾	M68										✓	✓	✓	✓	✓
Coolant temperature and site altitude															
Coolant temperature –50 to +40 °C	D02										✓	✓	✓	✓	✓
Coolant temperature –40 to +40 °C	D03										✓	✓	✓	✓	✓
Coolant temperature –30 to +40 °C	D04										✓	✓	✓	✓	✓
Designs in accordance with standards and specifications															
Electrical according to NEMA MG1-12	D30										✓	✓	✓	✓	✓
Design according to UL with "Recognition Mark" ¹⁴⁾	D31										✓	✓	✓	✓	✓
Canadian regulations (CSA) ¹⁵⁾	D40										✓	✓	✓	✓	✓
Bearings and lubrication															
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50										✓	✓	✓	✓	✓
Bearing design for increased cantilever forces ¹⁶⁾	K20										✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size	K36										✓	✓	✓	✓	✓ ¹⁷⁾
Regreasing device	K40										✓	✓	✓	✓	□
Located bearing DE	K94										✓	✓	✓	✓	✓
Located bearing NDE	L04										□	□	□	□	□
Insulated bearing cartridge	L27										–	–	✓	✓	✓
Balance and vibration quantity															
Vibration quantity A											□	□	□	□	□
Vibration quantity B	K02										✓	✓	✓	✓	✓
Full key balancing	L68										✓	✓	✓	✓	✓
Balancing without key	M37										✓	✓	✓	✓	✓

For legend, see Page 2/103, for footnotes, see Page 2/104.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated motors with increased output – Cast-iron series 1LG4															
1LG4 (cast-iron)															
Shaft and rotor															
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ¹⁸⁾	K04										✓	✓	✓	✓	✓
Second standard shaft extension ¹⁹⁾	K16										✓	✓	✓	✓	✓
Shaft extension with normal dimensions without featherkey way	K42										✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39										✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ²⁰⁾	Y55 • and identification code										✓	✓	✓	✓	✓
Heating and ventilation															
Metal external fan ²¹⁾	K35										✓	✓	✓	✓	✓
Anti-condensation heaters for 230 V	K45										✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46										✓	✓	✓	✓	✓
Sheet metal fan cover	L36										✓	✓	✓	✓	✓
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code										–	–	✓	✓	✓
Rating plate and extra rating plates															
Second lubricating plate, supplied loose	B06										✓	✓	✓	✓	✓
Second rating plate, loose	K31										✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code										✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code										✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code										✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates															
Acceptance test certificate 3.1 according to EN 10204	B02										✓	✓	✓	✓	✓
Operating instructions German/English enclosed in print	B23										✓	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance	F83										✓	✓	✓	✓	✓
Connected in star for dispatch	M32										✓	✓	✓	✓	✓
Connected in delta for dispatch	M33										✓	✓	□	□	□

- 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

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

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- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 3) Possible in combination with order code **L44** to **L49** or length specification in plain text.
- 4) Only the 50 Hz data are indicated on the rating plate.
- 5) A second shaft extension is not possible. Please inquire for mounted brakes. 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"
 - Combination of special versions "Special technology"
- 6) 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.
- 7) The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake supply voltages are possible with order codes **C00** and **C01**.
- 8) Not possible for motor series 1LG4 for 2-pole motors.
- 9) For 1LG4 motors in low-noise version a second shaft extension and/or mounting of an encoder are not possible.)
- 10) Not possible in combination with rotary pulse encoder HOG 9 D 10241 (order code **H72**, **H79**) and/or brake 2LM8 (used for motors up to and including frame size 225, order code **G26**).
- 11) Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code **G26**).
- 12) 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.
- 13) 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 cowl.
- 14) 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.
- 15) Order with voltage code **9** and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- 16) Not possible for 2-pole 1LG4 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level A available on request for 1LG4 motors. Not possible for 1LG4 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**.
- 17) Extra charge for 2-pole motors. With 4-pole to 8-pole motors, standard version.
- 18) 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.
- 19) 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.
- 20) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 x length E (normal) of the shaft extension
 For an explanation of the order codes, see catalog part 0 "Introduction".
- 21) 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**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions
Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6																
1LG6 (cast-iron)																
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11										✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12										✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23										✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25										✓	✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31										✓	✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers ¹⁾	A60										✓	✓	✓	✓	✓	✓
Installation of 6 PT 100 resistance thermometers in stator winding ¹⁾	A61										✓	✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings ¹⁾	A72										✓	✓	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A78										✓	✓	✓	✓	✓	✓
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A80										✓	✓	✓	✓	✓	✓
Motor connection and connection box																
Two-part plate on connection box	K06										–	✓	✓	✓	✓	✓
Connection box on RHS	K09										✓	✓	✓	✓	✓	✓
Connection box on LHS	K10										✓	✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11										✓	✓	✓	✓	✓	✓
Connection box in cast-iron version	K15										✓	✓	✓	□	□	□
One cable gland, metal	K54										✓	✓	✓	✓	✓	✓
Cable gland, maximum configuration	K55										✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83										✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84										✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85										✓	✓	✓	✓	✓	✓
Next larger connection box	L00										✓	✓	✓	✓	✓	✓
Undrilled entry plate	L01										○	○	○	○	○	○
External earthing	L13										□	□	□	□	□	□

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For legend, see Page 2/110, for footnotes, see Page 2/111.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size															
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315	
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6																	
												1LG6 (cast-iron)					
Motor connection and connection box (continued)																	
6 cables protruding, 1.5 m long ²⁾	L48											✓	✓	✓	O. R.	O. R.	O. R.
6 cables protruding, 3 m long ²⁾	L49											✓	✓	✓	O. R.	O. R.	O. R.
Protruding cable ends – right side ³⁾	L51											O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – left side ³⁾	L52											O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Auxiliary connection box 1XB3 020	L97											✓	✓	✓	✓	✓	✓
Stud terminal for cable connection, accessories pack (3 items)	M46											–	–	–	✓	✓	✓
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47											–	–	–	✓	✓	✓
Windings and insulation																	
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output ⁴⁾	C12											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13											✓	✓	✓	✓	✓	✓
Increased air humidity/temperature, with 30 to 60 g water per m ³ of air	C19											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % ⁴⁾	C22											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % ⁴⁾	C23											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % ⁴⁾	C24											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % ⁴⁾	C25											✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 • and specified output, CT .. °C or SA m above sea level											✓	✓	✓	✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT .. °C or SA m above sea level											✓	✓	✓	✓	✓	✓

For legend, see Page 2/110, for footnotes, see Page 2/111.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6																
1LG6 (cast-iron)																
Colors and paint finish																
Standard finish in RAL 7030 stone gray											□	□	□	□	□	□
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 Page 0/18	Y53 • and standard finish RAL										✓	✓	✓	✓	✓	✓
Special finish in RAL 7030 stone gray	K26										✓	✓	✓	✓	✓	✓
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 Page 0/18	Y54 • and special finish RAL										✓	✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL										✓	✓	✓	✓	✓	✓
Offshore special finish	M91										✓	✓	✓	✓	✓	✓
Sea air resistant special finish	M94										O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Unpainted (only cast iron parts primed)	K23										○	○	○	○	○	○
Unpainted, only primed	K24										✓	✓	✓	✓	✓	✓
Modular technology – Basic versions ⁵⁾																
Mounting of separately driven fan ⁶⁾	G17										✓	✓	✓	✓	✓	✓
Mounting of brake ^{6) 7)}	G26										✓	✓	✓	✓	✓	✓
Mounting of 1XP8 001-1 (HTL) rotary pulse encoder	H57										✓	✓	✓	✓	✓	✓
Mounting of 1XP8 001-2 (TTL) rotary pulse encoder	H58										✓	✓	✓	✓	✓	✓
Modular technology – Combinations of basic versions ⁵⁾																
Mounting of separately driven fan and 1XP8 001-1 rotary pulse encoder	H61										✓	✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-1 rotary pulse encoder ⁷⁾	H62										✓	✓	✓	✓	✓	✓
Mounting of brake and separately driven fan ^{6) 7)}	H63										✓	✓	✓	✓	✓	✓
Mounting of brake, separately driven fan and 1XP8 001-1 rotary pulse encoder ⁷⁾	H64										✓	✓	✓	✓	✓	✓
Mounting of separately driven fan and 1XP8 001-2 rotary pulse encoder	H97										✓	✓	✓	✓	✓	✓
Mounting of brake and 1XP8 001-2 rotary pulse encoder ⁷⁾	H98										✓	✓	✓	✓	✓	✓
Mounting of brake, separately driven fan and 1XP8 001-2 rotary pulse encoder ⁷⁾	H99										✓	✓	✓	✓	✓	✓

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6															
												1LG6 (cast-iron)			
Modular technology – Additional versions															
Brake supply voltage 24 V DC	C00										✓	✓	✓	✓	✓
Brake supply voltage 400 V AC	C01										✓	✓	✓	✓	✓
Mechanical manual brake release with lever (no locking)	K82										✓	✓	✓	✓	✓
Special technology ⁵⁾															
Mounting of LL 861 900 220 rotary pulse encoder	H70										✓	✓	✓	✓	✓
Mounting of HOG 9 D 1024 I rotary pulse encoder	H72										✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I rotary pulse encoder	H73										✓	✓	✓	✓	✓
Prepared for mounting LL 861 900 220	H78										✓	✓	✓	✓	✓
Prepared for mounting HOG 9 D 1024 I	H79										✓	✓	✓	✓	✓
Prepared for mounting HOG 10 D 1024 I	H80										✓	✓	✓	✓	✓
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against moisture	J15										✓	✓	✓	✓	✓
Mounting of explosion-proof rotary pulse encoder HOG 10 DN 1024 I, connection box protection against dust	J16										✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against moisture	Y74 • and specified speed rpm										✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + FSL, (speed rpm), connection box protection against dust	Y76 • and specified speed rpm										✓	✓	✓	✓	✓
Mounting of rotary pulse encoder HOG 10 DN 1024 I + ESL 93, (speed rpm), connection box protection against dust	Y79 • and specified speed (max. 3) rpm										✓	✓	✓	✓	✓
Mechanical design and degrees of protection															
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar. Not possible for IM V3 type of construction and 2-pole motors ⁸⁾	K17										✓	✓	✓	✓	✓
Low-noise version for 2-pole motors with clockwise direction of rotation ⁹⁾	K37										–	–	–	–	–
Low-noise version for 2-pole motors with clockwise direction of rotation ⁹⁾	K38										–	–	–	–	–
IP65 degree of protection ¹⁰⁾	K50										✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea) ¹¹⁾	K52										✓	✓	✓	✓	✓
Condensation drainage holes ¹²⁾	L12										□	□	□	□	□
Non-rusting screws (externally)	M27										✓	✓	✓	✓	✓
Earth brushes for converter-fed operation	M44										–	–	–	–	O. R. O. R.
Mechanical protection for encoder ¹³⁾	M68										✓	✓	✓	✓	✓

For legend, see Page 2/110, for footnotes, see Page 2/111.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6																
											1LG6 (cast-iron)					
Coolant temperature and site altitude																
Coolant temperature –50 to +40 °C	D02										✓	✓	✓	✓	✓	✓
Coolant temperature –40 to +40 °C	D03										✓	✓	✓	✓	✓	✓
Coolant temperature –30 to +40 °C	D04										✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
Electrical according to NEMA MG1-12 ¹⁴⁾	D30										□	□	□	□	□	□
Design according to UL with "Recognition Mark" ¹⁵⁾	D31										✓	✓	✓	✓	✓	✓
Certified for Korea according to KS C4202 ¹⁶⁾	D33										✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ¹⁷⁾	D40										✓	✓	✓	✓	✓	✓
VIK version (includes Zone 2 for mains-fed operation, without Ex nA II on rating plate)	K30										✓	✓	✓	✓	✓	✓
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50										✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces ¹⁸⁾	K20										✓	✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size 63	K36										✓	✓	✓	✓	✓ ¹⁹⁾	✓ ¹⁹⁾
Regreasing device	K40										✓	✓	✓	✓	□	□
Located bearing DE	K94										✓	✓	✓	✓	✓	✓
Located bearing NDE	L04										□	□	□	□	□	□
Insulated bearing cartridge	L27										–	–	✓	✓	✓	✓
Balance and vibration quantity																
Vibration quantity A											□	□	□	□	□	□
Vibration quantity B	K02										✓	✓	✓	✓	✓	✓
Full key balancing	L68										✓	✓	✓	✓	✓	✓
Balancing without key	M37										✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ²⁰⁾	K04										✓	✓	✓	✓	✓	✓
Second standard shaft extension ²¹⁾	K16										✓	✓	✓	✓	✓	✓
Shaft extension with normal dimensions without featherkey way	K42										✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39										✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ²²⁾	Y55 • and identification code										✓	✓	✓	✓	✓	✓
Heating and ventilation																
Metal external fan ²³⁾	K35										✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 230 V	K45										✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46										✓	✓	✓	✓	✓	✓
Sheet metal fan cover	L36										✓	✓	✓	✓	✓	✓
Separately driven fan with non-standard voltage and/or frequency	Y81 • and identification code										–	–	✓	✓	✓	✓

For legend, see Page 2/110, for footnotes, see Page 2/111.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size															
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315	
Self-ventilated energy-saving motors with high efficiency – Cast-iron series 1LG6																	
Rating plate and extra rating plates																	
Second lubricating plate, supplied loose	B06											✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31											✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification codes											✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code											✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code											✓	✓	✓	✓	✓	✓
Packaging, safety notes and test certificates																	
Acceptance test certificate 3.1 according to EN 10204	B02											✓	✓	✓	✓	✓	✓
Operating instructions German/English enclosed in print	B23											✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F83											✓	✓	✓	✓	✓	✓
Connected in star for dispatch	M32											✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33											✓	✓	□	□	□	□

- 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

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions
2

- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 3) Possible in combination with order code **L44** to **L49** or length specification in plain text.
- 4) Only the 50 Hz data are indicated on the rating plate.
- 5) A second shaft extension is not possible. Please inquire for mounted brakes. 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"
 - Combination of special versions
 Exception: For frame size 225 and above, the options for mounting a brake (order code **G26**), separately driven fan (order code **G17**) or brake and separately driven fan (order code **H63**) can be combined with the options or rotary pulse encoders of the "Special technology" range.
- 6) 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.
- 7) The standard brake supply voltage is 230 V AC, 50/60 Hz. Other brake supply voltages are possible with order codes **C00** and **C01**.
- 8) Not possible for motor series 1LG6 for 2-pole motors.
- 9) Not necessary for 1LG6 motors because these motors are already noise optimized.
- 10) Not possible in combination with rotary pulse encoder HOG 9 D 10241 (order code **H72**, **H79**) and/or brake 2LM8 (used for motors up to and including frame size 225, order code **G26**).
- 11) Not possible in combination with brake 2LM8 (used for motors up to and including frame size 225, order code **G26**).
- 12) 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.
- 13) 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 cowl.
- 14) For the EPACT standard version (no order code required).
- 15) 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.
- 16) For Korea are certified:
 - 2-pole motors ≤ 0.75 kW
 - 4-pole motors ≤ 0.75 kW
 - 6-pole motors ≤ 0.75 kW
- 17) Order with voltage code **9** and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- 18) Not possible for 2-pole 1LG6 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level B available on request for 1LG6 motors. Not possible for 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**.
- 19) Extra charge for 2-pole motors. With 4-pole to 8-pole motors, standard version.
- 20) 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.
- 21) 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.
- 22) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 part 0 "Introduction".
- 23) 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**.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-cooled motors without external fan – Aluminum series 1LP7 and 1LP5																
			1LP7 (aluminum)								1LP5 (aluminum)					
Motor protection																
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers ¹⁾	A60		–	–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor connection and connection box																
ECOFAST motor plug Han-Drive 10e for 230 VΔ/400 VY ²⁾	G55		✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–
ECOFAST motor plug EMC Han-Drive 10e for 230 VΔ/400 VY ³⁾	G56		✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–	–
Connection box on RHS	K09		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box on LHS	K10		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
One cable gland, metal	K54		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cable gland, maximum configuration	K55		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85		✓	✓	✓	✓	✓	○	○	○	○	✓	✓	✓	✓	✓
Next larger connection box	L00		–	–	–	–	–	–	–	–	–	–	✓	✓	✓	✓
External earthing	L13		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 cables protruding, 0.5 m long ⁴⁾	L44		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	–	–
3 cables protruding, 1.5 m long ⁴⁾	L45		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	–	–
6 cables protruding, 0.5 m long ⁴⁾	L47		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	O. R.	O. R.	–	–
6 cables protruding, 1.5 m long ⁴⁾	L48		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 cables protruding, 3 m long ⁵⁾	L49		–	–	–	–	–	–	–	–	–	–	–	–	–	–
Connection box on NDE	M64		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Terminal strip for main and auxiliary terminals	M69		✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–
Windings and insulation																
Increased air humidity/temperature with 30 to 60 g water per m ³ of air	C19		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air	C26		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legend, see Page 2/114, for footnotes, see Page 2/115.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-cooled motors without external fan – Aluminum series 1LP7 and 1LP5																
			1LP7 (aluminum)								1LP5 (aluminum)					
Colors and paint finish																
Special finish in RAL 7030 stone gray			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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 Page 0/18	Y54 • and special finish RAL		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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 Page 0/18	Y53 • and standard finish RAL		–	–	–	–	–	–	–	–	–	–	–	–	–	–
Sea air resistant special finish	M94		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.
Unpainted (only cast iron parts primed)	K23		○	○	○	○	○	○	○	○	○	○	○	○	○	○
Unpainted, only primed	K24		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar ⁵⁾	K17		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
With two additional eyebolts for IM V1/IM V3	K32		–	–	–	–	–	–	–	–	–	–	–	–	–	–
IP65 degree of protection	K50		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea)	K52		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vibration-proof version	L03		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Condensation drainage holes ⁶⁾	L12		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-rusting screws (externally)	M27		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature and site altitude																
Coolant temperature –40 to +40 °C	D03		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Coolant temperature –30 to +40 °C	D04		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
Design according to UL with "Recognition Mark" ⁷⁾	D31		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ⁸⁾	D40		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PSE Mark Japan ⁹⁾	D46		✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	–
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50		–	–	–	–	–	–	–	–	–	–	–	–	–	–
Bearing design for increased cantilever forces	K20		–	–	–	–	–	–	–	–	–	–	–	–	–	–
Regreasing device	K40		–	–	–	–	–	–	–	–	–	–	–	–	–	–
Located bearing DE	K94		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Located bearing NDE	L04		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	☐	☐	☐	☐

For legend, see Page 2/114, for footnotes, see Page 2/115.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-cooled motors without external fan – Aluminum series 1LP7 and 1LP5																
			1LP7 (aluminum)								1LP5 (aluminum)					
Balance and vibration quantity																
Vibration quantity A			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vibration quantity B	K02		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full key balancing	L68		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing without key	M37		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ¹⁰⁾	K04		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second standard shaft extension	K16		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with normal dimensions without featherkey way	K42		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard shaft made of non-rusting steel	M65		–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ¹¹⁾	Y55 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heating and ventilation																
Anti-condensation heaters for 230 V	K45		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and extra rating plates																
Second lubricating plate, supplied loose	B06		–	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Packaging, safety notes and test certificates																
Without safety and commissioning note. Customer's declaration of renouncement required.	B00		–	○	○	○	○	○	○	○	○	○	○	○	○	○
With one safety and startup guide per box pallet	B01		–	○	○	○	○	○	○	○	○	○	○	○	○	○
Acceptance test certificate 3.1 according to EN 10204	B02		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Operating instructions German/English in print	B23		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F83		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wire-lattice pallet	L99		○	○	○	○	○	○	○	○	○	○	○	○	○	○
Connected in star for dispatch	M32		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- ☐ 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 2/115.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions
2

- 1) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) 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, 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) 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, H90, H91, H92, H93, H94, H95, K04, K15, K16, K34, K35, K40, K45, K46, K52, K54, K82, L03, L44, L45, L47, L48, L49, L51, L52.**
- 4) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 5) Not possible for type of construction IM V3.
- 6) 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.
- 7) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.
- 8) The rated voltage is indicated on the rating plate without voltage range.
- 9) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.
- 10) 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**).
- 11) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 part 0 "Introduction".

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Options or order codes (supplement **-Z** is required)

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size															
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315	
Self-cooled motors without external fan – Cast-iron series 1LP4																	
Motor protection																	
Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping ¹⁾	A11											✓	✓	✓	✓	✓	✓
Motor protection with PTC thermistors with 6 embedded temperature sensors for tripping and alarm ¹⁾	A12											✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensor KTY 84-130 ¹⁾	A23											✓	✓	✓	✓	✓	✓
Motor temperature detection with embedded temperature sensors 2 x KTY 84-130 ¹⁾	A25											✓	✓	✓	✓	✓	✓
Temperature detectors for tripping ¹⁾	A31											✓	✓	✓	✓	✓	✓
Installation of 3 PT 100 resistance thermometers ¹⁾	A60											✓	✓	✓	✓	✓	✓
Installation of 6 PT 100 resistance thermometers in stator winding ¹⁾	A61											✓	✓	✓	✓	✓	✓
Installation of 2 PT 100 screw-in resistance thermometers (basic circuit) for rolling-contact bearings ¹⁾	A72											✓	✓	✓	✓	✓	✓
Installation of 2 PT100 screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A78											✓	✓	✓	✓	✓	✓
Installation of 2 PT 100 double screw-in resistance thermometers (3-wire circuit) for rolling-contact bearings ¹⁾	A80											✓	✓	✓	✓	✓	✓
Motor connection and connection box																	
Two-part plate on connection box	K06											–	✓	✓	✓	✓	✓
Connection box on RHS	K09											✓	✓	✓	✓	✓	✓
Connection box on LHS	K10											✓	✓	✓	✓	✓	✓
Connection box on top, feet screwed on	K11											✓	✓	✓	✓	✓	✓
One cable gland, metal	K54											✓	✓	✓	✓	✓	✓
Cable gland, maximum configuration	K55											✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from DE	K83											✓	✓	✓	✓	✓	✓
Rotation of the connection box through 90°, entry from NDE	K84											✓	✓	✓	✓	✓	✓
Rotation of connection box through 180°	K85											✓	✓	✓	✓	✓	✓
Next larger connection box	L00											✓	✓	✓	✓	✓	✓
External earthing	L13											☐	☐	☐	☐	☐	☐
6 cables protruding, 1.5 m long ²⁾	L48											✓	✓	✓	O. R.	O. R.	O. R.
6 cables protruding, 3 m long ²⁾	L49											✓	✓	✓	O. R.	O. R.	O. R.
Protruding cable ends – right side ³⁾	L51											O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Protruding cable ends – left side ³⁾	L52											O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
Auxiliary connection box 1XB3 020	L97											✓	✓	✓	✓	✓	✓

For legend and footnotes, see Page 2/119.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size													
		56	63	71	80	90	100	112	132	160	180	200	225	250	280
Self-cooled motors without external fan – Cast-iron series 1LP4															
Motor connection and connection box (continued)															
1LP4 (cast-iron)															
Stud terminal for cable connection, accessories pack (3 items)	M46												✓	✓	✓
Saddle terminal for connection without cable lug, accessories pack (6 items)	M47												✓	✓	✓
Windings and insulation															
Temperature class 155 (F), used acc. to 155 (F), with service factor (SF)	C11												✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased output ⁴⁾	C12												✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature	C13												✓	✓	✓
Increased air humidity/temperature, with 30 to 60 g water per m ³ of air	C19												✓	✓	✓
Increased air humidity/temperature, with 60 to 100 g water per m ³ of air	C26												✓	✓	✓
Temperature class 155 (F), used acc. to 130 (B), with increased coolant temperature and/or site altitude	Y50 • and specified output, CT .. °C or SA m above sea level												✓	✓	✓
Temperature class 155 (F), used acc. to 155 (F), other requirements	Y52 • and specified output, CT .. °C or SA m above sea level												✓	✓	✓
Colors and paint finish															
Standard finish in RAL 7030 stone gray													□	□	□
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 Page 0/18	Y53 • and standard finish RAL												✓	✓	✓
Special finish in RAL 7030 stone gray	K26												✓	✓	✓
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 Page 0/18	Y54 • and special finish RAL												✓	✓	✓
Special finish in special RAL colors: For RAL colors, see "Special finish in special RAL colors" on Page 0/19	Y51 • and special finish RAL												✓	✓	✓
Offshore special finish	M91												✓	✓	✓
Sea air resistant special finish	M94												O. R.	O. R.	O. R.
Unpainted (only cast iron parts primed)	K23												○	○	○
Unpainted, only primed	K24												✓	✓	✓

For legend and footnotes, see Page 2/119.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size														
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Self-cooled motors without external fan – Cast-iron series 1LP4																
1LP4 (cast-iron)																
Mechanical design and degrees of protection																
Drive-end seal for flange-mounting motors with an oil-tightness of up to 0.1 bar Not possible for IM V3 type of construction ⁵⁾	K17										✓	✓	✓	✓	✓	✓
IP65 degree of protection	K50										✓	✓	✓	✓	✓	✓
IP56 degree of protection (non-heavy-sea)	K52										✓	✓	✓	✓	✓	✓
Condensation drainage holes ⁶⁾	L12										□	□	□	□	□	□
Non-rusting screws (externally)	M27										✓	✓	✓	✓	✓	✓
Coolant temperature and site altitude																
Coolant temperature -50 to +40 °C	D02										✓	✓	✓	✓	✓	✓
Coolant temperature -40 to +40 °C	D03										✓	✓	✓	✓	✓	✓
Coolant temperature -30 to +40 °C	D04										✓	✓	✓	✓	✓	✓
Designs in accordance with standards and specifications																
Design according to UL with "Recognition Mark" ⁷⁾	D31										✓	✓	✓	✓	✓	✓
Canadian regulations (CSA) ⁸⁾	D40										✓	✓	✓	✓	✓	✓
Bearings and lubrication																
Measuring nipple for SPM shock pulse measurement for bearing inspection	G50										✓	✓	✓	✓	✓	✓
Bearing design for increased cantilever forces ⁹⁾	K20										✓	✓	✓	✓	✓	✓
Special bearing for DE and NDE, bearing size	K36										✓	✓	✓	✓	✓ ¹⁰⁾	✓ ¹⁰⁾
Regreasing device	K40										✓	✓	✓	✓	□	□
Located bearing DE	K94										✓	✓	✓	✓	✓	✓
Located bearing NDE	L04										□	□	□	□	□	□
Insulated bearing cartridge	L27										-	-	✓	✓	✓	✓
Balance and vibration quantity																
Vibration quantity A											□	□	□	□	□	□
Vibration quantity B	K02										✓	✓	✓	✓	✓	✓
Full key balancing	L68										✓	✓	✓	✓	✓	✓
Balancing without key	M37										✓	✓	✓	✓	✓	✓
Shaft and rotor																
Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors ¹¹⁾	K04										✓	✓	✓	✓	✓	✓
Second standard shaft extension ¹²⁾	K16										✓	✓	✓	✓	✓	✓
Shaft extension with normal dimensions without featherkey way	K42										✓	✓	✓	✓	✓	✓
Concentricity of shaft extension in accordance with DIN 42955 Tolerance R	L39										✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension ¹³⁾	Y55 • and identification code										✓	✓	✓	✓	✓	✓
Heating and ventilation																
Anti-condensation heaters for 230 V	K45										✓	✓	✓	✓	✓	✓
Anti-condensation heaters for 115 V	K46										✓	✓	✓	✓	✓	✓

For legend and footnotes, see Page 2/119.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Special versions

Special versions	Additional identification code -Z with order code and plain text if required	Motor type frame size															
		56	63	71	80	90	100	112	132	160	180	200	225	250	280	315	
Self-cooled motors without external fan – Cast-iron series 1LP4																	
Rating plate and extra rating plates																	
Second lubricating plate, supplied loose	B06											✓	✓	✓	✓	✓	✓
Second rating plate, loose	K31											✓	✓	✓	✓	✓	✓
Extra rating plate or rating plate with deviating rating plate data	Y80 • and identification code											✓	✓	✓	✓	✓	✓
Extra rating plate with identification codes	Y82 • and identification code											✓	✓	✓	✓	✓	✓
Additional information on rating plate and on package label (maximum of 20 characters)	Y84 • and identification code											✓	✓	✓	✓	✓	✓
Packaging, safety notes, documentation and test certificates																	
Acceptance test certificate 3.1 according to EN 10204	B02											✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance	F83											✓	✓	✓	✓	✓	✓
Connected in star for dispatch	M32											✓	✓	✓	✓	✓	✓
Connected in delta for dispatch	M33											✓	✓	□	□	□	□

- 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) Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.
- 2) In combination with the PTC thermistor option or anti-condensation heating option, please inquire before ordering.
- 3) Possible in combination with order code **L44** to **L49** or length specification in plain text.
- 4) Only the 50 Hz data are indicated on the rating plate.
- 5) Not possible for motor series 1LP4 for 2-pole motors.
- 6) 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.
- 7) 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.
- 8) Order with voltage code **9** and order code for voltage and frequency. The rated voltage is indicated on the rating plate.
- 9) Not possible for 2-pole 1LP4 motors, frame size 315 L in vertical types of construction; bearings for increased cantilever forces at vibration quantity level B available on request for 1LP4 motors. Not possible for 1LP4 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**.

- 10) Extra charge for 2-pole motors. With 4-pole to 8-pole motors, standard version.
- 11) 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**).
- 12) 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.
- 13) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way 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 featherkeys 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 part 0 "Introduction".

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

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

Version	Frame size	Number of poles	Order No.
Rotary pulse encoder ¹⁾	HTL version	71 ... 225	1XP8 001-1
	TTL version	71 ... 225	1XP8 001-2
Separately driven fan incl. mounting parts ²⁾	100	all	2CW2 180-8RF54-1AB0
	112	all	2CW2 210-8RF54-1AB1
	132	all	2CW2 250-8RF54-1AB2
	160	all	2CW2 300-8RF54-1AB3
	180	all	2CW2 300-8RF54-1AB4
	200	all	2CW2 300-8RF54-1AB5
	225 ³⁾	all	2CW2 300-8RF54-1AB6
	250	all	1PP9 063-2LA12-Z A11+K50⁴⁾
	280	all	1PP9 063-2LA12-Z A11+K50⁴⁾
	315	2	1PP9 070-2LA12-Z A11+K50⁴⁾
315	4 to 8	1PP9 063-2LA12-Z A11+K50⁴⁾	
Separately driven fan and rotary pulse encoder 1XP8 001-1 incl. mounting parts ²⁾	100	all	2CW2 180-8RF54-2AB0
	112	all	2CW2 210-8RF54-2AB1
	132	all	2CW2 250-8RF54-2AB2
	160	all	2CW2 300-8RF54-2AB3
	180	all	2CW2 300-8RF54-2AB4
	200	all	2CW2 300-8RF54-2AB5
225 ³⁾	all	2CW2 300-8RF54-2AB6	

Slide rails with fixing bolts and tensioning screws acc. 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 335 to 450, there are no standardised slide rails (please inquire).

Available from:
Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-7407-0
Fax +49 (0)5241-7407-90

<http://www.luetgert-antriebe.de>
e-mail: info@luetgert-antriebe.de

Foundation block acc. 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. In this case, the machine is positioned 2 to 3 mm lower. 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.

Available from:
Lütgert & Co. GmbH
Postfach 42 51
33276 Gütersloh, Germany
Tel. +49 (0)5241-7407-0
Fax +49 (0)5241-7407-90

<http://www.luetgert-antriebe.de>
e-mail: info@luetgert-antriebe.de

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.

Overview (continued)

Taper pins acc. 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.

Standardised taper pins are available from general engineering suppliers.

Available from:
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

<http://www.ottoroth.de>
e-mail: info@ottoroth.de

Couplings

The motor from Siemens is connected to the machine or gear unit through a coupling. Flender is an important coupling manufacturer with a wide range of products. For standard applications, Siemens recommends that elastic couplings of Flender types N-Eupex and Rupex or torsionally rigid couplings of types Arpex and Zapex are used. For special applications, Fludex and Elpex couplings are recommended.

Source of supply:
Siemens contact partner – ordering from Catalog
Siemens MD 10.1 "FLENDER Standard Couplings"

or

A. Friedr. Flender AG
Kupplungswerk Mussum
Industriepark Bocholt
Schlavenhorst 100
46395 Bocholt, Germany
Tel. +49 (0)2871-92 2185
Fax +49 (0)2871-92 2579

<http://www.flender.com>
e-mail: couplings@flender.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 (the type series may vary).
 - Repair parts will be supplied for up to 5 years.
 - For up to 10 years, Siemens will provide information and will, if necessary, supply documentation for repair 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 cowl 1LA7,
frame size 160 M, 4-pole:

**Fan cowl No. 7.40,
1LA7 163-4AA60, factory number J783298901018**

Mounting of encoder

In the case of mounting by the customer.

Options H79, H80

Baumer Hübner GmbH
Planufer 92b
10967 Berlin, Germany
Tel. +49 (0)30-690 03-0
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Fax +49 (0)7361-78 093-11

<http://www.leinelinde.com>
e-mail: info@leinelinde.se

- For bearing types, see the "Introduction".
- Repair 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.
- Support – Hotline
In Germany
Tel.: 01 80/5 05 04 48

National telephone numbers can be found on the Internet page:
<http://www.siemens.com/automation/service&support>

IEC Squirrel-Cage Motors

Standard motors frame size 315L and above

Dimensions

Overview (continued)

Frame size	Type	Number of poles	Dimensions				
			L	AD	H	AB	O
280 S/ 280 M	1LG4	2, 4	960	432	280	540	2 x M63 x 1.5
	1LG4 288		1070	432	280	540	2 x M63 x 1.5
	1LG6 280	2, 4, 6, 8	960	432	280	540	2 x M63 x 1.5
	1LG6 283		1070	432	280	540	2 x M63 x 1.5
	1LG6 283		960	432	280	540	2 x M63 x 1.5
	1LG6 288		1070	432	280	540	2 x M63 x 1.5
	1LP4 280		830	432	280	540	2 x M63 x 1.5
1LP4 283	830	432	280	540	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
1LG4 310	1102		500	315	610	2 x M63 x 1.5	
315 L	1LG4 313	4, 6, 8	1102	500	315	610	2 x M63 x 1.5
	1LG4 316		1232	500	315	610	2 x M63 x 1.5
	1LG4 316	4, 6, 8	1262	500	315	610	2 x M63 x 1.5
	1LG4 317		1232	500	315	610	2 x M63 x 1.5
	1LG4 317		1262	500	315	610	2 x M63 x 1.5
	1LG4 318		1262	500	315	610	2 x M63 x 1.5
	1LG4 318		1402	500	315	610	2 x M63 x 1.5
	1LP4 310	4, 6, 8	925	500	315	610	2 x M63 x 1.5
	1LP4 310		955	500	315	610	2 x M63 x 1.5
	1LP4 313		925	500	315	610	2 x M63 x 1.5
	1LP4 313		955	500	315	610	2 x M63 x 1.5
1LP4 316	1085		500	315	610	2 x M63 x 1.5	
1LP4 316	1115		500	315	610	2 x M63 x 1.5	
1LP4 317	4, 6, 8	1085	500	315	610	2 x M63 x 1.5	
1LP4 317		1115	500	315	610	2 x M63 x 1.5	

Frame size	Type	Number of poles	Dimensions				
			L	AD	H	AB	O
315 S/ 315 M/ 315 L	1LG6 310	2, 4, 6, 8	1072	500	315	610	2 x M63 x 1.5
315 L	1LG6 310		1102	500	315	610	2 x M63 x 1.5
	1LG6 313	2	1232	500	315	610	2 x M63 x 1.5
	1LG6 313		1262	500	315	610	2 x M63 x 1.5
	1LG6 313	8	1102	500	315	610	2 x M63 x 1.5
	1LG6 316		1232	500	315	610	2 x M63 x 1.5
	1LG6 316		1262	500	315	610	2 x M63 x 1.5
	1LG6 317	4, 6, 8	1262	500	315	610	2 x M63 x 1.5
	1LG6 317		1262	500	315	610	2 x M63 x 1.5
	1LG6 317	2	1372	500	315	610	2 x M63 x 1.5
	1LG6 317		1402	500	315	610	2 x M63 x 1.5
	1LG6 318	2	1372	651	315	610	2 x M63 x 1.5
	1LG6 318		1402	651	315	610	2 x M63 x 1.5
	1LG6 318	6, 8	1402	500	315	610	2 x M63 x 1.5
	1LP4 310		925	500	315	610	2 x M63 x 1.5
	1LP4 310	4, 6, 8	955	500	315	610	2 x M63 x 1.5
	1LP4 313		925	500	315	610	2 x M63 x 1.5
	1LP4 313	4, 6, 8	955	500	315	610	2 x M63 x 1.5
1LP4 316	1085		500	315	610	2 x M63 x 1.5	
1LP4 316	4, 6, 8	1115	500	315	610	2 x M63 x 1.5	
1LP4 317		1085	500	315	610	2 x M63 x 1.5	
1LP4 317	4, 6, 8	1115	500	315	610	2 x M63 x 1.5	

Notes on the dimensions

■ Dimension drawings 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 31 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 dimensions, the admissible deviations are given below:

Dimension designation	Dimension	Permitted 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.

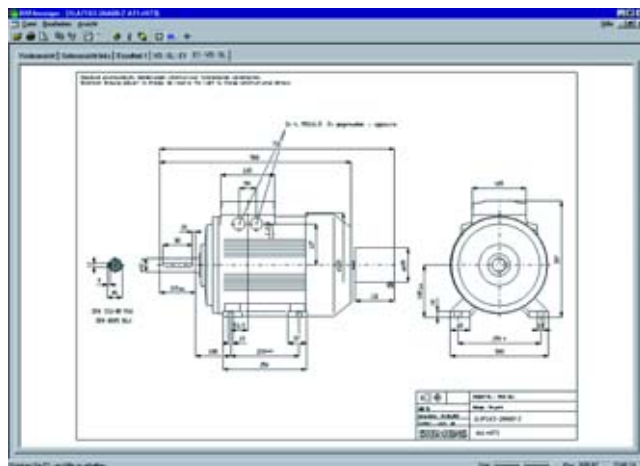
■ All dimensions are specified in mm.

More information

Dimension sheet generator

(part of the SD configurator)

A dimension drawing can be created in the SD 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.

The SD configurator has been integrated into the electronic Catalog CA 01 as a selection aid (for further information, catalog part 11 "Appendix", "SD configurator selection tool").

The interactive Catalog CA 01 can be ordered from your local Siemens sales representative or on the Internet at

<http://www.siemens.com/automation/CA01>

At this address, you will also find links to Tips & Tricks and to downloads for function or content updates.

Order number for CA 01 10/2008, English international:
DVD: E86060-D4001-A510-C7-7600

IEC Squirrel-Cage Motors

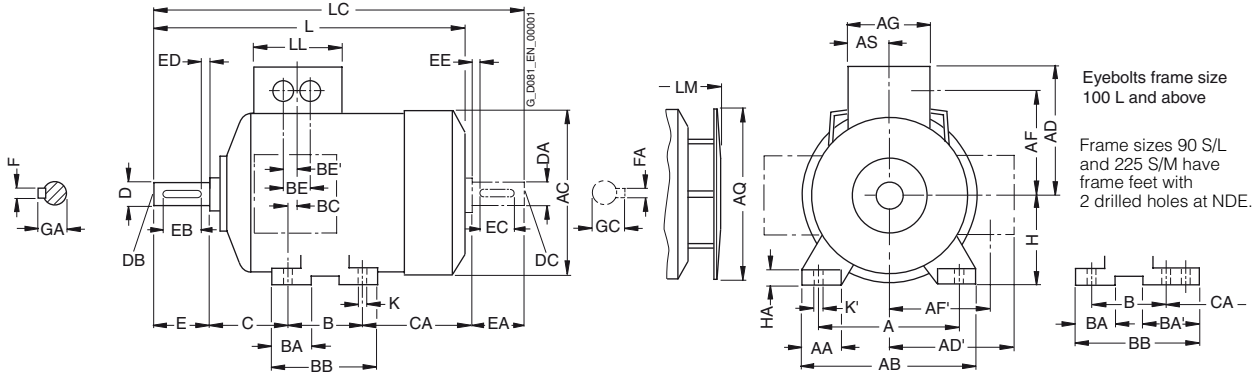
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

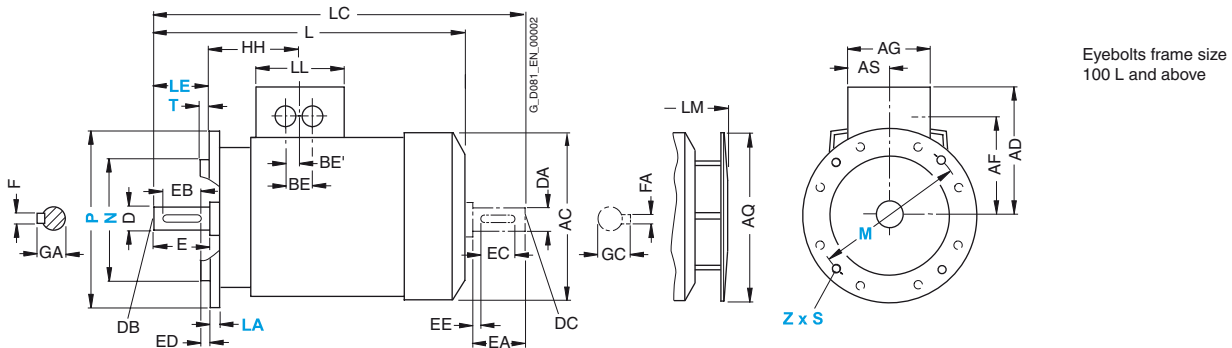
Aluminum series 1LA7 and 1LA5, frame sizes 56 M to 225 M

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/140 (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 ²⁾	AD' ²⁾	AF ²⁾	AF'	AG ²⁾	AQ	AS	B*	BA	BA'	BB	BC	BE ²⁾	BE' ²⁾	C	CA*	H	HA
56 M ³⁾	1LA7 050 1LA7 053	2, 4	90	25	110	116	101	101	78	78	75	-	37.5	71	28	-	87	34	32	18	36	53	56	6
63 M	1LA7 060 1LA7 063	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	1LA7 070 1LA7 073	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	1LA7 080 1LA7 083	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 90 L	1LA7 090 1LA7 096	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
100 L	1LA7 106 1LA7 107	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	1LA7 113	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	1LA7 130 1LA7 131	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	1LA7 133 1LA7 134	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	1LA7 163 1LA7 164	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	1LA7 166	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	1LA5 183	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	1LA5 186	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	1LA5 206 1LA5 207	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	1LA5 220	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	1LA5 223	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

■ For 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 SD configurator.

³⁾ The motors of frame size 56 M are not ventilated.

IEC Squirrel-Cage Motors

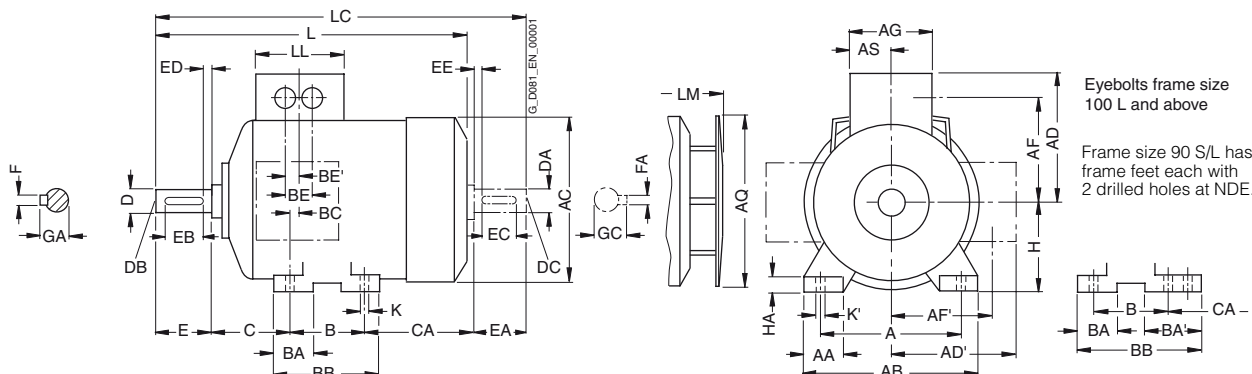
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

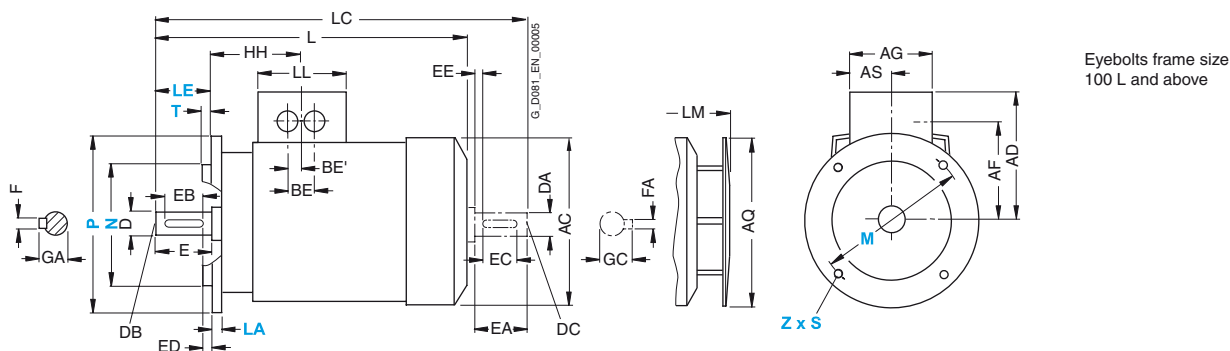
Aluminum series 1LA9, frame sizes 56 M to 200 L

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/140 (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
56 M ²⁾	1LA9 050 1LA9 053	2, 4	90	25	110	116	101	101	78	78	75	-	37.5	71	28	-	87	34	32	18	36	53	56	6
63 M	1LA9 060 1LA9 063	2, 4	100	27	120	124	101	101	78	78	75	124	37.5	80	28	-	96	30	32	18	40	66 92	63	7
71 M	1LA9 070 1LA9 073	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
80 M	1LA9 080 1LA9 083	2, 4	125	30.5	150	163	120	120	97	97	75	124	37.5	100	32	-	118	14	32	18	50	94 134	80	8
90 S 90 L	1LA9 090 1LA9 096	2, 4, 6	140	30.5	165	180	128	128	105	105	75	170	37.5	100 125	33	54	143	23	32	18	56	143 118	90	10
100 L	1LA9 106 1LA9 107	2, 4, 6	160	42	196	203	135	163	78	123	120	170	60	140	47	-	176	39	42	21	63	160 195 ³⁾	100	12
112 M	1LA9 113	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	1LA9 130	2, 4	216	53	256	267	167	194	107	154	140	250	70	140	49	-	180	39	42	21	89	162.5 200.5	132	15
132 M	1LA9 133 1LA9 133 1LA9 134	6 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	1LA9 163 1LA9 164	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	1LA9 166	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	1LA9 183	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	1LA9 186	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	1LA9 206 1LA9 207	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⁾ The motors of frame size 56 M are not ventilated. Frame size 56 M is not available in IM B35.

³⁾ For 1LA9 107-4KA.

IEC Squirrel-Cage Motors

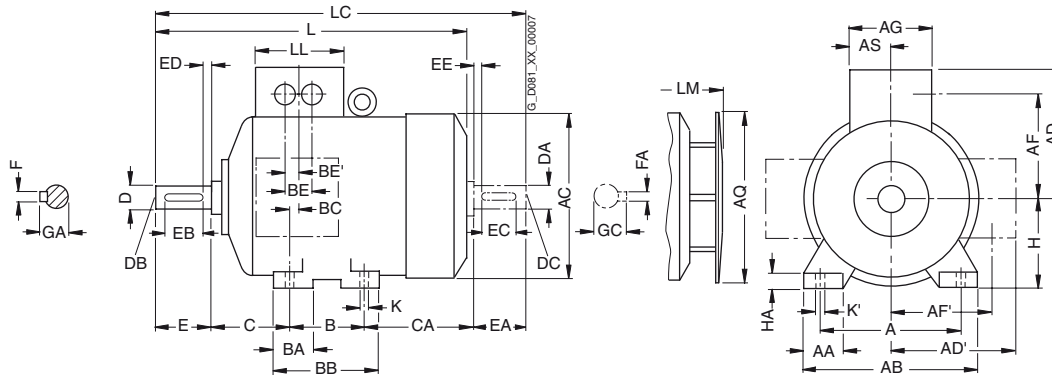
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

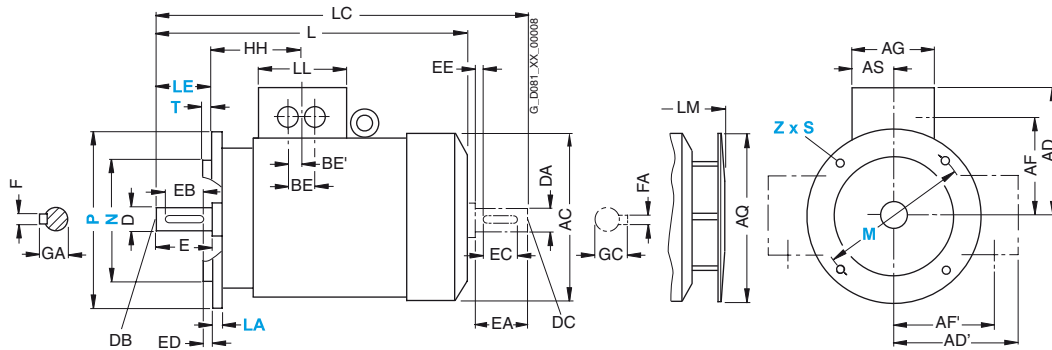
Cast-iron series 1LA6, frame sizes 100 L to 160 L

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/140 (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	1LA6 106	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
	1LA6 107	4, 8																					
112 M	1LA6 113	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	1LA6 130	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
	1LA6 131	2																					
132 M	1LA6 133	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
	1LA6 134	6																					
160 M	1LA6 163	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
	1LA6 164	2, 8																					
160 L	1LA6 166	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

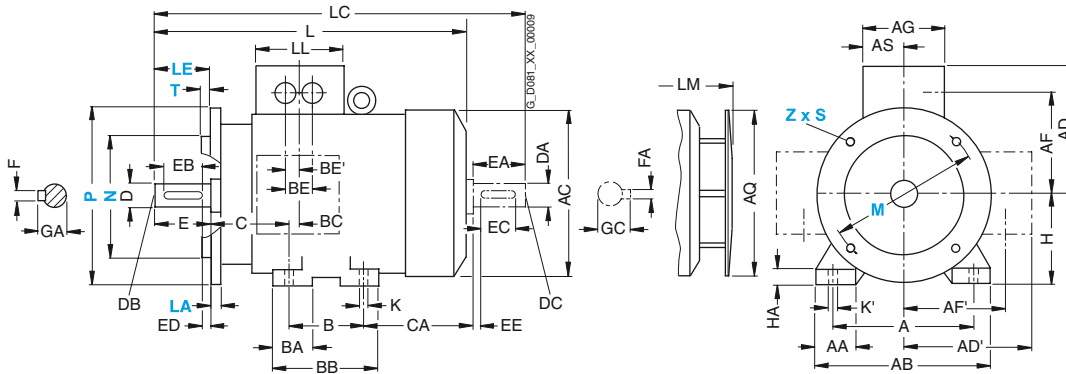
¹⁾ Measured across the bolt heads.

Dimensional drawings

Cast-iron series 1LA6, frame sizes 100 L to 160 L

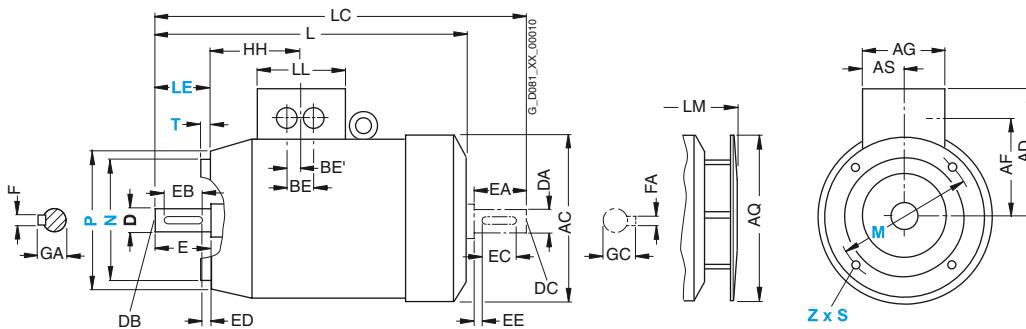
Type of construction IM B35

For flange dimensions, see Page 2/140 (Z = the number of retaining holes)



Types of construction IM B14

For flange dimensions, see Page 2/140 (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
100 L	1LA6 106	2, 4, 6, 8	104.5	12	16	372	438	121	423.5	28	M10	60	50	5	8	31	24	M8	50	40	5	8	27
	1LA6 107	4, 8																					
112 M	1LA6 113	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	1LA6 130	2, 4, 6, 8	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
	1LA6 131	2																					
132 M	1LA6 133	4, 6, 8	130.5	12	16	453.5	551.5	141	506	38	M12	80	70	5	10	41	38	M12	80	70	5	10	41
	1LA6 134	6																					
160 M	1LA6 163	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
	1LA6 164	2, 8																					
160 L	1LA6 166	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

IEC Squirrel-Cage Motors

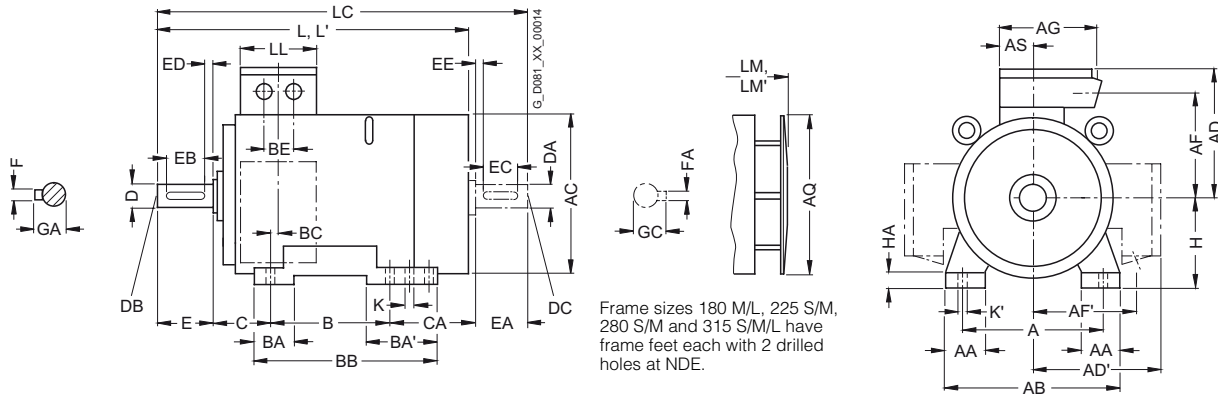
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

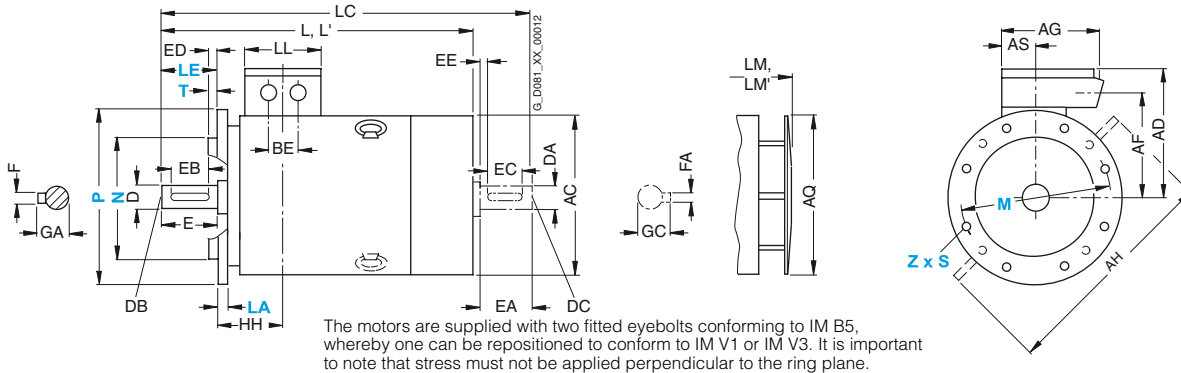
Cast-iron series 1LG4, frame sizes 180 M to 315 L

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/140 (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	1LG4 183	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	1LG4 186	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
	1LG4 188	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	1LG4 206	2, 6	318	70	378	402	300	300	247	247	260	512	340	96	305	80	80	355	63	85	133	177	200	25
	1LG4 207	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
	1LG4 208	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	1LG4 220	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	1LG4 223	2	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	193	225	34
	1LG4 228	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																						
250 M	1LG4 253	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	235	250	40
	1LG4 258	2	406	100	490	495	392	392	308	308	300	620	470	118	349	100	100	409	69	110	168	305	250	40
		4																				235		
		6, 8																						
280 S	1LG4 280	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																						
280 M	1LG4 283	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	216	280	40
	1LG4 288	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	1LG4 310	2	508	120	610	610	500	500	400	400	380	780	590	154	406	125	176	527	69	110	216	315	315	50
	1LG4 310	4, 6, 8																						
315 M ²⁾	1LG4 313	2	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	527	69	110	216	264	315	50
	1LG4 313	4, 6, 8																						
315 L ²⁾	1LG4 316/317	2	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
	1LG4 316/317	4, 6, 8																						
	1LG4 318	8																						
	1LG4 318	6	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	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.

IEC Squirrel-Cage Motors

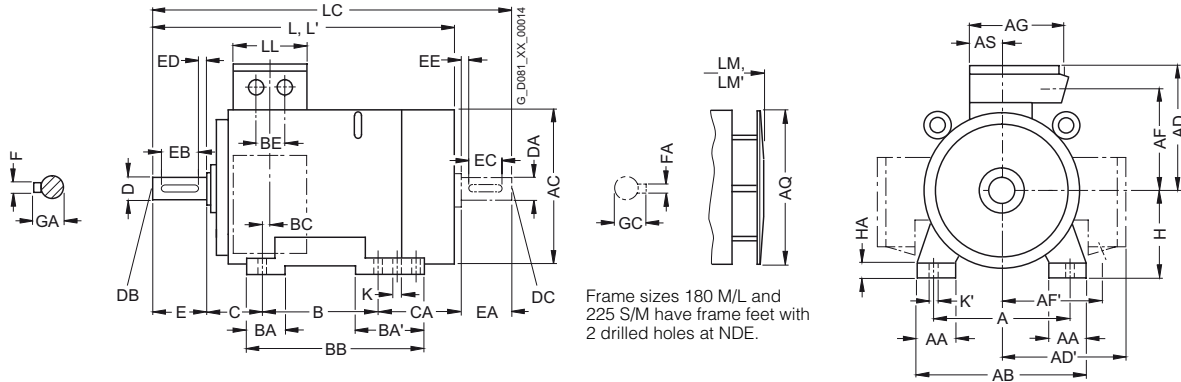
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

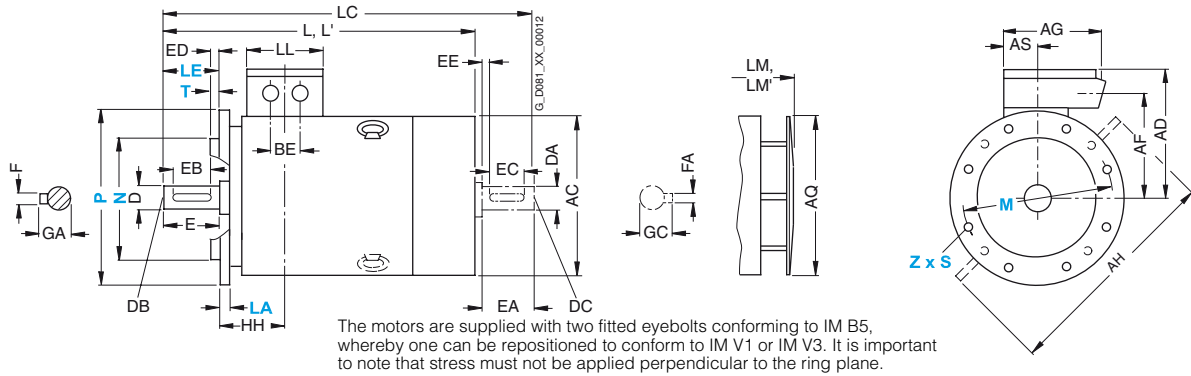
Cast-iron series 1LG6, frame sizes 180 M to 250 M

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/140 (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	1LG6 183	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	20
180 L	1LG6 186	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
200 L	1LG6 206	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	200	25
225 S	1LG6 220	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
225 M	1LG6 223	4, 6, 8																						
		2	356	80	436	442	325	325	272	272	260	556	425	96	311	85	110	361	47	85	149	303	225	34
250 M	1LG6 253	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
250 M	1LG6 258	6, 8																				235	250	40
		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																				305	250	40

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

¹⁾ Measured across the bolt heads.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

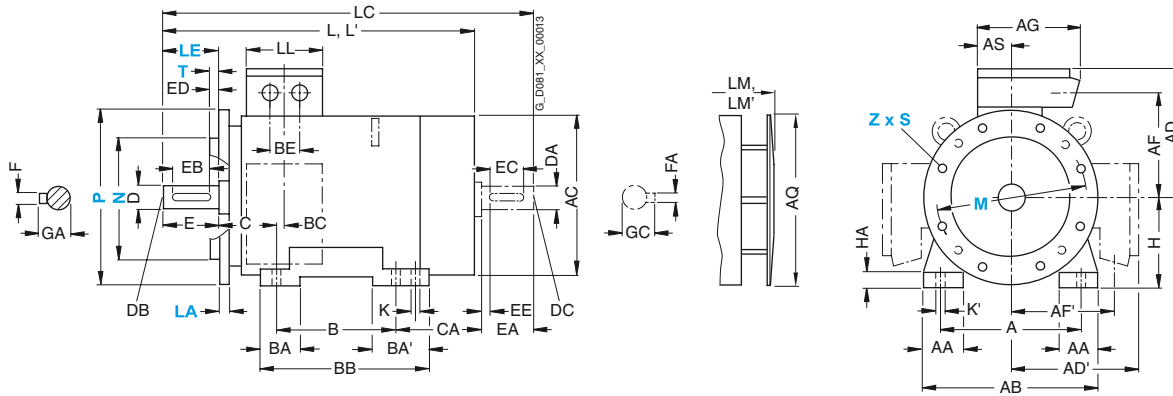
Dimensions

Dimensional drawings

Cast-iron series 1LG6, frame sizes 180 M to 250 M

Type of construction IM B35

For flange dimensions, see Page 2/140 (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	1LG6 183	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													
		4, 6, 8					720	835	132	810	48	M16	110	100	5	14	51.5	48	M16	110	100	5	14
200 L	1LG6 206	2, 6	196	19	25	720	835	192	810	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
		2, 6	196	19	25	777	892	192	867	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
		4, 8				720	835		810														
225 S	1LG6 220	4, 8	196	19	25	789	903	192	889	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		2	196	19	25	819	933	192	919	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
225 M	1LG6 223	2	196	19	25	869	983	192	969	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
		2	196	19	25	869	983	192	969	55	M20	110	100	5	16	59	48	M16	110	100	5	14	51.5
250 M	1LG6 253	2	237	24	30	887	1002	236	987	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
	1LG6 258	2	237	24	30	957	1102	236	1057	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
		4, 6								65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		2	237	24	30	957	1102	236	1057	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59

IEC Squirrel-Cage Motors

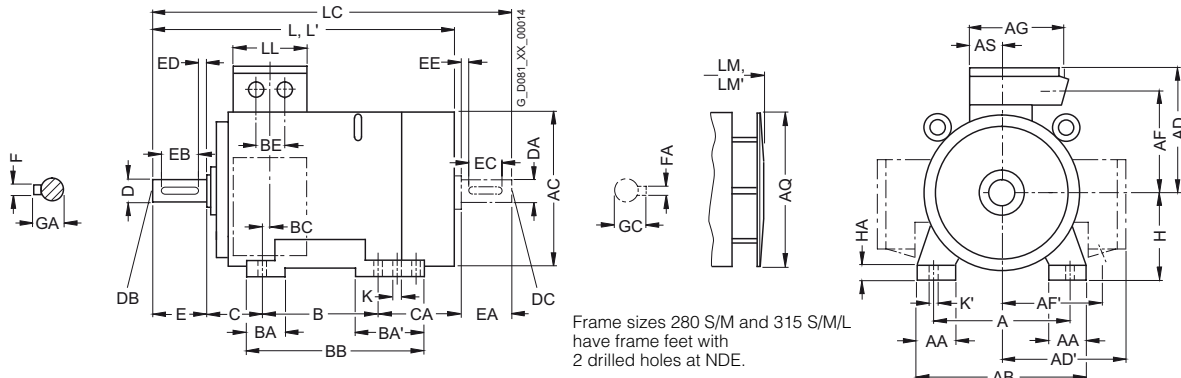
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

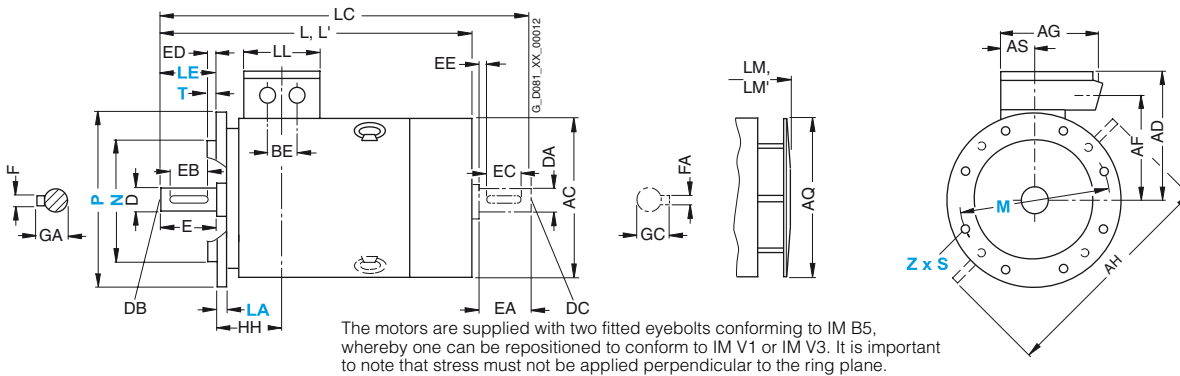
Cast-iron series 1LG6, frame sizes 280 S to 315 L

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/140 (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	AD'	AF	AF'	AG	AH	AQ	AS	B*	BA	BA'	BB	BC	BE	C	CA*	H	HA
	280 S	1LG6 280	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	1LG6 283	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
		1LG6 288	2	457	100	540	555	432	432	348	348	300	672	525	118	419	100	151	479	62	110	190	326	280	40
	315 S	1LG6 310	2	508	120	610	610	500	500	400	400	380	780	590	154	406	125	176	527	69	110	216	315	315	50
		1LG6 310	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⁾	1LG6 313	8	508	120	610	610	500	500	400	400	380	780	590	154	457	125	176	578	69	110	216	424	315	50
		1LG6 313	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⁾	1LG6 316	2	508	120	610	610	500	500	400	400	380	780	590	154	508	125	176	578	69	110	216	373	315	50
		1LG6 316	4, 6	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50
		1LG6 316	8	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50
		1LG6 317	2	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50
		1LG6 317	4, 6	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50
		1LG6 317	8	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	648	69	110	216	513	315	50
		1LG6 318	2	508	120	610	610	651	651	524	524	470	780	590	165	508	155	206	648	69	135	216	513	315	50
		1LG6 318	4	508	120	610	610	651	651	524	524	470	780	590	165	508	155	206	648	69	135	216	513	315	50
	1LG6 318	6, 8	508	120	610	610	500	500	400	400	380	780	590	154	508	155	206	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.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

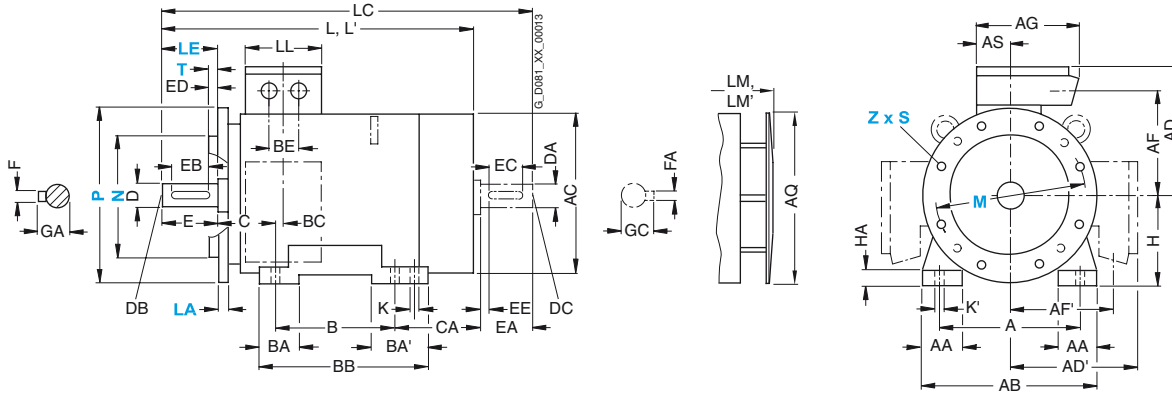
Dimensions

Dimensional drawings

Cast-iron series 1LG6, frame sizes 280 S to 315 L

Type of construction IM B35

For flange dimensions, see Page 2/140 (Z = the number of retaining holes)



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
280 S	1LG6 280	2	252	24	30	960	1105	236	1070	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	1LG6 283	2	252	24	30	1070	1215	236	1180	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
	1LG6 288	6, 8				960	1105		1070	75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
		2	252	24	30	1070	1215	236	1180	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
		4, 6								75	M20	140	125	10	20	79.5	65	M20	140	125	10	18	69
315 S	1LG6 310	2	285	28	35	1072	1217	307	1182	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6 310	4, 6, 8				1102	1247		1212	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 M	1LG6 313	8	285	28	35	1102	1247	307	1212	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6 313	2	285	28	35	1232	1377	307	1342	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
315 L	1LG6 313	4, 6				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6 316	2	285	28	35	1232	1377	307	1342	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6 316	4, 6				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6 316	8							80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5	
	1LG6 317	2	285	28	35	1372	1517	307	1482	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6 317	4, 6				1402	1547		1512	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6 317	8				1262	1407		1372	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6 318	2	285	28	35	1372	1517	330	1482	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LG6 318	4				1402	1547		1512	80 ¹⁾	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
	1LG6 318	6, 8						307	80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5	

¹⁾ Diameters up to 90 mm are possible.

IEC Squirrel-Cage Motors

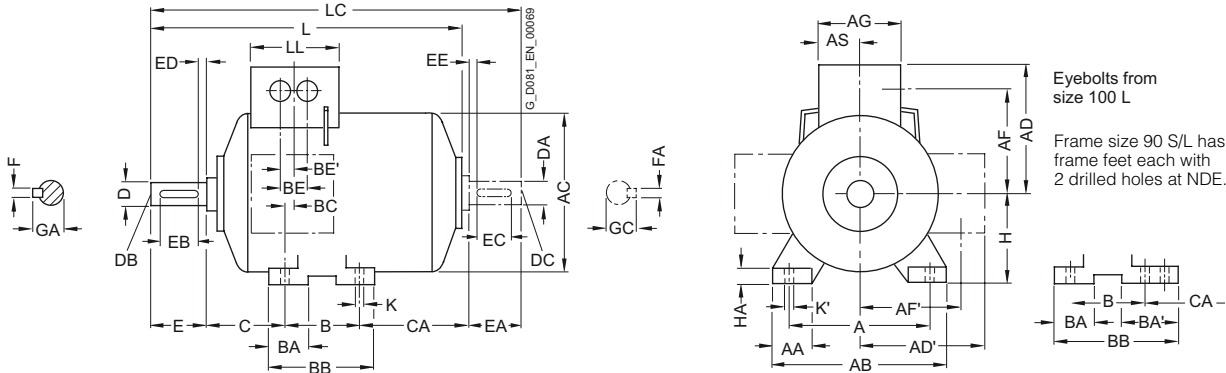
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

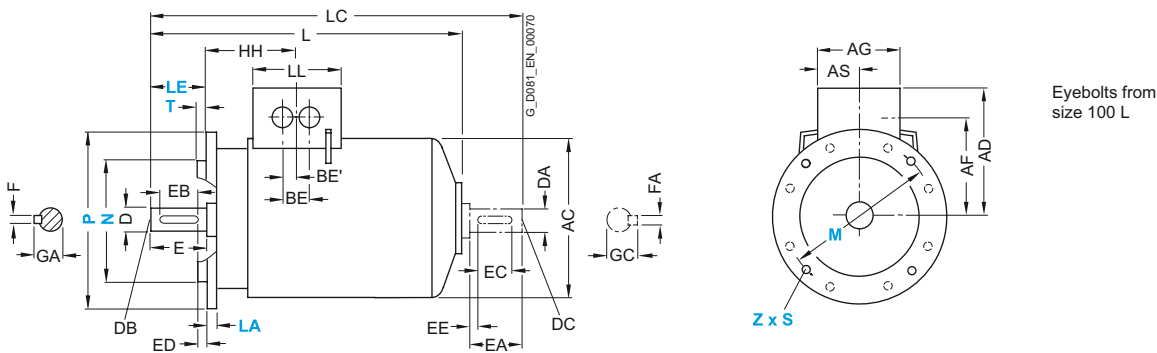
Aluminum series 1LP7 and 1LP5, frame sizes 63 M to 200 L

Type of construction IM B3



Types of construction IM B5 and IM V1

For flange dimensions, see Page 2/140 (Z = the number of retaining holes)



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	1LP7 060 1LP7 063	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	1LP7 070 1LP7 073	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	1LP7 080 1LP7 083	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	1LP7 090 1LP7 096	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	1LP7 106 1LP7 107	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	1LP7 113	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	1LP7 130 1LP7 131	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	1LP7 133 1LP7 134	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	1LP7 163 1LP7 164	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	1LP7 166	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	1LP5 183	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	1LP5 186	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	1LP5 206 1LP5 207	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.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

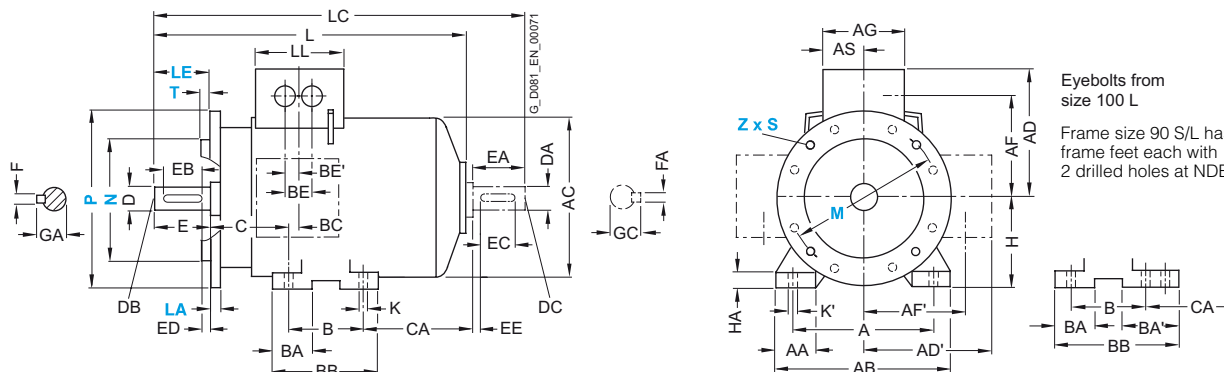
Dimensions

Dimensional drawings

Aluminum series 1LP7 and 1LP5, frame sizes 63 M to 200 L

Types of construction IM B35

For flange dimensions, see Page 2/140 (Z = the number of retaining holes)

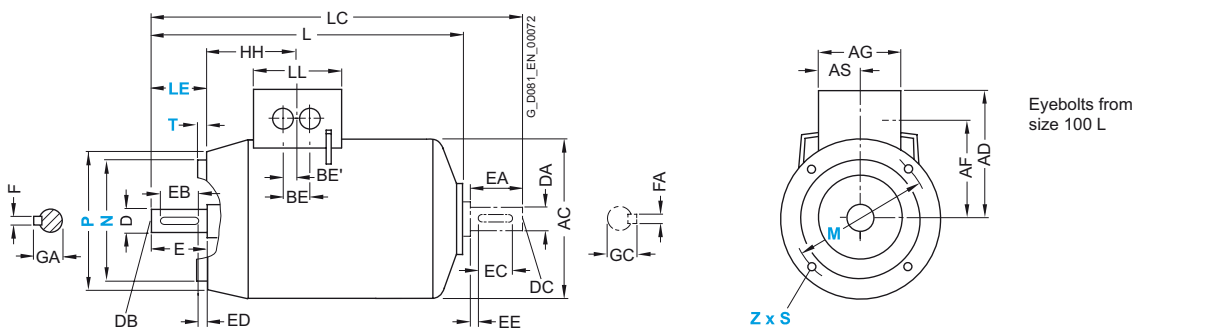


Eyebolts from size 100 L
Frame size 90 S/L has frame feet each with 2 drilled holes at NDE.

Type of construction IM B14

Type of construction IM B14 not possible for 1LP5 motors, frame sizes 180 M to 200 L

For flange dimensions, see Page 2/140 (Z = the number of retaining holes)



Eyebolts from size 100 L

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
63 M	1LP7 060 1LP7 063	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	1LP7 070 1LP7 073	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	1LP7 080 1LP7 083	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	1LP7 090 1LP7 096	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	1LP7 106 1LP7 107	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	1LP7 113	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	1LP7 130 1LP7 131	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	1LP7 133 1LP7 134	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	1LP7 163 1LP7 164	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	1LP7 166	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	1LP5 183	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	1LP5 186	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	1LP5 206 1LP5 207	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 1LP7 063 with type of construction code 1 (B5, IM V1 without protective cover, IM V3) the dimensions L and LC are 26 mm longer.

2) For IM B14, 381 mm.

3) For IM B5, 345 mm.

4) For IM B5, 399 mm.

IEC Squirrel-Cage Motors

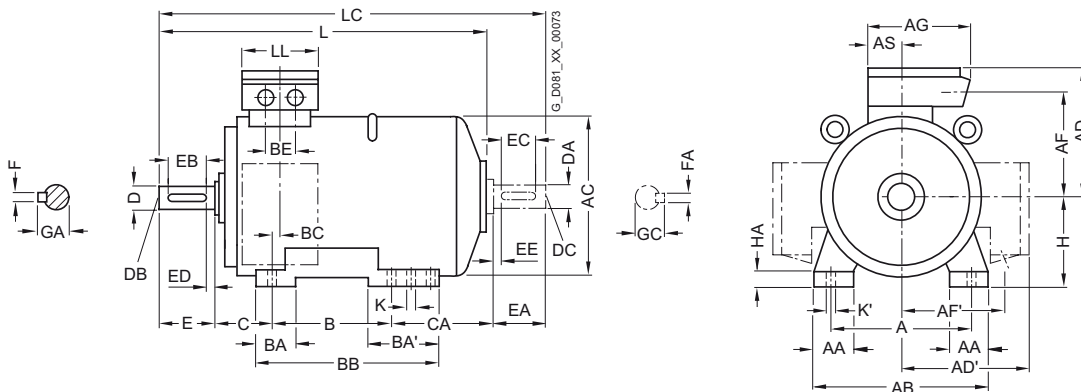
Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

Cast-iron series 1LP4, frame sizes 180 M to 315 L

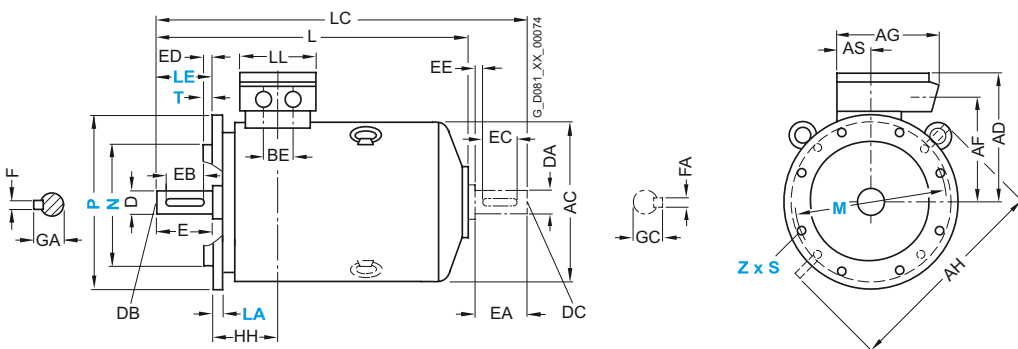
Type of construction IM B3



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 2/140 (Z = the number of retaining holes)



The motors are supplied with two fitted 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	1LP4 183	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	1LP4 186	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	1LP4 206	2, 6	318	70	378	402	300	300	247	247	260	512	96	305	80	80	355	63	85	133	76	200	25
	1LP4 207	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	1LP4 220	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	1LP4 223	2	356	80	436	442	325	325	272	272	260	556	96	311	85	110	361	47	85	149	74	225	34
		4, 6, 8																					
250 M	1LP4 253	2	406	100	490	495	392	392	308	308	300	620	118	349	100	100	409	69	110	168	111	250	40
		4, 6, 8																					
280 S	1LP4 280	2	457	100	540	555	432	432	348	348	300	672	118	368	100	151	479	62	110	190	137	280	40
		4, 6, 8																					
280 M	1LP4 283	2	457	100	540	555	432	432	348	348	300	672	118	414	100	151	479	62	110	190	86	280	40
		4, 6, 8																					
315 S	1LP4 310	2	508	120	610	610	500	500	400	400	380	780	154	406	125	176	527	69	110	216	168	315	50
	1LP4 310	4, 6, 8																					
315 M ¹⁾	1LP4 313	2	508	120	610	610	500	500	400	400	380	780	154	457	125	176	527	69	110	216	117	315	50
	1LP4 313	4, 6, 8																					
315 L ¹⁾	1LP4 316/317	2	508	120	610	610	500	500	400	400	380	780	154	508	125	176	578	69	110	216	226	315	50
	1LP4 316/317	4, 6, 8																					

* 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.

IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

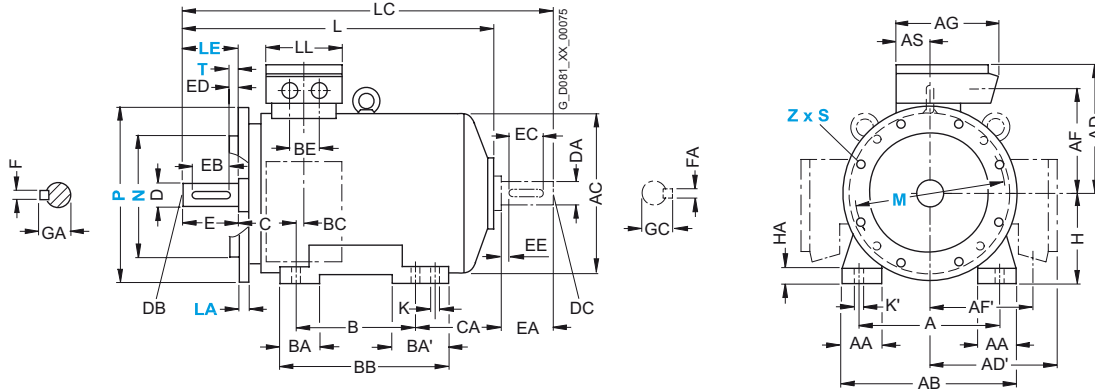
Dimensions

Dimensional drawings

Cast-iron series 1LP4, frame sizes 180 M to 315 L

Type of construction IM B35

For flange dimensions, see Page 2/140 (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	1LP4 183	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	1LP4 186	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	1LP4 206	2, 6	196	19	25	617	734	192	55	M20	110	100	5	16	59	55	M20	110	100	5	16	59
	1LP4 207	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	1LP4 220	4, 8	196	19	25	670	784	192	60	M20	140	125	10	18	64	55	M20	110	100	5	16	59
225 M	1LP4 223	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	1LP4 253	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	1LP4 280	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	1LP4 283	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	1LP4 310	2	285	28	35	925	1070	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LP4 310	4, 6, 8				955	1100		80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 M ¹⁾	1LP4 313	2	285	28	35	925	1070	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LP4 313	4, 6, 8				955	1100		80	M20	170	140	25	22	85	70	M20	140	125	10	20	74.5
315 L ¹⁾	1LP4 316/317	2	285	28	35	1085	1230	307	65	M20	140	125	10	18	69	60	M20	140	125	10	18	64
	1LP4 316/317	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.

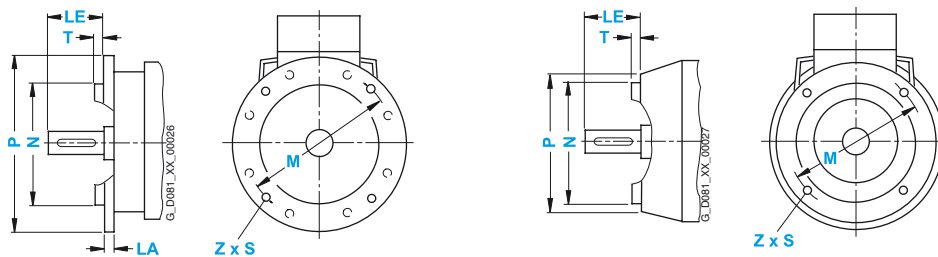
IEC Squirrel-Cage Motors

Standard motors up to frame size 315 L

Dimensions

Dimensional drawings

Flange dimensions



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 09/2003) 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	
56 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 100	Acc. to DIN EN 50347	A 120	8	20	100	80	120	7	3	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 65	Acc. to DIN 42948	C 80	–	20	65	50	80	M5	2.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 85	Acc. to DIN 42948	C 105	–	20	85	70	105	M6	2.5	4
63 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 115	Acc. to DIN EN 50347	A 140	8	23	115	95	140	10	3	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 75	Acc. to DIN 42948	C 90	–	23	75	60	90	M5	2.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 100	Acc. to DIN 42948	C 120	–	23	100	80	120	M6	3	4
71 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 130	Acc. to DIN EN 50347	A 160	9	30	130	110	160	10	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 85	Acc. to DIN 42948	C 105	–	30	85	70	105	M6	2.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 115	Acc. to DIN 42948	C 140	–	30	115	95	140	M8	3	4
80 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 165	Acc. to DIN EN 50347	A 200	10	40	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 100	Acc. to DIN 42948	C 120	–	40	100	80	120	M6	3	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 130	Acc. to DIN 42948	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	Acc. to DIN EN 50347	A 200	10	50	165	130	200	12	3.5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 115	Acc. to DIN 42948	C 140	–	50	115	95	140	M8	3	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 130	Acc. to DIN 42948	C 160	–	50	130	110	160	M8	3.5	4
100 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	Acc. to DIN EN 50347	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	Acc. to DIN 42948	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 165	Acc. to DIN 42948	C 200	–	60	165	130	200	M10	3.5	4
112 M	IM B5, IM B35, IM V1, IM V3	Flange	FF 215	Acc. to DIN EN 50347	A 250	11	60	215	180	250	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 130	Acc. to DIN 42948	C 160	–	60	130	110	160	M8	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 165	Acc. to DIN 42948	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	Acc. to DIN EN 50347	A 300	12	80	265	230	300	14.5	4	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 165	Acc. to DIN 42948	C 200	–	80	165	130	200	M10	3.5	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 215	Acc. to DIN 42948	C 250	–	80	215	180	250	M12	4	4
160 M, 160 L	IM B5, IM B35, IM V1, IM V3	Flange	FF 300	Acc. to DIN EN 50347	A 350	13	110	300	250	350	18.5	5	4
	IM B14, IM B34, IM V18, IM V19	Standard flange	FT 215	Acc. to DIN 42948	C 250	–	110	215	180	250	M12	4	4
	IM B14, IM B34, IM V18, IM V19	Special flange	FT 265	Acc. to DIN 42948	C 300	–	110	265	230	300	M12	4	4
180 M, 180 L	IM B5, IM V1, IM V3	Flange	FF 300	Acc. to DIN EN 50347	A 350	13	110	300	250	350	18.5	5	4
200 L	IM B5	Flange	FF 350	Acc. to DIN EN 50347	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	Acc. to DIN EN 50347	A 450	16	110 140	400	350	450	18.5	5	8
250 M	IM B5, IM V1, IM V3	Flange	FF 500	Acc. to DIN EN 50347	A 550	18	140	500	450	550	18.5	5	8
280 S, 280 M	IM B5, IM V1, IM V3	Flange	FF 500	Acc. to DIN EN 50347	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	Acc. to DIN EN 50347	A 660	22	140 170	600	550	660	24	6	8