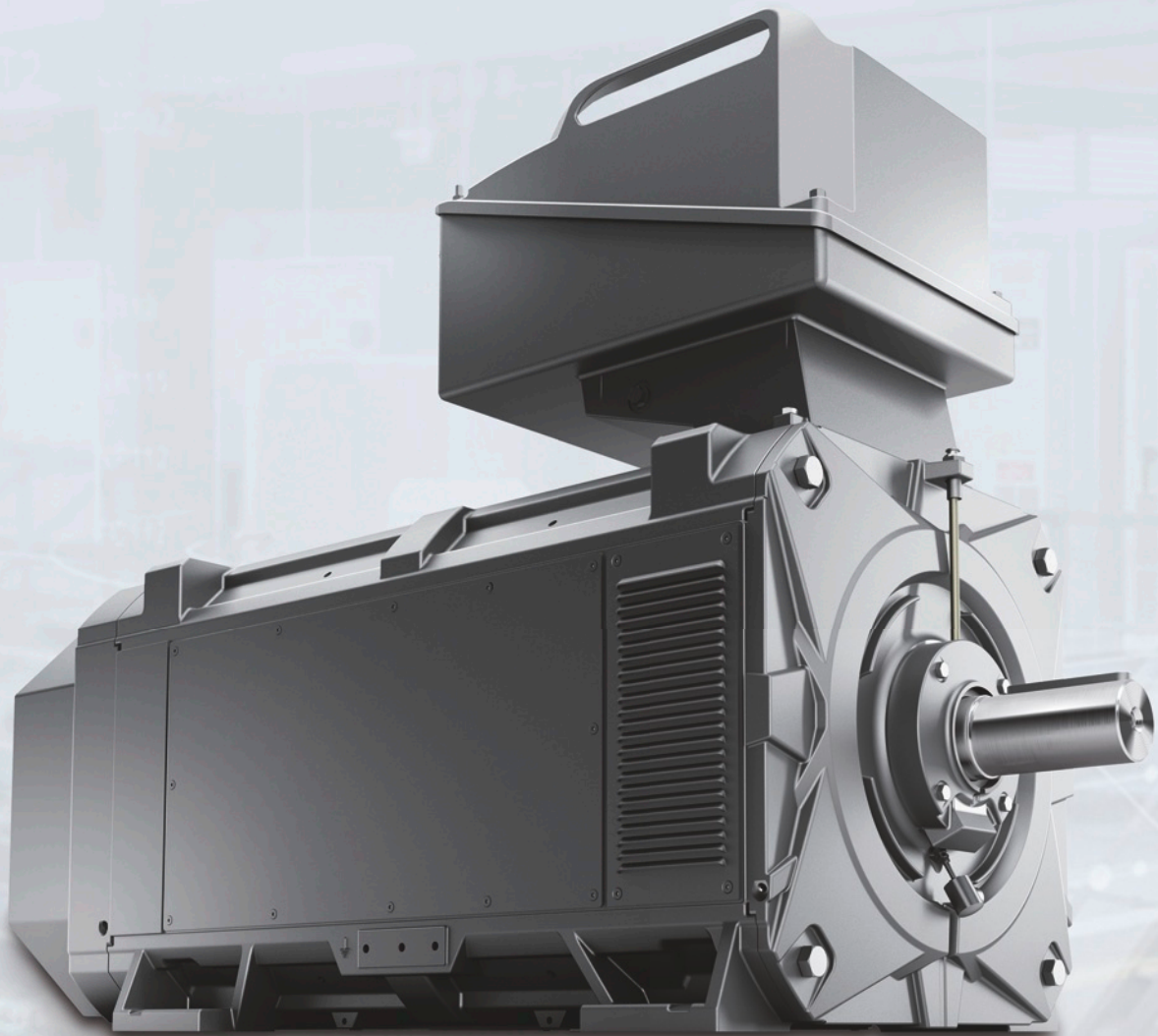


SIEMENS



Motors

SIMOTICS FD Low-Voltage Motors

Frame sizes 315 to 450

Power range 200 to 1800 kW

Catalog
D 81.8

Edition
2017

siemens.com/simotics-fd

Related catalogs

<p>SIMOTICS GP, SD, XP, DP D 81.1 Low-Voltage Motors Type series 1FP1, 1LE1, 1MB1 and 1PC1 Frame sizes 71 to 315 Power range 0.09 to 200 kW E86060-K5581-A111-A9-7600</p>	
<p>LOHER Low-Voltage Motors D 83.1 Type series 1MD5, 1PS0, 1PS1, 1PS4 and 1PS5 Frame sizes 71 to 500 Power range 0.12 to 1400 kW E86060-K5583-A111-A3-7600</p>	
<p>SINAMICS G130 D 11 Drive Converter Chassis Units SINAMICS G150 Drive Converter Cabinet Units E86060-K5511-A101-A6-7600</p>	
<p>Motion Control Drives D 21.4 SINAMICS S120 and SIMOTICS E86060-K5521-A141-A1-7600</p>	
<p>Motion Control System PM 21 SIMOTION Equipment for Production Machines E86060-K4921-A101-A4-7600</p>	
<p>SINAMICS S120 D 21.3 Chassis Format Converter Units and Cabinet Modules SINAMICS S150 Converter Cabinet Units PDF (E86060-K5521-A131-A5-7600)</p>	
<p>SINAMICS Drives D 35 SINAMICS G120P and SINAMICS G120P Cabinet pump, fan, compressor converters PDF (E86060-K5535-A101-A2-7600)</p>	
<p>Three-Phase Induction Motors D 84.1 SIMOTICS HV, SIMOTICS TN Series H-compact Series H-compact PLUS PDF (E86060-K5584-A111-A5-7600)</p>	
<p>Products for Automation and Drives CA 01 Interactive Catalog DVD E86060-D4001-A510-D7-7600</p>	

Industry Mall

Information and Ordering Platform in the Internet:



www.siemens.com/industrymall

All catalogs and other information material, such as brochures, manuals and operating instructions for standard drive systems are available up-to-date on the Internet at the following address:

www.siemens.com/drives/catalogs

The listed documentation can be ordered here or it is available in commonly used file formats (PDF, ZIP) for downloading.

SinaSave energy saving/energy efficiency tool

Further information on the subject of energy saving and the SinaSave energy efficiency tool is available at the following address:

www.automation.siemens.com/sinasave

SIMOTICS EE-COMPARATOR:

www.siemens.com/simotics-ee-comparator

Interactive catalog CA 01 – Drive Technology Configurator

The **Drive Technology Configurator** (DT Configurator) is available in conjunction with the electronic catalog CA 01 on DVD.



In addition, the DT Configurator can be used on the Internet without requiring any installation.

The DT Configurator can be found in the Industry Mall at the following address:

www.siemens.com/dt-configurator

The Drive Technology Configurator for gear units, motors, mechanical components, converters, connection systems, control and licenses and system configuration can be found in the CA 01 main menu, under drive systems, selection and engineering tools.

- Data sheets in up to 7 languages in PDF or RTF format
- 2D/3D dimensional drawings in various formats
- Terminal box drawing and terminal connection diagram
- Operating instructions
- Certificates
- Start-up calculation for SIMOTICS motors
- EPLAN macros

System requirements for CA 01 installation with Drive Technology Configurator

- PC with 2 GHz CPU or faster
- 1 GB RAM (or 2 GB RAM when product configurators are installed)
- Windows XP Service Pack 2 / Windows Vista / Windows 7 / Windows 8
- Screen resolution 1024 x 768 pixels or higher (1280 x 1024 recommended)
- 6.5 GB of free hard disk space (full installation)
- 1.6 GB of free hard disk space for each additional data package (optional)

Installation

The CA 01 catalog can be directly installed on the hard disk or in the network from the DVD as a partial or full version.

Copper surcharges

The metal factors that are applicable for the copper surcharges are specified in the headers of the current Price List D 81.1 P. Further information about "Metal surcharges" can be found in the appendix to this catalog.

SIMOTICS FD Low-Voltage Motors

Frame sizes 315 to 450 · Power range 200 to 1800 kW

Motors



Catalog D 81.8 · 2017

Supersedes:
Catalog D 81.8 · October 2015

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

www.siemens.com/industrymall

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

Article No.: E86060-D4001-A510-D7-7600

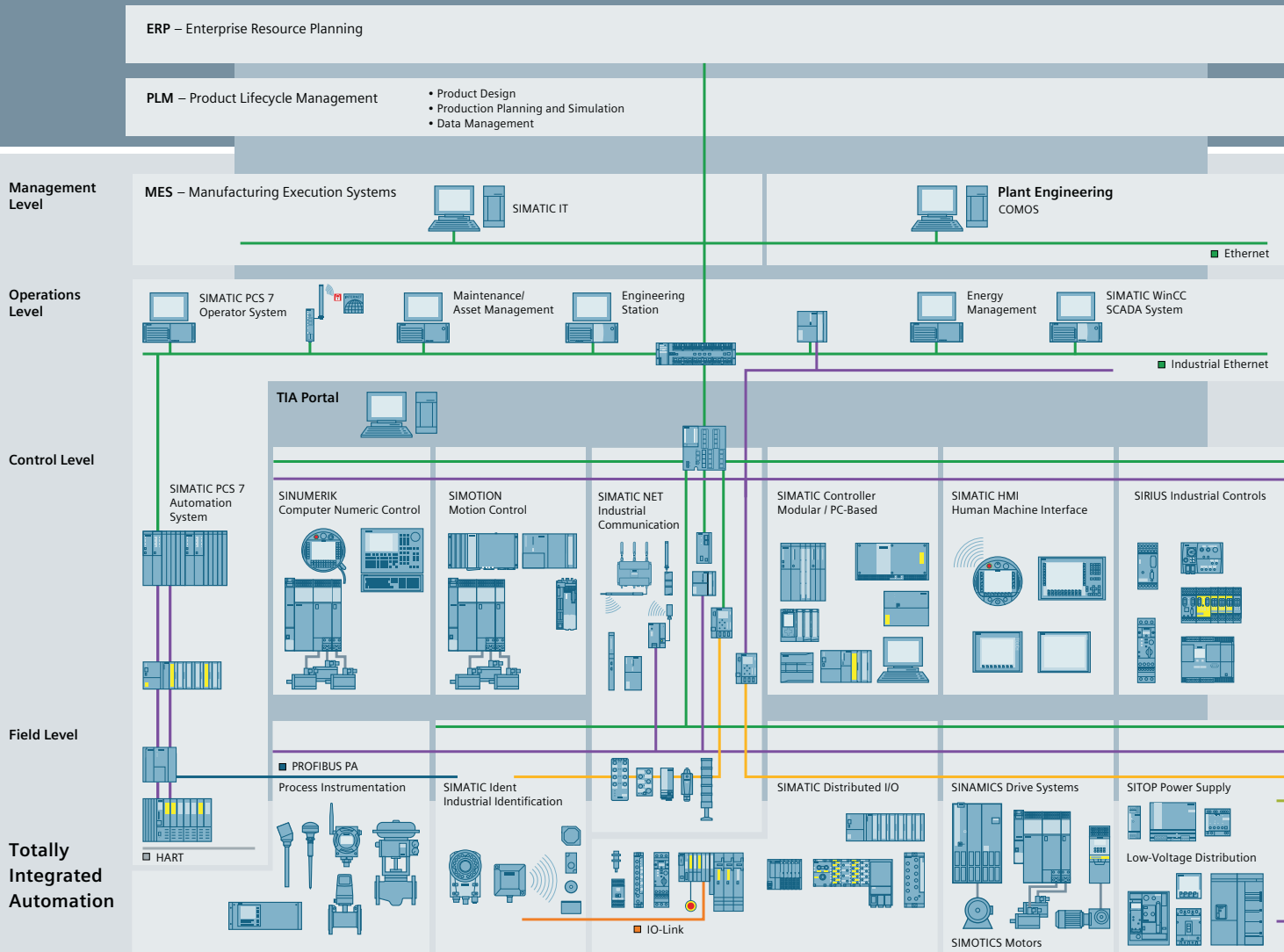
Please contact your local Siemens branch.

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The products and systems described in
this catalog are manufactured/distributed
under application of a certified quality
management system in accordance with
DIN EN ISO 9001 (Certified Registration
No. DE-000357 QM). The certificate is
recognized by all IQNet countries.

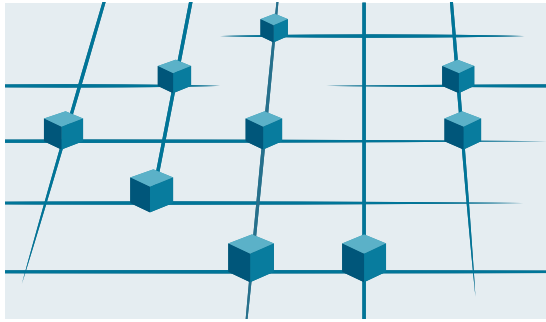
Introduction	1
Technical information	2
System components	3
Self-ventilated motors – enclosed version	4
Force-ventilated motors – enclosed version	5
Water-cooled motors with water-jacket cooling	6
Water-cooled motors with air-to-water heat exchanger	7
Self-ventilated motors – open version	8
Force-ventilated motors – open version	9
Explosion-proof motors Technical information	10
Article No. supplements and special versions	11
Application-specific motors	12
Appendix	13



Efficient automation starts with efficient engineering.

Totally Integrated Automation: Efficiency driving productivity.

Efficient engineering is the first step toward better production that is faster, more flexible, and more intelligent. With all components interacting efficiently, Totally Integrated Automation (TIA) delivers enormous time savings right from the engineering phase. The result is lower costs, faster time-to-market, and greater flexibility.



Totally Integrated Automation
Efficient interoperability of all automation components



■ PROFINET
■ Industrial Ethernet
■ PROFIBUS
■ AS-Interface
■ KNX GAMMA instabus

Totally
Integrated
Power

A unique complete approach for all industries

As one of the world's leading automation suppliers, Siemens provides an integrated, comprehensive portfolio for all requirements in process and manufacturing industries. All components are mutually compatible and system-tested. This ensures that they reliably perform their tasks in industrial use and interact efficiently, and that each automation solution can be implemented with little time and effort based on standard products. The integration of many separate individual engineering tasks into a single engineering environment, for example, provides enormous time and cost savings.

With its comprehensive technology and industry-specific expertise, Siemens is continuously driving progress in manufacturing industries – and Totally Integrated Automation plays a key role.

Totally Integrated Automation creates real value added in all automation tasks, especially for:

- **Integrated engineering**
Consistent, comprehensive engineering throughout the entire product development and production process
- **Industrial data management**
Access to all important data occurring in productive operation – along the entire value chain and across all levels
- **Industrial communication**
Integrated communication based on international cross-vendor standards that are mutually compatible
- **Industrial security**
Systematic minimization of the risk of an internal or external attack on plants and networks
- **Safety Integrated**
Reliable protection of personnel, machinery, and the environment thanks to seamless integration of safety technologies into the standard automation

Making things right with Totally Integrated Automation

Totally Integrated Automation, industrial automation from Siemens, stands for the efficient interoperability of all automation components. The open system architecture covers the entire production process and is based on end-to-end shared characteristics: consistent data management, global standards, and uniform hardware and software interfaces.

Totally Integrated Automation lays the foundation for comprehensive optimization of the production process:

- Time and cost savings due to efficient engineering
- Minimized downtime due to integrated diagnostic functions
- Simplified implementation of automation solutions due to global standards
- Better performance due to interoperability of system-tested components



Totally Integrated Power We bring power to the point – safely and reliably.



Comprehensive answers for power distribution in complex energy systems – from Siemens

Efficient, reliable, safe: These are the demands placed on electrification and especially power distribution. And our answer – for all application areas of the energy system – is Totally Integrated Power (TIP). It's based on our comprehensive range of products, systems, and solutions for low and medium voltage, rounded out by our support throughout the entire lifecycle – from planning with our own software tools to installation, operation, and services.

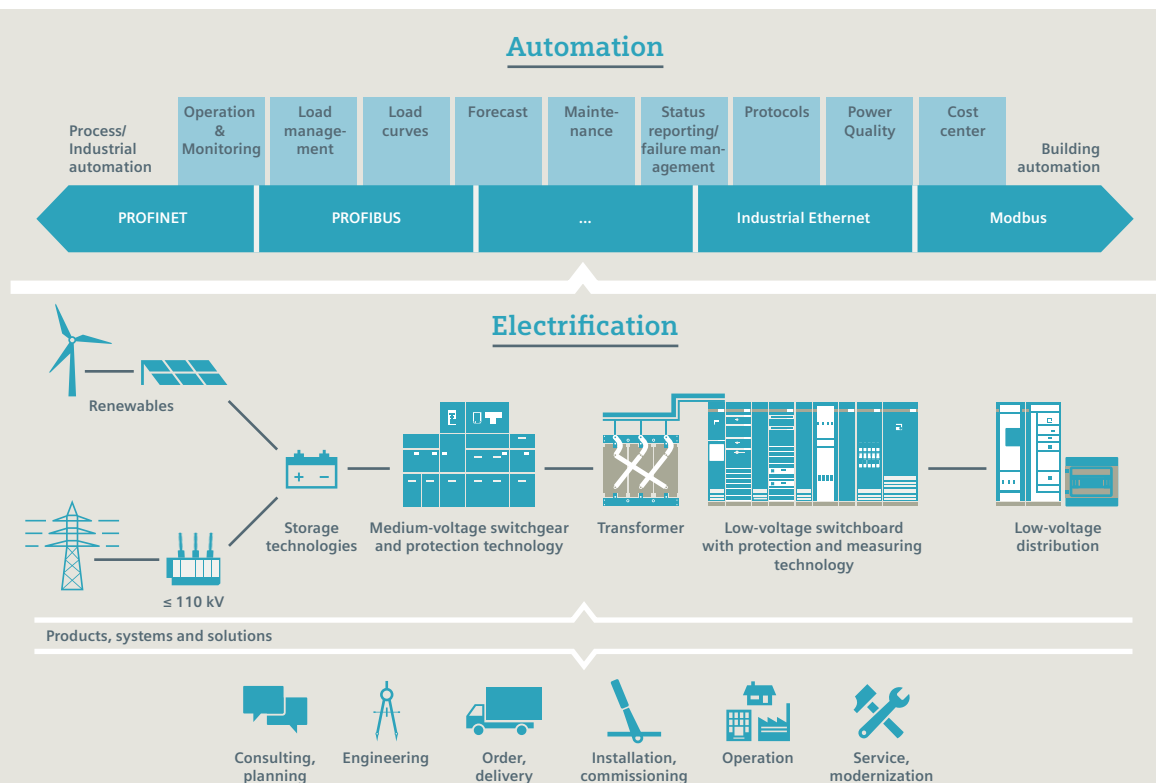
Smart interfaces allow linking to industrial or building automation, making it possible to fully exploit all the optimization potential of an integrated solution. This is how we provide our customers around the world with answers to their challenges. With highly efficient, reliable, and safe power distribution, we lay the foundation for sustainable infrastructure and cities, buildings, and industrial plants. We bring power to the point – wherever and whenever it is needed.

More information: www.siemens.com/tip

Totally Integrated Power offers more:

- **Consistency:**
For simplified plant engineering and commissioning as well as smooth integration into automation solutions for building or production processes
- **One-stop-shop:**
A reliable partner with a complete portfolio for the entire process and lifecycle – from the initial idea to after-sales service
- **Safety:**
A comprehensive range of protection components for personnel safety and line and fire protection, safety by means of type testing
- **Reliability:**
A reliable partner who works with customers to develop long-lasting solutions that meet the highest quality standards
- **Efficiency:**
Bringing power to the point means greater plant availability and maximum energy efficiency in power distribution
- **Flexibility:**
End-to-end consistency and modular design of Totally Integrated Power for any desired expansions and adaptation to future requirements
- **Advanced technology:**
Reliable power distribution especially for applications in which supply is critical, continuous refinement of the technology

Challenges are our speciality



Integrated Drive Systems

Faster on the market and in the black with Integrated Drive Systems

SIMOTICS FD is an important element of a Siemens Integrated Drive System, contributing significantly to increased efficiency, productivity, and availability in industrial production processes.

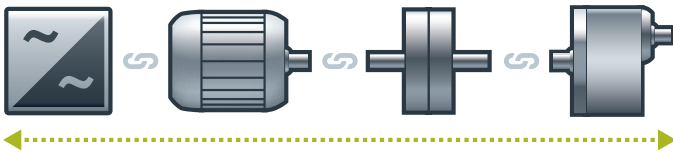
Integrated Drive Systems are Siemens' trendsetting answer to the high degree of complexity that characterizes drive and automation technology today. The world's only true one-stop solution for entire drive systems is characterized in particular by its threefold integration: Horizontal, vertical,

and lifecycle integration ensure that every drive system component fits seamlessly into the whole system, into any automation environment, and even into the entire lifecycle of a plant.

The outcome is an optimal workflow – from engineering all the way to service that entails more productivity, increased efficiency, and better availability. That's how Integrated Drive Systems reduce time to market and time to profit.

Horizontal integration

Integrated drive portfolio: The core elements of a fully integrated drive portfolio are frequency converters, motors, couplings, and gear units. At Siemens, they're all available from a single source. Perfectly integrated, perfectly interacting. For all power and performance classes. As standard solutions or fully customized. No other player in the market can offer a comparable portfolio. Moreover, all Siemens drive components are perfectly matched, so they are optimally interacting.

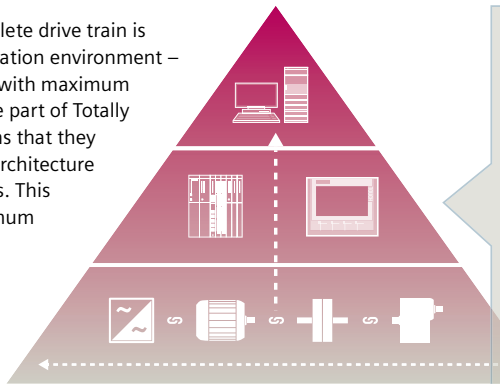


You can boost the availability of your application or plant to up to



Vertical integration

Thanks to **vertical integration**, the complete drive train is seamlessly integrated in the entire automation environment – an important prerequisite for production with maximum value added. Integrated Drive Systems are part of Totally Integrated Automation (TIA), which means that they are perfectly embedded into the system architecture of the entire industrial production process. This enables optimal processes through maximum communication and control.



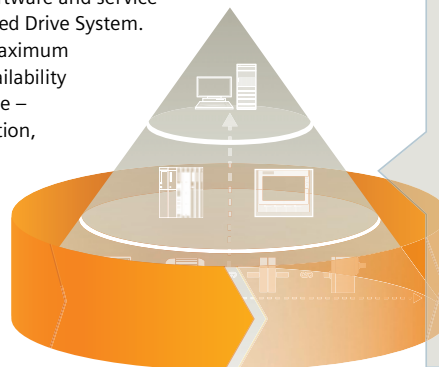
With TIA Portal you can cut your engineering time by up to



Lifecycle integration

Lifecycle integration adds the factor of time: Software and service are available for the entire lifecycle of an Integrated Drive System. That way, important optimization potential for maximum productivity, increased efficiency, and highest availability can be leveraged throughout the system's lifecycle – from planning, design, and engineering to operation, maintenance, and all the way even to modernization.

With Integrated Drive Systems, assets become important success factors. They ensure shorter time to market, maximum productivity and efficiency in operation, and shorter time to profit.



With Integrated Drive Systems you can reduce your maintenance costs by up to



Introduction



1/2

Orientation

1/2 Overview

1/2 The SIMOTICS family of motors

1/3 Performance features of the SIMOTICS FD series

1/3 Overview of the product lines

1/4 Benefits

1/4 Increased power

1/4 Optimally harmonized for converter operation

1/4 Higher degree of flexibility

1/4 Improved design

1/4 Wider range of applications

1/4 Application

1/5 Technical specifications

1/5 General technical specifications

1/6

Article number code

1/6 Overview

1/6 Structure of the article numbers for SIMOTICS FD motors

Introduction

Orientation


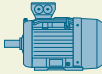
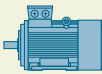
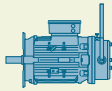
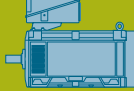
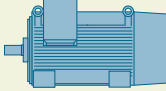
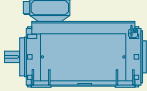

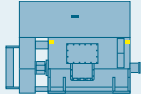



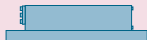

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Overview

The SIMOTICS family of motors

With SIMOTICS, Siemens offers a comprehensive range of electric motors. These extend from energy-efficient, low-voltage motors through servomotors with high dynamic performance up to well-proven DC motors and powerful high-voltage motors.

Innovative drive technology for all industries, applications and power classes. Outstanding performance, quality, efficiency and compactness.

SIMOTICS						
Low-voltage motors for line and converter operation						
General Purpose SIMOTICS GP	Severe Duty SIMOTICS SD	Explosion-proof SIMOTICS XP	Definite Purpose SIMOTICS DP	Flexible Duty SIMOTICS FD	Transnorm SIMOTICS TN	High Torque SIMOTICS HT
						
DC Motors		High Voltage Motors				
Direct Current SIMOTICS DC		High Voltage SIMOTICS HV				
						
Motors for Motion Control						
SIMOTICS S Servomotors		SIMOTICS M Main Motors		SIMOTICS L Linear Motors		SIMOTICS T Torque Motors
						

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SIMOTICS – Low-voltage motors for line and converter operation

SIMOTICS low-voltage motors for line and converter operation are subdivided into seven segments depending on the particular application.

- **General Purpose – SIMOTICS GP**
Motors for everyday applications in industry under standard environmental conditions.
- **Severe Duty – SIMOTICS SD**
Motors with cast-iron housing for applications under harsh environmental conditions.
- **Explosion-proof – SIMOTICS XP**
Motors for hazardous zones.
- **Definite Purpose – SIMOTICS DP**
Special motors, e.g. smoke extraction motors or built-in motors.
- **Flexible Duty – SIMOTICS FD**
Converter-optimized motor series for flexible applications with higher power ratings in the range of 200 kW to over 1800 kW, with various cooling methods. Water-cooled motors are also available for line operation.
- **Transnorm – SIMOTICS TN**
Motors with cast-iron housing with higher power ratings in the range of 145 kW to 1250 kW.
- **High Torque – SIMOTICS HT**
Permanent magnet synchronous motors for applications that require extremely powerful drives without gear units, even at low speeds.

Overview (continued)**Performance features of the SIMOTICS FD series**

The SIMOTICS FD series is characterized by the following features:

- Series of low-voltage motors optimized for converter operation
- Three product lines
 - Air-cooled, enclosed version
 - Water-cooled version
 - Air-cooled, open version
- Wide range of power ratings from 200 to 1800 kW in frame sizes 315, 355, 400 and 450
- Rugged cast-iron housing

A wide range of water-cooled motors is also available for line operation.

SIMOTICS FD can also be used in Zone 2 or 22 hazardous areas.

The SIMOTICS FD motor series covers power ratings from 200 kW and higher (at 1500 rpm), and is available in versions optimized for converter operation with various cooling methods and in water-cooled versions for line operation.

A number of technical features provide this motor series with its ruggedness and long lifetime and ensure the highest level of availability, for instance, KTY 84-130 temperature sensors are integrated in the winding as motor protection in series.

SIMOTICS FD motors are characterized by a very high power rating with a small frame size. The result of this is an extremely compact design that saves space in a number of industrial applications.

SIMOTICS FD motors are not only optimized in terms of their design, but also in terms of their efficiency, so they also contribute towards lower energy consumption.

The system optimized converter version is harmonized for operation with SINAMICS low-voltage frequency converters. Together, they form a perfectly coordinated drive system for variable-speed applications.

Overview of the product lines

	Air-cooled, enclosed version		Water-cooled version		Air-cooled, open version	
	with self-ventilation	with forced ventilation	with water-jacket cooling	with heat exchanger	with self-ventilation	with forced ventilation
Operation	VSD	VSD	DOL & VSD	VSD	VSD	VSD
Power	200 ... 1200 kW	200 ... 1200 kW	200 ... 1300 kW	200 ... 1500 kW	200 ... 1600 kW	200 ... 1800 kW
Cooling method	IC411	IC416 ¹⁾	IC71W	IC86W	IC01	IC06 ¹⁾
Degree of protection ²⁾	IP55/IP54	IP55/IP54	IP55/IP54	IP55/IP54	IP23	IP23
Features	Low-noise basic design	Low-noise or increased power	High power density, potable/fresh water cooling	High power density, seawater cooling	Low-noise basic design	Low-noise or increased power
Primary load characteristic	$T \sim n^2$	$T = \text{const}$	$T = \text{const}$ $T \sim n^2$	$T = \text{const}$ $T \sim n^2$	$T \sim n^2$	$T = \text{const}$
Motor type Safe Area	1LM1	1LQ1	1LH1	1LN1	1LL1	1LP1
Motor type Ex n, Ex t ³⁾	1MM1	1MQ1	1MH1	1MN1	–	–

VSD **V**ariable **S**peed **D**rives (converter operation)

DOL **D**irect **O**n **L**ine (line operation)

¹⁾ Cooling method IC37 (separately cooled using an external pipe system) on request.

²⁾ Other degrees of protection optionally available.

³⁾ Explosion-proof motors, Zones 2 and 22.

Introduction

Orientation

1

Benefits

The SIMOTICS FD motor series has been specifically developed for operation with SINAMICS converters. To supplement our portfolio in the low-voltage motor range, a water-cooled version for line operation has been created.

- The optimized efficiency results in lower operating costs.
- The high power density and compact design ensure low space requirements combined with low weight.
- An optimally harmonized and coordinated drive system is created as the motor is optimally matched to the converter. For instance, it has optimized noise levels, the converter does not have to be derated and the temperature rise is low.
- The cast-iron housing and bearing plates are extremely rigid and rugged and can therefore be subject to high stress levels. They have excellent vibration damping properties and are resistant to corrosion.
- The bearings are designed for maximum reliability, which results in good vibration characteristics, a long lifetime and low maintenance costs.
- The DURIGNIT IR 2000 insulation system with VPI or current UV impregnation results in high reliability, a long lifetime and high resistance to stress, for example, during starting or under overload conditions.
- Due to the low noise emission level, the stringent requirements of occupational health and safety are fulfilled without the need for any additional measures.
- Designed windings are available for easy selection for a large number of line voltages and converter versions.

Increased power

With SIMOTICS FD we have increased the power density so that we offer higher power for the same frame size.

Optimally harmonized for converter operation

The new motor series has been optimized for operation with SINAMICS G120P, G130, G150, S120, S120CM and S150 converters with regard to converter output currents and voltage utilization.

Through the use of optimized pulse patterns and the new non-ribbed housing, the SIMOTICS FD and converter system is noise optimized.

Higher degree of flexibility

As a result of the new motor design, SIMOTICS FD motors fulfill the most exacting customer requirements in terms of variance and mounted options. For instance, the optimized motor design allows terminal boxes to be added easily. Separately driven fans and mounted coolers can be mounted as required. Monitoring devices can also be added easily.

Improved design

The optimized housing in a modern design has an attractive appearance and enhances functionality as a result of the flexible, modular system. For instance, this is ensured by the optimized, easy-to-access terminal box with developed, with flexible terminal box position.

Wider range of applications

The motors are available in country and sector-specific versions, complying with the relevant regulations, standards and directives.

Application

With its numerous options, the SIMOTICS FD motor series can be used in all areas of industry. Paper, steel, energy, marine, chemical and water/wastewater are just some examples.

The wide field of applications that can be addressed includes the following:

- Pumps
- Fans
- Compressors
- Cranes
- Propeller drives, bow thrusters
- Paper machines
- Winches
- Centrifuges
- Handling lines
- Conveyor belts
- Rolling mills
- Extruders

Technical specifications*General technical specifications*

Type of motor	SIMOTICS FD IEC low-voltage motors
Frame sizes	315, 355, 400, 450
Rated power	200 ... 1800 kW
Rated speed	750 ... 3600 rpm
Rated torque	610 ... 14600 Nm
Versions	Air-cooled, enclosed version <ul style="list-style-type: none"> • with self-ventilation • with forced ventilation Water-cooled version <ul style="list-style-type: none"> • with water-jacket cooling • with heat exchanger Air-cooled, open version <ul style="list-style-type: none"> • with self-ventilation • with forced ventilation
Efficiency marking	Only for line motors efficiency class in accordance with IEC 60034-30-1: IE2, IE3 (4, 6 and 8-pole)
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	Temperature class 180 (H) DURIGNIT IR 2000 insulating system
Degree of protection according to EN 60034-5 (IEC 60034-5)	As standard IP55/IP54: Air-cooled, enclosed version, water-cooled version IP23: Air-cooled, open version
Cooling according to EN 60034-6 (IEC 60034-6)	<ul style="list-style-type: none"> • Self-ventilated 1LM1/1MM1 (IC411) motors • Force-ventilated 1LQ1/1MQ1 (IC416) motors • Water-cooled motors 1LH1/1MH1 (IC71W) • Air-to-water heat exchanger 1LN1/1MN1 motors (IC86W) • Self-ventilated, open-circuit ventilated 1LL1 motors (IC01) • Force-ventilated, open-circuit ventilated 1LP1 motors (IC06)
Permissible coolant temperature and installation altitude	As standard Air-cooled motors: Coolant temperature -20 ... +40 °C, installation altitude up to 1000 m above sea level Water-cooled motors: Cooling water inlet temperature +5 ... +25 °C, installation altitude up to 1000 m above sea level
Standard voltages according to EN 60038 (IEC 60038)	VSD: 50 Hz systems: 400 V, 500 V, 690 V 60 Hz systems: 460 V and 575 V DOL: 50 Hz systems: 400 V and 690 V 60 Hz systems: 460 V The voltage to be used can be found in the "Selection and ordering data" for the required motor.
Type of construction according to EN 60034-7 (IEC 60034-7)	<ul style="list-style-type: none"> • Without flange: IM B3, IM V5, IM V6 • With flange: IM B35, IM V1, IM V15, IM B5 with support foot
Paint finish Suitability of paint finish for climate group according to IEC 60721, Part 2-1	As standard: color RAL 7030 stone gray
Vibration quantity level according to EN 60034-14 (IEC 60034-14)	Level A (normal) Optionally: level B (with special vibration requirements)
Shaft extension according to DIN 748 (IEC 60072)	Balance type: half-key balancing as standard
Sound pressure level according to EN ISO 1680 (tolerance +3 dB)	The sound pressure level is listed in the "Selection and ordering data" for the required motor.
Weights	The weight is listed in the "Selection and ordering data" for the required motor.
Modular mounting concept	Prepared for mounting of rotary pulse encoder or brake.
Options	See "Article No. supplements and special versions"

Introduction

Article number code

1

Overview

Structure of the article numbers for SIMOTICS FD motors

The article number consists of a combination of digits and letters and is divided into three hyphenated blocks to provide a better overview, e.g.: **1LM1212-3AB31-1AA0**

The first block (positions 1 to 7) identifies the motor series, system description and the efficiency; the second block (positions 8 to 12) defines the motor frame size, the number of poles as well as the line voltage and frequency; and the third block (positions 13 to 16) encodes the speed, type of construction, terminal box, separately driven fan and heat exchanger position.

Ordering data:

- Complete Article No. and order code(s) or plain text

- If a quotation has been requested, please specify the quotation number in addition to the Article No.
- When ordering a complete motor as a spare part, please specify the works serial No. for the previously supplied motor as well as the Article No.

Note:

The structure of the Article No. of SIMOTICS FD motors supports the widest possible range of combinations. To check a configured Article No., the **Drive Technology Configurator** (DT Configurator) must be used.

The DT Configurator only permits technically feasible article numbers to be configured.

Structure of the Article No.:

Position: 1 2 3 4 5 6 7 - 8 9 10 11 12 - 13 14 15 16

SIMOTICS FD low-voltage motors																					
1st to 4th position: Digit, letter, letter, digit	Motors without explosion protection Motors with explosion protection Air-cooled, enclosed version with self-ventilation, IC411 Air-cooled, enclosed version with forced ventilation, IC416 Water-cooled with water-jacket cooling, IC71W Water-cooled with heat exchanger, IC86W Motors exclusively without explosion protection Air-cooled, open version with self-ventilation, IC01 Air-cooled, open version with forced ventilation, IC06	1 L 1 M																			
		M 1 Q 1 H 1 N 1																			
		1 L L 1 P 1																			
5th to 7th position: 3 digits	Motor series Low-noise standard version Increased power version Non-Siemens converter (standard) Non-Siemens converter (increased power) Crane motors for hoisting gear Energy storage devices System description Line operation (DOL) Operation on SINAMICS converter with controlled infeed Operation on SINAMICS converter with uncontrolled infeed Operation on non-Siemens converter with controlled infeed Operation on non-Siemens converter with uncontrolled infeed Efficiency High Efficiency Premium Efficiency		2 3 4 5 6 7																		
				0 1 2 3 4																	
					2 3																
8th and 9th position: Digit, letter	Frame size 315 355 400 450														3 A 3 B 4 A 4 B						
10th position: Letter	No. of poles 4-polig 6-polig 8-polig														B C D						
11th position: Digit	Laminated core length														1 ... 7						
12th position: Digit	Line voltage 400 V, 50 Hz 500 V, 50 Hz 690 V, 50 Hz – VSD 690 V, 50 Hz – DOL 460 V, 60 Hz 575 V, 60 Hz 480 V Deviating data requires order code M.. (e. g. M1Y)														1 2 3 4 5 6 8 9						
13th position: Digit	Rated speed Coded with 1 ... 9; 9 requires order code N.. (e.g. N1Y)																1 ... 9				
14th position: Letter	Type of construction Coded with A ... G, J ... K																	A ... K			
15th position: Letter	Terminal box position Coded with A ... F one terminal box, K ...P two terminal boxes																	A ... P			
16th position: Digit	Separately driven fan – heat exchanger position 0: No separately driven fan/heat exchanger 1 ... 4: Separately driven fan position for air-cooled motors 5: Heat exchanger, top																		0 ... 5		
	Special order versions: Coded – additional order code required Not coded – additional plain text required																				- Z

Technical information

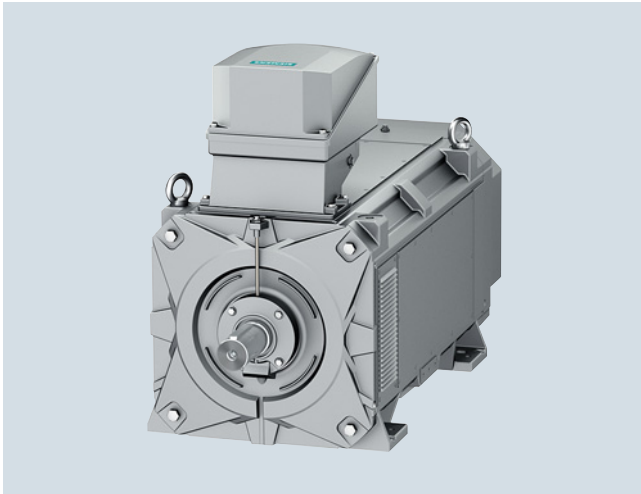


2/2	Overview
2/2	SIMOTICS FD motor series
2/2	Versions of the SIMOTICS FD motor series
2/4	Design
2/4	The basic design of the SIMOTICS FD motor series
2/5	Technical specifications
2/5	Applicable standards and specifications
2/6	Rating plate
2/6	Motors specially designed for converter operation
2/6	Rated voltage
2/7	Insulation
2/7	Noise
2/7	Forced ventilation
2/8	Reducing bearing currents
2/8	Thermal torque limits (continuous duty)
2/10	Maximum overload torques
2/10	More information
2/10	Water cooling
2/10	Mechanical load, grease lifetime
2/11	Motor protection
2/11	Anti-condensation heating
2/11	Motor connection
2/11	Motors specially designed for line operation (1LH1)
2/11	Torque characteristic
2/12	Calculating the DOL starting time
2/13	Starting procedure for three-phase motors with squirrel-cage rotor
2/14	Connection and terminal boxes
2/14	Terminal box mounting positions
2/16	Terminal boxes
2/19	Bearings and lubrication
2/19	Bearing assignment
2/20	Bearing lifetime (nominal lifetime)
2/20	Bearing system
2/20	Shaft seal and degree of protection
2/20	Insulated bearings for converter operation
2/20	Regreasing
2/20	Grease lifetime and regreasing intervals
2/20	Coupling weight at the DE shaft extension
2/21	Additional axial load for motors in the basic version
2/22	Admissible cantilever forces for motors with reinforced bearings
2/23	Retrofit

Technical information

Overview

SIMOTICS FD motor series



A wide range of requirements are placed on state-of-the-art, low-voltage motors with a high power rating. They should be energy efficient, able to be flexibly used, quiet in operation and optimally adapted to the converter, for example. All of these requirements are fulfilled by the SIMOTICS FD series of motors, which have been specifically developed for this purpose. As a result of their flexibility and the wide range of versions available, SIMOTICS FD motors are suitable for all industries.

Versions of the SIMOTICS FD motor series

1LM1/1MM1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, enclosed version with self-ventilation. They have been specifically designed for converter operation.

Note:

For frame size 355 (rated speeds above 3000 rpm) and from FS 400 (all rated speeds) a uni-directional shaft fan is used (Standard version with fan for clockwise rotation, for counter-clockwise rotation order code **K98** is required).

1LM1/1MM1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC411, self-ventilated
- Housing: cast iron

1LQ1/1MQ1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, enclosed version with forced ventilation. These motors can be operated with constant torque, also significantly below the rated speed, thanks to the forced ventilation. They have been specifically designed for converter operation.

1LQ1/1MQ1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- For the drive system and the separately driven fan motor the line voltage is specified by the 12th digit of the Article No.
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) or 85 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC416, force-ventilated
- Housing: cast iron

1LL1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, open version with self-ventilation. The internal cooling circuit is supplied with cooling air from the outside. This is the reason why the power rating was able to be increased by approximately 30 % as compared to the 1LM1 motors. They have been specifically designed for converter operation.

Note:

For frame size 355 (rated speeds above 3000 rpm) and from FS 400 (all rated speeds) a uni-directional shaft fan is used (Standard version with fan for clockwise rotation, for counter-clockwise rotation order code **K98** is required)

The 1LL1 motors are designed for indoor use. They must not be subjected to humid, salty or corrosive (e.g. hydrogen sulfide) atmospheres.

1LL1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- For the drive system and the separately driven fan motor the line voltage is specified by the 12th digit of the Article No.
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) under no-load operation
- IP23 degree of protection
- Cooling method IC01, self-ventilated
- Housing: cast iron

Overview (continued)1LP1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, open version with forced ventilation. The internal cooling circuit is supplied with cooling air from the outside. This is the reason why the power rating was able to be increased by approximately 35 % as compared to the 1LM1 motors. These motors can be operated with constant torque, also significantly below the rated speed, thanks to the forced ventilation. They have been specifically designed for converter operation.

1LP1 motors are designed for indoor use. They must not be subjected to humid, salty or corrosive (e.g. hydrogen sulfide) atmospheres.

1LP1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) or 85 dB(A) under no-load operation
- IP23 degree of protection
- Cooling method IC06, force-ventilated
- Housing: cast iron

1LH1/1MH1 motors

The motors are squirrel-cage induction motors with compact dimensions in an enclosed, water-cooled version. This is the reason why the power rating was able to be increased by approximately 30 % as compared to the 1LM1 motors. These motors can be operated with constant torque, significantly below the rated speed, as a result of the water cooling. They have been specifically designed for converter operation, and are also available in a version for line operation.

1LH1/1MH1 for converter operation

- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 78 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC71W, water-cooled
- Water-jacket cooling with either a copper or stainless steel jacket
- Housing: cast iron

1LH1/1MH1 for line operation

- Maximum A-weighted sound pressure level depending on the number of poles 68 to 72 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC71W, water-cooled
- Water-jacket cooling with either a copper or stainless steel jacket
- Housing: cast iron

1LN1/1MN1 motors

The motors are squirrel-cage induction motors with compact dimensions in a surface-cooled, enclosed version with air-to-water heat exchanger. A separately driven fan is used to circulate air through the internal cooling circuit. This is the reason why the power rating was able to be increased by approximately 30 % as compared to the 1LM1 motors. These motors can be operated with constant torque, significantly below the rated speed, as a result of the forced ventilation with air-to-water heat exchanger. They have been specifically designed for converter operation.

1LN1/1MH1 for converter operation

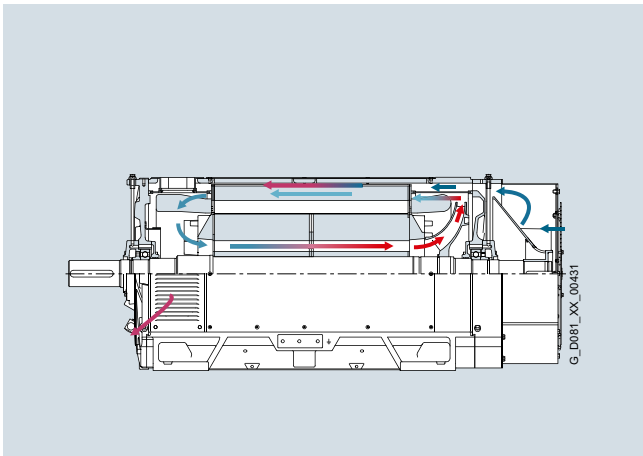
- Converter operation, optimally harmonized to the SINAMICS drive system
- Maximum A-weighted sound pressure level at rated speed is 79 dB(A) under no-load operation
- IP55/IP54 degree of protection
- Cooling method IC86W, air-to-water heat exchanger
- Housing: cast iron

Technical information

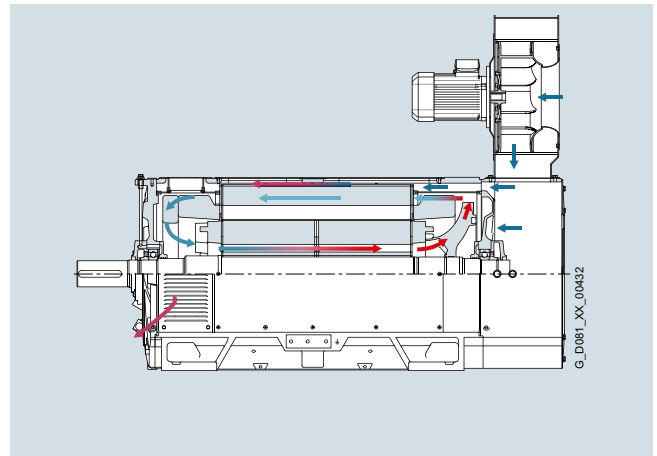
Design

The basic design of the SIMOTICS FD motor series

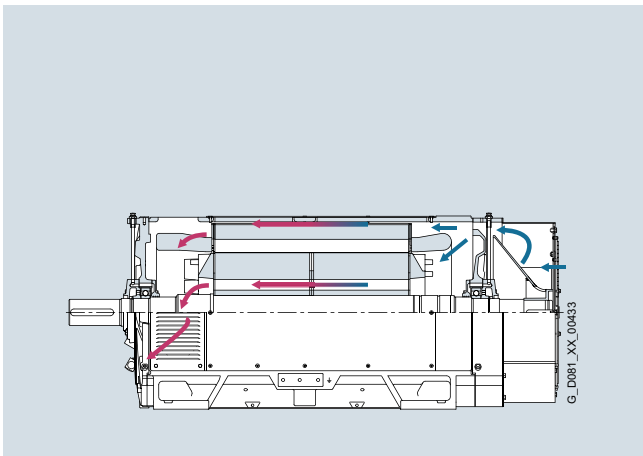
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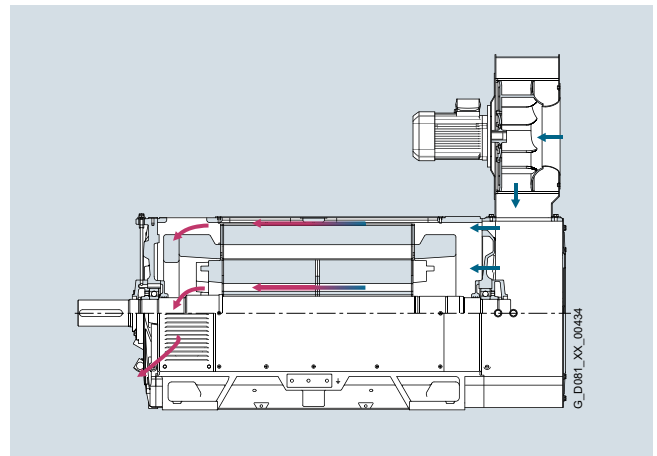
1LM1/1MM1 self-ventilated motors – enclosed version



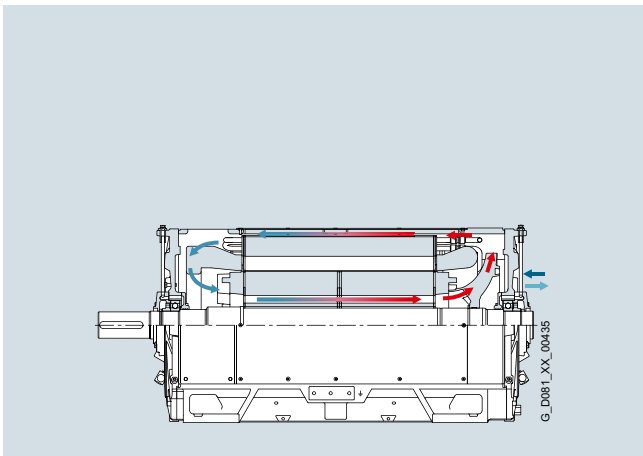
1LQ1/1MQ1 force-ventilated motors – enclosed version



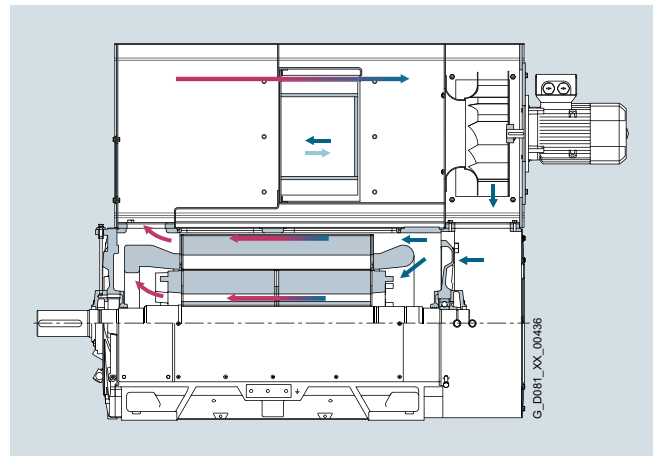
1LL1 self-ventilated motors – open version



1LP1 forced-ventilated motors – open version



1LH1/1MH1 water-cooled motors with water-jacket cooling



1LN1/1MN1 water-cooled motors with air-to-water heat exchanger

Technical specifications

Applicable standards and specifications

The SIMOTICS FD motors comply with the IEC 60034 series of international product standards for rotating electrical machines and, in particular, those parts that are listed in the table below.

Title	IEC/EN	EN
General specifications for rotating electrical machines	IEC 60034-1, IEC 60085	EN 60034-1
Specification of the losses and efficiency of rotating electrical machines	IEC 60034-2-1	EN 60034-2-1
Starting performance of rotating electrical machines	IEC 60034-12	EN 60034-12
Terminal designations and direction of rotation for electrical machines	IEC 60034-8	EN 60034-8
Designation for type of construction, mounting and terminal box position (IM code)	IEC 60034-7	EN 60034-7
Terminal box cable entries	–	DIN 42925
Built-in thermal protection	IEC 60034-11	EN 60034-11
Noise limits of rotating electrical machines	IEC 60034-9	EN 60034-9
IEC standard voltages	IEC 60038	IEC 60038
Methods of cooling of rotating electrical machines (IC code)	IEC 60034-6	EN 60034-6
Vibration severity of rotating electrical machines	IEC 60034-14	EN 60034-14
Vibration limits	–	ISO 10816
Degrees of protection for rotating electrical machines (IP code)	IEC 60034-5	EN 60034-5
International efficiency classes for rotating electrical machines (IE code)	IEC 60034-30-1	EN 60034-30-1
In addition, the following applies to Ex motors:		
General provisions	IEC/EN 60079-0	EN 60079-0
Type of protection "n" (non-sparking)	IEC/EN 60079-15	EN 60079-15
Areas containing flammable dust	IEC/EN 60079-31	EN 60079-31

Technical information



Technical specifications (continued)

Rating plate



In accordance with IEC 60034-1:2010, the approximate total weight is specified on the rating plate. An additional rating plate can be supplied loose for all motors, order code **K31**.

An additional rating plate for customer specifications is also possible, order code **Y82**.

As standard, the rating plate is in English.

SIEMENS							
3~ Mot. 1LM1 222-3AB71-2AA0-Z SIMOTICS FD NoN- H61485458010001 / 2016							
m: 1.78 t IP 55 IM B3 Ta: -20...+40°C Th.Cl.: 180(H) Util.:155(F)							
nmax: 2500 1/min IEC/EN 60034-1							
U [V]	I [A]	P [kW]	cosφ	n [1/min]	f [Hz]		Eff.
380 Δ	710	400	0.89	1500	50.50		96.0%
Mot. design: ONLY FOR SINAMICS WITH OPT. PULSE PATTERNS (p1802=19)							
Line supply: 400V/50Hz							
							
Made in Germany D-90441 Nürnberg 							

Example of a rating plate for 1LM1 for SINAMICS converter operation

SIEMENS							
3~ Mot. 1LH1 203-3BC71-3AA0-Z SIMOTICS FD NoN- F21441112010001 / 2015							
m: 2.34 t IP 55 IM B3 Ta: -20...+40°C Th.Cl.: 180(H) Util.:130(B)							
nmax: 2600 1/min IEC/EN 60034-1							
U [V]	I [A]	P [kW]	cosφ	n [1/min]	f [Hz]	Eff. Class	Eff.
400 Δ	940	630	0.85	991	50	IE3	95.9%
460 Δ	900	585	0.85	1192	60	IE3	96.3%
690 Y	540	530	0.85	991	50	IE3	95.9%
Mot. design: FOR DIRECT ON-LINE OPERATION ONLY							
Line supply: 400V/50Hz							
MAX. WASSERDRUCK / WATER PRESSURE 6 BAR							
KÜHLW./COOL.WATER 40 L/MIN, 25°C							
							
Made in Germany D-90441 Nürnberg 							

Example of a rating plate for 1LH1 for line operation

All motors, specifically designed for line operation, that comply with the international standard IEC 60034-30-1:2014 (Rotating electrical machines – Part 30-1: Efficiency classes of line operated AC motors (IE code)) have the efficiency class and the efficiency stamped on the rating plate. These efficiencies are based, according to the above standard, on the losses determined in accordance with standard IEC 60034-2-1:2014.

Motors specially designed for converter operation

These motors have been specifically designed for converter operation. The catalog data – especially the sound pressure level at the rated speed in no-load operation – are valid for operation with a SINAMICS converter (from firmware Version 4.6 and higher).

When operated with an alternative converter, the catalog data apply (thermal torque limits, maximum overload torques), with the exception of the sound pressure level, under the following boundary conditions:

- The converter is operated with a rated pulse frequency of at least 2.5 kHz.
- The converter can provide the rated voltage as listed in the catalog. This means that it is known whether the infeed (rectifier) is controlled or uncontrolled.

If the infeed is unknown, an uncontrolled infeed should be assumed, and the motor power rating should be reduced (please inquire).

For SINAMICS converters (from firmware Version 4.6 and higher), the SIMOTICS FD motor series can be selected as motor category in the SINAMICS converter using the STARTER commissioning tool software or on the converter operator panel (AOP – Advanced Operation Panel).

Rated voltage

The tolerance for the rated voltage is in accordance with IEC 60034-1:2010. A rated voltage is not specified.

The rated motor voltages are selected so that when operated with a SINAMICS converter, the available voltage is optimally utilized.

In addition to the line voltage, the type of converter infeed (controlled or uncontrolled rectifier) defines the motor voltage that is available. A converter with controlled rectifier always provides the motor with a higher voltage than a converter with uncontrolled rectifier.

Note:

When operating at the limits of voltage ranges A and B (see Fig. 12 in standard IEC 60034-1:2010), the temperatures and overtemperatures exceed the limits specified in the standard. Under certain circumstances, this can negatively impact the lifetime (continuous duty with undervoltage, on request).

Technical specifications (continued)

Insulation

The well-proven DURIGNIT IR 2000 insulation system is used adapted to the motor and converter. The insulation system corresponds to Impulse Voltage Insulation Class (IVIC) C (significant stress according to IEC 60034-18-41:2014) for operation with a two-level converter, and a distinction is made between two categories. The level of converter DC-link voltage and the rise times of the voltage are important factors in the voltage stress of the winding:

- For a converter DC link voltage of $U_{DC,max} < 750$ V (line voltage 500 V with uncontrolled infeed) the insulation system **IVIC-C advanced** is used.
- For a converter DC link voltage of $U_{DC} \geq 750$ V (line voltage 500 V with controlled infeed) up to $U_{DC,max} = 1035$ V the insulation system **IVIC-C premium** is used.
- The following applies for the voltage rise time: $T_a > 0.5 \mu\text{s}/2250$ V (IVIC-C advanced) and $T_a > 0.4 \mu\text{s}/1500$ V (IVIC-C premium). The voltage limits for low rise times can be found in the customer information for insulation technology (TU-IK 002).

For converter operation with the power ratings specified in the catalog, the motors can be utilized corresponding to thermal class 155 (F) (service factor 1.0).

In the case of a fault when connected to an IT supply system (ground fault), the insulation is excessively stressed. In this case, the process should be terminated as quickly as possible ($t < 2$ h), and the fault resolved. We do not recommend operation on TN supply systems with transition-point grounding.

Noise

The motors have been designed, so that at every rated speed a maximum sound pressure level of

- $L_{PA} = 79$ dB(A) for motors with self ventilation, forced ventilation and air-water heat exchanger (1LM1/1MM1, 1LL1, 1LQ1/1MQ1, 1LP1, 1LN1/1MN1) as well as with forced ventilation in low-noise version (1LQ1/1MQ1, 1LP1, 5th position of Article No. = 2)
- $L_{PA} = 85$ dB(A) for motors with forced ventilation in increased power version (1LQ1/1MQ1, 1LP1, position 5 of Article No. = 3)
- $L_{PA} = 78$ dB(A) for water-cooled motors (1LH1/1MH1)

when operated with SINAMICS converters (from firmware Version 4.6 and higher) in no-load operation is maintained.

Forced ventilation

The separately driven fans of motors of the 1LQ1 and 1LP1 series as well as the separately driven fans in the air-to-water heat exchangers for the 1LN1 series are especially quiet. The line voltage and frequency for the separately driven fan motors are specified, as for the drive system itself, in position 12 of the Article No.

The separately driven fan motors are only designed for line operation.

The ambient conditions listed in the following table apply to the technical specifications for the separately driven fan motors.

Motor series	Installation altitude above sea level	Ambient temperatures
	m	°C
1LQ1, 1LP1, 1MQ1	1000	-20 ... +60
1LN1, 1MN1		-20 ... +40

Technical specifications of the separately driven fan motor (1LQ1, 1LP1)¹⁾

Frame size	5th position of the Article No.	Mounting position	$P_{rated, 50 \text{ Hz}}$	$I_{rated, 400 \text{ V}, 50 \text{ Hz}}$	$P_{rated, 60 \text{ Hz}}$	$I_{rated, 460 \text{ V}, 60 \text{ Hz}}$
			kW	A	kW	A
315	2	Radial	1.41	2.96	2.24	3.9
	2	Axial	1.75	3.2	2.1	3
	3	Radial	5.17	9.87	5.59	9.1
355	2	Radial	1.41	2.96	2.24	3.9
	2	Axial	1.41	2.96	2.24	3.9
	3	Radial	5.17	9.87	5.59	9.1
400	2	Radial	2.82	5.26	3.76	6
	2	Axial	2.82	5.26	3.76	6
	3	Radial	7.05	12.31	7.05	11.5
450	2	Radial	2.82	5.26	3.76	6
	2	Axial	2.82	5.26	3.76	6
	3	Radial	7.05	12.31	7.05	11.5

Technical specifications of the separately driven fan motor (1LN1)¹⁾

Frame size	$P_{rated, 50 \text{ Hz}}$	$I_{rated, 400 \text{ V}, 50 \text{ Hz}}$	$P_{rated, 60 \text{ Hz}}$	$I_{rated, 460 \text{ V}, 60 \text{ Hz}}$
	kW	A	kW	A
315	3	6.1	3.45	5.8
355	4	7.8	4.55	7.5
400	7.5	13.1	8.6	13.0
450	7.5	13.1	8.6	13.0

Technical specifications of the separately driven fan motor (1MQ1)

Frame size	5th position of the Article No.	Mounting position	$P_{rated, 50 \text{ Hz}}$	$I_{rated, 400 \text{ V}, 50 \text{ Hz}}$	$P_{rated, 60 \text{ Hz}}$	$I_{rated, 460 \text{ V}, 60 \text{ Hz}}$
			kW	A	kW	A
315	2	Radial	1.8	3.61	2.46	4.89
	2	Axial	–	–	–	–
	3	Radial	4.51	8.61	4.51	8.36
355	2	Radial	1.8	3.61	2.46	4.89
	2	Axial	1.8	3.61	2.46	4.89
	3	Radial	4.51	8.61	4.51	8.36
400	2	Radial	3.28	6.07	3.73	5.99
	2	Axial	3.28	6.07	3.73	5.99
	3	Radial	6.15	10.8	7.05	10.70
450	2	Radial	3.28	6.07	3.73	5.99
	2	Axial	3.28	6.07	3.73	5.99
	3	Radial	6.15	10.8	7.05	10.70

Technical specifications of the separately driven fan motor (1MN1)

Frame size	$P_{rated, 50 \text{ Hz}}$	$I_{rated, 400 \text{ V}, 50 \text{ Hz}}$	$P_{rated, 60 \text{ Hz}}$	$I_{rated, 460 \text{ V}, 60 \text{ Hz}}$
	kW	A	kW	A
315	3.0	6.1	3.45	5.8
355	4.0	7.8	4.55	7.5
400	7.5	13.1	8.6	13.0
450	7.5	13.1	8.6	13.0

¹⁾ The motor data on the rating plate may differ.

Technical information

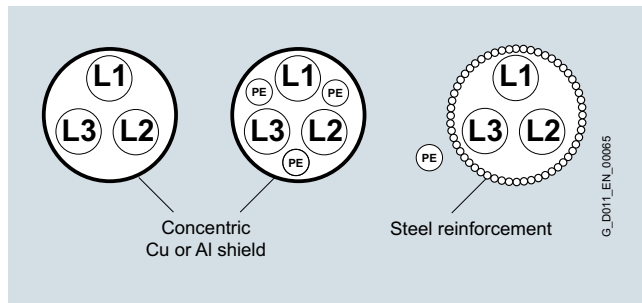
Technical specifications (continued)

2

Reducing bearing currents

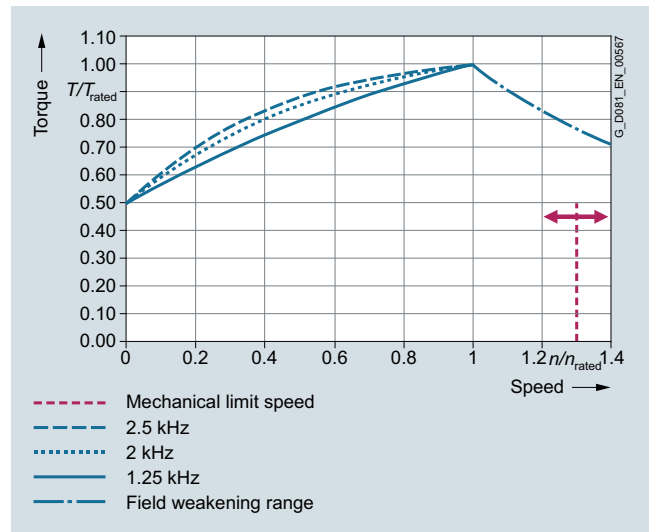
To specifically reduce and prevent damage caused by bearing currents, the system must be considered as a whole, which comprises the motor, converter, and driven machine. To prevent damage caused by bearing currents, the SIMOTICS FD converter motors are equipped with insulated bearings at NDE as standard. Important factors which will help to prevent bearing currents include:

- Set up a properly meshed grounding system in the system as a whole, with low impedance for high-frequency currents
- No potential difference between the motor, converter, and driven machine
 - Use symmetrical, shielded connecting cables
 - Connect the cable shield at both ends over the greatest possible surface area (360° contact)
 - Use equipotential bonding conductors between the motor and the driven machine, the motor and the converter, within the motor, as well as between the terminal boxes and the HF grounding position on the motor housing.
- Attach iron cores above the motor connecting cable at the converter output (selection and dimensioning through your Siemens sales partner)
- Limit the voltage rate of rise by using an output filter to dampen harmonic components in the output voltage
- Implement common-mode filter by employing damping cores to reduce common-mode components
- Use converters with a low switching frequency
- Use cables with a symmetrical cable cross-section:

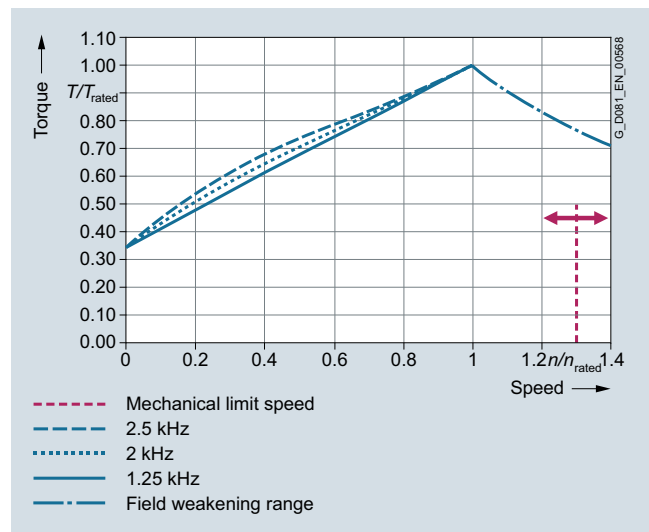


Thermal torque limits (continuous duty)

The thermal torque limit characteristics of the SIMOTICS FD motor series define the maximum load torque for continuous duty (S1) at the converter over the complete speed control range. The characteristic curves are differentiated according to type of modulation (optimized pulse patterns or space-vector modulation) and cooling method. The speed control range is limited by the mechanical speed limit, which depends on the motor's mechanical design (mechanical speed limit of the built-in fan with 1.M1 and 1.L1, type of construction, bearings). When operated on SINAMICS converter with optimized pulse patterns the motor can be utilized to its maximum at the rated operating point. The optimized pulse patterns are suitable for applications without increased requirements on torque or speed accuracy and operations without high dynamic response (e.g. pumps, fans, belt conveyor systems, see also "SIMOTICS FD motor on SINAMICS converter" on page 3/8). An increase in the thermal torque limit at speeds considerably below the rated speed is possible by increasing the converter pulse frequency, e.g. from 1.25 kHz to 2.5 kHz. However, this action results in derating of the converter based on increased switching losses.

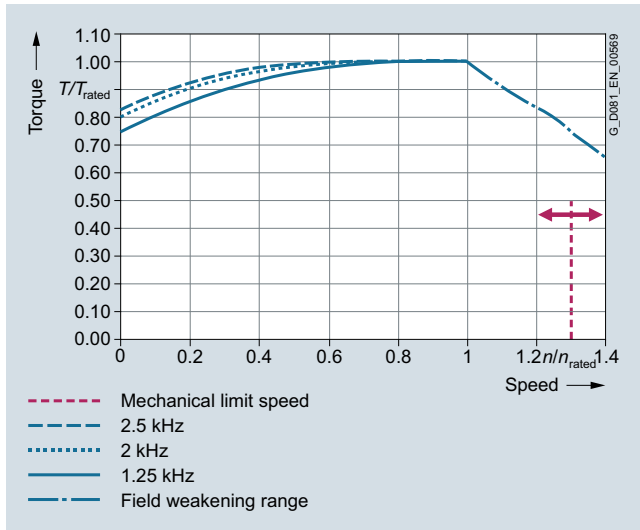


Thermal torque limit characteristic for the 1LM1 series (on SINAMICS converter with optimized pulse patterns)

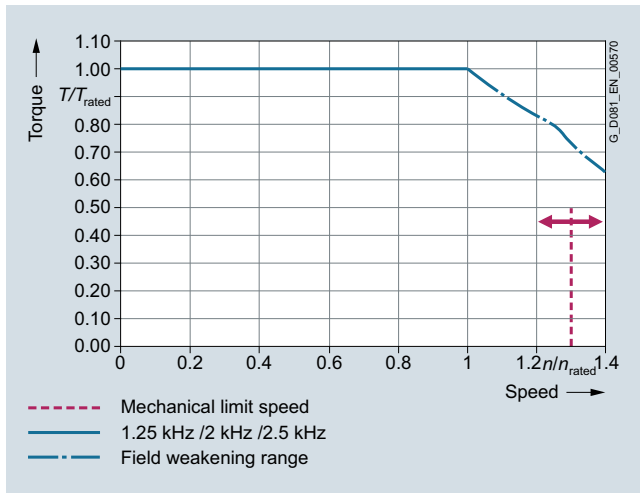


Thermal torque limit characteristic for the 1LL1 series (on SINAMICS converter with optimized pulse patterns)

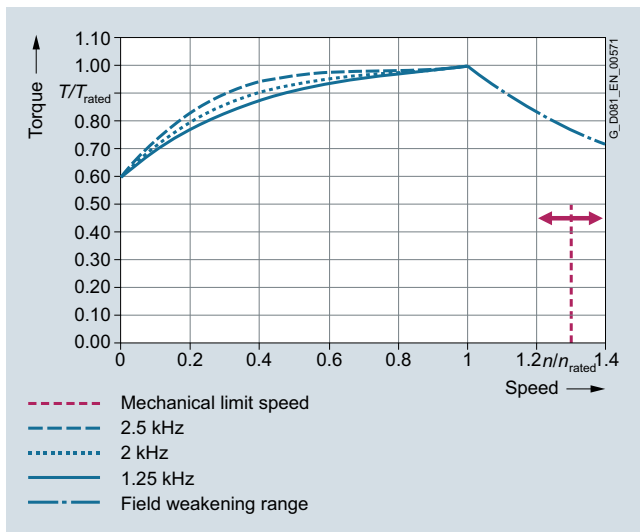
Technical specifications (continued)



Thermal torque limit characteristic for the 1LQ1 series (on SINAMICS converter with optimized pulse patterns)

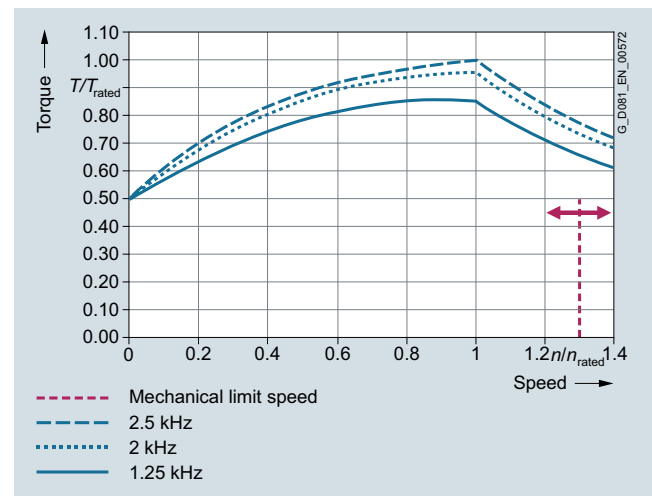


Thermal torque limit characteristic for the 1LP1 and 1LN1 series (on SINAMICS converter with optimized pulse patterns)

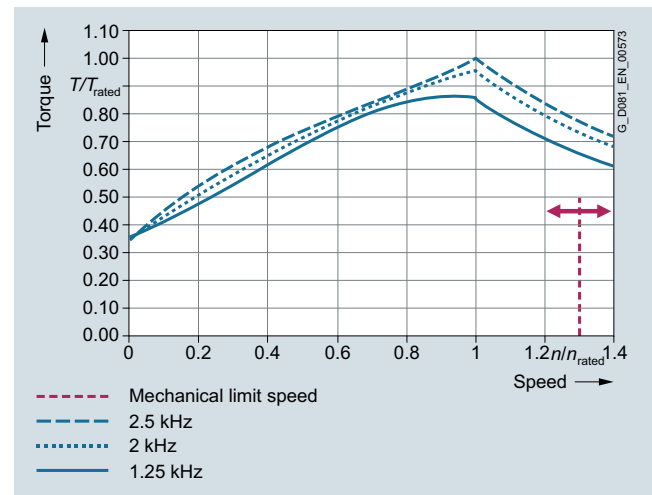


Thermal torque limit characteristic for the 1LH1 series (on SINAMICS converter with optimized pulse patterns)

If operation with optimized pulse patterns is not possible or desired with SINAMICS then the SINAMICS converter can also be operated with space-vector modulation. This is particularly the case with applications with increased requirements on torque or speed accuracy and operations with high dynamic response (e.g. paper or foil production, rolling mills, centrifuges, see also "SIMOTICS FD motor on SINAMICS converter" on page 3/8). Unlike optimized pulse patterns, this type of modulation results in derating of the motor if the pulse frequency is below 2.5 kHz, see "Options for engineering the drive system - detail level 2" on page 3/6 and "SIMOTICS FD motor on SINAMICS converter" on page 3/8. If the motor is operated on an alternative converter, it is assumed that the modulation method is comparable to the space-vector modulation of the SINAMICS converter.



Thermal torque limit characteristic for the 1LM1 series (with the SINAMICS converter with space-vector modulation or with an alternative converter)

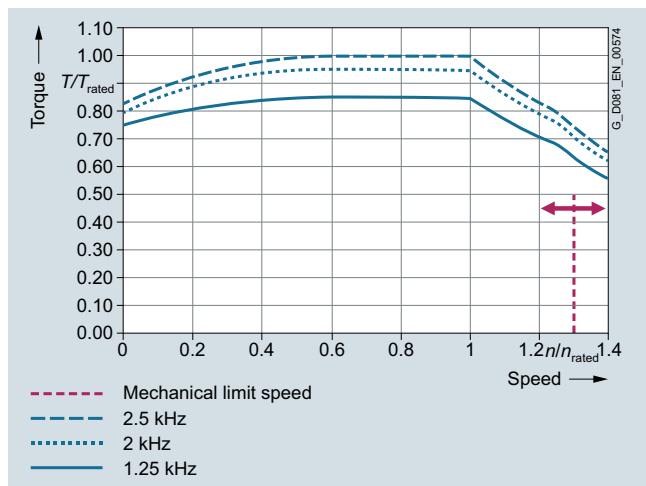


Thermal torque limit characteristic for the 1LL1 series (with the SINAMICS converter with space-vector modulation or with an alternative converter)

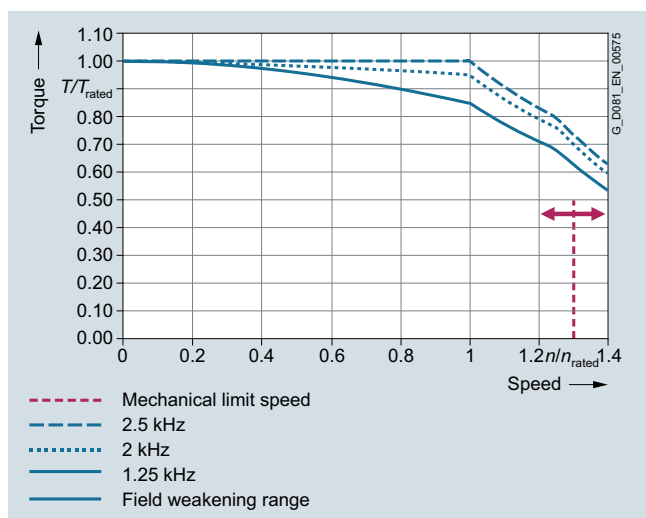
Technical information

Technical specifications (continued)

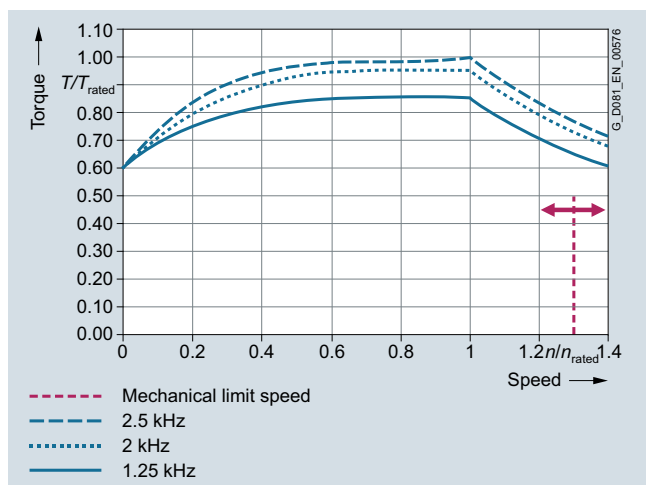
2



Thermal torque limit characteristic for the 1LQ1 series (with the SINAMICS converter with space-vector modulation or with an alternative converter)



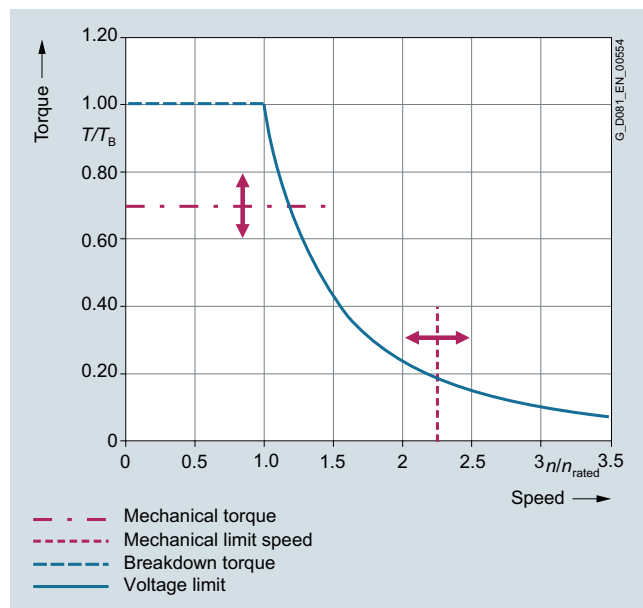
Thermal torque limit characteristic for the 1LP1 and 1LN1 series (with the SINAMICS converter with space-vector modulation or with an alternative converter)



Thermal torque limit characteristic for the 1LH1 series (with the SINAMICS converter with space-vector modulation or with an alternative converter)

Maximum overload torques

The maximum overload torque output from the motor is defined by the overload torque characteristic over the complete speed control range. The reference variable is the breakdown torque at rated speed (T_B). Depending on the frame size and length of the motor the maximum overload torque can be limited by the mechanical strength of the shaft extension (T_{max}). Operation at the maximum overload torque is only briefly permissible, for instance, when accelerating. The speed control range is limited by the mechanical speed limit (n_{max}), which depends on the motor's mechanical design.



SIMOTICS FD overload torque characteristic

More information

Water cooling

The catalog data for motors with water cooling (1LH1/1MH1) or with air-to-water heat exchanger (1LN1/1MN1) are applicable for the following coolant flow rates:

Frame size	Motor series	
	1LH1/1MH1	1LN1/1MN1
315	40 l/min	115 l/min
355	40 l/min	150 l/min
400	60 l/min	150 l/min
450	60 l/min ¹⁾	200 l/min

Mechanical load, grease lifetime

When motors are operated at speeds above the rated speed, the mechanical smooth running operation and the bearings are subjected to greater mechanical stress. This reduces the grease lifetime and the bearing lifetime. More detailed information is available on request. The SIMOTICS FD series optionally has spent grease removal at both bearings.

¹⁾ Applicable to 1LH motors with code digits **1** and **3** at the 11th position of the Article No.
For 1LH motors with code digits **5** and **7** at the 11th position in the Article No. the coolant flow increases to 80 l/min.

Technical specifications (continued)

Motor protection

A motor protection function can be implemented using the R^2t sensing circuit implemented in the converter software.

If precise motor protection is required, this is possible by directly sensing the temperature using the following sensors in the winding:

- 2 temperature sensors KTY 84-130 (standard)
- 6 temperature sensors KTY 84-130 – order code **A27**
- 6 PTC thermistors – order code **A12**
- 6 resistance thermometers Pt100 – order code **A61**
- 6 Pt100 resistance thermometers, 3-wire connection from the auxiliary terminal box – order code **A64**
- 2 Pt1000 resistance thermometers (4 terminals) – order code **A36**
- 6 Pt1000 resistance thermometers (12 terminals) – order code **A37**

When ordering **A12**, **A27**, **A36**, **A37**, **A61** or **A64** the standard temperature sensors KTY 84 are eliminated. Several motor protection sensors can be combined. Additional price on request.

Motor protection sensors can be evaluated in the converter, for example. Siemens converters can determine the motor temperature using the resistance of KTY or Pt100 sensors. They can be set to a required temperature for alarm and tripping.

For line motors, the 3RS10 temperature monitoring device that forms part of the protective equipment must be ordered separately, for further details, see [Catalog IC 10](#).

Motor protection elements (2 × KTY84-130 as standard, as well as order codes **A12**, **A27**, **A61** and **A64**) have a basic insulation. If protective separation is required, this must be implemented when designing the temperature monitoring system. The motor protection elements with order codes **A36** and **A37** have a protective separation.

Anti-condensation heating

- Supply voltage 230 V (1~) – order code **K45**
- Supply voltage 115 V (1~) – order code **K46**
- Supply voltage 400 V (1~) – order code **L08**
- Supply voltage 500 V (1~) – order code **L09**

On motors whose windings are at risk of condensation due to the climatic conditions, e.g. inactive motors in humid atmospheres or motors that are subjected to widely fluctuating temperatures, anti-condensation heaters must be used.

An additional M20 × 1.5 or M25 × 1.5 cable entry is provided for the connecting cable in the terminal box. Please refer to the terminal boxes table on page 2/16 for the assignment.

Anti-condensation heaters must not be switched on during operation.

Heating power of the anti-condensation heating

Supply voltage at	230 V	115 V	400 V	500 V
Order code	K45	K46	L08	L09
Power	200 W	200 W	332 W	500 W

Motor connection

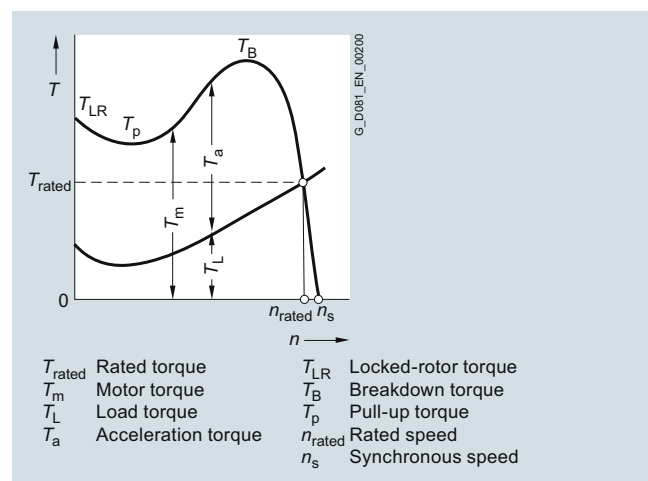
When connecting the motors, it is important to consider the restrictions for line motors as well as the maximum conductor cross-sections permitted for the converter.

Motors specially designed for line operation (1LH1/1MH1)

The 1LH1/1MH1 series also includes motors specifically for line operation. Contrary to motors specifically for converter operation, it is possible to switch between star and delta connection.

Torque characteristic

The torque generated by a three-phase motor at its shaft varies considerably within the speed range $n = 0$ to $n = n_s$. The characteristic curve of the torque as a function of the speed of a three-phase motor with squirrel-cage rotor is shown in the following diagram.



The values for locked-rotor torque and breakdown torque as well as for locked-rotor current for a specific motor can be found in the selection and ordering data.

The limit for the mechanical overload capability is the breakdown torque. Corresponding to IEC/EN 60034-1 induction motors must have an overload capability at rated voltage and rated frequency of at least 1.6 times the rated torque for a duration of 15 s. The minimum required starting, pull-up and breakdown torques depend on the rated power defined in IEC/EN 60034-12.

According to IEC/EN 60034-1, the following tolerances are admissible:

- For locked-rotor torque, from -15 to 25 % of the stated locked-rotor torque
- For locked-rotor current, up to 20 % of the stated locked-rotor current without lower limit
- For the breakdown torque, up to -10 % of the specified breakdown torque
- For pull-up torque, -15 % of the guaranteed value.

Taking these tolerances into account, the locked-rotor torque must be sufficiently higher than the breakaway torque of the driven machine; and the motor torque must constantly exceed the load torque during start-up until the operating speed is achieved.

In the case of squirrel-cage motors, the locked-rotor torque and breakdown torque are listed in the selection and ordering data as multiples of the rated torque.

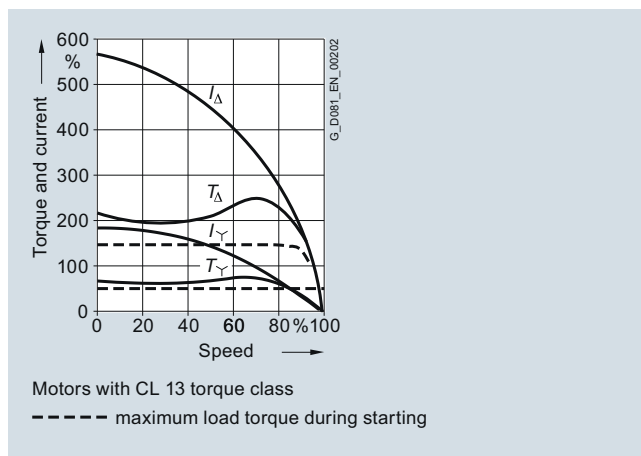
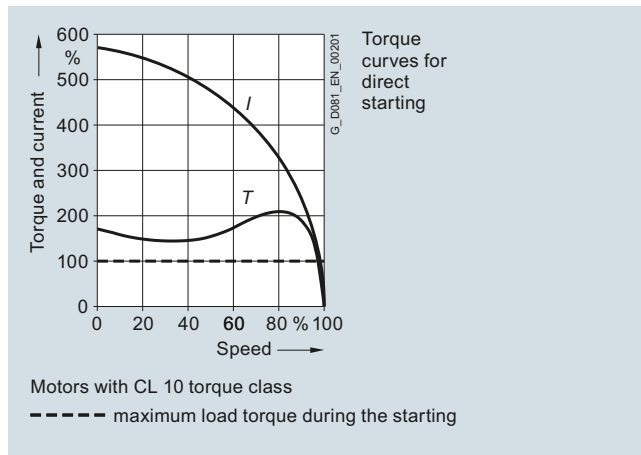
Technical information

Technical specifications (continued)

The normal practice is to start squirrel-cage motors directly on line. The torque class indicates that with direct-on-line starting, even if there is an undervoltage of 5 %, it is possible to start up the motor against a load torque of

- 130 % (for CL 13)
- 100 % (for CL 10)

of the rated torque.



The rated torque can be calculated as follows:

$$T_{\text{rated}} = 9.55 \cdot P_{\text{rated}} \cdot \frac{1000}{n_{\text{rated}}}$$

T_{rated} Rated torque in Nm
 n_{rated} Rated speed in rpm
 P_{rated} Rated power in kW

The rated speed of the motor differs from the synchronous speed by the slip s_{rated} .

Where:

$$s_{\text{rated}} = \frac{n_s - n_{\text{rated}}}{n_s} \cdot 100$$

s_{rated} Slip in %
 n_s Synchronous speed in rpm
 n_{rated} Rated speed in rpm

Calculating the DOL starting time

The starting time from $n = 0$ to $n = n_b$ can be approximately determined using the average acceleration torque.

$$t_a = \frac{\sum J \cdot n_b}{9.55 \cdot T_{\text{aav}}}$$

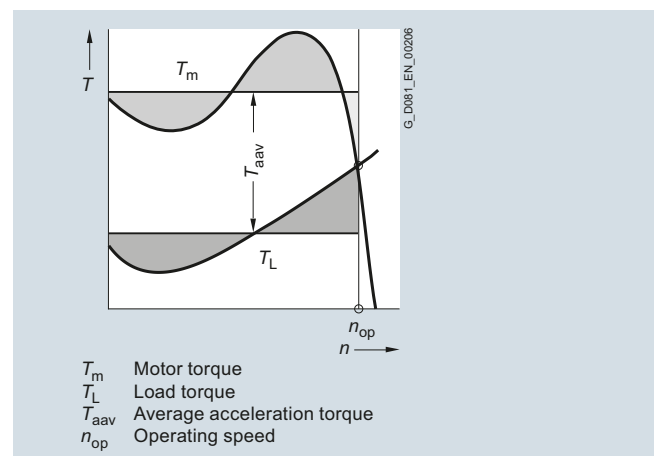
t_a Starting time in s
 J Total moment of inertia in kgm^2
 n_b Operating speed in rpm
 T_{aav} Average acceleration torque in Nm

The total moment of inertia is made up of the motor moment of inertia plus the moment of inertia of the driven machine and the coupling or belt pulleys and is converted to the speed of the motor shaft.

Limit values for the start-up curve of three-phase squirrel-cage motors for voltages up to and including 690 V are included in IEC/EN 60034.

If problem-free starting is not possible due to a high moment of inertia and/or a high load torque, a larger motor or a three-phase motor with a SINAMICS frequency converter can be used for SIMOTICS FD motors.

A mechanical solution for coping with heavy starting is to use a starting coupling, whose application is limited by its capability to absorb heat.



Determination of the average acceleration torque

Technical specifications (continued)

Starting procedure for three-phase motors with squirrel-cage rotor

Three-phase motors with squirrel-cage rotors should, as far as possible, be started directly on-line.

- It should be noted that for any specific motor, the torque and current characteristics are given, independent of the load to be started. Star-delta starting for motors with squirrel-cage rotor is to be used if low locked-rotor currents (e.g. specified by the local power utility) or an especially low starting torque (soft starting) is specified. Locked-rotor torque, breakdown torque and all other torque values as well as the locked-rotor current are 25 to 30 % of the values at direct-on-line starting.
- The motor torque must be sufficiently higher than the load torque during start-up in the star stage. The change from star to delta must not occur before approximately the operating speed.

The first diagram shows a case in which star-delta start-up is not appropriate because the excessive load torque causes the premature switchover which in turn causes a high torque and current surge that renders star-delta starting ineffective.

The torque curve can be approximately reduced by the square of the voltage and the current curve linearly with the voltage by reducing the voltage at the motor terminals with the help of a starting transformer or starting resistors.

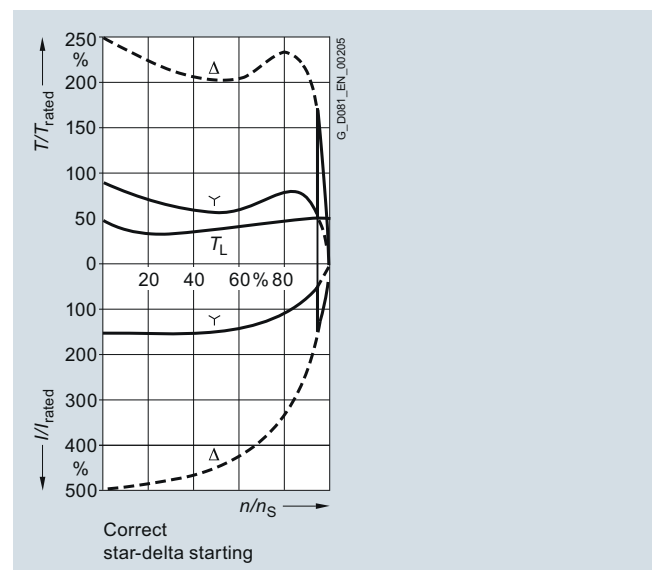
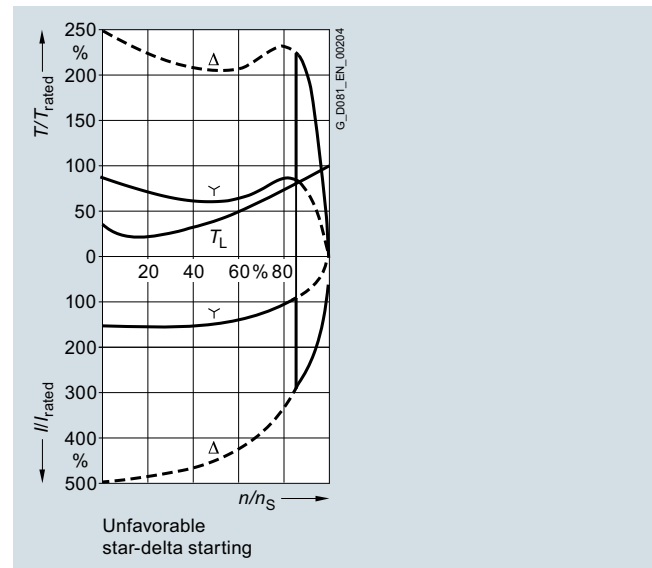
Soft starting for motors with squirrel-cage rotor can also be achieved with short-circuit soft starting. A resistor can be connected in one phase upon or during start-up. The locked-rotor torque can be arbitrarily reduced with the help of this circuit.

The locked-rotor current without a resistor or reactor is slightly higher in both phases than with direct on-line starting.

The electronic SIKOSTART motor starter can be used to better implement starting based on this principle. This device limits the torque and current while starting.

Any inquiries regarding start-up procedures must include the following information:

1. Power required by the driven machine and its rated speed
2. Planned motor speed
3. Load torque of the driven machine, depending on the speed of the driven machine or the motor speed
4. Total external moment of inertia and rated speed of the driven machine or referred to the motor speed
5. Number of starts in a specific time period and duty cycle or
6. Characteristics and number of operating cycles in a certain time (method of braking)



Technical information

Technical specifications (continued)

Connection and terminal boxes

Terminal box mounting positions

Terminal box position	Motor type	Fig. on page 2/16	IM B3 14th position of the Article No.: A						IM B35 14th position of the Article No.: K						
			right	left (L52)	top ⁵⁾ (N83)	bottom (L63)	DE (L61)	NDE (L62)	right	left (L52)	top ⁵⁾ (N83)	bottom (L63)	DE (L61)	NDE (L62)	
1.M1, 1.Q1, 1.LL1, 1.LP1 motors – with cooling method IC411, IC416, IC01, IC06															
Version with one terminal box ¹⁵⁾															
Standard version (DE top) ⁴⁾	A	1	■ 11)	✓ 11)	–	–	✓ 2),11)	✓ 2)	■ 11)	✓ 11),17)	–	–	–	–	✓
DE right ^{4),14)}	B	2	–	–	✓ 11)	✓ 11),13)	✓ 3),11),17)	■ 3)	–	–	✓ 11),17)	✓ 11),13),17)	–	–	■ 3)
DE left ^{4),14)}	C	2	–	–	✓ 11)	✓ 11),13)	✓ 3),11)	■ 3),17)	–	–	✓ 11)	✓ 11),13),17)	–	–	■ 3),17)
NDE top ⁷⁾	D	3	■	✓	–	–	✓	✓	■	✓	–	–	–	✓ 8)	✓
NDE right ^{7),14)}	E	–	–	–	✓ 13)	✓ 3)	–	■ 3)	–	–	✓	✓ 13)	–	✓ 3),8),17)	■ 3)
NDE left ^{7),14)}	F	–	–	–	✓ 13)	✓ 3)	–	■ 3)	–	–	✓	✓ 13)	–	✓ 3),8)	■ 3),17)
Version with two terminal boxes ¹⁶⁾															
Both top (NDE and DE) ⁷⁾	K	4	■ 9)	✓ 9)	–	–	–	–	■ 9)	✓ 9)	–	–	–	–	–
Both left (NDE and DE) ^{7),14)}	L	–	–	–	■ 9)	–	–	–	–	–	■ 9)	–	–	–	–
Both right (NDE and DE) ^{7),14)}	M	–	–	–	■ 9)	–	–	–	–	–	■ 9)	–	–	–	–
1.H1 motors – with IC71W cooling method															
Version with one terminal box ¹⁵⁾															
Standard version (DE top)	A	–	■	✓	–	–	✓ 2)	✓ 2)	■	✓ 17)	–	–	–	–	✓
DE right	B	2	–	–	✓	✓ 13)	✓ 3),17)	■ 3)	–	–	✓ 17)	✓ 13)	–	–	■ 3)
DE left	C	2	–	–	✓	✓ 13)	✓ 3)	■ 3),17)	–	–	✓	✓ 13)	–	–	■ 3),17)
NDE top	D	–	■	✓	–	–	✓	✓	■	✓	–	–	–	✓ 8)	✓
NDE right	E	–	–	–	✓ 13)	✓ 3),17)	–	■ 3)	–	–	✓	✓ 13)	–	✓ 3),8),17)	■ 3)
NDE left	F	–	–	–	✓ 13)	✓ 3)	–	■ 3),17)	–	–	✓	✓ 13)	–	✓ 3),8)	■ 3),17)
Version with two terminal boxes ¹⁶⁾															
Both top (NDE and DE)	K	–	■ 9)	✓ 9)	–	–	–	–	■ 9)	✓ 9)	–	–	–	–	–
Both left (NDE and DE)	L	–	–	–	■ 9)	–	–	–	–	–	■ 9)	–	–	–	–
Both right (NDE and DE)	M	–	–	–	■ 9)	–	–	–	–	–	■ 9)	–	–	–	–
Both DE (right and left)	N	–	–	–	✓ 11)	–	✓ 3),11)	■ 3)	–	–	✓ 11)	–	–	–	■ 3)
Both NDE (right and left)	P	–	–	–	✓	–	✓ 3)	■ 3)	–	–	✓	–	–	✓ 3),8)	■ 3)
1.N1 motors – with IC86W cooling method															
Version with one terminal box ¹⁵⁾															
Standard version (DE right)	B	–	–	–	✓	✓ 13)	✓ 3),17)	■ 3)	–	–	✓ 17)	✓ 13),17)	–	–	■ 3)
DE left	C	–	–	–	✓	✓ 13)	✓ 3)	■ 3),17)	–	–	✓	✓ 13),17)	–	–	■ 3),17)
NDE top	D	–	–	–	–	–	–	–	–	–	–	–	–	–	–
NDE right	E	–	–	–	✓ 10)	✓ 13)	✓ 3)	■ 3)	–	–	✓ 10)	✓ 13)	–	✓ 3),8),17)	■ 3)
NDE left	F	–	–	–	✓ 10)	✓ 13)	✓ 3)	■ 3)	–	–	✓ 10)	✓ 13)	–	✓ 3),8)	■ 3),17)
Version with two terminal boxes ¹⁶⁾															
Both left (NDE and DE)	L	–	–	–	■ 9),10)	–	–	–	–	–	■ 9),10)	–	–	–	–
Both right (NDE and DE)	M	–	–	–	■ 9),10)	–	–	–	–	–	■ 9),10)	–	–	–	–
Both DE (right and left)	N	–	–	–	✓ 11)	–	✓ 3),11)	■ 3)	–	–	✓ 11)	–	–	–	■ 3)
Both NDE (right and left)	P	–	–	–	–	–	✓ 3)	■ 3)	–	–	–	–	–	✓ 3),8)	■ 3)

- Standard version
- ✓ Combination is possible
- Combination not possible

1) When ordering the optional type of construction IM V15, IM V5 or IM V6, the position of the terminal box must be checked with regard to lifting method, accessibility of foot mounting bolts, etc.
 2) Not for 1XB1631 terminal boxes and frame size 315.
 3) Not for 1XB1631 and frame sizes 315, 355.
 4) If the terminal box and separately driven fan unit are both mounted on the top, or on the same side, then NDE cable entry is not possible – and for terminal boxes GT640, 1XB1621, 1XB7730 and 1XB7731, it is not possible to mount an auxiliary terminal box.

5) The position and direction "top" corresponds to the housing side opposite to the one with the mounting feet. For all types of construction, an housing with feet is used, but in the case of IM V1, the feet are not used.
 6) The radially mounted separately driven fan unit must be mounted on the left or right side.
 7) The radially mounted separately driven fan unit cannot be mounted on the same side as the terminal box.
 8) Note bending radius, where applicable.

Technical specifications (continued)

Terminal box position	Motor type	Fig. on page 2/16	Type of construction ¹⁾											
			IM B5 with support foot 14th position of the Article No.: F						IM V1 14th position of the Article No.: J					
			Cable entry (order code)											
			right	left (L52)	top ⁵⁾ (N83)	bottom (L63)	DE (L61)	NDE (L62)	right	left (L52)	top ⁵⁾ (N83)	bottom (L63)	DE (L61)	NDE (L62)
1.M1, 1.Q1, 1LL1, 1LP1 motors – with cooling method IC411, IC416, IC01, IC06														
Version with one terminal box ¹⁵⁾														
Standard version (DE top) ⁴⁾	A	1	■ ¹¹⁾	✓ ^{11),17)}	–	–	–	✓	✓ ^{11),12)}	✓ ^{11),12),17)}	–	–	–	■ ^{6),17)}
DE right ^{4),14)}	B	2	–	–	✓ ^{11),17)}	✓ ¹¹⁾	–	■	–	–	✓ ^{11),17)}	✓ ¹¹⁾	–	■
DE left ^{4),14)}	C	2	–	–	✓ ¹¹⁾	✓ ^{11),17)}	–	■	–	–	✓ ¹¹⁾	✓ ^{11),17)}	–	■
NDE top ⁷⁾	D	3	■	✓	–	–	✓ ⁸⁾	✓	✓ ¹²⁾	✓ ¹²⁾	–	–	✓ ^{8),17)}	■ ¹⁷⁾
NDE right ^{7),14)}	E	–	–	–	✓ ¹³⁾	✓ ^{3),8),17)}	■ ³⁾	–	–	–	✓	✓	✓ ⁸⁾	■
NDE left ^{7),14)}	F	–	–	–	✓ ¹³⁾	✓ ^{3),8)}	■ ^{3),17)}	–	–	–	✓	✓	✓ ⁸⁾	■
Version with two terminal boxes ¹⁶⁾														
Both top (NDE and DE) ⁷⁾	K	4	■ ⁹⁾	✓ ⁹⁾	–	–	–	–	■ ^{9),12)}	✓ ^{9),12)}	–	–	–	–
Both left (NDE and DE) ^{7),14)}	L	–	–	–	■ ⁹⁾	–	–	–	–	–	■ ⁹⁾	✓ ⁹⁾	–	–
Both right (NDE and DE) ^{7),14)}	M	–	–	–	■ ⁹⁾	–	–	–	–	–	■ ⁹⁾	✓ ⁹⁾	–	–
1.H1 motors – with IC71W cooling method														
Version with one terminal box ¹⁵⁾														
Standard version (DE top)	A	–	■	✓ ¹⁷⁾	–	–	–	✓	✓ ¹²⁾	✓ ^{12),17)}	–	–	–	■ ¹⁷⁾
DE right	B	2	–	–	✓ ¹⁷⁾	✓	–	■	–	–	✓ ¹⁷⁾	✓	–	■
DE left	C	2	–	–	✓ ¹⁷⁾	–	–	■	–	–	✓ ¹⁷⁾	–	–	■
NDE top	D	–	■	✓	–	–	✓ ⁸⁾	✓	✓ ¹²⁾	✓ ¹²⁾	–	–	✓ ^{8),17)}	■ ¹⁷⁾
NDE right	E	–	–	–	✓ ¹³⁾	✓ ^{3),8),17)}	■ ³⁾	–	–	–	✓	✓	✓ ⁸⁾	■
NDE left	F	–	–	–	✓ ¹³⁾	✓ ^{3),8)}	■ ^{3),17)}	–	–	–	✓	✓	✓ ⁸⁾	■
Version with two terminal boxes ¹⁶⁾														
Both top (NDE and DE)	K	–	■ ⁹⁾	✓ ⁹⁾	–	–	–	–	■ ^{9),12)}	✓ ^{9),12)}	–	–	–	–
Both left (NDE and DE)	L	–	–	–	■ ⁹⁾	–	–	–	–	–	■ ⁹⁾	✓ ⁹⁾	–	–
Both right (NDE and DE)	M	–	–	–	■ ⁹⁾	–	–	–	–	–	■ ⁹⁾	✓ ⁹⁾	–	–
Both DE (right and left)	N	–	–	–	✓ ¹¹⁾	✓ ¹¹⁾	–	■	–	–	✓ ¹¹⁾	✓ ¹¹⁾	–	■
Both NDE (right and left)	P	–	–	–	✓	–	✓ ^{3),8)}	■ ³⁾	–	–	✓	✓	✓ ⁸⁾	■
1.N1 motors – with IC86W cooling method														
Version with one terminal box ¹⁵⁾														
Standard version (DE right)	B	–	–	–	✓ ¹⁷⁾	✓	–	■	–	–	✓ ¹⁷⁾	✓	–	■
Terminal box on DE left	C	–	–	–	✓ ¹⁷⁾	–	–	■	–	–	✓ ¹⁷⁾	–	–	■
Terminal box on NDE top	D	–	–	–	–	–	–	–	–	–	–	–	–	–
Terminal box on NDE right	E	–	–	–	✓ ¹⁰⁾	✓ ¹³⁾	✓ ^{3),8),17)}	■ ³⁾	–	–	✓ ¹⁰⁾	✓	✓ ⁸⁾	■
Terminal box on NDE left	F	–	–	–	✓ ¹⁰⁾	✓ ¹³⁾	✓ ^{3),8)}	■ ^{3),17)}	–	–	✓ ¹⁰⁾	✓	✓ ⁸⁾	■
Version with two terminal boxes ¹⁶⁾														
Both left (NDE and DE)	L	–	–	–	■ ^{9),10)}	–	–	–	–	–	■ ^{9),10)}	✓ ⁹⁾	–	–
Both right (NDE and DE)	M	–	–	–	■ ^{9),10)}	–	–	–	–	–	■ ^{9),10)}	✓ ⁹⁾	–	–
Both DE (right and left)	N	–	–	–	✓ ¹¹⁾	✓ ¹¹⁾	–	■	–	–	✓ ¹¹⁾	✓ ¹¹⁾	–	■
Both NDE (right and left)	P	–	–	–	–	–	✓ ^{3),8)}	■ ³⁾	–	–	–	✓	✓ ⁸⁾	■

- Standard version
- ✓ Combination is possible
- Combination not possible

⁹⁾ The cable entries of the two terminal boxes must be mounted in the same direction.
¹⁰⁾ Cable entry top, only when the water connection of the cooler is on the other side.
¹¹⁾ In the case of an optional auxiliary terminal box, mounting must be (one side) on the cable duct instead of the console.
¹²⁾ For terminal boxes 1XB7740 and 1XB1631, the combination is only possible from frame size 400.

¹³⁾ Combination only possible from frame size 400 and only for terminal box types GT640, 1XB1621, 1XB7730 and 1XB7731; not for 1XB7740, 1XB7750 and 1XB1631.
¹⁴⁾ For horizontal types of construction (IM B3, IM B35, IM B5), not for 1LL1 and 1LP1 motors.
¹⁵⁾ Terminal boxes 1XB7750 not with frame sizes 315 and 355.
¹⁶⁾ Version with two terminal boxes not for frame size 315 and not for terminal boxes GT640, 1XB1621, 1XB7730, 1XB7731 and 1XB7750.
¹⁷⁾ Not with terminal box 1XB7750.

Technical information

Technical specifications (continued)

Fig. 1

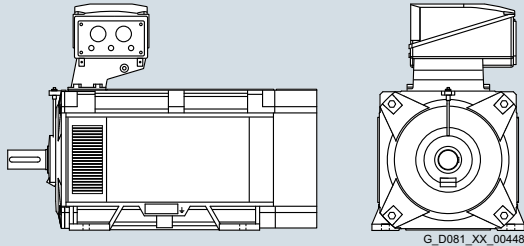


Fig. 2

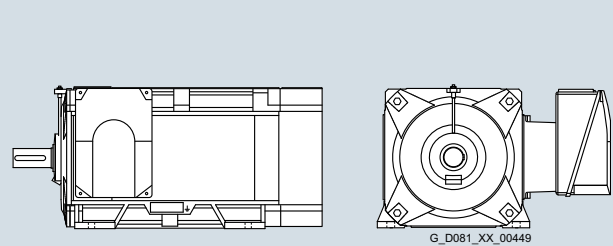


Fig. 3

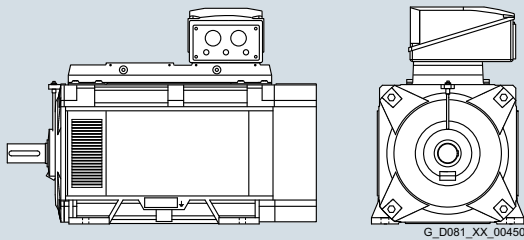
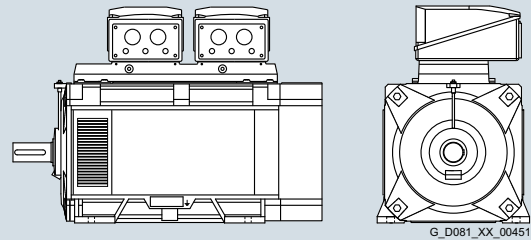


Fig. 4



Terminal boxes

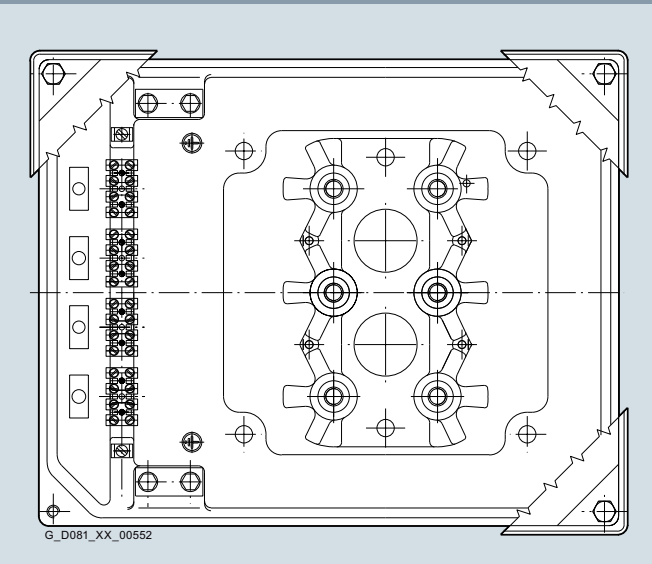
Terminal box	Number of terminals	Contact screw thread	Recommended max. conductor cross-section	Number of auxiliary terminal slots ¹⁾	Standard cable entry ¹⁾	Outer cable diameter (sealing range)	Auxiliary lead outer cable diameter	Glands provided (EMC glands for converter operation) can be ordered using option K57; ability to be installed tested ²⁾	Cable entry (option L01 or explosion-proof motor) ¹⁾
Type			mm ²		Size	mm	mm	Size	
GT640	6	M12	185	18	Cannot be removed	41.0 ... 56.5	7 ... 13	2 × M72 × 2	–
1XB1621	6	M16	240	12	Removable 2 × M72 × 2 + 2 × M20 × 1.5	56.0 ... 68.0	11.5 ... 15.5	2 × M80 × 2	Removable Not drilled
1XB1631	12	M16	240	24	Removable 4 × M80 × 2 + 2 × M25 × 1.5	56.0 ... 68.0	11.5 ... 15.5	4 × M80 × 2	Removable Not drilled
1XB7730	3	M12	185	20	Removable 1 × M72 × 2 + 3 × M25 × 1.5	41.0 ... 56.5	11.5 ... 15.5	1 × M72 × 2	Removable Not drilled
1XB7731	6	M12	185	20	Removable 2 × M72 × 2 + 3 × M25 × 1.5	41.0 ... 56.5	11.5 ... 15.5	2 × M72 × 2	Removable Not drilled
1XB7740	12	M12	240	20	Removable 4 × M80 × 2 + 3 × M25 × 1.5	56.0 ... 68.0	11.5 ... 15.5	4 × M80 × 2	Removable Not drilled
1XB7750	24	M12	240	20	Removable 8 × M72 × 2 + 3 × M25 × 1.5	41.0 ... 56.5	11.5 ... 15.5	8 × M72 × 2	Removable Not drilled

¹⁾ Others available on request.

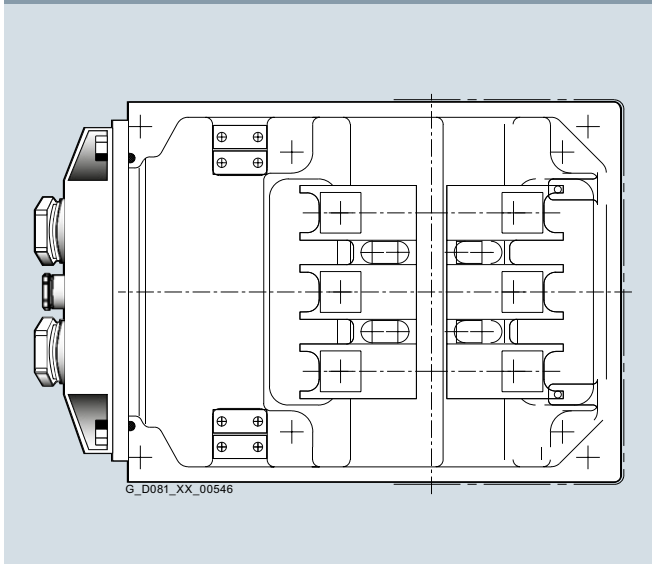
²⁾ When using a different cable gland in conjunction with the standard cable entry, the minimum clearances according to the dimension drawing must be carefully observed: You can find the dimension drawings at the end of the chapter on the particular motor version.

Technical specifications (continued)

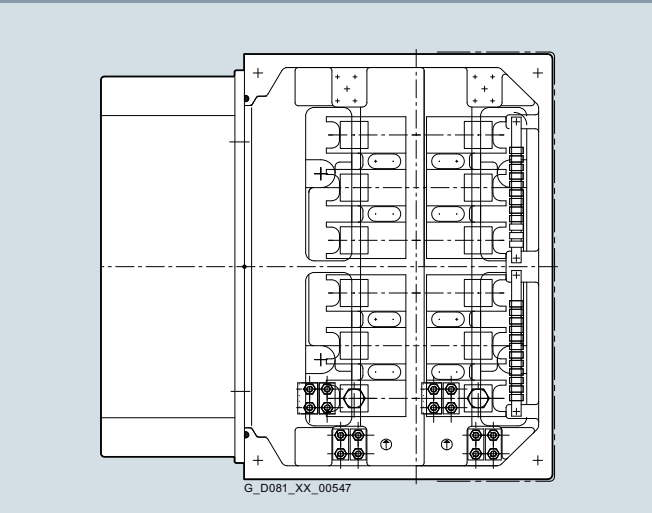
Terminal box type GT640



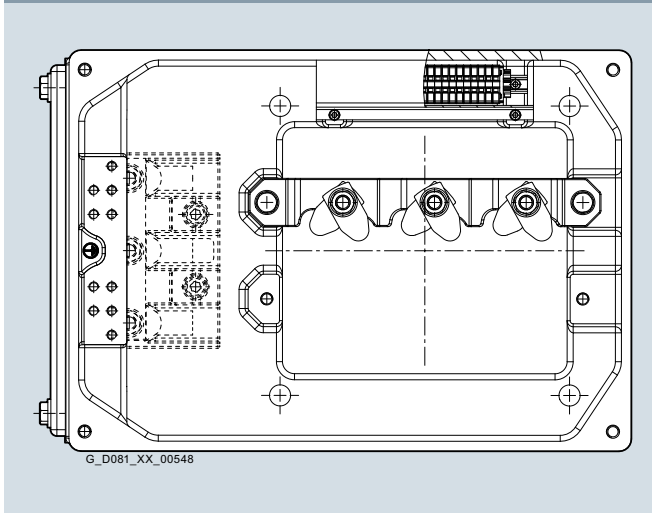
Terminal box type 1XB1621



Terminal box type 1XB1631



Terminal box type 1XB7730



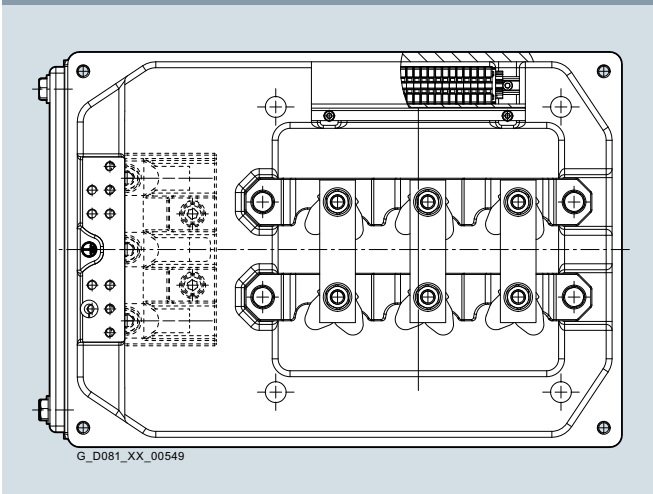
2

Technical information

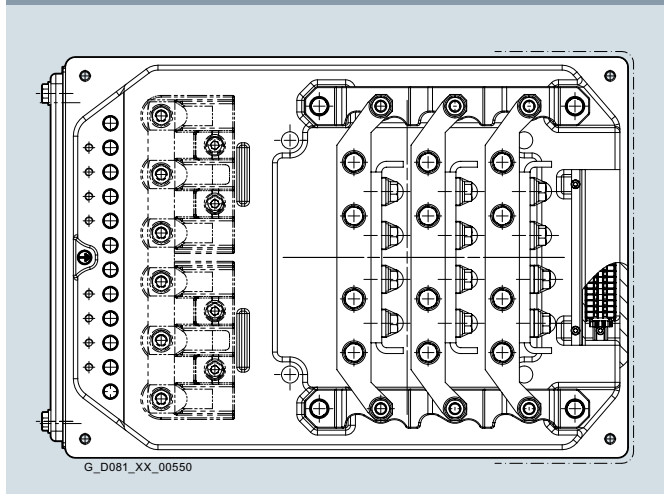
Technical specifications (continued)

2

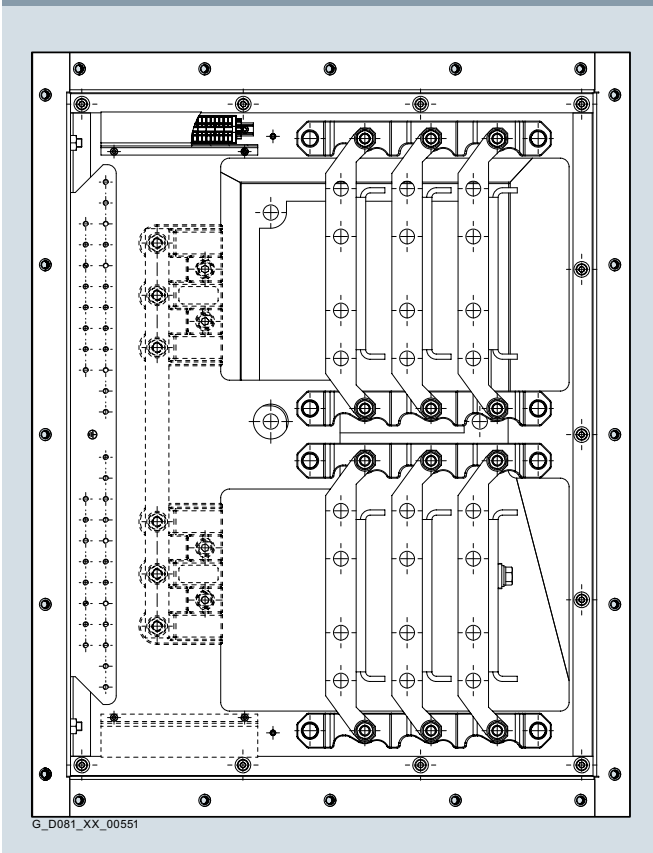
Terminal box type 1XB7731



Terminal box type 1XB7740



Terminal box type 1XB7750



Technical specifications (continued)

Bearings and lubrication

Bearing assignment

The bearing selection tables are only intended for planning purposes. Authoritative information on the actual type of bearings fitted in motors already supplied can be obtained by the factory by quoting the serial number or can be read from the lubrication plate.

Bearing design Frame size	Pole no. code letter 10th position of the Article No. 1..1...-■...-■...	Rated speed code 13th position of the Article No. 1..1...-■...-■...	Type of construction	DE	NDE
				Bearing type	Bearing type
315	B	1, 2, 5, 6	IM B3, IM B35, IM B5 ¹⁾ , IM V1	6218 C3	6218 C3
			IM B3 + K20	NU320E	6218 C3
	C	3, 4, 7, 8	IM B3, IM B35, IM B5 ¹⁾ , IM V1	6218 C3	6218 C3
			IM B3 + K20	NU320E	6218 C3
	D	4, 8	IM B3, IM B35, IM B5, IM V1	6218 C3	6218 C3
			IM B3 + K20	NU320E	6218 C3
355	B	1, 2, 6	IM B3, IM B35, IM B5 ¹⁾	6220 C3	6220 C3
			IM V1	7220 B + 6220 C3	6220 C3
		IM B3 + K20	NU322E	6220 C3	
	C	3, 4, 7, 8	IM B3, IM B35, IM B5 ¹⁾	6220 C3	6220 C3
			IM V1	7220 B + 6220 C3	6220 C3
			IM B3 + K20	NU322E	6220 C3
	D	4, 8	IM B3, IM B35, IM B5 ¹⁾	6220 C3	6220 C3
			IM V1	7220 B + 6220 C3	6220 C3
			IM B3 + K20	NU322E	6220 C3
400	B	2, 6	IM B3, IM B35, IM B5 ¹⁾	6224 C3	6224 C3
			IM V1	7224 B + 6224 C3	6224 C3
			IM B3 + K20	NU326E	6224 C3
	C	3, 4, 7, 8	IM B3, IM B35, IM B5 ¹⁾	6224 C3	6224 C3
			IM V1	7224 B + 6224 C3	6224 C3
			IM B3 + K20	NU326E	6224 C3
	D	4, 8	IM B3, IM B35, IM B5 ¹⁾	6224 C3	6224 C3
			IM V1	7224 B + 6224 C3	6224 C3
			IM B3 + K20	NU326E	6224 C3
450	B	2, 6	IM B3, IM B35, IM B5 ¹⁾	6226 C3	6226 C3
			IM V1	7226 B + 6226 C3	6226 C3
			IM B3 + K20	NU328E	6226 C3
	C	3, 4, 7, 8	IM B3, IM B35, IM B5 ¹⁾	6226 C3	6226 C3
			IM V1	7226 B + 6226 C3	6226 C3
			IM B3 + K20	NU328E	6226 C3
	D	4, 8	IM B3, IM B35, IM B5 ¹⁾	6226 C3	6226 C3
			IM V1	7226 B + 6226 C3	6226 C3
			IM B3 + K20	NU328E	6226 C3

¹⁾ Type of construction IM B5 only with support foot.

Technical information

Technical specifications (continued)

Bearing lifetime (nominal lifetime)

The nominal bearing lifetime is defined according to standardized calculation procedures (DIN ISO 281) and is reached or even exceeded for 90 % of the bearings when the motors are operated in compliance with the data provided in the catalog.

Generally, the bearing lifetime is defined by the bearing size, the bearing load, the operating conditions, the speed and the grease lifetime.

The bearing lifetime of motors with horizontal mounting is 40000 hours if there is no additional axial loading at the coupling output and 20000 hours when utilized according to the maximum admissible load.

Bearing system

For the admissible vibration values measured at the bearing plate, evaluation zones A and B specified in ISO 10816 are applicable in order to achieve the calculated lifetime under continuous duty. If higher vibration speeds will occur under the operating conditions, special arrangements will be necessary (please inquire).

In the basic bearing system, the floating bearing is situated at the non-drive end (NDE) and the located bearing is situated at the drive end (DE).

The bearing system is axially preloaded with a spring element to ensure smooth running of the motor backlash-free.

This is not the case in versions with cylindrical roller bearings. The bearings of these motors must always run under adequate radial force (motors must not be operated on a test bed without additional radial loads).

For increased cantilever forces (e.g. belt drives), reinforced bearings can be used at the drive end (DE). Order code **K20**.

Shaft seal and degree of protection

The standard degree of protection for the 1.M1, 1.Q1, 1.H1 and 1.N1 motor series is IP55. When the following operating speeds are exceeded, the degree of protection falls to IP54:

- > 3000 rpm for frame size 315
- > 2670 rpm for frame size 355
(in combination with order code **M61** or **K20**: > 2430 rpm)
- > 2200 rpm for frame size 400
- > 2000 rpm for frame size 450

Insulated bearings for converter operation

An insulated bearing is installed at the non-drive end (NDE).

Regreasing

Regreasing with an M10 × 1 flat greasing nipple according to DIN 3404 is provided.

Specifications for regreasing intervals, grease type and quantity and any other data can be found on the lubrication plate or rating plate.

Grease lifetime and regreasing intervals

Horizontal installation – basic version

Speed rpm	Regreasing interval up to CT 40 °C/ regrease quantity			
	Frame size			
	315	355	400	450
750	6000 h/25 g	6000 h/30 g	6000 h/40 g	6000 h/50 g
1000	6000 h/25 g	6000 h/30 g	6000 h/40 g	6000 h/50 g
1500	6000 h/25 g	6000 h/30 g	5000 h/40 g	5000 h/50 g
1800	6000 h/25 g	6000 h/30 g	4000 h/40 g	4000 h/50 g
3000	3000 h/25 g	2000 h/30 g	2000 h/30 g	2000 h/30 g
3300	–/–	2000 h/30 g	–/–	–/–
3600	2000 h/25 g	–/–	–/–	–/–

Vertical installation – basic version

Speed rpm	Regreasing interval up to CT 40 °C/ regrease quantity			
	Frame size			
	315	355	400	450
750	6000 h/25 g	6000 h/60/30 g	6000 h/90/45 g	6000 h/100/55 g
1000	6000 h/25 g	6000 h/60/30 g	5000 h/90/45 g	5000 h/100/55 g
1500	5000 h/25 g	4000 h/60/30 g	3500 h/90/45 g	3000 h/100/55 g
1800	5000 h/25 g	3500 h/60/30 g	3500 h/90/45 g	2000 h/100/55 g
2000	–/–	3500 h/60/30 g	On request	On request
2500	2500 h/25 g	–/–	On request	On request

Horizontal installation (IM B3 only) for reinforced bearing (K20):

Speed rpm	Regreasing interval up to CT 40 °C/ Regrease quantity DE/NDE			
	Frame size			
	315	355	400	450
750	5000 h/55/20 g	4000 h/65/30 g	4000 h/85/25 g	4000 h/95/25 g
1000	4000 h/55/20 g	3000 h/65/30 g	3000 h/85/25 g	3000 h/95/25 g
1500	3000 h/55/20 g	2000 h/65/30 g	1500 h/85/25 g	1500 h/95/25 g
1800	2000 h/55/20 g	1500 h/65/30 g	1000 h/85/25 g	1000 h/95/25 g

Coupling weight at the DE shaft extension

Coupling weight at the DE shaft extension – basic version

Weight	Frame size			
	315	355	400	450
	40 kg	60 kg	60 kg ¹⁾	60 kg ¹⁾
			90 kg	120 kg

Permissible coupling weight (half coupling) at the DE shaft extension.

Coupling aligned according to the operating instructions.

¹⁾ At rated speed 3000 rpm

Technical specifications (continued)

Additional axial load for motors in the basic version

Additional axial load for motors in horizontal type of construction – basic version

Frame size	Type	3000 rpm		1500 rpm		1000 rpm		750 rpm	
		Load direction							
		Tensile	Thrust	Tensile	Thrust	Tensile	Thrust	Tensile	Thrust
		N	N	N	N	N	N	N	N
315	1 ■.1...-...1.	3500	1900	4800	3100	5500	3900	6300	4600
	1 ■.1...-...3.	3500	1800	4700	3000	5500	3800	6200	4500
	1 ■.1...-...5.	3400	1700	4600	2900	5300	3600	6000	4300
	1 ■.1...-...7.	3300	1700	4500	2900	5300	3600	6000	4300
355	1 ■.1...-...5.	4400	2100	6000	3700	6800	4500	7700	5400
	1 ■.1...-...7.	4400	2100	6000	3700	6700	4400	7700	5400
400	1 ■.1...-...3.	3900	1600	6300	4000	7300	5000	8400	6100
	1 ■.1...-...5.	3900	1600	6300	4000	7200	4900	8300	6000
	1 ■.1...-...7.	3800	1500	6200	3900	7200	4900	8200	5900
450	1 ■.1...-...1.	3700	1400	7400	3300	8400	4300	9600	5500
	1 ■.1...-...3.	3600	1300	7300	3200	8400	4300	9500	5400
	1 ■.1...-...5.			7000	2900	8000	3900	9100	5000
	1 ■.1...-...7.			7000	2900	7900	3800	9000	4900

L Motors without explosion protection

M Motors with explosion protection

Tensile: Additional axial load in DE direction

Thrust: Additional axial load in NDE direction

Additional axial load for motors in vertical type of construction – basic version

Frame size	Type	2500/2000 rpm ²⁾		1500 rpm		1000 rpm		750 rpm	
		Shaft extension pointing downwards							
		Tensile	Thrust	Tensile	Thrust	Tensile	Thrust	Tensile	Thrust
		N	N	N	N	N	N	N	N
315	1 ■.1...-...1.	1500	6300	2500	7400	2700	8900	3500	9700
	1 ■.1...-...3.	1000	6800	2000	7800	2000	9600	2800	10400
	1 ■.1...-...5.	500	7300	1500	8300	1500	10200	2300	11000
	1 ■.1...-...7.	–	7800 ¹⁾	1000	8800	1200	10500	2000	11300
355	1 ■.1...-...5.	7800	8100	7800	8700	6200	11100	6200	11900
	1 ■.1...-...7.	7500	8400	7500	9000	5600	11700	5600	12500
400	1 ■.1...-...3.	5800	10100	5100	10000	3400	11700	3400	11700
	1 ■.1...-...5.	5200	10700	4500	10600	2600	12500	2600	12500
	1 ■.1...-...7.	4400	11400	3800	11300	1900	13300	1900	13300
450	1 ■.1...-...1.	3900	11900	6200	13600	4500	15300	4400	15400
	1 ■.1...-...3.	3000	12800	5500	14300	3500	16300	3500	16300
	1 ■.1...-...5.			4500	15300	2200	17600	2100	17700
	1 ■.1...-...7.			3300	16500	700	19100	700	19100

L Motors without explosion protection

M Motors with explosion protection

Data for 2500 rpm and 1500 rpm are applicable to 4-pole motors.

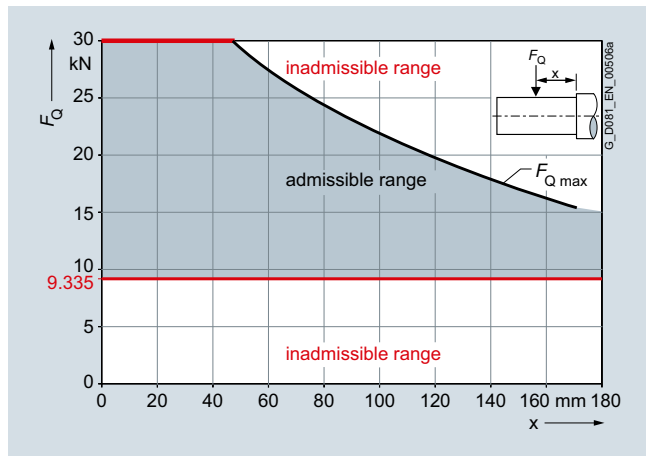
Data for 1000 rpm and 750 rpm are applicable to 6- or 8-pole motors. Types IM V15, IM V5 and IM V6 available on request.

¹⁾ Without additional axial load, the bearing lifetime is less than 20000 h.²⁾ Maximum speed IM V1: Frame size 315 = 2500 rpm and frame sizes 355/400/450 = 2000 rpm

Technical information

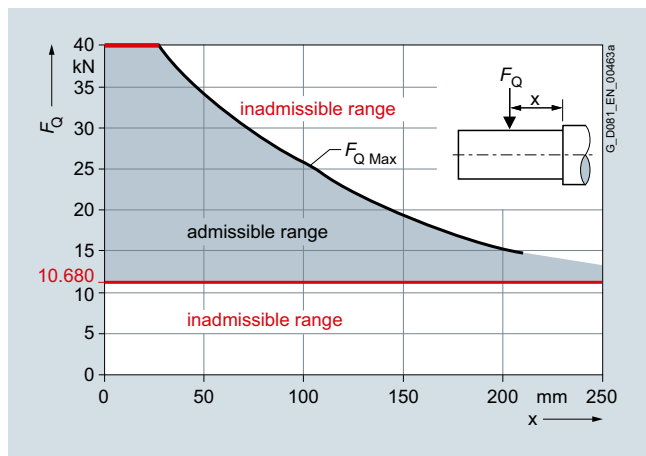
Technical specifications (continued)

Admissible cantilever forces for motors, frame size 315, in IM B3 type of construction with reinforced bearings (order code **K20**)



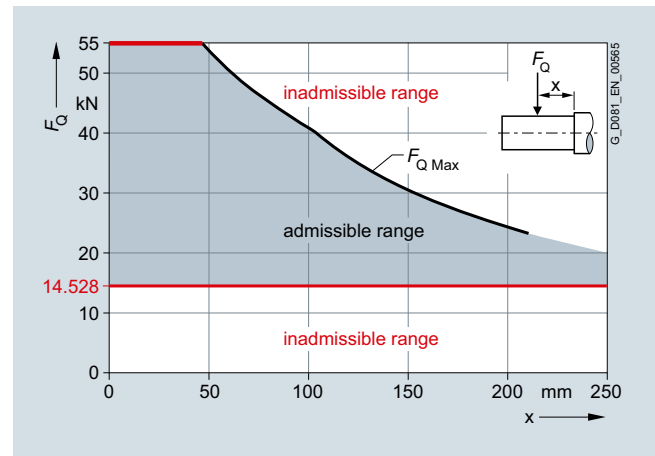
Bearings DE: NU320-E
 NDE: 6218
 Bearing lifetime: 20000 h
 Torsional torque T_m, T_a : 5600 Nm rising
 Minimum cantilever force: 9.335 kN
 The maximum cantilever force is limited to 30 kN.

Admissible cantilever forces for motors, frame size 355, in IM B3 type of construction with reinforced bearings (order code **K20**)



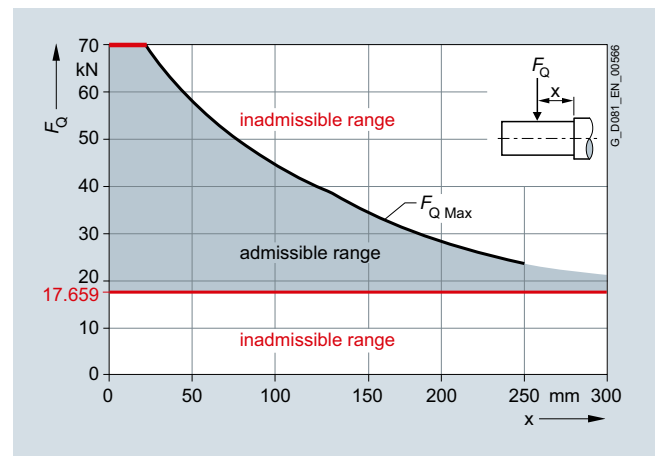
Bearings DE: NU322-E
 NDE: 6220
 Bearing lifetime: 20000 h
 Torsional torque T_m, T_a : 7600 Nm rising
 Minimum cantilever force: 10.680 kN
 The maximum cantilever force is limited to 40 kN.

Admissible cantilever forces for motors, frame size 400, in IM B3 type of construction with reinforced bearings (order code **K20**)



Bearings DE: NU326-E
 NDE: 6224
 Bearing lifetime: 20000 h
 Torsional torque T_m, T_a : 12300 Nm rising
 Minimum cantilever force: 14.528 kN
 The maximum cantilever force is limited to 55 kN.

Admissible cantilever forces for motors, frame size 450, in IM B3 type of construction with reinforced bearings (order code **K20**)



Bearings DE: NU328-E
 NDE: 6226
 Bearing lifetime: 20000 h
 Torsional torque T_m, T_a : 15400 Nm rising
 Minimum cantilever force: 17.659 kN
 The maximum cantilever force is limited to 70 kN.

Technical specifications (continued)Retrofit

A simple exchange is possible based on identical foot hole measurements for the same frame size for SIMOTICS FD and N-compact. Any differences in frame size that may exist as a result of the higher power density for the SIMOTICS FD series compared with older motors are balanced out using adapter plates. These can be ordered as an option for the corresponding motor types.

As a result of the design the SIMOTICS FD terminal boxes are not at the same position as they are with N-compact. In some cases existing connecting cables may no longer be long enough or there may be incompatibilities with other system parts. This often results in a need for corresponding measures (interim flange, cable length, change in the foundation, etc.). These must be taken into account at the configuring stage.

The system must generally always be seen in its entirety with a retrofit. Synchronizing the mechanical and electrical properties (e.g. torque, voltage, etc.) for the new motor with those of the old motor is not adequate. On the contrary, any minimum clearance requirements for ventilation or other mechanical conditions such as the total length of the motor must also be taken into account. This geometric data can be found in the relevant machine documentation. Together with the system data a judgment can then be made as to whether a 1:1 exchange is possible or whether further measures are required.

If a SIMOTICS FD motor is being operated with an existing SINAMICS converter then this is generally possible. If, in this converter, the pulse patterns are stored in the software, optimized pulse patterns can be imported for SIMOTICS FD motors using a simple software update and the motor operated. However, if the pulse patterns are defined on a PC board, then the appropriate parts must be exchanged; this will incur a specific cost. The required measures are listed in the following table.

16th position of the Article No.	Parts / components to be replaced	SINAMICS				
		G130	G150	S120	S120 CM	S150
.....-.....-... ■						
	3 It is not necessary to retrofit the hardware, as the pulse pattern is contained in the software.					
0	Control Unit	✓	✓	✓	✓	✓
1	Electronics Motor Module	✓	✓	✓	✓	✓
2	Electronics Active Line Module	–	–	✓	✓	✓
	Auxiliary function TM31	–	–	✓	✓	✓

Technical information

Notes

2

System components



3/2	Configuring
3/2	<u>Configuring the motor</u>
3/2	SIMOTICS FD
3/2	Structure of catalog motor selection tables
3/2	Ambient conditions and installation altitude
3/3	Operating modes
3/4	<u>Engineering the drive system</u>
3/4	General information
3/4	Power supplied from the converter
3/5	Engineering the drive system
3/9	Catalog versions and special versions
3/11	Noise emission when operated on a SINAMICS converter
3/11	EMC
3/12	<u>Water cooling (1LH1/1MH1 and 1LN1/1MN1 motors)</u>
3/12	Cooling circuit in the application
3/12	Cooling water quality
3/13	Materials used in the motor cooling circuit
3/13	Inhibitors, anti-freeze, biocides
3/14	Condition monitoring system
3/14	<u>SIPLUS CMS condition monitoring systems for the continuous condition monitoring of motors</u>
3/15	<u>Motor Condition Monitoring based on SIPLUS CMS2000</u>
3/16	Couplings
3/16	<u>Siemens Integrated Drive Systems</u>
3/16	FLENDER couplings – part of the drive system

System components

Configuring

Configuring the motor

Overview

SIMOTICS FD

Motors of the SIMOTICS FD series are designed for a wide range of different applications. For outdoor use, special applications or specific boundary conditions, an inquiry must be made to establish whether a catalog version is suitable or a special version is recommended. This is particularly the case with:

- Applications with increased mechanical stress due to vibration or shocks
- Installation on deck (ships)
- Direct exposure to weather in coastal areas
- Frame sizes V15, V5 and V6
- Piston engines, hackers, crushers, shredders, shearing machines, main press drive
- Use as energy storage device
- Deviating rated motor voltages, speeds or power ratings

Structure of catalog motor selection tables

The SIMOTICS FD motors have been optimized for operation with converters of the SINAMICS range. The selection tables are therefore structured as follows:

1. Motor type – cooling method (1LM1, 1LL1, 1LH1, ...)
2. Line voltage/frequency (400 V, 50 Hz; 460 V, 60 Hz; ...)
3. Type of infeed (controlled or uncontrolled)
4. Rated speed (1500 rpm, 1800 rpm, ...)

In the selection tables, a SINAMICS converter is also recommended for each motor. The motor data is specified for operation on this converter, or on another converter that is comparable with regard to the output voltage (section "Voltage supply").

Ambient conditions and installation altitude

For air-cooled motors the catalog data is applicable to ambient temperatures of -20 to +40 °C and installation altitudes of up to 1000 m above sea level. For ambient conditions outside this range, derating is necessary.

Reduction factor k_{HT} for non-standard installation altitudes and/or coolant temperatures for 1LM1/1MM1, 1LL1, 1LQ1/1MQ1 and 1LP1 air-cooled motors

Installation altitude above sea level	Coolant temperature (air)				
	30 ... 40 °C	≤ 45 °C	≤ 50 °C	≤ 55 °C	≤ 60 °C
m	1.00	0.96	0.92	0.87	0.82
≤ 1000	1.00	0.96	0.92	0.87	0.82
≤ 1500	0.97	0.93	0.89	0.84	0.80
≤ 2000	0.94	0.90	0.86	0.82	0.77

For water-cooled motors the catalog data is applicable for an ambient temperature of -20 to +55 °C and for installation altitudes of up to 1000 m above sea level. The cooling water inlet temperature may be up to +25 °C. For ambient conditions (cooling water temperature, installation altitude, ambient temperature) outside this range, derating is necessary. There should be a max. difference of 10 K between the cooling water temperature and ambient temperature in order to minimize condensation in the motor interior. Anti-freeze must be added to the cooling water at low temperatures.

Reduction factor k_{HT} for non-standard installation altitudes and/or coolant temperatures for 1LH1/1MH1 and 1LN1/1MN1 water-cooled motors

Installation altitude above sea level	Coolant temperature (water)					
	≤ 25 °C	≤ 30 °C	≤ 35 °C	≤ 38 °C	≤ 40 °C	≤ 45 °C
m	1.00	0.95	0.90	0.86	0.84	0.79
≤ 1000	1.00	0.95	0.90	0.86	0.84	0.79
≤ 1500	0.97	0.92	0.87	0.83	0.81	0.77
≤ 2000	0.94	0.89	0.85	0.81	0.79	0.74

Overview (continued)**Operating modes**

The operating data specified in the catalog for SIMOTICS FD motors is applicable to operating mode S1 (continuous duty according to EN 60034-1). Overload is possible in the case of duty types S2 (short-time duty), S3 (intermittent periodic duty) and S6 (continuous operation periodic duty). The applicable overload factors can be taken from the tables below for these three operating modes.

The overload factors are valid on starting when the motor is cold and when the resulting torque is less than or equal to the maximum overload torque (T_B). If the motor is prewarmed due to re-cent operation or it is in a thermal steady-state due to continuous duty (S1), thermal class 155 (F) will be exceeded under overload conditions. Depending on the amount of overload, the maximum winding temperature can be exceeded and the motor can be damaged.

Motor type	Overload factors								
	for short-time duty			for intermittent, periodic duty		for continuous operation, periodic duty			
	Operating mode S2			Operating mode S3		Operating mode S6			
	10 min.	30 min.	60 min.	60 %	80 %	25 %	40 %	60 %	
1.M.....	1.80	1.20	1.10	1.16	1.02	1.70	1.35	1.20	
1.L.....	1.70	1.15	1.05			1.60	1.30	1.15	
1.P.....				1.22	1.07				
1.Q.....	1.80	1.20	1.10			1.70	1.35	1.20	
1.H.....	1.70	1.15	1.05			1.60	1.30	1.15	
1.N.....									

With 1LQ1/1MQ1, 1LP1, 1LH1/1MH1 and 1LN1/1MN1, it is not permitted for the cooling to be interrupted.

System components

Configuring

Engineering the drive system

Overview

The SIMOTICS FD motor series offers scope for optimizing the drive system that comprises the converter and the motor with regard to different criteria. This focuses on the following motor characteristics:

- **Increased efficiency:**

SIMOTICS FD motors specially designed for converter operation are characterized as standard by a high degree of efficiency – comparable to IE2 motors for line operation. For selected cooling methods (IC411 – 1LM1 self-ventilated, IC416 – 1LQ1 force-ventilated, IC71W – 1LH1 water-cooled) motors with increased efficiency are also available – comparable to IE3 motors for line operation. For motors with increased efficiency (position 7 of the Article No. = **3**) in frame size 315, depending on the individual case, the thermal utilization for converter operation can also comply with thermal class 130 (B) instead of thermal class 155 (F). The specified efficiencies apply to motor voltages, which are to be complied with according to EN 60034-1 for motor versions "N" according to EN 60034-12.

- **Minimal noise emission for operation on SINAMICS converters:**

Noise emission is minimized, especially in the range of rated speed, thanks to a perfectly matched drive system comprising a SINAMICS converter and SIMOTICS FD motor. This has been achieved on the one hand with a new electrical and mechanical design of the motor, and on the other hand using a new pulse pattern in the SINAMICS converter series that has been specially optimized for SIMOTICS FD motors.

- **Optimum voltage utilization:**

The voltage supplied by the converter is optimally utilized. This reduces the motor current and has a positive effect on the converter either in the form of higher current reserves or lower costs for the Motor Module.

The SIMOTICS FD motors have been specially tuned to the converters of the SINAMICS G130, SINAMICS G150, SINAMICS S120, SINAMICS S150 and SINAMICS G120P series. SIMOTICS FD must be selected as the motor type during commissioning of the SINAMICS converter in the STARTER commissioning tool, or in the user interface.

The motors can also be operated with other converters under certain boundary conditions.

General information

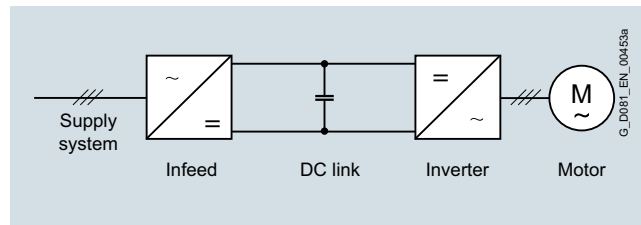
For optimum dimensioning of the motors with regard to heating and noise emission for converter operation, the following details are necessary:

- Type of infeed
- Maximum voltage available to the motor
- Converter pulse frequency, if applicable
- Required rated speed
- Required rated power, cooling method and degree of protection of the motor (see selection tables in Chapters 4 - 9)

The insulation system of the motors corresponds to thermal class 180 (H). The motors are utilized in accordance with thermal class 155 (F) as standard. For utilization of the motors in accordance with thermal class 130 (B) the power must be reduced by 14 % (derating factor 0.86).

Power supplied from the converter

To select a catalog version of the SIMOTICS FD motor series specifically designed for converter operation, the voltage available to the motor must be known. The line voltage and the configuration of the converter at the line side (infeed, rectifier or line-side converter – referred to below as the infeed) are important here.



Drive system

Uncontrolled infeed

If the infeed involves a line-commutated converter (uncontrolled infeed), i.e. a thyristor or diode rectifier (in some cases also an IGBT module), the maximum available motor voltage is lower than the line voltage. The DC link voltage and therefore the output voltage of the converter are not controlled and change as soon as fluctuations in the line voltage occur.

The SINAMICS converter series comprises two different variants of uncontrolled infeed:

- **Basic Infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 Basic Line Module (BLM, SINAMICS G120P):**
 - Line-commutated converters
 - Suitable for infeed operation (two-quadrant operation)
 - Power semiconductors: Thyristors/diodes
 - Line harmonics: Total harmonic distortion factor of the line current THD(I) up to 45 %
 - Low voltage stress on the motor winding
 - Low price, compact size
- **Smart Infeed – SINAMICS S120 Smart Line Modules (SLM):**
 - Line-commutated converters
 - Suitable for operation in infeed and regenerative feedback mode (4-quadrant operation)
 - Power semiconductors: IGBT modules
 - Line harmonics: Total harmonic distortion factor of the line current THD(I) up to 45 %
 - Low voltage stress on the motor winding
 - Medium price, medium size

The maximum voltage supplied to the motor by the converter in the case of SINAMICS converters (with optimized pulse pattern) is:

$$U_{\text{Motor max}} = 0.97 \cdot U_{\text{line}}$$

With converters of the SINAMICS G130 and SINAMICS G150 series, SINAMICS S120 Basic Line Modules, SINAMICS S120 Smart Line Modules and SINAMICS G120P, it is ensured at full line voltage (position 12 of the Article No.) that the rated motor voltages specified in this catalog are available.

If an alternative converter is to be used, it must be established in the context of project engineering that the rated motor voltage can be provided by the converter. Otherwise the operating data deviate from the catalog data and there is a risk of reduced overload capability or of excessive motor temperature which will reduce the lifetime.

Overview (continued)Controlled infeed

If the infeed involves a self-commutated converter (controlled infeed), the maximum available motor voltage is higher than the line voltage. The DC link voltage and, therefore, also the output voltage of the converter is normally controlled so it is independent of any fluctuations in line voltage.

For converters of the SINAMICS S150 series that are equipped with an Active Line Module as well as SINAMICS S120 with Active Line Modules, the following applies:

- Self-commutated converter
- Suitable for operation in infeed and regenerative feedback mode (4-quadrant operation)
- Power semiconductors: IGBT modules
- Line harmonics: Total harmonic distortion factor of the line current THD(I) up to 3 %
- With reference to the supply network, with factory settings $\cos\varphi = 1$
- Higher voltage load on the motor winding than for uncontrolled infeed

The maximum voltage supplied to the motor by the converter in the case of SINAMICS converters (with optimized pulse pattern) is:

$$U_{\text{Motor max}} = 1.11 \cdot U_{\text{line}}$$

With converters of the SINAMICS S120 series with Active Line Modules and SINAMICS S150, it is ensured that the rated motor voltages specified in this catalog are available.

If an alternative converter is to be used, it must be established in the context of project engineering that the rated motor voltage can be provided by the converter. Otherwise the operating data deviate from the catalog data and there is a risk of reduced overload capability or of excessive motor temperature which will reduce the lifetime.

Engineering the drive system

A motor should be selected (according to voltage, speed and torque) following engineering of the drive system to ensure that all the benefits that arise from the motor and converter combination can be fully utilized. The motors of the SIMOTICS FD series are specifically matched to the SINAMICS converter series. This results in additional system advantages, such as reduced noise emission.

In contrast to simple selection of a motor, drive system engineering takes into account that the converter also contributes towards loading of the motor winding due to non-sinusoidal voltage and current.

In this catalog, SIMOTICS FD motors specially designed for converter operation are offered for the following line voltages:

- 400 V, 50 Hz
- 500 V, 50 Hz
- 690 V, 50 Hz
- 460 V, 60 Hz
- 575 V, 60 Hz

Motors for other line voltages can be supplied on request.

Depending on the type of infeed, it is possible to choose between motors whose rated voltages either lie below the line voltage (uncontrolled infeed) or above the line voltage (controlled infeed). Depending on which information is available for the drive system to be engineered, engineering can be performed in accordance with one of the two subsequent detail levels.

System components

Configuring

Engineering the drive system

Overview (continued)

Options for engineering the drive system

Detail level 1

Simple motor selection – details of the converter are not known

Detail level 2

Engineering the drive system – details of the converter are known – certain properties of the drive system can be optimized

Engineering goal

- | | |
|---|--|
| <ul style="list-style-type: none"> • Selection of a motor specifically for converter operation | <ul style="list-style-type: none"> • Selection of a motor specifically for converter operation • Optimum voltage utilization (low-cost drive system without derating of converter or motor) • Low noise emissions |
|---|--|

Preconditions

- | | |
|---|--|
| <ul style="list-style-type: none"> • Line voltage is known • Required rated speed is known • Motor will only be operated on the converter • Type of infeed, or the converter, are unknown | <ul style="list-style-type: none"> • Line voltage is known • Required rated speed is known • Motor will only be operated on the converter • Type of infeed is known • For operation on the SINAMICS converter, the rated pulse frequency is 1.25 kHz or more (from $I_{rated} = 490$ A for G150, S150, S120) or 2 kHz (for G120P). • For operation on an alternative converter, the pulse frequency is 2.5 kHz or higher. |
|---|--|

Engineering steps

- | | |
|---|--|
| <ul style="list-style-type: none"> • Selection of the line voltage or inquiry about other line voltages (position 12 of the Article No.) • Selection of a catalog version for the uncontrolled infeed (position 6 of the Article No.: 2 for SINAMICS converter or 4 for alternative converter) • Rated motor power is reduced by the factor 0.85 | <ul style="list-style-type: none"> • Selection of the line voltage or inquiry about other line voltages (position 12 of the Article No.) • Selection of a catalog version for: <ul style="list-style-type: none"> - Uncontrolled infeed (position 6 of Article No.: 2 for SINAMICS converter or 4 for alternative converter) - Controlled infeed (position 6 of Article No.: 1 for SINAMICS converter or 3 for alternative converter) • The catalog data is applicable for operation with SINAMICS converter and under the described preconditions for operation on alternative converters (with the exception of sound pressure levels) |
|---|--|

Advantages of the drive system

- | | |
|--|---|
| <ul style="list-style-type: none"> • The required rated motor voltage is available. • Irrespective of the pulse frequency, type of infeed and converter type, compliance with the thermal class specified in the catalog is assured. | <ul style="list-style-type: none"> • The required rated motor voltage is available and will be optimally utilized. • <i>For operation on a SINAMICS converter:</i> <ul style="list-style-type: none"> - Low-noise motor ($L_{PA} \leq 79$ dB(A)) - Integration in the "STARTER commissioning tool" software and the Advanced Operation Panel (AOP) of the converter - Operation of a motor with a winding system on two parallel converter Motor Modules is possible as standard - Recommended SINAMICS converter for the respective catalog version - Optimized pulse pattern for SIMOTICS FD |
|--|---|

Constraints with unknown converter

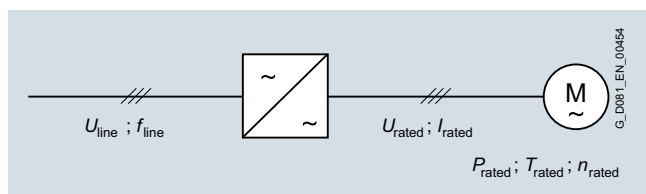
- | | |
|--|--|
| <ul style="list-style-type: none"> • Rated motor power is reduced by the factor 0.85 • The A-weighted sound pressure level specified cannot be used for engineering because the pulse frequency and the modulation technique of the converter are unknown. | <ul style="list-style-type: none"> • For operation on an alternative converter, the specified A-weighted sound pressure level is only a guide value due to the unknown modulation technique. • Operation with optimized pulse patterns is normally assumed. If operation with space-vector modulation is planned, constraints may exist with regard to the pulse frequency and operation of a motor with a winding system on a SINAMICS converter with two parallel Motor Modules. |
|--|--|

Overview (continued)

Simple motor selection – detail level 1

A motor can also be selected without precise knowledge of the converter. In this case, the motor is the central focus of the engineering and not the drive system and its optimization. Simple motor selection focuses on the large majority of applications for which an uncontrolled infeed is sufficient and the functions of a controlled infeed (e.g. four-quadrant operation or low line harmonics) are not required. Applications in which an uncontrolled infeed is normally sufficient include excavators, conveyor drives, bow thrusters, wood chippers, centrifugal pumps, fans, mills, propellers, pumps or shredders. Even in applications with a quadratic torque characteristic, controlled infeed is not normally required.

For engineering at detail level 1, the line voltage must be known.



Drive system – simple motor selection (detail level 1)

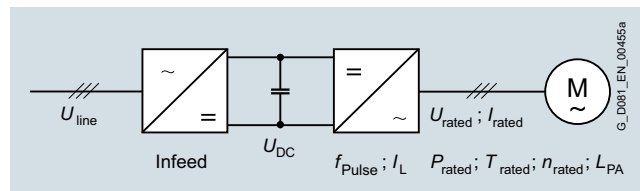
When selecting a SIMOTICS FD motor from the catalog, it is important to note:

- For all line voltages, the versions **for uncontrolled infeed** are required.
- The converter must be able to provide the rated voltage of the motor. Otherwise, the motor current rises and there is a risk of excessive motor temperature which reduces the lifetime of the motor.
- Due to the unknown infeed and modulation technique of the converter, the rated power specified in the catalog must be reduced (**reduction factor 0.85**).
- The maximum A-weighted sound pressure levels specified in the catalog cannot be used, because the modulation technique of the converter is unknown.

Engineering the drive system – detail level 2

Engineering at detail level 2 involves, in addition to the motor selection, engineering of an optimized drive system due to knowledge of the converter – especially the infeed – with regard to:

- Noise emission (when operated with a SINAMICS converter)
- Voltage utilization and therefore motor or converter current consumption
- Power and torque or frame size



Drive system – engineering of the drive system at detail level 2

For engineering at detail level 2, the following must be known:

- Line voltage and, where applicable, line frequency
- Uncontrolled or controlled infeed
- Rated pulse frequency of the converter

When selecting a SIMOTICS FD motor from the catalog, it is important to note:

- For each combination of line voltage and infeed, a SIMOTICS FD motor can be selected that optimally utilizes the available converter output voltage.
- For operation on SINAMICS converter (firmware 4.6), operation with optimized pulse patterns is already possible from the rated pulse frequency $f_{pulse} = 1.25$ kHz and higher without derating.
- If the converter is **not** a SINAMICS G130, SINAMICS G150, SINAMICS S120, SINAMICS S150 or SINAMICS G120P, the pulse frequency must be at least 2.5 kHz, otherwise the risk of excessive motor temperature rise and noise emission prevails.
- The maximum A-weighted sound pressure levels specified are applicable for operation on SINAMICS G130, SINAMICS G150, SINAMICS S120, SINAMICS S150 or SINAMICS G120P converters.

Rated motor voltages dependent on the line voltage and infeed

SIMOTICS FD										
Line voltage U_{line}	400 V		460 V		500 V		575 V		690 V	
Line frequency f_{line}	50 Hz		60 Hz		50 Hz		60 Hz		50 Hz	
Line voltage – 12th position of the Article No.	1		5		2		6		3	
Infeed	uncontrolled	controlled	uncontrolled	controlled	uncontrolled	controlled	uncontrolled	controlled	uncontrolled	controlled
System description – 6th position of the Article No.	2; 4	1; 3	2; 4	1; 3	2; 4	1; 3	2; 4	1; 3	2; 4	1; 3
Rated motor voltage U_{rated}	380 V	425 V	440 V	480 V	480 V	520 V	550 V	610 V	660 V	730 V
Insulation system	IVIC-C advanced		IVIC-C advanced		IVIC-C advanced	IVIC-C premium	IVIC-C premium		IVIC-C premium	

When the motor is selected correctly, it operates with optimized pulse patterns from approximately 87 % of the rated speed upwards.

If operation is planned with space-vector modulation instead of with optimized pulse patterns, the converter pulse frequency results in derating for the converter if it is above the rated pulse frequency of the converter. If the converter pulse frequency is less than 2.5 kHz, this results in derating of the motor.

System components

Configuring

Engineering the drive system

Overview (continued)

SIMOTICS FD motor on SINAMICS converter

The SIMOTICS FD motors are designed for operation with optimized pulse patterns.

The optimized pulse patterns for SIMOTICS FD are activated if

- The motor type is selected as "SIMOTICS FD" on commissioning (SINAMICS parameter p300).
- The modulation type is converted to optimized pulse pattern (SINAMICS parameter p1802 = 19).
- With SINAMICS G converters parameters are assigned automatically when the motor type is selected, and with SINAMICS S converters they are assigned manually.
- **Note:** With SINAMICS S converters, space-vector modulation is preset and can be changed manually depending on the application to optimized pulse patterns for SIMOTICS FD.

If operation is planned up to the mechanical speed limit, it must be ensured that the ratio of converter pulse frequency f_p to electrical motor frequency is approx. 12.5. With an electrical supply frequency of more than 100 Hz the converter rated pulse frequency must therefore be increased from $f_p = 1.25$ kHz to $f_p = 2.5$ kHz. This results in derating of the converter.

Operation with U/F control is not generally normal or permitted in the SIMOTICS FD motor power range. The motor should be operated with a variable speed (for SINAMICS: vector mode).

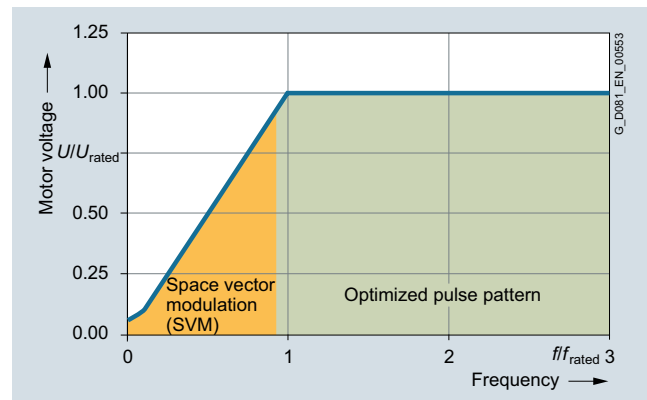
Operation on the SINAMICS converter with optimized pulse patterns takes place initially as standard with space-vector modulation up to around 87 % of the rated speed. Above this limit the operation then takes place with optimized pulse patterns (see figure "Modulation types"). The thermal torque limit characteristics for operation on the SINAMICS converter with optimized pulse patterns apply to this operation mode (see Chapter 2 section "Thermal torque limits (continuous duty)").

If the drive system is to be operated on the SINAMICS converter with space-vector modulation over the entire speed range, then the torque must be reduced in accordance with the converter pulse frequency:

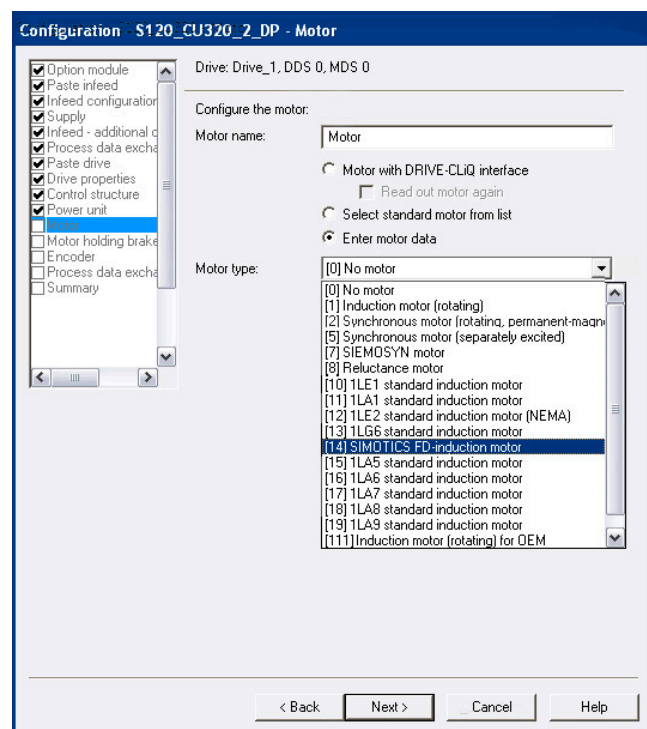
- Space-vector modulation with converter pulse frequency of 1.25 kHz: Reduction factor 0.85
- Space-vector modulation with converter pulse frequency of 2 kHz: Reduction factor 0.95
- Space-vector modulation with converter pulse frequency of 2.5 kHz: Reduction factor 1

The thermal torque limit characteristics for operation on the SINAMICS converter with space-vector modulation or an alternative converter apply to this operation mode (see Chapter 2 section "Thermal torque limits (continuous duty)").

Operation with space-vector modulation over the entire speed range may be required for certain applications, e.g. if multiple motors are due to be operated with synchronous speed.



Modulation types



Selecting SIMOTICS FD in the STARTER commissioning tool

SIMOTICS FD motor on alternative converters

If a SIMOTICS FD motor is operated on an alternative converter that does not belong to the SINAMICS series G130, G150, S120, S150 or G120P, it is important to note the following:

- The selection and ordering data for operation on a SINAMICS converter also applies to operation on an alternative converter when the rated motor voltage is available and the rated pulse frequency of the converter is at least 2.5 kHz.
- The A-weighted sound pressure levels specified for operation on a SINAMICS converter do not apply for operation on an alternative converter, due to the unknown modulation technique.
- A distinction is made between the standard version (position 5 of Article No. = **4** for series 1.M1, 1.L1, 1.P1, 1.Q1, 1.H1 and 1.N1) and the increased power version (position 5 of Article No. = **5** for series 1.P1 and 1.Q1).
- A distinction is made between controlled infeed (position 6 of Article No. = **3**) and uncontrolled infeed (position 6 of Article No. = **4**).

Overview (continued)

Catalog versions and special versions

Catalog versions

Rated motor speeds

To select a catalog version, in addition to the available voltage (see section "Voltage supply") the required motor speed must also be known. The rated speeds of the catalog versions are assigned to the line supplies listed in this section in accordance with the line frequency. For the line voltages 400 V, 460 V, 500 V, 575 V and 690 V catalog versions are available with the rated speeds.

U_{line}, f_{line}	Rated speed			
400 V, 50 Hz	750 rpm	1000 rpm	1500 rpm	3000 rpm
500 V, 50 Hz				
690 V, 50 Hz				
460 V, 60 Hz	900 rpm	1200 rpm	1800 rpm	3600 rpm
575 V, 60 Hz				

Due to the converter supply, the rated motor speed does not depend on the line frequency. The rated speeds of 750 rpm to 1200 rpm are covered by the 6-pole version and the rated speeds of 1500 rpm to 3600 rpm are covered by the 4-pole version. If other rated motor speeds are required, it can be clarified on request whether it is necessary for the windings to be modified.

	Speed code position 13 of the Article No.	System description code position 6 of the Article No.	Additional ordering data with order code and plain text if required
Different speed	9	1, 2, 3, 4	M1Y • and customer specifications

Can only be ordered with additional price.

Different speed (position 13 of the Article No. **9**) not possible for line motors (DOL) with 3000/3600 rpm.

The rated speed must be specified in plain text in the order. If the rated motor voltage corresponds to the catalog version, the required rated power must be specified in addition. If the rated motor voltage does not correspond to the catalog version, **M1Y** must be ordered in addition, and the required rated power must be specified there.

The different rated speed must not exceed the mechanical speed limit.

Recommended SINAMICS converters

In the catalog, a suitable converter of the SINAMICS series is assigned to every motor of the SIMOTICS FD series that is specially designed for converter operation. This assignment is a recommendation. If the complete drive system is to be ordered, engineering of the drive system is required in accordance with detail level 2.

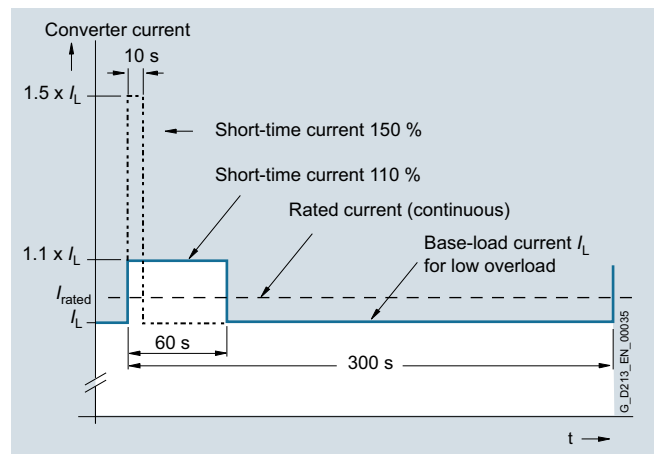
Converter assignment is based on the following assumptions:

- The recommendation is applicable for an ambient temperature of up to 40 °C and 1000 m above sea level.
- The rated motor current corresponds to the reduced base-load current I_L of the converter for the standard load cycle "Minimal overloading of the converter" (see diagram below). The current I_L is slightly less than the rated output current of the converter (by approx. 3 to 6 %).
- The line voltage assumed on motor selection is available to the converter.

- For converters with uncontrolled infeed, cabinet units of the SINAMICS G120P or SINAMICS G150 series are recommended.
- For converters with uncontrolled infeed, it is assumed that no special requirements exist (e.g.: line harmonics) and infeed operation will be used exclusively (no regenerative feedback – two-quadrant operation).
- For converters with controlled infeed, cabinet units of the SINAMICS S150 series are recommended.
- When converters of the SINAMICS series are recommended, chassis units can also be used as an alternative.

For the reduced base-load current I_L of the overall converter, the following applies in the case of parallel connection of two power units:

- For connection in parallel, the SINAMICS S150 should be replaced with SINAMICS S120 CM. For SINAMICS S120 CM in the version with "parallel connection of Motor Modules", the reduced base-load current I_L for the single device is doubled and the total current is reduced by 5 %.



Definition of the standard load cycle "Minimal overloading of the converter"

Due to the numerous assumptions on which the assignment of converters of the SINAMICS series is based, it must be ensured that the assumptions quoted actually apply for the planned application when the drive system is engineered. This must apply for every point, otherwise the recommendation is invalid, especially:

- When the motor is to be operated with short-time or periodic overloading, and currents higher than the rated motor current are necessary.
Note: Not all rated motor currents fully utilize the reduced base-load current of the converter, which is why the recommended converter may already have current reserves. To evaluate the existing current reserves, the rated motor current can be compared with the respective reduced base-load current of the converter (see the following table).
- When operation with space-vector modulation is planned, the converter is not operated with the optimized pulse patterns for SIMOTICS FD motors. In this case, the pulse frequency of the converter must be at least 2.5 kHz or the power must be reduced.
- Furthermore, with uncontrolled infeed and operation exclusively in space-vector modulation, the motor only has a maximum voltage available to it of

$$U_{Motor\ max.} = 0.92 \cdot U_{line}$$

System components

Configuring

Engineering the drive system

Overview (continued)

Reduced base-load currents I_L of the SINAMICS converters (SINAMICS G120P, SINAMICS G150 and SINAMICS G130 or SINAMICS S150 and SINAMICS S120 technically comparable) – for engineering purposes I_L can be regarded as equal to the motor current

Power kW	Number of Motor Modules	I_L	f_p	Type	Number of Motor Modules	I_L	f_p	Type	Number of Motor Modules	I_L	f_p	Type
		A	kHz			A	kHz			A	kHz	
SINAMICS G120P converter – uncontrolled infeed												
$U_{line,min}/U_{line,max}$: 380/480 V												
110	1	200	2	6SL3710-1PE32-1AA0								
132	1	240	2	6SL3710-1PE32-5AA0								
160	1	290	2	6SL3710-1PE33-0AA0								
200	1	360	2	6SL3710-1PE33-7AA0								
250	1	450	2	6SL3710-1PE34-6AA0								
315	1	570	2	6SL3710-1PE35-8AA0								
355	1	640	2	6SL3710-1PE36-6AA0								
400	1	710	2	6SL3710-1PE37-4AA0								
SINAMICS G150 converter – uncontrolled infeed												
$U_{line,min}/U_{line,max}$: 380/480 V					$U_{line,min}/U_{line,max}$: 500/600 V				$U_{line,min}/U_{line,max}$: 660/690 V			
75	–	–	–	–	1	80	1.25	6SL3710-1GH28-5AA3				
90	–	–	–	–	1	95	1.25	6SL3710-1GH31-0AA3				
110	1	205	2	6SL3710-1GE32-1AA3	1	171	1.25	6SL3710-1GF31-8AA3	1	115	1.25	6SL3710-1GH31-2AA3
132	1	250	2	6SL3710-1GE32-6AA3	1	208	1.25	6SL3710-1GF32-2AA3	1	142	1.25	6SL3710-1GH31-5AA3
160	1	302	2	6SL3710-1GE33-1AA3	1	250	1.25	6SL3710-1GF32-6AA3	1	171	1.25	6SL3710-1GH31-8AA3
200	1	370	2	6SL3710-1GE33-8AA3	1	320	1.25	6SL3710-1GF33-3AA3	1	208	1.25	6SL3710-1GH32-2AA3
250	1	477	2	6SL3710-1GE35-0AA3	1	400	1.25	6SL3710-1GF34-1AA3	1	250	1.25	6SL3710-1GH32-6AA3
315	1	590	1.25	6SL3710-1GE36-1AA3	1	452	1.25	6SL3710-1GF34-7AA3	1	320	1.25	6SL3710-1GH33-3AA3
400	1	725	1.25	6SL3710-1GE37-5AA3	1	560	1.25	6SL3710-1GF35-8AA3	1	400	1.25	6SL3710-1GH34-1AA3
450	1	820	1.25	6SL3710-1GE38-4AA3	–	–	–	–	1	452	1.25	6SL3710-1GH34-7AA3
500	–	–	–	–	1	710	1.25	6SL3710-1GF37-4AA3	–	–	–	–
560	1	960	1.25	6SL3710-1GE41-0AA3	1	790	1.25	6SL3710-1GF38-1AA3	1	560	1.25	6SL3710-1GH35-8AA3
630	2	1092	1.25	6SL3710-2GE41-1AA3	2	836	1.25	6SL3710-2GF38-6AA3	–	–	–	–
710	2	1340	1.25	6SL3710-2GE41-4AA3	2	1036	1.25	6SL3710-2GF41-1AA3	1	710	1.25	6SL3710-1GH37-4AA3
800	–	–	–	–	–	–	–	–	1	790	1.25	6SL3710-1GH38-1AA3
900	2	1516	1.25	6SL3710-2GE41-6AA3	–	–	–	–	–	–	–	–
1000	–	–	–	–	2	1314	1.25	6SL3710-2GF41-4AA3	2	1036	1.25	6SL3710-2GH41-1AA3
1350	–	–	–	–	–	–	–	–	2	1314	1.25	6SL3710-2GH41-4AA3
1500	–	–	–	–	–	–	–	–	2	1462	1.25	6SL3710-2GH41-5AA3
1750	–	–	–	–	–	–	–	–	2	1720	1.25	6SL3710-2GH41-8EA3
1950	–	–	–	–	–	–	–	–	3	1940	1.25	6SL3710-2GH42-0EA3
2150	–	–	–	–	–	–	–	–	3	2150	1.25	6SL3710-2GH42-2EA3
2400	–	–	–	–	–	–	–	–	3	2390	1.25	6SL3710-2GH42-4EA3
2700	–	–	–	–	–	–	–	–	4	2685	1.25	6SL3710-2GH42-7EA3
SINAMICS S150 converter – controlled infeed												
$U_{line,min}/U_{line,max}$: 380/480 V					$U_{line,min}/U_{line,max}$: 500/690 V							
75	–	–	–	–	1	80	1.25	6SL3710-7LG28-5AA3				
90	–	–	–	–	1	95	1.25	6SL3710-7LG31-0AA3				
110	1	205	2	6SL3710-7LE32-1AA3	1	115	1.25	6SL3710-7LG31-2AA3				
132	1	250	2	6SL3710-7LE32-6AA3	1	142	1.25	6SL3710-7LG31-5AA3				
160	1	302	2	6SL3710-7LE33-1AA3	1	170	1.25	6SL3710-7LG31-8AA3				
200	1	370	2	6SL3710-7LE33-8AA3	1	208	1.25	6SL3710-7LG32-2AA3				
250	1	477	2	6SL3710-7LE35-0AA3	1	250	1.25	6SL3710-7LG32-6AA3				
315	1	590	1.25	6SL3710-7LE36-1AA3	1	320	1.25	6SL3710-7LG33-3AA3				
400	1	725	1.25	6SL3710-7LE37-5AA3	1	400	1.25	6SL3710-7LG34-1AA3				
450	1	820	1.25	6SL3710-7LE38-4AA3	1	452	1.25	6SL3710-7LG34-7AA3				
560	1	960	1.25	6SL3710-7LE41-0AA3	1	560	1.25	6SL3710-7LG35-8AA3				
710	1	1230	1.25	6SL3710-7LE41-2AA3	1	710	1.25	6SL3710-7LG37-4AA3				
800	1	1370	1.25	6SL3710-7LE41-4AA3	1	790	1.25	6SL3710-7LG38-1AA3				
900	–	–	–	–	1	880	1.25	6SL3710-7LG38-8AA3				
1000	–	–	–	–	1	1000	1.25	6SL3710-7LG41-0AA3				
1200	–	–	–	–	1	1230	1.25	6SL3710-7LG41-3AA3				

More information about SINAMICS converters can be found in the SINAMICS Engineering Manual.

Overview (continued)Special versions**Modified windings – Special versions for non-standard voltage or speed**

For versions of the SIMOTICS FD series that are not listed in the catalog, individual inquiries regarding winding modification are necessary. A winding modification may be required for:

1. A combination of defined supply and rated speed codes that is not listed in the catalog.
2. Non-standard supply systems for which a code has not been defined.
3. Non-standard rated speeds for which a code has not been defined.

Case 1 can be described with the Article No. without an additional order code. For case 2 and case 3, the appropriate order codes and plain text details are required.

- Non-standard line voltage (12th position of the Article No.: **9**): Order code **M1Y** and non-standard line voltage and/or rated motor voltage specified in plain text
- Non-standard rated speed (13th position of the Article No.: **9**): Order code **N1Y** and non-standard rated speed specified in plain text

Non-standard motor and load data possible on request.

Noise emission when operated on a SINAMICS converter

The variants of the SIMOTICS FD motor series that can be selected in the catalog have been designed such that the maximum A-weighted sound pressure levels listed in the tables below are not exceeded in no-load operation at the rated operating point when connected to a SINAMICS converter.

This has been achieved thanks to the following measures:

- Optimized electrical design: reduced, electromagnetic noise generation
- Optimized mechanical design: improved radiation characteristics
- The choice of rated voltages, whereby the maximum converter output voltages supplied are optimally utilized
- Operation of the SINAMICS converter with an optimized pulse pattern: Reduced electromagnetically generated noise, especially in the range of the rated speed ("rated range" in the diagrams below)
- Choice of suitable built-in fan (for 1LM1 and 1LL1): Limiting of the aerodynamic noise
- Dimensioning of new separately driven fan: Limiting of the noise from the separately driven fan

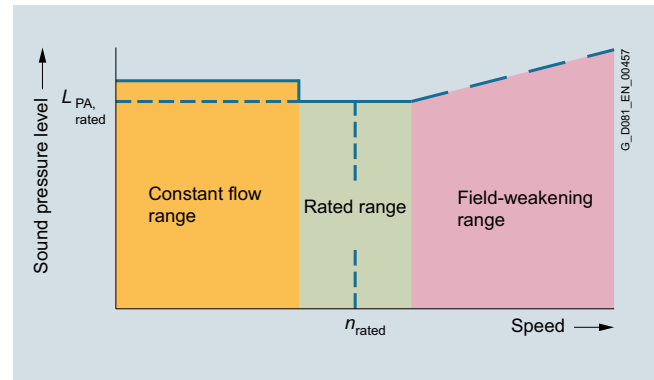
Motors of the SIMOTICS FD series can be selected in the "STARTER commissioning tool" software and in the Advanced Operation Panel (AOP) as a motor type. This ensures that operation using the named modulation technique is assured for all SIMOTICS FD motors in the respective range close to the rated speed.

A-weighted sound pressure levels under no-load operation on SINAMICS converter at rated speed (tolerance +3 dB)

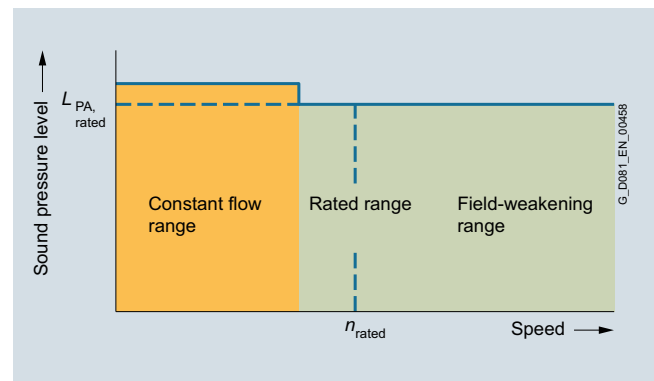
SIMOTICS FD series	L_{PA} in dB(A)
1LM1, 1LL1, 1LN1	79
1LQ1, 1LP1 (5th position of the Article No. = 2)	79
(5th position of the Article No. = 3)	85
1LH1	78

For engineering a noise-optimized system, it is therefore important to:

- Select a motor with a rated voltage that matches the line voltage and the infeed of the SINAMICS converter.
- Select a motor with a rated speed that is lower than or equal to the speed(s) to be expected during operation.
- Upgrade the hardware and software of the SINAMICS converter if an existing SINAMICS converter (16th position of the SINAMICS Article No.: **0**, **1** or **2**) is to be used.



Schematic diagram of sound pressure level (1LM1, 1LL1)



Schematic diagram of sound pressure level (1LP1, 1LQ1, 1LH1, 1LN1)

The noise emission was able to be reduced in particular close to the rated speed (rated range). If a constant torque drive (mainly 1LP1, 1LQ1, 1LH1 and 1LN1) is implemented for low noise generation, it must be ensured during engineering that the lower operating speeds remain within the rated range. This can be achieved, for example, through the correct choice of rated speed. In self-ventilated motors (1LM1, 1LL1), the aerodynamic noise generated by the built-in fan dominates with increasing speed above the rated range. For drives of this type, the high operating speeds must be close to the rated speed.

EMC

The system comprising SIMOTICS FD in combination with SINAMICS has been checked according to the guidelines for electromagnetic compatibility 2014/30/EU and the regulations of the EMC directives. System compatibility is only provided with EMC-compliant grounding and if shielded power cables are used whose shield is conductively bonded over a large area to the metal motor terminal box.

System components

Configuring

Water cooling (1LH1/1MH1 and 1LN1/1MN1 motors)

Overview

Cooling circuit in the application

When water-cooled motors of the SIMOTICS FD series (1LH1/1MH1, 1LN1/1MN1) are operated in the application, they become part of the overall cooling circuit. Apart from the cooling unit, this can include other heat sources.

The particular version of the cooling materials demands two completely different cooling concepts for the overall cooling circuit in the application.

For the coolant circuit in water-cooled motors SIMOTICS FD, the materials listed in the table "Materials used in the motor (cooling circuit)" can be employed which provides the user with a range of possibilities for configuring the cooling circuit.

The electrochemical processes that take place in a cooling system must be minimized by choosing the right materials. For this reason, mixed installations, i.e. a combination of different materials, such as copper, brass, iron, zinc, or halogenated plastics (PVC hoses and seals), should not be used or should be limited to the absolutely essential minimum.

Please read the following definitions for clarification:

1. Closed cooling circuit:

The pressure compensator is closed (no ingress of oxygen) and fitted with a pressure-relief valve (6 bar for 1LN1 and 1LH1 motors); it is always connected on the suction side of the pump. The coolant is only routed through the SIMOTICS FD motors, the components required for cooling and, if necessary, a converter. The materials used in the cooling circuit comply with the recommendations in the table "Admissible materials for the overall cooling circuit".

2. Semi-open cooling circuit:

Oxygen can only enter the coolant through the pressure compensator, otherwise the cooling circuit corresponds to a closed cooling circuit.

3. Open cooling circuit:

The coolant is guided through the motors and the cooling components required for heat dissipation as well as through components external to the cooling circuit. The materials used comply with the minimum requirements specified in the table "Admissible materials for the overall cooling circuit".

Possible cooling circuits of the SIMOTICS FD motor series

Type	Type of cooling circuit		
	Closed	Semi-open	Open
1LH1/1MH1	✓	–	–
1LN1/1MN1	✓	✓	–

For further information on the construction of a cooling circuit, see the Manual "SINAMICS S120 – Chassis Liquid Cooled Power Units".

Assignment, connection thread water-cooled 1LH1/1MH1 motors

Type	Frame size	Connection thread
1LH1/1MH1	315	G 1/2"
	355	G 1/2"
	400	G 3/4"
	450	G 3/4"

Water-cooled motors with 1LN1/1MN1 air-water heat exchanger

The air-water heat exchanger has two flange connections. One each for the water inlet and water outlet.

Type	Frame size	Water connection
1LN1/1MN1	315	Flange EN 1092-1/11/B1/DN32/PN16
	355	Flange EN 1092-1/11/B1/DN32/PN16
	400	Flange EN 1092-1/11/B1/DN32/PN16
	450	Flange EN 1092-1/11/B1/DN50/PN16

Cooling water quality

The water-cooled versions of the SIMOTICS FD series offer solutions for different qualities of cooling water. The optimum cooling water quality can therefore be selected in accordance with the location and application. The following tables contain the water properties defined for the various motor versions.

Definition of water properties

		Water quality		
		Potable water	Fresh water	Sea water
pH value	–	6.5 to 8.0	6.0 to 9.5	6.5 to 10
Carbon-related hardness	mMol/l	–	–	< 0.9
Total hardness	mMol/l	< 2.5	< 1.7	< 1.8
Chloride ions (Cl ⁻)	mg/l	< 50	< 200	< 3000
Sulfate ions (SO ₄ ²⁻)	mg/l	< 50	< 240	< 3000
Sulfide ions (S ₂ ⁻)	mg/l	–	–	< 1
Nitrate ions (NO ₃ ⁻)	mg/l	< 50	< 50	< 50
Iron (Fe ³⁺)	mg/l	–	–	< 1
Ferromanganese ions (Fe ³⁺ Mn ²⁺)	mg/l	–	–	< 50
Ammonia (NH ₃) Ammonium (NH ₄ ⁺)	mg/l	–	–	< 15
Alkalinity	mg/l	< 300	–	–
Dissolved substances	mg/l	< 340	< 340	< 340
Electrical conductivity	µS/cm	< 500	< 2000	< 32000
Size of entrained particles (sand)	mm	< 0.1	< 0.1	< 0.1
Biological growth	resistant	No	No	Yes

Assignment of motor versions to cooling water quality

Water quality to motor cooling	Motor type	
	1LH1/1MH1	1LN1/1MN1
Potable water	✓	✓
Fresh water	✓ ¹⁾	✓
Sea water	–	✓

¹⁾ With order code **M85**.

Overview**Materials used in the motor cooling circuit**

Motors of the 1LH1/1MH1 series are equipped with built-in cooling pipes constructed from copper as standard, or as an option from stainless steel (order code **M85**).

Motors of the 1LN1/1MN1 series are equipped with an air-to-water heat exchanger. The materials used in the 1LH1/1MH1 and 1LN1/1MN1 series are listed in the table below.

Materials used in the motor (cooling circuit)

Motor type	Materials
1LH1/1MH1 (standard)	Cu, stainless steel (V2A), CuZn39Pb3
1LN1/1MN1 (standard)	CuNi (90/10) RILSAN plastic-coated steel

Admissible materials for the overall cooling circuit

Material	1LH1/ 1MH1	1LH1/ 1MH1 With order code M85 , 1LN1/ 1MN1	Comment
Aluminum	–	✓	
Zinc	✓	✓	Can be used in closed circuits with inhibitor.
Brass	✓	✓	Can be used in closed circuits with inhibitor.
Copper	✓	✓	Can be used in closed circuits with inhibitor.
Common steel (e.g. St 37)	✓	✓	Permissible in closed circuits with inhibitors or anti-freeze, check for oxide formation, inspection window is recommended.
Cast steel/ cast iron	✓	✓	Closed circuit and use of strainers and flushback filters.
High-alloy steel, Group 1 (V2A)	✓	✓	
PVC	–	–	
Hoses	✓	✓	Reduce use to a minimum. Must not be used as the main pipe for the whole system.

- ✓ Admissible
- Inadmissible

Inhibitors, anti-freeze, biocides**Coolant additives**

Material	1LH1/1MH1	1LH1/1MH1 with order code M85	1LN1/1MN1
Inhibitor without anti-freeze effect	Required NALCO TRAC100 0.2 % < X ≤ 0.25 %	Not required	Not required
Anti-freeze	Antifrogen N 20 % < X ≤ 45 % Antifrogen L 25 % < X ≤ 48 % Varidos FSK 25 % < X ≤ 45 %		
Biocide ¹⁾	Antifrogen N, minimum quantity 20 % Antifrogen L, minimum quantity 30 % Varidos FSK, minimum quantity 30 %		
Anti-freeze + biocide	When Antifrogen N 20 % or Antifrogen L/Varidos FSK 30 % is used, an adequate biocidal effect exists.		

¹⁾ Effectiveness regarding the growth of microorganisms.

System components

Condition monitoring system

SIPLUS CMS condition monitoring systems for the continuous condition monitoring of motors

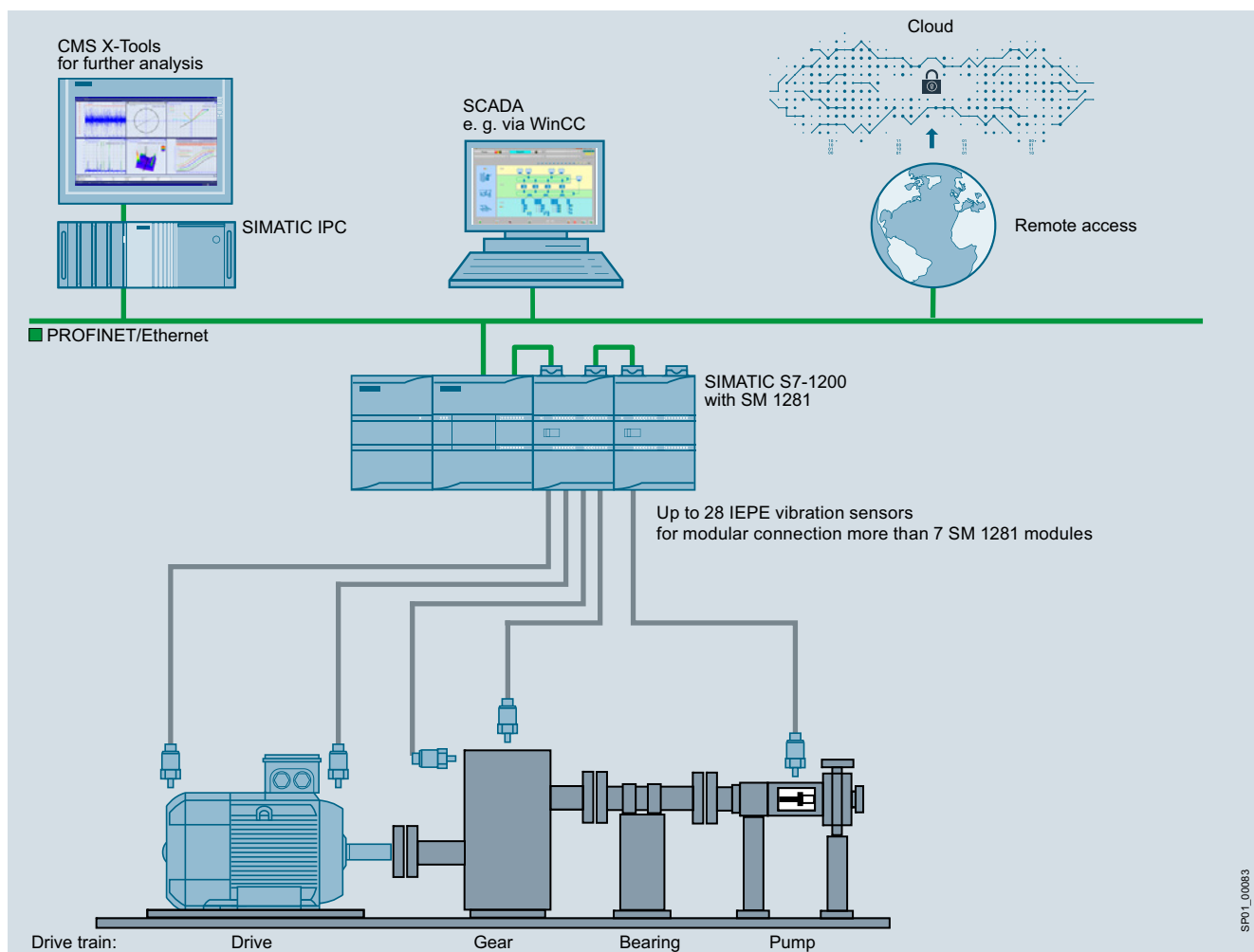
Overview

The SIPLUS CMS condition monitoring systems continuously monitor the condition of wear-prone drive components such as motors. Depending on the system, individual motors can be monitored as well as complete drive trains, or even the entire plant; damage can be detected at any early stage and maintenance work can be planned specifically. IEPE sensors are used for acquisition of the motor vibrations for analysis, visualization and archiving by SIPLUS CMS. Information is provided on a regular basis and event driven – also in remote operation. SIPLUS CMS can also be subsequently installed.

More information on SIPLUS CMS is available on the Internet at: www.siemens.com/siplus-cms



SIPLUS CMS1200 – compact, integrated and flexibly expandable



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Overview

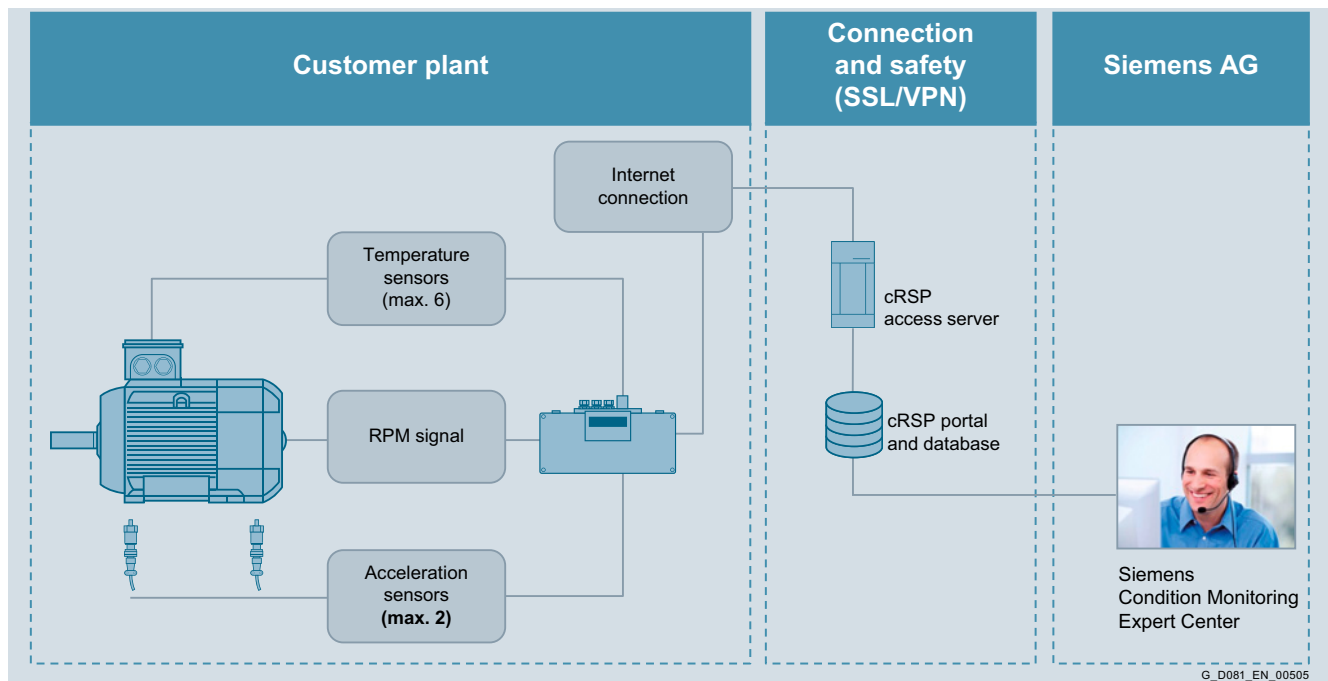
With the motor condition monitoring box (order code **M49**) Siemens offers a CMS2000 condition monitoring system that has been designed for use on a rotating machine. The box is mounted directly on the motor and comprises a vibration and a temperature sensor for each bearing as well as three winding temperature sensors and the speed sensing. These are all electrically connected and tested. The rugged die-cast aluminum box has an IP65 degree of protection, and protects the modules inside the box even under the harshest of conditions. The box is thermally insulated, so that the heat dissipated by the motor does not have a negative impact on the module electronics. If a service contract is concluded, the evaluation of the data can be performed by Siemens (not included in option **M49**). For further information on the motor condition monitoring box visit www.siemens.com/mcm.



Motor condition monitoring box

Technical specifications

Housing	Diecast aluminum housing, IP65 version
Color	RAL 7001 for orders using the Z option (new motor) with the same color as the motor
Dimensions	<ul style="list-style-type: none"> • Width: 360 mm • Height: 160 mm • Depth: 120 mm
Weight, approx.	4.2 kg
Inputs and outputs	2 × IEPE: Vibration sensing 2 × AL: Analog inputs 1 × DI: INHIBIT input 1 × DI: Trigger input 1 × DI: Speed input 6 × Temperature input 3 × DO: System-limit value signals 1 × Ethernet interface
Power supply	100 ... 230 V 1 AC, 50/60 Hz



Motor condition monitoring advanced service overview

Siemens offers Advanced Motor Condition Monitoring services to optimally support and monitor motors. Continuously monitoring the process-critical variables of the motor with a combination of motor condition monitoring box and service contract allows changes to the operating state to be identified at an early phase. Siemens experts set individual warning and alarm limits for all of the values that are monitored. When limit values and the relevant status changes are exceeded, in the next step, Siemens experts carry out in-depth analysis as to the reason for this – and make recommendations regarding the necessary countermeasures.

Further, Siemens experts immediately contact you. The values measured with the motor condition monitoring box are monitored and evaluated by qualified Siemens personnel via a remote data link. A regular status report shows the state of the monitored components and includes, where relevant, recommendations for action to be taken.

You can obtain additional information and ordering options at www.siemens.com/mcm

System components

Couplings

Siemens Integrated Drive Systems

Overview

Integrated drive portfolio:

The core elements of a fully integrated drive system are frequency converters, motors, couplings and gear units. Siemens offers all the required components in top manufacturing quality from a single source, perfectly integrated – operating perfectly together, for all power classes.

As a standard solution or tailored to individual requirements. No other provider on the market is able to offer a comparable portfolio. All Siemens drive components are optimally harmonized and coordinated to each other so that they interact ideally in every application.

Siemens Integrated Drive Systems turn simple drive components into real systems. Drive technology based on IDS ensures maximum productivity, energy efficiency and reliability in every automation environment and over the entire product lifecycle.

FLENDER couplings – part of the drive system

A drive system comprises individual machines, including motor and gearbox; couplings connect these components and frequently ensure the connection to the driven load.

The coupling can perform other tasks in addition to the transmission of rotary motion and torque, such as:

- Compensation for **shaft misalignment** with low restorative forces
- Influencing of intrinsic torsional frequency and **damping**
- **Overload**: Interruption or limitation of torque
- **Electrical** insulation, noise insulation
- Function in **explosive environments**

Couplings are frequently planned after the machines to be connected have already been selected. Thanks to a large number of different coupling assembly options, specified boundary conditions for installation space and connection geometry can be met from the catalog standard. The coupling also performs secondary functions, such as the provision of brake disks or brake drums for operational or holding brakes, devices to record speed or the addition of chain wheels or belt pulleys.

Because of the environment, the coupling has to meet a large number of additional requirements. Couplings must be as suitable for use in a potentially explosive environment as for use at a high or low ambient temperature. The environment may be defined as chemically aggressive or be subject to laboratory conditions or requirements of food manufacture.

Standard construction types of Siemens FLENDER couplings for SIMOTICS FD motors

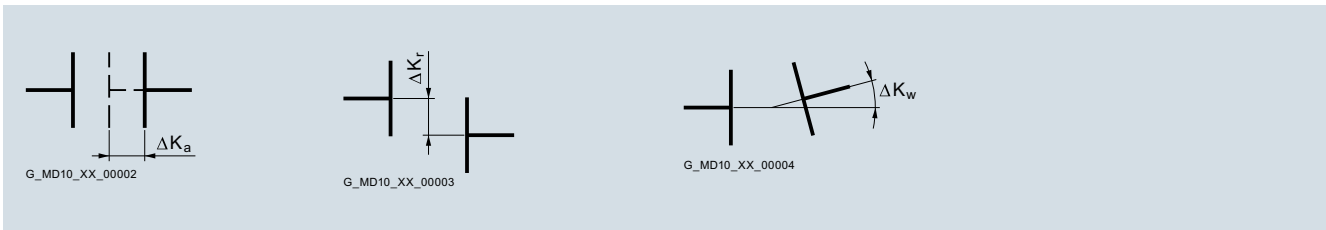
Type	Description
N-EUPEX	Flexible cam coupling <ul style="list-style-type: none"> • Universally implementable, damping coupling for compensation of shaft misalignment • Suitable for plug-in installation and easy assembly with three-part design Rated torque: 19 ... 62000 Nm
N-BIPEX	Flexible claw coupling <ul style="list-style-type: none"> • Universal usage, damping shaft coupling to offset shaft misalignment • Compact design • Suitable for plug-in assembly Rated torque: 12 ... 4650 Nm
RUPEX	Flexible pin and bush coupling <ul style="list-style-type: none"> • Fail-safe, damping universal coupling for medium to very high torques with a good misalignment range • Compact design, low weights and mass moments of inertia • Suitable for plug-in assembly Rated torque: 200 ... 1300000 Nm
ZAPEX	Gear couplings <ul style="list-style-type: none"> • Double-jointed coupling compensates for angular, parallel and axial misalignment • Long-term lubrication through design measures and the use of special seals • Small dimensions • Can be used for high shock loads Rated torque: 1300 ... 7200000 Nm
ARPEX	All-steel couplings <ul style="list-style-type: none"> • Zero-backlash, torsionally rigid coupling • For compensating radial, angular, and axial shaft misalignment by means of two flexible lamella packages made of stainless spring steel • Easy installation thanks to compact lamella packages Rated torque: 92 ... 1450000 Nm

Overview (continued)Shaft misalignment

Shaft misalignment is the result of displacement that occurs during assembly and operation and, where machines constructed with two radial bearings each rigidly coupled, will cause high loads being placed on the bearings. Elastic deformation of base frame, foundation and machine housing will lead to shaft misalignment which cannot be prevented, even by precise alignment. Furthermore, because individual components of the drive train heat up differently during operation, heat expansion of the machine housings causes shaft misalignment.

Poorly aligned drives are often the cause of seal, rolling bearing or coupling failure. Alignment should be carried out by specialist personnel in accordance with the Siemens operating instructions.

Depending on the direction of the effective shaft misalignment, a distinction is made between:



Axial misalignment

Radial misalignment

Angular misalignment

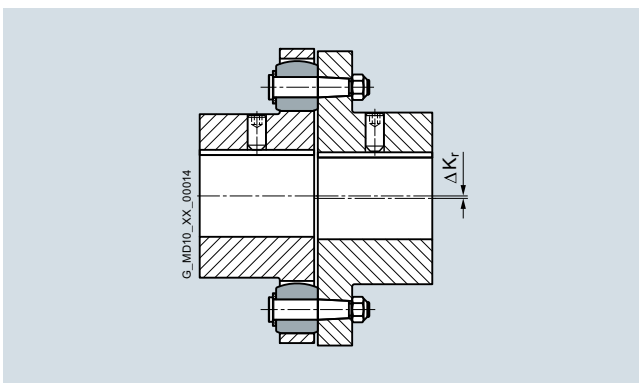
The couplings can be subdivided into the following groups:

- **Single-joint couplings – N-EUPEX, N-BIPEX, and RUPEX series**

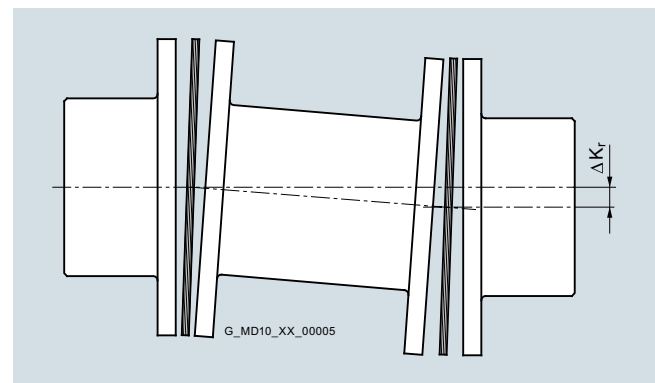
Couplings with flexible elements mainly made of elastomer materials. Shaft misalignment results in deformation of the elastomer elements. The elastomer elements can absorb shaft misalignment as deformations in an axial, radial and angular direction. The degree of permissible misalignment depends on the coupling size, the speed of rotation and the type of elastomer element. Single-joint couplings do not require an adapter and are therefore short versions.

- **Two-joint couplings – ARPEX and ZAPEX series**

Two-joint couplings are always designed with an adapter. The two joint planes are able to absorb axial and angular offsets; radial offset is achieved by the distance between the two joint planes and the angular shift of the joint planes. The permitted angular misalignment per joint level is frequently about 0.5° . The permitted shaft misalignment of the coupling can be adjusted via the length of the adapter. If there are more than two joint levels, it is not possible to define the position of the coupling parts relative to the axis of rotation. (The less frequently used parallel-crank couplings are an exception)



Example: RUPEX coupling



Example: ARPEX coupling

System components

Couplings

Siemens Integrated Drive Systems

Overview (continued)

Overload

Overload conditions are operating conditions that go beyond the limit loads of the coupling. Overload conditions may occur under non-standard operating conditions, e.g. drive blockage, short circuit or supply fluctuations, as well as under standard operating conditions, e.g. when starting or braking. Particularly in the case of high mass moments of inertia of the driven machine, torques that are a multiple of the motor starting torque may become effective during direct starting or star-delta starting.

Overload conditions may damage not only the coupling but also the entire drive train. Frequently, overload conditions can be avoided through design measures; SIRIUS soft starters or SINAMICS frequency converters are suitable for considerably reducing starting torques of induction motors. If drive blockages or overloads of the driven machine cannot be ruled out, torque limiting coupling designs can prevent damage to the drive train.

Coupling behavior under overload conditions

Coupling behavior under overload where the torque is considerably above the limits of use of the coupling concerned is determined by the engineering design of the coupling series.

The ZAPEX, ARPEX, N-EUPEX, N-BIPEX and RUPEX coupling series can withstand overloads until the breakage of metal parts. These coupling series are designated as fail-safe. Coupling types which can withstand overload, i.e. fail-safe types, are used e.g. in crane systems. In case of coupling breakage due to overloads, the splintering metal parts may cause injury to persons and property damage!

The N-EUPEX DS coupling series throws overload.

The elastomer element of these couplings is irreparably damaged without damage to metal parts when subjected to excessive overload. These coupling series are designated as non-fail-safe, but can be fitted with a fail-safe device. This component enables emergency operation, even after the rubber element of the coupling has been irreparably damaged.

Damping

On drives which are prone to torsional and bending vibrations, measurements or calculations such as natural frequency calculations, torsional vibration simulation or bending vibration calculations are necessary for verifying safe dimensioning of the drive train and preventing damage.

The drive train may, depending on complexity, be regarded as a two-mass vibration-generating system or N-mass vibration-generating system. The vibration-generating masses are defined by the rotating bodies and the couplings by the coupling stiffnesses and shaft stiffnesses. The effect of torsional vibration excitations on the behavior of the system is calculated.

Torsional vibration excitations may occur during the starting of an induction motor, during a motor short circuit or in diesel engine drives. Bending vibrations may be critical if the coupling is insufficiently balanced and/or at an operating speed close to the critical speed.

The details needed for calculating the torsional vibration are specified in the coupling catalog:

- Dynamic torsional stiffness
- Damping (specification of the damping coefficient ψ or Lehr's damping $D = \psi/4\pi$)
- Mass moment of inertia of the coupling halves

Electrical insulation

A particularly efficient and economical measure for reducing bearing currents is to use an electrically isolating coupling. The range of couplings comprises suitable couplings in leakage-current-isolated versions for the various drive scenarios.

Version for potentially explosive atmospheres

Wherever a potentially explosive environment cannot be ruled out, the machinery used must meet special conditions in order to prevent the outbreak of fire as far as possible. Within the European Union, Directive 2014/34/EU applies to these applications. This directive harmonizes the individual states' legal requirements for explosion prevention and clearly defines the procedure for testing and circulating machines and parts.

Whether or not a machine is used in a potentially explosive environment, the manufacturer is required under EC Machinery Directive 2006/42/EC to assess and as far as possible prevent hazards which may arise from his product.

The operator has an obligation to ascertain whether an environment is potentially explosive. Details of this are laid down in Directive 1999/92/EC. The manufacturer is responsible for ensuring that the product is safe as defined in the EC Machinery Directive and conforms to Directive 2014/34/EU, if the EX requirement is specified by the operating company.

The drive train mostly comprises individual pieces of equipment which are put together to form a subassembly. If the individual pieces of equipment, such as motor, coupling, gearbox or driven machine conform to Directive 2014/34/EU, the manufacturer of the overall unit can limit the risk assessment to the additional hazards which arise from the combination of different individual pieces of equipment. The hazards which can arise from the individual pieces of equipment are assessed by the relevant suppliers.

Directive 94/9/EC of March 23, 1994 has been replaced since April 20, 2016 by Directive 2014/34/EU of the European Parliament and the Council of February 26, 2014 on the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres.

The coupling series suitable for use in potentially explosive environments are marked EX in Catalog MD 10.1.

FLENDER couplings are to be rated as components according to the new EC Machinery Directive 2006/42/EC. Therefore, Siemens does not issue a declaration of incorporation for these products.

Overview (continued)

Assignment of coupling types to SIMOTICS FD motors

Motors		Water-cooled		Air-cooled – open version	
Air-cooled – enclosed version	Forced ventilation	Water-jacket cooling	Heat exchanger	Self-ventilation	Forced ventilation
Cooling method IC411	Cooling method IC416	Cooling method IC71W	Cooling method IC86W	Cooling method IC01	Cooling method IC06
1LM1/1MM1	1LQ1/1MQ1	1LH1/1MH1	1LN1/1MN1	1LL1	1LP1
Applications					
Pumps, fans, compressors	Conveyor belts, paper machines, rolling mills	Extruders, rollers, winches	Propeller drives, bow thrusters	Compressors, fans	Lifting, holding, closing gear
Industry assignments					
W&WW, energy, chemicals, O&G	Paper, steel, mining, cement	Marine, plastics, textile, paper, steel	Marine, steel, plastics	Energy, steel	Cranes
Coupling assignments					
N-EUPEX	RUPEX	ARPEX	ARPEX	RUPEX	RUPEX
N-BIPEX	ARPEX	ZAPEX	ZAPEX	ARPEX	
RUPEX	ZAPEX				
ARPEX					

System components Couplings

Siemens Integrated Drive Systems

Overview (continued)

3

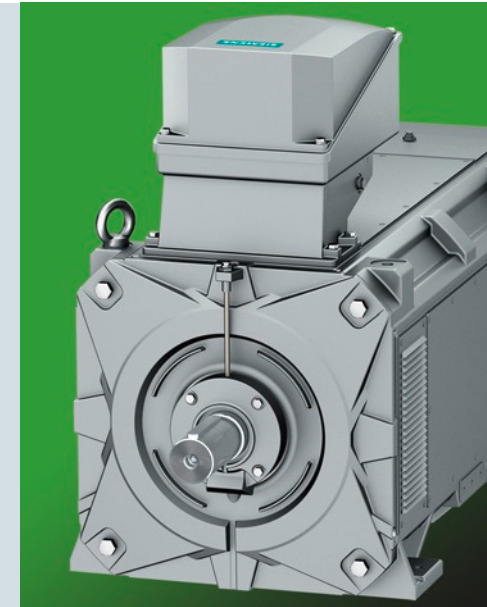
FLENDER couplings – the right coupling for any application		N-EUPEX	N-BIPEX	RUPEX	ZAPEX	ARPEX ARP-6	ARPEX ARS - ARC
Characteristics		Flexible coupling			Torsionally rigid coupling		
		Cam coupling	Claw coupling	Pin-and-bush coupling	Gear coupling	All-steel coupling	All-steel coupling
Properties		Fail-safe, torsionally flexible, damping	Fail-safe, torsionally flexible, damping	Fail-safe, torsionally flexible, damping	Fail-safe, torsionally rigid, double-cardanic	Fail-safe, torsionally rigid, double-cardanic	Fail-safe, torsionally rigid, double-cardanic
Rated torque	Nm	19 ... 62000	12 ... 4650	200 ... 1300000	1020 ... 7200000	100 ... 17000	170 ... 1450000
Perm. peripheral speed	m/s	36	45	40/60	60	100	55/100
Temperature in area of application	°C	-50 ... +100	-50 ... +100	-50 ... +100	-20 ... +80	-40 ... +280	-40 ... +280
Perm. angular misalignment	°						
• at 1500 rpm		0.1	0.5/0.4/0.3	0.2	0.5 - 1	0.7	0.7/0.4/0.3/0.2
Versions							
• with clamping hub		–	–	○	–	○	●
• with adapter		●	–	○	●	●	●
• with brake disk/drum		●	–	●	●	○	○
• with sliding hub		○	–	○	○	○	○
Vertical installation		●	●	●	●	●/○	●/○
• with axial play limitation		–	–	●	●	–	○
• as clutch coupling		–	–	○	●	–	○
• as shear pin coupling		–	–	○	○	–	○
Leakage current insulation		–	●	○	●	○	○
• in accordance with API 610/ API 671		–	–/●	–/●	–	API 610 (671)	–
• in accordance with Directive 2014/34/EU		●	●	●	●	●	●
Service							
Maintenance interval		Annual visual inspection	Annual visual inspection	Annual visual inspection	Annual visual inspection	Maintenance-free ¹⁾	Maintenance-free ¹⁾
Wear parts, radially expandable		●	–	●	–	●	●
Installation outlay		Low	Low	Low	High	High	High

- Optionally available
- Available in standard program
- Not possible

For additional information about FLENDER couplings see [Catalog MD 10.1](#).

¹⁾ An annual visual inspection is recommended.

Self-ventilated motors – enclosed version



4/2 1LM1 motors for converter operation

- 4/2 Line voltage 400 V, 50 Hz
- 4/2 High Efficiency
- 4/6 Premium Efficiency
- 4/10 Line voltage 500 V, 50 Hz
- 4/10 High Efficiency
- 4/14 Premium Efficiency
- 4/18 Line voltage 690 V, 50 Hz
- 4/18 High Efficiency
- 4/22 Premium Efficiency
- 4/26 Line voltage 460 V, 60 Hz
- 4/26 High Efficiency
- 4/30 Premium Efficiency
- 4/34 Line voltage 575 V, 60 Hz
- 4/34 High Efficiency
- 4/38 Premium Efficiency

4/42 Dimensions

- 4/42 1LM1 motors
- 4/44 Flanges
- 4/45 Terminal boxes

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 425 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
3000 rpm, 4-pole															
245	329	315	Δ	100.6	780	95.4	96	95.8	0.89	390	6.5	2028	7500	1LM1212-3AB11-1 ■■■ 0	
300	402	315	Δ	100.6	955	95.8	96.3	96.1	0.9	470	7.2	2770	7500	1LM1212-3AB31-1 ■■■ 0	
335	449	315	Δ	100.6	1066	95.8	96.3	95.9	0.9	530	7.6	3198	7500	1LM1212-3AB51-1 ■■■ 0	
385	516	315	Δ	100.5	1225	96	96.5	96.1	0.9	600	8.1	3920	7500	1LM1212-3AB71-1 ■■■ 0	
435	583	355	Δ	100.5	1385	95.8	96.3	95.9	0.89	690	6.8	4155	10200	1LM1212-3BB51-1 ■■■ 0	
455	610	355	Δ	100.6	1448	95.8	96.4	96.1	0.89	720	6.1	3765	10200	1LM1212-3BB71-1 ■■■ 0	
1500 rpm, 4-pole															
245	329	315	Δ	50.5	1560	94.4	95.3	95.3	0.87	400	7.2	4836	7500	1LM1212-3AB11-2 ■■■ 0	
315	422	315	Δ	50.5	2005	95	95.7	95.7	0.87	510	8.2	7018	7500	1LM1212-3AB31-2 ■■■ 0	
345	463	315	Δ	50.5	2196	95	95.8	95.8	0.89	550	8.5	7686	7500	1LM1212-3AB51-2 ■■■ 0	
395	530	315	Δ	50.5	2515	95.2	96	96	0.9	620	8.5	8803	7500	1LM1212-3AB71-2 ■■■ 0	
450	603	355	Δ	50.5	2865	95.1	95.9	95.9	0.89	720	7.1	9168	10200	1LM1212-3BB51-2 ■■■ 0	
500	671	355	Δ	50.4	3183	95.3	96.1	96	0.88	800	7.9	11459	10200	1LM1212-3BB71-2 ■■■ 0	
565	758	400	Δ	50.3	3597	95.4	95.8	95.9	0.86	930	8	12230	16400	1LM1212-4AB31-2 ■■■ 0	
625	838	400	Δ	50.3	3979	95.6	96	96.1	0.86	1020	9.2	15120	16400	1LM1212-4AB51-2 ■■■ 0	
660	885	400	Δ	50.4	4202	95.6	96	96.2	0.89	1040	8	13446	16400	1LM1212-4AB71-2 ■■■ 0	
795	1066	450	Δ	50.2	5061	95.9	96.1	96	0.83	1360	9.7	21762	20700	1LM1212-4BB11-2 ■■■ 0	
845	1133	450	Δ	50.2	5379	95.9	96.1	96	0.84	1420	10.4	24206	20700	1LM1212-4BB31-2 ■■■ 0	
1000 rpm, 6-pole															
190	255	315	Δ	50.4	1814	94.7	95.5	95.4	0.79	340	8.4	5805	7500	1LM1212-3AC11-3 ■■■ 0	
235	315	315	Δ	50.4	2244	94.9	95.7	95.7	0.81	410	8.5	7181	7500	1LM1212-3AC31-3 ■■■ 0	
270	362	315	Δ	50.4	2578	95.1	95.7	95.8	0.83	460	8.4	7992	7500	1LM1212-3AC51-3 ■■■ 0	
295	396	315	Δ	50.4	2817	95.2	95.7	95.9	0.82	520	8.9	9578	7500	1LM1212-3AC71-3 ■■■ 0	
355	476	355	Δ	50.3	3390	95	95.7	95.5	0.85	590	9.8	12204	10200	1LM1212-3BC51-3 ■■■ 0	
395	530	355	Δ	50.3	3772	95.2	95.9	95.5	0.83	670	10.9	15465	10200	1LM1212-3BC71-3 ■■■ 0	
415	557	400	Δ	50.3	3963	95.5	96	96.2	0.85	690	8	12285	16400	1LM1212-4AC31-3 ■■■ 0	
465	624	400	Δ	50.3	4440	95.8	96.1	96.3	0.84	780	8.7	15540	16400	1LM1212-4AC51-3 ■■■ 0	
525	704	400	Δ	50.3	5013	96	96.3	96.3	0.83	890	10	20052	16400	1LM1212-4AC71-3 ■■■ 0	
575	771	450	Δ	50.3	5491	96	96.3	96.4	0.83	980	8	17022	20700	1LM1212-4BC11-3 ■■■ 0	
640	858	450	Δ	50.2	6112	96.2	96.4	96.4	0.81	1120	9.7	23837	20700	1LM1212-4BC31-3 ■■■ 0	
750 rpm, 6-pole															
145	194	315	Δ	37.9	1846	93.9	94.8	94.8	0.77	270	8.3	6276	7500	1LM1212-3AC11-4 ■■■ 0	
185	248	315	Δ	37.9	2355	94.2	95.1	95.2	0.8	330	8.2	7772	7500	1LM1212-3AC31-4 ■■■ 0	
210	282	315	Δ	37.9	2674	94.3	95.3	95.4	0.83	360	7.9	8022	7500	1LM1212-3AC51-4 ■■■ 0	
235	315	315	Δ	37.9	2992	94.4	95.4	95.5	0.83	405	7.9	8976	7500	1LM1212-3AC71-4 ■■■ 0	
265	355	355	Δ	37.8	3374	94.3	95.3	95.3	0.86	440	9	11809	10200	1LM1212-3BC51-4 ■■■ 0	
300	402	355	Δ	37.8	3820	94.5	95.4	95.4	0.86	495	9.2	13370	10200	1LM1212-3BC71-4 ■■■ 0	
330	443	400	Δ	37.8	4202	95	95.6	96.1	0.84	560	7.7	13026	16400	1LM1212-4AC31-4 ■■■ 0	
380	510	400	Δ	37.8	4838	95.3	95.9	96.2	0.83	650	8.7	17417	16400	1LM1212-4AC51-4 ■■■ 0	
420	563	400	Δ	37.8	5348	95.4	95.9	96.3	0.85	700	8.2	18183	16400	1LM1212-4AC71-4 ■■■ 0	
460	617	450	Δ	37.7	5857	95.6	96.1	96.3	0.83	780	8.1	19328	20700	1LM1212-4BC11-4 ■■■ 0	
515	691	450	Δ	37.7	6557	95.8	96.2	96.3	0.82	890	8.8	23605	20700	1LM1212-4BC31-4 ■■■ 0	
610	818	450	Δ	37.7	7767	95.8	96.3	96.5	0.84	1020	8.2	25631	20700	1LM1212-4BC51-4 ■■■ 0	
660	885	450	Δ	37.7	8403	95.9	96.3	96.6	0.85	1100	8.2	27730	20700	1LM1212-4BC71-4 ■■■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1212-3AB11-1.0	1320	1360	3.5	79	94.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AB31-1.0	1500	1550	4.4	79	94.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AB51-1.0	1670	1720	5.1	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3AB71-1.0	1880	1920	5.9	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-3BB51-1.0	2310	2370	8.4	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-3BB71-1.0	2440	2500	9	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-3AB11-2.0	1320	1360	3.5	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AB31-2.0	1500	1550	4.4	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3AB51-2.0	1670	1720	5.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3AB71-2.0	1880	1920	5.9	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-3BB51-2.0	2310	2370	8.4	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-3BB71-2.0	2440	2500	9	79	95	2200	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1212-4AB31-2.0	2870	2940	14.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1212-4AB51-2.0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1212-4AB71-2.0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1212-4BB11-2.0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LM1212-4BB31-2.0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1212-3AC11-3.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1212-3AC31-3.0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AC51-3.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AC71-3.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3BC51-3.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3BC71-3.0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4AC31-3.0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4AC51-3.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1212-4AC71-3.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1212-4BC11-3.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1212-4BC31-3.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LM1212-3AC11-4.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LE33-1AA3	302
1LM1212-3AC31-4.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1212-3AC51-4.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-7LE33-8AA3	370
1LM1212-3AC71-4.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3BC51-4.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3BC71-4.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-4AC31-4.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-4AC51-4.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4AC71-4.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4BC11-4.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1212-4BC31-4.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1212-4BC51-4.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1212-4BC71-4.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
235	315	315	Δ	100.6	748	95.4	96	95.7	0.88	425	6.5	2020	7500	1LM1222-3AB11-1 ■■ 0	
300	402	315	Δ	100.6	955	95.8	96.4	96.1	0.9	530	7.4	2865	7500	1LM1222-3AB31-1 ■■ 0	
325	436	315	Δ	100.5	1035	95.9	96.3	95.9	0.9	570	8.6	3519	7500	1LM1222-3AB51-1 ■■ 0	
350	469	315	Δ	100.6	1114	95.8	96.3	96.1	0.91	610	7.1	3119	7500	1LM1222-3AB71-1 ■■ 0	
420	563	355	Δ	100.4	1337	95.8	96.2	95.7	0.88	750	8.1	4680	10200	1LM1222-3BB51-1 ■■ 0	
445	597	355	Δ	100.5	1416	95.8	96.4	96	0.89	790	7.2	4390	10200	1LM1222-3BB71-1 ■■ 0	
1500 rpm, 4-pole															
250	335	315	Δ	50.5	1592	94.6	95.4	95.3	0.85	470	7.7	5413	7500	1LM1222-3AB11-2 ■■ 0	
315	422	315	Δ	50.5	2005	94.9	95.7	95.7	0.88	570	8.1	6817	7500	1LM1222-3AB31-2 ■■ 0	
345	463	315	Δ	50.5	2196	95.1	95.8	95.8	0.88	620	8.5	7906	7500	1LM1222-3AB51-2 ■■ 0	
400	536	315	Δ	50.5	2546	95.2	96	96	0.89	710	8.7	9166	7500	1LM1222-3AB71-2 ■■ 0	
455	610	355	Δ	50.4	2897	95.1	95.9	95.9	0.88	820	7.3	9560	10200	1LM1222-3BB51-2 ■■ 0	
510	684	355	Δ	50.4	3247	95.4	96.2	96	0.87	930	8.4	12663	10200	1LM1222-3BB71-2 ■■ 0	
530	711	400	Δ	50.4	3374	95.1	95.6	95.9	0.88	960	6.8	9447	16400	1LM1222-4AB31-2 ■■ 0	
595	798	400	Δ	50.4	3788	95.5	95.9	96.1	0.88	1080	7.6	12122	16400	1LM1222-4AB51-2 ■■ 0	
680	912	400	Δ	50.3	4329	95.7	96.1	96.3	0.88	1220	8.9	15584	16400	1LM1222-4AB71-2 ■■ 0	
740	992	450	Δ	50.2	4711	95.8	95.9	95.8	0.83	1420	10	20728	20700	1LM1222-4BB11-2 ■■ 0	
1000 rpm, 6-pole															
190	255	315	Δ	50.4	1814	94.7	95.5	95.4	0.8	380	8.1	5623	7500	1LM1222-3AC11-3 ■■ 0	
235	315	315	Δ	50.4	2244	95	95.7	95.7	0.81	460	8.6	7405	7500	1LM1222-3AC31-3 ■■ 0	
270	362	315	Δ	50.4	2578	95.1	95.7	95.8	0.82	520	8.7	8507	7500	1LM1222-3AC51-3 ■■ 0	
300	402	315	Δ	50.4	2865	95.2	95.7	96	0.84	570	8.5	8882	7500	1LM1222-3AC71-3 ■■ 0	
355	476	355	Δ	50.3	3390	95.1	95.7	95.5	0.83	680	10.5	13560	10200	1LM1222-3BC51-3 ■■ 0	
390	523	355	Δ	50.3	3724	95.2	95.9	95.6	0.84	740	10.5	14896	10200	1LM1222-3BC71-3 ■■ 0	
420	563	400	Δ	50.3	4011	95.6	96	96.2	0.84	790	8.5	13637	16400	1LM1222-4AC31-3 ■■ 0	
460	617	400	Δ	50.3	4393	95.7	96.1	96.3	0.85	860	8.3	14497	16400	1LM1222-4AC51-3 ■■ 0	
525	704	400	Δ	50.3	5013	96	96.3	96.4	0.83	1000	9.8	19551	16400	1LM1222-4AC71-3 ■■ 0	
565	758	450	Δ	50.2	5395	96.1	96.3	96.3	0.8	1120	9.6	21041	20700	1LM1222-4BC11-3 ■■ 0	
750 rpm, 6-pole															
150	201	315	Δ	37.9	1910	94.1	95	94.9	0.77	310	8.2	6303	7500	1LM1222-3AC11-4 ■■ 0	
180	241	315	Δ	37.9	2292	94.3	95.2	95.1	0.77	375	8.6	8251	7500	1LM1222-3AC31-4 ■■ 0	
210	282	315	Δ	37.9	2674	94.4	95.3	95.3	0.81	415	8.4	8824	7500	1LM1222-3AC51-4 ■■ 0	
230	308	315	Δ	37.9	2928	94.4	95.4	95.5	0.83	440	8.1	9077	7500	1LM1222-3AC71-4 ■■ 0	
270	362	355	Δ	37.9	3438	94.3	95.3	95.3	0.86	500	8.9	11689	10200	1LM1222-3BC51-4 ■■ 0	
300	402	355	Δ	37.8	3820	94.5	95.4	95.4	0.86	560	9.4	13752	10200	1LM1222-3BC71-4 ■■ 0	
330	443	400	Δ	37.8	4202	95	95.6	96.1	0.84	620	7.8	13446	16400	1LM1222-4AC31-4 ■■ 0	
375	503	400	Δ	37.8	4775	95.2	95.8	96.2	0.84	710	8.1	15758	16400	1LM1222-4AC51-4 ■■ 0	
430	577	400	Δ	37.8	5475	95.4	96	96.3	0.84	810	8.7	19710	16400	1LM1222-4AC71-4 ■■ 0	
470	630	450	Δ	37.7	5984	95.7	96.1	96.3	0.82	910	8	19747	20700	1LM1222-4BC11-4 ■■ 0	
525	704	450	Δ	37.7	6685	95.8	96.2	96.4	0.83	1000	8.3	22729	20700	1LM1222-4BC31-4 ■■ 0	
575	771	450	Δ	37.7	7321	95.8	96.2	96.5	0.84	1080	8.4	24891	20700	1LM1222-4BC51-4 ■■ 0	
680	912	450	Δ	37.7	8658	95.8	96.3	96.6	0.85	1260	7.9	27706	20700	1LM1222-4BC71-4 ■■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1222-3AB11-1.0	1320	1360	3.5	79	94.5	3600	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AB31-1.0	1500	1550	4.4	79	94.5	3600	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AB51-1.0	1670	1720	5.1	79	94.5	3600	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AB71-1.0	1880	1920	5.9	79	94.5	3600	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1222-3BB51-1.0	2310	2370	8.4	79 ⁴⁾	95	3300	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-3BB71-1.0	2440	2500	9	79 ⁴⁾	95	3300	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-3AB11-2.0	1320	1360	3.5	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AB31-2.0	1500	1550	4.4	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AB51-2.0	1710	1760	5.1	79	94.5	2500	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1222-3AB71-2.0	1880	1920	5.9	79	94.5	2500	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1222-3BB51-2.0	2310	2370	8.4	79	95	2200	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-3BB71-2.0	2440	2500	9	79	95	2200	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4AB31-2.0	2870	2940	14.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4AB51-2.0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-1AA3	1092
1LM1222-4AB71-2.0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LM1222-4BB11-2.0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LM1222-3AC11-3.0	1350	1390	5.9	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AC31-3.0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AC51-3.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AC71-3.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3BC51-3.0	2310	2360	14.6	79	95	2200	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1222-3BC71-3.0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-4AC31-3.0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-4AC51-3.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4AC71-3.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LM1222-4BC11-3.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LM1222-3AC11-4.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1PE33-7AA0	360
1LM1222-3AC31-4.0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AC51-4.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AC71-4.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3BC51-4.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3BC71-4.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-4AC31-4.0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1222-4AC51-4.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1222-4AC71-4.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-4BC11-4.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4BC31-4.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GE41-1AA3	1092
1LM1222-4BC51-4.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-1AA3	1092
1LM1222-4BC71-4.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 425 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
1500 rpm, 4-pole															
175	235	315	Δ	50.4	1114	95.2	95.9	95.7	0.83	300	9.5	4902	7500	1LM1213-3AB11-2 ■■ 0	
255	342	315	Δ	50.4	1623	95.5	96.2	96.1	0.85	425	9.8	6979	7500	1LM1213-3AB31-2 ■■ 0	
320	429	315	Δ	50.4	2037	95.2	96	95.9	0.88	510	9.1	7741	7500	1LM1213-3AB51-2 ■■ 0	
410	550	315	Δ	50.5	2610	95.2	96	96.1	0.9	640	8.3	8874	7500	1LM1213-3AB71-2 ■■ 0	
465	624	355	Δ	50.5	2960	95.2	96.1	96.2	0.89	740	6.9	9176	10200	1LM1213-3BB51-2 ■■ 0	
510	684	355	Δ	50.4	3247	95.5	96.3	96.3	0.88	820	7.7	11365	10200	1LM1213-3BB71-2 ■■ 0	
585	784	400	Δ	50.4	3724	95.5	96	96.2	0.86	960	7.7	11917	16400	1LM1213-4AB31-2 ■■ 0	
655	878	400	Δ	50.3	4170	95.8	96.2	96.4	0.85	1080	8.7	15012	16400	1LM1213-4AB51-2 ■■ 0	
685	919	400	Δ	50.4	4361	95.7	96.2	96.5	0.89	1080	7.7	13519	16400	1LM1213-4AB71-2 ■■ 0	
855	1147	450	Δ	50.2	5443	96.2	96.5	96.6	0.83	1460	9	21772	20700	1LM1213-4BB11-2 ■■ 0	
900	1207	450	Δ	50.2	5730	96.2	96.5	96.6	0.84	1500	9.8	24066	20700	1LM1213-4BB31-2 ■■ 0	
1000 rpm, 6-pole															
185	248	315	Δ	50.4	1767	94.8	95.7	95.6	0.79	330	8.6	5831	7500	1LM1213-3AC11-3 ■■ 0	
240	322	315	Δ	50.4	2292	95	95.9	95.9	0.81	420	8.3	7105	7500	1LM1213-3AC31-3 ■■ 0	
275	369	315	Δ	50.4	2626	95.1	96	96	0.83	470	8.2	8141	7500	1LM1213-3AC51-3 ■■ 0	
305	409	315	Δ	50.4	2913	95.3	96.1	96.1	0.82	530	8.7	9613	7500	1LM1213-3AC71-3 ■■ 0	
380	510	355	Δ	50.4	3629	95.2	96.1	96.1	0.85	630	9.2	12339	10200	1LM1213-3BC51-3 ■■ 0	
420	563	355	Δ	50.3	4011	95.5	96.3	96.1	0.82	720	10.1	15643	10200	1LM1213-3BC71-3 ■■ 0	
485	650	400	Δ	50.3	4631	95.9	96.4	96.7	0.84	810	8.4	15282	16400	1LM1213-4AC51-3 ■■ 0	
560	751	400	Δ	50.3	5348	96.2	96.6	96.8	0.82	960	9.2	20322	16400	1LM1213-4AC71-3 ■■ 0	
595	798	450	Δ	50.3	5682	96.2	96.6	96.8	0.83	1000	7.9	17046	20700	1LM1213-4BC11-3 ■■ 0	
675	905	450	Δ	50.2	6446	96.4	96.8	96.9	0.8	1180	9.2	23850	20700	1LM1213-4BC31-3 ■■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1213-3AB11-2.0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-7LE33-1AA3	302
1LM1213-3AB31-2.0	1500	1550	4.4	79	94.5	3000	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1213-3AB51-2.0	1670	1720	5.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1213-3AB71-2.0	1880	1920	5.9	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1213-3BB51-2.0	2310	2370	8.4	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1213-3BB71-2.0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1213-4AB31-2.0	2870	2940	14.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1213-4AB51-2.0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LM1213-4AB71-2.0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LM1213-4BB11-2.0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1213-4BB31-2.0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1213-3AC11-3.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1213-3AC31-3.0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1213-3AC51-3.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1213-3AC71-3.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1213-3BC51-3.0	2310	2360	14.6	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1213-3BC71-3.0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1213-4AC51-3.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1213-4AC71-3.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1213-4BC11-3.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1213-4BC31-3.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power									T_B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
1500 rpm, 4-pole															
185	248	315	Δ	50.4	1178	95.3	95.9	95.7	0.81	360	10	5419	7500	1LM1223-3AB11-2 ■■ 0	
255	342	315	Δ	50.4	1623	95.5	96.2	96.1	0.85	475	9.7	6817	7500	1LM1223-3AB31-2 ■■ 0	
335	449	315	Δ	50.5	2133	95.2	96	96	0.88	600	8.8	7892	7500	1LM1223-3AB51-2 ■■ 0	
405	543	315	Δ	50.5	2578	95.2	96.1	96.1	0.89	720	8.6	9281	7500	1LM1223-3AB71-2 ■■ 0	
470	630	355	Δ	50.5	2992	95.2	96.1	96.2	0.88	840	7.1	9574	10200	1LM1223-3BB51-2 ■■ 0	
530	711	355	Δ	50.4	3374	95.6	96.4	96.4	0.87	960	8.1	12484	10200	1LM1223-3BB71-2 ■■ 0	
605	811	400	Δ	50.4	3852	95.6	96.1	96.3	0.88	1080	7.6	11941	16400	1LM1223-4AB51-2 ■■ 0	
710	952	400	Δ	50.3	4520	95.9	96.3	96.6	0.88	1280	8.5	15820	16400	1LM1223-4AB71-2 ■■ 0	
790	1059	450	Δ	50.2	5029	96	96.3	96.4	0.83	1500	9.5	20619	20700	1LM1223-4BB11-2 ■■ 0	
1000 rpm, 6-pole															
180	241	315	Δ	50.4	1719	94.8	95.7	95.6	0.79	360	8.5	5673	7500	1LM1223-3AC11-3 ■■ 0	
240	322	315	Δ	50.4	2292	95	95.9	95.9	0.81	470	8.4	7334	7500	1LM1223-3AC31-3 ■■ 0	
275	369	315	Δ	50.4	2626	95.1	96	96	0.82	530	8.5	8403	7500	1LM1223-3AC51-3 ■■ 0	
310	416	315	Δ	50.4	2960	95.2	96.1	96.2	0.83	590	8.1	8880	7500	1LM1223-3AC71-3 ■■ 0	
375	503	355	Δ	50.3	3581	95.4	96.2	96	0.83	710	10	13608	10200	1LM1223-3BC51-3 ■■ 0	
415	557	355	Δ	50.3	3963	95.5	96.3	96.1	0.84	780	9.9	14663	10200	1LM1223-3BC71-3 ■■ 0	
430	577	400	Δ	50.3	4106	95.8	96.3	96.6	0.83	820	8.2	13550	16400	1LM1223-4AC31-3 ■■ 0	
480	644	400	Δ	50.3	4584	95.9	96.4	96.7	0.85	890	8	14669	16400	1LM1223-4AC51-3 ■■ 0	
555	744	400	Δ	50.3	5300	96.2	96.6	96.8	0.83	1060	9.2	19610	16400	1LM1223-4AC71-3 ■■ 0	
595	798	450	Δ	50.2	5682	96.4	96.7	96.8	0.8	1160	9.3	20455	20700	1LM1223-4BC11-3 ■■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1223-3AB11-2..0	1320	1360	3.5	79	94.5	3000	1XB7 731	6SL3710-1PE33-7AA0	360
1LM1223-3AB31-2..0	1500	1550	4.4	79	94.5	3000	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1223-3AB51-2..0	1710	1760	5.1	79	94.5	2500	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1223-3AB71-2..0	1880	1920	5.9	79	94.5	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LM1223-3BB51-2..0	2310	2370	8.4	79	95	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1223-3BB71-2..0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1223-4AB51-2..0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-1AA3	1092
1LM1223-4AB71-2..0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LM1223-4BB11-2..0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LM1223-3AC11-3..0	1350	1390	5.9	79	94.5	2500	1XB7 731	6SL3710-1PE33-7AA0	360
1LM1223-3AC31-3..0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1223-3AC51-3..0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1223-3AC71-3..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1PE36-6AA0	640
1LM1223-3BC51-3..0	2310	2360	14.6	79	95	2200	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1223-3BC71-3..0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1223-4AC31-3..0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1223-4AC51-3..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1223-4AC71-3..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LM1223-4BC11-3..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, [see page 11/8](#).

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
Rated motor voltage 520 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
225	302	315	Δ	100.6	716	95.4	95.9	95.6	0.88	295	7.3	2076	7500	1LM1212-3AB12-1 ■■ 0	
285	382	315	Δ	100.5	907	95.8	96.3	95.9	0.89	370	8.9	3265	7500	1LM1212-3AB32-1 ■■ 0	
305	409	315	Δ	100.4	971	95.8	96.1	95.7	0.89	395	9.5	3690	7500	1LM1212-3AB52-1 ■■ 0	
335	449	315	Δ	100.5	1066	95.7	96.3	95.9	0.91	425	7.8	3305	7500	1LM1212-3AB72-1 ■■ 0	
410	550	355	Δ	100.4	1305	95.7	96.2	95.7	0.89	530	8	4437	10200	1LM1212-3BB52-1 ■■ 0	
435	583	355	Δ	100.5	1385	95.7	96.3	95.9	0.89	560	7.1	4155	10200	1LM1212-3BB72-1 ■■ 0	
1500 rpm, 4-pole															
225	302	315	Δ	50.5	1432	94.3	95.2	95.1	0.87	300	7.7	4726	7500	1LM1212-3AB12-2 ■■ 0	
285	382	315	Δ	50.5	1814	94.7	95.5	95.6	0.89	370	8.2	6168	7500	1LM1212-3AB32-2 ■■ 0	
320	429	315	Δ	50.4	2037	95	95.8	95.7	0.88	420	9.2	7741	7500	1LM1212-3AB52-2 ■■ 0	
380	510	315	Δ	50.4	2419	95.3	96	95.9	0.87	510	10.1	10402	7500	1LM1212-3AB72-2 ■■ 0	
435	583	355	Δ	50.4	2769	95.2	95.9	95.7	0.87	580	8.6	11076	10200	1LM1212-3BB52-2 ■■ 0	
480	644	355	Δ	50.4	3056	95.4	96	95.8	0.86	650	9.2	13141	10200	1LM1212-3BB72-2 ■■ 0	
530	711	400	Δ	50.3	3374	95.3	95.7	95.8	0.87	710	7.7	11134	16400	1LM1212-4AB32-2 ■■ 0	
580	778	400	Δ	50.3	3692	95.5	95.9	96	0.87	770	8.3	12553	16400	1LM1212-4AB52-2 ■■ 0	
650	872	400	Δ	50.3	4138	95.6	96	96.2	0.88	850	8.9	14897	16400	1LM1212-4AB72-2 ■■ 0	
750	1006	450	Δ	50.2	4775	95.7	95.9	95.9	0.84	1040	9.5	19578	20700	1LM1212-4BB12-2 ■■ 0	
910	1220	450	Δ	50.2	5793	95.9	96.2	96.2	0.86	1220	8.8	21434	20700	1LM1212-4BB32-2 ■■ 0	
1025	1375	450	Δ	50.2	6525	96.1	96.3	96.3	0.85	1400	10.2	28710	20700	1LM1212-4BB52-2 ■■ 0	
1125	1509	450	Δ	50.2	7162	96.1	96.4	96.4	0.87	1480	10.2	30080	20700	1LM1212-4BB72-2 ■■ 0	
1000 rpm, 6-pole															
180	241	315	Δ	50.4	1719	94.7	95.4	95.3	0.79	265	8.8	5673	7500	1LM1212-3AC12-3 ■■ 0	
210	282	315	Δ	50.4	2005	94.9	95.6	95.5	0.8	305	9.4	7218	7500	1LM1212-3AC32-3 ■■ 0	
245	329	315	Δ	50.4	2340	94.9	95.7	95.7	0.83	340	8.8	7722	7500	1LM1212-3AC52-3 ■■ 0	
270	362	315	Δ	50.4	2578	95	95.7	95.7	0.83	375	9	8765	7500	1LM1212-3AC72-3 ■■ 0	
325	436	355	Δ	50.3	3104	94.9	95.6	95.3	0.84	450	10.6	12416	10200	1LM1212-3BC52-3 ■■ 0	
360	483	355	Δ	50.3	3438	95.1	95.7	95.3	0.83	500	11.3	14783	10200	1LM1212-3BC72-3 ■■ 0	
405	543	400	Δ	50.3	3867	95.6	96	96.1	0.83	560	9.3	14308	16400	1LM1212-4AC32-3 ■■ 0	
445	597	400	Δ	50.3	4249	95.8	96.1	96.2	0.82	630	9.8	16996	16400	1LM1212-4AC52-3 ■■ 0	
495	664	400	Δ	50.3	4727	95.8	96.2	96.3	0.84	680	9.3	17490	16400	1LM1212-4AC72-3 ■■ 0	
560	751	450	Δ	50.2	5348	96	96.3	96.3	0.82	790	8.8	18718	20700	1LM1212-4BC12-3 ■■ 0	
610	818	450	Δ	50.2	5825	96.1	96.3	96.3	0.8	880	10.1	23882	20700	1LM1212-4BC32-3 ■■ 0	
710	952	450	Δ	50.2	6780	96.2	96.4	96.5	0.82	1000	9.6	26442	20700	1LM1212-4BC52-3 ■■ 0	
820	1100	450	Δ	50.2	7830	96.3	96.5	96.6	0.83	1140	9.3	28971	20700	1LM1212-4BC72-3 ■■ 0	
750 rpm, 6-pole															
130	174	315	Δ	37.9	1655	93.9	94.7	94.5	0.75	205	9	6289	7500	1LM1212-3AC12-4 ■■ 0	
165	221	315	Δ	37.9	2101	94.1	95	94.9	0.78	245	9.1	7564	7500	1LM1212-3AC32-4 ■■ 0	
190	255	315	Δ	37.9	2419	94.1	95.1	95.2	0.83	265	8.4	7741	7500	1LM1212-3AC52-4 ■■ 0	
210	282	315	Δ	37.9	2674	94.3	95.2	95.3	0.82	300	8.8	9092	7500	1LM1212-3AC72-4 ■■ 0	
250	335	355	Δ	37.8	3183	94.4	95.2	95	0.83	350	10.4	13050	10200	1LM1212-3BC52-4 ■■ 0	
270	362	355	Δ	37.8	3438	94.4	95.3	95.2	0.85	370	9.8	13064	10200	1LM1212-3BC72-4 ■■ 0	
315	422	400	Δ	37.8	4011	95	95.6	96	0.84	435	8	13236	16400	1LM1212-4AC32-4 ■■ 0	
355	476	400	Δ	37.8	4520	95.3	95.8	96.1	0.84	490	8.7	16272	16400	1LM1212-4AC52-4 ■■ 0	
395	530	400	Δ	37.8	5029	95.3	95.9	96.2	0.84	540	8.8	18104	16400	1LM1212-4AC72-4 ■■ 0	
450	603	450	Δ	37.7	5730	95.5	96	96.2	0.82	630	8.4	19482	20700	1LM1212-4BC12-4 ■■ 0	
505	677	450	Δ	37.7	6430	95.7	96.1	96.3	0.83	700	8.7	22505	20700	1LM1212-4BC32-4 ■■ 0	
575	771	450	Δ	37.7	7321	95.7	96.1	96.4	0.85	780	8	23427	20700	1LM1212-4BC52-4 ■■ 0	
660	885	450	Δ	37.7	8403	95.8	96.2	96.5	0.84	910	8.5	29411	20700	1LM1212-4BC72-4 ■■ 0	

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1212-3AB12-1.0	1320	1360	3.5	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB32-1.0	1500	1550	4.4	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3AB52-1.0	1670	1720	5.1	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3AB72-1.0	1840	1880	5.9	79	94.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-3BB52-1.0	2270	2330	8.4	79 ⁴⁾	95	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-3BB72-1.0	2400	2460	9	79 ⁴⁾	95	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-3AB12-2.0	1320	1360	3.5	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB32-2.0	1500	1550	4.4	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3AB52-2.0	1670	1720	5.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-3AB72-2.0	1840	1880	5.9	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-3BB52-2.0	2270	2330	8.4	79	95	2200	1XB7 731	6SL3710-7LG37-4AA3	710
1LM1212-3BB72-2.0	2440	2500	9	79	95	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4AB32-2.0	2870	2940	14.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4AB52-2.0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4AB72-2.0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1212-4BB12-2.0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1212-4BB32-2.0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1212-4BB52-2.0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1212-4BB72-2.0	5120	5220	34.2	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1212-3AC12-3.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AC32-3.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AC52-3.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3AC72-3.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3BC52-3.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-3BC72-3.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AC32-3.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AC52-3.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4AC72-3.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC12-3.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4BC32-3.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1212-4BC52-3.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LM1212-4BC72-3.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1212-3AC12-4.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3AC32-4.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1212-3AC52-4.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AC72-4.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3BC52-4.0	2270	2320	14.6	79	95	2200	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3BC72-4.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-4AC32-4.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-4AC52-4.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AC72-4.0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4BC12-4.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC32-4.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC52-4.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4BC72-4.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
250	335	315	Δ	100.6	796	95.5	96.1	95.8	0.88	355	6.6	2149	7500	1LM1222-3AB12-1 ■■■ 0	
305	409	315	Δ	100.6	971	95.8	96.3	96.1	0.9	425	7.1	2719	7500	1LM1222-3AB32-1 ■■■ 0	
330	443	315	Δ	100.6	1050	95.8	96.3	95.9	0.9	460	7.5	3150	7500	1LM1222-3AB52-1 ■■■ 0	
375	503	315	Δ	100.5	1194	95.9	96.4	96.1	0.91	510	7.9	3701	7500	1LM1222-3AB72-1 ■■■ 0	
420	563	355	Δ	100.5	1337	95.7	96.3	95.9	0.89	590	6.6	3877	10200	1LM1222-3BB52-1 ■■■ 0	
460	617	355	Δ	100.4	1464	95.9	96.4	95.9	0.89	640	7.9	4978	10200	1LM1222-3BB72-1 ■■■ 0	
1500 rpm, 4-pole															
240	322	315	Δ	50.6	1528	94.4	95.3	95.3	0.87	350	6.9	4584	7500	1LM1222-3AB12-2 ■■■ 0	
320	429	315	Δ	50.5	2037	95	95.8	95.7	0.87	460	8.5	7333	7500	1LM1222-3AB32-2 ■■■ 0	
350	469	315	Δ	50.5	2228	95.1	95.9	95.8	0.88	500	8.5	8021	7500	1LM1222-3AB52-2 ■■■ 0	
395	530	315	Δ	50.5	2515	95.2	96	96	0.9	550	8.5	8803	7500	1LM1222-3AB72-2 ■■■ 0	
480	644	355	Δ	50.4	3056	95.3	96.1	95.9	0.87	690	8.5	11918	10200	1LM1222-3BB52-2 ■■■ 0	
505	677	355	Δ	50.4	3215	95.3	96.1	96	0.89	710	7.7	11253	10200	1LM1222-3BB72-2 ■■■ 0	
570	764	400	Δ	50.3	3629	95.4	95.8	96	0.87	820	7.8	11613	16400	1LM1222-4AB32-2 ■■■ 0	
625	838	400	Δ	50.3	3979	95.6	96	96.1	0.87	900	8.6	14324	16400	1LM1222-4AB52-2 ■■■ 0	
705	945	400	Δ	50.3	4488	95.8	96.1	96.2	0.87	1020	9.4	17503	16400	1LM1222-4AB72-2 ■■■ 0	
805	1080	450	Δ	50.2	5125	95.8	96.1	96.1	0.84	1200	9	19988	20700	1LM1222-4BB12-2 ■■■ 0	
925	1240	450	Δ	50.2	5889	96	96.2	96.2	0.84	1380	10	25912	20700	1LM1222-4BB32-2 ■■■ 0	
1015	1361	450	Δ	50.2	6462	96	96.3	96.3	0.86	1480	9.3	25848	20700	1LM1222-4BB52-2 ■■■ 0	
1000 rpm, 6-pole															
185	248	315	Δ	50.5	1767	94.6	95.5	95.4	0.81	290	7.9	5301	7500	1LM1222-3AC12-3 ■■■ 0	
230	308	315	Δ	50.4	2196	95	95.7	95.6	0.8	360	8.9	7466	7500	1LM1222-3AC32-3 ■■■ 0	
270	362	315	Δ	50.4	2578	95	95.7	95.8	0.83	410	8.4	7992	7500	1LM1222-3AC52-3 ■■■ 0	
300	402	315	Δ	50.4	2865	95.2	95.7	95.9	0.82	460	8.7	9455	7500	1LM1222-3AC72-3 ■■■ 0	
360	483	355	Δ	50.3	3438	95	95.7	95.5	0.85	530	9.4	12033	10200	1LM1222-3BC52-3 ■■■ 0	
400	536	355	Δ	50.3	3820	95.2	95.9	95.6	0.85	590	10.2	14516	10200	1LM1222-3BC72-3 ■■■ 0	
415	557	400	Δ	50.3	3963	95.5	95.9	96.2	0.85	610	7.8	11889	16400	1LM1222-4AC32-3 ■■■ 0	
465	624	400	Δ	50.3	4440	95.7	96.1	96.3	0.85	680	8.2	14208	16400	1LM1222-4AC52-3 ■■■ 0	
530	711	400	Δ	50.3	5061	95.9	96.2	96.4	0.85	780	8.8	17714	16400	1LM1222-4AC72-3 ■■■ 0	
570	764	450	Δ	50.2	5443	96	96.3	96.4	0.82	870	8.7	18506	20700	1LM1222-4BC12-3 ■■■ 0	
645	865	450	Δ	50.2	6159	96.1	96.4	96.5	0.84	960	8.4	20325	20700	1LM1222-4BC32-3 ■■■ 0	
750	1006	450	Δ	50.2	7162	96.3	96.5	96.5	0.82	1140	9.7	27932	20700	1LM1222-4BC52-3 ■■■ 0	
750 rpm, 6-pole															
145	194	315	Δ	37.9	1846	93.9	94.9	94.9	0.78	235	8.2	6092	7500	1LM1222-3AC12-4 ■■■ 0	
185	248	315	Δ	37.9	2355	94.2	95.1	95.2	0.8	290	8.3	7772	7500	1LM1222-3AC32-4 ■■■ 0	
210	282	315	Δ	37.9	2674	94.2	95.2	95.4	0.83	320	7.6	7755	7500	1LM1222-3AC52-4 ■■■ 0	
230	308	315	Δ	37.9	2928	94.2	95.3	95.5	0.84	345	7.7	8491	7500	1LM1222-3AC72-4 ■■■ 0	
270	362	355	Δ	37.8	3438	94.4	95.3	95.3	0.85	400	9.2	12377	10200	1LM1222-3BC52-4 ■■■ 0	
300	402	355	Δ	37.8	3820	94.5	95.4	95.4	0.86	440	9.4	14134	10200	1LM1222-3BC72-4 ■■■ 0	
335	449	400	Δ	37.8	4265	95.1	95.7	96.1	0.84	500	7.9	13648	16400	1LM1222-4AC32-4 ■■■ 0	
375	503	400	Δ	37.8	4775	95.3	95.8	96.2	0.83	570	8.7	17190	16400	1LM1222-4AC52-4 ■■■ 0	
430	577	400	Δ	37.8	5475	95.5	96	96.3	0.84	640	8.9	20258	16400	1LM1222-4AC72-4 ■■■ 0	
450	603	450	Δ	37.7	5730	95.6	96	96.2	0.82	690	8.7	20628	20700	1LM1222-4BC12-4 ■■■ 0	
520	697	450	Δ	37.7	6621	95.7	96.2	96.4	0.83	780	8.3	22511	20700	1LM1222-4BC32-4 ■■■ 0	
615	825	450	Δ	37.7	7830	95.9	96.3	96.5	0.84	910	8.2	25839	20700	1LM1222-4BC52-4 ■■■ 0	
690	925	450	Δ	37.7	8785	95.9	96.3	96.6	0.84	1020	8.3	29869	20700	1LM1222-4BC72-4 ■■■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1222-3AB12-1.0	1320	1360	3.5	79	94.5	3600	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3AB32-1.0	1500	1550	4.4	79	94.5	3600	1XB7 731	6SL3710-1GF34-7AA3	452
1LM1222-3AB52-1.0	1670	1720	5.1	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3AB72-1.0	1840	1880	5.9	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3BB52-1.0	2270	2330	8.4	79 ⁴⁾	95	3300	1XB7 731	6SL3710-1GF37-4AA3	710
1LM1222-3BB72-1.0	2440	2500	9	79 ⁴⁾	95	3300	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-3AB12-2.0	1320	1360	3.5	79	94.5	2500	1XB7 730	6SL3710-1GF34-1AA3	400
1LM1222-3AB32-2.0	1500	1550	4.4	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3AB52-2.0	1670	1720	5.1	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3AB72-2.0	1840	1880	5.9	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3BB52-2.0	2310	2370	8.4	79	95	2200	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-3BB72-2.0	2440	2500	9	79	95	2200	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4AB32-2.0	2870	2940	14.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GF38-6AA3	836
1LM1222-4AB52-2.0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1222-4AB72-2.0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1222-4BB12-2.0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1222-4BB32-2.0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1222-4BB52-2.0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1222-3AC12-3.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AC32-3.0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3AC52-3.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LM1222-3AC72-3.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3BC52-3.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3BC72-3.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1GF37-4AA3	710
1LM1222-4AC32-3.0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4AC52-3.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4AC72-3.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1222-4BC12-3.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1222-4BC32-3.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1222-4BC52-3.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1222-3AC12-4.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GF32-6AA3	250
1LM1222-3AC32-4.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AC52-4.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AC72-4.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-1GF34-1AA3	400
1LM1222-3BC52-4.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3BC72-4.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1GF34-7AA3	452
1LM1222-4AC32-4.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-4AC52-4.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GF37-4AA3	710
1LM1222-4AC72-4.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4BC12-4.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4BC32-4.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1222-4BC52-4.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1222-4BC72-4.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 520 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
1500 rpm, 4-pole																
160	215	315	Δ	50.3	1019	95.2	95.8	95.6	0.82	225	10.3	4789	7500	1LM1213-3AB12-2 ■■ 0 ⁵⁾		
230	308	315	Δ	50.4	1464	95.2	96	96	0.86	310	9.6	6149	7500	1LM1213-3AB32-2 ■■ 0		
295	396	315	Δ	50.4	1878	95.1	96	95.8	0.87	390	9.7	7888	7500	1LM1213-3AB52-2 ■■ 0		
390	523	315	Δ	50.4	2483	95.3	96.1	96	0.87	520	9.8	10429	7500	1LM1213-3AB72-2 ■■ 0		
460	617	355	Δ	50.4	2928	95.3	96.2	96.1	0.87	610	8.2	10834	10200	1LM1213-3BB52-2 ■■ 0		
505	677	355	Δ	50.4	3215	95.5	96.3	96.2	0.86	680	8.8	12860	10200	1LM1213-3BB72-2 ■■ 0		
550	738	400	Δ	50.4	3501	95.4	96	96.1	0.87	730	7.5	11203	16400	1LM1213-4AB32-2 ■■ 0		
595	798	400	Δ	50.3	3788	95.6	96.1	96.3	0.87	790	8	12500	16400	1LM1213-4AB52-2 ■■ 0		
670	898	400	Δ	50.3	4265	95.8	96.2	96.5	0.88	880	8.6	14928	16400	1LM1213-4AB72-2 ■■ 0		
795	1066	450	Δ	50.2	5061	95.9	96.3	96.4	0.84	1100	9	19738	20700	1LM1213-4BB12-2 ■■ 0		
955	1281	450	Δ	50.3	6080	96.1	96.5	96.7	0.86	1280	8.4	21888	20700	1LM1213-4BB32-2 ■■ 0		
1100	1475	450	Δ	50.2	7003	96.3	96.6	96.8	0.85	1480	9.7	28712	20700	1LM1213-4BB52-2 ■■ 0		
1185	1589	450	Δ	50.2	7544	96.3	96.7	96.8	0.87	1560	9.6	30176	20700	1LM1213-4BB72-2 ■■ 0		
1000 rpm, 6-pole																
165	221	315	Δ	50.4	1576	94.8	95.6	95.4	0.78	245	9.5	5674	7500	1LM1213-3AC12-3 ■■ 0		
215	288	315	Δ	50.4	2053	95	95.8	95.7	0.8	310	9.2	7186	7500	1LM1213-3AC32-3 ■■ 0		
250	335	315	Δ	50.4	2387	94.9	95.8	95.9	0.83	350	8.5	7638	7500	1LM1213-3AC52-3 ■■ 0		
275	369	315	Δ	50.4	2626	95.1	95.9	96	0.83	385	8.8	8666	7500	1LM1213-3AC72-3 ■■ 0		
345	463	355	Δ	50.3	3295	95.2	96	95.9	0.84	475	10	12521	10200	1LM1213-3BC52-3 ■■ 0		
380	510	355	Δ	50.3	3629	95.4	96.1	96	0.82	540	10.5	14879	10200	1LM1213-3BC72-3 ■■ 0		
425	570	400	Δ	50.3	4058	95.8	96.2	96.5	0.82	600	8.7	14203	16400	1LM1213-4AC32-3 ■■ 0		
470	630	400	Δ	50.3	4488	96	96.4	96.6	0.82	660	9.3	16606	16400	1LM1213-4AC52-3 ■■ 0		
520	697	400	Δ	50.3	4966	96	96.4	96.7	0.84	710	8.9	17878	16400	1LM1213-4AC72-3 ■■ 0		
585	784	450	Δ	50.2	5586	96.2	96.6	96.8	0.82	820	8.5	18434	20700	1LM1213-4BC12-3 ■■ 0		
655	878	450	Δ	50.2	6255	96.4	96.7	96.8	0.8	940	9.4	23769	20700	1LM1213-4BC32-3 ■■ 0		
745	999	450	Δ	50.2	7114	96.4	96.8	96.9	0.82	1040	9.3	26322	20700	1LM1213-4BC52-3 ■■ 0		
860	1153	450	Δ	50.2	8212	96.5	96.8	97	0.83	1180	9	29563	20700	1LM1213-4BC72-3 ■■ 0		

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1213-3AB12-2..0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1213-3AB32-2..0	1500	1550	4.4	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1213-3AB52-2..0	1670	1720	5.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1213-3AB72-2..0	1840	1880	5.9	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-3BB52-2..0	2310	2370	8.4	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-3BB72-2..0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4AB32-2..0	2870	2940	14.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1213-4AB52-2..0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1213-4AB72-2..0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1213-4BB12-2..0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1213-4BB32-2..0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1213-4BB52-2..0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1213-4BB72-2..0	5120	5220	34.2	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1213-3AC12-3..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1213-3AC32-3..0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1213-3AC52-3..0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1213-3AC72-3..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1213-3BC52-3..0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-3BC72-3..0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-4AC32-3..0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4AC52-3..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4AC72-3..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4BC12-3..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1213-4BC32-3..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LM1213-4BC52-3..0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LM1213-4BC72-3..0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

5) Utilization according to thermal class 130 (B).

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
1500 rpm, 4-pole															
180	241	315	Δ	50.4	1146	95.1	95.9	95.8	0.85	265	9.2	4584	7500	1LM1223-3AB12-2 ■ ■ 0	
260	349	315	Δ	50.4	1655	95.5	96.2	96.1	0.84	385	10.1	7448	7500	1LM1223-3AB32-2 ■ ■ 0	
345	463	315	Δ	50.5	2196	95.2	96	96	0.88	490	8.7	8125	7500	1LM1223-3AB52-2 ■ ■ 0	
405	543	315	Δ	50.5	2578	95.1	96	96.1	0.9	560	8.4	8765	7500	1LM1223-3AB72-2 ■ ■ 0	
495	664	355	Δ	50.4	3151	95.5	96.3	96.3	0.86	720	8.2	11974	10200	1LM1223-3BB52-2 ■ ■ 0	
520	697	355	Δ	50.4	3310	95.4	96.3	96.3	0.88	740	7.4	11254	10200	1LM1223-3BB72-2 ■ ■ 0	
595	798	400	Δ	50.4	3788	95.5	96	96.3	0.86	870	7.4	11743	16400	1LM1223-4AB32-2 ■ ■ 0	
650	872	400	Δ	50.3	4138	95.7	96.2	96.4	0.86	950	8.1	14069	16400	1LM1223-4AB52-2 ■ ■ 0	
740	992	400	Δ	50.3	4711	95.9	96.3	96.6	0.86	1080	8.9	17431	16400	1LM1223-4AB72-2 ■ ■ 0	
855	1147	450	Δ	50.2	5443	96.1	96.4	96.5	0.84	1280	8.4	20139	20700	1LM1223-4BB12-2 ■ ■ 0	
995	1334	450	Δ	50.2	6334	96.3	96.6	96.7	0.84	1480	9.4	25969	20700	1LM1223-4BB32-2 ■ ■ 0	
1070	1435	450	Δ	50.2	6812	96.3	96.6	96.8	0.86	1540	9	25886	20700	1LM1223-4BB52-2 ■ ■ 0	
1000 rpm, 6-pole															
170	228	315	Δ	50.4	1623	94.8	95.7	95.6	0.8	265	8.6	5356	7500	1LM1223-3AC12-3 ■ ■ 0	
240	322	315	Δ	50.4	2292	95	95.9	95.9	0.8	375	8.5	7564	7500	1LM1223-3AC32-3 ■ ■ 0	
275	369	315	Δ	50.4	2626	95.1	96	96	0.83	415	8.3	8141	7500	1LM1223-3AC52-3 ■ ■ 0	
310	416	315	Δ	50.4	2960	95.2	96.1	96.1	0.82	475	8.4	9472	7500	1LM1223-3AC72-3 ■ ■ 0	
375	503	355	Δ	50.4	3581	95.2	96.1	96.1	0.85	550	9	12175	10200	1LM1223-3BC52-3 ■ ■ 0	
425	570	355	Δ	50.3	4058	95.4	96.2	96.2	0.84	630	9.5	14609	10200	1LM1223-3BC72-3 ■ ■ 0	
485	650	400	Δ	50.3	4631	95.8	96.3	96.7	0.85	710	7.9	14356	16400	1LM1223-4AC52-3 ■ ■ 0	
550	738	400	Δ	50.3	5252	96	96.5	96.8	0.85	810	8.5	17857	16400	1LM1223-4AC72-3 ■ ■ 0	
590	791	450	Δ	50.2	5634	96.3	96.6	96.8	0.82	900	8.4	18592	20700	1LM1223-4BC12-3 ■ ■ 0	
670	898	450	Δ	50.3	6398	96.3	96.7	96.9	0.83	1000	8	20474	20700	1LM1223-4BC32-3 ■ ■ 0	
790	1059	450	Δ	50.2	7544	96.5	96.8	97	0.81	1220	9.1	27913	20700	1LM1223-4BC52-3 ■ ■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1223-3AB12-2..0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1223-3AB32-2..0	1500	1550	4.4	79	94.5	3000	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1223-3AB52-2..0	1670	1720	5.1	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1223-3AB72-2..0	1840	1880	5.9	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1223-3BB52-2..0	2310	2370	8.4	79	95	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1223-3BB72-2..0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1223-4AB32-2..0	2870	2940	14.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4AB52-2..0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4AB72-2..0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1223-4BB12-2..0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1223-4BB32-2..0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1223-4BB52-2..0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1223-3AC12-3..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1223-3AC32-3..0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1223-3AC52-3..0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LM1223-3AC72-3..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1223-3BC52-3..0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1223-3BC72-3..0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1223-4AC52-3..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1223-4AC72-3..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LM1223-4BC12-3..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4BC32-3..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4BC52-3..0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 730 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
3000 rpm, 4-pole															
220	295	315	Δ	100.5	700	95.4	95.9	95.5	0.88	205	7.3	2030	7500	1LM1212-3AB13-1 ■■■ 0	
290	389	315	Δ	100.5	923	95.8	96.2	95.9	0.89	270	8.2	3046	7500	1LM1212-3AB33-1 ■■■ 0	
315	422	315	Δ	100.4	1003	95.8	96.2	95.7	0.89	290	9.7	3912	7500	1LM1212-3AB53-1 ■■■ 0	
360	483	315	Δ	100.5	1146	95.9	96.3	95.9	0.9	330	9.2	4240	7500	1LM1212-3AB73-1 ■■■ 0	
425	570	355	Δ	100.5	1353	95.7	96.2	95.8	0.89	395	7.4	4330	10200	1LM1212-3BB53-1 ■■■ 0	
450	603	355	Δ	100.5	1432	95.7	96.3	96	0.89	415	6.6	4010	10200	1LM1212-3BB73-1 ■■■ 0	
1500 rpm, 4-pole															
210	282	315	Δ	50.4	1337	94.5	95.2	95.1	0.85	205	8.4	4947	7500	1LM1212-3AB13-2 ■■■ 0	
290	389	315	Δ	50.4	1846	94.9	95.6	95.5	0.86	280	8.8	7015	7500	1LM1212-3AB33-2 ■■■ 0	
325	436	315	Δ	50.4	2069	95.1	95.8	95.7	0.87	310	9.4	8276	7500	1LM1212-3AB53-2 ■■■ 0	
370	496	315	Δ	50.4	2355	95.2	95.9	95.8	0.88	345	10	9656	7500	1LM1212-3AB73-2 ■■■ 0	
420	563	355	Δ	50.4	2674	95.2	95.9	95.7	0.87	400	8.4	10429	10200	1LM1212-3BB53-2 ■■■ 0	
470	630	355	Δ	50.4	2992	95.2	96	95.9	0.88	440	8.4	11370	10200	1LM1212-3BB73-2 ■■■ 0	
545	731	400	Δ	50.3	3470	95.4	95.7	95.9	0.86	520	8.3	12145	16400	1LM1212-4AB33-2 ■■■ 0	
585	784	400	Δ	50.3	3724	95.5	95.9	96	0.87	550	8.6	13034	16400	1LM1212-4AB53-2 ■■■ 0	
660	885	400	Δ	50.3	4202	95.8	96.1	96.1	0.86	630	10.3	18069	16400	1LM1212-4AB73-2 ■■■ 0	
810	1086	450	Δ	50.2	5157	95.8	96.1	96.1	0.85	780	9.1	20112	20700	1LM1212-4BB13-2 ■■■ 0	
900	1207	450	Δ	50.2	5730	95.9	96.2	96.1	0.84	880	9.7	24066	20700	1LM1212-4BB33-2 ■■■ 0	
1030	1381	450	Δ	50.2	6557	96.1	96.3	96.3	0.85	1000	10.2	28851	20700	1LM1212-4BB53-2 ■■■ 0	
1200	1609	450	Δ	50.2	7639	96.2	96.5	96.5	0.85	1160	10.7	34376	20700	1LM1212-4BB73-2 ■■■ 0	
1000 rpm, 6-pole															
160	215	315	Y	50.4	1528	94.7	95.4	95.1	0.78	170	9.6	5654	7500	1LM1212-3AC13-3 ■■■ 0	
200	268	315	Y	50.4	1910	94.9	95.6	95.4	0.8	205	9.7	7067	7500	1LM1212-3AC33-3 ■■■ 0	
245	329	315	Y	50.4	2340	95	95.7	95.7	0.82	245	9	7722	7500	1LM1212-3AC53-3 ■■■ 0	
275	369	315	Δ	50.4	2626	95.1	95.7	95.8	0.83	275	9.1	8928	7500	1LM1212-3AC73-3 ■■■ 0	
325	436	355	Δ	50.3	3104	94.9	95.6	95.3	0.84	320	10.5	12106	10200	1LM1212-3BC53-3 ■■■ 0	
360	483	355	Δ	50.3	3438	95.1	95.7	95.3	0.83	360	11.3	14783	10200	1LM1212-3BC73-3 ■■■ 0	
395	530	400	Δ	50.3	3772	95.5	95.9	96.1	0.84	390	8.2	12448	16400	1LM1212-4AC33-3 ■■■ 0	
445	597	400	Δ	50.3	4249	95.8	96.1	96.2	0.83	440	9.6	16146	16400	1LM1212-4AC53-3 ■■■ 0	
490	657	400	Y	50.2	4679	95.9	96.2	96.2	0.82	490	10.3	19652	16400	1LM1212-4AC73-3 ■■■ 0	
560	751	450	Δ	50.2	5348	96	96.3	96.3	0.82	560	9.1	19253	20700	1LM1212-4BC13-3 ■■■ 0	
620	831	450	Δ	50.2	5921	96.1	96.4	96.4	0.82	620	9.4	21908	20700	1LM1212-4BC33-3 ■■■ 0	
710	952	450	Δ	50.2	6780	96.2	96.4	96.5	0.82	710	9.7	26442	20700	1LM1212-4BC53-3 ■■■ 0	
820	1100	450	Δ	50.2	7830	96.3	96.6	96.6	0.82	820	9.7	30537	20700	1LM1212-4BC73-3 ■■■ 0	
750 rpm, 6-pole															
130	174	315	Y	37.9	1655	93.8	94.7	94.5	0.76	142	8.9	5958	7500	1LM1212-3AC13-4 ■■■ 0	
170	228	315	Y	37.9	2165	94.2	95	95	0.79	180	8.7	7361	7500	1LM1212-3AC33-4 ■■■ 0	
190	255	315	Δ	37.9	2419	94.2	95.1	95.2	0.82	192	8.6	7983	7500	1LM1212-3AC53-4 ■■■ 0	
205	275	315	Δ	37.9	2610	94.4	95.3	95.4	0.82	205	8.8	8874	7500	1LM1212-3AC73-4 ■■■ 0	
250	335	355	Y	37.8	3183	94.3	95.2	95	0.84	245	10.4	12732	10200	1LM1212-3BC53-4 ■■■ 0	
280	375	355	Δ	37.8	3565	94.5	95.3	95.2	0.84	275	10.5	14616	10200	1LM1212-3BC73-4 ■■■ 0	
320	429	400	Δ	37.8	4074	95.1	95.6	96	0.83	320	8.3	13852	16400	1LM1212-4AC33-4 ■■■ 0	
355	476	400	Δ	37.8	4520	95.3	95.8	96.1	0.83	355	9	16724	16400	1LM1212-4AC53-4 ■■■ 0	
400	536	400	Δ	37.8	5093	95.3	95.9	96.2	0.85	390	8.6	17826	16400	1LM1212-4AC73-4 ■■■ 0	
450	603	450	Δ	37.7	5730	95.5	96	96.2	0.83	445	8.3	18909	20700	1LM1212-4BC13-4 ■■■ 0	
505	677	450	Δ	37.7	6430	95.7	96.1	96.3	0.82	510	8.6	22505	20700	1LM1212-4BC33-4 ■■■ 0	
575	771	450	Δ	37.7	7321	95.7	96.2	96.4	0.84	560	8.6	25624	20700	1LM1212-4BC53-4 ■■■ 0	
685	919	450	Δ	37.7	8722	95.9	96.3	96.5	0.84	670	8.6	30527	20700	1LM1212-4BC73-4 ■■■ 0	

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – enclosed version 1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1212-3AB13-1.0	1320	1360	3.5	79	94.5	3600	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3AB33-1.0	1500	1550	4.4	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB53-1.0	1670	1720	5.1	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB73-1.0	1840	1880	5.9	79	94.5	3600	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3BB53-1.0	2270	2330	8.4	79 ⁴⁾	95	3300	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3BB73-1.0	2400	2460	9	79 ⁴⁾	95	3300	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-3AB13-2.0	1320	1360	3.5	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3AB33-2.0	1500	1550	4.4	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB53-2.0	1670	1720	5.1	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB73-2.0	1840	1880	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3BB53-2.0	2270	2330	8.4	79	95	2200	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3BB73-2.0	2400	2460	9	79	95	2200	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-4AB33-2.0	2830	2900	14.7	79 ⁴⁾	95.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AB53-2.0	3040	3110	16.5	79 ⁴⁾	95.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AB73-2.0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BB13-2.0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4BB33-2.0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1212-4BB53-2.0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-0AA3	1000
1LM1212-4BB73-2.0	5120	5220	34.2	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1212-3AC13-3.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG31-8AA3	170
1LM1212-3AC33-3.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3AC53-3.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1212-3AC73-3.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3BC53-3.0	2270	2320	14.6	79	95	2200	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3BC73-3.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-4AC33-3.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-4AC53-3.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-4AC73-3.0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4BC13-3.0	3930	4030	35.4	79 ⁴⁾	95.5	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4BC33-3.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC53-3.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC73-3.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1212-3AC13-4.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG31-5AA3	142
1LM1212-3AC33-4.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3AC53-4.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3AC73-4.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3BC53-4.0	2270	2320	14.6	79	95	2200	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1212-3BC73-4.0	2420	2470	16.1	79	95	2200	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-4AC33-4.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-4AC53-4.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-4AC73-4.0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-4BC13-4.0	3930	4030	35.4	79 ⁴⁾	95.5	1700	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-4BC33-4.0	4230	4330	39.4	79 ⁴⁾	95.5	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4BC53-4.0	4660	4760	44.1	79 ⁴⁾	95.5	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4BC73-4.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 660 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
225	302	315	Δ	100.5	716	95.4	95.9	95.5	0.88	235	7.4	2220	7500	1LM1222-3AB13-1 ■■■ 0	
280	375	315	Δ	100.5	891	95.7	96.2	95.9	0.89	285	8.2	2940	7500	1LM1222-3AB33-1 ■■■ 0	
300	402	315	Δ	100.4	955	95.8	96.1	95.6	0.89	305	10.1	3820	7500	1LM1222-3AB53-1 ■■■ 0	
345	463	315	Δ	100.4	1098	95.9	96.3	95.9	0.9	350	9.7	4282	7500	1LM1222-3AB73-1 ■■■ 0	
385	516	355	Δ	100.4	1225	95.7	96.1	95.6	0.88	400	8.1	4410	10200	1LM1222-3BB53-1 ■■■ 0	
425	570	355	Δ	100.5	1353	95.7	96.3	95.9	0.89	435	7	4059	10200	1LM1222-3BB73-1 ■■■ 0	
1500 rpm, 4-pole															
230	308	315	Δ	50.5	1464	94.4	95.2	95.2	0.86	245	7.8	4978	7500	1LM1222-3AB13-2 ■■■ 0	
290	389	315	Δ	50.5	1846	94.8	95.6	95.6	0.88	300	8.4	6461	7500	1LM1222-3AB33-2 ■■■ 0	
310	416	315	Δ	50.4	1974	95	95.7	95.6	0.88	320	9.3	7699	7500	1LM1222-3AB53-2 ■■■ 0	
375	503	315	Δ	50.4	2387	95.2	95.9	95.9	0.89	385	9.5	9548	7500	1LM1222-3AB73-2 ■■■ 0	
420	563	355	Δ	50.3	2674	95.3	95.9	95.7	0.85	450	9.5	11766	10200	1LM1222-3BB53-2 ■■■ 0	
460	617	355	Δ	50.4	2928	95.2	96	95.9	0.88	475	8.4	11126	10200	1LM1222-3BB73-2 ■■■ 0	
530	711	400	Δ	50.3	3374	95.4	95.7	95.8	0.86	560	8.3	11809	16400	1LM1222-4AB33-2 ■■■ 0	
575	771	400	Δ	50.3	3661	95.5	95.9	96	0.87	600	8.6	13180	16400	1LM1222-4AB53-2 ■■■ 0	
640	858	400	Y	50.3	4074	95.7	96	96.1	0.87	670	9.4	16296	16400	1LM1222-4AB73-2 ■■■ 0	
800	1073	450	Δ	50.2	5093	95.8	96	96	0.84	870	9.4	20881	20700	1LM1222-4BB13-2 ■■■ 0	
920	1234	450	Δ	50.2	5857	96	96.2	96.2	0.85	980	9.9	24599	20700	1LM1222-4BB33-2 ■■■ 0	
955	1281	450	Δ	50.2	6080	95.9	96.2	96.1	0.85	1020	10.6	27360	20700	1LM1222-4BB53-2 ■■■ 0	
1105	1482	450	Δ	50.2	7035	96.1	96.3	96.3	0.85	1180	11.3	33768	20700	1LM1222-4BB73-2 ■■■ 0	
1000 rpm, 6-pole															
170	228	315	Y	50.4	1623	94.6	95.3	95.2	0.79	198	9	5518	7500	1LM1222-3AC13-3 ■■■ 0	
210	282	315	Δ	50.4	2005	94.9	95.6	95.5	0.8	240	9.3	7018	7500	1LM1222-3AC33-3 ■■■ 0	
250	335	315	Δ	50.4	2387	95	95.7	95.7	0.83	275	9	7877	7500	1LM1222-3AC53-3 ■■■ 0	
270	362	315	Δ	50.4	2578	95.1	95.7	95.7	0.81	305	9.5	9281	7500	1LM1222-3AC73-3 ■■■ 0	
325	436	355	Δ	50.3	3104	94.9	95.6	95.3	0.85	350	10.3	11795	10200	1LM1222-3BC53-3 ■■■ 0	
350	469	355	Δ	50.3	3342	95.1	95.7	95.3	0.83	385	11.6	14705	10200	1LM1222-3BC73-3 ■■■ 0	
385	516	400	Δ	50.3	3676	95.5	95.9	96.1	0.84	420	8.2	12131	16400	1LM1222-4AC33-3 ■■■ 0	
435	583	400	Δ	50.3	4154	95.8	96.1	96.2	0.83	475	9.9	16201	16400	1LM1222-4AC53-3 ■■■ 0	
485	650	400	Δ	50.2	4631	95.9	96.2	96.3	0.83	530	10.1	18987	16400	1LM1222-4AC73-3 ■■■ 0	
550	738	450	Δ	50.2	5252	96	96.3	96.3	0.81	620	9.5	19958	20700	1LM1222-4BC13-3 ■■■ 0	
605	811	450	Δ	50.2	5777	96.1	96.3	96.3	0.8	690	10.1	23686	20700	1LM1222-4BC33-3 ■■■ 0	
710	952	450	Δ	50.2	6780	96.2	96.5	96.5	0.83	780	9.2	25086	20700	1LM1222-4BC53-3 ■■■ 0	
765	1026	450	Δ	50.2	7305	96.2	96.4	96.5	0.83	840	9.8	28490	20700	1LM1222-4BC73-3 ■■■ 0	
750 rpm, 6-pole															
130	174	315	Y	37.9	1655	93.8	94.7	94.6	0.78	154	8.6	5627	7500	1LM1222-3AC13-4 ■■■ 0	
170	228	315	Δ	37.9	2165	94.3	95.1	94.9	0.77	205	9	8011	7500	1LM1222-3AC33-4 ■■■ 0	
195	261	315	Δ	37.9	2483	94.2	95.1	95.2	0.81	220	8.6	8194	7500	1LM1222-3AC53-4 ■■■ 0	
210	282	315	Δ	37.9	2674	94.2	95.2	95.3	0.83	230	8.5	8557	7500	1LM1222-3AC73-4 ■■■ 0	
250	335	355	Δ	37.8	3183	94.4	95.2	95	0.83	275	10.4	12732	10200	1LM1222-3BC53-4 ■■■ 0	
270	362	355	Δ	37.8	3438	94.4	95.3	95.1	0.85	290	10.4	13752	10200	1LM1222-3BC73-4 ■■■ 0	
315	422	400	Δ	37.8	4011	95.1	95.6	96	0.83	345	8.6	14039	16400	1LM1222-4AC33-4 ■■■ 0	
355	476	400	Δ	37.8	4520	95.2	95.8	96.1	0.84	385	8.8	16272	16400	1LM1222-4AC53-4 ■■■ 0	
395	530	400	Δ	37.8	5029	95.4	95.9	96.2	0.84	430	9.2	19110	16400	1LM1222-4AC73-4 ■■■ 0	
445	597	450	Δ	37.7	5666	95.6	96	96.2	0.81	500	8.8	20398	20700	1LM1222-4BC13-4 ■■■ 0	
500	671	450	Δ	37.7	6366	95.7	96.1	96.3	0.82	560	8.7	22918	20700	1LM1222-4BC33-4 ■■■ 0	
585	784	450	Δ	37.7	7448	95.8	96.2	96.4	0.83	640	8.5	26068	20700	1LM1222-4BC53-4 ■■■ 0	
660	885	450	Δ	37.7	8403	95.9	96.3	96.5	0.84	710	8.8	30251	20700	1LM1222-4BC73-4 ■■■ 0	

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – enclosed version 1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1222-3AB13-1.0	1320	1360	3.5	79	94.5	3600	1XB7 730	6SL3710-1GH32-6AA3	250
1LM1222-3AB33-1.0	1500	1550	4.4	79	94.5	3600	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-3AB53-1.0	1670	1720	5.1	79	94.5	3600	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-3AB73-1.0	1840	1880	5.9	79	94.5	3600	1XB7 730	6SL3710-1GH34-1AA3	400
1LM1222-3BB53-1.0	2270	2330	8.4	79 ⁴⁾	95	3300	1XB7 731	6SL3710-1GH34-1AA3	400
1LM1222-3BB73-1.0	2400	2460	9	79 ⁴⁾	95	3300	1XB7 731	6SL3710-1GH34-7AA3	452
1LM1222-3AB13-2.0	1320	1360	3.5	79	94.5	2500	1XB7 730	6SL3710-1GH32-6AA3	250
1LM1222-3AB33-2.0	1500	1550	4.4	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-3AB53-2.0	1670	1720	5.1	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-3AB73-2.0	1840	1880	5.9	79	94.5	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LM1222-3BB53-2.0	2270	2330	8.4	79	95	2200	1XB7 731	6SL3710-1GH34-7AA3	452
1LM1222-3BB73-2.0	2400	2460	9	79	95	2200	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1222-4AB33-2.0	2830	2900	14.7	79 ⁴⁾	95.5	2200	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1222-4AB53-2.0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LM1222-4AB73-2.0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-1GH37-4AA3	710
1LM1222-4BB13-2.0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LM1222-4BB33-2.0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-1AA3	1036
1LM1222-4BB53-2.0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-1AA3	1036
1LM1222-4BB73-2.0	5120	5220	34.2	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LM1222-3AC13-3.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GH32-2AA3	208
1LM1222-3AC33-3.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-1GH32-6AA3	250
1LM1222-3AC53-3.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-3AC73-3.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-3BC53-3.0	2270	2320	14.6	79	95	2200	1XB7 730	6SL3710-1GH34-1AA3	400
1LM1222-3BC73-3.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1GH34-1AA3	400
1LM1222-4AC33-3.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH34-7AA3	452
1LM1222-4AC53-3.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1222-4AC73-3.0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1222-4BC13-3.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LM1222-4BC33-3.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LM1222-4BC53-3.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LM1222-4BC73-3.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LM1222-3AC13-4.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GH31-8AA3	171
1LM1222-3AC33-4.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-1GH32-2AA3	208
1LM1222-3AC53-4.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-1GH32-6AA3	250
1LM1222-3AC73-4.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-1GH32-6AA3	250
1LM1222-3BC53-4.0	2270	2320	14.6	79	95	2200	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-3BC73-4.0	2420	2470	16.1	79	95	2200	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1222-4AC33-4.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 730	6SL3710-1GH34-1AA3	400
1LM1222-4AC53-4.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH34-1AA3	400
1LM1222-4AC73-4.0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH34-7AA3	452
1LM1222-4BC13-4.0	3930	4030	35.4	79 ⁴⁾	95.5	1700	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1222-4BC33-4.0	4230	4330	39.4	79 ⁴⁾	95.5	1700	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1222-4BC53-4.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LM1222-4BC73-4.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 730 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
1500 rpm, 4-pole																
155	208	315	Δ	50.3	987	95.2	95.8	95.5	0.8	160	10.7	4935	7500	1LM1213-3AB13-2 ■■ 0 ⁵⁾		
230	308	315	Δ	50.3	1464	95.4	96.1	95.9	0.83	230	10.7	7027	7500	1LM1213-3AB33-2 ■■ 0		
325	436	315	Δ	50.4	2069	95.1	96	95.8	0.87	310	9.3	8276	7500	1LM1213-3AB53-2 ■■ 0		
380	510	315	Δ	50.4	2419	95.3	96	96	0.88	355	9.7	9676	7500	1LM1213-3AB73-2 ■■ 0		
455	610	355	Δ	50.4	2897	95.3	96.1	96.1	0.87	430	7.8	10140	10200	1LM1213-3BB53-2 ■■ 0		
480	644	355	Δ	50.4	3056	95.4	96.2	96.2	0.88	450	8.2	11307	10200	1LM1213-3BB73-2 ■■ 0		
560	751	400	Δ	50.3	3565	95.5	96	96.2	0.86	540	8	12121	16400	1LM1213-4AB33-2 ■■ 0		
615	825	400	Δ	50.3	3915	95.6	96.1	96.3	0.87	580	8.2	13311	16400	1LM1213-4AB53-2 ■■ 0		
700	939	400	Δ	50.3	4456	95.9	96.3	96.5	0.85	680	9.5	17824	16400	1LM1213-4AB73-2 ■■ 0		
860	1153	450	Δ	50.2	5475	96	96.4	96.5	0.85	830	8.5	19710	20700	1LM1213-4BB13-2 ■■ 0		
970	1301	450	Δ	50.2	6175	96.2	96.5	96.6	0.84	950	9	24083	20700	1LM1213-4BB33-2 ■■ 0		
1105	1482	450	Δ	50.2	7035	96.3	96.6	96.8	0.85	1060	9.7	28843	20700	1LM1213-4BB53-2 ■■ 0		
1275	1710	450	Δ	50.2	8117	96.5	96.8	97	0.85	1220	10.1	34903	20700	1LM1213-4BB73-2 ■■ 0		
1000 rpm, 6-pole																
155	208	315	Y	50.3	1480	94.8	95.5	95.3	0.77	166	9.7	5624	7500	1LM1213-3AC13-3 ■■ 0		
200	268	315	Y	50.4	1910	95	95.8	95.7	0.8	205	9.7	7067	7500	1LM1213-3AC33-3 ■■ 0		
250	335	315	Y	50.4	2387	95	95.9	95.9	0.82	250	8.7	7877	7500	1LM1213-3AC53-3 ■■ 0		
285	382	315	Δ	50.4	2722	95.1	96	96	0.83	285	8.7	8710	7500	1LM1213-3AC73-3 ■■ 0		
345	463	355	Δ	50.3	3295	95.2	96	95.9	0.84	340	9.9	12192	10200	1LM1213-3BC53-3 ■■ 0		
385	516	355	Δ	50.3	3676	95.4	96.1	96	0.82	385	10.5	14704	10200	1LM1213-3BC73-3 ■■ 0		
410	550	400	Δ	50.3	3915	95.6	96.2	96.5	0.84	400	8	12137	16400	1LM1213-4AC33-3 ■■ 0		
450	603	400	Δ	50.3	4297	96	96.4	96.6	0.82	450	9.3	16329	16400	1LM1213-4AC53-3 ■■ 0		
545	731	400	Y	50.3	5204	96.1	96.5	96.7	0.82	540	9.4	19775	16400	1LM1213-4AC73-3 ■■ 0		
585	784	450	Δ	50.2	5586	96.2	96.6	96.8	0.81	590	8.6	18992	20700	1LM1213-4BC13-3 ■■ 0		
650	872	450	Δ	50.2	6207	96.3	96.7	96.8	0.82	650	9	22345	20700	1LM1213-4BC33-3 ■■ 0		
755	1012	450	Δ	50.2	7210	96.4	96.8	96.9	0.82	750	9.2	25956	20700	1LM1213-4BC53-3 ■■ 0		
865	1160	450	Δ	50.2	8260	96.5	96.9	97	0.82	860	9.2	30562	20700	1LM1213-4BC73-3 ■■ 0		

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1213-3AB13-2..0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG31-8AA3	170
1LM1213-3AB33-2..0	1500	1550	4.4	79	94.5	3000	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1213-3AB53-2..0	1670	1720	5.1	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1213-3AB73-2..0	1840	1880	5.9	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1213-3BB53-2..0	2270	2330	8.4	79	95	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1213-3BB73-2..0	2400	2460	9	79	95	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1213-4AB33-2..0	2830	2900	14.7	79 ⁴⁾	95.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-4AB53-2..0	3040	3110	16.5	79 ⁴⁾	95.5	2200	1XB7 731	6SL3710-7LG37-4AA3	710
1LM1213-4AB73-2..0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4BB13-2..0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1213-4BB33-2..0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LM1213-4BB53-2..0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1213-4BB73-2..0	5120	5220	34.2	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1213-3AC13-3..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG31-8AA3	170
1LM1213-3AC33-3..0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1213-3AC53-3..0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1213-3AC73-3..0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1213-3BC53-3..0	2270	2320	14.6	79	95	2200	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1213-3BC73-3..0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1213-4AC33-3..0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1213-4AC53-3..0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1213-4AC73-3..0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-4BC13-3..0	3930	4030	35.4	79 ⁴⁾	95.5	1700	1XB7 731	6SL3710-7LG37-4AA3	710
1LM1213-4BC33-3..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4BC53-3..0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1213-4BC73-3..0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required

5) Utilization according to thermal class 130 (B).

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated}				
<ul style="list-style-type: none"> Rated motor voltage 660 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
1500 rpm, 4-pole														
145	194	315	Δ	50.3	923	95.3	95.8	95.5	0.79	168	11.2	4984	7500	1LM1223-3AB13-2 ■■ 0 ⁵⁾
235	315	315	Δ	50.4	1496	95.3	96.1	96	0.85	250	10	6433	7500	1LM1223-3AB33-2 ■■ 0
285	382	315	Δ	50.4	1814	95.2	96	95.8	0.87	300	9.9	7800	7500	1LM1223-3AB53-2 ■■ 0
380	510	315	Δ	50.4	2419	95.2	96	96	0.89	390	9.3	9434	7500	1LM1223-3AB73-2 ■■ 0
455	610	355	Δ	50.4	2897	95.5	96.2	96.1	0.85	485	8.8	11878	10200	1LM1223-3BB53-2 ■■ 0
480	644	355	Δ	50.4	3056	95.4	96.2	96.2	0.88	495	8	11002	10200	1LM1223-3BB73-2 ■■ 0
525	704	400	Δ	50.3	3342	95.5	96	96.1	0.85	560	8.3	11697	16400	1LM1223-4AB33-2 ■■ 0
600	805	400	Δ	50.3	3820	95.6	96.1	96.3	0.87	630	8.2	12988	16400	1LM1223-4AB53-2 ■■ 0
670	898	400	Y	50.3	4265	95.8	96.3	96.5	0.87	700	9	16207	16400	1LM1223-4AB73-2 ■■ 0
855	1147	450	Δ	50.2	5443	96.1	96.4	96.5	0.84	920	8.8	20683	20700	1LM1223-4BB13-2 ■■ 0
980	1314	450	Δ	50.2	6239	96.2	96.5	96.7	0.84	1060	9.1	24332	20700	1LM1223-4BB33-2 ■■ 0
1020	1368	450	Δ	50.2	6494	96.2	96.5	96.6	0.85	1080	10.1	27275	20700	1LM1223-4BB53-2 ■■ 0
1190	1596	450	Δ	50.2	7576	96.4	96.7	96.8	0.85	1260	10.6	34092	20700	1LM1223-4BB73-2 ■■ 0
1000 rpm, 6-pole														
155	208	315	Y	50.4	1480	94.8	95.5	95.4	0.77	184	9.6	5624	7500	1LM1223-3AC13-3 ■■ 0
210	282	315	Δ	50.4	2005	95	95.8	95.7	0.8	240	9.3	7018	7500	1LM1223-3AC33-3 ■■ 0
260	349	315	Δ	50.4	2483	95	95.9	95.9	0.83	285	8.6	7946	7500	1LM1223-3AC53-3 ■■ 0
280	375	315	Δ	50.4	2674	95.2	96	95.9	0.81	315	9.2	9359	7500	1LM1223-3AC73-3 ■■ 0
340	456	355	Δ	50.3	3247	95.2	96	95.9	0.84	370	9.7	12014	10200	1LM1223-3BC53-3 ■■ 0
360	483	355	Δ	50.3	3438	95.4	96.1	95.9	0.82	400	11.2	14783	10200	1LM1223-3BC73-3 ■■ 0
400	536	400	Δ	50.3	3820	95.6	96.1	96.5	0.84	435	7.9	11842	16400	1LM1223-4AC33-3 ■■ 0
455	610	400	Δ	50.3	4345	96	96.4	96.6	0.82	500	9.4	16077	16400	1LM1223-4AC53-3 ■■ 0
520	697	400	Δ	50.3	4966	96.1	96.5	96.7	0.8	590	9	18871	16400	1LM1223-4AC73-3 ■■ 0
575	771	450	Δ	50.2	5491	96.3	96.6	96.7	0.8	650	9	19768	20700	1LM1223-4BC13-3 ■■ 0
630	845	450	Δ	50.2	6016	96.4	96.7	96.8	0.8	710	9.8	23462	20700	1LM1223-4BC33-3 ■■ 0
745	999	450	Δ	50.2	7114	96.4	96.8	96.9	0.83	810	8.9	24899	20700	1LM1223-4BC53-3 ■■ 0
805	1080	450	Δ	50.2	7687	96.4	96.8	96.9	0.83	880	9.3	29211	20700	1LM1223-4BC73-3 ■■ 0

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1223-3AB13-2..0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-1GH31-8AA3	171
1LM1223-3AB33-2..0	1500	1550	4.4	79	94.5	3000	1XB7 730	6SL3710-1GH32-6AA3	250
1LM1223-3AB53-2..0	1670	1720	5.1	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1223-3AB73-2..0	1840	1880	5.9	79	94.5	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LM1223-3BB53-2..0	2270	2330	8.4	79	95	2600	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1223-3BB73-2..0	2400	2460	9	79	95	2600	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1223-4AB33-2..0	2830	2900	14.7	79 ⁴⁾	95.5	2200	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1223-4AB53-2..0	3080	3150	16.5	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LM1223-4AB73-2..0	3350	3420	18.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-1GH37-4AA3	710
1LM1223-4BB13-2..0	4050	4150	24.4	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LM1223-4BB33-2..0	4330	4430	27.1	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LM1223-4BB53-2..0	4680	4780	29.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LM1223-4BB73-2..0	5120	5220	34.2	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LM1223-3AC13-3..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GH32-2AA3	208
1LM1223-3AC33-3..0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-1GH32-6AA3	250
1LM1223-3AC53-3..0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1223-3AC73-3..0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LM1223-3BC53-3..0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1GH34-1AA3	400
1LM1223-3BC73-3..0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1GH34-1AA3	400
1LM1223-4AC33-3..0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH34-7AA3	452
1LM1223-4AC53-3..0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LM1223-4AC73-3..0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH37-4AA3	710
1LM1223-4BC13-3..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LM1223-4BC33-3..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LM1223-4BC53-3..0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LM1223-4BC73-3..0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

5) Utilization according to thermal class 130 (B).

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3600 rpm, 4-pole																
235	315	315	Δ	120.4	623	95.6	95.9	95.2	0.87	340	8.8	2243	7500	1LM1212-3AB15-5 ■■■ 0		
275	369	315	Δ	120.4	729	95.8	96.1	95.4	0.87	395	10.7	3208	7500	1LM1212-3AB35-5 ■■■ 0		
320	429	315	Δ	120.5	849	95.7	96.1	95.5	0.9	445	8.6	2887	7500	1LM1212-3AB55-5 ■■■ 0		
360	483	315	Δ	120.5	955	95.9	96.2	95.7	0.9	500	9.3	3534	7500	1LM1212-3AB75-5 ■■■ 0		
3000 rpm, 4-pole																
420	563	355	Δ	100.5	1337	95.7	96.3	95.9	0.89	590	6.6	3877	10200	1LM1212-3BB55-1 ■■■ 0		
465	624	355	Δ	100.4	1480	95.9	96.4	95.9	0.89	650	7.7	4884	10200	1LM1212-3BB75-1 ■■■ 0		
1800 rpm, 4-pole																
260	349	315	Δ	60.5	1379	95.1	95.8	95.5	0.85	385	8.4	5102	7500	1LM1212-3AB15-6 ■■■ 0		
320	429	315	Δ	60.5	1698	95.4	96	95.9	0.88	455	8.8	6283	7500	1LM1212-3AB35-6 ■■■ 0		
355	476	315	Δ	60.5	1883	95.5	96.1	96	0.89	500	9	6967	7500	1LM1212-3AB55-6 ■■■ 0		
430	577	315	Δ	60.4	2281	95.9	96.4	96.2	0.86	620	11	10493	7500	1LM1212-3AB75-6 ■■■ 0		
520	697	355	Δ	60.4	2759	95.6	96.3	96	0.87	750	8.7	10760	10200	1LM1212-3BB55-6 ■■■ 0		
545	731	355	Δ	60.4	2891	95.6	96.3	96.2	0.89	760	8	10119	10200	1LM1212-3BB75-6 ■■■ 0		
620	831	400	Δ	60.3	3289	95.5	95.9	95.9	0.87	890	8	10854	16400	1LM1212-4AB35-6 ■■■ 0		
680	912	400	Δ	60.3	3608	95.8	96	96	0.87	980	9.1	13350	16400	1LM1212-4AB55-6 ■■■ 0		
750	1006	400	Δ	60.3	3979	96	96.2	96.1	0.85	1100	10.7	17508	16400	1LM1212-4AB75-6 ■■■ 0		
825	1106	450	Δ	60.2	4377	95.8	95.9	95.6	0.82	1260	10.4	20134	20700	1LM1212-4BB15-6 ■■■ 0		
905	1214	450	Δ	60.2	4801	95.9	96	95.8	0.85	1340	10.4	21124	20700	1LM1212-4BB35-6 ■■■ 0		
1200 rpm, 6-pole																
215	288	315	Δ	60.5	1711	95	95.7	95.6	0.81	335	8.2	5133	7500	1LM1212-3AC15-7 ■■■ 0		
260	349	315	Δ	60.4	2069	95.3	95.7	95.9	0.83	390	8.6	6414	7500	1LM1212-3AC35-7 ■■■ 0		
310	416	315	Δ	60.4	2467	95.5	95.7	96	0.83	475	9.1	8141	7500	1LM1212-3AC55-7 ■■■ 0		
335	449	315	Δ	60.4	2666	95.5	95.7	96.1	0.84	500	8.9	8531	7500	1LM1212-3AC75-7 ■■■ 0		
395	530	355	Δ	60.3	3143	95.4	95.9	95.5	0.84	590	11	12572	10200	1LM1212-3BC55-7 ■■■ 0		
445	597	355	Δ	60.3	3541	95.4	96	95.6	0.85	660	10.5	13810	10200	1LM1212-3BC75-7 ■■■ 0		
470	630	400	Δ	60.3	3740	95.8	96.1	96.1	0.84	700	8.8	12716	16400	1LM1212-4AC35-7 ■■■ 0		
520	697	400	Δ	60.3	4138	96	96.2	96.2	0.83	780	10	16138	16400	1LM1212-4AC55-7 ■■■ 0		
575	771	400	Δ	60.3	4576	96.1	96.3	96.3	0.84	850	9.9	17389	16400	1LM1212-4AC75-7 ■■■ 0		
605	811	450	Δ	60.2	4814	96.2	96.3	96.2	0.81	930	9.9	18293	20700	1LM1212-4BC15-7 ■■■ 0		
700	939	450	Δ	60.2	5570	96.3	96.5	96.4	0.82	1060	9.7	20609	20700	1LM1212-4BC35-7 ■■■ 0		
900 rpm, 6-pole																
175	235	315	Δ	45.4	1857	94.6	95.4	95.3	0.79	280	8.5	6128	7500	1LM1212-3AC15-8 ■■■ 0		
210	282	315	Δ	45.4	2228	94.9	95.6	95.4	0.76	350	9.3	8466	7500	1LM1212-3AC35-8 ■■■ 0		
245	329	315	Δ	45.4	2600	94.8	95.7	95.7	0.83	370	8.2	8060	7500	1LM1212-3AC55-8 ■■■ 0		
270	362	315	Δ	45.4	2865	94.9	95.8	95.8	0.83	410	8.4	9168	7500	1LM1212-3AC75-8 ■■■ 0		
310	416	355	Δ	45.3	3289	94.8	95.6	95.5	0.86	455	9.4	11512	10200	1LM1212-3BC55-8 ■■■ 0		
345	463	355	Δ	45.3	3661	95	95.7	95.5	0.85	510	9.8	13546	10200	1LM1212-3BC75-8 ■■■ 0		
385	516	400	Δ	45.3	4085	95.4	95.9	96.2	0.84	570	8.1	13072	16400	1LM1212-4AC35-8 ■■■ 0		
430	577	400	Δ	45.3	4562	95.6	96	96.3	0.84	640	8.4	15511	16400	1LM1212-4AC55-8 ■■■ 0		
485	650	400	Δ	45.3	5146	95.8	96.2	96.4	0.84	720	9	18526	16400	1LM1212-4AC75-8 ■■■ 0		
540	724	450	Δ	45.2	5730	95.9	96.3	96.4	0.82	820	8.7	19482	20700	1LM1212-4BC15-8 ■■■ 0		
565	758	450	Δ	45.2	5995	96	96.3	96.3	0.81	870	9.4	22781	20700	1LM1212-4BC35-8 ■■■ 0		
680	912	450	Δ	45.2	7215	96.2	96.4	96.5	0.82	1040	9.5	27417	20700	1LM1212-4BC55-8 ■■■ 0		
790	1059	450	Δ	45.2	8382	96.2	96.5	96.6	0.83	1180	9.2	31013	20700	1LM1212-4BC75-8 ■■■ 0		

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1212-3AB15-5.0	1320	1360	3.5	79	94.5	3600	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1212-3AB35-5.0	1500	1550	4.4	79	94.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AB55-5.0	1670	1720	5.1	79	94.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AB75-5.0	1840	1880	5.9	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3BB55-1.0	2270	2330	8.4	79 ⁴⁾	95	3300	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3BB75-1.0	2440	2500	9	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-3AB15-6.0	1320	1360	3.5	79	94.5	2700	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AB35-6.0	1500	1550	4.4	79	94.5	2700	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AB55-6.0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3AB75-6.0	1880	1920	5.9	79	94.5	2700	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-3BB55-6.0	2310	2370	8.4	79	95	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1212-3BB75-6.0	2440	2500	9	79	95	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1212-4AB35-6.0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1212-4AB55-6.0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1212-4AB75-6.0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LM1212-4BB15-6.0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LM1212-4BB35-6.0	4320	4420	26.6	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LM1212-3AC15-7.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1212-3AC35-7.0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AC55-7.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3AC75-7.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3BC55-7.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-3BC75-7.0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4AC35-7.0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4AC55-7.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1212-4AC75-7.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1212-4BC15-7.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1212-4BC35-7.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LM1212-3AC15-8.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LE33-1AA3	302
1LM1212-3AC35-8.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1212-3AC55-8.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-7LE33-8AA3	370
1LM1212-3AC75-8.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3BC55-8.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1212-3BC75-8.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-4AC35-8.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1212-4AC55-8.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4AC75-8.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1212-4BC15-8.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1212-4BC35-8.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1212-4BC55-8.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1212-4BC75-8.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3600 rpm, 4-pole															
230	308	315	Δ	120.4	610	95.6	95.8	95.1	0.87	360	9.6	2379	7500	1LM1222-3AB15-5 ■■ 0	
285	382	315	Δ	120.5	756	95.9	96.2	95.7	0.89	435	8.9	2646	7500	1LM1222-3AB35-5 ■■ 0	
315	422	315	Δ	120.4	836	95.8	96	95.3	0.89	485	9.9	3260	7500	1LM1222-3AB55-5 ■■ 0	
340	456	315	Δ	120.4	902	95.8	96	95.3	0.88	530	11.7	4239	7500	1LM1222-3AB75-5 ■■ 0	
3000 rpm, 4-pole															
420	563	355	Δ	100.4	1337	95.8	96.3	95.8	0.89	640	7.6	4412	10200	1LM1222-3BB55-1 ■■ 0	
450	603	355	Δ	100.5	1432	95.8	96.4	96	0.89	690	6.6	4153	10200	1LM1222-3BB75-1 ■■ 0	
1800 rpm, 4-pole															
255	342	315	Δ	60.4	1353	95.1	95.7	95.5	0.85	410	8.6	5141	7500	1LM1222-3AB15-6 ■■ 0	
320	429	315	Δ	60.4	1698	95.4	96.1	95.9	0.87	500	9.1	6452	7500	1LM1222-3AB35-6 ■■ 0	
365	489	315	Δ	60.4	1936	95.5	96.1	96	0.88	570	9.1	7550	7500	1LM1222-3AB55-6 ■■ 0	
420	563	315	Δ	60.4	2228	95.7	96.3	96.2	0.89	640	9.5	8689	7500	1LM1222-3AB75-6 ■■ 0	
500	671	355	Δ	60.4	2653	95.5	96.2	96	0.88	770	7.7	9020	10200	1LM1222-3BB55-6 ■■ 0	
560	751	355	Δ	60.4	2971	95.7	96.4	96.2	0.88	870	8.8	11884	10200	1LM1222-3BB75-6 ■■ 0	
625	838	400	Δ	60.3	3316	95.7	95.9	95.9	0.85	1000	8.9	12269	16400	1LM1222-4AB35-6 ■■ 0	
650	872	400	Δ	60.3	3448	95.7	96	96.1	0.88	1000	8.1	11378	16400	1LM1222-4AB55-6 ■■ 0	
735	986	400	Δ	60.3	3899	95.9	96.2	96.2	0.88	1140	9.3	14816	16400	1LM1222-4AB75-6 ■■ 0	
775	1039	450	Δ	60.2	4112	95.7	95.8	95.5	0.83	1280	10.8	19326	20700	1LM1222-4BB15-6 ■■ 0	
1200 rpm, 6-pole															
220	295	315	Δ	60.4	1751	95.2	95.7	95.6	0.79	380	9.1	5778	7500	1LM1222-3AC15-7 ■■ 0	
265	355	315	Δ	60.4	2109	95.4	95.7	95.9	0.82	440	8.9	6749	7500	1LM1222-3AC35-7 ■■ 0	
305	409	315	Δ	60.4	2427	95.5	95.7	96	0.83	500	9	8009	7500	1LM1222-3AC55-7 ■■ 0	
340	456	315	Δ	60.4	2706	95.6	95.7	96.2	0.84	550	8.7	8389	7500	1LM1222-3AC75-7 ■■ 0	
395	530	355	Δ	60.3	3143	95.4	95.9	95.5	0.84	640	10.9	12572	10200	1LM1222-3BC55-7 ■■ 0	
435	583	355	Δ	60.3	3462	95.5	96	95.6	0.85	700	10.8	13848	10200	1LM1222-3BC75-7 ■■ 0	
460	617	400	Δ	60.3	3661	95.8	96.1	96.1	0.84	750	8.8	12447	16400	1LM1222-4AC35-7 ■■ 0	
505	677	400	Δ	60.2	4019	96	96.2	96.1	0.82	840	10.3	16478	16400	1LM1222-4AC55-7 ■■ 0	
575	771	400	Δ	60.2	4576	96.1	96.3	96.3	0.83	940	10.2	18304	16400	1LM1222-4AC75-7 ■■ 0	
615	825	450	Δ	60.2	4894	96.2	96.3	96.2	0.8	1040	10.1	19087	20700	1LM1222-4BC15-7 ■■ 0	
900 rpm, 6-pole															
170	228	315	Δ	45.4	1804	94.5	95.3	95.1	0.76	310	8.8	6494	7500	1LM1222-3AC15-8 ■■ 0	
215	288	315	Δ	45.4	2281	94.8	95.6	95.5	0.8	370	8.7	7755	7500	1LM1222-3AC35-8 ■■ 0	
245	329	315	Δ	45.4	2600	94.8	95.7	95.7	0.82	410	8.4	8320	7500	1LM1222-3AC55-8 ■■ 0	
270	362	315	Δ	45.4	2865	94.9	95.8	95.8	0.84	440	8.1	8595	7500	1LM1222-3AC75-8 ■■ 0	
310	416	355	Δ	45.3	3289	94.9	95.6	95.4	0.85	500	10	12498	10200	1LM1222-3BC55-8 ■■ 0	
345	463	355	Δ	45.3	3661	95.1	95.8	95.5	0.84	560	10.8	15010	10200	1LM1222-3BC75-8 ■■ 0	
385	516	400	Δ	45.3	4085	95.5	96	96.2	0.83	630	8.7	14298	16400	1LM1222-4AC35-8 ■■ 0	
425	570	400	Δ	45.3	4509	95.7	96.1	96.2	0.82	710	9.4	17134	16400	1LM1222-4AC55-8 ■■ 0	
480	644	400	Δ	45.3	5093	95.8	96.2	96.4	0.84	780	8.9	18335	16400	1LM1222-4AC75-8 ■■ 0	
520	697	450	Δ	45.2	5517	95.9	96.3	96.4	0.82	860	8.9	19310	20700	1LM1222-4BC15-8 ■■ 0	
585	784	450	Δ	45.2	6207	96	96.4	96.5	0.83	960	8.5	21104	20700	1LM1222-4BC35-8 ■■ 0	
660	885	450	Δ	45.2	7003	96.1	96.4	96.6	0.84	1060	8.3	23110	20700	1LM1222-4BC55-8 ■■ 0	

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – enclosed version 1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1222-3AB15-5..0	1320	1360	3.5	79	94.5	3600	1XB7 731	6SL3710-1PE33-7AA0	360
1LM1222-3AB35-5..0	1500	1550	4.4	79	94.5	3600	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AB55-5..0	1670	1720	5.1	79	94.5	3600	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AB75-5..0	1840	1880	5.9	79	94.5	3600	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3BB55-1..0	2310	2370	8.4	79 ⁴⁾	95	3300	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1222-3BB75-1..0	2440	2500	9	79 ⁴⁾	95	3300	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1222-3AB15-6..0	1320	1360	3.5	79	94.5	2700	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AB35-6..0	1500	1550	4.4	79	94.5	2700	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AB55-6..0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AB75-6..0	1880	1920	5.9	79	94.5	2700	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1222-3BB55-6..0	2310	2370	8.4	79	95	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-3BB75-6..0	2440	2500	9	79	95	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4AB35-6..0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LM1222-4AB55-6..0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LM1222-4AB75-6..0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LM1222-4BB15-6..0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LM1222-3AC15-7..0	1350	1390	5.9	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AC35-7..0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AC55-7..0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3AC75-7..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3BC55-7..0	2310	2360	14.6	79	95	2200	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1222-3BC75-7..0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1222-4AC35-7..0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-4AC55-7..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4AC75-7..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4BC15-7..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-1AA3	1092
1LM1222-3AC15-8..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1PE33-7AA0	360
1LM1222-3AC35-8..0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AC55-8..0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3AC75-8..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1222-3BC55-8..0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-3BC75-8..0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1222-4AC35-8..0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1PE36-6AA0	640
1LM1222-4AC55-8..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1222-4AC75-8..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1222-4BC15-8..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4BC35-8..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1222-4BC55-8..0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-1AA3	1092

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
1800 rpm, 4-pole																
235	315	315	Δ	60.4	1247	95.4	96.2	95.8	0.84	350	9.3	5113	7500	1LM1213-3AB15-6 ■■ 0		
290	389	315	Δ	60.4	1538	95.7	96.3	96.2	0.87	415	9.6	6306	7500	1LM1213-3AB35-6 ■■ 0		
365	489	315	Δ	60.5	1936	95.5	96.2	96.1	0.89	510	8.8	6970	7500	1LM1213-3AB55-6 ■■ 0		
445	597	315	Δ	60.4	2361	95.9	96.5	96.4	0.87	640	10.5	10388	7500	1LM1213-3AB75-6 ■■ 0		
550	738	355	Δ	60.4	2918	95.8	96.5	96.4	0.87	790	8.2	10797	10200	1LM1213-3BB55-6 ■■ 0		
570	764	355	Δ	60.4	3024	95.7	96.5	96.5	0.89	800	7.6	10282	10200	1LM1213-3BB75-6 ■■ 0		
650	872	400	Δ	60.4	3448	95.7	96.2	96.3	0.87	930	7.6	10689	16400	1LM1213-4AB35-6 ■■ 0		
720	966	400	Δ	60.3	3820	96	96.3	96.4	0.87	1040	8.6	13370	16400	1LM1213-4AB55-6 ■■ 0		
815	1093	400	Δ	60.3	4324	96.2	96.5	96.6	0.86	1180	9.9	17728	16400	1LM1213-4AB75-6 ■■ 0		
910	1220	450	Δ	60.2	4828	96.2	96.4	96.4	0.83	1360	9.6	19795	20700	1LM1213-4BB15-6 ■■ 0		
985	1321	450	Δ	60.2	5226	96.2	96.4	96.5	0.85	1440	9.7	21427	20700	1LM1213-4BB35-6 ■■ 0		
1200 rpm, 6-pole																
220	295	315	Δ	60.5	1751	95	95.9	95.8	0.81	340	8	5078	7500	1LM1213-3AC15-7 ■■ 0		
270	362	315	Δ	60.4	2149	95.3	96.1	96.1	0.83	405	8.2	6447	7500	1LM1213-3AC35-7 ■■ 0		
310	416	315	Δ	60.4	2467	95.6	96.3	96.2	0.82	470	9.1	8141	7500	1LM1213-3AC55-7 ■■ 0		
345	463	315	Δ	60.4	2745	95.6	96.3	96.3	0.83	520	8.5	8510	7500	1LM1213-3AC75-7 ■■ 0		
435	583	355	Δ	60.3	3462	95.7	96.4	96.2	0.84	650	10	12809	10200	1LM1213-3BC55-7 ■■ 0		
475	637	355	Δ	60.3	3780	95.7	96.4	96.3	0.85	700	9.9	13608	10200	1LM1213-3BC75-7 ■■ 0		
500	671	400	Δ	60.3	3979	96	96.4	96.6	0.84	740	8.3	12733	16400	1LM1213-4AC35-7 ■■ 0		
560	751	400	Δ	60.3	4456	96.2	96.6	96.7	0.83	840	9.3	16042	16400	1LM1213-4AC55-7 ■■ 0		
615	825	400	Δ	60.3	4894	96.3	96.6	96.8	0.84	910	9.3	17618	16400	1LM1213-4AC75-7 ■■ 0		
645	865	450	Δ	60.2	5133	96.5	96.7	96.7	0.81	990	9.3	18479	20700	1LM1213-4BC15-7 ■■ 0		
750	1006	450	Δ	60.2	5968	96.6	96.8	96.9	0.82	1140	9	20888	20700	1LM1213-4BC35-7 ■■ 0		

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1213-3AB15-6..0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1213-3AB35-6..0	1500	1550	4.4	79	94.5	3000	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1213-3AB55-6..0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1213-3AB75-6..0	1880	1920	5.9	79	94.5	2700	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1213-3BB55-6..0	2310	2370	8.4	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1213-3BB75-6..0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1213-4AB35-6..0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1213-4AB55-6..0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1213-4AB75-6..0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LM1213-4BB15-6..0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LM1213-4BB35-6..0	4320	4420	26.6	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1213-3AC15-7..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LE33-8AA3	370
1LM1213-3AC35-7..0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1213-3AC55-7..0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LM1213-3AC75-7..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LM1213-3BC55-7..0	2310	2360	14.6	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1213-3BC75-7..0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LM1213-4AC35-7..0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LM1213-4AC55-7..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1213-4AC75-7..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LM1213-4BC15-7..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LM1213-4BC35-7..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 																
1800 rpm, 4-pole																
235	315	315	Δ	60.4	1247	95.4	96.2	95.8	0.84	380	9.3	5113	7500	1LM1223-3AB15-6 ■ ■ 0		
290	389	315	Δ	60.4	1538	95.7	96.3	96.2	0.86	460	9.8	6460	7500	1LM1223-3AB35-6 ■ ■ 0		
370	496	315	Δ	60.4	1963	95.6	96.3	96.2	0.88	570	9.1	7459	7500	1LM1223-3AB55-6 ■ ■ 0		
430	577	315	Δ	60.4	2281	95.7	96.4	96.4	0.89	660	9.2	8668	7500	1LM1223-3AB75-6 ■ ■ 0		
520	697	355	Δ	60.5	2759	95.6	96.4	96.4	0.88	800	7.4	9105	10200	1LM1223-3BB55-6 ■ ■ 0		
590	791	355	Δ	60.4	3130	95.9	96.6	96.5	0.88	910	8.4	11581	10200	1LM1223-3BB75-6 ■ ■ 0		
665	892	400	Δ	60.3	3528	95.8	96.2	96.3	0.85	1060	8.4	12348	16400	1LM1223-4AB35-6 ■ ■ 0		
685	919	400	Δ	60.4	3634	95.8	96.2	96.4	0.88	1060	7.6	11265	16400	1LM1223-4AB55-6 ■ ■ 0		
780	1046	400	Δ	60.3	4138	96.1	96.4	96.6	0.88	1200	8.9	14897	16400	1LM1223-4AB75-6 ■ ■ 0		
860	1153	450	Δ	60.2	4562	96.1	96.3	96.2	0.83	1420	9.7	19160	20700	1LM1223-4BB15-6 ■ ■ 0		
1200 rpm, 6-pole																
225	302	315	Δ	60.4	1790	95.3	96	95.9	0.79	390	8.8	5907	7500	1LM1223-3AC15-7 ■ ■ 0		
270	362	315	Δ	60.4	2149	95.4	96.2	96.1	0.82	450	8.7	6877	7500	1LM1223-3AC35-7 ■ ■ 0		
315	422	315	Δ	60.4	2507	95.5	96.3	96.2	0.83	520	8.6	7772	7500	1LM1223-3AC55-7 ■ ■ 0		
350	469	315	Δ	60.4	2785	95.6	96.4	96.3	0.84	570	8.3	8355	7500	1LM1223-3AC75-7 ■ ■ 0		
430	577	355	Δ	60.3	3422	95.6	96.4	96.1	0.84	700	9.9	12661	10200	1LM1223-3BC55-7 ■ ■ 0		
470	630	355	Δ	60.3	3740	95.7	96.5	96.3	0.85	750	10.1	13838	10200	1LM1223-3BC75-7 ■ ■ 0		
490	657	400	Δ	60.3	3899	96	96.4	96.6	0.84	790	8.4	12477	16400	1LM1223-4AC35-7 ■ ■ 0		
545	731	400	Δ	60.3	4337	96.3	96.6	96.7	0.82	900	9.6	16481	16400	1LM1223-4AC55-7 ■ ■ 0		
620	831	400	Δ	60.3	4934	96.4	96.7	96.8	0.83	1020	9.4	18256	16400	1LM1223-4AC75-7 ■ ■ 0		
665	892	450	Δ	60.2	5292	96.5	96.7	96.8	0.8	1120	9.3	19051	20700	1LM1223-4BC15-7 ■ ■ 0		

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1223-3AB15-6..0	1320	1360	3.5	79	94.5	3000	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1223-3AB35-6..0	1500	1550	4.4	79	94.5	3000	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1223-3AB55-6..0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1223-3AB75-6..0	1880	1920	5.9	79	94.5	2700	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1223-3BB55-6..0	2310	2370	8.4	79	95	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1223-3BB75-6..0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1223-4AB35-6..0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-1AA3	1092
1LM1223-4AB55-6..0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-1AA3	1092
1LM1223-4AB75-6..0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LM1223-4BB15-6..0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LM1223-3AC15-7..0	1350	1390	5.9	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1223-3AC35-7..0	1520	1570	7.3	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LM1223-3AC55-7..0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1223-3AC75-7..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LM1223-3BC55-7..0	2310	2360	14.6	79	95	2200	1XB7 740	6SL3710-1PE37-4AA0	710
1LM1223-3BC75-7..0	2460	2510	16.1	79	95	2200	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1223-4AC35-7..0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LM1223-4AC55-7..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LM1223-4AC75-7..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LM1223-4BC15-7..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
3600 rpm, 4-pole															
220	295	315	Δ	120.5	584	95.5	95.8	95.1	0.88	245	8.6	1986	7500	1LM1212-3AB16-5 ■■■ 0	
270	362	315	Δ	120.4	716	95.8	96	95.3	0.87	305	10.7	3079	7500	1LM1212-3AB36-5 ■■■ 0	
300	402	315	Δ	120.4	796	95.6	95.8	95.1	0.88	335	11.2	3582	7500	1LM1212-3AB56-5 ■■■ 0	
340	456	315	Δ	120.4	902	95.8	96	95.3	0.88	380	11.5	4149	7500	1LM1212-3AB76-5 ■■■ 0	
3000 rpm, 4-pole															
405	543	355	Δ	100.5	1289	95.6	96.2	95.8	0.89	450	6.7	3738	10200	1LM1212-3BB56-1 ■■■ 0	
450	603	355	Δ	100.5	1432	95.7	96.3	95.9	0.89	495	7.2	4439	10200	1LM1212-3BB76-1 ■■■ 0	
1800 rpm, 4-pole															
235	315	315	Δ	60.4	1247	94.9	95.6	95.3	0.86	270	8.5	4614	7500	1LM1212-3AB16-6 ■■■ 0	
300	402	315	Δ	60.4	1592	95.4	96	95.7	0.85	350	10.2	7164	7500	1LM1212-3AB36-6 ■■■ 0	
335	449	315	Δ	60.4	1777	95.5	96.1	95.8	0.87	380	10	7641	7500	1LM1212-3AB56-6 ■■■ 0	
395	530	315	Δ	60.4	2096	95.8	96.3	96	0.86	450	11.6	10061	7500	1LM1212-3AB76-6 ■■■ 0	
480	644	355	Δ	60.4	2546	95.5	96.2	95.9	0.87	540	9.2	10693	10200	1LM1212-3BB56-6 ■■■ 0	
520	697	355	Δ	60.3	2759	95.7	96.3	95.9	0.86	590	10.1	12691	10200	1LM1212-3BB76-6 ■■■ 0	
585	784	400	Δ	60.3	3104	95.5	95.8	95.8	0.87	660	8.2	10864	16400	1LM1212-4AB36-6 ■■■ 0	
640	858	400	Δ	60.3	3395	95.7	96	96	0.87	730	8.7	12222	16400	1LM1212-4AB56-6 ■■■ 0	
705	945	400	Δ	60.3	3740	95.8	96.1	96.1	0.88	790	9.5	14212	16400	1LM1212-4AB76-6 ■■■ 0	
785	1053	450	Δ	60.2	4165	95.7	95.8	95.5	0.83	930	10.5	18743	20700	1LM1212-4BB16-6 ■■■ 0	
860	1153	450	Δ	60.2	4562	95.8	95.8	95.5	0.82	1040	11.9	24179	20700	1LM1212-4BB36-6 ■■■ 0	
1010	1354	450	Δ	60.2	5358	96	96	95.8	0.82	1220	11.9	27862	20700	1LM1212-4BB56-6 ■■■ 0	
1200 rpm, 6-pole															
200	268	315	Δ	60.4	1592	95	95.7	95.4	0.79	250	9.3	5413	7500	1LM1212-3AC16-7 ■■■ 0	
240	322	315	Δ	60.4	1910	95.3	95.7	95.6	0.81	295	9.7	6876	7500	1LM1212-3AC36-7 ■■■ 0	
280	375	315	Δ	60.4	2228	95.3	95.7	95.9	0.83	335	9	7352	7500	1LM1212-3AC56-7 ■■■ 0	
305	409	315	Δ	60.4	2427	95.4	95.7	95.9	0.83	360	9.5	8252	7500	1LM1212-3AC76-7 ■■■ 0	
360	483	355	Δ	60.3	2865	95.3	95.7	95.1	0.81	440	12.5	13466	10200	1LM1212-3BC56-7 ■■■ 0	
395	530	355	Δ	60.3	3143	95.3	95.8	95.3	0.83	470	12	14144	10200	1LM1212-3BC76-7 ■■■ 0	
440	590	400	Δ	60.3	3501	95.8	96	96	0.82	530	9.8	13304	16400	1LM1212-4AC36-7 ■■■ 0	
480	644	400	Δ	60.2	3820	95.9	96.1	96	0.82	580	10.6	16044	16400	1LM1212-4AC56-7 ■■■ 0	
545	731	400	Δ	60.3	4337	96	96.2	96.2	0.84	640	9.8	16481	16400	1LM1212-4AC76-7 ■■■ 0	
605	811	450	Δ	60.2	4814	96.2	96.3	96.1	0.79	750	10.2	19256	20700	1LM1212-4BC16-7 ■■■ 0	
665	892	450	Δ	60.2	5292	96.2	96.3	96.2	0.8	820	10.7	22226	20700	1LM1212-4BC36-7 ■■■ 0	
755	1012	450	Δ	60.2	6008	96.3	96.4	96.3	0.81	920	10.4	24633	20700	1LM1212-4BC56-7 ■■■ 0	
885	1187	450	Δ	60.2	7043	96.4	96.6	96.5	0.83	1040	10.1	27468	20700	1LM1212-4BC76-7 ■■■ 0	
900 rpm, 6-pole															
155	208	315	Y	45.4	1645	94.4	95.1	95	0.78	198	9.1	5758	7500	1LM1212-3AC16-8 ■■■ 0	
190	255	315	Δ	45.3	2016	94.9	95.5	95.2	0.75	250	9.9	8064	7500	1LM1212-3AC36-8 ■■■ 0	
230	308	315	Δ	45.4	2440	94.8	95.6	95.5	0.82	280	8.9	8296	7500	1LM1212-3AC56-8 ■■■ 0	
245	329	315	Δ	45.3	2600	94.9	95.7	95.5	0.8	305	9.6	9880	7500	1LM1212-3AC76-8 ■■■ 0	
290	389	355	Δ	45.3	3077	94.8	95.5	95.2	0.84	340	10.8	12616	10200	1LM1212-3BC56-8 ■■■ 0	
320	429	355	Δ	45.3	3395	94.9	95.6	95.3	0.84	375	10.8	13919	10200	1LM1212-3BC76-8 ■■■ 0	
365	489	400	Δ	45.3	3873	95.4	95.8	96	0.83	435	8.9	13943	16400	1LM1212-4AC36-8 ■■■ 0	
410	550	400	Δ	45.3	4350	95.7	96	96.1	0.82	495	9.7	17400	16400	1LM1212-4AC56-8 ■■■ 0	
460	617	400	Δ	45.2	4881	95.8	96.1	96.2	0.83	550	9.9	20012	16400	1LM1212-4AC76-8 ■■■ 0	
530	711	450	Δ	45.2	5623	95.9	96.2	96.3	0.81	640	8.7	19681	20700	1LM1212-4BC16-8 ■■■ 0	
575	771	450	Δ	45.2	6101	96	96.3	96.4	0.83	680	8.9	21354	20700	1LM1212-4BC36-8 ■■■ 0	
670	898	450	Δ	45.2	7109	96.1	96.4	96.5	0.83	790	9.3	26303	20700	1LM1212-4BC56-8 ■■■ 0	
715	959	450	Δ	45.2	7586	96.1	96.4	96.4	0.82	860	9.7	30344	20700	1LM1212-4BC76-8 ■■■ 0	

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – enclosed version 1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1212-3AB16-5.0	1320	1360	3.5	79	94.5	3600	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1212-3AB36-5.0	1500	1550	4.4	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB56-5.0	1670	1720	5.1	79	94.5	3600	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3AB76-5.0	1840	1880	5.9	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3BB56-1.0	2270	2330	8.4	79 ⁴⁾	95	3300	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-3BB76-1.0	2400	2460	9	79 ⁴⁾	95	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-3AB16-6.0	1320	1360	3.5	79	94.5	2700	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AB36-6.0	1500	1550	4.4	79	94.5	2700	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3AB56-6.0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3AB76-6.0	1840	1880	5.9	79	94.5	2700	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-3BB56-6.0	2270	2330	8.4	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-3BB76-6.0	2400	2460	9	79	95	2500	1XB7 731	6SL3710-7LG37-4AA3	710
1LM1212-4AB36-6.0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4AB56-6.0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4AB76-6.0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4BB16-6.0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-0AA3	1000
1LM1212-4BB36-6.0	4320	4420	26.6	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1212-4BB56-6.0	4670	4770	29.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1212-3AC16-7.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1212-3AC36-7.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AC56-7.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3AC76-7.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-3BC56-7.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-3BC76-7.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AC36-7.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AC56-7.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LM1212-4AC76-7.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC16-7.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4BC36-7.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1212-4BC56-7.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LM1212-4BC76-7.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1212-3AC16-8.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LM1212-3AC36-8.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LM1212-3AC56-8.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3AC76-8.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1212-3BC56-8.0	2270	2320	14.6	79	95	2200	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1212-3BC76-8.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1212-4AC36-8.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1212-4AC56-8.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4AC76-8.0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1212-4BC16-8.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC36-8.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1212-4BC56-8.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1212-4BC76-8.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 550 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 																
3600 rpm, 4-pole																
205	275	315	Δ	120.4	544	95.4	95.6	94.8	0.86	260	10.8	2394	7500	1LM1222-3AB16-5 ■■■ 0		
235	315	315	Δ	120.3	623	95.6	95.7	94.9	0.86	300	12.4	3177	7500	1LM1222-3AB36-5 ■■■ 0		
255	342	315	Δ	120.3	676	95.3	95.4	94.4	0.85	330	13.4	3786	7500	1LM1222-3AB56-5 ■■■ 0		
330	443	315	Δ	120.4	875	95.8	96.1	95.5	0.9	400	9.8	3325	7500	1LM1222-3AB76-5 ■■■ 0		
3000 rpm, 4-pole																
395	530	355	Δ	100.5	1257	95.6	96.2	95.7	0.89	485	7.1	3771	10200	1LM1222-3BB56-1 ■■■ 0		
425	570	355	Δ	100.4	1353	95.8	96.2	95.8	0.89	520	8.1	4736	10200	1LM1222-3BB76-1 ■■■ 0		
1800 rpm, 4-pole																
230	308	315	Δ	60.5	1220	94.9	95.5	95.3	0.87	290	8.2	4270	7500	1LM1222-3AB16-6 ■■■ 0		
295	396	315	Δ	60.4	1565	95.4	95.9	95.7	0.86	375	10.1	6730	7500	1LM1222-3AB36-6 ■■■ 0		
330	443	315	Δ	60.4	1751	95.5	96.1	95.8	0.87	415	10	7354	7500	1LM1222-3AB56-6 ■■■ 0		
390	523	315	Δ	60.3	2069	95.8	96.3	96	0.85	500	11.9	10552	7500	1LM1222-3AB76-6 ■■■ 0		
475	637	355	Δ	60.3	2520	95.6	96.2	95.8	0.86	600	9.5	10836	10200	1LM1222-3BB56-6 ■■■ 0		
505	677	355	Δ	60.4	2679	95.5	96.2	96	0.88	630	8.4	10180	10200	1LM1222-3BB76-6 ■■■ 0		
585	784	400	Δ	60.3	3104	95.5	95.8	95.8	0.87	740	8.4	10864	16400	1LM1222-4AB36-6 ■■■ 0		
630	845	400	Δ	60.3	3342	95.7	95.9	95.9	0.87	790	9.5	13034	16400	1LM1222-4AB56-6 ■■■ 0		
700	939	400	Δ	60.3	3714	95.9	96.1	96	0.86	890	10.4	15970	16400	1LM1222-4AB76-6 ■■■ 0		
815	1093	450	Δ	60.2	4324	95.8	95.8	95.6	0.83	1080	9.9	18593	20700	1LM1222-4BB16-6 ■■■ 0		
930	1247	450	Δ	60.2	4934	95.9	96	95.8	0.83	1220	11.2	23683	20700	1LM1222-4BB36-6 ■■■ 0		
980	1314	450	Δ	60.2	5199	95.9	96	95.8	0.84	1280	11.7	25995	20700	1LM1222-4BB56-6 ■■■ 0		
1200 rpm, 6-pole																
185	248	315	Δ	60.4	1472	94.9	95.6	95.4	0.81	250	8.9	4710	7500	1LM1222-3AC16-7 ■■■ 0		
235	315	315	Δ	60.4	1870	95.3	95.7	95.6	0.81	320	9.8	6732	7500	1LM1222-3AC36-7 ■■■ 0		
275	369	315	Δ	60.4	2188	95.3	95.7	95.8	0.83	360	9.3	7439	7500	1LM1222-3AC56-7 ■■■ 0		
300	402	315	Δ	60.4	2387	95.5	95.7	95.9	0.83	400	9.8	8593	7500	1LM1222-3AC76-7 ■■■ 0		
350	469	355	Δ	60.3	2785	95.2	95.7	95.2	0.83	465	12	12254	10200	1LM1222-3BC56-7 ■■■ 0		
370	496	355	Δ	60.2	2944	95.3	95.7	95	0.79	510	13.5	15309	10200	1LM1222-3BC76-7 ■■■ 0		
430	577	400	Δ	60.2	3422	95.8	96	95.9	0.81	580	10.6	14030	16400	1LM1222-4AC36-7 ■■■ 0		
470	630	400	Δ	60.2	3740	95.9	96.1	96	0.83	620	10.2	14960	16400	1LM1222-4AC56-7 ■■■ 0		
510	684	400	Δ	60.2	4058	96	96.1	96	0.81	690	11.7	19073	16400	1LM1222-4AC76-7 ■■■ 0		
580	778	450	Δ	60.2	4615	96.1	96.2	96	0.78	810	10.9	19845	20700	1LM1222-4BC16-7 ■■■ 0		
645	865	450	Δ	60.2	5133	96.2	96.3	96.1	0.8	880	10.9	22072	20700	1LM1222-4BC36-7 ■■■ 0		
765	1026	450	Δ	60.2	6088	96.3	96.4	96.3	0.81	1020	10.4	24961	20700	1LM1222-4BC56-7 ■■■ 0		
900 rpm, 6-pole																
150	201	315	Δ	45.3	1592	94.5	95.1	94.8	0.73	225	9.7	6368	7500	1LM1222-3AC16-8 ■■■ 0		
185	248	315	Δ	45.3	1963	94.8	95.4	95	0.74	275	10.2	8245	7500	1LM1222-3AC36-8 ■■■ 0		
220	295	315	Δ	45.4	2334	94.8	95.6	95.4	0.8	300	9.6	8636	7500	1LM1222-3AC56-8 ■■■ 0		
245	329	315	Δ	45.4	2600	94.9	95.7	95.5	0.8	335	9.5	9620	7500	1LM1222-3AC76-8 ■■■ 0		
280	375	355	Δ	45.3	2971	94.8	95.5	95.2	0.84	365	10.9	12181	10200	1LM1222-3BC56-8 ■■■ 0		
300	402	355	Δ	45.3	3183	94.9	95.6	95.2	0.83	395	11.4	14005	10200	1LM1222-3BC76-8 ■■■ 0		
360	483	400	Δ	45.3	3820	95.5	95.9	96.1	0.83	475	9	13752	16400	1LM1222-4AC36-8 ■■■ 0		
395	530	400	Δ	45.3	4191	95.6	96	96.2	0.83	520	9.2	15507	16400	1LM1222-4AC56-8 ■■■ 0		
445	597	400	Δ	45.3	4722	95.8	96.1	96.3	0.84	580	9.5	18416	16400	1LM1222-4AC76-8 ■■■ 0		
485	650	450	Δ	45.2	5146	95.8	96.1	96.2	0.82	650	8.9	18526	20700	1LM1222-4BC16-8 ■■■ 0		
560	751	450	Δ	45.2	5942	95.9	96.3	96.4	0.84	730	8.6	20203	20700	1LM1222-4BC36-8 ■■■ 0		
655	878	450	Δ	45.2	6950	96.1	96.4	96.5	0.83	860	9	25020	20700	1LM1222-4BC56-8 ■■■ 0		
735	986	450	Δ	45.2	7799	96.1	96.4	96.6	0.85	940	8.7	26517	20700	1LM1222-4BC76-8 ■■■ 0		

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1222-3AB16-5.0	1320	1360	3.5	79	94.5	3600	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AB36-5.0	1500	1550	4.4	79	94.5	3600	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AB56-5.0	1670	1720	5.1	79	94.5	3600	1XB7 730	6SL3710-1GF34-1AA3	400
1LM1222-3AB76-5.0	1840	1880	5.9	79	94.5	3600	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3BB56-1.0	2270	2330	8.4	79 ⁴⁾	95	3300	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3BB76-1.0	2400	2460	9	79 ⁴⁾	95	3300	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3AB16-6.0	1320	1360	3.5	79	94.5	2700	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AB36-6.0	1500	1550	4.4	79	94.5	2700	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3AB56-6.0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-1GF34-7AA3	452
1LM1222-3AB76-6.0	1840	1880	5.9	79	94.5	2700	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3BB56-6.0	2310	2370	8.4	79	95	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-3BB76-6.0	2440	2500	9	79	95	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4AB36-6.0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1222-4AB56-6.0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1222-4AB76-6.0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-1GF34-1AA3	1036
1LM1222-4BB16-6.0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1222-4BB36-6.0	4320	4420	26.6	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1222-4BB56-6.0	4670	4770	29.4	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1222-3AC16-7.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GF32-6AA3	250
1LM1222-3AC36-7.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AC56-7.0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3AC76-7.0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3BC56-7.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-3BC76-7.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-4AC36-7.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GF37-4AA3	710
1LM1222-4AC56-7.0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4AC76-7.0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4BC16-7.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF38-6AA3	836
1LM1222-4BC36-7.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1222-4BC56-7.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-1AA3	1036
1LM1222-3AC16-8.0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GF32-6AA3	250
1LM1222-3AC36-8.0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AC56-8.0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LM1222-3AC76-8.0	1810	1860	9.1	79	94.5	2500	1XB7 730	6SL3710-1GF34-1AA3	400
1LM1222-3BC56-8.0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-3BC76-8.0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1222-4AC36-8.0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-4AC56-8.0	3070	3140	25.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1222-4AC76-8.0	3300	3370	28.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GF37-4AA3	710
1LM1222-4BC16-8.0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1222-4BC36-8.0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1222-4BC56-8.0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1222-4BC76-8.0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{LR} / I _{rated}					
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
1800 rpm, 4-pole															
125	168	315	Δ	60.2	663	95.3	95.8	94.7	0.74	166	13.9	4641	7500	1LM1213-3AB16-6 ■■■ 0 ⁵⁾	
265	355	315	Δ	60.3	1406	95.7	96.2	95.9	0.83	315	11.2	7171	7500	1LM1213-3AB36-6 ■■■ 0	
345	463	315	Δ	60.4	1830	95.5	96.2	96	0.87	390	9.8	7686	7500	1LM1213-3AB56-6 ■■■ 0	
395	530	315	Δ	60.4	2096	95.8	96.4	96.2	0.86	450	11.4	10061	7500	1LM1213-3AB76-6 ■■■ 0	
510	684	355	Δ	60.4	2706	95.7	96.4	96.3	0.87	580	8.6	10553	10200	1LM1213-3BB56-6 ■■■ 0	
560	751	355	Δ	60.4	2971	95.9	96.6	96.4	0.86	640	9.3	12478	10200	1LM1213-3BB76-6 ■■■ 0	
620	831	400	Δ	60.4	3289	95.6	96.2	96.2	0.87	700	7.7	10854	16400	1LM1213-4AB36-6 ■■■ 0	
675	905	400	Δ	60.3	3581	95.8	96.2	96.4	0.87	760	8.3	12175	16400	1LM1213-4AB56-6 ■■■ 0	
750	1006	400	Δ	60.3	3979	96	96.4	96.5	0.88	840	8.9	14324	16400	1LM1213-4AB76-6 ■■■ 0	
865	1160	450	Δ	60.2	4589	96	96.3	96.2	0.84	1020	9.6	18815	20700	1LM1213-4BB16-6 ■■■ 0	
980	1314	450	Δ	60.2	5199	96.2	96.4	96.4	0.83	1160	10.7	23915	20700	1LM1213-4BB36-6 ■■■ 0	
1150	1542	450	Δ	60.2	6101	96.4	96.6	96.6	0.83	1360	10.7	28065	20700	1LM1213-4BB56-6 ■■■ 0	
1200 rpm, 6-pole															
210	282	315	Δ	60.4	1671	95.1	95.9	95.7	0.8	260	9	5514	7500	1LM1213-3AC16-7 ■■■ 0	
250	335	315	Δ	60.4	1989	95.3	96	95.9	0.81	305	9.4	6962	7500	1LM1213-3AC36-7 ■■■ 0	
285	382	315	Δ	60.4	2268	95.4	96.1	96.1	0.83	340	8.8	7258	7500	1LM1213-3AC56-7 ■■■ 0	
315	422	315	Δ	60.4	2507	95.5	96.2	96.1	0.83	375	9	8273	7500	1LM1213-3AC76-7 ■■■ 0	
395	530	355	Δ	60.3	3143	95.6	96.2	95.9	0.8	485	11.3	13515	10200	1LM1213-3BC56-7 ■■■ 0	
435	583	355	Δ	60.3	3462	95.7	96.3	96.1	0.83	520	10.9	14194	10200	1LM1213-3BC76-7 ■■■ 0	
470	630	400	Δ	60.3	3740	96	96.4	96.5	0.82	560	9.2	13464	16400	1LM1213-4AC36-7 ■■■ 0	
525	704	400	Δ	60.3	4178	96.2	96.5	96.6	0.82	630	9.7	15876	16400	1LM1213-4AC56-7 ■■■ 0	
585	784	400	Δ	60.3	4655	96.2	96.6	96.7	0.84	680	9.2	16758	16400	1LM1213-4AC76-7 ■■■ 0	
655	878	450	Δ	60.2	5212	96.5	96.7	96.7	0.79	810	9.4	19284	20700	1LM1213-4BC16-7 ■■■ 0	
720	966	450	Δ	60.2	5730	96.5	96.7	96.8	0.8	880	10	22347	20700	1LM1213-4BC36-7 ■■■ 0	
815	1093	450	Δ	60.2	6486	96.6	96.8	96.9	0.82	970	9.8	24647	20700	1LM1213-4BC56-7 ■■■ 0	
955	1281	450	Δ	60.2	7600	96.7	96.9	97	0.83	1120	9.4	27360	20700	1LM1213-4BC76-7 ■■■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1213-3AB16-6..0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG31-8AA3	170
1LM1213-3AB36-6..0	1500	1550	4.4	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1213-3AB56-6..0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1213-3AB76-6..0	1840	1880	5.9	79	94.5	2700	1XB7 731	6SL3710-7LG34-7AA3	452
1LM1213-3BB56-6..0	2270	2330	8.4	79	95	2600	1XB7 731	6SL3710-7LG37-4AA3	710
1LM1213-3BB76-6..0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4AB36-6..0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4AB56-6..0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LM1213-4AB76-6..0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1213-4BB16-6..0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1213-4BB36-6..0	4320	4420	26.6	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LM1213-4BB56-6..0	4670	4770	29.4	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1213-3AC16-7..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1213-3AC36-7..0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LM1213-3AC56-7..0	1710	1750	8.3	79	94.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LM1213-3AC76-7..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LM1213-3BC56-7..0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-3BC76-7..0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-4AC36-7..0	2860	2930	22.6	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LM1213-4AC56-7..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4AC76-7..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LM1213-4BC16-7..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1213-4BC36-7..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LM1213-4BC56-7..0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LM1213-4BC76-7..0	5110	5210	50	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

5) Utilization according to thermal class 130 (B).

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LM1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	%	%			
kW	hp	FS		Hz	Nm	%	%	%								
<ul style="list-style-type: none"> Rated motor voltage 550 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 																
1800 rpm, 4-pole																
125	168	315	Δ	60.3	663	95.3	95.8	95	0.78	177	13.3	4310	7500	1LM1223-3AB16-6	■	0 ⁵⁾
265	355	315	Δ	60.3	1406	95.6	96.2	96	0.84	345	11	6749	7500	1LM1223-3AB36-6	■	0
340	456	315	Δ	60.4	1804	95.5	96.2	96	0.88	420	9.9	7396	7500	1LM1223-3AB56-6	■	0
400	536	315	Δ	60.3	2122	95.8	96.4	96.2	0.85	510	11.5	10610	7500	1LM1223-3AB76-6	■	0
505	677	355	Δ	60.4	2679	95.8	96.5	96.3	0.86	640	8.9	10984	10200	1LM1223-3BB56-6	■	0
530	711	355	Δ	60.4	2812	95.7	96.4	96.4	0.88	660	8.1	10123	10200	1LM1223-3BB76-6	■	0
620	831	400	Δ	60.3	3289	95.7	96.2	96.2	0.86	790	7.8	10854	16400	1LM1223-4AB36-6	■	0
675	905	400	Δ	60.3	3581	95.9	96.2	96.3	0.87	850	8.8	12892	16400	1LM1223-4AB56-6	■	0
755	1012	400	Δ	60.3	4005	96.1	96.4	96.5	0.86	960	9.7	16020	16400	1LM1223-4AB76-6	■	0
895	1200	450	Δ	60.2	4748	96.1	96.3	96.3	0.83	1180	9	18517	20700	1LM1223-4BB16-6	■	0
1040	1395	450	Δ	60.2	5517	96.3	96.5	96.5	0.84	1340	10.2	23723	20700	1LM1223-4BB36-6	■	0
1090	1462	450	Δ	60.2	5783	96.3	96.5	96.5	0.84	1420	10.5	26024	20700	1LM1223-4BB56-6	■	0
1200 rpm, 6-pole																
175	235	315	Δ	60.4	1393	95	95.8	95.6	0.81	235	9.4	4736	7500	1LM1223-3AC16-7	■	0
250	335	315	Δ	60.4	1989	95.3	96	95.9	0.81	335	9.3	6763	7500	1LM1223-3AC36-7	■	0
285	382	315	Δ	60.4	2268	95.4	96.1	96.1	0.83	375	8.9	7258	7500	1LM1223-3AC56-7	■	0
315	422	315	Δ	60.4	2507	95.5	96.2	96.1	0.83	415	9.3	8524	7500	1LM1223-3AC76-7	■	0
385	516	355	Δ	60.3	3064	95.6	96.2	96	0.83	510	10.9	12256	10200	1LM1223-3BC56-7	■	0
405	543	355	Δ	60.3	3223	95.7	96.3	95.9	0.79	560	12.2	15470	10200	1LM1223-3BC76-7	■	0
465	624	400	Δ	60.3	3700	96.1	96.4	96.4	0.81	630	9.7	14060	16400	1LM1223-4AC36-7	■	0
510	684	400	Δ	60.3	4058	96.2	96.5	96.6	0.83	670	9.5	15015	16400	1LM1223-4AC56-7	■	0
565	758	400	Δ	60.2	4496	96.3	96.6	96.6	0.81	760	10.6	18883	16400	1LM1223-4AC76-7	■	0
635	852	450	Δ	60.2	5053	96.4	96.6	96.6	0.79	870	10.1	19707	20700	1LM1223-4BC16-7	■	0
695	932	450	Δ	60.2	5531	96.5	96.7	96.7	0.8	940	10.2	22124	20700	1LM1223-4BC36-7	■	0
825	1106	450	Δ	60.2	6565	96.6	96.8	96.9	0.82	1100	9.6	24947	20700	1LM1223-4BC56-7	■	0

For versions, see Article No. supplements and special versions.

Self-ventilated motors – enclosed version

1LM1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LM1223-3AB16-6..0	1320	1360	3.5	79	94.5	3000	1XB7 730	6SL3710-1GF32-2AA3	208
1LM1223-3AB36-6..0	1500	1550	4.4	79	94.5	3000	1XB7 730	6SL3710-1GF34-1AA3	400
1LM1223-3AB56-6..0	1670	1720	5.1	79	94.5	2700	1XB7 731	6SL3710-1GF34-7AA3	452
1LM1223-3AB76-6..0	1840	1880	5.9	79	94.5	2700	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1223-3BB56-6..0	2310	2370	8.4	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1223-3BB76-6..0	2440	2500	9	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1223-4AB36-6..0	2870	2940	14.4	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1223-4AB56-6..0	3070	3140	16.1	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4AB76-6..0	3340	3410	18.3	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4BB16-6..0	4050	4150	23.9	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LM1223-4BB36-6..0	4320	4420	26.6	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1223-4BB56-6..0	4670	4770	29.4	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LM1223-3AC16-7..0	1350	1390	5.9	79	94.5	2500	1XB7 730	6SL3710-1GF32-6AA3	250
1LM1223-3AC36-7..0	1520	1570	7.3	79	94.5	2500	1XB7 730	6SL3710-1GF34-1AA3	400
1LM1223-3AC56-7..0	1710	1750	8.3	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LM1223-3AC76-7..0	1810	1860	9.1	79	94.5	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LM1223-3BC56-7..0	2270	2320	14.6	79	95	2200	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1223-3BC76-7..0	2420	2470	16.1	79	95	2200	1XB7 731	6SL3710-1GF35-8AA3	560
1LM1223-4AC36-7..0	2900	2970	22.6	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1223-4AC56-7..0	3110	3180	25.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LM1223-4AC76-7..0	3340	3410	28.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LM1223-4BC16-7..0	3970	4070	35.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4BC36-7..0	4270	4370	39.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LM1223-4BC56-7..0	4700	4800	44.1	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

5) Utilization according to thermal class 130 (B).

Self-ventilated motors – enclosed version

Dimensions

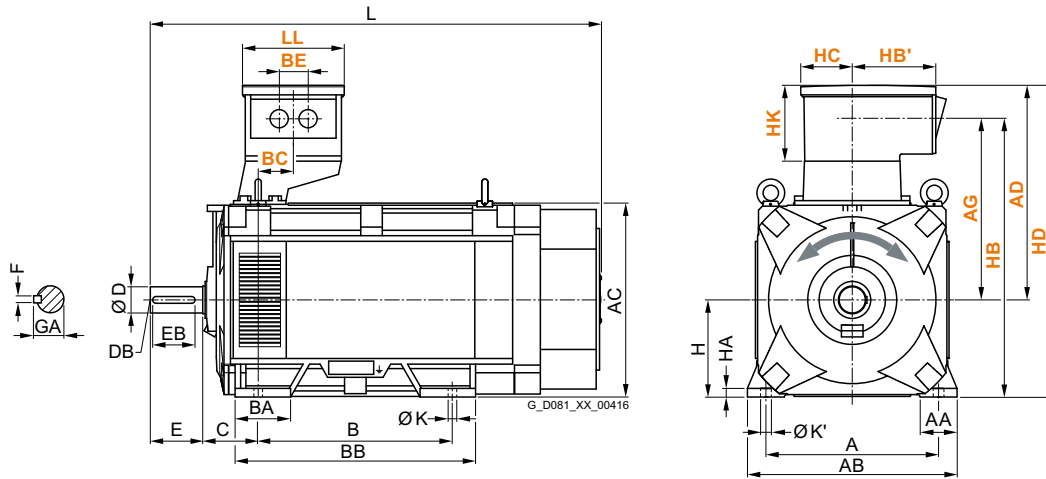
1LM1 motors

Dimensional drawings

Type of construction IM B3

For terminal box dimensions, see page 4/45

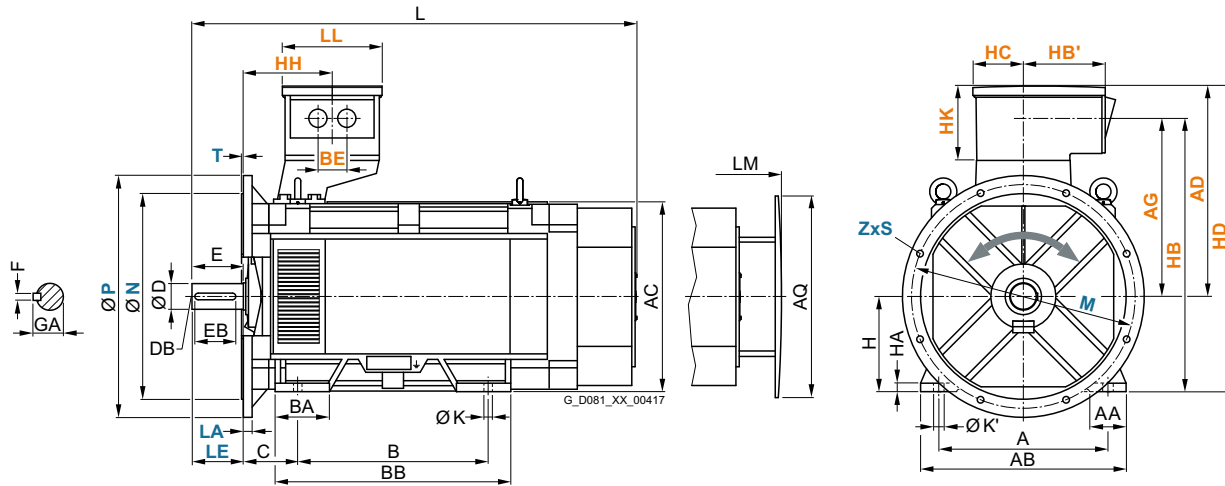
4



Types of construction IM B35 and IM V1

For flange dimensions, see page 4/44 (Z = the number of retaining holes)

For terminal box dimensions, see page 4/45



Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																				
			A	AA	AB	AC	AQ	B	BA	BB	C	H	HA	K	K'	L	LM	D	DB	E	EB	F	GA
315	4, 6	1LM1...-3A.1.-....	560	120	680	630	670	630	180	780	180	315	28	28	35	1470	1615	85	M20	170	140	22	90
		1LM1...-3A.3.-....	● 560	120	680	630	670	630	180	780	200	315	28	28	35	1490	1635	95	M24	170	140	25	100
		1LM1...-3A.5.-....	560	120	680	630	670	835	180	985	180	315	28	28	35	1610	1755	85	M20	170	140	22	90
		1LM1...-3A.7.-....	● 560	120	680	630	670	835	180	985	200	315	28	28	35	1630	1775	95	M24	170	140	25	100
355	4, 6	1LM1...-3B.5.-....	630	150	780	710	750	800	220	980	200	355	35	35	42	1735	1905	95	M24	170	140	25	100
		1LM1...-3B.7.-....	● 630	150	780	710	750	800	220	980	224	355	35	35	42	1800	1970	100	M24	210	180	28	106
400	4, 6	1LM1...-4A.3.-....	710	150	860	800	850	900	220	1080	224	400	35	35	42	1955	2120	110	M24	210	180	28	116
		1LM1...-4A.5.-....	● 710	150	860	800	850	900	220	1080	250	400	35	35	42	1980	2145	120	M24	210	180	32	127
		1LM1...-4A.7.-....																					
450	4, 6	1LM1...-4B.1.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2000	2170	120	M24	210	180	32	127
		1LM1...-4B.3.-....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2070	2240	130	M24	250	220	32	137
		1LM1...-4B.5.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2170	2340	120	M24	210	180	32	127
		1LM1...-4B.7.-....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2240	2410	130	M24	250	220	32	137

- Bearing design for increased cantilever forces, for type of construction IM B3 only.

Note:

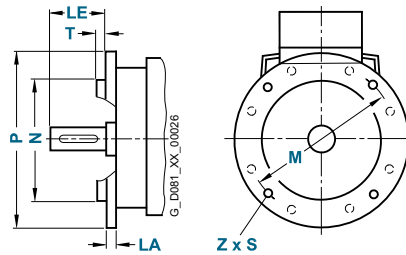
When using an encoder, dimensions L and LM increase by 170 mm for frame size 315, by 190 mm for frame size 355 and by 260 mm for frame size 400 and frame size 450.

Self-ventilated motors – enclosed version

Dimensions

Flanges

Dimensional drawings

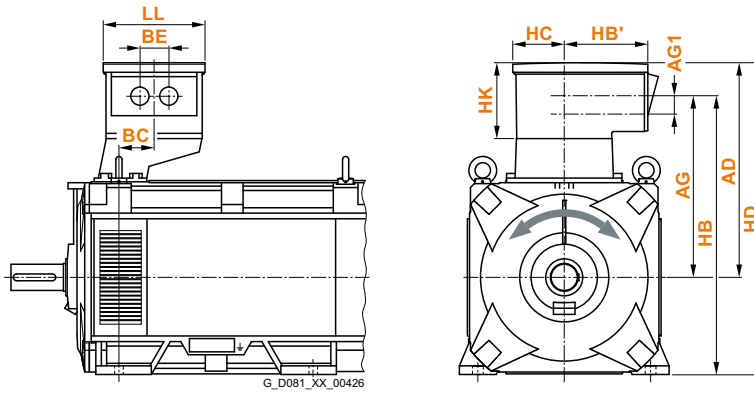


(Z = the number of retaining holes)

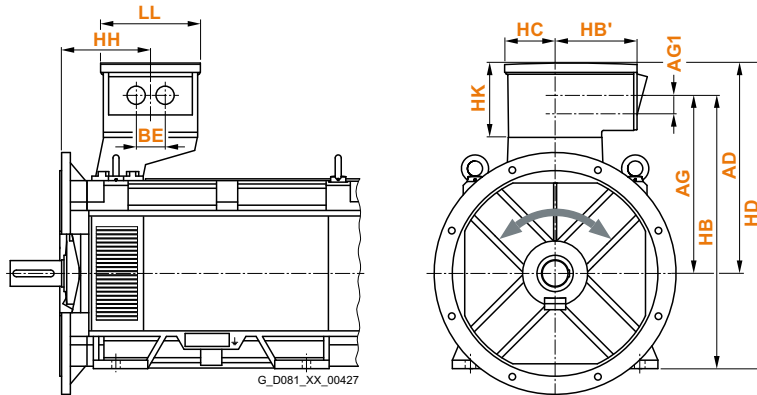
Motor type	Frame size	No. of poles	Type of construction	Flange type	Flange with through holes (FF/A) in accordance with DIN 42948	Dimension designation acc. to IEC							
						LA	LE	M	N	P	S	T	Z
1LM1	315	4, 6	IM B35, IM V1	Flange	A 800	29	170	740	680	800	22	6	8
				Flange (order code M61)	A 660	22	170	600	550	660	22	6	8
	355	4, 6	IM B35, IM V1	Flange	A 900	29	170	840	780	900	22	6	8
				Flange (order code M61)	A 660	27	170	600	550	660	22	6	8
	400	4, 6	IM B35, IM V1	Flange	A 1000	28	210	940	880	1000	22	6	8
	450	4, 6	IM B35, IM V1		A 1150	30	210	1080	1000	1150	26	6	8

Dimensional drawings

Type of construction IM B3



Types of construction IM B35 and IM V1



Self-ventilated motors – enclosed version

Dimensions

Terminal boxes

Dimensional drawings (continued)

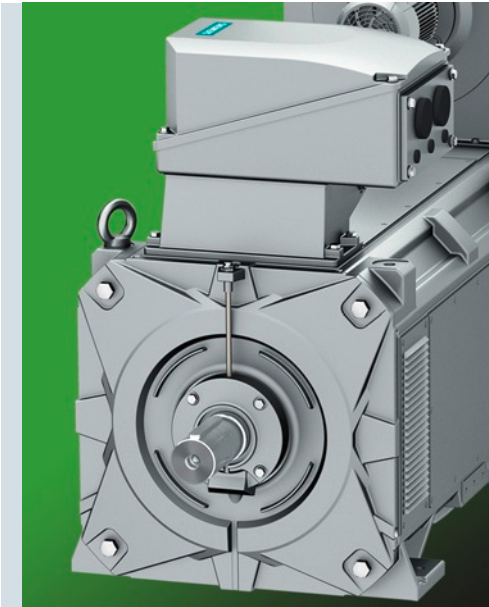
Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LM1	315	4, 6	1XB7730	705	570	–	115	–	885	310	295	180	1020	255	345
			1XB7731	705	570	–	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
			GT640	620	520	–	115	110	835	225	295	155	935	170	310
			1XB1621	700	580	–	115	150	895	305	295	165	1015	250	330
			1XB1631	770	635	–	115	100	950	400	295	175	1085	320	555
	355	4, 6	1XB7730	750	615	–	100	–	970	310	300	180	1105	255	345
			1XB7731	750	615	–	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425
			GT640	665	565	–	100	110	920	225	300	155	1020	170	310
			1XB1621	745	625	–	100	150	980	305	300	165	1100	250	330
			1XB1631	815	680	–	100	100	1035	400	300	175	1170	320	555
	400	4, 6	1XB7730	795	660	–	100	–	1060	310	324	180	1195	255	345
			1XB7731	795	660	–	100	115	1060	310	324	180	1195	255	345
			1XB7740	880	700	60	100	96	1100	365	324	235	1280	340	425
			1XB7750	960	850	65	100	103	1250	405	324	300	1360	420	890
			GT640	710	610	–	100	110	1010	225	324	155	1110	170	310
			1XB1621	790	670	–	100	150	1070	305	324	165	1190	250	330
	450	4, 6	1XB1 631	860	725	–	100	100	1125	400	324	175	1260	320	555
			1XB7730	841	710	–	80	–	1160	310	325	180	1291	255	345
			1XB7731	841	710	–	80	115	1160	310	325	180	1291	255	345
			1XB7740	926	750	60	80	96	1200	365	325	235	1376	340	425
			1XB7750	1006	900	65	80	103	1350	405	325	300	1456	420	890
			GT640	756	660	–	80	110	1110	225	325	155	1206	170	310
1XB1621	836	720	–	80	150	1170	305	325	165	1286	250	330			
1XB1631	906	770	–	80	100	1220	400	325	175	1356	320	555			

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

Force-ventilated motors – enclosed version



5/2 1LQ1 motors for converter operation

5/2	<u>Line voltage 400 V, 50 Hz</u>
5/2	High Efficiency – low noise
5/6	High Efficiency – increased power
5/10	Premium Efficiency
5/14	<u>Line voltage 500 V, 50 Hz</u>
5/14	High Efficiency – low noise
5/18	High Efficiency – increased power
5/22	Premium Efficiency
5/26	<u>Line voltage 690 V, 50 Hz</u>
5/26	High Efficiency – low noise
5/30	High Efficiency – increased power
5/34	Premium Efficiency – low noise
5/38	<u>Line voltage 460 V, 60 Hz</u>
5/38	High Efficiency – low noise
5/42	High Efficiency – increased power
5/46	Premium Efficiency
5/50	<u>Line voltage 575 V, 60 Hz</u>
5/50	High Efficiency – low noise
5/54	High Efficiency – increased power
5/58	Premium Efficiency

5/62 Dimensions

5/62	1LQ1 motors
5/62	• Radially mounted equipment unit
5/64	• Axially mounted equipment unit
5/66	Flanges
5/67	Terminal boxes

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
• Rated motor voltage 425 V															
• Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
• Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
255	342	315	Δ	100.7	812	94.7	95.2	94.7	0.89	410	6.1	2030	7500	1LQ1212-3AB11-1	■■■■
320	429	315	Δ	100.6	1019	95.2	95.7	95.2	0.9	500	6.7	2751	7500	1LQ1212-3AB31-1	■■■■
360	483	315	Δ	100.6	1146	95.4	95.9	95.5	0.9	570	7	3209	7500	1LQ1212-3AB51-1	■■■■
415	557	315	Δ	100.6	1321	95.7	96.1	95.7	0.91	640	7.6	3963	7500	1LQ1212-3AB71-1	■■■■
455	610	355	Δ	100.5	1448	95.7	96.3	95.9	0.89	720	6.6	4054	10200	1LQ1212-3BB51-1	■■■■
475	637	355	Δ	100.6	1512	95.7	96.3	96	0.89	750	5.9	3780	10200	1LQ1212-3BB71-1	■■■■
1500 rpm, 4-pole															
245	329	315	Δ	50.5	1560	94.7	95.6	95.8	0.87	400	7.2	4836	7500	1LQ1212-3AB11-2	■■■■
320	429	315	Δ	50.5	2037	95.1	95.9	96.1	0.88	510	8.2	6926	7500	1LQ1212-3AB31-2	■■■■
355	476	315	Δ	50.5	2260	95.2	95.9	96.2	0.89	560	8.3	7684	7500	1LQ1212-3AB51-2	■■■■
405	543	315	Δ	50.5	2578	95.3	96.2	96.3	0.9	640	8.2	8765	7500	1LQ1212-3AB71-2	■■■■
430	577	355	Δ	50.4	2737	95.6	96.5	96.6	0.88	690	7.4	9306	10200	1LQ1212-3BB51-2	■■■■
475	637	355	Δ	50.4	3024	95.7	96.6	96.6	0.88	760	8.4	11491	10200	1LQ1212-3BB71-2	■■■■
535	717	400	Δ	50.3	3406	95.8	96.3	96.5	0.86	880	8.4	11921	16400	1LQ1212-4AB31-2	■■■■
580	778	400	Δ	50.3	3692	96	96.4	96.6	0.85	960	9.7	15137	16400	1LQ1212-4AB51-2	■■■■
625	838	400	Δ	50.3	3979	96	96.4	96.7	0.88	1000	8.4	13529	16400	1LQ1212-4AB71-2	■■■■
765	1026	450	Δ	50.2	4870	96.2	96.5	96.5	0.82	1320	10	21915	20700	1LQ1212-4BB11-2	■■■■
820	1100	450	Δ	50.2	5220	96.2	96.4	96.5	0.83	1400	10.5	24012	20700	1LQ1212-4BB31-2	■■■■
1000 rpm, 6-pole															
215	288	315	Δ	50.5	2053	94.6	95.5	95.7	0.81	380	7.5	5748	7500	1LQ1212-3AC11-3	■■■■
265	355	315	Δ	50.5	2531	94.8	95.7	95.9	0.82	460	7.6	7340	7500	1LQ1212-3AC31-3	■■■■
305	409	315	Δ	50.5	2913	94.9	95.7	96	0.84	510	7.6	8156	7500	1LQ1212-3AC51-3	■■■■
340	456	315	Δ	50.4	3247	95.1	95.7	96	0.83	580	8	9741	7500	1LQ1212-3AC71-3	■■■■
380	510	355	Δ	50.4	3629	95.1	96	95.9	0.86	630	9.2	12339	10200	1LQ1212-3BC51-3	■■■■
425	570	355	Δ	50.3	4058	95.3	96.1	95.9	0.84	720	10.2	15420	10200	1LQ1212-3BC71-3	■■■■
490	657	400	Δ	50.3	4679	95.9	96.3	96.6	0.85	810	8.4	15441	16400	1LQ1212-4AC51-3	■■■■
545	731	400	Δ	50.3	5204	96.1	96.4	96.6	0.83	930	9.6	20296	16400	1LQ1212-4AC71-3	■■■■
585	784	450	Δ	50.3	5586	96.1	96.5	96.7	0.84	980	8	17317	20700	1LQ1212-4BC11-3	■■■■
665	892	450	Δ	50.2	6350	96.3	96.6	96.7	0.81	1160	9.4	24130	20700	1LQ1212-4BC31-3	■■■■
750 rpm, 6-pole															
165	221	315	Δ	38	2101	93.7	94.8	95	0.79	300	7.5	6303	7500	1LQ1212-3AC11-4	■■■■
215	288	315	Δ	38	2737	93.9	95	95.3	0.81	380	7.2	7664	7500	1LQ1212-3AC31-4	■■■■
245	329	315	Δ	38	3119	93.9	95.1	95.5	0.84	415	6.9	8109	7500	1LQ1212-3AC51-4	■■■■
275	369	315	Δ	38	3501	94	95.2	95.5	0.84	465	6.9	9103	7500	1LQ1212-3AC71-4	■■■■
315	422	355	Δ	37.9	4011	94	95.1	95.4	0.87	520	7.6	11632	10200	1LQ1212-3BC51-4	■■■■
350	469	355	Δ	37.9	4456	94.2	95.3	95.5	0.87	570	8	13368	10200	1LQ1212-3BC71-4	■■■■
370	496	400	Δ	37.9	4711	94.8	95.6	96.2	0.85	620	6.9	13191	16400	1LQ1212-4AC31-4	■■■■
425	570	400	Δ	37.8	5411	95.2	95.8	96.3	0.84	720	7.8	17315	16400	1LQ1212-4AC51-4	■■■■
460	617	400	Δ	37.8	5857	95.2	95.9	96.4	0.86	760	7.5	18157	16400	1LQ1212-4AC71-4	■■■■
505	677	450	Δ	37.8	6430	95.6	96.1	96.5	0.83	860	7.4	19290	20700	1LQ1212-4BC11-4	■■■■
580	778	450	Δ	37.8	7385	95.7	96.2	96.5	0.83	990	8	23632	20700	1LQ1212-4BC31-4	■■■■
670	898	450	Δ	37.8	8531	95.8	96.3	96.6	0.85	1120	7.5	25593	20700	1LQ1212-4BC51-4	■■■■
725	972	450	Δ	37.8	9231	95.8	96.3	96.7	0.85	1200	7.5	27693	20700	1LQ1212-4BC71-4	■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1212-3AB11-1...	1380	1430	3.5	79	94.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AB31-1...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB51-1...	1740	1780	5	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB71-1...	1950	1990	5.8	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BB51-1...	2390	2440	8.3	79	95	3300	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BB71-1...	2510	2570	8.9	79	95	3300	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1212-3AB11-2...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AB31-2...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB51-2...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB71-2...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BB51-2...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BB71-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1212-4AB31-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4AB51-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4AB71-2...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1212-4BB11-2...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LQ1212-4BB31-2...	4420	4520	25.5	79	96	2000	1XB7 750	On request	On request
1LQ1212-3AC11-3...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AC31-3...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AC51-3...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AC71-3...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3BC51-3...	2380	2440	14.5	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BC71-3...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AC51-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1212-4AC71-3...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4BC11-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1212-4BC31-3...	4360	4460	37.8	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1212-3AC11-4...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LE33-1AA3	302
1LQ1212-3AC31-4...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AC51-4...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AC71-4...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3BC51-4...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3BC71-4...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-4AC31-4...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AC51-4...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AC71-4...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1212-4BC11-4...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4BC31-4...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1212-4BC51-4...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1212-4BC71-4...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
245	329	315	Δ	100.6	780	94.7	95.1	94.6	0.89	440	6.3	2028	7500	1LQ1222-3AB11-1	■■■■
310	416	315	Δ	100.6	987	95.2	95.7	95.2	0.9	550	7.2	2862	7500	1LQ1222-3AB31-1	■■■■
355	476	315	Δ	100.5	1130	95.5	95.9	95.4	0.9	620	7.9	3503	7500	1LQ1222-3AB51-1	■■■■
375	503	315	Δ	100.7	1194	95.4	96	95.6	0.91	650	6.7	3104	7500	1LQ1222-3AB71-1	■■■■
445	597	355	Δ	100.4	1416	95.8	96.2	95.7	0.89	790	7.7	4673	10200	1LQ1222-3BB51-1	■■■■
465	624	355	Δ	100.5	1480	95.8	96.3	95.9	0.89	820	7	4440	10200	1LQ1222-3BB71-1	■■■■
1500 rpm, 4-pole															
250	335	315	Δ	50.5	1592	94.9	95.7	95.8	0.85	465	7.7	5413	7500	1LQ1222-3AB11-2	■■■■
315	422	315	Δ	50.5	2005	95.1	95.9	96.1	0.88	570	8.1	6817	7500	1LQ1222-3AB31-2	■■■■
355	476	315	Δ	50.5	2260	95.3	95.9	96.2	0.89	630	8.4	7910	7500	1LQ1222-3AB51-2	■■■■
405	543	315	Δ	50.5	2578	95.4	96.3	96.4	0.89	720	8.6	9281	7500	1LQ1222-3AB71-2	■■■■
430	577	355	Δ	50.4	2737	95.6	96.5	96.6	0.88	770	7.8	9580	10200	1LQ1222-3BB51-2	■■■■
480	644	355	Δ	50.4	3056	95.9	96.6	96.6	0.87	870	8.9	12530	10200	1LQ1222-3BB71-2	■■■■
505	677	400	Δ	50.4	3215	95.6	96.1	96.5	0.88	910	7.2	9645	16400	1LQ1222-4AB31-2	■■■■
565	758	400	Δ	50.3	3597	95.9	96.3	96.6	0.88	1020	8.1	11870	16400	1LQ1222-4AB51-2	■■■■
640	858	400	Δ	50.3	4074	96.1	96.5	96.7	0.87	1160	9.4	15889	16400	1LQ1222-4AB71-2	■■■■
710	952	450	Δ	50.2	4520	96.1	96.3	96.4	0.82	1360	10.4	20792	20700	1LQ1222-4BB11-2	■■■■
1000 rpm, 6-pole															
215	288	315	Δ	50.5	2053	94.5	95.5	95.7	0.81	420	7.3	5543	7500	1LQ1222-3AC11-3	■■■■
270	362	315	Δ	50.5	2578	94.8	95.7	95.9	0.82	520	7.6	7218	7500	1LQ1222-3AC31-3	■■■■
305	409	315	Δ	50.5	2913	95	95.7	96	0.83	580	7.8	8448	7500	1LQ1222-3AC51-3	■■■■
345	463	315	Δ	50.5	3295	95	95.7	96.1	0.84	650	7.4	8897	7500	1LQ1222-3AC71-3	■■■■
380	510	355	Δ	50.3	3629	95.2	96	95.8	0.84	720	9.9	13427	10200	1LQ1222-3BC51-3	■■■■
415	557	355	Δ	50.3	3963	95.3	96.1	95.9	0.85	770	10	14663	10200	1LQ1222-3BC71-3	■■■■
445	597	400	Δ	50.3	4249	95.7	96.2	96.5	0.84	840	8	13597	16400	1LQ1222-4AC31-3	■■■■
485	650	400	Δ	50.3	4631	95.8	96.3	96.6	0.85	900	8	14356	16400	1LQ1222-4AC51-3	■■■■
550	738	400	Δ	50.3	5252	96.1	96.4	96.6	0.83	1040	9.4	19958	16400	1LQ1222-4AC71-3	■■■■
580	778	450	Δ	50.2	5539	96.3	96.5	96.6	0.8	1140	9.4	21048	20700	1LQ1222-4BC11-3	■■■■
750 rpm, 6-pole															
180	241	315	Δ	38	2292	93.6	94.8	95.1	0.8	360	7.1	6188	7500	1LQ1222-3AC11-4	■■■■
215	288	315	Δ	38	2737	94	95.1	95.3	0.8	430	7.5	8211	7500	1LQ1222-3AC31-4	■■■■
245	329	315	Δ	38	3119	94	95.2	95.4	0.82	475	7.3	8733	7500	1LQ1222-3AC51-4	■■■■
270	362	315	Δ	38	3438	94	95.2	95.5	0.84	510	7	8939	7500	1LQ1222-3AC71-4	■■■■
315	422	355	Δ	37.9	4011	94	95.1	95.4	0.87	580	7.6	11632	10200	1LQ1222-3BC51-4	■■■■
350	469	355	Δ	37.9	4456	94.2	95.3	95.5	0.87	640	8.2	13814	10200	1LQ1222-3BC71-4	■■■■
375	503	400	Δ	37.9	4775	94.8	95.5	96.1	0.85	700	6.9	13370	16400	1LQ1222-4AC31-4	■■■■
420	563	400	Δ	37.9	5348	95.1	95.8	96.3	0.85	780	7.3	16044	16400	1LQ1222-4AC51-4	■■■■
475	637	400	Δ	37.8	6048	95.3	95.9	96.4	0.85	890	7.9	19958	16400	1LQ1222-4AC71-4	■■■■
520	697	450	Δ	37.8	6621	95.6	96.1	96.5	0.83	990	7.3	19201	20700	1LQ1222-4BC11-4	■■■■
575	771	450	Δ	37.8	7321	95.7	96.2	96.5	0.84	1080	7.7	22695	20700	1LQ1222-4BC31-4	■■■■
645	865	450	Δ	37.8	8212	95.7	96.2	96.6	0.85	1200	7.5	24636	20700	1LQ1222-4BC51-4	■■■■
750	1006	450	Δ	37.8	9549	95.8	96.3	96.7	0.86	1380	7.2	27692	20700	1LQ1222-4BC71-4	■■■■

For versions, see Article No. supplements and special versions. ■■■■

5

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1222-3AB11-1...	1380	1430	3.5	79	94.5	3600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AB31-1...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AB51-1...	1780	1820	5	79	94.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3AB71-1...	1950	1990	5.8	79	94.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BB51-1...	2390	2440	8.3	79	95	3300	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-3BB71-1...	2510	2570	8.9	79	95	3300	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-3AB11-2...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AB31-2...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AB51-2...	1780	1820	5	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3AB71-2...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BB51-2...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-3BB71-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4AB31-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4AB51-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1222-4AB71-2...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1222-4BB11-2...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LQ1222-3AC11-3...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AC31-3...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AC51-3...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AC71-3...	1920	1970	9.1	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BC51-3...	2380	2440	14.5	79	95	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BC71-3...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-4AC31-3...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4AC51-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4AC71-3...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1222-4BC11-3...	4060	4160	33.8	79	96	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1222-3AC11-4...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-1GE33-8AA3	370
1LQ1222-3AC31-4...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AC51-4...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AC71-4...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3BC51-4...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3BC71-4...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-4AC31-4...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-4AC51-4...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-4AC71-4...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4BC11-4...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1222-4BC31-4...	4360	4460	37.8	79	96	1700	1XB7 750	6SL3710-2GE41-1AA3	1092
1LQ1222-4BC51-4...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1222-4BC71-4...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-2GE41-6AA3	1516

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A				
<ul style="list-style-type: none"> Rated motor voltage 425 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
3000 rpm, 4-pole														
280	375	315	Δ	100.7	891	94.6	95.2	94.8	0.89	450	5.6	2049	7500	1LQ1312-3AB11-1 ■■■■
355	476	315	Δ	100.7	1130	95.1	95.7	95.4	0.9	560	6	2712	7500	1LQ1312-3AB31-1 ■■■■
400	536	315	Δ	100.7	1273	95.3	95.9	95.6	0.9	630	6.4	3183	7500	1LQ1312-3AB51-1 ■■■■
460	617	315	Δ	100.6	1464	95.6	96.1	95.8	0.91	710	6.9	3953	7500	1LQ1312-3AB71-1 ■■■■
495	664	355	Δ	100.6	1576	95.7	96.3	96	0.89	780	6	4098	10200	1LQ1312-3BB51-1 ■■■■
510	684	355	Δ	100.6	1623	95.6	96.3	96.1	0.89	810	5.4	3895	10200	1LQ1312-3BB71-1 ■■■■
1500 rpm, 4-pole														
265	355	315	Δ	50.6	1687	94.4	95.4	95.7	0.87	435	6.6	4892	7500	1LQ1312-3AB11-2 ■■■■
345	463	315	Δ	50.5	2196	94.9	95.8	96	0.88	560	7.4	7027	7500	1LQ1312-3AB31-2 ■■■■
380	510	315	Δ	50.5	2419	95	95.9	96.1	0.89	600	7.8	7741	7500	1LQ1312-3AB51-2 ■■■■
435	583	315	Δ	50.5	2769	95.1	96	96.3	0.9	680	7.7	8861	7500	1LQ1312-3AB71-2 ■■■■
470	630	355	Δ	50.5	2992	95.4	96.4	96.5	0.89	740	6.9	9275	10200	1LQ1312-3BB51-2 ■■■■
515	691	355	Δ	50.4	3279	95.6	96.5	96.6	0.88	820	7.7	11477	10200	1LQ1312-3BB71-2 ■■■■
575	771	400	Δ	50.3	3661	95.7	96.2	96.5	0.86	940	7.9	12081	16400	1LQ1312-4AB31-2 ■■■■
635	852	400	Δ	50.3	4043	96	96.4	96.6	0.86	1040	9	15363	16400	1LQ1312-4AB51-2 ■■■■
670	898	400	Δ	50.4	4265	95.9	96.4	96.7	0.89	1060	7.9	13648	16400	1LQ1312-4AB71-2 ■■■■
805	1080	450	Δ	50.2	5125	96.2	96.5	96.5	0.83	1360	9.7	21525	20700	1LQ1312-4BB11-2 ■■■■
860	1153	450	Δ	50.2	5475	96.2	96.5	96.5	0.84	1440	10.2	24090	20700	1LQ1312-4BB31-2 ■■■■
1000 rpm, 6-pole														
235	315	315	Δ	50.5	2244	94.2	95.3	95.5	0.81	415	6.9	5834	7500	1LQ1312-3AC11-3 ■■■■
290	389	315	Δ	50.5	2769	94.5	95.5	95.7	0.83	495	7.1	7199	7500	1LQ1312-3AC31-3 ■■■■
335	449	315	Δ	50.6	3199	94.6	95.6	95.9	0.84	570	6.8	7998	7500	1LQ1312-3AC51-3 ■■■■
375	503	315	Δ	50.5	3581	94.8	95.7	95.9	0.84	640	7.3	9669	7500	1LQ1312-3AC71-3 ■■■■
405	543	355	Δ	50.4	3867	95	95.9	95.9	0.86	670	8.6	12374	10200	1LQ1312-3BC51-3 ■■■■
455	610	355	Δ	50.3	4345	95.2	96	95.9	0.85	760	9.6	15642	10200	1LQ1312-3BC71-3 ■■■■
480	644	400	Δ	50.4	4584	95.4	96	96.5	0.85	800	6.9	12377	16400	1LQ1312-4AC31-3 ■■■■
535	717	400	Δ	50.3	5109	95.7	96.2	96.6	0.85	890	7.6	15327	16400	1LQ1312-4AC51-3 ■■■■
605	811	400	Δ	50.3	5777	96	96.4	96.6	0.84	1020	8.7	20220	16400	1LQ1312-4AC71-3 ■■■■
640	858	450	Δ	50.3	6112	96.1	96.5	96.7	0.84	1080	7.3	17114	20700	1LQ1312-4BC11-3 ■■■■
745	999	450	Δ	50.2	7114	96.3	96.6	96.7	0.83	1260	8.6	24188	20700	1LQ1312-4BC31-3 ■■■■
750 rpm, 6-pole														
190	255	315	Δ	38	2419	93	94.3	94.8	0.8	340	6.6	6289	7500	1LQ1312-3AC11-4 ■■■■
235	315	315	Δ	38	2992	93.4	94.7	95.1	0.82	410	6.6	7779	7500	1LQ1312-3AC31-4 ■■■■
270	362	315	Δ	38.1	3438	93.4	94.7	95.2	0.84	460	6.2	7907	7500	1LQ1312-3AC51-4 ■■■■
300	402	315	Δ	38.1	3820	93.6	94.9	95.3	0.84	510	6.2	9168	7500	1LQ1312-3AC71-4 ■■■■
330	443	355	Δ	37.9	4202	93.8	95	95.3	0.87	540	7.3	11766	10200	1LQ1312-3BC51-4 ■■■■
370	496	355	Δ	37.9	4711	94	95.2	95.4	0.87	610	7.5	13191	10200	1LQ1312-3BC71-4 ■■■■
395	530	400	Δ	37.9	5029	94.7	95.4	96.1	0.85	660	6.5	13075	16400	1LQ1312-4AC31-4 ■■■■
460	617	400	Δ	37.9	5857	95	95.7	96.2	0.85	770	7.3	17571	16400	1LQ1312-4AC51-4 ■■■■
495	664	400	Δ	37.9	6303	95.1	95.8	96.3	0.86	820	7	18279	16400	1LQ1312-4AC71-4 ■■■■
545	731	450	Δ	37.8	6939	95.4	96	96.4	0.84	920	6.9	19429	20700	1LQ1312-4BC11-4 ■■■■
630	845	450	Δ	37.8	8021	95.6	96.2	96.5	0.84	1060	7.4	24063	20700	1LQ1312-4BC31-4 ■■■■
720	966	450	Δ	37.8	9167	95.6	96.2	96.6	0.85	1200	7	25668	20700	1LQ1312-4BC51-4 ■■■■
785	1053	450	Δ	37.8	9995	95.7	96.2	96.7	0.86	1280	7.1	27986	20700	1LQ1312-4BC71-4 ■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1312-3AB11-1...	1430	1470	3.5	85	100.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AB31-1...	1610	1660	4.4	85	100.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AB51-1...	1820	1870	5	85	100.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3AB71-1...	1990	2040	5.8	85	100.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BB51-1...	2430	2490	8.3	85	101	3300	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-3BB71-1...	2560	2610	8.9	85	101	3300	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-3AB11-2...	1430	1470	3.5	85	100.5	3000	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AB31-2...	1610	1660	4.4	85	100.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AB51-2...	1820	1870	5	85	100.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3AB71-2...	1990	2040	5.8	85	100.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BB51-2...	2430	2490	8.3	85	101	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-3BB71-2...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4AB31-2...	3000	3070	13.6	85	101.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4AB51-2...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1312-4AB71-2...	3480	3550	17.6	85	101.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-4BB11-2...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LQ1312-4BB31-2...	4450	4550	25.5	85	102	2000	1XB7 750	On request	On request
1LQ1312-3AC11-3...	1460	1500	5.9	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AC31-3...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AC51-3...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AC71-3...	1970	2010	9.1	85	100.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BC51-3...	2430	2480	14.5	85	101	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BC71-3...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4AC31-3...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4AC51-3...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4AC71-3...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1312-4BC11-3...	4090	4190	33.8	85	102	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-4BC31-3...	4390	4490	37.8	85	102	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LQ1312-3AC11-4...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LE33-8AA3	370
1LQ1312-3AC31-4...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AC51-4...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AC71-4...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3BC51-4...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3BC71-4...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-4AC31-4...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-4AC51-4...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4AC71-4...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4BC11-4...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4BC31-4...	4390	4490	37.8	85	102	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-4BC51-4...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-4BC71-4...	5240	5340	48.4	85	102	1700	1XB7 750	6SL3710-7LE41-4AA3	1370

- 1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
- 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

- 3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
275	369	315	Δ	100.7	875	94.6	95.1	94.8	0.89	495	5.6	2012	7500	1LQ1322-3AB11-1	■■■■
350	469	315	Δ	100.7	1114	95.2	95.7	95.4	0.9	620	6.4	2896	7500	1LQ1322-3AB31-1	■■■■
395	530	315	Δ	100.6	1257	95.4	95.9	95.6	0.9	700	7	3520	7500	1LQ1322-3AB51-1	■■■■
415	557	315	Δ	100.7	1321	95.3	95.9	95.7	0.91	720	6	3170	7500	1LQ1322-3AB71-1	■■■■
490	657	355	Δ	100.5	1560	95.8	96.3	95.9	0.89	870	7	4680	10200	1LQ1322-3BB51-1	■■■■
510	684	355	Δ	100.5	1623	95.8	96.4	96.1	0.89	900	6.3	4382	10200	1LQ1322-3BB71-1	■■■■
1500 rpm, 4-pole															
270	362	315	Δ	50.5	1719	94.6	95.5	95.7	0.86	500	7.2	5329	7500	1LQ1322-3AB11-2	■■■■
340	456	315	Δ	50.5	2165	94.8	95.8	96	0.88	610	7.5	6928	7500	1LQ1322-3AB31-2	■■■■
385	516	315	Δ	50.5	2451	95	96	96.1	0.89	680	7.8	7843	7500	1LQ1322-3AB51-2	■■■■
445	597	315	Δ	50.5	2833	95.1	96.1	96.3	0.9	780	7.9	9066	7500	1LQ1322-3AB71-2	■■■■
475	637	355	Δ	50.5	3024	95.4	96.4	96.5	0.89	840	7.2	9677	10200	1LQ1322-3BB51-2	■■■■
535	717	355	Δ	50.4	3406	95.7	96.6	96.6	0.88	960	8.1	12602	10200	1LQ1322-3BB71-2	■■■■
605	811	400	Δ	50.4	3852	95.8	96.3	96.6	0.88	1080	7.6	11941	16400	1LQ1322-4AB51-2	■■■■
690	925	400	Δ	50.3	4393	96	96.5	96.8	0.88	1240	8.8	15815	16400	1LQ1322-4AB71-2	■■■■
755	1012	450	Δ	50.2	4806	96.1	96.4	96.4	0.83	1440	9.8	20666	20700	1LQ1322-4BB11-2	■■■■
1000 rpm, 6-pole															
235	315	315	Δ	50.6	2244	94.2	95.2	95.5	0.82	455	6.8	5610	7500	1LQ1322-3AC11-3	■■■■
295	396	315	Δ	50.5	2817	94.5	95.5	95.8	0.83	570	7	7324	7500	1LQ1322-3AC31-3	■■■■
335	449	315	Δ	50.5	3199	94.6	95.7	95.9	0.83	640	7.1	8317	7500	1LQ1322-3AC51-3	■■■■
380	510	315	Δ	50.6	3629	94.7	95.7	96	0.85	710	6.8	9073	7500	1LQ1322-3AC71-3	■■■■
410	550	355	Δ	50.4	3915	95.1	95.9	95.8	0.85	760	9.3	13311	10200	1LQ1322-3BC51-3	■■■■
440	590	355	Δ	50.3	4202	95.2	96	95.9	0.85	820	9.4	14707	10200	1LQ1322-3BC71-3	■■■■
490	657	400	Δ	50.4	4679	95.6	96.1	96.5	0.84	920	7.3	13569	16400	1LQ1322-4AC31-3	■■■■
530	711	400	Δ	50.4	5061	95.7	96.2	96.6	0.85	980	7.3	14677	16400	1LQ1322-4AC51-3	■■■■
610	818	400	Δ	50.3	5825	96	96.4	96.7	0.84	1140	8.6	19805	16400	1LQ1322-4AC71-3	■■■■
650	872	450	Δ	50.2	6207	96.2	96.5	96.7	0.82	1240	8.7	21104	20700	1LQ1322-4BC11-3	■■■■
750 rpm, 6-pole															
195	261	315	Δ	38.1	2483	93.2	94.5	94.9	0.8	390	6.5	6208	7500	1LQ1322-3AC11-4	■■■■
240	322	315	Δ	38	3056	93.5	94.7	95.1	0.81	475	6.8	8251	7500	1LQ1322-3AC31-4	■■■■
270	362	315	Δ	38	3438	93.6	94.8	95.2	0.83	520	6.7	8939	7500	1LQ1322-3AC51-4	■■■■
295	396	315	Δ	38.1	3756	93.6	94.8	95.3	0.84	560	6.3	9014	7500	1LQ1322-3AC71-4	■■■■
330	443	355	Δ	37.9	4202	93.9	95	95.3	0.87	610	7.3	11766	10200	1LQ1322-3BC51-4	■■■■
370	496	355	Δ	37.9	4711	94.1	95.2	95.4	0.87	680	7.7	13662	10200	1LQ1322-3BC71-4	■■■■
400	536	400	Δ	37.9	5093	94.6	95.4	96.1	0.85	750	6.5	13242	16400	1LQ1322-4AC31-4	■■■■
450	603	400	Δ	37.9	5730	94.9	95.6	96.2	0.85	840	6.8	16044	16400	1LQ1322-4AC51-4	■■■■
515	691	400	Δ	37.8	6557	95.1	95.8	96.3	0.85	960	7.3	19671	16400	1LQ1322-4AC71-4	■■■■
560	751	450	Δ	37.8	7130	95.5	96.1	96.5	0.83	1060	6.9	19251	20700	1LQ1322-4BC11-4	■■■■
635	852	450	Δ	37.8	8085	95.5	96.1	96.5	0.84	1200	6.9	22638	20700	1LQ1322-4BC31-4	■■■■
695	932	450	Δ	37.8	8849	95.6	96.2	96.6	0.85	1300	7	24777	20700	1LQ1322-4BC51-4	■■■■
805	1080	450	Δ	37.8	10250	95.6	96.2	96.7	0.86	1480	6.7	27675	20700	1LQ1322-4BC71-4	■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1322-3AB11-1...	1430	1470	3.5	85	100.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AB31-1...	1650	1700	4.4	85	100.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AB51-1...	1820	1870	5	85	100.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AB71-1...	1990	2040	5.8	85	100.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3BB51-1...	2430	2490	8.3	85	101	3300	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-3BB71-1...	2560	2610	8.9	85	101	3300	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-3AB11-2...	1430	1470	3.5	85	100.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AB31-2...	1650	1700	4.4	85	100.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AB51-2...	1820	1870	5	85	100.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AB71-2...	1990	2040	5.8	85	100.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-3BB51-2...	2430	2490	8.3	85	101	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-3BB71-2...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4AB51-2...	3210	3280	15.4	85	101.5	2200	1XB7 750	6SL3710-2GE41-1AA3	1092
1LQ1322-4AB71-2...	3480	3550	17.6	85	101.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-4BB11-2...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LQ1322-3AC11-3...	1460	1500	5.9	85	100.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1322-3AC31-3...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AC51-3...	1860	1900	8.3	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AC71-3...	1970	2010	9.1	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3BC51-3...	2430	2480	14.5	85	101	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-3BC71-3...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-4AC31-3...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4AC51-3...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1322-4AC71-3...	3480	3550	27	85	101.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-4BC11-3...	4090	4190	33.8	85	102	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-3AC11-4...	1460	1500	5.9	85	100.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1322-3AC31-4...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1322-3AC51-4...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AC71-4...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3BC51-4...	2430	2480	14.5	85	101	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3BC71-4...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-4AC31-4...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-4AC51-4...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4AC71-4...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4BC11-4...	4090	4190	33.8	85	102	1700	1XB7 750	6SL3710-2GE41-1AA3	1092
1LQ1322-4BC31-4...	4390	4490	37.8	85	102	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-4BC51-4...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-4BC71-4...	5240	5340	48.4	85	102	1700	1XB7 750	6SL3710-2GE41-6AA3	1516

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power									T_B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 425 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
1500 rpm, 4-pole															
210	282	315	Δ	50.5	1337	95.1	96	96	0.86	345	8.3	4813	7500	1LQ1213-3AB11-2	
325	436	315	Δ	50.5	2069	95.1	96	96.2	0.88	520	8	7035	7500	1LQ1213-3AB31-2	
360	483	315	Δ	50.5	2292	95.2	96.2	96.3	0.89	570	8.2	7793	7500	1LQ1213-3AB51-2	
415	557	315	Δ	50.5	2642	95.3	96.3	96.5	0.9	650	8.2	8719	7500	1LQ1213-3AB71-2	
445	597	355	Δ	50.5	2833	95.7	96.6	96.8	0.88	710	7.2	9349	10200	1LQ1213-3BB51-2	
495	664	355	Δ	50.4	3151	95.9	96.8	96.9	0.88	790	8	11344	10200	1LQ1213-3BB71-2	
560	751	400	Δ	50.3	3565	95.9	96.5	96.8	0.86	920	8.1	12121	16400	1LQ1213-4AB31-2	
620	831	400	Δ	50.3	3947	96.2	96.6	96.9	0.85	1020	9.2	14999	16400	1LQ1213-4AB51-2	
650	872	400	Δ	50.3	4138	96.1	96.6	97	0.88	1040	8	13655	16400	1LQ1213-4AB71-2	
825	1106	450	Δ	50.2	5252	96.5	96.8	97	0.83	1400	9.4	21533	20700	1LQ1213-4BB11-2	
875	1173	450	Δ	50.2	5570	96.5	96.8	97	0.83	1480	9.9	23951	20700	1LQ1213-4BB31-2	
1000 rpm, 6-pole															
195	261	315	Δ	50.4	1862	94.8	95.8	95.8	0.79	350	8.1	5772	7500	1LQ1213-3AC11-3	
270	362	315	Δ	50.5	2578	94.8	95.8	96	0.82	465	7.5	7218	7500	1LQ1213-3AC31-3	
310	416	315	Δ	50.5	2960	94.9	95.9	96.1	0.84	520	7.4	7992	7500	1LQ1213-3AC51-3	
345	463	315	Δ	50.5	3295	95.1	96.1	96.2	0.83	590	7.8	9556	7500	1LQ1213-3AC71-3	
400	536	355	Δ	50.4	3820	95.3	96.3	96.3	0.85	660	8.7	12224	10200	1LQ1213-3BC51-3	
445	597	355	Δ	50.3	4249	95.6	96.4	96.4	0.83	760	9.6	15721	10200	1LQ1213-3BC71-3	
505	677	400	Δ	50.3	4822	96	96.5	96.9	0.84	850	8	15430	16400	1LQ1213-4AC51-3	
570	764	400	Δ	50.3	5443	96.3	96.7	97	0.83	960	9.2	20139	16400	1LQ1213-4AC71-3	
605	811	450	Δ	50.3	5777	96.3	96.8	97.1	0.83	1020	7.7	17331	20700	1LQ1213-4BC11-3	
700	939	450	Δ	50.2	6685	96.5	96.9	97.1	0.81	1220	8.9	23398	20700	1LQ1213-4BC31-3	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1213-3AB11-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-7LE33-8AA3	370
1LQ1213-3AB31-2...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3AB51-2...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3AB71-2...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1213-3BB51-2...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1213-3BB71-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1213-4AB31-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4AB51-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1213-4AB71-2...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1213-4BB11-2...	4140	4240	22.8	79	96	2000	1XB7 750	On request	On request
1LQ1213-4BB31-2...	4420	4520	25.5	79	96	2000	1XB7 750	On request	On request
1LQ1213-3AC11-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LE33-8AA3	370
1LQ1213-3AC31-3...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1213-3AC51-3...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3AC71-3...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3BC51-3...	2380	2440	14.5	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1213-3BC71-3...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1213-4AC51-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4AC71-3...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4BC11-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1213-4BC31-3...	4360	4460	37.8	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
1500 rpm, 4-pole														
225	302	315	Δ	50.4	1432	95.2	96	96	0.84	425	8.5	5442	7500	1LQ1223-3AB11-2 ■■■ 4)
320	429	315	Δ	50.5	2037	95.1	96	96.2	0.88	580	7.9	6926	7500	1LQ1223-3AB31-2 ■■■
365	489	315	Δ	50.5	2324	95.3	96.2	96.4	0.89	650	8.1	7902	7500	1LQ1223-3AB51-2 ■■■
420	563	315	Δ	50.5	2674	95.4	96.3	96.5	0.9	740	8.3	9092	7500	1LQ1223-3AB71-2 ■■■
445	597	355	Δ	50.4	2833	95.7	96.7	96.9	0.88	790	7.6	9632	10200	1LQ1223-3BB51-2 ■■■
505	677	355	Δ	50.4	3215	96	96.9	97	0.87	910	8.5	12539	10200	1LQ1223-3BB71-2 ■■■
520	697	400	Δ	50.4	3310	95.7	96.3	96.8	0.88	930	7.1	9599	16400	1LQ1223-4AB31-2 ■■■
585	784	400	Δ	50.4	3724	96	96.5	96.9	0.88	1040	7.9	11917	16400	1LQ1223-4AB51-2 ■■■
675	905	400	Δ	50.3	4297	96.2	96.7	97	0.87	1220	8.9	15899	16400	1LQ1223-4AB71-2 ■■■
765	1026	450	Δ	50.2	4870	96.4	96.7	96.9	0.82	1460	9.7	20941	20700	1LQ1223-4BB11-2 ■■■
1000 rpm, 6-pole														
195	261	315	Δ	50.5	1862	94.8	95.7	95.9	0.8	385	8	5586	7500	1LQ1223-3AC11-3 ■■■
275	369	315	Δ	50.5	2626	94.8	95.8	96	0.82	530	7.4	7353	7500	1LQ1223-3AC31-3 ■■■
315	422	315	Δ	50.5	3008	94.9	95.9	96.1	0.83	600	7.5	8422	7500	1LQ1223-3AC51-3 ■■■
350	469	315	Δ	50.5	3342	95	96.1	96.3	0.84	660	7.3	9023	7500	1LQ1223-3AC71-3 ■■■
400	536	355	Δ	50.3	3820	95.4	96.3	96.3	0.83	760	9.3	13370	10200	1LQ1223-3BC51-3 ■■■
435	583	355	Δ	50.3	4154	95.6	96.4	96.4	0.84	820	9.4	14954	10200	1LQ1223-3BC71-3 ■■■
460	617	400	Δ	50.3	4393	95.9	96.4	96.8	0.84	860	7.8	13618	16400	1LQ1223-4AC31-3 ■■■
505	677	400	Δ	50.3	4822	95.9	96.5	96.9	0.85	940	7.6	14466	16400	1LQ1223-4AC51-3 ■■■
575	771	400	Δ	50.3	5491	96.3	96.7	97	0.83	1080	9.1	19768	16400	1LQ1223-4AC71-3 ■■■
605	811	450	Δ	50.2	5777	96.5	96.8	97	0.8	1180	9.1	20797	20700	1LQ1223-4BC11-3 ■■■

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1223-3AB11-2...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1223-3AB31-2...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1223-3AB51-2...	1780	1820	5	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1223-3AB71-2...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1223-3BB51-2...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1223-3BB71-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1223-4AB31-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1223-4AB51-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1223-4AB71-2...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1223-4BB11-2...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LQ1223-3AC11-3...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1223-3AC31-3...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1223-3AC51-3...	1810	1860	8.3	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1223-3AC71-3...	1920	1970	9.1	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1223-3BC51-3...	2380	2440	14.5	79	95	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1223-3BC71-3...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1223-4AC31-3...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1223-4AC51-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1223-4AC71-3...	3450	3520	27	79	95.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LQ1223-4BC11-3...	4060	4160	33.8	79	96	1700	1XB7 750	6SL3710-2GE41-4AA3	1340

5

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
<ul style="list-style-type: none"> Rated motor voltage 520 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3000 rpm, 4-pole																
240	322	315	Δ	100.6	764	94.6	95	94.5	0.89	315	6.8	2139	7500	1LQ1212-3AB12-1	■■■■	
305	409	315	Δ	100.5	971	95.2	95.6	95	0.89	400	8.2	3204	7500	1LQ1212-3AB32-1	■■■■	
340	456	315	Δ	100.5	1082	95.4	95.8	95.3	0.9	440	8.6	3679	7500	1LQ1212-3AB52-1	■■■■	
365	489	315	Δ	100.6	1162	95.4	95.9	95.5	0.91	465	7.2	3370	7500	1LQ1212-3AB72-1	■■■■	
435	583	355	Δ	100.5	1385	95.7	96.1	95.7	0.89	560	7.6	4432	10200	1LQ1212-3BB52-1	■■■■	
455	610	355	Δ	100.5	1448	95.7	96.2	95.9	0.89	590	6.7	4199	10200	1LQ1212-3BB72-1	■■■■	
1500 rpm, 4-pole																
225	302	315	Δ	50.5	1432	94.6	95.5	95.6	0.87	300	7.7	4726	7500	1LQ1212-3AB12-2	■■■■	
285	382	315	Δ	50.5	1814	94.9	95.8	96	0.88	375	8.1	6168	7500	1LQ1212-3AB32-2	■■■■	
330	443	315	Δ	50.4	2101	95.2	95.9	96.1	0.88	435	8.8	7774	7500	1LQ1212-3AB52-2	■■■■	
390	523	315	Δ	50.4	2483	95.5	96.3	96.3	0.87	520	9.9	10429	7500	1LQ1212-3AB72-2	■■■■	
410	550	355	Δ	50.4	2610	95.7	96.5	96.4	0.86	550	9.1	10962	10200	1LQ1212-3BB52-2	■■■■	
445	597	355	Δ	50.3	2833	95.8	96.5	96.4	0.85	600	10	13032	10200	1LQ1212-3BB72-2	■■■■	
505	677	400	Δ	50.3	3215	95.7	96.2	96.5	0.87	670	8.1	11253	16400	1LQ1212-4AB32-2	■■■■	
550	738	400	Δ	50.3	3501	95.9	96.3	96.6	0.87	730	8.7	12604	16400	1LQ1212-4AB52-2	■■■■	
610	818	400	Δ	50.3	3883	96	96.4	96.7	0.87	810	9.3	14755	16400	1LQ1212-4AB72-2	■■■■	
720	966	450	Δ	50.2	4584	96	96.3	96.4	0.84	990	10	19711	20700	1LQ1212-4BB12-2	■■■■	
885	1187	450	Δ	50.2	5634	96.2	96.5	96.7	0.86	1180	9.1	21409	20700	1LQ1212-4BB32-2	■■■■	
1005	1348	450	Δ	50.2	6398	96.3	96.6	96.7	0.84	1380	10.4	28791	20700	1LQ1212-4BB52-2	■■■■	
1080	1448	450	Δ	50.2	6875	96.3	96.6	96.8	0.87	1420	10.6	30250	20700	1LQ1212-4BB72-2	■■■■	
1000 rpm, 6-pole																
205	275	315	Δ	50.5	1958	94.6	95.5	95.6	0.81	295	7.9	5678	7500	1LQ1212-3AC12-3	■■■■	
245	329	315	Δ	50.4	2340	94.8	95.7	95.7	0.82	345	8.3	7254	7500	1LQ1212-3AC32-3	■■■■	
280	375	315	Δ	50.5	2674	94.7	95.7	95.8	0.84	385	7.8	7487	7500	1LQ1212-3AC52-3	■■■■	
305	409	315	Δ	50.4	2913	94.9	95.7	95.9	0.84	420	8.1	8739	7500	1LQ1212-3AC72-3	■■■■	
350	469	355	Δ	50.3	3342	95.1	95.7	95.7	0.85	475	10.1	12365	10200	1LQ1212-3BC52-3	■■■■	
385	516	355	Δ	50.3	3676	95.2	95.9	95.7	0.84	530	10.7	14704	10200	1LQ1212-3BC72-3	■■■■	
430	577	400	Δ	50.3	4106	95.7	96.2	96.4	0.83	600	8.7	13960	16400	1LQ1212-4AC32-3	■■■■	
470	630	400	Δ	50.3	4488	95.9	96.3	96.5	0.83	650	9.5	17054	16400	1LQ1212-4AC52-3	■■■■	
515	691	400	Δ	50.3	4918	95.9	96.4	96.6	0.85	700	9	17705	16400	1LQ1212-4AC72-3	■■■■	
575	771	450	Δ	50.2	5491	96.1	96.5	96.6	0.82	810	8.6	18669	20700	1LQ1212-4BC12-3	■■■■	
645	865	450	Δ	50.2	6159	96.2	96.5	96.6	0.81	920	9.6	24020	20700	1LQ1212-4BC32-3	■■■■	
720	966	450	Δ	50.2	6875	96.3	96.6	96.7	0.82	1000	9.6	26125	20700	1LQ1212-4BC52-3	■■■■	
835	1120	450	Δ	50.2	7974	96.4	96.7	96.8	0.84	1140	9.3	29504	20700	1LQ1212-4BC72-3	■■■■	
750 rpm, 6-pole																
160	215	315	Δ	37.9	2037	93.5	94.6	94.8	0.78	240	7.7	6315	7500	1LQ1212-3AC12-4	■■■■	
195	261	315	Δ	37.9	2483	93.8	94.9	95.1	0.8	285	7.8	7697	7500	1LQ1212-3AC32-4	■■■■	
220	295	315	Δ	38	2801	93.7	94.9	95.3	0.84	305	7.3	7843	7500	1LQ1212-3AC52-4	■■■■	
250	335	315	Δ	38	3183	93.9	95.1	95.3	0.83	350	7.5	9231	7500	1LQ1212-3AC72-4	■■■■	
290	389	355	Δ	37.8	3692	94.2	95.2	95.2	0.85	400	9.1	12922	10200	1LQ1212-3BC52-4	■■■■	
320	429	355	Δ	37.9	4074	94.1	95.1	95.3	0.87	430	8.4	13037	10200	1LQ1212-3BC72-4	■■■■	
355	476	400	Δ	37.9	4520	94.8	95.5	96.1	0.85	485	7.2	13108	16400	1LQ1212-4AC32-4	■■■■	
400	536	400	Δ	37.8	5093	95.1	95.8	96.2	0.85	550	7.7	16298	16400	1LQ1212-4AC52-4	■■■■	
440	590	400	Δ	37.8	5602	95.2	95.8	96.3	0.85	600	7.9	17926	16400	1LQ1212-4AC72-4	■■■■	
500	671	450	Δ	37.8	6366	95.5	96	96.4	0.83	700	7.5	19098	20700	1LQ1212-4BC12-4	■■■■	
565	758	450	Δ	37.8	7194	95.6	96.1	96.4	0.84	780	7.8	23021	20700	1LQ1212-4BC32-4	■■■■	
630	845	450	Δ	37.8	8021	95.6	96.2	96.5	0.85	860	7.3	23261	20700	1LQ1212-4BC52-4	■■■■	
725	972	450	Δ	37.8	9231	95.8	96.3	96.6	0.85	980	7.9	28616	20700	1LQ1212-4BC72-4	■■■■	

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1212-3AB12-1...	1380	1430	3.5	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB32-1...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3AB52-1...	1740	1780	5	79	94.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3AB72-1...	1910	1950	5.8	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB52-1...	2350	2400	8.3	79	95	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB72-1...	2470	2530	8.9	79	95	3300	1XB7 731	6SL3710-7LG37-4AA3	710
1LQ1212-3AB12-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB32-2...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3AB52-2...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3AB72-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB52-2...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB72-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4AB32-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4AB52-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1212-4AB72-2...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1212-4BB12-2...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-7LG41-0AA3	1000
1LQ1212-4BB32-2...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1212-4BB52-2...	4770	4870	28.3	79	96	2000	1XB7 750	On request	On request
1LQ1212-4BB72-2...	5210	5310	32.6	79	96	2000	1XB7 750	On request	On request
1LQ1212-3AC12-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AC32-3...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1212-3AC52-3...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3AC72-3...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3BC52-3...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BC72-3...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC32-3...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4AC52-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4AC72-3...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC12-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1212-4BC32-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1212-4BC52-3...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1212-4BC72-3...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1212-3AC12-4...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1212-3AC32-4...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AC52-4...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AC72-4...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1212-3BC52-4...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3BC72-4...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-4AC32-4...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC52-4...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC72-4...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC12-4...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC32-4...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1212-4BC52-4...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1212-4BC72-4...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 480 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3000 rpm, 4-pole															
255	342	315	Δ	100.6	812	94.8	95.2	94.7	0.89	360	6.5	2192	7500	1LQ1222-3AB12-1	
320	429	315	Δ	100.6	1019	95.2	95.7	95.2	0.9	445	6.8	2751	7500	1LQ1222-3AB32-1	
355	476	315	Δ	100.6	1130	95.4	95.9	95.5	0.9	495	7	3164	7500	1LQ1222-3AB52-1	
410	550	315	Δ	100.6	1305	95.6	96.1	95.7	0.91	560	7.2	3654	7500	1LQ1222-3AB72-1	
445	597	355	Δ	100.6	1416	95.6	96.2	95.9	0.89	630	6.2	3823	10200	1LQ1222-3BB52-1	
485	650	355	Δ	100.5	1544	95.8	96.3	95.9	0.89	680	7.4	4941	10200	1LQ1222-3BB72-1	
1500 rpm, 4-pole															
245	329	315	Δ	50.6	1560	94.6	95.6	95.8	0.87	355	6.8	4680	7500	1LQ1222-3AB12-2	
325	436	315	Δ	50.5	2069	95.2	95.9	96.1	0.87	470	8.3	7448	7500	1LQ1222-3AB32-2	
360	483	315	Δ	50.5	2292	95.3	95.9	96.2	0.89	510	8.4	8022	7500	1LQ1222-3AB52-2	
405	543	315	Δ	50.5	2578	95.3	96.2	96.3	0.9	560	8.4	8765	7500	1LQ1222-3AB72-2	
450	603	355	Δ	50.4	2865	95.8	96.6	96.5	0.86	650	9.1	12033	10200	1LQ1222-3BB52-2	
475	637	355	Δ	50.4	3024	95.7	96.6	96.6	0.88	670	8.2	11189	10200	1LQ1222-3BB72-2	
540	724	400	Δ	50.3	3438	95.8	96.3	96.5	0.86	780	8.2	11689	16400	1LQ1222-4AB32-2	
585	784	400	Δ	50.3	3724	96	96.4	96.6	0.86	850	9.1	14151	16400	1LQ1222-4AB52-2	
660	885	400	Δ	50.3	4202	96.1	96.5	96.7	0.86	960	10	17648	16400	1LQ1222-4AB72-2	
775	1039	450	Δ	50.2	4934	96.2	96.5	96.5	0.84	1140	9.4	19736	20700	1LQ1222-4BB12-2	
895	1200	450	Δ	50.2	5698	96.3	96.5	96.6	0.83	1340	10.3	25641	20700	1LQ1222-4BB32-2	
990	1328	450	Δ	50.2	6303	96.3	96.6	96.7	0.85	1460	9.5	25842	20700	1LQ1222-4BB52-2	
1000 rpm, 6-pole															
210	282	315	Δ	50.5	2005	94.4	95.5	95.7	0.82	325	7.1	5213	7500	1LQ1222-3AC12-3	
270	362	315	Δ	50.5	2578	94.9	95.7	95.9	0.82	415	7.7	7476	7500	1LQ1222-3AC32-3	
305	409	315	Δ	50.5	2913	94.9	95.7	96	0.84	460	7.5	8156	7500	1LQ1222-3AC52-3	
340	456	315	Δ	50.5	3247	95.1	95.7	96.1	0.83	510	7.9	9416	7500	1LQ1222-3AC72-3	
380	510	355	Δ	50.4	3629	95.1	95.9	95.9	0.86	550	9.1	11976	10200	1LQ1222-3BC52-3	
425	570	355	Δ	50.3	4058	95.3	96.1	95.9	0.85	630	9.6	14609	10200	1LQ1222-3BC72-3	
485	650	400	Δ	50.3	4631	95.8	96.3	96.6	0.85	710	7.9	14356	16400	1LQ1222-4AC52-3	
545	731	400	Δ	50.3	5204	96	96.4	96.7	0.85	800	8.6	17694	16400	1LQ1222-4AC72-3	
580	778	450	Δ	50.2	5539	96.2	96.5	96.7	0.83	870	8.7	18833	20700	1LQ1222-4BC12-3	
665	892	450	Δ	50.2	6350	96.2	96.6	96.8	0.84	990	8.1	20320	20700	1LQ1222-4BC32-3	
755	1012	450	Δ	50.2	7210	96.4	96.7	96.7	0.82	1140	9.7	28119	20700	1LQ1222-4BC52-3	
750 rpm, 6-pole															
170	228	315	Δ	38	2165	93.6	94.8	95	0.8	270	7.1	6062	7500	1LQ1222-3AC12-4	
215	288	315	Δ	38	2737	93.9	95	95.3	0.81	335	7.2	7664	7500	1LQ1222-3AC32-4	
240	322	315	Δ	38	3056	93.8	95	95.4	0.84	360	6.8	7946	7500	1LQ1222-3AC52-4	
265	355	315	Δ	38	3374	93.9	95.1	95.5	0.84	400	6.6	8772	7500	1LQ1222-3AC72-4	
320	429	355	Δ	37.9	4074	94.1	95.2	95.4	0.86	470	7.8	12222	10200	1LQ1222-3BC52-4	
350	469	355	Δ	37.9	4456	94.2	95.3	95.5	0.87	510	8.1	13814	10200	1LQ1222-3BC72-4	
375	503	400	Δ	37.9	4775	94.9	95.6	96.2	0.85	560	7	13848	16400	1LQ1222-4AC32-4	
425	570	400	Δ	37.8	5411	95.2	95.8	96.3	0.84	640	7.7	17315	16400	1LQ1222-4AC52-4	
480	644	400	Δ	37.8	6112	95.3	95.9	96.4	0.85	710	8	20170	16400	1LQ1222-4AC72-4	
495	664	450	Δ	37.7	6303	95.6	96.1	96.4	0.82	760	7.9	20170	20700	1LQ1222-4BC12-4	
580	778	450	Δ	37.8	7385	95.7	96.2	96.5	0.84	860	7.5	22155	20700	1LQ1222-4BC32-4	
670	898	450	Δ	37.8	8531	95.8	96.3	96.6	0.84	1000	7.5	25593	20700	1LQ1222-4BC52-4	
765	1026	450	Δ	37.8	9740	95.8	96.3	96.7	0.85	1120	7.6	29220	20700	1LQ1222-4BC72-4	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version 1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1222-3AB12-1...	1380	1430	3.5	79	94.5	3600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1222-3AB32-1...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3AB52-1...	1740	1780	5	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3AB72-1...	1910	1950	5.8	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BB52-1...	2390	2440	8.3	79	95	3300	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-3BB72-1...	2510	2570	8.9	79	95	3300	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-3AB12-2...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1222-3AB32-2...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3AB52-2...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3AB72-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BB52-2...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-3BB72-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4AB32-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1222-4AB52-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4AB72-2...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4BB12-2...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1222-4BB32-2...	4420	4520	25.5	79	96	2000	1XB7 750	On request	On request
1LQ1222-4BB52-2...	4770	4870	28.3	79	96	2000	1XB7 750	On request	On request
1LQ1222-3AC12-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LQ1222-3AC32-3...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3AC52-3...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3AC72-3...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BC52-3...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BC72-3...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4AC52-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4AC72-3...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1222-4BC12-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4BC32-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4BC52-3...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1222-3AC12-4...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1222-3AC32-4...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LQ1222-3AC52-4...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1222-3AC72-4...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1222-3BC52-4...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BC72-4...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-4AC32-4...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-4AC52-4...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4AC72-4...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4BC12-4...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1222-4BC32-4...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4BC52-4...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4BC72-4...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
• Rated motor voltage 520 V															
• Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
• Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
265	355	315	Δ	100.7	844	94.5	95	94.6	0.89	350	6.1	2110	7500	1LQ1312-3AB12-1	
345	463	315	Δ	100.6	1098	95.2	95.7	95.2	0.9	445	7.4	3294	7500	1LQ1312-3AB32-1	
380	510	315	Δ	100.5	1210	95.4	95.8	95.4	0.9	490	7.7	3751	7500	1LQ1312-3AB52-1	
405	543	315	Δ	100.7	1289	95.2	95.8	95.6	0.91	520	6.4	3351	7500	1LQ1312-3AB72-1	
475	637	355	Δ	100.5	1512	95.7	96.2	95.8	0.89	620	6.9	4536	10200	1LQ1312-3BB52-1	
500	671	355	Δ	100.6	1592	95.6	96.3	96	0.89	650	6.1	4298	10200	1LQ1312-3BB72-1	
1500 rpm, 4-pole															
245	329	315	Δ	50.5	1560	94.3	95.3	95.5	0.87	330	7	4680	7500	1LQ1312-3AB12-2	
305	409	315	Δ	50.5	1942	94.7	95.6	95.9	0.89	400	7.5	6214	7500	1LQ1312-3AB32-2	
360	483	315	Δ	50.5	2292	95	95.9	96	0.89	470	8.2	7793	7500	1LQ1312-3AB52-2	
425	570	315	Δ	50.4	2706	95.3	96.1	96.2	0.88	560	9.2	10283	7500	1LQ1312-3AB72-2	
460	617	355	Δ	50.4	2928	95.5	96.4	96.4	0.87	610	8.2	10834	10200	1LQ1312-3BB52-2	
505	677	355	Δ	50.4	3215	95.7	96.5	96.5	0.87	670	8.9	13181	10200	1LQ1312-3BB72-2	
535	717	400	Δ	50.4	3406	95.6	96.1	96.5	0.87	710	7.7	11240	16400	1LQ1312-4AB32-2	
590	791	400	Δ	50.3	3756	95.8	96.3	96.6	0.88	770	8.3	12770	16400	1LQ1312-4AB52-2	
660	885	400	Δ	50.3	4202	95.9	96.4	96.7	0.88	860	8.8	15127	16400	1LQ1312-4AB72-2	
760	1019	450	Δ	50.2	4838	96	96.3	96.4	0.84	1040	9.5	19836	20700	1LQ1312-4BB12-2	
915	1227	450	Δ	50.2	5825	96.2	96.5	96.7	0.86	1220	8.8	21553	20700	1LQ1312-4BB32-2	
1055	1415	450	Δ	50.2	6716	96.3	96.6	96.7	0.85	1420	10.1	28207	20700	1LQ1312-4BB52-2	
1140	1529	450	Δ	50.2	7257	96.3	96.6	96.8	0.87	1500	10	29754	20700	1LQ1312-4BB72-2	
1000 rpm, 6-pole															
220	295	315	Δ	50.5	2101	94.3	95.3	95.5	0.81	315	7.4	5673	7500	1LQ1312-3AC12-3	
270	362	315	Δ	50.5	2578	94.4	95.4	95.6	0.82	385	7.4	7218	7500	1LQ1312-3AC32-3	
305	409	315	Δ	50.5	2913	94.4	95.5	95.7	0.84	420	7.1	7574	7500	1LQ1312-3AC52-3	
340	456	315	Δ	50.5	3247	94.5	95.6	95.8	0.84	470	7.2	8767	7500	1LQ1312-3AC72-3	
375	503	355	Δ	50.3	3581	94.9	95.7	95.7	0.85	510	9.4	12534	10200	1LQ1312-3BC52-3	
410	550	355	Δ	50.3	3915	95.1	95.9	95.7	0.85	560	10.1	14877	10200	1LQ1312-3BC72-3	
475	637	400	Δ	50.3	4536	95.6	96.1	96.4	0.84	650	8	14062	16400	1LQ1312-4AC32-3	
520	697	400	Δ	50.3	4966	95.8	96.2	96.5	0.84	710	8.7	16884	16400	1LQ1312-4AC52-3	
570	764	400	Δ	50.3	5443	95.8	96.3	96.6	0.85	770	8.2	17418	16400	1LQ1312-4AC72-3	
635	852	450	Δ	50.3	6064	96	96.4	96.6	0.83	880	7.9	18798	20700	1LQ1312-4BC12-3	
720	966	450	Δ	50.2	6875	96.2	96.5	96.7	0.82	1020	8.7	24063	20700	1LQ1312-4BC32-3	
800	1073	450	Δ	50.2	7639	96.2	96.6	96.7	0.83	1100	8.8	25973	20700	1LQ1312-4BC52-3	
930	1247	450	Δ	50.2	8881	96.3	96.6	96.8	0.85	1260	8.4	29307	20700	1LQ1312-4BC72-3	
750 rpm, 6-pole															
175	235	315	Δ	38	2228	93	94.3	94.6	0.79	260	7.1	6238	7500	1LQ1312-3AC12-4	
215	288	315	Δ	38	2737	93.3	94.6	94.9	0.81	310	7.2	7664	7500	1LQ1312-3AC32-4	
240	322	315	Δ	38	3056	93.2	94.6	95	0.84	335	6.7	7640	7500	1LQ1312-3AC52-4	
275	369	315	Δ	38	3501	93.5	94.7	95.1	0.84	385	6.8	9103	7500	1LQ1312-3AC72-4	
315	422	355	Δ	37.9	4011	94	95	95.2	0.85	435	8.4	12835	10200	1LQ1312-3BC52-4	
335	449	355	Δ	37.9	4265	93.9	95	95.3	0.87	450	8	12795	10200	1LQ1312-3BC72-4	
380	510	400	Δ	37.9	4838	94.6	95.4	96	0.85	520	6.7	13063	16400	1LQ1312-4AC32-4	
435	583	400	Δ	37.9	5539	94.9	95.6	96.2	0.85	590	7.2	16063	16400	1LQ1312-4AC52-4	
480	644	400	Δ	37.8	6112	95	95.7	96.2	0.86	650	7.3	18336	16400	1LQ1312-4AC72-4	
540	724	450	Δ	37.8	6875	95.3	95.9	96.4	0.84	740	7.1	19250	20700	1LQ1312-4BC12-4	
615	825	450	Δ	37.8	7830	95.5	96	96.4	0.84	850	7.2	22707	20700	1LQ1312-4BC32-4	
680	912	450	Δ	37.8	8658	95.5	96.1	96.5	0.85	920	6.8	23377	20700	1LQ1312-4BC52-4	
785	1053	450	Δ	37.8	9995	95.6	96.2	96.6	0.85	1060	7.3	28986	20700	1LQ1312-4BC72-4	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version 1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1312-3AB12-1...	1430	1470	3.5	85	100.5	3600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-3AB32-1...	1610	1660	4.4	85	100.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3AB52-1...	1780	1830	5	85	100.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3AB72-1...	1950	2000	5.8	85	100.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3BB52-1...	2430	2490	8.3	85	101	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-3BB72-1...	2560	2610	8.9	85	101	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-3AB12-2...	1430	1470	3.5	85	100.5	3000	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-3AB32-2...	1610	1660	4.4	85	100.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3AB52-2...	1780	1830	5	85	100.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3AB72-2...	1950	2000	5.8	85	100.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3BB52-2...	2430	2490	8.3	85	101	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-3BB72-2...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AB32-2...	3000	3070	13.6	85	101.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AB52-2...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4AB72-2...	3480	3550	17.6	85	101.5	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1312-4BB12-2...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-4BB32-2...	4450	4550	25.5	85	102	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-4BB52-2...	4800	4900	28.3	85	102	2000	1XB7 750	On request	On request
1LQ1312-4BB72-2...	5240	5340	32.6	85	102	2000	1XB7 750	On request	On request
1LQ1312-3AC12-3...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AC32-3...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3AC52-3...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3AC72-3...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	560
1LQ1312-3BC52-3...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3BC72-3...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AC32-3...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AC52-3...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AC72-3...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4BC12-3...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1312-4BC32-3...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LQ1312-4BC52-3...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-4BC72-3...	5240	5340	48.4	85	102	1700	1XB7 750	On request	On request
1LQ1312-3AC12-4...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AC32-4...	1640	1680	7.2	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AC52-4...	1820	1860	8.3	85	100.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-3AC72-4...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3BC52-4...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3BC72-4...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-4AC32-4...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AC52-4...	3210	3280	24	85	101.5	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LQ1312-4AC72-4...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC12-4...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4BC32-4...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1312-4BC52-4...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1312-4BC72-4...	5240	5340	48.4	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 480 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3000 rpm, 4-pole															
290	389	315	Δ	100.7	923	94.7	95.2	94.9	0.89	410	5.7	2123	7500	1LQ1322-3AB12-1	
355	476	315	Δ	100.7	1130	95.1	95.6	95.4	0.9	495	6.1	2712	7500	1LQ1322-3AB32-1	
395	530	315	Δ	100.7	1257	95.3	95.9	95.6	0.9	550	6.3	3143	7500	1LQ1322-3AB52-1	
450	603	315	Δ	100.7	1432	95.5	96.1	95.8	0.91	620	6.5	3723	7500	1LQ1322-3AB72-1	
485	650	355	Δ	100.6	1544	95.6	96.3	96	0.89	680	5.7	3860	10200	1LQ1322-3BB52-1	
535	717	355	Δ	100.5	1703	95.8	96.4	96.1	0.89	750	6.7	4939	10200	1LQ1322-3BB72-1	
1500 rpm, 4-pole															
255	342	315	Δ	50.6	1623	94.4	95.4	95.7	0.88	365	6.6	4544	7500	1LQ1322-3AB12-2	
350	469	315	Δ	50.5	2228	95	95.9	96	0.87	500	7.8	7352	7500	1LQ1322-3AB32-2	
390	523	315	Δ	50.5	2483	95	96	96.1	0.89	550	7.8	7946	7500	1LQ1322-3AB52-2	
435	583	315	Δ	50.5	2769	95.1	96	96.2	0.9	610	7.7	8861	7500	1LQ1322-3AB72-2	
505	677	355	Δ	50.4	3215	95.7	96.5	96.5	0.87	720	8.2	11896	10200	1LQ1322-3BB52-2	
530	711	355	Δ	50.5	3374	95.5	96.5	96.6	0.89	740	7.4	11134	10200	1LQ1322-3BB72-2	
570	764	400	Δ	50.3	3629	95.7	96.2	96.5	0.87	820	7.8	11976	16400	1LQ1322-4AB32-2	
630	845	400	Δ	50.3	4011	95.9	96.4	96.6	0.87	900	8.6	14039	16400	1LQ1322-4AB52-2	
715	959	400	Δ	50.3	4552	96.1	96.5	96.7	0.87	1020	9.4	17298	16400	1LQ1322-4AB72-2	
820	1100	450	Δ	50.2	5220	96.2	96.5	96.6	0.85	1200	9	19836	20700	1LQ1322-4BB12-2	
940	1261	450	Δ	50.2	5984	96.3	96.6	96.6	0.84	1400	9.9	25731	20700	1LQ1322-4BB32-2	
1035	1388	450	Δ	50.2	6589	96.3	96.6	96.8	0.86	1500	9.2	25697	20700	1LQ1322-4BB52-2	
1000 rpm, 6-pole															
230	308	315	Δ	50.6	2196	94	95.2	95.5	0.82	355	6.5	5270	7500	1LQ1322-3AC12-3	
295	396	315	Δ	50.5	2817	94.5	95.6	95.8	0.82	455	7.1	7606	7500	1LQ1322-3AC32-3	
335	449	315	Δ	50.5	3199	94.5	95.6	95.9	0.84	500	6.9	7998	7500	1LQ1322-3AC52-3	
375	503	315	Δ	50.5	3581	94.8	95.7	95.9	0.84	560	7.2	9311	7500	1LQ1322-3AC72-3	
405	543	355	Δ	50.4	3867	95	95.9	95.9	0.86	590	8.4	11988	10200	1LQ1322-3BC52-3	
455	610	355	Δ	50.4	4345	95.2	96	95.9	0.86	660	9.1	14773	10200	1LQ1322-3BC72-3	
475	637	400	Δ	50.4	4536	95.4	96	96.5	0.85	700	6.8	12247	16400	1LQ1322-4AC32-3	
530	711	400	Δ	50.4	5061	95.6	96.2	96.6	0.86	770	7.3	14171	16400	1LQ1322-4AC52-3	
600	805	400	Δ	50.3	5730	95.8	96.3	96.7	0.86	870	7.9	17763	16400	1LQ1322-4AC72-3	
640	858	450	Δ	50.3	6112	96.1	96.5	96.7	0.83	960	7.9	18336	20700	1LQ1322-4BC12-3	
735	986	450	Δ	50.3	7019	96.1	96.6	96.8	0.85	1080	7.5	20355	20700	1LQ1322-4BC32-3	
845	1133	450	Δ	50.2	8069	96.3	96.7	96.8	0.83	1260	8.8	27435	20700	1LQ1322-4BC52-3	
750 rpm, 6-pole															
190	255	315	Δ	38.1	2419	93	94.3	94.8	0.81	300	6.4	6048	7500	1LQ1322-3AC12-4	
235	315	315	Δ	38	2992	93.4	94.7	95.1	0.82	365	6.6	7779	7500	1LQ1322-3AC32-4	
265	355	315	Δ	38.1	3374	93.3	94.6	95.2	0.84	400	6.1	7760	7500	1LQ1322-3AC52-4	
290	389	315	Δ	38.1	3692	93.4	94.7	95.3	0.85	435	6.1	8492	7500	1LQ1322-3AC72-4	
335	449	355	Δ	37.9	4265	94	95.1	95.4	0.86	495	7.4	12369	10200	1LQ1322-3BC52-4	
370	496	355	Δ	37.9	4711	94.1	95.2	95.4	0.87	540	7.6	14133	10200	1LQ1322-3BC72-4	
400	536	400	Δ	37.9	5093	94.7	95.5	96.1	0.85	590	6.7	13751	16400	1LQ1322-4AC32-4	
460	617	400	Δ	37.9	5857	94.9	95.7	96.2	0.85	680	7.3	17571	16400	1LQ1322-4AC52-4	
515	691	400	Δ	37.8	6557	95.2	95.8	96.3	0.85	760	7.5	20327	16400	1LQ1322-4AC72-4	
540	724	450	Δ	37.8	6875	95.4	96	96.4	0.83	820	7.3	20625	20700	1LQ1322-4BC12-4	
625	838	450	Δ	37.8	7958	95.5	96.1	96.5	0.84	930	7	22282	20700	1LQ1322-4BC32-4	
725	972	450	Δ	37.8	9231	95.7	96.2	96.6	0.85	1060	7.1	25847	20700	1LQ1322-4BC52-4	
830	1113	450	Δ	37.8	10568	95.7	96.3	96.7	0.85	1220	7	29590	20700	1LQ1322-4BC72-4	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1322-3AB12-1...	1430	1470	3.5	85	100.5	3600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1322-3AB32-1...	1610	1660	4.4	85	100.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AB52-1...	1780	1830	5	85	100.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AB72-1...	1990	2040	5.8	85	100.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-3BB52-1...	2430	2490	8.3	85	101	3300	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-3BB72-1...	2560	2610	8.9	85	101	3300	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-3AB12-2...	1430	1470	3.5	85	100.5	3000	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1322-3AB32-2...	1610	1660	4.4	85	100.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AB52-2...	1780	1830	5	85	100.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AB72-2...	1990	2040	5.8	85	100.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-3BB52-2...	2430	2490	8.3	85	101	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-3BB72-2...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-4AB32-2...	3000	3070	13.6	85	101.5	2200	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1322-4AB52-2...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4AB72-2...	3480	3550	17.6	85	101.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BB12-2...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-4BB32-2...	4450	4550	25.5	85	102	2000	1XB7 750	On request	On request
1LQ1322-4BB52-2...	4800	4900	28.3	85	102	2000	1XB7 750	On request	On request
1LQ1322-3AC12-3...	1460	1500	5.9	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1322-3AC32-3...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AC52-3...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AC72-3...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3BC52-3...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-1GF37-4AA3	710
1LQ1322-3BC72-3...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4AC32-3...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4AC52-3...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-4AC72-3...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BC12-3...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BC32-3...	4390	4490	37.8	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-4BC52-3...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-3AC12-4...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1322-3AC32-4...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1322-3AC52-4...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1322-3AC72-4...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1322-3BC52-4...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3BC72-4...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-4AC32-4...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-1GF37-4AA3	710
1LQ1322-4AC52-4...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4AC72-4...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-4BC12-4...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1322-4BC32-4...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BC52-4...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-4BC72-4...	5240	5340	48.4	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 520 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
1500 rpm, 4-pole															
180	241	315	Δ	50.4	1146	95.2	95.9	95.9	0.84	250	9.2	4813	7500	1LQ1213-3AB12-2	
260	349	315	Δ	50.4	1655	95.1	96	96.1	0.88	340	8.8	6124	7500	1LQ1213-3AB32-2	
335	449	315	Δ	50.5	2133	95.2	96.1	96.2	0.88	440	8.6	7892	7500	1LQ1213-3AB52-2	
400	536	315	Δ	50.4	2546	95.5	96.3	96.4	0.87	530	9.7	10439	7500	1LQ1213-3AB72-2	
420	563	355	Δ	50.4	2674	95.9	96.7	96.8	0.86	560	8.9	10963	10200	1LQ1213-3BB52-2	
475	637	355	Δ	50.3	3024	96	96.8	96.8	0.85	640	9.4	13003	10200	1LQ1213-3BB72-2	
525	704	400	Δ	50.3	3342	95.8	96.4	96.7	0.86	700	7.8	11029	16400	1LQ1213-4AB32-2	
575	771	400	Δ	50.3	3661	96	96.5	96.9	0.87	760	8.4	12447	16400	1LQ1213-4AB52-2	
645	865	400	Δ	50.3	4106	96.1	96.6	97	0.87	850	8.9	14782	16400	1LQ1213-4AB72-2	
770	1033	450	Δ	50.2	4902	96.3	96.7	96.9	0.84	1060	9.3	19608	20700	1LQ1213-4BB12-2	
920	1234	450	Δ	50.2	5857	96.4	96.8	97.1	0.86	1220	8.8	21671	20700	1LQ1213-4BB32-2	
1080	1448	450	Δ	50.2	6875	96.6	96.9	97.2	0.84	1480	9.7	28875	20700	1LQ1213-4BB52-2	
1145	1535	450	Δ	50.2	7289	96.5	96.9	97.2	0.87	1500	10	29885	20700	1LQ1213-4BB72-2	
1000 rpm, 6-pole															
180	241	315	Δ	50.4	1719	94.9	95.8	95.8	0.79	265	8.8	5673	7500	1LQ1213-3AC12-3	
245	329	315	Δ	50.4	2340	94.8	95.8	95.9	0.81	350	8.1	7254	7500	1LQ1213-3AC32-3	
285	382	315	Δ	50.5	2722	94.7	95.8	96	0.84	395	7.5	7622	7500	1LQ1213-3AC52-3	
315	422	315	Δ	50.5	3008	94.9	95.9	96.1	0.84	435	7.7	8723	7500	1LQ1213-3AC72-3	
365	489	355	Δ	50.3	3485	95.3	96.2	96.2	0.84	500	9.5	12546	10200	1LQ1213-3BC52-3	
405	543	355	Δ	50.3	3867	95.5	96.3	96.3	0.83	560	10.1	14695	10200	1LQ1213-3BC72-3	
450	603	400	Δ	50.3	4297	95.9	96.4	96.8	0.83	620	8.4	14180	16400	1LQ1213-4AC32-3	
495	664	400	Δ	50.3	4727	96.1	96.6	96.9	0.82	690	8.9	17017	16400	1LQ1213-4AC52-3	
540	724	400	Δ	50.3	5157	96.1	96.6	96.9	0.84	740	8.5	17534	16400	1LQ1213-4AC72-3	
595	798	450	Δ	50.2	5682	96.3	96.7	97	0.82	830	8.4	18751	20700	1LQ1213-4BC12-3	
680	912	450	Δ	50.2	6494	96.5	96.8	97	0.81	960	9.2	23378	20700	1LQ1213-4BC32-3	
755	1012	450	Δ	50.2	7210	96.5	96.9	97.1	0.82	1060	9.1	25956	20700	1LQ1213-4BC52-3	
875	1173	450	Δ	50.2	8356	96.6	96.9	97.2	0.83	1200	8.8	29246	20700	1LQ1213-4BC72-3	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1213-3AB12-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1213-3AB32-2...	1570	1610	4.4	79	94.5	3000	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1213-3AB52-2...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1213-3AB72-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-3BB52-2...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-3BB72-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AB32-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AB52-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1213-4AB72-2...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1213-4BB12-2...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1213-4BB32-2...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1213-4BB52-2...	4770	4870	28.3	79	96	2000	1XB7 750	On request	On request
1LQ1213-4BB72-2...	5210	5310	32.6	79	96	2000	1XB7 750	On request	On request
1LQ1213-3AC12-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1213-3AC32-3...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1213-3AC52-3...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1213-3AC72-3...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1213-3BC52-3...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-3BC72-3...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-4AC32-3...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AC52-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AC72-3...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1213-4BC12-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1213-4BC32-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1213-4BC52-3...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1213-4BC72-3...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
1500 rpm, 4-pole															
205	275	315	Δ	50.5	1305	95.1	96	96	0.86	300	8.1	4698	7500	1LQ1223-3AB12-2 ■■■ 4)	
330	443	315	Δ	50.5	2101	95.2	96.1	96.2	0.87	475	8.2	7354	7500	1LQ1223-3AB32-2 ■■■	
365	489	315	Δ	50.5	2324	95.3	96.2	96.4	0.88	520	8.2	8134	7500	1LQ1223-3AB52-2 ■■■	
415	557	315	Δ	50.5	2642	95.3	96.2	96.5	0.9	580	8.1	8719	7500	1LQ1223-3AB72-2 ■■■	
475	637	355	Δ	50.4	3024	96	96.8	96.9	0.86	690	8.5	11794	10200	1LQ1223-3BB52-2 ■■■	
495	664	355	Δ	50.4	3151	95.8	96.8	96.9	0.88	700	7.8	11029	10200	1LQ1223-3BB72-2 ■■■	
565	758	400	Δ	50.3	3597	95.9	96.5	96.8	0.86	820	7.8	11870	16400	1LQ1223-4AB32-2 ■■■	
615	825	400	Δ	50.3	3915	96.1	96.6	96.9	0.86	890	8.7	14094	16400	1LQ1223-4AB52-2 ■■■	
700	939	400	Δ	50.3	4456	96.3	96.7	97	0.86	1020	9.4	17378	16400	1LQ1223-4AB72-2 ■■■	
825	1106	450	Δ	50.2	5252	96.4	96.8	97	0.84	1220	8.8	19958	20700	1LQ1223-4BB12-2 ■■■	
965	1294	450	Δ	50.2	6143	96.5	96.9	97.1	0.83	1440	9.6	25801	20700	1LQ1223-4BB32-2 ■■■	
1050	1408	450	Δ	50.2	6685	96.5	96.9	97.2	0.85	1540	9	25403	20700	1LQ1223-4BB52-2 ■■■	
1000 rpm, 6-pole															
190	255	315	Δ	50.5	1814	94.8	95.8	95.9	0.81	295	7.7	5261	7500	1LQ1223-3AC12-3 ■■■ 4)	
275	369	315	Δ	50.5	2626	94.8	95.8	96	0.82	420	7.6	7353	7500	1LQ1223-3AC32-3 ■■■	
310	416	315	Δ	50.5	2960	94.9	95.9	96.1	0.83	470	7.3	7992	7500	1LQ1223-3AC52-3 ■■■	
350	469	315	Δ	50.5	3342	95.1	96	96.2	0.83	530	7.5	9358	7500	1LQ1223-3AC72-3 ■■■	
395	530	355	Δ	50.4	3772	95.3	96.2	96.3	0.85	580	8.6	12070	10200	1LQ1223-3BC52-3 ■■■	
445	597	355	Δ	50.4	4249	95.5	96.4	96.4	0.85	650	9.2	14447	10200	1LQ1223-3BC72-3 ■■■	
490	657	400	Δ	50.3	4679	96	96.5	96.9	0.85	720	7.7	14505	16400	1LQ1223-4AC52-3 ■■■	
560	751	400	Δ	50.3	5348	96.1	96.6	97	0.85	820	8.4	17648	16400	1LQ1223-4AC72-3 ■■■	
600	805	450	Δ	50.2	5730	96.4	96.8	97.1	0.82	910	8.3	18336	20700	1LQ1223-4BC12-3 ■■■	
690	925	450	Δ	50.3	6589	96.4	96.9	97.2	0.84	1020	7.9	20426	20700	1LQ1223-4BC32-3 ■■■	
795	1066	450	Δ	50.2	7592	96.6	97	97.2	0.81	1220	9.1	27331	20700	1LQ1223-4BC52-3 ■■■	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1223-3AB12-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1223-3AB32-2...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-3AB52-2...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-3AB72-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LQ1223-3BB52-2...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1223-3BB72-2...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1223-4AB32-2...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1223-4AB52-2...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1223-4AB72-2...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1223-4BB12-2...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1223-4BB32-2...	4420	4520	25.5	79	96	2000	1XB7 750	On request	On request
1LQ1223-4BB52-2...	4770	4870	28.3	79	96	2000	1XB7 750	On request	On request
1LQ1223-3AC12-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1223-3AC32-3...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1223-3AC52-3...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-3AC72-3...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-3BC52-3...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GF37-4AA3	710
1LQ1223-3BC72-3...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1223-4AC52-3...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1223-4AC72-3...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1223-4BC12-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1223-4BC32-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1223-4BC52-3...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 730 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
240	322	315	Δ	100.6	764	94.6	95	94.5	0.89	225	6.7	2063	7500	1LQ1212-3AB13-1	■■■■
310	416	315	Δ	100.5	987	95.2	95.6	95.1	0.89	290	7.6	3060	7500	1LQ1212-3AB33-1	■■■■
350	469	315	Δ	100.5	1114	95.4	95.8	95.3	0.9	320	8.8	3899	7500	1LQ1212-3AB53-1	■■■■
400	536	315	Δ	100.5	1273	95.6	96	95.6	0.9	365	8.3	4201	7500	1LQ1212-3AB73-1	■■■■
450	603	355	Δ	100.5	1432	95.6	96.2	95.8	0.89	415	7	4296	10200	1LQ1212-3BB53-1	■■■■
470	630	355	Δ	100.5	1496	95.6	96.2	95.9	0.89	435	6.3	4039	10200	1LQ1212-3BB73-1	■■■■
1500 rpm, 4-pole															
215	288	315	Δ	50.5	1369	94.8	95.6	95.6	0.86	205	8.4	4928	7500	1LQ1212-3AB13-2	■■■■
290	389	315	Δ	50.4	1846	95.1	95.9	95.9	0.86	280	8.8	7015	7500	1LQ1212-3AB33-2	■■■■
335	449	315	Δ	50.4	2133	95.3	95.9	96.1	0.88	315	9.3	8319	7500	1LQ1212-3AB53-2	■■■■
385	516	315	Δ	50.4	2451	95.4	96.2	96.2	0.88	360	9.5	9804	7500	1LQ1212-3AB73-2	■■■■
410	550	355	Δ	50.4	2610	95.7	96.5	96.5	0.87	385	8.7	10440	10200	1LQ1212-3BB53-2	■■■■
440	590	355	Δ	50.4	2801	95.7	96.5	96.5	0.87	415	8.9	11484	10200	1LQ1212-3BB73-2	■■■■
515	691	400	Δ	50.3	3279	95.8	96.2	96.4	0.86	490	8.8	12132	16400	1LQ1212-4AB33-2	■■■■
555	744	400	Δ	50.3	3533	95.9	96.3	96.6	0.87	520	9.1	13072	16400	1LQ1212-4AB53-2	■■■■
615	825	400	Δ	50.2	3915	96.1	96.4	96.6	0.85	590	11	18009	16400	1LQ1212-4AB73-2	■■■■
780	1046	450	Δ	50.2	4966	96.2	96.5	96.6	0.84	760	9.3	19864	20700	1LQ1212-4BB13-2	■■■■
880	1180	450	Δ	50.2	5602	96.2	96.5	96.6	0.84	860	10	24089	20700	1LQ1212-4BB33-2	■■■■
1005	1348	450	Δ	50.2	6398	96.3	96.6	96.7	0.84	980	10.5	28791	20700	1LQ1212-4BB53-2	■■■■
1150	1542	450	Δ	50.2	7321	96.4	96.7	96.8	0.85	1100	11.2	34409	20700	1LQ1212-4BB73-2	■■■■
1000 rpm, 6-pole															
195	261	315	Y	50.4	1862	94.5	95.4	95.5	0.8	200	8.1	5586	7500	1LQ1212-3AC13-3	■■■■
245	329	315	Y	50.4	2340	94.7	95.6	95.7	0.82	245	8.1	7020	7500	1LQ1212-3AC33-3	■■■■
280	375	315	Y	50.5	2674	94.8	95.7	95.9	0.84	280	7.8	7755	7500	1LQ1212-3AC53-3	■■■■
315	422	315	Δ	50.4	3008	95	95.7	96	0.84	310	8	8723	7500	1LQ1212-3AC73-3	■■■■
345	463	355	Δ	50.3	3295	95	95.7	95.7	0.85	335	10	12192	10200	1LQ1212-3BC53-3	■■■■
385	516	355	Δ	50.3	3676	95.2	95.9	95.7	0.84	380	10.7	14704	10200	1LQ1212-3BC73-3	■■■■
415	557	400	Δ	50.3	3963	95.6	96.1	96.4	0.85	400	8	12285	16400	1LQ1212-4AC33-3	■■■■
455	610	400	Δ	50.3	4345	95.9	96.3	96.5	0.83	450	9.4	16077	16400	1LQ1212-4AC53-3	■■■■
515	691	400	Y	50.2	4918	96	96.4	96.5	0.83	510	9.9	19672	16400	1LQ1212-4AC73-3	■■■■
565	758	450	Δ	50.2	5395	96.2	96.5	96.6	0.82	560	9.1	18883	20700	1LQ1212-4BC13-3	■■■■
645	865	450	Δ	50.2	6159	96.2	96.5	96.6	0.82	640	9.1	22172	20700	1LQ1212-4BC33-3	■■■■
715	959	450	Δ	50.2	6828	96.3	96.6	96.7	0.82	710	9.7	26629	20700	1LQ1212-4BC53-3	■■■■
840	1126	450	Δ	50.2	8021	96.4	96.7	96.8	0.82	840	9.4	30480	20700	1LQ1212-4BC73-3	■■■■
750 rpm, 6-pole															
155	208	315	Y	37.9	1974	93.5	94.6	94.8	0.79	164	7.7	6119	7500	1LQ1212-3AC13-4	■■■■
200	268	315	Y	38	2546	93.8	94.9	95.2	0.81	205	7.6	7383	7500	1LQ1212-3AC33-4	■■■■
225	302	315	Δ	38	2865	93.8	95	95.3	0.83	225	7.3	8022	7500	1LQ1212-3AC53-4	■■■■
255	342	315	Δ	38	3247	93.9	95.1	95.4	0.84	250	7.2	8767	7500	1LQ1212-3AC73-4	■■■■
295	396	355	Y	37.9	3756	94.1	95.1	95.2	0.85	290	8.8	12770	10200	1LQ1212-3BC53-4	■■■■
330	443	355	Δ	37.8	4202	94.3	95.3	95.3	0.85	320	9	14287	10200	1LQ1212-3BC73-4	■■■■
365	489	400	Δ	37.8	4647	94.9	95.6	96.1	0.84	360	7.4	13941	16400	1LQ1212-4AC33-4	■■■■
405	543	400	Δ	37.8	5157	95.1	95.8	96.2	0.84	400	8	17018	16400	1LQ1212-4AC53-4	■■■■
445	597	400	Δ	37.8	5666	95.2	95.8	96.3	0.86	425	7.9	18131	16400	1LQ1212-4AC73-4	■■■■
495	664	450	Δ	37.8	6303	95.5	96	96.4	0.83	490	7.6	18909	20700	1LQ1212-4BC13-4	■■■■
565	758	450	Δ	37.8	7194	95.6	96.1	96.4	0.83	560	7.8	23021	20700	1LQ1212-4BC33-4	■■■■
645	865	450	Δ	37.8	8212	95.6	96.2	96.5	0.85	620	7.8	25457	20700	1LQ1212-4BC53-4	■■■■
755	1012	450	Δ	37.8	9613	95.8	96.3	96.6	0.84	740	7.8	30762	20700	1LQ1212-4BC73-4	■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version
1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1212-3AB13-1...	1380	1430	3.5	79	94.5	3600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1212-3AB33-1...	1570	1610	4.4	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB53-1...	1740	1780	5	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB73-1...	1910	1950	5.8	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3BB53-1...	2350	2400	8.3	79	95	3300	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3BB73-1...	2470	2530	8.9	79	95	3300	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3AB13-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG32-2AA3	208
1LQ1212-3AB33-2...	1570	1610	4.4	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB53-2...	1740	1780	5	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB73-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3BB53-2...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3BB73-2...	2470	2530	8.9	79	95	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-4AB33-2...	2930	3000	13.6	79	95.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AB53-2...	3140	3210	15.4	79	95.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AB73-2...	3410	3480	17.6	79	95.5	2200	1XB7 731	6SL3710-7LG37-4AA3	710
1LQ1212-4BB13-2...	4140	4240	22.8	79	96	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1212-4BB33-2...	4420	4520	25.5	79	96	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1212-4BB53-2...	4770	4870	28.3	79	96	2000	1XB7 750	6SL3710-7LG41-0AA3	1000
1LQ1212-4BB73-2...	5210	5310	32.6	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1212-3AC13-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG32-2AA3	208
1LQ1212-3AC33-3...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1212-3AC53-3...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AC73-3...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3BC53-3...	2340	2400	14.5	79	95	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1212-3BC73-3...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-4AC33-3...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-4AC53-3...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-4AC73-3...	3410	3480	27	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4BC13-3...	4020	4120	33.8	79	96	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4BC33-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC53-3...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC73-3...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1212-3AC13-4...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG31-8AA3	170
1LQ1212-3AC33-4...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG32-2AA3	208
1LQ1212-3AC53-4...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1212-3AC73-4...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1212-3BC53-4...	2340	2400	14.5	79	95	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3BC73-4...	2490	2540	16	79	95	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-4AC33-4...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-4AC53-4...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-4AC73-4...	3410	3480	27	79	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-4BC13-4...	4020	4120	33.8	79	96	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4BC33-4...	4320	4420	37.8	79	96	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4BC53-4...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC73-4...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-7LG38-1AA3	790

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{LR} / I _{rated}	A					
<ul style="list-style-type: none"> Rated motor voltage 660 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 																
3000 rpm, 4-pole																
240	322	315	Δ	100.6	764	94.7	95	94.5	0.88	250	7	2216	7500	1LQ1222-3AB13-1	■■■■	
300	402	315	Δ	100.5	955	95.1	95.5	95	0.9	305	7.6	2961	7500	1LQ1222-3AB33-1	■■■■	
340	456	315	Δ	100.5	1082	95.4	95.8	95.3	0.9	345	8.9	3895	7500	1LQ1222-3AB53-1	■■■■	
390	523	315	Δ	100.5	1241	95.6	96	95.6	0.9	395	8.6	4219	7500	1LQ1222-3AB73-1	■■■■	
420	563	355	Δ	100.4	1337	95.6	96.1	95.6	0.89	430	7.6	4412	10200	1LQ1222-3BB53-1	■■■■	
440	590	355	Δ	100.5	1401	95.6	96.2	95.8	0.89	450	6.8	4063	10200	1LQ1222-3BB73-1	■■■■	
1500 rpm, 4-pole																
230	308	315	Δ	50.5	1464	94.7	95.6	95.7	0.86	245	7.8	4978	7500	1LQ1222-3AB13-2	■■■■	
290	389	315	Δ	50.5	1846	95	95.9	96	0.88	300	8.4	6461	7500	1LQ1222-3AB33-2	■■■■	
325	436	315	Δ	50.4	2069	95.2	95.9	96.1	0.88	335	8.9	7655	7500	1LQ1222-3AB53-2	■■■■	
385	516	315	Δ	50.4	2451	95.4	96.2	96.3	0.89	395	9.3	9559	7500	1LQ1222-3AB73-2	■■■■	
400	536	355	Δ	50.3	2546	95.8	96.5	96.4	0.84	430	9.9	11966	10200	1LQ1222-3BB53-2	■■■■	
430	577	355	Δ	50.4	2737	95.7	96.5	96.5	0.87	450	8.8	11222	10200	1LQ1222-3BB73-2	■■■■	
505	677	400	Δ	50.3	3215	95.8	96.2	96.5	0.86	530	8.8	11896	16400	1LQ1222-4AB33-2	■■■■	
540	724	400	Δ	50.3	3438	95.9	96.3	96.6	0.87	560	9.2	13064	16400	1LQ1222-4AB53-2	■■■■	
605	811	400	Y	50.3	3852	96.1	96.4	96.6	0.87	630	10	16178	16400	1LQ1222-4AB73-2	■■■■	
770	1033	450	Δ	50.2	4902	96.2	96.4	96.5	0.84	830	9.8	20588	20700	1LQ1222-4BB13-2	■■■■	
890	1194	450	Δ	50.2	5666	96.2	96.5	96.6	0.84	960	10.1	24364	20700	1LQ1222-4BB33-2	■■■■	
935	1254	450	Δ	50.2	5952	96.2	96.5	96.5	0.84	1000	10.9	27379	20700	1LQ1222-4BB53-2	■■■■	
1060	1421	450	Δ	50.2	6748	96.3	96.6	96.6	0.84	1140	11.7	33740	20700	1LQ1222-4BB73-2	■■■■	
1000 rpm, 6-pole																
195	261	315	Y	50.5	1862	94.5	95.4	95.5	0.8	225	7.9	5586	7500	1LQ1222-3AC13-3	■■■■	
245	329	315	Δ	50.4	2340	94.7	95.6	95.7	0.82	275	8.1	7020	7500	1LQ1222-3AC33-3	■■■■	
285	382	315	Δ	50.5	2722	94.9	95.7	95.9	0.84	310	7.9	7894	7500	1LQ1222-3AC53-3	■■■■	
310	416	315	Δ	50.4	2960	95	95.7	95.9	0.83	340	8.5	9472	7500	1LQ1222-3AC73-3	■■■■	
345	463	355	Δ	50.3	3295	95	95.7	95.7	0.85	370	9.7	11862	10200	1LQ1222-3BC53-3	■■■■	
365	489	355	Δ	50.3	3485	95.3	95.7	95.6	0.83	400	11.2	14637	10200	1LQ1222-3BC73-3	■■■■	
410	550	400	Δ	50.3	3915	95.6	96.1	96.4	0.85	440	7.8	12137	16400	1LQ1222-4AC33-3	■■■■	
460	617	400	Δ	50.3	4393	95.9	96.3	96.5	0.83	500	9.4	16254	16400	1LQ1222-4AC53-3	■■■■	
510	684	400	Δ	50.3	4870	96	96.4	96.5	0.84	550	9.7	18993	16400	1LQ1222-4AC73-3	■■■■	
560	751	450	Δ	50.2	5348	96.2	96.5	96.5	0.81	630	9.3	19788	20700	1LQ1222-4BC13-3	■■■■	
630	845	450	Δ	50.2	6016	96.3	96.5	96.6	0.81	710	9.8	23462	20700	1LQ1222-4BC33-3	■■■■	
720	966	450	Δ	50.2	6875	96.3	96.6	96.7	0.83	790	9.1	24750	20700	1LQ1222-4BC53-3	■■■■	
780	1046	450	Δ	50.2	7448	96.3	96.6	96.7	0.83	850	9.6	29047	20700	1LQ1222-4BC73-3	■■■■	
750 rpm, 6-pole																
155	208	315	Y	38	1974	93.3	94.5	94.8	0.8	180	7.3	5725	7500	1LQ1222-3AC13-4	■■■■	
205	275	315	Δ	37.9	2610	93.9	95	95.1	0.8	235	7.8	7830	7500	1LQ1222-3AC33-4	■■■■	
225	302	315	Δ	38	2865	93.9	95	95.3	0.83	250	7.5	8309	7500	1LQ1222-3AC53-4	■■■■	
245	329	315	Δ	38	3119	93.9	95	95.4	0.84	270	7.2	8733	7500	1LQ1222-3AC73-4	■■■■	
295	396	355	Δ	37.9	3756	94.1	95.2	95.2	0.85	320	8.9	12770	10200	1LQ1222-3BC53-4	■■■■	
320	429	355	Δ	37.9	4074	94.2	95.2	95.3	0.86	340	8.9	13444	10200	1LQ1222-3BC73-4	■■■■	
360	483	400	Δ	37.8	4584	94.9	95.6	96.1	0.84	390	7.6	14210	16400	1LQ1222-4AC33-4	■■■■	
400	536	400	Δ	37.8	5093	95.1	95.7	96.2	0.85	430	7.9	16298	16400	1LQ1222-4AC53-4	■■■■	
440	590	400	Δ	37.8	5602	95.3	95.9	96.3	0.85	470	8.4	19047	16400	1LQ1222-4AC73-4	■■■■	
495	664	450	Δ	37.7	6303	95.5	96	96.3	0.82	550	8	20170	20700	1LQ1222-4BC13-4	■■■■	
560	751	450	Δ	37.8	7130	95.6	96.1	96.4	0.83	610	7.9	22816	20700	1LQ1222-4BC33-4	■■■■	
645	865	450	Δ	37.8	8212	95.7	96.2	96.5	0.84	700	7.8	26278	20700	1LQ1222-4BC53-4	■■■■	
735	986	450	Δ	37.7	9358	95.8	96.3	96.6	0.85	790	7.9	29946	20700	1LQ1222-4BC73-4	■■■■	

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1222-3AB13-1...	1380	1430	3.5	79	94.5	3600	1XB7 730	6SL3710-1GH32-6AA3	250
1LQ1222-3AB33-1...	1570	1610	4.4	79	94.5	3600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1222-3AB53-1...	1740	1780	5	79	94.5	3600	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1222-3AB73-1...	1910	1950	5.8	79	94.5	3600	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1222-3BB53-1...	2350	2400	8.3	79	95	3300	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1222-3BB73-1...	2470	2530	8.9	79	95	3300	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1222-3AB13-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-1GH32-6AA3	250
1LQ1222-3AB33-2...	1570	1610	4.4	79	94.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1222-3AB53-2...	1740	1780	5	79	94.5	3000	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1222-3AB73-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1222-3BB53-2...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1222-3BB73-2...	2470	2530	8.9	79	95	2600	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1222-4AB33-2...	2930	3000	13.6	79	95.5	2200	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1222-4AB53-2...	3140	3210	15.4	79	95.5	2200	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1222-4AB73-2...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-1GH37-4AA3	710
1LQ1222-4BB13-2...	4140	4240	22.8	79	96	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LQ1222-4BB33-2...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-2GH41-1AA3	1036
1LQ1222-4BB53-2...	4770	4870	28.3	79	96	2000	1XB7 750	6SL3710-2GH41-1AA3	1036
1LQ1222-4BB73-2...	5210	5310	32.6	79	96	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LQ1222-3AC13-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LQ1222-3AC33-3...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1222-3AC53-3...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1222-3AC73-3...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1222-3BC53-3...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1222-3BC73-3...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1222-4AC33-3...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1222-4AC53-3...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1222-4AC73-3...	3410	3480	27	79	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1222-4BC13-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1222-4BC33-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1222-4BC53-3...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LQ1222-4BC73-3...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LQ1222-3AC13-4...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GH32-2AA3	208
1LQ1222-3AC33-4...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LQ1222-3AC53-4...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LQ1222-3AC73-4...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1222-3BC53-4...	2340	2400	14.5	79	95	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1222-3BC73-4...	2490	2540	16	79	95	2500	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1222-4AC33-4...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1222-4AC53-4...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1222-4AC73-4...	3410	3480	27	79	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1222-4BC13-4...	4020	4120	33.8	79	96	1700	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1222-4BC33-4...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1222-4BC53-4...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1222-4BC73-4...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-1GH38-1AA3	790

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
<ul style="list-style-type: none"> Rated motor voltage 730 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3000 rpm, 4-pole																
265	355	315	Δ	100.7	844	94.5	95	94.6	0.89	250	6	2110	7500	1LQ1312-3AB13-1	■■■■	
345	463	315	Δ	100.6	1098	95.1	95.6	95.2	0.9	315	7	3074	7500	1LQ1312-3AB33-1	■■■■	
395	530	315	Δ	100.5	1257	95.4	95.9	95.5	0.9	360	7.8	3897	7500	1LQ1312-3AB53-1	■■■■	
440	590	315	Δ	100.6	1401	95.5	96	95.7	0.91	400	7.6	4203	7500	1LQ1312-3AB73-1	■■■■	
485	650	355	Δ	100.5	1544	95.6	96.2	95.9	0.89	450	6.5	4323	10200	1LQ1312-3BB53-1	■■■■	
510	684	355	Δ	100.6	1623	95.6	96.2	96	0.89	470	5.8	4058	10200	1LQ1312-3BB73-1	■■■■	
1500 rpm, 4-pole																
245	329	315	Δ	50.5	1560	94.4	95.3	95.5	0.87	235	7.3	4836	7500	1LQ1312-3AB13-2	■■■■	
315	422	315	Δ	50.5	2005	94.8	95.7	95.9	0.87	300	8.2	7018	7500	1LQ1312-3AB33-2	■■■■	
365	489	315	Δ	50.5	2324	95.1	95.9	96.1	0.88	340	8.6	8366	7500	1LQ1312-3AB53-2	■■■■	
415	557	315	Δ	50.5	2642	95.2	96.1	96.2	0.89	385	8.9	9775	7500	1LQ1312-3AB73-2	■■■■	
460	617	355	Δ	50.4	2928	95.5	96.4	96.5	0.88	430	7.8	10248	10200	1LQ1312-3BB53-2	■■■■	
485	650	355	Δ	50.4	3088	95.6	96.5	96.5	0.88	450	8.2	11426	10200	1LQ1312-3BB73-2	■■■■	
550	738	400	Δ	50.3	3501	95.7	96.2	96.5	0.86	530	8.2	12254	16400	1LQ1312-4AB33-2	■■■■	
595	798	400	Δ	50.3	3788	95.8	96.3	96.6	0.87	560	8.5	13258	16400	1LQ1312-4AB53-2	■■■■	
690	925	400	Δ	50.3	4393	96	96.4	96.6	0.86	660	9.8	18011	16400	1LQ1312-4AB73-2	■■■■	
820	1100	450	Δ	50.2	5220	96.1	96.5	96.6	0.85	790	9	19836	20700	1LQ1312-4BB13-2	■■■■	
905	1214	450	Δ	50.2	5761	96.2	96.5	96.6	0.84	880	9.7	24196	20700	1LQ1312-4BB33-2	■■■■	
1060	1421	450	Δ	50.2	6748	96.3	96.6	96.7	0.85	1020	10	29016	20700	1LQ1312-4BB53-2	■■■■	
1220	1636	450	Δ	50.2	7767	96.5	96.7	96.8	0.85	1180	10.5	34175	20700	1LQ1312-4BB73-2	■■■■	
1000 rpm, 6-pole																
215	288	315	Y	50.5	2053	94.1	95.1	95.3	0.81	220	7.4	5543	7500	1LQ1312-3AC13-3	■■■■	
270	362	315	Y	50.5	2578	94.3	95.4	95.6	0.83	270	7.4	6961	7500	1LQ1312-3AC33-3	■■■■	
310	416	315	Y	50.5	2960	94.4	95.5	95.7	0.84	305	7.2	7696	7500	1LQ1312-3AC53-3	■■■■	
350	469	315	Δ	50.5	3342	94.6	95.6	95.8	0.84	345	7.2	8689	7500	1LQ1312-3AC73-3	■■■■	
370	496	355	Δ	50.3	3533	94.9	95.7	95.7	0.85	360	9.3	12366	10200	1LQ1312-3BC53-3	■■■■	
410	550	355	Δ	50.3	3915	95.1	95.9	95.7	0.85	400	10.1	14877	10200	1LQ1312-3BC73-3	■■■■	
460	617	400	Δ	50.4	4393	95.4	96	96.4	0.85	445	7.2	12300	16400	1LQ1312-4AC33-3	■■■■	
520	697	400	Δ	50.3	4966	95.7	96.2	96.5	0.84	510	8.3	16388	16400	1LQ1312-4AC53-3	■■■■	
575	771	400	Y	50.3	5491	95.9	96.3	96.6	0.84	560	9	19768	16400	1LQ1312-4AC73-3	■■■■	
635	852	450	Δ	50.3	6064	96.1	96.5	96.6	0.83	630	8.1	18798	20700	1LQ1312-4BC13-3	■■■■	
715	959	450	Δ	50.2	6828	96.2	96.5	96.7	0.83	710	8.2	21850	20700	1LQ1312-4BC33-3	■■■■	
805	1080	450	Δ	50.2	7687	96.3	96.6	96.7	0.83	790	8.7	26136	20700	1LQ1312-4BC53-3	■■■■	
935	1254	450	Δ	50.2	8929	96.4	96.7	96.8	0.84	910	8.7	30359	20700	1LQ1312-4BC73-3	■■■■	
750 rpm, 6-pole																
160	215	315	Y	38	2037	93.2	94.4	94.6	0.79	170	7.5	6111	7500	1LQ1312-3AC13-4	■■■■	
220	295	315	Y	38	2801	93.3	94.6	95	0.82	225	6.9	7563	7500	1LQ1312-3AC33-4	■■■■	
245	329	315	Δ	38	3119	93.3	94.6	95.1	0.84	245	6.7	8109	7500	1LQ1312-3AC53-4	■■■■	
275	369	315	Δ	38	3501	93.5	94.8	95.2	0.85	270	6.7	8753	7500	1LQ1312-3AC73-4	■■■■	
315	422	355	Y	37.9	4011	93.9	95	95.2	0.86	305	8.3	12434	10200	1LQ1312-3BC53-4	■■■■	
350	469	355	Δ	37.9	4456	94.1	95.2	95.3	0.86	340	8.5	14259	10200	1LQ1312-3BC73-4	■■■■	
395	530	400	Δ	37.9	5029	94.7	95.4	96	0.85	385	6.9	14081	16400	1LQ1312-4AC33-4	■■■■	
440	590	400	Δ	37.8	5602	94.9	95.6	96.2	0.85	430	7.4	16806	16400	1LQ1312-4AC53-4	■■■■	
470	630	400	Δ	37.8	5984	95.1	95.7	96.3	0.86	450	7.4	17952	16400	1LQ1312-4AC73-4	■■■■	
540	724	450	Δ	37.8	6875	95.3	95.9	96.4	0.84	530	7	19250	20700	1LQ1312-4BC13-4	■■■■	
615	825	450	Δ	37.8	7830	95.4	96	96.4	0.84	600	7.3	22707	20700	1LQ1312-4BC33-4	■■■■	
695	932	450	Δ	37.8	8849	95.5	96.1	96.5	0.85	670	7.2	25662	20700	1LQ1312-4BC53-4	■■■■	
820	1100	450	Δ	37.8	10441	95.7	96.3	96.6	0.85	790	7.3	30279	20700	1LQ1312-4BC73-4	■■■■	

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1312-3AB13-1...	1430	1470	3.5	85	100.5	3600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1312-3AB33-1...	1610	1660	4.4	85	100.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AB53-1...	1780	1830	5	85	100.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3AB73-1...	1950	2000	5.8	85	100.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3BB53-1...	2390	2450	8.3	85	101	3300	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3BB73-1...	2520	2570	8.9	85	101	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3AB13-2...	1430	1470	3.5	85	100.5	3000	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1312-3AB33-2...	1610	1660	4.4	85	100.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AB53-2...	1780	1830	5	85	100.5	3000	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-3AB73-2...	1950	2000	5.8	85	100.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3BB53-2...	2390	2450	8.3	85	101	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3BB73-2...	2520	2570	8.9	85	101	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-4AB33-2...	2960	3030	13.6	85	101.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AB53-2...	3170	3240	15.4	85	101.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AB73-2...	3480	3550	17.6	85	101.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BB13-2...	4170	4270	22.8	85	102	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4BB33-2...	4450	4550	25.5	85	102	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1312-4BB53-2...	4800	4900	28.3	85	102	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-4BB73-2...	5240	5340	32.6	85	102	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-3AC13-3...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1312-3AC33-3...	1640	1680	7.2	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AC53-3...	1820	1860	8.3	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AC73-3...	1930	1970	9.1	85	100.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-3BC53-3...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3BC73-3...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-4AC33-3...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-4AC53-3...	3210	3280	24	85	101.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AC73-3...	3440	3510	27	85	101.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4BC13-3...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC33-3...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC53-3...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4BC73-3...	5240	5340	48.4	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1312-3AC13-4...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LG31-8AA3	170
1LQ1312-3AC33-4...	1640	1680	7.2	85	100.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1312-3AC53-4...	1820	1860	8.3	85	100.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1312-3AC73-4...	1930	1970	9.1	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3BC53-4...	2390	2440	14.5	85	101	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3BC73-4...	2530	2590	16	85	101	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-4AC33-4...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-4AC53-4...	3210	3280	24	85	101.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-4AC73-4...	3440	3510	27	85	101.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-4BC13-4...	4050	4150	33.8	85	102	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4BC33-4...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC53-4...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC73-4...	5240	5340	48.4	85	102	1700	1XB7 740	6SL3710-7LG38-1AA3	790

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A				
• Rated motor voltage 660 V														
• Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)														
• Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)														
3000 rpm, 4-pole														
265	355	315	Δ	100.6	844	94.6	95.1	94.6	0.89	275	6.3	2194	7500	1LQ1322-3AB13-1
330	443	315	Δ	100.6	1050	95.1	95.6	95.2	0.9	335	7	2940	7500	1LQ1322-3AB33-1
380	510	315	Δ	100.5	1210	95.4	95.8	95.4	0.9	385	8	3872	7500	1LQ1322-3AB53-1
435	583	315	Δ	100.6	1385	95.5	96	95.7	0.91	435	7.8	4294	7500	1LQ1322-3AB73-1
465	624	355	Δ	100.5	1480	95.6	96.2	95.8	0.89	475	6.9	4440	10200	1LQ1322-3BB53-1
485	650	355	Δ	100.6	1544	95.6	96.2	96	0.89	495	6.2	4169	10200	1LQ1322-3BB73-1
1500 rpm, 4-pole														
250	335	315	Δ	50.5	1592	94.4	95.4	95.6	0.87	265	7.2	4935	7500	1LQ1322-3AB13-2
310	416	315	Δ	50.5	1974	94.8	95.7	95.9	0.88	320	7.8	6514	7500	1LQ1322-3AB33-2
350	469	315	Δ	50.5	2228	94.9	95.9	96	0.89	360	8.3	7798	7500	1LQ1322-3AB53-2
415	557	315	Δ	50.5	2642	95.2	96.1	96.2	0.89	425	8.6	9511	7500	1LQ1322-3AB73-2
455	610	355	Δ	50.4	2897	95.7	96.5	96.4	0.86	480	8.9	11878	10200	1LQ1322-3BB53-2
480	644	355	Δ	50.4	3056	95.6	96.5	96.5	0.88	495	8	11002	10200	1LQ1322-3BB73-2
545	731	400	Δ	50.3	3470	95.7	96.2	96.5	0.86	580	8	11798	16400	1LQ1322-4AB33-2
585	784	400	Δ	50.3	3724	95.8	96.3	96.6	0.87	610	8.5	13034	16400	1LQ1322-4AB53-2
660	885	400	Y	50.3	4202	96	96.4	96.7	0.87	690	9.1	15547	16400	1LQ1322-4AB73-2
815	1093	450	Δ	50.2	5188	96.1	96.5	96.6	0.84	880	9.2	20752	20700	1LQ1322-4BB13-2
930	1247	450	Δ	50.2	5921	96.2	96.5	96.6	0.85	990	9.8	24868	20700	1LQ1322-4BB33-2
965	1294	450	Δ	50.2	6143	96.2	96.5	96.6	0.85	1020	10.6	27644	20700	1LQ1322-4BB53-2
1130	1515	450	Δ	50.2	7194	96.3	96.6	96.7	0.85	1200	11.2	33812	20700	1LQ1322-4BB73-2
1000 rpm, 6-pole														
215	288	315	Y	50.5	2053	94.1	95.1	95.3	0.81	245	7.2	5543	7500	1LQ1322-3AC13-3
270	362	315	Δ	50.5	2578	94.4	95.4	95.6	0.83	300	7.4	7218	7500	1LQ1322-3AC33-3
315	422	315	Δ	50.5	3008	94.5	95.5	95.8	0.84	345	7.1	7821	7500	1LQ1322-3AC53-3
345	463	315	Δ	50.5	3295	94.7	95.7	95.8	0.83	380	7.6	9226	7500	1LQ1322-3AC73-3
370	496	355	Δ	50.4	3533	94.9	95.7	95.7	0.86	395	9.1	12012	10200	1LQ1322-3BC53-3
405	543	355	Δ	50.3	3867	95.1	95.9	95.7	0.84	440	10.2	14695	10200	1LQ1322-3BC73-3
445	597	400	Δ	50.4	4249	95.4	96	96.4	0.85	475	7.2	11897	16400	1LQ1322-4AC33-3
510	684	400	Δ	50.3	4870	95.8	96.2	96.5	0.84	550	8.6	16558	16400	1LQ1322-4AC53-3
565	758	400	Δ	50.3	5395	95.9	96.3	96.6	0.85	600	8.9	18883	16400	1LQ1322-4AC73-3
625	838	450	Δ	50.2	5968	96.1	96.5	96.6	0.82	690	8.5	19694	20700	1LQ1322-4BC13-3
710	952	450	Δ	50.2	6780	96.2	96.5	96.7	0.82	780	8.9	23730	20700	1LQ1322-4BC33-3
800	1073	450	Δ	50.2	7639	96.2	96.6	96.8	0.84	860	8.4	25209	20700	1LQ1322-4BC53-3
870	1167	450	Δ	50.2	8308	96.2	96.6	96.7	0.84	940	8.7	29078	20700	1LQ1322-4BC73-3
750 rpm, 6-pole														
170	228	315	Y	38	2165	92.8	94.1	94.6	0.81	196	6.7	5629	7500	1LQ1322-3AC13-4
220	295	315	Δ	38	2801	93.5	94.7	95	0.81	250	7.3	7843	7500	1LQ1322-3AC33-4
250	335	315	Δ	38	3183	93.4	94.7	95.1	0.84	275	6.9	8276	7500	1LQ1322-3AC53-4
270	362	315	Δ	38	3438	93.3	94.7	95.1	0.85	295	6.6	8595	7500	1LQ1322-3AC73-4
315	422	355	Δ	37.9	4011	94	95.1	95.2	0.86	335	8.5	12835	10200	1LQ1322-3BC53-4
340	456	355	Δ	37.9	4329	94	95.1	95.3	0.86	365	8.2	13420	10200	1LQ1322-3BC73-4
390	523	400	Δ	37.9	4966	94.7	95.4	96.1	0.84	425	7	14401	16400	1LQ1322-4AC33-4
430	577	400	Δ	37.9	5475	94.9	95.6	96.2	0.85	465	7.3	16425	16400	1LQ1322-4AC53-4
480	644	400	Δ	37.8	6112	95.1	95.8	96.3	0.85	520	7.6	18947	16400	1LQ1322-4AC73-4
535	717	450	Δ	37.8	6812	95.4	96	96.3	0.83	590	7.5	20436	20700	1LQ1322-4BC13-4
610	818	450	Δ	37.8	7767	95.5	96	96.4	0.84	660	7.3	22524	20700	1LQ1322-4BC33-4
700	939	450	Δ	37.8	8913	95.6	96.1	96.5	0.85	750	7.3	25848	20700	1LQ1322-4BC53-4
800	1073	450	Δ	37.8	10186	95.7	96.2	96.6	0.85	860	7.3	29539	20700	1LQ1322-4BC73-4

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1322-3AB13-1...	1430	1470	3.5	85	100.5	3600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1322-3AB33-1...	1610	1660	4.4	85	100.5	3600	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1322-3AB53-1...	1780	1830	5	85	100.5	3600	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1322-3AB73-1...	1950	2000	5.8	85	100.5	3600	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1322-3BB53-1...	2390	2450	8.3	85	101	3300	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-3BB73-1...	2520	2570	8.9	85	101	3300	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-3AB13-2...	1430	1470	3.5	85	100.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1322-3AB33-2...	1610	1660	4.4	85	100.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1322-3AB53-2...	1780	1830	5	85	100.5	3000	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1322-3AB73-2...	1950	2000	5.8	85	100.5	3000	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1322-3BB53-2...	2390	2450	8.3	85	101	2600	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-3BB73-2...	2520	2570	8.9	85	101	2600	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-4AB33-2...	2960	3030	13.6	85	101.5	2200	1XB7 731	6SL3710-1GH37-4AA3	710
1LQ1322-4AB53-2...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1322-4AB73-2...	3480	3550	17.6	85	101.5	2200	1XB7 750	6SL3710-1GH37-4AA3	710
1LQ1322-4BB13-2...	4170	4270	22.8	85	102	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LQ1322-4BB33-2...	4450	4550	25.5	85	102	2000	1XB7 750	6SL3710-2GH41-1AA3	1036
1LQ1322-4BB53-2...	4800	4900	28.3	85	102	2000	1XB7 750	6SL3710-2GH41-1AA3	1036
1LQ1322-4BB73-2...	5240	5340	32.6	85	102	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LQ1322-3AC13-3...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LQ1322-3AC33-3...	1640	1680	7.2	85	100.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1322-3AC53-3...	1820	1860	8.3	85	100.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1322-3AC73-3...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1322-3BC53-3...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1322-3BC73-3...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1322-4AC33-3...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-4AC53-3...	3210	3280	24	85	101.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-4AC73-3...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1322-4BC13-3...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1322-4BC33-3...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LQ1322-4BC53-3...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LQ1322-4BC73-3...	5240	5340	48.4	85	102	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LQ1322-3AC13-4...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-1GH32-2AA3	208
1LQ1322-3AC33-4...	1640	1680	7.2	85	100.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LQ1322-3AC53-4...	1820	1860	8.3	85	100.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1322-3AC73-4...	1930	1970	9.1	85	100.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1322-3BC53-4...	2390	2440	14.5	85	101	2500	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1322-3BC73-4...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1322-4AC33-4...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1322-4AC53-4...	3210	3280	24	85	101.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-4AC73-4...	3440	3510	27	85	101.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1322-4BC13-4...	4050	4150	33.8	85	102	1700	1XB7 731	6SL3710-1GH37-4AA3	710
1LQ1322-4BC33-4...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1322-4BC53-4...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LQ1322-4BC73-4...	5240	5340	48.4	85	102	1700	1XB7 740	6SL3710-2GH41-1AA3	1036

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 730 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
1500 rpm, 4-pole														
185	248	315	Δ	50.4	1178	95.2	95.9	95.8	0.83	184	9.3	4948	7500	1LQ1213-3AB13-2 ■■■ 4)
300	402	315	Δ	50.4	1910	95.1	96	96.1	0.87	285	8.6	7067	7500	1LQ1213-3AB33-2 ■■■
340	456	315	Δ	50.4	2165	95.3	96.2	96.3	0.87	320	9	8227	7500	1LQ1213-3AB53-2 ■■■
395	530	315	Δ	50.4	2515	95.4	96.3	96.4	0.88	370	9.3	9809	7500	1LQ1213-3AB73-2 ■■■
425	570	355	Δ	50.4	2706	95.8	96.7	96.8	0.87	400	8.4	10283	10200	1LQ1213-3BB53-2 ■■■
465	624	355	Δ	50.4	2960	95.8	96.8	96.9	0.87	435	8.5	11248	10200	1LQ1213-3BB73-2 ■■■
540	724	400	Δ	50.3	3438	95.9	96.4	96.8	0.85	520	8.3	12033	16400	1LQ1213-4AB33-2 ■■■
580	778	400	Δ	50.3	3692	96	96.5	96.9	0.86	550	8.6	13291	16400	1LQ1213-4AB53-2 ■■■
655	878	400	Δ	50.3	4170	96.3	96.7	97	0.85	630	10.3	17931	16400	1LQ1213-4AB73-2 ■■■
830	1113	450	Δ	50.2	5284	96.4	96.8	97	0.84	810	8.8	20079	20700	1LQ1213-4BB13-2 ■■■
945	1267	450	Δ	50.2	6016	96.5	96.8	97.1	0.84	920	9.3	24064	20700	1LQ1213-4BB33-2 ■■■
1080	1448	450	Δ	50.2	6875	96.6	96.9	97.2	0.84	1040	9.9	28875	20700	1LQ1213-4BB53-2 ■■■
1245	1670	450	Δ	50.2	7926	96.7	97.1	97.3	0.85	1200	10.3	34874	20700	1LQ1213-4BB73-2 ■■■
1000 rpm, 6-pole														
175	235	315	Y	50.4	1671	94.9	95.7	95.7	0.79	184	8.8	5681	7500	1LQ1213-3AC13-3 ■■■ 4)
240	322	315	Y	50.4	2292	94.8	95.8	95.9	0.82	240	8.2	7105	7500	1LQ1213-3AC33-3 ■■■
285	382	315	Y	50.5	2722	94.8	95.8	96	0.83	285	7.7	7894	7500	1LQ1213-3AC53-3 ■■■
325	436	315	Δ	50.5	3104	94.9	95.9	96.1	0.84	320	7.7	8691	7500	1LQ1213-3AC73-3 ■■■
365	489	355	Δ	50.3	3485	95.3	96.2	96.2	0.84	355	9.4	12198	10200	1LQ1213-3BC53-3 ■■■
405	543	355	Δ	50.3	3867	95.5	96.3	96.3	0.83	400	10.1	14695	10200	1LQ1213-3BC73-3 ■■■
435	583	400	Δ	50.3	4154	95.7	96.3	96.8	0.84	425	7.5	12462	16400	1LQ1213-4AC33-3 ■■■
490	657	400	Δ	50.3	4679	96	96.5	96.9	0.83	485	8.7	16377	16400	1LQ1213-4AC53-3 ■■■
540	724	400	Y	50.3	5157	96.2	96.7	96.9	0.82	540	9.4	19597	16400	1LQ1213-4AC73-3 ■■■
595	798	450	Δ	50.2	5682	96.4	96.8	97	0.82	590	8.6	19319	20700	1LQ1213-4BC13-3 ■■■
670	898	450	Δ	50.2	6398	96.4	96.8	97.1	0.82	670	8.7	22393	20700	1LQ1213-4BC33-3 ■■■
760	1019	450	Δ	50.2	7257	96.5	96.9	97.1	0.82	760	9.1	26125	20700	1LQ1213-4BC53-3 ■■■
880	1180	450	Δ	50.2	8403	96.6	97	97.2	0.82	880	9	30251	20700	1LQ1213-4BC73-3 ■■■

For versions, see Article No. supplements and special versions. ■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1213-3AB13-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG32-2AA3	208
1LQ1213-3AB33-2...	1570	1610	4.4	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1213-3AB53-2...	1740	1780	5	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1213-3AB73-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1213-3BB53-2...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1213-3BB73-2...	2470	2530	8.9	79	95	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1213-4AB33-2...	2930	3000	13.6	79	95.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-4AB53-2...	3140	3210	15.4	79	95.5	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-4AB73-2...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4BB13-2...	4140	4240	22.8	79	96	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1213-4BB33-2...	4420	4520	25.5	79	96	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1213-4BB53-2...	4770	4870	28.3	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1213-4BB73-2...	5210	5310	32.6	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1213-3AC13-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG32-2AA3	208
1LQ1213-3AC33-3...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1213-3AC53-3...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1213-3AC73-3...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1213-3BC53-3...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1213-3BC73-3...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1213-4AC33-3...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1213-4AC53-3...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-4AC73-3...	3410	3480	27	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-4BC13-3...	4020	4120	33.8	79	96	1700	1XB7 731	6SL3710-7LG37-4AA3	710
1LQ1213-4BC33-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4BC53-3...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1213-4BC73-3...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 660 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
1500 rpm, 4-pole														
185	248	315	Δ	50.4	1178	95.2	95.9	95.8	0.84	200	9.4	4948	7500	1LQ1223-3AB13-2 ■■■ 4)
285	382	315	Δ	50.5	1814	95.1	96	96.1	0.88	295	8.5	6530	7500	1LQ1223-3AB33-2 ■■■
330	443	315	Δ	50.5	2101	95.2	96.1	96.2	0.88	340	8.7	7774	7500	1LQ1223-3AB53-2 ■■■
390	523	315	Δ	50.4	2483	95.4	96.3	96.4	0.89	400	9.1	9435	7500	1LQ1223-3AB73-2 ■■■
420	563	355	Δ	50.3	2674	96	96.8	96.8	0.84	450	9.5	11766	10200	1LQ1223-3BB53-2 ■■■
450	603	355	Δ	50.4	2865	95.9	96.8	96.9	0.87	465	8.6	10887	10200	1LQ1223-3BB73-2 ■■■
530	711	400	Δ	50.3	3374	95.9	96.4	96.8	0.86	560	8.3	11809	16400	1LQ1223-4AB33-2 ■■■
570	764	400	Δ	50.3	3629	96	96.5	96.9	0.87	590	8.8	13064	16400	1LQ1223-4AB53-2 ■■■
635	852	400	Y	50.3	4043	96.2	96.7	97	0.87	660	9.5	16172	16400	1LQ1223-4AB73-2 ■■■
825	1106	450	Δ	50.2	5252	96.4	96.8	97	0.83	900	9	20483	20700	1LQ1223-4BB13-2 ■■■
950	1274	450	Δ	50.2	6048	96.5	96.9	97.1	0.84	1020	9.5	24797	20700	1LQ1223-4BB33-2 ■■■
1000	1341	450	Δ	50.2	6366	96.4	96.8	97.1	0.84	1080	10.1	27374	20700	1LQ1223-4BB53-2 ■■■
1145	1535	450	Δ	50.2	7289	96.6	97	97.2	0.84	1220	11	33529	20700	1LQ1223-4BB73-2 ■■■
1000 rpm, 6-pole														
175	235	315	Y	50.4	1671	94.9	95.7	95.7	0.79	200	8.8	5514	7500	1LQ1223-3AC13-3 ■■■ 4)
240	322	315	Δ	50.4	2292	94.8	95.8	95.9	0.81	270	8.2	7105	7500	1LQ1223-3AC33-3 ■■■
290	389	315	Δ	50.5	2769	94.8	95.9	96.1	0.84	315	7.8	7753	7500	1LQ1223-3AC53-3 ■■■
320	429	315	Δ	50.4	3056	95	95.9	96.1	0.83	350	8.2	9474	7500	1LQ1223-3AC73-3 ■■■
360	483	355	Δ	50.3	3438	95.3	96.2	96.2	0.85	385	9.3	12033	10200	1LQ1223-3BC53-3 ■■■
395	530	355	Δ	50.3	3772	95.5	96.3	96.3	0.83	430	10.4	14711	10200	1LQ1223-3BC73-3 ■■■
415	557	400	Δ	50.3	3963	95.7	96.3	96.8	0.84	450	7.6	11889	16400	1LQ1223-4AC33-3 ■■■
480	644	400	Δ	50.3	4584	96.1	96.6	96.9	0.83	520	9	16502	16400	1LQ1223-4AC53-3 ■■■
535	717	400	Δ	50.3	5109	96.2	96.6	96.9	0.83	580	9.2	18903	16400	1LQ1223-4AC73-3 ■■■
585	784	450	Δ	50.2	5586	96.4	96.8	97	0.81	650	9	19551	20700	1LQ1223-4BC13-3 ■■■
665	892	450	Δ	50.2	6350	96.5	96.9	97	0.8	750	9.3	23495	20700	1LQ1223-4BC33-3 ■■■
750	1006	450	Δ	50.2	7162	96.5	96.9	97.1	0.83	820	8.8	25067	20700	1LQ1223-4BC53-3 ■■■
815	1093	450	Δ	50.2	7783	96.5	96.9	97.1	0.83	890	9.2	28797	20700	1LQ1223-4BC73-3 ■■■

For versions, see Article No. supplements and special versions. ■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1223-3AB13-2...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-1GH32-2AA3	208
1LQ1223-3AB33-2...	1570	1610	4.4	79	94.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1223-3AB53-2...	1740	1780	5	79	94.5	3000	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1223-3AB73-2...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1223-3BB53-2...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1223-3BB73-2...	2470	2530	8.9	79	95	2600	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1223-4AB33-2...	2930	3000	13.6	79	95.5	2200	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1223-4AB53-2...	3140	3210	15.4	79	95.5	2200	1XB7 731	6SL3710-1GH37-4AA3	710
1LQ1223-4AB73-2...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-1GH37-4AA3	710
1LQ1223-4BB13-2...	4140	4240	22.8	79	96	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LQ1223-4BB33-2...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-2GH41-1AA3	1036
1LQ1223-4BB53-2...	4770	4870	28.3	79	96	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LQ1223-4BB73-2...	5210	5310	32.6	79	96	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LQ1223-3AC13-3...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GH32-2AA3	208
1LQ1223-3AC33-3...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1223-3AC53-3...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LQ1223-3AC73-3...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LQ1223-3BC53-3...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LQ1223-3BC73-3...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1223-4AC33-3...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-1GH34-7AA3	452
1LQ1223-4AC53-3...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LQ1223-4AC73-3...	3410	3480	27	79	95.5	2000	1XB7 731	6SL3710-1GH37-4AA3	710
1LQ1223-4BC13-3...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LQ1223-4BC33-3...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LQ1223-4BC53-3...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LQ1223-4BC73-3...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-2GH41-1AA3	1036

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
3600 rpm, 4-pole															
285	382	315	Δ	120.6	756	94.5	94.7	93.8	0.88	410	7.3	2268	7500	1LQ1212-3AB15-5	
345	463	315	Δ	120.5	915	95	95.2	94.3	0.89	490	8.6	3203	7500	1LQ1212-3AB35-5	
375	503	315	Δ	120.6	995	95.1	95.4	94.7	0.9	530	7.2	2886	7500	1LQ1212-3AB55-5	
430	577	315	Δ	120.6	1141	95.4	95.7	95	0.91	590	7.9	3537	7500	1LQ1212-3AB75-5	
3000 rpm, 4-pole															
450	603	355	Δ	100.6	1432	95.6	96.2	95.9	0.89	630	6.2	3866	10200	1LQ1212-3BB55-1	
495	664	355	Δ	100.5	1576	95.8	96.4	96	0.89	690	7.3	4886	10200	1LQ1212-3BB75-1	
1800 rpm, 4-pole															
285	382	315	Δ	60.5	1512	95.2	96	95.9	0.86	415	7.8	5141	7500	1LQ1212-3AB15-6	
350	469	315	Δ	60.5	1857	95.5	96.1	96.2	0.88	495	8.1	6314	7500	1LQ1212-3AB35-6	
390	523	315	Δ	60.5	2069	95.6	96.4	96.4	0.89	550	8.1	7035	7500	1LQ1212-3AB55-6	
480	644	315	Δ	60.4	2546	96	96.7	96.6	0.88	680	10	10439	7500	1LQ1212-3AB75-6	
485	650	355	Δ	60.4	2573	96.1	96.8	96.6	0.86	700	9.3	10807	10200	1LQ1212-3BB55-6	
510	684	355	Δ	60.4	2706	96	96.8	96.7	0.88	720	8.4	10283	10200	1LQ1212-3BB75-6	
565	758	400	Δ	60.3	2997	96	96.3	96.5	0.86	820	8.6	10789	16400	1LQ1212-4AB35-6	
620	831	400	Δ	60.3	3289	96.2	96.4	96.5	0.86	900	9.9	13485	16400	1LQ1212-4AB55-6	
675	905	400	Δ	60.2	3581	96.3	96.5	96.5	0.84	1000	11.7	17547	16400	1LQ1212-4AB75-6	
760	1019	450	Δ	60.2	4032	96.2	96.3	96.2	0.81	1180	11.1	20160	20700	1LQ1212-4BB15-6	
845	1133	450	Δ	60.2	4483	96.2	96.4	96.4	0.84	1260	11.1	21518	20700	1LQ1212-4BB35-6	
1200 rpm, 6-pole															
240	322	315	Δ	60.5	1910	95	95.7	95.9	0.82	365	7.5	5157	7500	1LQ1212-3AC15-7	
295	396	315	Δ	60.5	2348	95.2	95.7	96.1	0.84	445	7.6	6340	7500	1LQ1212-3AC35-7	
355	476	315	Δ	60.5	2825	95.5	95.7	96.3	0.84	530	8.1	8193	7500	1LQ1212-3AC55-7	
380	510	315	Δ	60.5	3024	95.5	96.3	96.3	0.84	570	7.8	8770	7500	1LQ1212-3AC75-7	
400	536	355	Δ	60.3	3183	95.6	96.3	95.9	0.84	590	11	12732	10200	1LQ1212-3BC55-7	
445	597	355	Δ	60.3	3541	95.7	96.3	96	0.85	650	10.7	13810	10200	1LQ1212-3BC75-7	
475	637	400	Δ	60.3	3780	96.1	96.4	96.6	0.84	710	8.7	12474	16400	1LQ1212-4AC35-7	
520	697	400	Δ	60.3	4138	96.2	96.5	96.6	0.83	780	10	16138	16400	1LQ1212-4AC55-7	
565	758	400	Δ	60.3	4496	96.3	96.6	96.6	0.84	840	10	17534	16400	1LQ1212-4AC75-7	
580	778	450	Δ	60.2	4615	96.4	96.6	96.5	0.8	900	10.2	18460	20700	1LQ1212-4BC15-7	
680	912	450	Δ	60.2	5411	96.5	96.7	96.7	0.82	1040	9.9	20562	20700	1LQ1212-4BC35-7	
900 rpm, 6-pole															
205	275	315	Δ	45.5	2175	94.3	95.4	95.5	0.8	325	7.3	6090	7500	1LQ1212-3AC15-8	
250	335	315	Δ	45.4	2653	94.8	95.6	95.7	0.79	400	8.1	8490	7500	1LQ1212-3AC35-8	
280	375	315	Δ	45.5	2971	94.6	95.6	95.8	0.84	420	7.2	8022	7500	1LQ1212-3AC55-8	
310	416	315	Δ	45.5	3289	94.7	95.7	95.9	0.84	465	7.4	9209	7500	1LQ1212-3AC75-8	
355	476	355	Δ	45.4	3767	94.7	95.7	95.7	0.86	520	8.2	11678	10200	1LQ1212-3BC55-8	
395	530	355	Δ	45.4	4191	94.9	95.8	95.8	0.86	580	8.6	13411	10200	1LQ1212-3BC75-8	
420	563	400	Δ	45.3	4456	95.4	96	96.4	0.85	620	7.5	13368	16400	1LQ1212-4AC35-8	
465	624	400	Δ	45.3	4934	95.6	96.1	96.5	0.85	680	7.9	15295	16400	1LQ1212-4AC55-8	
525	704	400	Δ	45.3	5570	95.8	96.3	96.6	0.85	770	8.4	18938	16400	1LQ1212-4AC75-8	
565	758	450	Δ	45.3	5995	96	96.4	96.6	0.82	860	8.3	19784	20700	1LQ1212-4BC15-8	
610	818	450	Δ	45.2	6472	96.1	96.4	96.6	0.82	930	8.8	22652	20700	1LQ1212-4BC35-8	
710	952	450	Δ	45.2	7533	96.2	96.6	96.7	0.82	1080	9.1	27872	20700	1LQ1212-4BC55-8	
825	1106	450	Δ	45.2	8754	96.3	96.6	96.8	0.84	1220	8.9	30639	20700	1LQ1212-4BC75-8	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version 1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1212-3AB15-5...	1380	1430	3.5	79	94.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AB35-5...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB55-5...	1740	1780	5	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB75-5...	1910	1950	5.8	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3BB55-1...	2390	2440	8.3	79	95	3300	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BB75-1...	2510	2570	8.9	79	95	3300	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3AB15-6...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AB35-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB55-6...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AB75-6...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BB55-6...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-3BB75-6...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AB35-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1212-4AB55-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4AB75-6...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1212-4BB15-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1212-4BB35-6...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LQ1212-3AC15-7...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-7LE33-8AA3	370
1LQ1212-3AC35-7...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AC55-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3AC75-7...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3BC55-7...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3BC75-7...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AC35-7...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AC55-7...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1212-4AC75-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4BC15-7...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4BC35-7...	4360	4460	37.8	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1212-3AC15-8...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LE33-8AA3	370
1LQ1212-3AC35-8...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AC55-8...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3AC75-8...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1212-3BC55-8...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-3BC75-8...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1212-4AC35-8...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AC55-8...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1212-4AC75-8...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1212-4BC15-8...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4BC35-8...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1212-4BC55-8...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1212-4BC75-8...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 440 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3600 rpm, 4-pole															
285	382	315	Δ	120.5	756	94.6	94.7	93.7	0.88	450	7.7	2419	7500	1LQ1222-3AB15-5 ■■■■	
345	463	315	Δ	120.6	915	95	95.2	94.4	0.9	530	7.3	2654	7500	1LQ1222-3AB35-5 ■■■■	
380	510	315	Δ	120.5	1008	95.2	95.4	94.7	0.9	580	8.2	3326	7500	1LQ1222-3AB55-5 ■■■■	
425	570	315	Δ	120.4	1127	95.4	95.6	94.9	0.9	650	9.5	4283	7500	1LQ1222-3AB75-5 ■■■■	
3000 rpm, 4-pole															
445	597	355	Δ	100.5	1416	95.7	96.2	95.8	0.89	680	7.2	4390	10200	1LQ1222-3BB55-1 ■■■■	
470	630	355	Δ	100.5	1496	95.7	96.3	96	0.89	720	6.4	4189	10200	1LQ1222-3BB75-1 ■■■■	
1800 rpm, 4-pole															
280	375	315	Δ	60.5	1485	95.3	96	95.9	0.86	445	8	5049	7500	1LQ1222-3AB15-6 ■■■■	
350	469	315	Δ	60.5	1857	95.5	96.1	96.2	0.88	540	8.4	6500	7500	1LQ1222-3AB35-6 ■■■■	
400	536	315	Δ	60.5	2122	95.7	96.4	96.4	0.89	610	8.5	7427	7500	1LQ1222-3AB55-6 ■■■■	
460	617	315	Δ	60.5	2440	95.8	96.6	96.6	0.9	690	8.8	8784	7500	1LQ1222-3AB75-6 ■■■■	
470	630	355	Δ	60.4	2493	95.9	96.7	96.7	0.88	720	8.2	8975	10200	1LQ1222-3BB55-6 ■■■■	
520	697	355	Δ	60.4	2759	96.1	96.8	96.7	0.87	810	9.4	11864	10200	1LQ1222-3BB75-6 ■■■■	
575	771	400	Δ	60.3	3050	96.1	96.3	96.4	0.85	920	9.7	12200	16400	1LQ1222-4AB35-6 ■■■■	
605	811	400	Δ	60.3	3210	96.1	96.4	96.6	0.88	940	8.6	11235	16400	1LQ1222-4AB55-6 ■■■■	
675	905	400	Δ	60.3	3581	96.2	96.6	96.7	0.87	1060	10	14682	16400	1LQ1222-4AB75-6 ■■■■	
720	966	450	Δ	60.2	3820	96.1	96.2	96.1	0.82	1200	11.5	19482	20700	1LQ1222-4BB15-6 ■■■■	
1200 rpm, 6-pole															
250	335	315	Δ	60.5	1989	95.2	95.7	96	0.8	425	8.1	5768	7500	1LQ1222-3AC15-7 ■■■■	
305	409	315	Δ	60.5	2427	95.3	95.7	96.1	0.83	500	7.8	6796	7500	1LQ1222-3AC35-7 ■■■■	
345	463	315	Δ	60.5	2745	95.4	95.7	96.2	0.84	560	8	7961	7500	1LQ1222-3AC55-7 ■■■■	
385	516	315	Δ	60.5	3064	95.5	96.3	96.4	0.85	620	7.7	8579	7500	1LQ1222-3AC75-7 ■■■■	
400	536	355	Δ	60.3	3183	95.6	96.3	95.9	0.84	650	10.7	12732	10200	1LQ1222-3BC55-7 ■■■■	
440	590	355	Δ	60.3	3501	95.7	96.3	96	0.85	710	10.7	13654	10200	1LQ1222-3BC75-7 ■■■■	
470	630	400	Δ	60.3	3740	96.1	96.4	96.6	0.84	760	8.7	12342	16400	1LQ1222-4AC35-7 ■■■■	
505	677	400	Δ	60.2	4019	96.3	96.5	96.5	0.82	840	10.3	16478	16400	1LQ1222-4AC55-7 ■■■■	
560	751	400	Δ	60.2	4456	96.3	96.6	96.6	0.83	920	10.4	18270	16400	1LQ1222-4AC75-7 ■■■■	
585	784	450	Δ	60.2	4655	96.4	96.6	96.5	0.8	990	10.6	19086	20700	1LQ1222-4BC15-7 ■■■■	
900 rpm, 6-pole															
200	268	315	Δ	45.5	2122	94.4	95.3	95.4	0.78	355	7.7	6366	7500	1LQ1222-3AC15-8 ■■■■	
250	335	315	Δ	45.5	2653	94.6	95.5	95.7	0.81	425	7.6	7694	7500	1LQ1222-3AC35-8 ■■■■	
280	375	315	Δ	45.5	2971	94.6	95.6	95.8	0.83	465	7.4	8319	7500	1LQ1222-3AC55-8 ■■■■	
310	416	315	Δ	45.5	3289	94.6	95.7	95.9	0.85	500	7.1	8551	7500	1LQ1222-3AC75-8 ■■■■	
355	476	355	Δ	45.4	3767	94.8	95.7	95.7	0.86	570	8.8	12431	10200	1LQ1222-3BC55-8 ■■■■	
395	530	355	Δ	45.3	4191	95	95.9	95.8	0.85	640	9.5	15088	10200	1LQ1222-3BC75-8 ■■■■	
420	563	400	Δ	45.3	4456	95.5	96.1	96.4	0.84	680	8.1	14259	16400	1LQ1222-4AC35-8 ■■■■	
465	624	400	Δ	45.3	4934	95.8	96.2	96.5	0.83	760	8.7	17269	16400	1LQ1222-4AC55-8 ■■■■	
510	684	400	Δ	45.3	5411	95.8	96.3	96.6	0.85	820	8.4	18397	16400	1LQ1222-4AC75-8 ■■■■	
550	738	450	Δ	45.2	5836	96	96.4	96.6	0.82	910	8.4	19259	20700	1LQ1222-4BC15-8 ■■■■	
625	838	450	Δ	45.3	6631	96.1	96.5	96.7	0.84	1020	8	21219	20700	1LQ1222-4BC35-8 ■■■■	
680	912	450	Δ	45.2	7215	96.1	96.5	96.8	0.85	1080	8.2	23088	20700	1LQ1222-4BC55-8 ■■■■	

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1222-3AB15-5...	1380	1430	3.5	79	94.5	3600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AB35-5...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AB55-5...	1740	1780	5	79	94.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AB75-5...	1950	1990	5.8	79	94.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BB55-1...	2390	2440	8.3	79	95	3300	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BB75-1...	2510	2570	8.9	79	95	3300	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3AB15-6...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AB35-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AB55-6...	1780	1820	5	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3AB75-6...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BB55-6...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BB75-6...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-4AB35-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4AB55-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4AB75-6...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-2GE41-1AA3	1092
1LQ1222-4BB15-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1222-3AC15-7...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AC35-7...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AC55-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3AC75-7...	1920	1970	9.1	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BC55-7...	2380	2440	14.5	79	95	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-3BC75-7...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-4AC35-7...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-4AC55-7...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4AC75-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4BC15-7...	4060	4160	33.8	79	96	1700	1XB7 750	6SL3710-2GE41-1AA3	1092
1LQ1222-3AC15-8...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-1GE33-8AA3	370
1LQ1222-3AC35-8...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AC55-8...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1222-3AC75-8...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3BC55-8...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1222-3BC75-8...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-4AC35-8...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1222-4AC55-8...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-4AC75-8...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1222-4BC15-8...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1222-4BC35-8...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1222-4BC55-8...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-2GE41-1AA3	1092

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.		
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	Hz	Nm				%	%
kW	hp	FS																
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																		
3600 rpm, 4-pole																		
310	416	315	Δ	120.6	822	94.6	94.8	94	0.88	445	6.7	2219	7500	1LQ1312-3AB15-5	■ ■ ■ ■			
385	516	315	Δ	120.5	1021	95.1	95.3	94.6	0.89	550	7.7	3165	7500	1LQ1312-3AB35-5	■ ■ ■ ■			
410	550	315	Δ	120.6	1088	95.1	95.5	94.9	0.9	570	6.7	2829	7500	1LQ1312-3AB55-5	■ ■ ■ ■			
470	630	315	Δ	120.6	1247	95.4	95.8	95.2	0.91	650	7.2	3492	7500	1LQ1312-3AB75-5	■ ■ ■ ■			
3000 rpm, 4-pole																		
485	650	355	Δ	100.6	1544	95.6	96.3	96	0.89	680	5.7	3860	10200	1LQ1312-3BB55-1	■ ■ ■ ■			
540	724	355	Δ	100.5	1719	95.8	96.4	96.1	0.89	760	6.6	4985	10200	1LQ1312-3BB75-1	■ ■ ■ ■			
1800 rpm, 4-pole																		
300	402	315	Δ	60.5	1592	95.1	95.9	95.9	0.86	440	7.4	5094	7500	1LQ1312-3AB15-6	■ ■ ■ ■			
370	496	315	Δ	60.5	1963	95.3	96.1	96.2	0.89	520	7.7	6282	7500	1LQ1312-3AB35-6	■ ■ ■ ■			
415	557	315	Δ	60.5	2202	95.4	96.3	96.3	0.9	580	7.7	7046	7500	1LQ1312-3AB55-6	■ ■ ■ ■			
510	684	315	Δ	60.4	2706	95.9	96.6	96.6	0.88	720	9.4	10553	7500	1LQ1312-3AB75-6	■ ■ ■ ■			
555	744	355	Δ	60.4	2944	96	96.7	96.7	0.87	790	8.2	10893	10200	1LQ1312-3BB55-6	■ ■ ■ ■			
580	778	355	Δ	60.5	3077	95.9	96.7	96.8	0.89	810	7.5	10154	10200	1LQ1312-3BB75-6	■ ■ ■ ■			
615	825	400	Δ	60.3	3263	95.9	96.3	96.5	0.87	880	8	10768	16400	1LQ1312-4AB35-6	■ ■ ■ ■			
670	898	400	Δ	60.3	3554	96.1	96.5	96.6	0.87	960	9.3	13505	16400	1LQ1312-4AB55-6	■ ■ ■ ■			
745	999	400	Δ	60.3	3952	96.3	96.5	96.6	0.85	1100	10.7	17784	16400	1LQ1312-4AB75-6	■ ■ ■ ■			
805	1080	450	Δ	60.2	4271	96.2	96.4	96.3	0.82	1220	10.7	20074	20700	1LQ1312-4BB15-6	■ ■ ■ ■			
900	1207	450	Δ	60.2	4775	96.3	96.5	96.5	0.85	1320	10.6	21488	20700	1LQ1312-4BB35-6	■ ■ ■ ■			
1200 rpm, 6-pole																		
265	355	315	Δ	60.6	2109	94.7	95.6	95.8	0.82	405	6.8	5062	7500	1LQ1312-3AC15-7	■ ■ ■ ■			
315	422	315	Δ	60.5	2507	95	95.7	96	0.84	470	7.2	6518	7500	1LQ1312-3AC35-7	■ ■ ■ ■			
390	523	315	Δ	60.5	3104	95.2	96.1	96.2	0.84	580	7.4	8070	7500	1LQ1312-3AC55-7	■ ■ ■ ■			
420	563	315	Δ	60.5	3342	95.2	96.1	96.2	0.84	630	7.1	8689	7500	1LQ1312-3AC75-7	■ ■ ■ ■			
440	590	355	Δ	60.3	3501	95.6	96.3	96	0.85	650	10	12604	10200	1LQ1312-3BC55-7	■ ■ ■ ■			
485	650	355	Δ	60.3	3860	95.6	96.3	96.1	0.86	700	9.9	13896	10200	1LQ1312-3BC75-7	■ ■ ■ ■			
530	711	400	Δ	60.3	4218	96	96.4	96.6	0.84	790	7.8	12654	16400	1LQ1312-4AC35-7	■ ■ ■ ■			
590	791	400	Δ	60.3	4695	96.2	96.5	96.6	0.84	880	8.9	15963	16400	1LQ1312-4AC55-7	■ ■ ■ ■			
635	852	400	Δ	60.3	5053	96.2	96.6	96.7	0.85	930	9.1	17686	16400	1LQ1312-4AC75-7	■ ■ ■ ■			
660	885	450	Δ	60.2	5252	96.4	96.6	96.7	0.82	1000	9.2	18382	20700	1LQ1312-4BC15-7	■ ■ ■ ■			
775	1039	450	Δ	60.2	6167	96.5	96.7	96.8	0.83	1160	8.8	20968	20700	1LQ1312-4BC35-7	■ ■ ■ ■			
900 rpm, 6-pole																		
225	302	315	Δ	45.6	2387	93.9	95.1	95.4	0.81	350	6.8	5968	7500	1LQ1312-3AC15-8	■ ■ ■ ■			
280	375	315	Δ	45.5	2971	94.4	95.4	95.5	0.8	440	7.4	8319	7500	1LQ1312-3AC35-8	■ ■ ■ ■			
310	416	315	Δ	45.6	3289	94.2	95.3	95.6	0.84	465	6.5	7894	7500	1LQ1312-3AC55-8	■ ■ ■ ■			
340	456	315	Δ	45.5	3608	94.3	95.4	95.7	0.84	510	6.7	9020	7500	1LQ1312-3AC75-8	■ ■ ■ ■			
375	503	355	Δ	45.4	3979	94.6	95.6	95.7	0.87	540	7.9	11539	10200	1LQ1312-3BC55-8	■ ■ ■ ■			
420	563	355	Δ	45.4	4456	94.7	95.7	95.8	0.87	610	8.2	13814	10200	1LQ1312-3BC75-8	■ ■ ■ ■			
455	610	400	Δ	45.4	4828	95.2	95.9	96.4	0.85	670	6.9	13036	16400	1LQ1312-4AC35-8	■ ■ ■ ■			
505	677	400	Δ	45.4	5358	95.4	96	96.5	0.85	740	7.3	15538	16400	1LQ1312-4AC55-8	■ ■ ■ ■			
570	764	400	Δ	45.3	6048	95.6	96.2	96.6	0.85	840	7.7	18749	16400	1LQ1312-4AC75-8	■ ■ ■ ■			
620	831	450	Δ	45.3	6578	95.9	96.4	96.6	0.83	930	7.6	19734	20700	1LQ1312-4BC15-8	■ ■ ■ ■			
670	898	450	Δ	45.2	7109	96	96.4	96.6	0.83	1000	8.2	22749	20700	1LQ1312-4BC35-8	■ ■ ■ ■			
785	1053	450	Δ	45.2	8329	96.1	96.5	96.7	0.83	1180	8.3	27486	20700	1LQ1312-4BC55-8	■ ■ ■ ■			
915	1227	450	Δ	45.3	9708	96.2	96.6	96.8	0.84	1360	8	31066	20700	1LQ1312-4BC75-8	■ ■ ■ ■			

For versions, see Article No. supplements and special versions. ■ ■ ■ ■

5

Force-ventilated motors – enclosed version 1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1312-3AB15-5...	1430	1470	3.5	85	100.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AB35-5...	1610	1660	4.4	85	100.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AB55-5...	1780	1830	5	85	100.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AB75-5...	1990	2040	5.8	85	100.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BB55-1...	2430	2490	8.3	85	101	3300	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BB75-1...	2560	2610	8.9	85	101	3300	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-3AB15-6...	1430	1470	3.5	85	100.5	3000	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AB35-6...	1610	1660	4.4	85	100.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AB55-6...	1780	1830	5	85	100.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AB75-6...	1990	2040	5.8	85	100.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BB55-6...	2430	2490	8.3	85	101	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-3BB75-6...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4AB35-6...	3000	3070	13.6	85	101.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4AB55-6...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4AB75-6...	3480	3550	17.6	85	101.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-4BB15-6...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-4BB35-6...	4450	4550	25.5	85	102	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LQ1312-3AC15-7...	1460	1500	5.9	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AC35-7...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AC55-7...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3AC75-7...	1970	2010	9.1	85	100.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BC55-7...	2430	2480	14.5	85	101	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-3BC75-7...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-4AC35-7...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4AC55-7...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4AC75-7...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4BC15-7...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1312-4BC35-7...	4390	4490	37.8	85	102	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-3AC15-8...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LE33-8AA3	370
1LQ1312-3AC35-8...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AC55-8...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1312-3AC75-8...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3BC55-8...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1312-3BC75-8...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-4AC35-8...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1312-4AC55-8...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1312-4AC75-8...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4BC15-8...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1312-4BC35-8...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LQ1312-4BC55-8...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1312-4BC75-8...	5240	5340	48.4	85	102	1700	1XB7 750	6SL3710-7LE41-4AA3	1370

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3600 rpm, 4-pole															
315	422	315	Δ	120.6	836	94.6	94.8	94	0.88	495	7	2424	7500	1LQ1322-3AB15-5	
375	503	315	Δ	120.6	995	95	95.3	94.6	0.9	570	6.8	2687	7500	1LQ1322-3AB35-5	
420	563	315	Δ	120.6	1114	95.2	95.5	94.9	0.9	640	7.5	3342	7500	1LQ1322-3AB55-5	
475	637	315	Δ	120.5	1260	95.5	95.8	95.1	0.9	720	8.6	4284	7500	1LQ1322-3AB75-5	
3000 rpm, 4-pole															
490	657	355	Δ	100.5	1560	95.7	96.3	96	0.89	750	6.5	4368	10200	1LQ1322-3BB55-1	
510	684	355	Δ	100.6	1623	95.7	96.4	96.1	0.89	780	5.9	4058	10200	1LQ1322-3BB75-1	
1800 rpm, 4-pole															
300	402	315	Δ	60.5	1592	95.1	95.9	95.9	0.86	475	7.5	5094	7500	1LQ1322-3AB15-6	
375	503	315	Δ	60.5	1989	95.3	96.1	96.2	0.88	580	7.8	6564	7500	1LQ1322-3AB35-6	
425	570	315	Δ	60.5	2255	95.5	96.3	96.4	0.89	650	8	7442	7500	1LQ1322-3AB55-6	
490	657	315	Δ	60.5	2600	95.6	96.4	96.5	0.9	740	8.2	8840	7500	1LQ1322-3AB75-6	
530	711	355	Δ	60.5	2812	95.8	96.7	96.7	0.89	810	7.3	8998	10200	1LQ1322-3BB55-6	
595	798	355	Δ	60.4	3157	96	96.8	96.8	0.88	920	8.3	11681	10200	1LQ1322-3BB75-6	
625	838	400	Δ	60.3	3316	96	96.4	96.5	0.85	1000	8.9	12269	16400	1LQ1322-4AB35-6	
650	872	400	Δ	60.3	3448	96	96.4	96.6	0.88	1000	8.1	11378	16400	1LQ1322-4AB55-6	
735	986	400	Δ	60.3	3899	96.2	96.6	96.7	0.88	1140	9.3	14816	16400	1LQ1322-4AB75-6	
775	1039	450	Δ	60.2	4112	96.1	96.3	96.2	0.83	1280	10.8	19326	20700	1LQ1322-4BB15-6	
1200 rpm, 6-pole															
280	375	315	Δ	60.5	2228	94.9	95.7	95.9	0.81	475	7.3	5793	7500	1LQ1322-3AC15-7	
335	449	315	Δ	60.5	2666	95	95.7	96.1	0.83	550	7.1	6932	7500	1LQ1322-3AC35-7	
380	510	315	Δ	60.5	3024	95.1	96.1	96.2	0.84	620	7.2	7862	7500	1LQ1322-3AC55-7	
425	570	315	Δ	60.5	3382	95.2	96.1	96.3	0.85	680	7	8455	7500	1LQ1322-3AC75-7	
435	583	355	Δ	60.3	3462	95.6	96.2	96	0.85	700	10	12463	10200	1LQ1322-3BC55-7	
480	644	355	Δ	60.3	3820	95.6	96.3	96.1	0.86	760	10	13752	10200	1LQ1322-3BC75-7	
505	677	400	Δ	60.3	4019	96	96.4	96.6	0.84	820	8.1	12459	16400	1LQ1322-4AC35-7	
575	771	400	Δ	60.3	4576	96.2	96.5	96.6	0.83	940	9.2	16474	16400	1LQ1322-4AC55-7	
640	858	400	Δ	60.3	5093	96.3	96.6	96.7	0.84	1040	9.2	18335	16400	1LQ1322-4AC75-7	
675	905	450	Δ	60.2	5371	96.4	96.6	96.7	0.81	1140	9.2	19336	20700	1LQ1322-4BC15-7	
900 rpm, 6-pole															
220	295	315	Δ	45.5	2334	93.9	95	95.3	0.79	385	7.1	6535	7500	1LQ1322-3AC15-8	
275	369	315	Δ	45.5	2918	94.2	95.3	95.5	0.82	460	7	7587	7500	1LQ1322-3AC35-8	
310	416	315	Δ	45.5	3289	94.2	95.3	95.6	0.84	510	6.8	8223	7500	1LQ1322-3AC55-8	
340	456	315	Δ	45.6	3608	94.2	95.4	95.7	0.85	550	6.4	8659	7500	1LQ1322-3AC75-8	
370	496	355	Δ	45.4	3926	94.7	95.7	95.7	0.86	590	8.5	12563	10200	1LQ1322-3BC55-8	
425	570	355	Δ	45.4	4509	94.9	95.8	95.8	0.86	680	8.9	14880	10200	1LQ1322-3BC75-8	
460	617	400	Δ	45.4	4881	95.3	96	96.4	0.84	750	7.3	14155	16400	1LQ1322-4AC35-8	
515	691	400	Δ	45.3	5464	95.6	96.1	96.5	0.84	840	7.9	17485	16400	1LQ1322-4AC55-8	
560	751	400	Δ	45.3	5942	95.7	96.2	96.6	0.86	890	7.8	18420	16400	1LQ1322-4AC75-8	
600	805	450	Δ	45.3	6366	95.9	96.4	96.6	0.83	980	7.8	19098	20700	1LQ1322-4BC15-8	
670	898	450	Δ	45.3	7109	96	96.4	96.7	0.84	1080	7.5	20616	20700	1LQ1322-4BC35-8	
750	1006	450	Δ	45.3	7958	96	96.5	96.8	0.85	1200	7.4	23078	20700	1LQ1322-4BC55-8	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1322-3AB15-5...	1430	1470	3.5	85	100.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AB35-5...	1610	1660	4.4	85	100.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AB55-5...	1820	1870	5	85	100.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AB75-5...	1990	2040	5.8	85	100.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3BB55-1...	2430	2490	8.3	85	101	3300	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-3BB75-1...	2560	2610	8.9	85	101	3300	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-3AB15-6...	1430	1470	3.5	85	100.5	3000	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1322-3AB35-6...	1610	1660	4.4	85	100.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AB55-6...	1820	1870	5	85	100.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AB75-6...	1990	2040	5.8	85	100.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-3BB55-6...	2430	2490	8.3	85	101	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-3BB75-6...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4AB35-6...	3000	3070	13.6	85	101.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1322-4AB55-6...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1322-4AB75-6...	3480	3550	17.6	85	101.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-4BB15-6...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-3AC15-7...	1460	1500	5.9	85	100.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1322-3AC35-7...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AC55-7...	1860	1900	8.3	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3AC75-7...	1970	2010	9.1	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3BC55-7...	2430	2480	14.5	85	101	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-3BC75-7...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-4AC35-7...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-4AC55-7...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4AC75-7...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1322-4BC15-7...	4090	4190	33.8	85	102	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1322-3AC15-8...	1460	1500	5.9	85	100.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1322-3AC35-8...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1322-3AC55-8...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3AC75-8...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3BC55-8...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1322-3BC75-8...	2570	2630	16	85	101	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1322-4AC35-8...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1322-4AC55-8...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4AC75-8...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1322-4BC15-8...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1322-4BC35-8...	4390	4490	37.8	85	102	1700	1XB7 750	6SL3710-2GE41-1AA3	1092
1LQ1322-4BC55-8...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-2GE41-4AA3	1340

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
1800 rpm, 4-pole															
250	335	315	Δ	60.4	1326	95.5	96.2	96	0.85	370	8.8	5171	7500	1LQ1213-3AB15-6 ■■■	
350	469	315	Δ	60.5	1857	95.5	96.3	96.4	0.88	495	8.1	6314	7500	1LQ1213-3AB35-6 ■■■	
390	523	315	Δ	60.5	2069	95.6	96.4	96.5	0.89	550	8.1	7035	7500	1LQ1213-3AB55-6 ■■■	
480	644	315	Δ	60.4	2546	96	96.7	96.7	0.88	680	9.9	10439	7500	1LQ1213-3AB75-6 ■■■	
515	691	355	Δ	60.4	2732	96.2	97	97	0.86	740	8.8	10928	10200	1LQ1213-3BB55-6 ■■■	
540	724	355	Δ	60.4	2865	96.1	97	97.1	0.88	760	8	10314	10200	1LQ1213-3BB75-6 ■■■	
605	811	400	Δ	60.3	3210	96.1	96.6	96.9	0.86	880	8	10593	16400	1LQ1213-4AB35-6 ■■■	
665	892	400	Δ	60.3	3528	96.3	96.7	97	0.86	960	9.3	13406	16400	1LQ1213-4AB55-6 ■■■	
745	999	400	Δ	60.3	3952	96.5	96.8	97	0.84	1100	10.7	17389	16400	1LQ1213-4AB75-6 ■■■	
865	1160	450	Δ	60.2	4589	96.6	96.8	96.9	0.82	1320	9.9	20192	20700	1LQ1213-4BB15-6 ■■■	
930	1247	450	Δ	60.2	4934	96.6	96.9	97	0.85	1360	10.2	21216	20700	1LQ1213-4BB35-6 ■■■	
1200 rpm, 6-pole															
240	322	315	Δ	60.5	1910	95	96	96.1	0.82	365	7.5	5157	7500	1LQ1213-3AC15-7 ■■■	
305	409	315	Δ	60.5	2427	95.2	96.1	96.3	0.83	460	7.3	6310	7500	1LQ1213-3AC35-7 ■■■	
360	483	315	Δ	60.5	2865	95.5	96.4	96.4	0.83	540	7.9	8309	7500	1LQ1213-3AC55-7 ■■■	
390	523	315	Δ	60.5	3104	95.4	96.4	96.4	0.84	580	7.6	8691	7500	1LQ1213-3AC75-7 ■■■	
435	583	355	Δ	60.3	3462	95.9	96.7	96.6	0.84	640	10.1	12809	10200	1LQ1213-3BC55-7 ■■■	
480	644	355	Δ	60.3	3820	96	96.7	96.6	0.85	700	9.9	13752	10200	1LQ1213-3BC75-7 ■■■	
505	677	400	Δ	60.3	4019	96.2	96.7	97	0.84	750	8.2	12861	16400	1LQ1213-4AC35-7 ■■■	
560	751	400	Δ	60.3	4456	96.5	96.8	97.1	0.83	840	9.3	16042	16400	1LQ1213-4AC55-7 ■■■	
605	811	400	Δ	60.3	4814	96.5	96.9	97.1	0.84	890	9.5	17812	16400	1LQ1213-4AC75-7 ■■■	
620	831	450	Δ	60.2	4934	96.7	97	97.1	0.8	960	9.6	18256	20700	1LQ1213-4BC15-7 ■■■	
735	986	450	Δ	60.2	5849	96.8	97.1	97.2	0.82	1120	9.1	20472	20700	1LQ1213-4BC35-7 ■■■	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1213-3AB15-6...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-7LE33-8AA3	370
1LQ1213-3AB35-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3AB55-6...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3AB75-6...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1213-3BB55-6...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1213-3BB75-6...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1213-4AB35-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4AB55-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4AB75-6...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LQ1213-4BB15-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LQ1213-4BB35-6...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LQ1213-3AC15-7...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-7LE33-8AA3	370
1LQ1213-3AC35-7...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LQ1213-3AC55-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3AC75-7...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LQ1213-3BC55-7...	2380	2440	14.5	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1213-3BC75-7...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LQ1213-4AC35-7...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LQ1213-4AC55-7...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4AC75-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4BC15-7...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LE41-0AA3	960
1LQ1213-4BC35-7...	4360	4460	37.8	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230

5

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power									T_B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
1800 rpm, 4-pole															
245	329	315	Δ	60.4	1300	95.5	96.2	96.1	0.84	400	8.9	5070	7500	1LQ1223-3AB15-6 ■■■ 4)	
350	469	315	Δ	60.5	1857	95.5	96.3	96.4	0.88	540	8.4	6500	7500	1LQ1223-3AB35-6 ■■■	
400	536	315	Δ	60.5	2122	95.7	96.5	96.6	0.89	610	8.5	7427	7500	1LQ1223-3AB55-6 ■■■	
460	617	315	Δ	60.5	2440	95.8	96.6	96.7	0.9	690	8.8	8784	7500	1LQ1223-3AB75-6 ■■■	
490	657	355	Δ	60.4	2600	96.1	96.9	97	0.88	750	7.9	9100	10200	1LQ1223-3BB55-6 ■■■	
555	744	355	Δ	60.4	2944	96.3	97.1	97.1	0.87	860	8.9	11776	10200	1LQ1223-3BB75-6 ■■■	
615	825	400	Δ	60.3	3263	96.3	96.6	96.8	0.84	990	9	12399	16400	1LQ1223-4AB35-6 ■■■	
635	852	400	Δ	60.3	3369	96.2	96.7	96.9	0.88	980	8.3	11118	16400	1LQ1223-4AB55-6 ■■■	
725	972	400	Δ	60.3	3846	96.4	96.8	97.1	0.87	1120	9.5	14615	16400	1LQ1223-4AB75-6 ■■■	
810	1086	450	Δ	60.2	4297	96.5	96.8	96.8	0.82	1340	10.3	19337	20700	1LQ1223-4BB15-6 ■■■	
1200 rpm, 6-pole															
260	349	315	Δ	60.5	2069	95.2	96.1	96.1	0.8	445	7.7	5793	7500	1LQ1223-3AC15-7 ■■■	
310	416	315	Δ	60.5	2467	95.3	96.2	96.3	0.83	510	7.6	6908	7500	1LQ1223-3AC35-7 ■■■	
355	476	315	Δ	60.5	2825	95.4	96.3	96.4	0.84	580	7.7	7910	7500	1LQ1223-3AC55-7 ■■■	
395	530	315	Δ	60.5	3143	95.5	96.4	96.5	0.85	630	7.5	8486	7500	1LQ1223-3AC75-7 ■■■	
430	577	355	Δ	60.3	3422	95.9	96.7	96.6	0.84	690	10.1	12661	10200	1LQ1223-3BC55-7 ■■■	
470	630	355	Δ	60.3	3740	96	96.7	96.6	0.85	750	10.1	13838	10200	1LQ1223-3BC75-7 ■■■	
495	664	400	Δ	60.3	3939	96.3	96.7	97	0.84	800	8.2	12605	16400	1LQ1223-4AC35-7 ■■■	
545	731	400	Δ	60.3	4337	96.5	96.8	97	0.82	900	9.6	16481	16400	1LQ1223-4AC55-7 ■■■	
610	818	400	Δ	60.3	4854	96.6	96.9	97.1	0.83	1000	9.6	18445	16400	1LQ1223-4AC75-7 ■■■	
635	852	450	Δ	60.2	5053	96.7	97	97.1	0.8	1080	9.7	19201	20700	1LQ1223-4BC15-7 ■■■	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1223-3AB15-6...	1380	1430	3.5	79	94.5	3000	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1223-3AB35-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1223-3AB55-6...	1780	1820	5	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1223-3AB75-6...	1950	1990	5.8	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1223-3BB55-6...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1223-3BB75-6...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1223-4AB35-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1223-4AB55-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1223-4AB75-6...	3450	3520	17.6	79	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1223-4BB15-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LQ1223-3AC15-7...	1410	1460	5.9	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LQ1223-3AC35-7...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1223-3AC55-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LQ1223-3AC75-7...	1920	1970	9.1	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1223-3BC55-7...	2380	2440	14.5	79	95	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LQ1223-3BC75-7...	2530	2580	16	79	95	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1223-4AC35-7...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-1GE38-4AA3	820
1LQ1223-4AC55-7...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LQ1223-4AC75-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LQ1223-4BC15-7...	4060	4160	33.8	79	96	1700	1XB7 750	6SL3710-2GE41-1AA3	1092

5

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A				
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
3600 rpm, 4-pole														
270	362	315	Δ	120.6	716	94.3	94.5	93.6	0.88	305	7	2005	7500	1LQ1212-3AB16-5■■■■
335	449	315	Δ	120.5	889	94.9	95	94.2	0.89	375	8.7	3112	7500	1LQ1212-3AB36-5■■■■
370	496	315	Δ	120.5	981	95.1	95.3	94.5	0.89	415	9	3532	7500	1LQ1212-3AB56-5■■■■
425	570	315	Δ	120.5	1127	95.4	95.6	94.8	0.9	470	9.3	4170	7500	1LQ1212-3AB76-5■■■■
3000 rpm, 4-pole														
435	583	355	Δ	100.6	1385	95.5	96.1	95.8	0.89	480	6.2	3740	10200	1LQ1212-3BB56-1■■■■
475	637	355	Δ	100.5	1512	95.7	96.3	95.9	0.89	520	6.9	4385	10200	1LQ1212-3BB76-1■■■■
1800 rpm, 4-pole														
255	342	315	Δ	60.5	1353	95.1	95.8	95.8	0.87	290	7.9	4600	7500	1LQ1212-3AB16-6■■■■
330	443	315	Δ	60.4	1751	95.6	96.1	96.1	0.86	380	9.4	7179	7500	1LQ1212-3AB36-6■■■■
370	496	315	Δ	60.4	1963	95.6	96.1	96.3	0.88	415	9.2	7656	7500	1LQ1212-3AB56-6■■■■
440	590	315	Δ	60.4	2334	95.9	96.6	96.5	0.87	495	10.5	10036	7500	1LQ1212-3AB76-6■■■■
450	603	355	Δ	60.3	2387	96	96.7	96.5	0.86	510	9.8	10503	10200	1LQ1212-3BB56-6■■■■
480	644	355	Δ	60.3	2546	96.1	96.7	96.5	0.85	550	10.9	12730	10200	1LQ1212-3BB76-6■■■■
540	724	400	Δ	60.3	2865	95.9	96.3	96.4	0.86	620	8.8	10601	16400	1LQ1212-4AB36-6■■■■
585	784	400	Δ	60.3	3104	96.1	96.4	96.5	0.87	660	9.6	12106	16400	1LQ1212-4AB56-6■■■■
645	865	400	Δ	60.3	3422	96.2	96.5	96.6	0.87	730	10.3	14372	16400	1LQ1212-4AB76-6■■■■
730	979	450	Δ	60.2	3873	96.1	96.2	96.1	0.82	880	11.1	18978	20700	1LQ1212-4BB16-6■■■■
790	1059	450	Δ	60.2	4191	96.1	96.2	96	0.8	970	12.8	23889	20700	1LQ1212-4BB36-6■■■■
925	1240	450	Δ	60.2	4907	96.2	96.3	96.2	0.8	1140	12.8	27970	20700	1LQ1212-4BB56-6■■■■
1200 rpm, 6-pole														
230	308	315	Δ	60.5	1830	95	95.7	95.8	0.81	280	8.3	5490	7500	1LQ1212-3AC16-7■■■■
280	375	315	Δ	60.4	2228	95.2	95.7	96	0.82	335	8.6	6907	7500	1LQ1212-3AC36-7■■■■
315	422	315	Δ	60.5	2507	95.3	95.7	96.1	0.84	370	8.1	7270	7500	1LQ1212-3AC56-7■■■■
350	469	315	Δ	60.4	2785	95.4	95.7	96.2	0.84	410	8.3	8355	7500	1LQ1212-3AC76-7■■■■
365	489	355	Δ	60.3	2905	95.6	95.7	95.6	0.81	445	12.3	13654	10200	1LQ1212-3BC56-7■■■■
400	536	355	Δ	60.3	3183	95.6	96.2	95.8	0.83	475	11.9	14005	10200	1LQ1212-3BC76-7■■■■
450	603	400	Δ	60.3	3581	96.1	96.4	96.4	0.82	540	9.6	13608	16400	1LQ1212-4AC36-7■■■■
465	624	400	Δ	60.2	3700	96.2	96.4	96.4	0.81	560	10.9	15910	16400	1LQ1212-4AC56-7■■■■
535	717	400	Δ	60.2	4257	96.2	96.5	96.6	0.84	620	10.2	16602	16400	1LQ1212-4AC76-7■■■■
575	771	450	Δ	60.2	4576	96.4	96.5	96.4	0.79	710	10.8	19219	20700	1LQ1212-4BC16-7■■■■
640	858	450	Δ	60.2	5093	96.4	96.6	96.5	0.79	790	11.1	22409	20700	1LQ1212-4BC36-7■■■■
710	952	450	Δ	60.2	5650	96.5	96.6	96.6	0.8	870	11	24860	20700	1LQ1212-4BC56-7■■■■
840	1126	450	Δ	60.2	6685	96.6	96.7	96.7	0.82	1000	10.5	27408	20700	1LQ1212-4BC76-7■■■■
900 rpm, 6-pole														
180	241	315	Y	45.4	1910	94.2	95.2	95.3	0.8	225	8	5921	7500	1LQ1212-3AC16-8■■■■
235	315	315	Δ	45.4	2493	94.7	95.5	95.5	0.79	295	8.4	7978	7500	1LQ1212-3AC36-8■■■■
265	355	315	Δ	45.4	2812	94.6	95.6	95.7	0.83	315	7.9	8155	7500	1LQ1212-3AC56-8■■■■
285	382	315	Δ	45.4	3024	94.8	95.7	95.7	0.82	345	8.5	9677	7500	1LQ1212-3AC76-8■■■■
330	443	355	Δ	45.3	3501	94.8	95.6	95.6	0.85	385	9.5	12604	10200	1LQ1212-3BC56-8■■■■
365	489	355	Δ	45.3	3873	94.9	95.7	95.6	0.85	425	9.6	13943	10200	1LQ1212-3BC76-8■■■■
400	536	400	Δ	45.3	4244	95.4	96	96.3	0.84	470	8.2	14005	16400	1LQ1212-4AC36-8■■■■
450	603	400	Δ	45.3	4775	95.7	96.2	96.4	0.83	530	9	17190	16400	1LQ1212-4AC56-8■■■■
495	664	400	Δ	45.3	5252	95.8	96.3	96.5	0.83	590	9.2	19958	16400	1LQ1212-4AC76-8■■■■
555	744	450	Δ	45.2	5889	96	96.4	96.6	0.82	660	8.5	19434	20700	1LQ1212-4BC16-8■■■■
615	825	450	Δ	45.2	6525	96	96.4	96.6	0.83	730	8.3	21533	20700	1LQ1212-4BC36-8■■■■
705	945	450	Δ	45.2	7480	96.1	96.5	96.7	0.83	830	8.9	26180	20700	1LQ1212-4BC56-8■■■■
745	999	450	Δ	45.2	7905	96.2	96.5	96.6	0.83	880	9.5	30039	20700	1LQ1212-4BC76-8■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version 1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1212-3AB16-5...	1380	1430	3.5	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB36-5...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3AB56-5...	1740	1780	5	79	94.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3AB76-5...	1910	1950	5.8	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB56-1...	2350	2400	8.3	79	95	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB76-1...	2470	2530	8.9	79	95	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3AB16-6...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AB36-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3AB56-6...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3AB76-6...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB56-6...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-3BB76-6...	2470	2530	8.9	79	95	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AB36-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4AB56-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4AB76-6...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1212-4BB16-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-7LG38-8AA3	880
1LQ1212-4BB36-6...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-7LG41-0AA3	1000
1LQ1212-4BB56-6...	4770	4870	28.3	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1212-3AC16-7...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AC36-7...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1212-3AC56-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3AC76-7...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3BC56-7...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-3BC76-7...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC36-7...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC56-7...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC76-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC16-7...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC36-7...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1212-4BC56-7...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1212-4BC76-7...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-7LG41-0AA3	1000
1LQ1212-3AC16-8...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1212-3AC36-8...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AC56-8...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1212-3AC76-8...	1880	1930	9.1	79	94.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1212-3BC56-8...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1212-3BC76-8...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1212-4AC36-8...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC56-8...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1212-4AC76-8...	3410	3480	27	79	95.5	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LQ1212-4BC16-8...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1212-4BC36-8...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1212-4BC56-8...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1212-4BC76-8...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cosφ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 550 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3600 rpm, 4-pole															
265	355	315	Δ	120.5	703	94.4	94.4	93.4	0.88	335	8.4	2390	7500	1LQ1222-3AB16-5 ■■■■	
315	422	315	Δ	120.4	836	94.8	94.9	93.9	0.89	390	9.5	3177	7500	1LQ1222-3AB36-5 ■■■■	
345	463	315	Δ	120.4	915	95	95.1	94.2	0.89	430	10.3	3751	7500	1LQ1222-3AB56-5 ■■■■	
400	536	315	Δ	120.5	1061	95.2	95.5	94.8	0.91	485	8	3395	7500	1LQ1222-3AB76-5 ■■■■	
3000 rpm, 4-pole															
415	557	355	Δ	100.5	1321	95.6	96.1	95.7	0.89	510	6.7	3831	10200	1LQ1222-3BB56-1 ■■■■	
450	603	355	Δ	100.4	1432	95.7	96.2	95.8	0.89	550	7.7	4726	10200	1LQ1222-3BB76-1 ■■■■	
1800 rpm, 4-pole															
250	335	315	Δ	60.5	1326	95	95.8	95.8	0.88	310	7.7	4243	7500	1LQ1222-3AB16-6 ■■■■	
325	436	315	Δ	60.4	1724	95.5	96.1	96.1	0.87	410	9.2	6724	7500	1LQ1222-3AB36-6 ■■■■	
365	489	315	Δ	60.4	1936	95.6	96.1	96.3	0.89	450	9.2	7357	7500	1LQ1222-3AB56-6 ■■■■	
435	583	315	Δ	60.4	2308	95.9	96.6	96.5	0.87	540	11	10617	7500	1LQ1222-3AB76-6 ■■■■	
470	630	355	Δ	60.4	2493	96	96.7	96.6	0.88	580	9.2	10221	10200	1LQ1222-3BB76-6 ■■■■	
540	724	400	Δ	60.3	2865	96	96.3	96.4	0.86	680	9.1	10887	16400	1LQ1222-4AB36-6 ■■■■	
580	778	400	Δ	60.3	3077	96.1	96.4	96.5	0.86	730	10.2	12923	16400	1LQ1222-4AB56-6 ■■■■	
635	852	400	Δ	60.2	3369	96.2	96.5	96.5	0.85	810	11.5	15834	16400	1LQ1222-4AB76-6 ■■■■	
755	1012	450	Δ	60.2	4005	96.1	96.3	96.2	0.82	1000	10.6	18423	20700	1LQ1222-4BB16-6 ■■■■	
860	1153	450	Δ	60.2	4562	96.2	96.4	96.3	0.82	1140	12	23722	20700	1LQ1222-4BB36-6 ■■■■	
910	1220	450	Δ	60.2	4828	96.2	96.4	96.3	0.82	1200	12.5	26071	20700	1LQ1222-4BB56-6 ■■■■	
1200 rpm, 6-pole															
215	288	315	Δ	60.5	1711	94.8	95.7	95.8	0.82	290	7.7	4791	7500	1LQ1222-3AC16-7 ■■■■	
275	369	315	Δ	60.4	2188	95.2	95.7	96	0.82	365	8.6	6783	7500	1LQ1222-3AC36-7 ■■■■	
315	422	315	Δ	60.5	2507	95.3	95.7	96.1	0.84	410	8.2	7270	7500	1LQ1222-3AC56-7 ■■■■	
345	463	315	Δ	60.4	2745	95.4	95.7	96.2	0.84	450	8.7	8510	7500	1LQ1222-3AC76-7 ■■■■	
355	476	355	Δ	60.3	2825	95.5	95.7	95.7	0.83	465	12	12430	10200	1LQ1222-3BC56-7 ■■■■	
375	503	355	Δ	60.2	2984	95.6	95.7	95.5	0.8	510	13.5	15218	10200	1LQ1222-3BC76-7 ■■■■	
440	590	400	Δ	60.2	3501	96.1	96.3	96.4	0.81	590	10.4	14354	16400	1LQ1222-4AC36-7 ■■■■	
470	630	400	Δ	60.2	3740	96.2	96.4	96.5	0.83	620	10.2	14960	16400	1LQ1222-4AC56-7 ■■■■	
500	671	400	Δ	60.2	3979	96.3	96.4	96.4	0.8	680	11.8	19099	16400	1LQ1222-4AC76-7 ■■■■	
545	731	450	Δ	60.2	4337	96.3	96.4	96.3	0.77	770	11.4	19950	20700	1LQ1222-4BC16-7 ■■■■	
625	838	450	Δ	60.2	4974	96.4	96.6	96.4	0.79	860	11.1	21886	20700	1LQ1222-4BC36-7 ■■■■	
715	959	450	Δ	60.2	5690	96.5	96.6	96.6	0.8	970	11	25036	20700	1LQ1222-4BC56-7 ■■■■	
900 rpm, 6-pole															
180	241	315	Δ	45.4	1910	94.3	95.2	95.2	0.77	260	8.4	6303	7500	1LQ1222-3AC16-8 ■■■■	
225	302	315	Δ	45.4	2387	94.6	95.4	95.4	0.77	320	8.7	8355	7500	1LQ1222-3AC36-8 ■■■■	
260	349	315	Δ	45.4	2759	94.6	95.6	95.6	0.82	350	8.2	8553	7500	1LQ1222-3AC56-8 ■■■■	
285	382	315	Δ	45.4	3024	94.8	95.7	95.7	0.82	380	8.4	9677	7500	1LQ1222-3AC76-8 ■■■■	
325	436	355	Δ	45.3	3448	94.8	95.6	95.6	0.85	420	9.5	12413	10200	1LQ1222-3BC56-8 ■■■■	
350	469	355	Δ	45.3	3714	94.9	95.7	95.6	0.85	450	10	14113	10200	1LQ1222-3BC76-8 ■■■■	
400	536	400	Δ	45.3	4244	95.5	96	96.4	0.84	520	8.2	14005	16400	1LQ1222-4AC36-8 ■■■■	
430	577	400	Δ	45.3	4562	95.6	96.1	96.4	0.84	560	8.6	15511	16400	1LQ1222-4AC56-8 ■■■■	
480	644	400	Δ	45.3	5093	95.8	96.2	96.5	0.84	620	8.9	18335	16400	1LQ1222-4AC76-8 ■■■■	
510	684	450	Δ	45.2	5411	95.9	96.3	96.5	0.83	670	8.6	18397	20700	1LQ1222-4BC16-8 ■■■■	
600	805	450	Δ	45.3	6366	96	96.4	96.6	0.84	780	8	19735	20700	1LQ1222-4BC36-8 ■■■■	
680	912	450	Δ	45.2	7215	96.1	96.5	96.7	0.84	880	8.8	25253	20700	1LQ1222-4BC56-8 ■■■■	
775	1039	450	Δ	45.2	8223	96.1	96.5	96.8	0.85	990	8.3	27136	20700	1LQ1222-4BC76-8 ■■■■	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1222-3AB16-5...	1380	1430	3.5	79	94.5	3600	1XB7 730	6SL3710-1GF34-1AA3	400
1LQ1222-3AB36-5...	1570	1610	4.4	79	94.5	3600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1222-3AB56-5...	1740	1780	5	79	94.5	3600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3AB76-5...	1910	1950	5.8	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BB56-1...	2350	2400	8.3	79	95	3300	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BB76-1...	2470	2530	8.9	79	95	3300	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3AB16-6...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1222-3AB36-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3AB56-6...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3AB76-6...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BB76-6...	2470	2530	8.9	79	95	2600	1XB7 731	6SL3710-1GF37-4AA3	710
1LQ1222-4AB36-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4AB56-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1222-4AB76-6...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1222-4BB16-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GF41-1AA3	1036
1LQ1222-4BB36-6...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1222-4BB56-6...	4770	4870	28.3	79	96	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1222-3AC16-7...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1222-3AC36-7...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1222-3AC56-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3AC76-7...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3BC56-7...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-3BC76-7...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-4AC36-7...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-1GF37-4AA3	710
1LQ1222-4AC56-7...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4AC76-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4BC16-7...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1222-4BC36-7...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4BC56-7...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-2GF41-1AA3	1036
1LQ1222-3AC16-8...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1222-3AC36-8...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1222-3AC56-8...	1770	1820	8.3	79	94.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LQ1222-3AC76-8...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1222-3BC56-8...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-3BC76-8...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1222-4AC36-8...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-4AC56-8...	3180	3250	24	79	95.5	2000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1222-4AC76-8...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4BC16-8...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1222-4BC36-8...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1222-4BC56-8...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1222-4BC76-8...	5210	5310	48.4	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cosφ _{rated} , 4/4	I _{rated}	Nm				
kW	hp	FS		Hz	Nm	%	%	%		A	Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
3600 rpm, 4-pole															
295	396	315	Δ	120.6	783	94.3	94.6	93.8	0.88	335	6.3	2036	7500	1LQ1312-3AB16-5	
375	503	315	Δ	120.5	995	95	95.2	94.5	0.89	420	7.7	3085	7500	1LQ1312-3AB36-5	
410	550	315	Δ	120.5	1088	95.2	95.4	94.7	0.9	450	8.3	3590	7500	1LQ1312-3AB56-5	
470	630	315	Δ	120.5	1247	95.4	95.7	95.1	0.9	520	8.4	4115	7500	1LQ1312-3AB76-5	
3000 rpm, 4-pole															
470	630	355	Δ	100.6	1496	95.5	96.1	95.9	0.89	520	5.8	3740	10200	1LQ1312-3BB56-1	
510	684	355	Δ	100.5	1623	95.7	96.3	96	0.89	560	6.4	4382	10200	1LQ1312-3BB76-1	
1800 rpm, 4-pole															
270	362	315	Δ	60.5	1432	94.9	95.7	95.7	0.87	305	7.6	4582	7500	1LQ1312-3AB16-6	
355	476	315	Δ	60.5	1883	95.4	96.1	96.1	0.87	400	9	7155	7500	1LQ1312-3AB36-6	
395	530	315	Δ	60.5	2096	95.4	96.2	96.3	0.89	435	8.8	7546	7500	1LQ1312-3AB56-6	
475	637	315	Δ	60.4	2520	95.8	96.5	96.5	0.88	530	9.8	10080	7500	1LQ1312-3AB76-6	
515	691	355	Δ	60.4	2732	95.9	96.6	96.6	0.87	580	8.6	10655	10200	1LQ1312-3BB56-6	
560	751	355	Δ	60.4	2971	96	96.7	96.6	0.86	640	9.3	12775	10200	1LQ1312-3BB76-6	
585	784	400	Δ	60.3	3104	95.9	96.3	96.5	0.87	660	8.2	10864	16400	1LQ1312-4AB36-6	
630	845	400	Δ	60.3	3342	96	96.4	96.6	0.87	710	8.9	12031	16400	1LQ1312-4AB56-6	
705	945	400	Δ	60.3	3740	96.2	96.5	96.7	0.88	790	9.5	14212	16400	1LQ1312-4AB76-6	
785	1053	450	Δ	60.2	4165	96.1	96.3	96.2	0.83	930	10.5	18743	20700	1LQ1312-4BB16-6	
860	1153	450	Δ	60.2	4562	96.2	96.3	96.2	0.81	1040	11.9	24179	20700	1LQ1312-4BB36-6	
1005	1348	450	Δ	60.2	5332	96.3	96.4	96.3	0.82	1200	12.1	28260	20700	1LQ1312-4BB56-6	
1200 rpm, 6-pole															
255	342	315	Δ	60.5	2029	94.7	95.6	95.7	0.81	310	7.5	5478	7500	1LQ1312-3AC16-7	
310	416	315	Δ	60.5	2467	94.9	95.7	95.9	0.83	370	7.8	6908	7500	1LQ1312-3AC36-7	
350	469	315	Δ	60.5	2785	94.9	95.7	96	0.84	410	7.3	7241	7500	1LQ1312-3AC56-7	
385	516	315	Δ	60.5	3064	95.1	96	96.1	0.84	450	7.6	8273	7500	1LQ1312-3AC76-7	
405	543	355	Δ	60.3	3223	95.5	96.1	95.8	0.82	485	11.3	13537	10200	1LQ1312-3BC56-7	
445	597	355	Δ	60.3	3541	95.5	96.2	95.9	0.84	520	10.9	14164	10200	1LQ1312-3BC76-7	
505	677	400	Δ	60.3	4019	96	96.3	96.5	0.84	590	8.8	13263	16400	1LQ1312-4AC36-7	
550	738	400	Δ	60.3	4377	96.1	96.4	96.6	0.83	650	9.4	16195	16400	1LQ1312-4AC56-7	
605	811	400	Δ	60.3	4814	96.2	96.5	96.7	0.85	700	9	16849	16400	1LQ1312-4AC76-7	
645	865	450	Δ	60.2	5133	96.4	96.6	96.6	0.8	790	9.7	18992	20700	1LQ1312-4BC16-7	
750	1006	450	Δ	60.2	5968	96.4	96.6	96.6	0.81	910	9.7	22678	20700	1LQ1312-4BC36-7	
820	1100	450	Δ	60.2	6525	96.5	96.7	96.7	0.82	980	9.7	24795	20700	1LQ1312-4BC56-7	
970	1301	450	Δ	60.2	7719	96.5	96.8	96.9	0.84	1120	9.4	27788	20700	1LQ1312-4BC76-7	
900 rpm, 6-pole															
200	268	315	Y	45.5	2122	93.7	94.8	95.1	0.81	245	7.3	5729	7500	1LQ1312-3AC16-8	
255	342	315	Δ	45.5	2706	94.3	95.3	95.4	0.8	315	7.8	8118	7500	1LQ1312-3AC36-8	
290	389	315	Δ	45.5	3077	94.2	95.3	95.6	0.84	345	7.2	8308	7500	1LQ1312-3AC56-8	
320	429	315	Δ	45.5	3395	94.4	95.4	95.6	0.83	385	7.6	9846	7500	1LQ1312-3AC76-8	
345	463	355	Δ	45.4	3661	94.7	95.6	95.6	0.85	400	9.2	12447	10200	1LQ1312-3BC56-8	
390	523	355	Δ	45.4	4138	94.7	95.6	95.6	0.86	450	9	14069	10200	1LQ1312-3BC76-8	
435	583	400	Δ	45.3	4615	95.3	95.9	96.3	0.84	510	7.6	13845	16400	1LQ1312-4AC36-8	
480	644	400	Δ	45.3	5093	95.6	96.1	96.4	0.84	560	8.6	17316	16400	1LQ1312-4AC56-8	
545	731	400	Δ	45.3	5783	95.7	96.2	96.5	0.84	640	8.5	19662	16400	1LQ1312-4AC76-8	
600	805	450	Δ	45.3	6366	95.9	96.4	96.6	0.83	710	7.9	19735	20700	1LQ1312-4BC16-8	
675	905	450	Δ	45.3	7162	95.9	96.4	96.6	0.84	790	7.7	21486	20700	1LQ1312-4BC36-8	
780	1046	450	Δ	45.3	8276	96	96.5	96.7	0.84	910	8.1	26483	20700	1LQ1312-4BC56-8	
835	1120	450	Δ	45.2	8860	96.1	96.5	96.7	0.84	970	8.6	30124	20700	1LQ1312-4BC76-8	

For versions, see Article No. supplements and special versions. ■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1312-3AB16-5...	1430	1470	3.5	85	100.5	3600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-3AB36-5...	1610	1660	4.4	85	100.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3AB56-5...	1780	1830	5	85	100.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3AB76-5...	1950	2000	5.8	85	100.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3BB56-1...	2390	2450	8.3	85	101	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3BB76-1...	2520	2570	8.9	85	101	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3AB16-6...	1430	1470	3.5	85	100.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AB36-6...	1610	1660	4.4	85	100.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3AB56-6...	1780	1830	5	85	100.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3AB76-6...	1950	2000	5.8	85	100.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3BB56-6...	2390	2450	8.3	85	101	2600	1XB7 731	6SL3710-7LG37-4AA3	710
1LQ1312-3BB76-6...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AB36-6...	3000	3070	13.6	85	101.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AB56-6...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AB76-6...	3480	3550	17.6	85	101.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4BB16-6...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-7LG41-0AA3	1000
1LQ1312-4BB36-6...	4450	4550	25.5	85	102	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-4BB56-6...	4800	4900	28.3	85	102	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-3AC16-7...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AC36-7...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3AC56-7...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3AC76-7...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-3BC56-7...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-3BC76-7...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AC36-7...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LQ1312-4AC56-7...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4AC76-7...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC16-7...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4BC36-7...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1312-4BC56-7...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1312-4BC76-7...	5240	5340	48.4	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1312-3AC16-8...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LQ1312-3AC36-8...	1640	1680	7.2	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1312-3AC56-8...	1820	1860	8.3	85	100.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1312-3AC76-8...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3BC56-8...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1312-3BC76-8...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1312-4AC36-8...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AC56-8...	3210	3280	24	85	101.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1312-4AC76-8...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC16-8...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1312-4BC36-8...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1312-4BC56-8...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1312-4BC76-8...	5240	5340	48.4	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version 1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	COSφ _{rated} , 4/4	I _{rated} A				
<ul style="list-style-type: none"> Rated motor voltage 550 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
3600 rpm, 4-pole														
295	396	315	Δ	120.5	783	94.5	94.6	93.8	0.88	370	7.6	2427	7500	1LQ1322-3AB16-5 ■■■■
355	476	315	Δ	120.5	942	94.9	95.1	94.3	0.89	440	8.4	3203	7500	1LQ1322-3AB36-5 ■■■■
390	523	315	Δ	120.5	1035	95.1	95.3	94.5	0.89	485	9.1	3830	7500	1LQ1322-3AB56-5 ■■■■
440	590	315	Δ	120.6	1167	95.2	95.6	95	0.91	530	7.4	3384	7500	1LQ1322-3AB76-5 ■■■■
3000 rpm, 4-pole														
455	610	355	Δ	100.6	1448	95.5	96.2	95.8	0.89	560	6.1	3765	10200	1LQ1322-3BB56-1 ■■■■
495	664	355	Δ	100.5	1576	95.7	96.3	95.9	0.89	610	6.9	4728	10200	1LQ1322-3BB76-1 ■■■■
1800 rpm, 4-pole														
270	362	315	Δ	60.6	1432	94.7	95.6	95.7	0.88	335	7.1	4296	7500	1LQ1322-3AB16-6 ■■■■
345	463	315	Δ	60.5	1830	95.3	96.1	96	0.87	435	8.7	6771	7500	1LQ1322-3AB36-6 ■■■■
390	523	315	Δ	60.5	2069	95.4	96.2	96.3	0.89	480	8.7	7448	7500	1LQ1322-3AB56-6 ■■■■
470	630	315	Δ	60.4	2493	95.8	96.5	96.4	0.87	590	10.1	10471	7500	1LQ1322-3AB76-6 ■■■■
505	677	355	Δ	60.4	2679	95.9	96.7	96.6	0.87	630	9	10984	10200	1LQ1322-3BB56-6 ■■■■
535	717	355	Δ	60.4	2838	95.9	96.7	96.7	0.89	650	8.2	10217	10200	1LQ1322-3BB76-6 ■■■■
585	784	400	Δ	60.3	3104	95.9	96.3	96.5	0.87	730	8.5	10864	16400	1LQ1322-4AB36-6 ■■■■
630	845	400	Δ	60.3	3342	96.1	96.4	96.5	0.87	790	9.5	13034	16400	1LQ1322-4AB56-6 ■■■■
695	932	400	Δ	60.3	3687	96.2	96.5	96.6	0.86	880	10.5	15854	16400	1LQ1322-4AB76-6 ■■■■
810	1086	450	Δ	60.2	4297	96.2	96.4	96.3	0.83	1060	10	18477	20700	1LQ1322-4BB16-6 ■■■■
925	1240	450	Δ	60.2	4907	96.3	96.4	96.4	0.83	1220	11.2	24044	20700	1LQ1322-4BB36-6 ■■■■
980	1314	450	Δ	60.2	5199	96.3	96.4	96.4	0.84	1280	11.7	25995	20700	1LQ1322-4BB56-6 ■■■■
1200 rpm, 6-pole														
240	322	315	Δ	60.6	1910	94.4	95.5	95.7	0.83	320	7	4775	7500	1LQ1322-3AC16-7 ■■■■
300	402	315	Δ	60.5	2387	95	95.7	95.9	0.83	395	7.9	6684	7500	1LQ1322-3AC36-7 ■■■■
345	463	315	Δ	60.5	2745	95	95.7	96	0.84	450	7.5	7412	7500	1LQ1322-3AC56-7 ■■■■
390	523	315	Δ	60.5	3104	95.1	96	96.1	0.84	510	7.6	8691	7500	1LQ1322-3BC76-7 ■■■■
395	530	355	Δ	60.3	3143	95.5	96.1	95.8	0.84	510	10.9	12572	10200	1LQ1322-3BC56-7 ■■■■
420	563	355	Δ	60.3	3342	95.6	96.1	95.7	0.82	560	12.3	15373	10200	1LQ1322-3BC76-7 ■■■■
500	671	400	Δ	60.3	3979	96	96.4	96.5	0.82	660	9.3	14324	16400	1LQ1322-4AC36-7 ■■■■
535	717	400	Δ	60.3	4257	96.1	96.4	96.6	0.84	690	9.2	14900	16400	1LQ1322-4AC56-7 ■■■■
585	784	400	Δ	60.2	4655	96.2	96.5	96.5	0.82	780	10.3	19086	16400	1LQ1322-4AC76-7 ■■■■
645	865	450	Δ	60.2	5133	96.4	96.5	96.5	0.8	880	10	20019	20700	1LQ1322-4BC16-7 ■■■■
720	966	450	Δ	60.2	5730	96.4	96.6	96.6	0.81	970	9.9	21774	20700	1LQ1322-4BC36-7 ■■■■
835	1120	450	Δ	60.2	6645	96.5	96.7	96.7	0.83	1100	9.7	24587	20700	1LQ1322-4BC56-7 ■■■■
900 rpm, 6-pole														
200	268	315	Δ	45.5	2122	93.9	94.9	95.1	0.78	285	7.6	6366	7500	1LQ1322-3AC16-8 ■■■■
250	335	315	Δ	45.4	2653	94.3	95.2	95.3	0.79	350	8	8224	7500	1LQ1322-3AC36-8 ■■■■
290	389	315	Δ	45.5	3077	94.2	95.3	95.5	0.83	385	7.5	8616	7500	1LQ1322-3AC56-8 ■■■■
315	422	315	Δ	45.5	3342	94.4	95.4	95.6	0.83	420	7.6	9692	7500	1LQ1322-3AC76-8 ■■■■
345	463	355	Δ	45.4	3661	94.6	95.6	95.6	0.86	440	9.1	12447	10200	1LQ1322-3BC56-8 ■■■■
380	510	355	Δ	45.3	4032	94.8	95.7	95.6	0.86	485	9.3	14112	10200	1LQ1322-3BC76-8 ■■■■
430	577	400	Δ	45.3	4562	95.4	95.9	96.3	0.84	560	7.6	13686	16400	1LQ1322-4AC36-8 ■■■■
470	630	400	Δ	45.3	4987	95.5	96	96.4	0.85	600	8	15958	16400	1LQ1322-4AC56-8 ■■■■
530	711	400	Δ	45.3	5623	95.6	96.2	96.5	0.85	680	8.1	18556	16400	1LQ1322-4AC76-8 ■■■■
560	751	450	Δ	45.3	5942	95.8	96.2	96.5	0.83	740	7.8	18420	20700	1LQ1322-4BC16-8 ■■■■
650	872	450	Δ	45.3	6897	95.9	96.4	96.7	0.85	830	7.5	20001	20700	1LQ1322-4BC36-8 ■■■■
750	1006	450	Δ	45.3	7958	96	96.4	96.7	0.84	970	8	24670	20700	1LQ1322-4BC56-8 ■■■■
850	1140	450	Δ	45.3	9019	96	96.5	96.8	0.86	1080	7.6	27057	20700	1LQ1322-4BC76-8 ■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version 1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1322-3AB16-5...	1430	1470	3.5	85	100.5	3600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1322-3AB36-5...	1610	1660	4.4	85	100.5	3600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1322-3AB56-5...	1780	1830	5	85	100.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AB76-5...	1950	2000	5.8	85	100.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3BB56-1...	2390	2450	8.3	85	101	3300	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3BB76-1...	2560	2610	8.9	85	101	3300	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-3AB16-6...	1430	1470	3.5	85	100.5	3000	1XB7 730	6SL3710-1GF34-1AA3	400
1LQ1322-3AB36-6...	1610	1660	4.4	85	100.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1322-3AB56-6...	1780	1830	5	85	100.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3AB76-6...	1950	2000	5.8	85	100.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LQ1322-3BB56-6...	2430	2490	8.3	85	101	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-3BB76-6...	2560	2610	8.9	85	101	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4AB36-6...	3000	3070	13.6	85	101.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-4AB56-6...	3210	3280	15.4	85	101.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-4AB76-6...	3480	3550	17.6	85	101.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BB16-6...	4170	4270	22.8	85	102	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-4BB36-6...	4450	4550	25.5	85	102	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-4BB56-6...	4800	4900	28.3	85	102	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-3AC16-7...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1322-3AC36-7...	1640	1680	7.2	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1322-3AC56-7...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1322-3AC76-7...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3BC56-7...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-3BC76-7...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-4AC36-7...	3040	3110	21.5	85	101.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4AC56-7...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4AC76-7...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-4BC16-7...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BC36-7...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BC56-7...	4820	4920	42.5	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1322-3AC16-8...	1460	1500	5.9	85	100.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1322-3AC36-8...	1640	1680	7.2	85	100.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LQ1322-3AC56-8...	1820	1860	8.3	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1322-3AC76-8...	1930	1970	9.1	85	100.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1322-3BC56-8...	2390	2440	14.5	85	101	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1322-3BC76-8...	2530	2590	16	85	101	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-4AC36-8...	3000	3070	21.5	85	101.5	2000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1322-4AC56-8...	3250	3320	24	85	101.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4AC76-8...	3480	3550	27	85	101.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1322-4BC16-8...	4090	4190	33.8	85	102	1700	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1322-4BC36-8...	4390	4490	37.8	85	102	1700	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1322-4BC56-8...	4820	4920	42.5	85	102	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1322-4BC76-8...	5240	5340	48.4	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
1800 rpm, 4-pole														
235	315	315	Δ	60.4	1247	95.2	96.2	95.9	0.86	270	8.5	4614	7500	1LQ1213-3AB16-6 ■■■■
330	443	315	Δ	60.4	1751	95.6	96.3	96.2	0.86	375	9.4	7179	7500	1LQ1213-3AB36-6 ■■■■
370	496	315	Δ	60.4	1963	95.7	96.4	96.5	0.88	415	9.2	7656	7500	1LQ1213-3AB56-6 ■■■■
440	590	315	Δ	60.4	2334	95.9	96.6	96.6	0.87	495	10.4	10036	7500	1LQ1213-3AB76-6 ■■■■
480	644	355	Δ	60.4	2546	96.2	97	96.9	0.86	540	9.2	10439	10200	1LQ1213-3BB56-6 ■■■■
520	697	355	Δ	60.3	2759	96.3	97	97	0.85	600	10	12691	10200	1LQ1213-3BB76-6 ■■■■
575	771	400	Δ	60.3	3050	96.1	96.5	96.8	0.86	660	8.2	10675	16400	1LQ1213-4AB36-6 ■■■■
625	838	400	Δ	60.3	3316	96.3	96.7	96.9	0.87	700	9	12269	16400	1LQ1213-4AB56-6 ■■■■
695	932	400	Δ	60.3	3687	96.4	96.8	97	0.87	780	9.6	14379	16400	1LQ1213-4AB76-6 ■■■■
815	1093	450	Δ	60.2	4324	96.4	96.7	96.8	0.83	960	10.2	19026	20700	1LQ1213-4BB16-6 ■■■■
915	1227	450	Δ	60.2	4854	96.5	96.8	96.9	0.81	1100	11.3	23785	20700	1LQ1213-4BB36-6 ■■■■
1075	1442	450	Δ	60.2	5703	96.7	96.9	97	0.82	1280	11.4	27945	20700	1LQ1213-4BB56-6 ■■■■
1200 rpm, 6-pole														
240	322	315	Δ	60.5	1910	95	95.9	96	0.81	290	8	5539	7500	1LQ1213-3AC16-7 ■■■■
285	382	315	Δ	60.4	2268	95.2	96.1	96.1	0.82	340	8.4	6804	7500	1LQ1213-3AC36-7 ■■■■
325	436	315	Δ	60.5	2586	95.2	96.2	96.3	0.84	380	7.9	7241	7500	1LQ1213-3AC56-7 ■■■■
355	476	315	Δ	60.4	2825	95.4	96.3	96.3	0.84	415	8.2	8475	7500	1LQ1213-3AC76-7 ■■■■
400	536	355	Δ	60.3	3183	95.9	96.6	96.4	0.81	485	11.3	13369	10200	1LQ1213-3BC56-7 ■■■■
440	590	355	Δ	60.3	3501	95.9	96.6	96.5	0.83	520	10.9	14004	10200	1LQ1213-3BC76-7 ■■■■
470	630	400	Δ	60.3	3740	96.3	96.7	96.9	0.82	560	9.2	13464	16400	1LQ1213-4AC36-7 ■■■■
525	704	400	Δ	60.3	4178	96.4	96.8	97	0.82	630	9.7	15876	16400	1LQ1213-4AC56-7 ■■■■
575	771	400	Δ	60.3	4576	96.5	96.8	97.1	0.84	670	9.4	16931	16400	1LQ1213-4AC76-7 ■■■■
630	845	450	Δ	60.2	5013	96.7	97	97	0.79	780	9.8	19049	20700	1LQ1213-4BC16-7 ■■■■
710	952	450	Δ	60.2	5650	96.7	97	97.1	0.8	870	10.1	22600	20700	1LQ1213-4BC36-7 ■■■■
775	1039	450	Δ	60.2	6167	96.8	97.1	97.2	0.81	930	10.2	24668	20700	1LQ1213-4BC56-7 ■■■■
915	1227	450	Δ	60.2	7281	96.8	97.1	97.3	0.83	1080	9.7	27668	20700	1LQ1213-4BC76-7 ■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1213-3AB16-6...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1213-3AB36-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1213-3AB56-6...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1213-3AB76-6...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-3BB56-6...	2350	2400	8.3	79	95	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-3BB76-6...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AB36-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AB56-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AB76-6...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1213-4BB16-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-7LG41-0AA3	1000
1LQ1213-4BB36-6...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LQ1213-4BB56-6...	4770	4870	28.3	79	96	2000	1XB7 750	On request	On request
1LQ1213-3AC16-7...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LQ1213-3AC36-7...	1590	1640	7.2	79	94.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LQ1213-3AC56-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LQ1213-3AC76-7...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LQ1213-3BC56-7...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-3BC76-7...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-4AC36-7...	2970	3040	21.5	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LQ1213-4AC56-7...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4AC76-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LQ1213-4BC16-7...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LQ1213-4BC36-7...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LQ1213-4BC56-7...	4790	4890	42.5	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LQ1213-4BC76-7...	5210	5310	48.4	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

5

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LQ1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
1800 rpm, 4-pole															
220	295	315	Δ	60.5	1167	95.3	96.2	95.9	0.86	280	8.4	4318	7500	1LQ1223-3AB16-6	
315	422	315	Δ	60.4	1671	95.6	96.3	96.2	0.86	400	9.5	6851	7500	1LQ1223-3AB36-6	
365	489	315	Δ	60.4	1936	95.7	96.4	96.4	0.88	450	9.2	7357	7500	1LQ1223-3AB56-6	
435	583	315	Δ	60.4	2308	96	96.7	96.6	0.86	550	10.7	10617	7500	1LQ1223-3AB76-6	
470	630	355	Δ	60.3	2493	96.2	97	96.9	0.85	600	9.5	10969	10200	1LQ1223-3BB56-6	
495	664	355	Δ	60.4	2626	96.1	97	97	0.88	610	8.7	10241	10200	1LQ1223-3BB76-6	
575	771	400	Δ	60.3	3050	96.1	96.6	96.8	0.86	730	8.5	10675	16400	1LQ1223-4AB36-6	
625	838	400	Δ	60.3	3316	96.3	96.7	96.9	0.86	790	9.5	12932	16400	1LQ1223-4AB56-6	
695	932	400	Δ	60.3	3687	96.4	96.8	97	0.86	880	10.5	15854	16400	1LQ1223-4AB76-6	
845	1133	450	Δ	60.2	4483	96.5	96.8	96.9	0.83	1100	9.7	18829	20700	1LQ1223-4BB16-6	
980	1314	450	Δ	60.2	5199	96.6	96.9	97	0.83	1280	10.7	23915	20700	1LQ1223-4BB36-6	
1025	1375	450	Δ	60.2	5438	96.6	96.9	97	0.83	1340	11.2	26102	20700	1LQ1223-4BB56-6	
1200 rpm, 6-pole															
220	295	315	Δ	60.5	1751	94.8	95.8	95.9	0.82	295	7.5	4728	7500	1LQ1223-3AC16-7	
280	375	315	Δ	60.4	2228	95.2	96.1	96.1	0.82	375	8.3	6684	7500	1LQ1223-3AC36-7	
320	429	315	Δ	60.5	2546	95.3	96.2	96.3	0.84	415	8	7383	7500	1LQ1223-3AC56-7	
360	483	315	Δ	60.4	2865	95.4	96.3	96.3	0.84	465	8.3	8595	7500	1LQ1223-3AC76-7	
385	516	355	Δ	60.3	3064	95.9	96.6	96.4	0.82	510	10.9	12562	10200	1LQ1223-3BC56-7	
415	557	355	Δ	60.3	3302	96	96.6	96.4	0.8	560	12.2	15189	10200	1LQ1223-3BC76-7	
475	637	400	Δ	60.3	3780	96.3	96.7	96.9	0.81	640	9.6	14364	16400	1LQ1223-4AC36-7	
505	677	400	Δ	60.3	4019	96.4	96.8	97	0.83	660	9.6	14870	16400	1LQ1223-4AC56-7	
555	744	400	Δ	60.2	4417	96.6	96.9	97	0.81	740	10.9	18993	16400	1LQ1223-4AC76-7	
600	805	450	Δ	60.2	4775	96.7	96.9	97	0.78	830	10.6	20055	20700	1LQ1223-4BC16-7	
680	912	450	Δ	60.2	5411	96.7	97	97.1	0.79	930	10.3	22185	20700	1LQ1223-4BC36-7	
770	1033	450	Δ	60.2	6127	96.8	97.1	97.2	0.81	1020	10.4	25121	20700	1LQ1223-4BC56-7	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – enclosed version

1LQ1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LQ1223-3AB16-6...	1380	1430	3.5	79	94.5	3000	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1223-3AB36-6...	1570	1610	4.4	79	94.5	3000	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1223-3AB56-6...	1740	1780	5	79	94.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1223-3AB76-6...	1910	1950	5.8	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-3BB56-6...	2390	2440	8.3	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1223-3BB76-6...	2510	2570	8.9	79	95	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1223-4AB36-6...	2970	3040	13.6	79	95.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1223-4AB56-6...	3180	3250	15.4	79	95.5	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1223-4AB76-6...	3450	3520	17.6	79	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1223-4BB16-6...	4140	4240	22.8	79	96	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1223-4BB36-6...	4420	4520	25.5	79	96	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LQ1223-4BB56-6...	4770	4870	28.3	79	96	2000	1XB7 750	On request	On request
1LQ1223-3AC16-7...	1410	1460	5.9	79	94.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LQ1223-3AC36-7...	1590	1640	7.2	79	94.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LQ1223-3AC56-7...	1770	1820	8.3	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LQ1223-3AC76-7...	1880	1930	9.1	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-3BC56-7...	2340	2400	14.5	79	95	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-3BC76-7...	2490	2540	16	79	95	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LQ1223-4AC36-7...	3010	3080	21.5	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1223-4AC56-7...	3220	3290	24	79	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LQ1223-4AC76-7...	3450	3520	27	79	95.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LQ1223-4BC16-7...	4060	4160	33.8	79	96	1700	1XB7 740	6SL3710-2GF38-6AA3	836
1LQ1223-4BC36-7...	4360	4460	37.8	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LQ1223-4BC56-7...	4790	4890	42.5	79	96	1700	1XB7 750	6SL3710-2GF41-1AA3	1036

5

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Force-ventilated motors – enclosed version

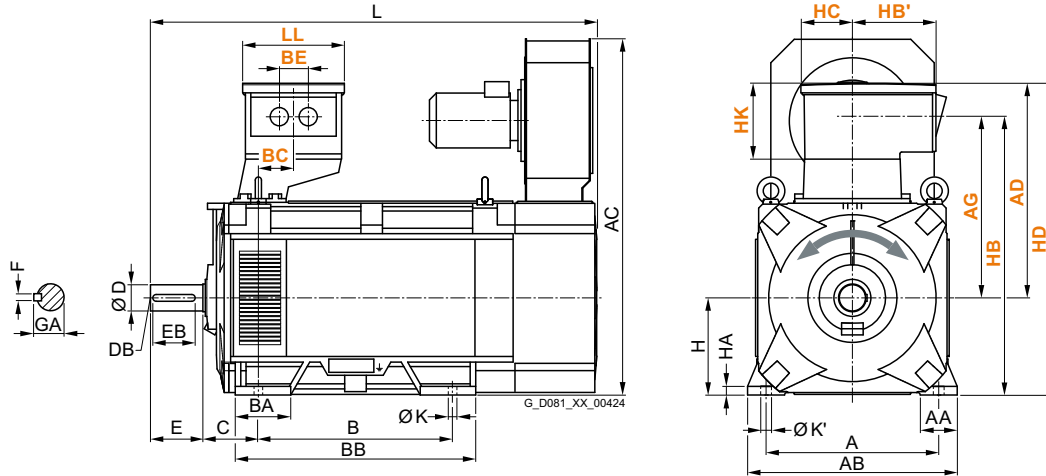
Dimensions

1LQ1 motors - Radially mounted equipment unit

Dimensional drawings

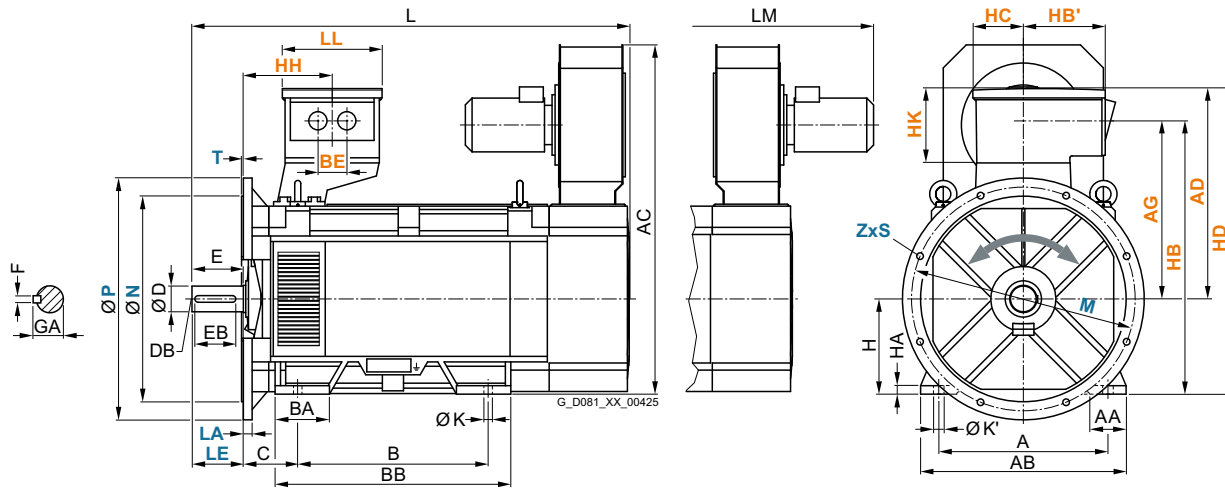
Type of construction IM B3

For terminal box dimensions, see page 5/67



Types of construction IM B35 and IM V1

For flange dimensions, see page 5/66 (Z = the number of retaining holes),
For terminal box dimensions, see page 5/67



Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																					
			A	AA	AB	AC	B	BA	BB	C	H	HA	K	K'	L ¹⁾	LM ¹⁾	D	DB	E	EB	F	GA		
315	4, 6	1LQ12..-3A.1-.....	560	120	680	1155	630	180	780	180	315	28	28	35	1450	1725	85	M20	170	140	22	90		
		1LQ12..-3A.3-.....	• 560	120	680	1155	630	180	780	200	315	28	28	35	1470	1745	95	M24	170	140	25	100		
		1LQ14..-3A.1-.....																						
		1LQ14..-3A.3-.....																						
		1LQ12..-3A.5-.....	560	120	680	1155	835	180	985	180	315	28	28	35	1590	1865	85	M20	170	140	22	90		
		1LQ12..-3A.7-.....	• 560	120	680	1155	835	180	985	200	315	28	28	35	1610	1885	95	M24	170	140	25	100		
	1LQ14..-3A.5-.....																							
	1LQ14..-3A.7-.....																							
	1LQ13..-3A.1-.....	560	120	680	1245	630	180	780	180	315	28	28	35	1450	1810	85	M20	170	140	22	90			
	1LQ13..-3A.3-.....	• 560	120	680	1245	630	180	780	200	315	28	28	35	1470	1830	95	M24	170	140	25	100			
	1LQ15..-3A.1-.....																							
	1LQ15..-3A.3-.....																							
355	4, 6	1LQ12..-3B.5-.....	630	150	780	1305	800	220	980	200	355	35	35	42	1730	2015	95	M24	170	140	25	100		
		1LQ12..-3B.7-.....	• 630	150	780	1305	800	220	980	224	355	35	35	42	1795	2075	100	M24	210	180	28	106		
		1LQ14..-3B.5-.....																						
		1LQ14..-3B.7-.....																						
		1LQ13..-3B.5-.....	630	150	780	1305	800	220	980	200	355	35	35	42	1730	2070	95	M24	170	140	25	100		
		1LQ13..-3B.7-.....	• 630	150	780	1305	800	220	980	224	355	25	35	42	1795	2135	100	M24	210	180	28	106		
	1LQ15..-3B.5-.....																							
	1LQ15..-3B.7-.....																							
	400	4, 6	1LQ12..-4A.3-.....	710	150	860	1535	900	220	1080	224	400	35	35	42	1960	2240	100	M24	210	180	28	116	
			1LQ12..-4A.5-.....	• 710	150	860	1535	900	220	1080	250	400	35	35	42	1985	2265	120	M24	210	180	32	127	
			1LQ12..-4A.7-.....																					
			1LQ14..-4A.3-.....																					
1LQ14..-4A.5-.....																								
1LQ14..-4A.7-.....																								
1LQ13..-4A.3-.....		710	150	860	1535	900	220	1080	224	400	35	35	42	1960	2330	100	M24	210	180	28	116			
1LQ13..-4A.5-.....		• 710	150	860	1535	900	220	1080	250	400	35	35	42	1985	2355	120	M24	210	180	32	127			
1LQ15..-4A.3-.....																								
1LQ15..-4A.5-.....																								
1LQ15..-4A.7-.....																								
450		4, 6	1LQ12..-4B.1-.....	800	180	980	1635	1000	260	1220	250	450	42	42	50	1970	2250	120	M24	210	180	32	127	
	1LQ12..-4B.3-.....		• 800	180	980	1635	1000	260	1220	280	450	42	42	50	2040	2320	130	M24	250	220	32	137		
	1LQ14..-4B.1-.....																							
	1LQ14..-4B.3-.....																							
	1LQ12..-4B.5-.....		800	180	980	1635	1000	260	1220	250	450	42	42	50	2145	2425	120	M24	210	180	32	127		
	1LQ12..-4B.7-.....		• 800	180	980	1635	1000	260	1220	280	450	42	42	50	2215	2495	130	M24	250	220	32	137		
	1LQ14..-4B.5-.....																							
	1LQ14..-4B.7-.....																							
	1LQ13..-4B.1-.....	800	180	980	1635	1000	260	1220	250	450	42	42	50	1970	2340	120	M24	210	180	32	127			
	1LQ13..-4B.3-.....	• 800	180	980	1635	1000	260	1220	280	450	42	42	50	2040	2410	130	M24	250	220	32	137			
	1LQ15..-4B.1-.....																							
	1LQ15..-4B.3-.....																							
1LQ13..-4B.5-.....	800	180	980	1635	1000	260	1220	250	450	42	42	50	2145	2515	120	M24	210	180	32	127				
1LQ13..-4B.7-.....	• 800	180	980	1635	1000	260	1220	280	450	42	42	50	2215	2585	130	M24	250	220	32	137				
1LQ15..-4B.5-.....																								
1LQ15..-4B.7-.....																								

• Bearing design for increased cantilever forces, for type of construction IM B3 only.

¹⁾ With type of construction IM V1, IM V15, IM V5 dimension LM increases due to a protective cover for the fan motor.

Force-ventilated motors – enclosed version

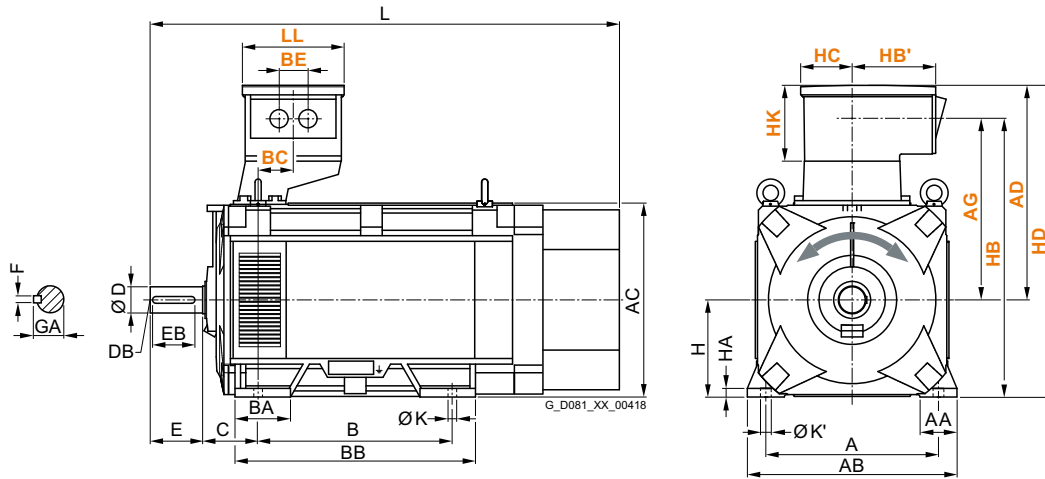
Dimensions

1LQ1 motors - Axially mounted equipment unit

Dimensional drawings

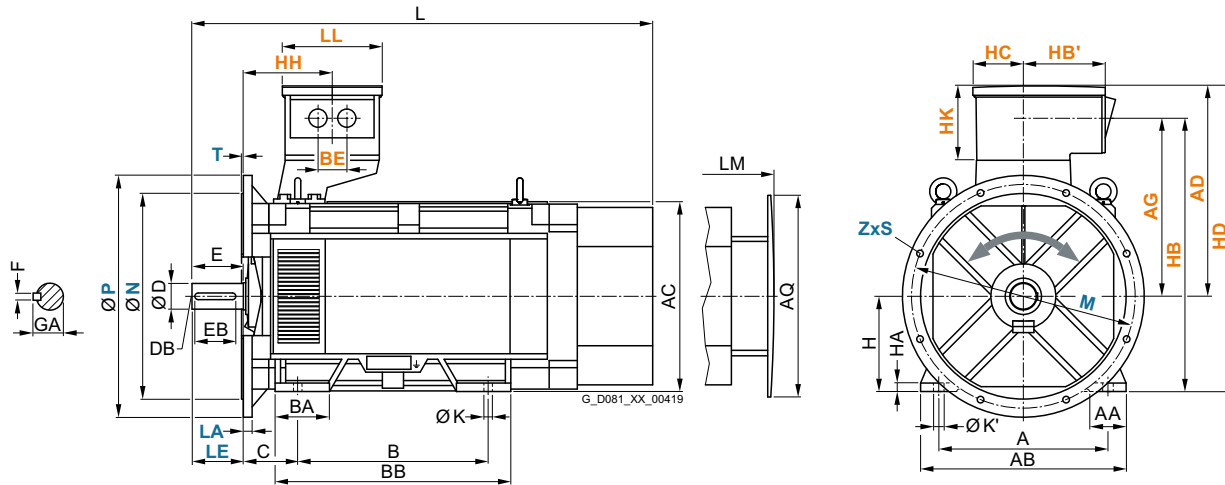
Type of construction IM B3

For terminal box dimensions, see page 5/67



Types of construction IM B35 and IM V1

For flange dimensions, see page 5/66 (Z = the number of retaining holes),
For terminal box dimensions, see page 5/67



Force-ventilated motors – enclosed version

Dimensions

1LQ1 motors - Axially mounted equipment unit

Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																					
			A	AA	AB	AC	AQ	B	BA	BB	C	H	HA	K	K'	L	LM	D	DB	E	EB	F	GA	
315	4, 6	1LQ12...-3A.1-.....	560	120	680	630	670	630	180	780	180	315	28	28	35	1610	1770	85	M20	170	140	22	90	
		1LQ12...-3A.3-.....	● 560	120	680	630	670	630	180	780	200	315	28	28	35	1630	1790	95	M24	170	140	25	100	
		1LQ14...-3A.1-.....																						
		1LQ14...-3A.3-.....																						
		1LQ12...-3A.5-.....	560	120	680	630	670	835	180	985	180	315	28	28	35	1750	1910	85	M20	170	140	22	90	
		1LQ12...-3A.7-.....	● 560	120	680	630	670	835	180	985	200	315	28	28	35	1770	1930	95	M24	170	140	25	100	
355	4, 6	1LQ12...-3B.5-.....	630	150	780	710	750	800	220	980	200	355	35	35	42	2130	2315	95	M24	170	140	25	100	
		1LQ12...-3B.7-.....	● 630	150	780	710	750	800	220	980	224	355	35	35	42	2195	2380	100	M24	210	180	28	106	
		1LQ14...-3B.5-.....																						
		1LQ14...-3B.7-.....																						
400	4, 6	1LQ12...-4A.3-.....	710	150	860	800	850	900	220	1080	224	400	35	35	42	2325	2485	110	M24	210	180	28	116	
		1LQ12...-4A.5-.....	● 710	150	860	800	850	900	220	1080	250	400	35	35	42	2350	2510	120	M24	210	180	32	127	
		1LQ12...-4A.7-.....																						
		1LQ14...-4A.3-.....																						
		1LQ14...-4A.5-.....																						
		1LQ14...-4A.7-.....																						
450	4, 6	1LQ12...-4B.1-.....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2330	2505	120	M24	210	180	32	127	
		1LQ12...-4B.3-.....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2400	2575	130	M24	250	220	32	137	
		1LQ14...-4B.1-.....																						
		1LQ14...-4B.3-.....																						
		1LQ12...-4B.5-.....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2505	2680	120	M24	210	180	32	127	
		1LQ12...-4B.7-.....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2575	2750	130	M24	250	220	32	137	

- Bearing design for increased cantilever forces, for type of construction IM B3 only.

Note:

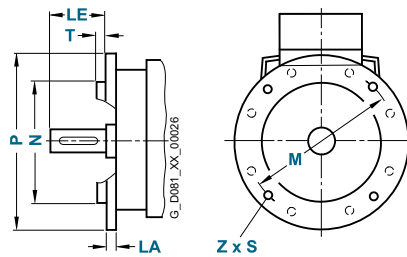
When using an encoder, dimensions L and LM increase by 170 mm for frame size 315, by 190 mm for frame size 355 and by 260 mm for frame size 400 and frame size 450.

Force-ventilated motors – enclosed version

Dimensions

Flanges

Dimensional drawings

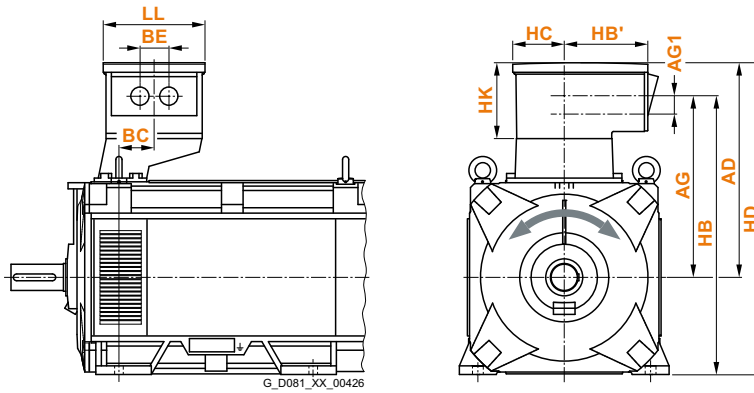


(Z = the number of retaining holes)

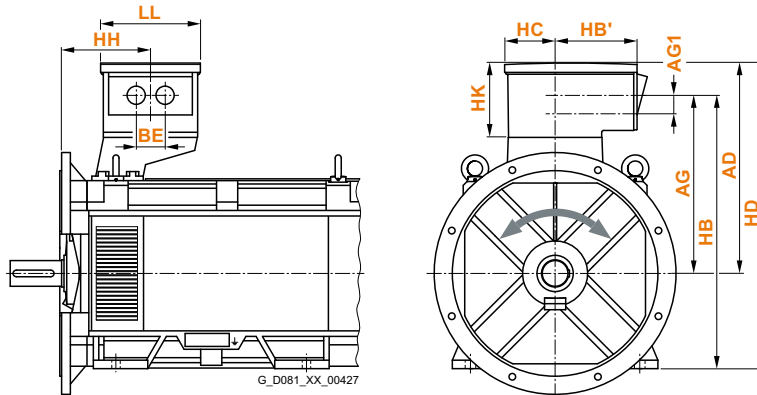
Motor type	Frame size	No. of poles	Type of construction	Flange type	Flange with through holes (FF/A) acc. to DIN 42948	Dimension designation acc. to IEC							
						LA	LE	M	N	P	S	T	Z
1LQ1	315	4, 6	IM B35, IM V1	Flange	A 800	29	170	740	680	800	22	6	8
				Flange (optional)	A 660	22	170	600	550	660	22	6	8
	355	4, 6	IM B35, IM V1	Flange	A 900	29	170	840	780	900	22	6	8
				Flange (optional)	A 660	27	170	600	550	660	22	6	8
400	4, 6	IM B35, IM V1	Flange	A 1000	28	210	940	880	1000	22	6	8	
450	4, 6	IM B35, IM V1	Flange	A 1150	30	210	1080	1000	1150	26	6	8	

Dimensional drawings

Type of construction IM B3



Types of construction IM B35 and IM V1



Force-ventilated motors – enclosed version

Dimensions

Terminal boxes

Dimensional drawings (continued)

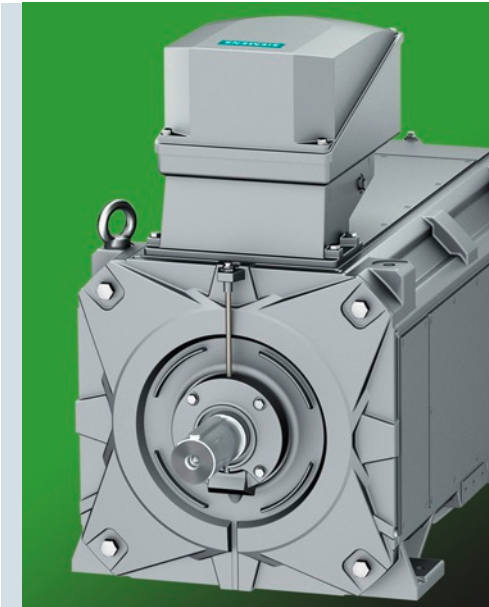
Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LQ1	315	4, 6	1XB7730	705	570	–	115	–	885	310	295	180	1020	255	345
			1XB7731	705	570	–	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
			GT640	620	520	–	115	110	835	225	295	155	935	170	310
			1XB1621	700	580	–	115	150	895	305	295	165	1015	250	330
			1XB1631	770	635	–	115	100	950	400	295	175	1085	320	555
	355	4, 6	1XB7730	750	615	–	100	–	970	310	300	180	1105	255	345
			1XB7731	750	615	–	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425
			GT640	665	565	–	100	110	920	225	300	155	1020	170	310
			1XB1621	745	625	–	100	150	980	305	300	165	1100	250	330
			1XB1631	815	680	–	100	100	1035	400	300	175	1170	320	555
	400	4, 6	1XB7730	795	660	–	100	–	1060	310	324	180	1195	255	345
			1XB7731	795	660	–	100	115	1060	310	324	180	1195	255	345
			1XB7740	880	700	60	100	96	1100	365	324	235	1280	340	425
			1XB7750	960	850	65	100	103	1250	405	324	300	1360	420	890
			GT640	710	610	–	100	110	1010	225	324	155	1110	170	310
			1XB1621	790	670	–	100	150	1070	305	324	165	1190	250	330
	450	4, 6	1XB1631	860	725	–	100	100	1125	400	324	175	1260	320	555
			1XB7730	841	710	–	80	–	1160	310	325	180	1291	255	345
			1XB7731	841	710	–	80	115	1160	310	325	180	1291	255	345
			1XB7740	926	750	60	80	96	1200	365	325	235	1376	340	425
			1XB7750	1006	900	65	80	103	1350	405	325	300	1456	420	890
			GT640	756	660	–	80	110	1110	225	325	155	1206	170	310
			1XB1621	836	720	–	80	150	1170	305	325	165	1286	250	330
			1XB1631	906	770	–	80	100	1220	400	325	175	1356	320	555

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

Water-cooled motors with water-jacket cooling



6/2 1LH1 motors for converter operation

- 6/2 Line voltage 400 V, 50 Hz
- 6/2 High Efficiency
- 6/6 Premium Efficiency
- 6/10 Line voltage 500 V, 50 Hz
- 6/10 High Efficiency
- 6/14 Premium Efficiency
- 6/18 Line voltage 690 V, 50 Hz
- 6/18 High Efficiency
- 6/22 Premium Efficiency
- 6/26 Line voltage 460 V, 60 Hz
- 6/26 High Efficiency
- 6/30 Premium Efficiency
- 6/34 Line voltage 575 V, 60 Hz
- 6/34 High Efficiency
- 6/38 Premium Efficiency

6/42 1LH1 motors for line operation

- 6/42 Line voltage 400 V, 50 Hz
- 6/42 High Efficiency
- 6/44 Premium Efficiency
- 6/46 Line voltage 690 V, 50 Hz
- 6/46 High Efficiency
- 6/48 Premium Efficiency
- 6/50 Line voltage 460 V, 60 Hz
- 6/50 High Efficiency
- 6/52 Premium Efficiency

6/54 Dimensions

- 6/54 1LH1 motors
- 6/56 Flanges
- 6/57 Terminal boxes

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power								I_{LR}/I_{rated}	T_B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\phi_{rated, 4/4}$	I_{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A	Nm	Nm			
Rated motor voltage 425 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
330	443	315	Δ	100.9	1050	94.5	95.3	95.2	0.88	530	4.8	1995	7500	1LH1212-3AB11-1 ■■■ 0	
410	550	315	Δ	100.8	1305	95	95.7	95.6	0.89	650	5.2	2741	7500	1LH1212-3AB31-1 ■■■ 0	
460	617	315	Δ	100.8	1464	95.2	95.8	95.6	0.9	720	5.6	3221	7500	1LH1212-3AB51-1 ■■■ 0	
535	717	315	Δ	100.8	1703	95.4	96.1	95.9	0.91	830	5.9	3917	7500	1LH1212-3AB71-1 ■■■ 0	
560	751	355	Δ	100.7	1783	95.3	95.9	95.6	0.89	890	5.3	4101	10200	1LH1212-3BB51-1 ■■■ 0	
575	771	355	Δ	100.7	1830	95.2	95.9	95.7	0.89	920	4.8	3843	10200	1LH1212-3BB71-1 ■■■ 0	
1500 rpm, 4-pole															
310	416	315	Δ	50.7	1974	94	95.2	95.7	0.88	500	5.7	4738	7500	1LH1212-3AB11-2 ■■■ 0	
405	543	315	Δ	50.6	2578	94.6	95.7	96	0.89	650	6.4	6961	7500	1LH1212-3AB31-2 ■■■ 0	
445	597	315	Δ	50.6	2833	94.6	95.7	96	0.9	700	6.7	7649	7500	1LH1212-3AB51-2 ■■■ 0	
510	684	315	Δ	50.6	3247	94.7	95.8	96.1	0.9	800	6.6	8767	7500	1LH1212-3AB71-2 ■■■ 0	
560	751	355	Δ	50.6	3565	94.9	96	96.4	0.89	890	5.8	9269	10200	1LH1212-3BB51-2 ■■■ 0	
630	845	355	Δ	50.5	4011	95.2	96.2	96.5	0.89	1000	6.4	11632	10200	1LH1212-3BB71-2 ■■■ 0	
695	932	400	Δ	50.4	4425	95.4	96	96.4	0.87	1140	6.5	11948	16400	1LH1212-4AB31-2 ■■■ 0	
755	1012	400	Δ	50.4	4806	95.7	96.2	96.6	0.87	1220	7.7	15379	16400	1LH1212-4AB51-2 ■■■ 0	
775	1039	400	Δ	50.4	4934	95.6	96.2	96.6	0.89	1220	6.9	13815	16400	1LH1212-4AB71-2 ■■■ 0	
900	1207	450	Δ	50.2	5730	96.2	96.5	96.6	0.85	1500	8.8	21774	20700	1LH1212-4BB11-2 ■■■ 0	
930	1247	450	Δ	50.2	5921	96.2	96.5	96.6	0.85	1540	9.6	24276	20700	1LH1212-4BB31-2 ■■■ 0	
1000 rpm, 6-pole															
260	349	315	Δ	50.6	2483	94.1	95.2	95.6	0.81	460	6.2	5711	7500	1LH1212-3AC11-3 ■■■ 0	
320	429	315	Δ	50.6	3056	94.3	95.4	95.8	0.83	550	6.4	7334	7500	1LH1212-3AC31-3 ■■■ 0	
370	496	315	Δ	50.6	3533	94.4	95.5	95.9	0.84	630	6.1	8126	7500	1LH1212-3AC51-3 ■■■ 0	
415	557	315	Δ	50.6	3963	94.6	95.7	96	0.84	700	6.6	9511	7500	1LH1212-3AC71-3 ■■■ 0	
495	664	355	Δ	50.5	4727	94.5	95.6	95.8	0.86	820	7	12290	10200	1LH1212-3BC51-3 ■■■ 0	
565	758	355	Δ	50.4	5395	94.8	95.8	95.9	0.86	930	7.9	15646	10200	1LH1212-3BC71-3 ■■■ 0	
635	852	400	Δ	50.4	6064	95.4	96	96.5	0.85	1060	6.4	15160	16400	1LH1212-4AC51-3 ■■■ 0	
725	972	400	Δ	50.4	6923	95.7	96.3	96.6	0.85	1200	7.4	20077	16400	1LH1212-4AC71-3 ■■■ 0	
820	1100	450	Δ	50.4	7830	95.6	96.3	96.7	0.85	1360	5.8	17226	20700	1LH1212-4BC11-3 ■■■ 0	
955	1281	450	Δ	50.3	9120	96	96.5	96.8	0.84	1600	6.8	23712	20700	1LH1212-4BC31-3 ■■■ 0	
750 rpm, 6-pole															
205	275	315	Δ	38.1	2610	92.9	94.3	94.8	0.81	365	6.1	6264	7500	1LH1212-3AC11-4 ■■■ 0	
265	355	315	Δ	38.1	3374	93.1	94.5	95.1	0.83	460	5.9	7760	7500	1LH1212-3AC31-4 ■■■ 0	
300	402	315	Δ	38.2	3820	93.1	94.5	95.2	0.84	510	5.6	8022	7500	1LH1212-3AC51-4 ■■■ 0	
335	449	315	Δ	38.1	4265	93.2	94.7	95.3	0.85	570	5.6	8957	7500	1LH1212-3AC71-4 ■■■ 0	
380	510	355	Δ	38	4838	93.3	94.6	95.1	0.87	630	6.3	11611	10200	1LH1212-3BC51-4 ■■■ 0	
425	570	355	Δ	38	5411	93.5	94.8	95.3	0.87	700	6.5	13528	10200	1LH1212-3BC71-4 ■■■ 0	
450	603	400	Δ	38	5730	94.2	95.1	95.9	0.85	760	5.6	13179	16400	1LH1212-4AC31-4 ■■■ 0	
515	691	400	Δ	37.9	6557	94.7	95.5	96.2	0.85	860	6.5	17704	16400	1LH1212-4AC51-4 ■■■ 0	
550	738	400	Δ	37.9	7003	94.8	95.6	96.2	0.86	910	6.3	18208	16400	1LH1212-4AC71-4 ■■■ 0	
590	791	450	Δ	37.8	7512	95.2	95.9	96.4	0.84	990	6.4	18780	20700	1LH1212-4BC11-4 ■■■ 0	
670	898	450	Δ	37.8	8531	95.5	96.1	96.5	0.84	1120	7	23887	20700	1LH1212-4BC31-4 ■■■ 0	
760	1019	450	Δ	37.8	9677	95.5	96.1	96.6	0.85	1260	6.7	26128	20700	1LH1212-4BC51-4 ■■■ 0	
810	1086	450	Δ	37.8	10313	95.6	96.2	96.6	0.86	1340	6.7	27845	20700	1LH1212-4BC71-4 ■■■ 0	

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1212-3AB11-1..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AB31-1..0	1520	1570	4.4	78	93.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AB51-1..0	1690	1740	5	78	93.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AB71-1..0	1860	1910	5.8	78	93.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-3BB51-1..0	2290	2340	8.3	78	93.5	3300	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-3BB71-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-3AB11-2..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AB31-2..0	1520	1570	4.4	78	93.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AB51-2..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AB71-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LE38-4AA3	820
1LH1212-3BB51-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-3BB71-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LE41-2AA3	1230
1LH1212-4AB31-2..0	2800	2870	13.6	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4AB51-2..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4AB71-2..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4BB11-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1212-4BB31-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1212-3AC11-3..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LH1212-3AC31-3..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AC51-3..0	1730	1770	8.3	78	93.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AC71-3..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3BC51-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LH1212-3BC71-3..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-4AC51-3..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4AC71-3..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4BC11-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LH1212-4BC31-3..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1212-3AC11-4..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-7LE33-8AA3	370
1LH1212-3AC31-4..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LH1212-3AC51-4..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AC71-4..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3BC51-4..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3BC71-4..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-4AC31-4..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LH1212-4AC51-4..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-4AC71-4..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-4BC11-4..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-7LE41-2AA3	1230
1LH1212-4BC31-4..0	4200	4300	37.8	78	94.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4BC51-4..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LH1212-4BC71-4..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-7LE41-4AA3	1370

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling
 1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
320	429	315	Δ	100.9	1019	94.5	95.3	95.1	0.88	580	4.8	2038	7500	1LH1222-3AB11-1 ■■■0	
410	550	315	Δ	100.8	1305	95.1	95.8	95.6	0.9	720	5.5	2871	7500	1LH1222-3AB31-1 ■■■0	
465	624	315	Δ	100.7	1480	95.3	95.9	95.7	0.9	820	6	3552	7500	1LH1222-3AB51-1 ■■■0	
480	644	315	Δ	100.9	1528	95.1	95.8	95.7	0.9	850	5.1	3209	7500	1LH1222-3AB71-1 ■■■0	
565	758	355	Δ	100.6	1798	95.5	96	95.6	0.89	1000	6.1	4675	10200	1LH1222-3BB51-1 ■■■0	
585	784	355	Δ	100.6	1862	95.4	96	95.7	0.89	1040	5.5	4469	10200	1LH1222-3BB71-1 ■■■0	
1500 rpm, 4-pole															
320	429	315	Δ	50.6	2037	94.3	95.4	95.7	0.87	590	6.1	5500	7500	1LH1222-3AB11-2 ■■■0	
400	536	315	Δ	50.6	2546	94.5	95.6	96	0.89	710	6.5	6874	7500	1LH1222-3AB31-2 ■■■0	
450	603	315	Δ	50.6	2865	94.6	95.7	96	0.9	790	6.7	8022	7500	1LH1222-3AB51-2 ■■■0	
520	697	315	Δ	50.6	3310	94.8	95.8	96.1	0.9	920	6.7	9268	7500	1LH1222-3AB71-2 ■■■0	
565	758	355	Δ	50.6	3597	95	96.1	96.4	0.89	1000	6	9712	10200	1LH1222-3BB51-2 ■■■0	
650	872	355	Δ/Δ	50.5	4138	95.3	96.3	96.5	0.89	1160	6.7	12414	10200	1LH1222-3BB71-2 ■■■0	
710	952	400	Δ	50.4	4520	95.5	96.1	96.5	0.88	1280	6.5	12204	16400	1LH1222-4AB51-2 ■■■0	
810	1086	400	Δ	50.4	5157	95.8	96.3	96.7	0.89	1440	7.5	15987	16400	1LH1222-4AB71-2 ■■■0	
835	1120	450	Δ	50.2	5316	96.1	96.4	96.5	0.84	1560	9.1	20732	20700	1LH1222-4BB11-2 ■■■0	
1000 rpm, 6-pole															
260	349	315	Δ	50.6	2483	94	95.1	95.5	0.82	510	6	5711	7500	1LH1222-3AC11-3 ■■■0	
325	436	315	Δ	50.6	3104	94.3	95.4	95.8	0.83	620	6.4	7450	7500	1LH1222-3AC31-3 ■■■0	
370	496	315	Δ	50.6	3533	94.5	95.6	95.9	0.84	700	6.5	8479	7500	1LH1222-3AC51-3 ■■■0	
420	563	315	Δ	50.6	4011	94.5	95.6	96	0.85	790	6.1	8824	7500	1LH1222-3AC71-3 ■■■0	
505	677	355	Δ	50.5	4822	94.7	95.7	95.8	0.86	930	7.6	13502	10200	1LH1222-3BC51-3 ■■■0	
560	751	355	Δ	50.5	5348	94.8	95.8	95.9	0.87	1020	7.6	14974	10200	1LH1222-3BC71-3 ■■■0	
580	778	400	Δ	50.4	5539	95.2	95.9	96.4	0.85	1080	6.2	13294	16400	1LH1222-4AC31-3 ■■■0	
630	845	400	Δ	50.4	6016	95.3	96	96.5	0.86	1160	6.2	14438	16400	1LH1222-4AC51-3 ■■■0	
735	986	400	Δ	50.4	7019	95.7	96.3	96.7	0.85	1360	7.2	19653	16400	1LH1222-4AC71-3 ■■■0	
865	1160	450	Δ	50.3	8260	95.9	96.4	96.7	0.83	1640	6.6	20650	20700	1LH1222-4BC11-3 ■■■0	
750 rpm, 6-pole															
220	295	315	Δ	38.2	2801	92.9	94.2	94.9	0.81	440	5.8	6162	7500	1LH1222-3AC11-4 ■■■0	
270	362	315	Δ	38.1	3438	93.2	94.5	95.1	0.82	530	6.1	8251	7500	1LH1222-3AC31-4 ■■■0	
305	409	315	Δ	38.1	3883	93.2	94.6	95.2	0.83	590	5.9	8931	7500	1LH1222-3AC51-4 ■■■0	
330	443	315	Δ	38.1	4202	93.2	94.6	95.3	0.85	620	5.7	8824	7500	1LH1222-3AC71-4 ■■■0	
380	510	355	Δ	38	4838	93.3	94.7	95.2	0.87	700	6.3	11611	10200	1LH1222-3BC51-4 ■■■0	
430	577	355	Δ	38	5475	93.6	94.8	95.3	0.87	790	6.6	13688	10200	1LH1222-3BC71-4 ■■■0	
455	610	400	Δ	38	5793	94.2	95.1	95.9	0.85	860	5.6	13324	16400	1LH1222-4AC31-4 ■■■0	
500	671	400	Δ	37.9	6366	94.6	95.4	96.1	0.86	930	6.2	15915	16400	1LH1222-4AC51-4 ■■■0	
570	764	400	Δ	37.9	7257	94.9	95.6	96.3	0.86	1060	6.6	19594	16400	1LH1222-4AC71-4 ■■■0	
605	811	450	Δ	37.8	7703	95.3	96	96.4	0.84	1140	6.4	19258	20700	1LH1222-4BC11-4 ■■■0	
675	905	450	Δ	37.8	8594	95.4	96	96.5	0.84	1280	6.5	22344	20700	1LH1222-4BC31-4 ■■■0	
730	979	450	Δ	37.8	9295	95.5	96.1	96.6	0.85	1360	6.6	25097	20700	1LH1222-4BC51-4 ■■■0	
835	1120	450	Δ	37.8	10632	95.6	96.2	96.6	0.86	1540	6.5	27643	20700	1LH1222-4BC71-4 ■■■0	

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1222-3AB11-1..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AB31-1..0	1520	1570	4.4	78	93.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AB51-1..0	1690	1740	5	78	93.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-3AB71-1..0	1860	1910	5.8	78	93.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3BB51-1..0	2290	2340	8.3	78	93.5	3300	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1222-3BB71-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1222-3AB11-2..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AB31-2..0	1520	1570	4.4	78	93.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AB51-2..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-3AB71-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3BB51-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1222-3BB71-2..0	2540	2590	8.9	78	93.5	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LH1222-4AB51-2..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4AB71-2..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LH1222-4BB11-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1222-3AC11-3..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AC31-3..0	1550	1590	7.2	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AC51-3..0	1730	1770	8.3	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AC71-3..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-3BC51-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3BC71-3..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1222-4AC31-3..0	2830	2900	21.5	78	94	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LH1222-4AC51-3..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4AC71-3..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LH1222-4BC11-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request
1LH1222-3AC11-4..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LH1222-3AC31-4..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AC51-4..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AC71-4..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3BC51-4..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3BC71-4..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-4AC31-4..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-4AC51-4..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-4AC71-4..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LH1222-4BC11-4..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4BC31-4..0	4200	4300	37.8	78	94.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4BC51-4..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LH1222-4BC71-4..0	5050	5150	48.4	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power								T _B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}			
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 425 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
1500 rpm, 4-pole														
225	302	315	Δ	50.5	1432	95.1	96	96.1	0.86	370	7.7	4869	7500	1LH1213-3AB11-2 ■■■ 4)
365	489	315	Δ	50.6	2324	95	96	96.3	0.88	590	7.1	6972	7500	1LH1213-3AB31-2 ■■■ 4)
400	536	315	Δ	50.6	2546	95	96	96.2	0.89	640	7.3	7893	7500	1LH1213-3AB51-2 ■■■ 4)
480	644	315	Δ	50.6	3056	94.9	96	96.3	0.9	750	7.1	8862	7500	1LH1213-3AB71-2 ■■■ 0
570	764	355	Δ	50.6	3629	95	96.2	96.6	0.89	900	5.7	9073	10200	1LH1213-3BB51-2 ■■■ 0
645	865	355	Δ	50.6	4106	95.3	96.4	96.7	0.89	1020	6.2	11497	10200	1LH1213-3BB71-2 ■■■ 0
710	952	400	Δ	50.4	4520	95.5	96.2	96.7	0.87	1160	6.4	12204	16400	1LH1213-4AB31-2 ■■■ 0
785	1053	400	Δ	50.4	4997	95.8	96.4	96.8	0.87	1280	7.3	14991	16400	1LH1213-4AB51-2 ■■■ 0
945	1267	450	Δ	50.3	6016	96.4	96.8	97.1	0.84	1580	8.4	21658	20700	1LH1213-4BB11-2 ■■■ 0
975	1307	450	Δ	50.2	6207	96.4	96.8	97.1	0.85	1600	9.2	24207	20700	1LH1213-4BB31-2 ■■■ 0
1000 rpm, 6-pole														
210	282	315	Δ	50.5	2005	94.8	95.8	95.9	0.8	370	7.7	5815	7500	1LH1213-3AC11-3 ■■■ 4)
290	389	315	Δ	50.5	2769	94.7	95.8	96	0.83	495	7	7199	7500	1LH1213-3AC31-3 ■■■ 4)
335	449	315	Δ	50.5	3199	94.8	95.9	96.2	0.84	560	6.9	7998	7500	1LH1213-3AC51-3 ■■■ 4)
410	550	315	Δ	50.6	3915	94.7	95.8	96.1	0.84	690	6.7	9788	7500	1LH1213-3AC71-3 ■■■ 0
510	684	355	Δ	50.5	4870	94.7	95.8	96.1	0.86	840	6.9	12175	10200	1LH1213-3BC51-3 ■■■ 0
580	778	355	Δ	50.5	5539	95	96.1	96.3	0.85	960	7.6	15509	10200	1LH1213-3BC71-3 ■■■ 0
650	872	400	Δ	50.4	6207	95.5	96.2	96.8	0.85	1080	6.3	15518	16400	1LH1213-4AC51-3 ■■■ 0
740	992	400	Δ	50.4	7066	95.9	96.5	96.9	0.85	1220	7.3	20491	16400	1LH1213-4AC71-3 ■■■ 0
835	1120	450	Δ	50.4	7974	95.7	96.4	97	0.84	1400	5.6	17543	20700	1LH1213-4BC11-3 ■■■ 0
970	1301	450	Δ	50.3	9263	96.1	96.7	97.1	0.83	1640	6.6	24084	20700	1LH1213-4BC31-3 ■■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1213-3AB11-2..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-7LE33-8AA3	370
1LH1213-3AB31-2..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1213-3AB51-2..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1213-3AB71-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LE38-4AA3	820
1LH1213-3BB51-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1213-3BB71-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LE41-2AA3	1230
1LH1213-4AB31-2..0	2800	2870	13.6	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1213-4AB51-2..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LH1213-4BB11-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1213-4BB31-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1213-3AC11-3..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-7LE33-8AA3	370
1LH1213-3AC31-3..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1213-3AC51-3..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1213-3AC71-3..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1213-3BC51-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1213-3BC71-3..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1213-4AC51-3..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1213-4AC71-3..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1213-4BC11-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request
1LH1213-4BC31-3..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated}				
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
1500 rpm, 4-pole														
245	329	315	Δ	50.5	1560	95.1	96	96.1	0.85	455	7.9	5460	7500	1LH1223-3AB11-2 ■■■ 4)
360	483	315	Δ	50.6	2292	94.9	96	96.3	0.88	650	7.1	6876	7500	1LH1223-3AB31-2 ■■■ 4)
405	543	315	Δ	50.6	2578	95	96	96.3	0.89	720	7.3	7992	7500	1LH1223-3AB51-2 ■■■ 4)
495	664	315	Δ	50.6	3151	94.9	96	96.3	0.9	870	7.1	9138	7500	1LH1223-3AB71-2 ■■■ 0
580	778	355	Δ	50.6	3692	95.1	96.2	96.6	0.89	1020	5.9	9599	10200	1LH1223-3BB51-2 ■■■ 0
670	898	355	Δ/Δ	50.5	4265	95.4	96.5	96.8	0.88	1200	6.5	12369	10200	1LH1223-3BB71-2 ■■■ 0
730	979	400	Δ	50.4	4647	95.5	96.2	96.7	0.88	1320	6.3	12082	16400	1LH1223-4AB51-2 ■■■ 0
835	1120	400	Δ	50.4	5316	95.9	96.5	96.9	0.88	1500	7.2	15948	16400	1LH1223-4AB71-2 ■■■ 0
880	1180	450	Δ	50.2	5602	96.3	96.7	97	0.84	1640	8.6	20727	20700	1LH1223-4BB11-2 ■■■ 0
1000 rpm, 6-pole														
205	275	315	Δ	50.5	1958	94.8	95.8	95.9	0.81	400	7.7	5678	7500	1LH1223-3AC11-3 ■■■ 4)
295	396	315	Δ	50.5	2817	94.7	95.8	96	0.82	570	6.9	7324	7500	1LH1223-3AC31-3 ■■■ 4)
345	463	315	Δ	50.5	3295	94.7	95.8	96.1	0.83	660	6.8	8567	7500	1LH1223-3AC51-3 ■■■ 0
405	543	315	Δ	50.6	3867	94.6	95.8	96.1	0.84	760	6.3	8894	7500	1LH1223-3AC71-3 ■■■ 0
515	691	355	Δ	50.5	4918	94.9	95.9	96.2	0.85	960	7.4	13279	10200	1LH1223-3BC51-3 ■■■ 0
575	771	355	Δ/Δ	50.5	5491	94.9	96	96.3	0.86	1060	7.3	14826	10200	1LH1223-3BC71-3 ■■■ 0
600	805	400	Δ	50.5	5730	95.3	96	96.7	0.85	1120	6	13752	16400	1LH1223-4AC31-3 ■■■ 0
645	865	400	Δ	50.4	6159	95.4	96.1	96.8	0.85	1200	6	14782	16400	1LH1223-4AC51-3 ■■■ 0
760	1019	400	Δ	50.4	7257	95.8	96.4	96.9	0.85	1400	7	19594	16400	1LH1223-4AC71-3 ■■■ 0
875	1173	450	Δ	50.3	8356	96	96.6	97	0.83	1660	6.5	20890	20700	1LH1223-4BC11-3 ■■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1223-3AB11-2..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-1GE35-0AA3	477
1LH1223-3AB31-2..0	1520	1570	4.4	78	93.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1223-3AB51-2..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1223-3AB71-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1223-3BB51-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1223-3BB71-2..0	2540	2590	8.9	78	93.5	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LH1223-4AB51-2..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1223-4AB71-2..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LH1223-4BB11-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1223-3AC11-3..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LH1223-3AC31-3..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1223-3AC51-3..0	1730	1770	8.3	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1223-3AC71-3..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1223-3BC51-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1223-3BC71-3..0	2560	2610	16	78	93.5	2500	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1223-4AC31-3..0	2830	2900	21.5	78	94	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1223-4AC51-3..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1223-4AC71-3..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LH1223-4BC11-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 520 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
305	409	315	Δ	100.8	971	94.6	95.2	95	0.89	400	5.4	2136	7500	1LH1212-3AB12-1	■ ■ ■ 0
405	543	315	Δ	100.7	1289	95.2	95.8	95.6	0.9	520	6.3	3223	7500	1LH1212-3AB32-1	■ ■ ■ 0
450	603	315	Δ	100.7	1432	95.3	95.8	95.6	0.9	580	6.5	3723	7500	1LH1212-3AB52-1	■ ■ ■ 0
470	630	315	Δ	100.8	1496	95.1	95.8	95.6	0.9	610	5.5	3291	7500	1LH1212-3AB72-1	■ ■ ■ 0
545	731	355	Δ	100.6	1735	95.3	95.9	95.5	0.89	710	6	4511	10200	1LH1212-3BB52-1	■ ■ ■ 0
570	764	355	Δ	100.7	1814	95.2	95.9	95.6	0.89	740	5.4	4172	10200	1LH1212-3BB72-1	■ ■ ■ 0
1500 rpm, 4-pole															
285	382	315	Δ	50.7	1814	94	95.2	95.6	0.88	380	6.1	4716	7500	1LH1212-3AB12-2	■ ■ ■ 0
360	483	315	Δ	50.6	2292	94.3	95.5	95.9	0.89	470	6.4	6188	7500	1LH1212-3AB32-2	■ ■ ■ 0
420	563	315	Δ	50.6	2674	94.6	95.6	95.9	0.9	540	7.1	7755	7500	1LH1212-3AB52-2	■ ■ ■ 0
505	677	315	Δ	50.5	3215	95	95.9	96.1	0.89	660	7.8	10288	7500	1LH1212-3AB72-2	■ ■ ■ 0
560	751	355	Δ	50.5	3565	95.1	96.1	96.3	0.88	740	6.8	11052	10200	1LH1212-3BB52-2	■ ■ ■ 0
620	831	355	Δ	50.5	3947	95.3	96.3	96.4	0.88	810	7.4	13025	10200	1LH1212-3BB72-2	■ ■ ■ 0
645	865	400	Δ	50.4	4106	95.3	95.9	96.4	0.88	850	6.4	11086	16400	1LH1212-4AB32-2	■ ■ ■ 0
700	939	400	Δ	50.4	4456	95.5	96.1	96.5	0.88	920	6.9	12477	16400	1LH1212-4AB52-2	■ ■ ■ 0
770	1033	400	Δ	50.4	4902	95.7	96.2	96.6	0.89	1000	7.5	14706	16400	1LH1212-4AB72-2	■ ■ ■ 0
840	1126	450	Δ	50.2	5348	96	96.3	96.5	0.85	1140	8.6	19788	20700	1LH1212-4BB12-2	■ ■ ■ 0
990	1328	450	Δ	50.3	6303	96.1	96.5	96.8	0.87	1300	8.3	21430	20700	1LH1212-4BB32-2	■ ■ ■ 0
1100	1475	450	Δ	50.2	7003	96.3	96.6	96.8	0.85	1480	9.7	28712	20700	1LH1212-4BB52-2	■ ■ ■ 0
1175	1576	450	Δ	50.2	7480	96.3	96.7	96.8	0.87	1560	9.6	29920	20700	1LH1212-4BB72-2	■ ■ ■ 0
1000 rpm, 6-pole															
250	335	315	Δ	50.6	2387	94	95.2	95.5	0.82	355	6.6	5729	7500	1LH1212-3AC12-3	■ ■ ■ 0
300	402	315	Δ	50.6	2865	94.2	95.3	95.6	0.83	420	6.8	7163	7500	1LH1212-3AC32-3	■ ■ ■ 0
335	449	315	Δ	50.6	3199	94.2	95.4	95.7	0.84	465	6.4	7678	7500	1LH1212-3AC52-3	■ ■ ■ 0
375	503	315	Δ	50.6	3581	94.4	95.5	95.8	0.85	510	6.6	8594	7500	1LH1212-3AC72-3	■ ■ ■ 0
460	617	355	Δ	50.4	4393	94.5	95.5	95.7	0.86	620	7.7	12300	10200	1LH1212-3BC52-3	■ ■ ■ 0
515	691	355	Δ	50.4	4918	94.7	95.7	95.7	0.86	690	8.2	14754	10200	1LH1212-3BC72-3	■ ■ ■ 0
575	771	400	Δ	50.4	5491	95.2	95.9	96.4	0.84	790	6.6	14277	16400	1LH1212-4AC32-3	■ ■ ■ 0
625	838	400	Δ	50.4	5968	95.5	96.1	96.5	0.85	850	7.2	16710	16400	1LH1212-4AC52-3	■ ■ ■ 0
675	905	400	Δ	50.4	6446	95.5	96.1	96.6	0.86	910	7	17404	16400	1LH1212-4AC72-3	■ ■ ■ 0
825	1106	450	Δ	50.4	7878	95.6	96.2	96.6	0.84	1140	6.1	18907	20700	1LH1212-4BC12-3	■ ■ ■ 0
935	1254	450	Δ	50.3	8929	95.9	96.4	96.7	0.84	1280	6.9	24108	20700	1LH1212-4BC32-3	■ ■ ■ 0
1010	1354	450	Δ	50.3	9645	96	96.5	96.8	0.85	1360	7.1	26042	20700	1LH1212-4BC52-3	■ ■ ■ 0
1160	1556	450	Δ	50.3	11077	96.1	96.5	96.9	0.86	1560	6.8	28800	20700	1LH1212-4BC72-3	■ ■ ■ 0
750 rpm, 6-pole															
200	268	315	Δ	38.1	2546	92.7	94.1	94.6	0.8	295	6.2	6110	7500	1LH1212-3AC12-4	■ ■ ■ 0
245	329	315	Δ	38.1	3119	93	94.4	94.9	0.82	350	6.4	7486	7500	1LH1212-3AC32-4	■ ■ ■ 0
270	362	315	Δ	38.1	3438	92.9	94.3	95	0.84	380	5.9	7907	7500	1LH1212-3AC52-4	■ ■ ■ 0
310	416	315	Δ	38.1	3947	93.1	94.5	95.1	0.84	435	6	9078	7500	1LH1212-3AC72-4	■ ■ ■ 0
365	489	355	Δ	37.9	4647	93.5	94.7	95.1	0.86	500	7.3	13012	10200	1LH1212-3BC52-4	■ ■ ■ 0
390	523	355	Δ	38	4966	93.4	94.7	95.1	0.87	530	6.8	12912	10200	1LH1212-3BC72-4	■ ■ ■ 0
425	570	400	Δ	37.9	5411	94.2	95.1	95.9	0.85	580	6	12986	16400	1LH1212-4AC32-4	■ ■ ■ 0
480	644	400	Δ	37.9	6112	94.6	95.4	96.1	0.85	660	6.4	15891	16400	1LH1212-4AC52-4	■ ■ ■ 0
525	704	400	Δ	37.9	6685	94.8	95.5	96.2	0.86	710	6.7	18050	16400	1LH1212-4AC72-4	■ ■ ■ 0
585	784	450	Δ	37.8	7448	95.2	95.8	96.3	0.84	810	6.5	19365	20700	1LH1212-4BC12-4	■ ■ ■ 0
655	878	450	Δ	37.8	8340	95.3	95.9	96.4	0.84	900	6.8	22518	20700	1LH1212-4BC32-4	■ ■ ■ 0
710	952	450	Δ	37.8	9040	95.4	96	96.5	0.86	950	6.6	23504	20700	1LH1212-4BC52-4	■ ■ ■ 0
815	1093	450	Δ	37.8	10377	95.6	96.1	96.6	0.86	1100	7	29056	20700	1LH1212-4BC72-4	■ ■ ■ 0

For versions, see Article No. supplements and special versions. ■ ■

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1212-3AB12-1..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AB32-1..0	1480	1530	4.4	78	93.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AB52-1..0	1650	1700	5	78	93.5	3600	1XB7 731	6SL3710-7LG37-4AA3	710
1LH1212-3AB72-1..0	1860	1910	5.8	78	93.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3BB52-1..0	2290	2340	8.3	78	93.5	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3BB72-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-3AB12-2..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AB32-2..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AB52-2..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AB72-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3BB52-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-3BB72-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4AB32-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4AB52-2..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4AB72-2..0	3280	3350	17.6	78	94	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BB12-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-4BB32-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1212-4BB52-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1212-4BB72-2..0	5050	5150	32.6	78	94.5	2000	1XB7 750	On request	On request
1LH1212-3AC12-3..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AC32-3..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3AC52-3..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AC72-3..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BC52-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3BC72-3..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4AC32-3..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-4AC52-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4AC72-3..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BC12-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-4BC32-3..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1212-4BC52-3..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request
1LH1212-4BC72-3..0	5050	5150	48.4	78	94.5	1700	1XB7 750	On request	On request
1LH1212-3AC12-4..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1212-3AC32-4..0	1510	1550	7.2	78	93.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LH1212-3AC52-4..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AC72-4..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3BC52-4..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BC72-4..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4AC32-4..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LH1212-4AC52-4..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4AC72-4..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4BC12-4..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4BC32-4..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BC52-4..0	4630	4730	42.5	78	94.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BC72-4..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated, 5/4}	η _{rated, 4/4}	η _{rated, 3/4}	COSφ _{rated, 4/4}	I _{rated}	I _{LR} /I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
330	443	315	Δ	100.8	1050	94.7	95.4	95.2	0.88	475	5	2100	7500	1LH1222-3AB12-1 ■■ 0	
415	557	315	Δ	100.8	1321	95	95.7	95.6	0.89	590	5.1	2774	7500	1LH1222-3AB32-1 ■■ 0	
460	617	315	Δ	100.8	1464	95.1	95.8	95.6	0.9	640	5.4	3221	7500	1LH1222-3AB52-1 ■■ 0	
520	697	315	Δ	100.8	1655	95.3	96	95.8	0.91	720	5.6	3641	7500	1LH1222-3AB72-1 ■■ 0	
545	731	355	Δ	100.7	1735	95.2	95.9	95.6	0.89	770	5.1	3817	10200	1LH1222-3BB52-1 ■■ 0	
615	825	355	Δ	100.6	1958	95.5	96.1	95.8	0.89	860	5.9	4895	10200	1LH1222-3BB72-1 ■■ 0	
1500 rpm, 4-pole															
305	409	315	Δ	50.7	1942	93.9	95.2	95.6	0.88	440	5.5	4661	7500	1LH1222-3AB12-2 ■■ 0	
415	557	315	Δ	50.6	2642	94.6	95.7	96	0.88	590	6.6	7398	7500	1LH1222-3AB32-2 ■■ 0	
455	610	315	Δ	50.6	2897	94.7	95.7	96	0.9	640	6.7	8112	7500	1LH1222-3AB52-2 ■■ 0	
510	684	315	Δ	50.6	3247	94.7	95.8	96.1	0.9	710	6.6	8767	7500	1LH1222-3AB72-2 ■■ 0	
615	825	355	Δ	50.5	3915	95.3	96.3	96.4	0.88	870	6.8	11745	10200	1LH1222-3BB52-2 ■■ 0	
630	845	355	Δ	50.6	4011	95.2	96.2	96.5	0.89	890	6.2	11231	10200	1LH1222-3BB72-2 ■■ 0	
700	939	400	Δ	50.4	4456	95.4	96	96.5	0.87	1000	6.4	11586	16400	1LH1222-4AB32-2 ■■ 0	
755	1012	400	Δ	50.4	4806	95.6	96.2	96.6	0.88	1080	7.2	13937	16400	1LH1222-4AB52-2 ■■ 0	
840	1126	400	Δ	50.4	5348	95.9	96.4	96.7	0.88	1200	8	17648	16400	1LH1222-4AB72-2 ■■ 0	
890	1194	450	Δ	50.3	5666	96.1	96.5	96.7	0.85	1300	8.3	19831	20700	1LH1222-4BB12-2 ■■ 0	
1015	1361	450	Δ	50.2	6462	96.3	96.6	96.7	0.85	1480	9.4	25848	20700	1LH1222-4BB32-2 ■■ 0	
1075	1442	450	Δ	50.2	6844	96.3	96.6	96.8	0.86	1560	8.9	25323	20700	1LH1222-4BB52-2 ■■ 0	
1000 rpm, 6-pole															
255	342	315	Δ	50.7	2435	93.8	95.1	95.5	0.82	395	5.8	5357	7500	1LH1222-3AC12-3 ■■ 0	
330	443	315	Δ	50.6	3151	94.3	95.4	95.8	0.83	500	6.4	7562	7500	1LH1222-3AC32-3 ■■ 0	
370	496	315	Δ	50.6	3533	94.4	95.5	95.9	0.84	550	6.3	8126	7500	1LH1222-3AC52-3 ■■ 0	
415	557	315	Δ	50.6	3963	94.6	95.7	96	0.84	620	6.5	9511	7500	1LH1222-3AC72-3 ■■ 0	
495	664	355	Δ	50.5	4727	94.5	95.5	95.8	0.86	720	6.9	11818	10200	1LH1222-3BC52-3 ■■ 0	
560	751	355	Δ	50.5	5348	94.7	95.7	95.9	0.87	810	7.4	14440	10200	1LH1222-3BC72-3 ■■ 0	
625	838	400	Δ	50.4	5968	95.3	96	96.5	0.86	910	6.1	14323	16400	1LH1222-4AC52-3 ■■ 0	
710	952	400	Δ	50.4	6780	95.5	96.1	96.6	0.86	1040	6.6	17628	16400	1LH1222-4AC72-3 ■■ 0	
825	1106	450	Δ	50.4	7878	95.7	96.3	96.7	0.84	1220	6.2	18907	20700	1LH1222-4BC12-3 ■■ 0	
925	1240	450	Δ	50.4	8833	95.8	96.4	96.8	0.85	1360	5.9	20316	20700	1LH1222-4BC32-3 ■■ 0	
1080	1448	450	Δ	50.3	10313	96.1	96.6	96.9	0.85	1580	7	27845	20700	1LH1222-4BC52-3 ■■ 0	
750 rpm, 6-pole															
215	288	315	Δ	38.2	2737	92.6	94.1	94.8	0.81	340	5.7	6021	7500	1LH1222-3AC12-4 ■■ 0	
265	355	315	Δ	38.1	3374	93.1	94.4	95	0.83	405	5.9	7760	7500	1LH1222-3AC32-4 ■■ 0	
295	396	315	Δ	38.2	3756	92.9	94.4	95.1	0.84	445	5.5	7888	7500	1LH1222-3AC52-4 ■■ 0	
315	422	315	Δ	38.1	4011	93.1	94.6	95.2	0.85	470	5.6	8423	7500	1LH1222-3AC72-4 ■■ 0	
390	523	355	Δ	38	4966	93.4	94.7	95.2	0.87	570	6.5	12415	10200	1LH1222-3BC52-4 ■■ 0	
430	577	355	Δ	38	5475	93.5	94.8	95.3	0.87	630	6.6	14235	10200	1LH1222-3BC72-4 ■■ 0	
460	617	400	Δ	38	5857	94.2	95.2	95.9	0.85	680	5.8	13471	16400	1LH1222-4AC32-4 ■■ 0	
515	691	400	Δ	37.9	6557	94.6	95.5	96.1	0.85	760	6.5	17048	16400	1LH1222-4AC52-4 ■■ 0	
575	771	400	Δ	37.9	7321	94.9	95.7	96.3	0.86	840	6.8	20499	16400	1LH1222-4AC72-4 ■■ 0	
590	791	450	Δ	37.8	7512	95.2	95.9	96.3	0.84	880	6.8	20282	20700	1LH1222-4BC12-4 ■■ 0	
665	892	450	Δ	37.8	8467	95.4	96	96.5	0.85	980	6.6	22014	20700	1LH1222-4BC32-4 ■■ 0	
760	1019	450	Δ	37.8	9677	95.6	96.2	96.6	0.85	1120	6.7	26128	20700	1LH1222-4BC52-4 ■■ 0	
860	1153	450	Δ	37.8	10950	95.6	96.2	96.7	0.86	1260	6.7	29565	20700	1LH1222-4BC72-4 ■■ 0	

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1222-3AB12-1..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3AB32-1..0	1480	1530	4.4	78	93.5	3600	1XB7 731	6SL3710-1GF37-4AA3	710
1LH1222-3AB52-1..0	1690	1740	5	78	93.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3AB72-1..0	1860	1910	5.8	78	93.5	3600	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1222-3BB52-1..0	2290	2340	8.3	78	93.5	3300	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1222-3BB72-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-3AB12-2..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LH1222-3AB32-2..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LH1222-3AB52-2..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3AB72-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3BB52-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-3BB72-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4AB32-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4AB52-2..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1222-4AB72-2..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1222-4BB12-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1222-4BB32-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1222-4BB52-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1222-3AC12-3..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LH1222-3AC32-3..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3AC52-3..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3AC72-3..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3BC52-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1222-3BC72-3..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-2GF38-6AA3	836
1LH1222-4AC52-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4AC72-3..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-2GF41-4AA3	1314
1LH1222-4BC12-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1222-4BC32-3..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1222-4BC52-3..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request
1LH1222-3AC12-4..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LH1222-3AC32-4..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LH1222-3AC52-4..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LH1222-3AC72-4..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3BC52-4..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-1GF37-4AA3	710
1LH1222-3BC72-4..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-4AC32-4..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-4AC52-4..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1222-4AC72-4..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4BC12-4..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4BC32-4..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4BC52-4..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1222-4BC72-4..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 520 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 															
1500 rpm, 4-pole															
210	282	315	Δ	50.5	1337	94.9	96	95.9	0.86	280	8.2	4813	7500	1LH1213-3AB12-2 ■■■ 0	
290	389	315	Δ	50.5	1846	95	96	96.2	0.88	380	7.8	6276	7500	1LH1213-3AB32-2 ■■■ 0 ⁴⁾	
365	489	315	Δ	50.5	2324	95	96	96.2	0.89	475	8	7902	7500	1LH1213-3AB52-2 ■■■ 0 ⁴⁾	
505	677	315	Δ	50.5	3215	95	96	96.2	0.89	660	7.8	10288	7500	1LH1213-3AB72-2 ■■■ 0	
575	771	355	Δ	50.5	3661	95.2	96.3	96.6	0.88	750	6.7	10983	10200	1LH1213-3BB52-2 ■■■ 0	
640	858	355	Δ	50.5	4074	95.4	96.5	96.7	0.88	840	7.1	13037	10200	1LH1213-3BB72-2 ■■■ 0	
660	885	400	Δ	50.4	4202	95.3	96	96.6	0.87	880	6.2	11345	16400	1LH1213-4AB32-2 ■■■ 0	
720	966	400	Δ	50.4	4584	95.6	96.2	96.7	0.88	940	6.8	12835	16400	1LH1213-4AB52-2 ■■■ 0	
795	1066	400	Δ	50.4	5061	95.8	96.4	96.8	0.88	1040	7.2	15183	16400	1LH1213-4AB72-2 ■■■ 0	
875	1173	450	Δ	50.3	5570	96.2	96.6	96.9	0.85	1180	8.4	19495	20700	1LH1213-4BB12-2 ■■■ 0	
1025	1375	450	Δ	50.3	6525	96.3	96.8	97.1	0.87	1360	7.9	21533	20700	1LH1213-4BB32-2 ■■■ 0	
1160	1556	450	Δ	50.2	7385	96.5	96.9	97.2	0.85	1560	9.2	28802	20700	1LH1213-4BB52-2 ■■■ 0	
1230	1649	450	Δ	50.2	7830	96.5	96.9	97.2	0.87	1620	9.3	29754	20700	1LH1213-4BB72-2 ■■■ 0	
1000 rpm, 6-pole															
195	261	315	Δ	50.4	1862	94.7	95.7	95.8	0.8	285	8.2	5772	7500	1LH1213-3AC12-3 ■■■ 0 ⁴⁾	
260	349	315	Δ	50.5	2483	94.7	95.8	95.9	0.82	365	7.8	7201	7500	1LH1213-3AC32-3 ■■■ 0 ⁴⁾	
300	402	315	Δ	50.5	2865	94.7	95.8	96	0.84	415	7.2	7736	7500	1LH1213-3AC52-3 ■■■ 0 ⁴⁾	
340	456	315	Δ	50.5	3247	94.8	95.8	96.1	0.84	470	7.2	8767	7500	1LH1213-3AC72-3 ■■■ 0 ⁴⁾	
470	630	355	Δ	50.5	4488	94.7	95.8	96.1	0.86	630	7.6	12566	10200	1LH1213-3BC52-3 ■■■ 0	
530	711	355	Δ	50.4	5061	94.9	95.9	96.1	0.86	710	8	14677	10200	1LH1213-3BC72-3 ■■■ 0	
585	784	400	Δ	50.4	5586	95.3	96	96.6	0.84	810	6.4	13965	16400	1LH1213-4AC32-3 ■■■ 0	
640	858	400	Δ	50.4	6112	95.6	96.3	96.8	0.84	880	7	17114	16400	1LH1213-4AC52-3 ■■■ 0	
695	932	400	Δ	50.4	6637	95.6	96.3	96.8	0.86	930	6.8	17920	16400	1LH1213-4AC72-3 ■■■ 0	
835	1120	450	Δ	50.4	7974	95.8	96.4	96.9	0.84	1140	6.1	18340	20700	1LH1213-4BC12-3 ■■■ 0	
950	1274	450	Δ	50.3	9072	96	96.6	97	0.83	1320	6.7	23587	20700	1LH1213-4BC32-3 ■■■ 0	
1030	1381	450	Δ	50.3	9836	96.1	96.7	97.1	0.84	1400	6.9	26557	20700	1LH1213-4BC52-3 ■■■ 0	
1180	1582	450	Δ	50.3	11268	96.2	96.7	97.2	0.85	1600	6.6	29297	20700	1LH1213-4BC72-3 ■■■ 0	

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1213-3AB12-2..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1213-3AB32-2..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1213-3AB52-2..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-3AB72-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-3BB52-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1213-3BB72-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4AB32-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4AB52-2..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1213-4AB72-2..0	3280	3350	17.6	78	94	2200	1XB7 740	6SL3710-7LG41-3AA3	1230
1LH1213-4BB12-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1213-4BB32-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1213-4BB52-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1213-4BB72-2..0	5050	5150	32.6	78	94.5	2000	1XB7 750	On request	On request
1LH1213-3AC12-3..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1213-3AC32-3..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1213-3AC52-3..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1213-3AC72-3..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-3BC52-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-3BC72-3..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-4AC32-3..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4AC52-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4AC72-3..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1213-4BC12-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1213-4BC32-3..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1213-4BC52-3..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request
1LH1213-4BC72-3..0	5050	5150	48.4	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
1500 rpm, 4-pole														
220	295	315	Δ	50.5	1401	94.9	96	96	0.87	315	7.7	4623	7500	1LH1223-3AB12-2 ■■■ 0
370	496	315	Δ	50.5	2355	95.1	96	96.3	0.88	530	7.4	7536	7500	1LH1223-3AB32-2 ■■■ 0 ⁴⁾
410	550	315	Δ	50.6	2610	95.1	96	96.3	0.89	580	7.4	8091	7500	1LH1223-3AB52-2 ■■■ 0 ⁴⁾
470	630	315	Δ	50.6	2992	94.9	96	96.3	0.9	650	7.2	8976	7500	1LH1223-3AB72-2 ■■■ 0
630	845	355	Δ	50.5	4011	95.4	96.4	96.7	0.88	890	6.6	12033	10200	1LH1223-3BB52-2 ■■■ 0
645	865	355	Δ	50.6	4106	95.2	96.3	96.7	0.89	910	6	11086	10200	1LH1223-3BB72-2 ■■■ 0
715	959	400	Δ	50.4	4552	95.4	96.1	96.7	0.87	1020	6.3	11835	16400	1LH1223-4AB32-2 ■■■ 0
775	1039	400	Δ	50.4	4934	95.7	96.3	96.8	0.87	1120	6.9	14309	16400	1LH1223-4AB52-2 ■■■ 0
870	1167	400	Δ	50.4	5539	96	96.5	96.9	0.88	1240	7.7	17725	16400	1LH1223-4AB72-2 ■■■ 0
940	1261	450	Δ	50.3	5984	96.3	96.8	97.1	0.85	1380	7.8	19747	20700	1LH1223-4BB12-2 ■■■ 0
1075	1442	450	Δ	50.2	6844	96.5	96.9	97.2	0.85	1560	8.9	26007	20700	1LH1223-4BB32-2 ■■■ 0
1125	1509	450	Δ	50.2	7162	96.5	96.9	97.2	0.86	1620	8.5	25783	20700	1LH1223-4BB52-2 ■■■ 0
1000 rpm, 6-pole														
195	261	315	Δ	50.5	1862	94.8	95.8	95.9	0.81	300	7.6	5214	7500	1LH1223-3AC12-3 ■■■ 0 ⁴⁾
295	396	315	Δ	50.5	2817	94.7	95.8	96	0.82	450	7.1	7606	7500	1LH1223-3AC32-3 ■■■ 0 ⁴⁾
335	449	315	Δ	50.5	3199	94.8	95.9	96.1	0.84	500	6.9	7998	7500	1LH1223-3AC52-3 ■■■ 0 ⁴⁾
405	543	315	Δ	50.6	3867	94.7	95.8	96.1	0.84	610	6.5	9281	7500	1LH1223-3AC72-3 ■■■ 0
505	677	355	Δ	50.5	4822	94.6	95.8	96.1	0.86	740	6.7	12055	10200	1LH1223-3BC52-3 ■■■ 0
575	771	355	Δ	50.5	5491	94.9	96	96.2	0.86	840	7.1	14826	10200	1LH1223-3BC72-3 ■■■ 0
640	858	400	Δ	50.4	6112	95.4	96.1	96.7	0.86	930	6	14058	16400	1LH1223-4AC52-3 ■■■ 0
725	972	400	Δ	50.4	6923	95.6	96.3	96.9	0.86	1060	6.5	18000	16400	1LH1223-4AC72-3 ■■■ 0
835	1120	450	Δ	50.4	7974	95.9	96.5	97	0.84	1240	6.1	18340	20700	1LH1223-4BC12-3 ■■■ 0
935	1254	450	Δ	50.4	8929	95.9	96.5	97	0.85	1380	5.8	20537	20700	1LH1223-4BC32-3 ■■■ 0
1100	1475	450	Δ	50.3	10504	96.2	96.8	97.2	0.84	1620	6.8	27310	20700	1LH1223-4BC52-3 ■■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 500 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1223-3AB12-2..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-1GF33-3AA3	320
1LH1223-3AB32-2..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1223-3AB52-2..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LH1223-3AB72-2..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1223-3BB52-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-3BB72-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AB32-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AB52-2..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1223-4AB72-2..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1223-4BB12-2..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1223-4BB32-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1223-4BB52-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1223-3AC12-3..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LH1223-3AC32-3..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LH1223-3AC52-3..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1223-3AC72-3..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1223-3BC52-3..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1223-3BC72-3..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AC52-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AC72-3..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1223-4BC12-3..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1223-4BC32-3..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1223-4BC52-3..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power									T_B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
Rated motor voltage 730 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
310	416	315	Δ	100.8	987	94.5	95.2	95	0.88	295	5.1	2073	7500	1LH1212-3AB13-1 ■■■ 0	
405	543	315	Δ	100.7	1289	95.1	95.7	95.5	0.9	370	5.9	3094	7500	1LH1212-3AB33-1 ■■■ 0	
465	624	315	Δ	100.7	1480	95.3	95.9	95.6	0.9	425	6.6	3996	7500	1LH1212-3AB53-1 ■■■ 0	
520	697	315	Δ	100.7	1655	95.4	96	95.8	0.91	470	6.4	4138	7500	1LH1212-3AB73-1 ■■■ 0	
560	751	355	Δ	100.6	1783	95.3	95.9	95.6	0.89	520	5.6	4279	10200	1LH1212-3BB53-1 ■■■ 0	
580	778	355	Δ	100.7	1846	95.2	95.9	95.6	0.89	540	5.1	4061	10200	1LH1212-3BB73-1 ■■■ 0	
1500 rpm, 4-pole															
290	389	315	Δ	50.6	1846	94	95.2	95.6	0.88	275	6.2	4984	7500	1LH1212-3AB13-2 ■■■ 0	
375	503	315	Δ	50.6	2387	94.5	95.6	95.9	0.88	355	6.9	7161	7500	1LH1212-3AB33-2 ■■■ 0	
430	577	315	Δ	50.6	2737	94.7	95.7	96	0.89	400	7.3	8211	7500	1LH1212-3AB53-2 ■■■ 0	
490	657	315	Δ	50.5	3119	94.9	95.8	96.1	0.9	450	7.6	9669	7500	1LH1212-3AB73-2 ■■■ 0	
555	744	355	Δ	50.5	3533	95.1	96.1	96.3	0.89	510	6.6	10246	10200	1LH1212-3BB53-2 ■■■ 0	
600	805	355	Δ	50.5	3820	95.1	96.2	96.4	0.89	550	6.7	11460	10200	1LH1212-3BB73-2 ■■■ 0	
670	898	400	Δ	50.4	4265	95.4	96	96.4	0.87	630	6.9	11942	16400	1LH1212-4AB33-2 ■■■ 0	
710	952	400	Δ	50.4	4520	95.5	96.1	96.5	0.88	660	7.2	13108	16400	1LH1212-4AB53-2 ■■■ 0	
800	1073	400	Δ	50.3	5093	95.9	96.3	96.6	0.87	760	8.5	17826	16400	1LH1212-4AB73-2 ■■■ 0	
910	1220	450	Δ	50.3	5793	96.1	96.5	96.7	0.86	870	8.2	19696	20700	1LH1212-4BB13-2 ■■■ 0	
995	1334	450	Δ	50.2	6334	96.2	96.5	96.7	0.85	960	8.9	24069	20700	1LH1212-4BB33-2 ■■■ 0	
1100	1475	450	Δ	50.2	7003	96.3	96.6	96.7	0.85	1060	9.7	28712	20700	1LH1212-4BB53-2 ■■■ 0	
1265	1696	450	Δ	50.2	8053	96.5	96.7	96.9	0.86	1200	10.3	34628	20700	1LH1212-4BB73-2 ■■■ 0	
1000 rpm, 6-pole															
240	322	315	Y	50.6	2292	93.9	95.1	95.4	0.82	245	6.6	5730	7500	1LH1212-3AC13-3 ■■■ 0	
295	396	315	Y	50.6	2817	94.2	95.3	95.6	0.83	295	6.7	7043	7500	1LH1212-3AC33-3 ■■■ 0	
340	456	315	Y	50.6	3247	94.3	95.4	95.7	0.84	335	6.6	7793	7500	1LH1212-3AC53-3 ■■■ 0	
385	516	315	Δ	50.6	3676	94.4	95.6	95.9	0.85	375	6.6	8822	7500	1LH1212-3AC73-3 ■■■ 0	
455	610	355	Δ	50.4	4345	94.5	95.5	95.7	0.86	440	7.6	12166	10200	1LH1212-3BC53-3 ■■■ 0	
520	697	355	Δ	50.4	4966	94.7	95.7	95.7	0.86	500	8.1	14898	10200	1LH1212-3BC73-3 ■■■ 0	
550	738	400	Δ	50.4	5252	95	95.7	96.3	0.85	530	6	12080	16400	1LH1212-4AC33-3 ■■■ 0	
620	831	400	Δ	50.4	5921	95.4	96	96.5	0.85	600	7	15987	16400	1LH1212-4AC53-3 ■■■ 0	
690	925	400	Y	50.3	6589	95.7	96.2	96.6	0.85	670	7.6	19767	16400	1LH1212-4AC73-3 ■■■ 0	
830	1113	450	Δ	50.3	7926	95.7	96.3	96.7	0.84	810	6.3	19022	20700	1LH1212-4BC13-3 ■■■ 0	
910	1220	450	Δ	50.3	8690	95.8	96.4	96.7	0.85	880	6.6	21725	20700	1LH1212-4BC33-3 ■■■ 0	
1030	1381	450	Δ	50.3	9836	96	96.5	96.8	0.85	990	7	26557	20700	1LH1212-4BC53-3 ■■■ 0	
1170	1569	450	Δ	50.3	11173	96.2	96.6	96.9	0.85	1120	7.1	30167	20700	1LH1212-4BC73-3 ■■■ 0	
750 rpm, 6-pole															
195	261	315	Y	38.1	2483	92.6	94	94.6	0.81	205	6.2	5959	7500	1LH1212-3AC13-4 ■■■ 0	
250	335	315	Y	38.1	3183	93	94.4	95	0.83	250	6.2	7321	7500	1LH1212-3AC33-4 ■■■ 0	
275	369	315	Δ	38.1	3501	93	94.4	95	0.84	275	6	8052	7500	1LH1212-3AC53-4 ■■■ 0	
310	416	315	Δ	38.1	3947	93.1	94.5	95.2	0.85	305	5.9	8683	7500	1LH1212-3AC73-4 ■■■ 0	
360	483	355	Y	37.9	4584	93.5	94.7	95.1	0.86	350	7.3	12835	10200	1LH1212-3BC53-4 ■■■ 0	
410	550	355	Δ	37.9	5220	93.6	94.8	95.2	0.87	395	7.3	14616	10200	1LH1212-3BC73-4 ■■■ 0	
440	590	400	Δ	37.9	5602	94.3	95.2	95.9	0.85	430	6.2	14005	16400	1LH1212-4AC33-4 ■■■ 0	
485	650	400	Δ	37.9	6175	94.7	95.5	96.1	0.85	475	6.7	17290	16400	1LH1212-4AC53-4 ■■■ 0	
525	704	400	Δ	37.9	6685	94.8	95.5	96.2	0.86	510	6.5	18050	16400	1LH1212-4AC73-4 ■■■ 0	
570	764	450	Δ	37.8	7257	95.2	95.8	96.3	0.84	560	6.6	18868	20700	1LH1212-4BC13-4 ■■■ 0	
655	878	450	Δ	37.8	8340	95.3	95.9	96.4	0.84	640	6.9	22518	20700	1LH1212-4BC33-4 ■■■ 0	
730	979	450	Δ	37.8	9295	95.4	96	96.5	0.85	710	6.8	25097	20700	1LH1212-4BC53-4 ■■■ 0	
850	1140	450	Δ	37.8	10823	95.6	96.2	96.6	0.85	820	7	30304	20700	1LH1212-4BC73-4 ■■■ 0	

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1212-3AB13-1..0	1300	1340	3.5	78	93.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1212-3AB33-1..0	1480	1530	4.4	78	93.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AB53-1..0	1650	1700	5	78	93.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3AB73-1..0	1820	1870	5.8	78	93.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BB53-1..0	2250	2300	8.3	78	93.5	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BB73-1..0	2370	2430	8.9	78	93.5	3300	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AB13-2..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1212-3AB33-2..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AB53-2..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AB73-2..0	1820	1870	5.8	78	93.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3BB53-2..0	2250	2300	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BB73-2..0	2370	2430	8.9	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4AB33-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4AB53-2..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4AB73-2..0	3280	3350	17.6	78	94	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-4BB13-2..0	3980	4080	22.8	78	94.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4BB33-2..0	4260	4360	25.5	78	94.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BB53-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-4BB73-2..0	5050	5150	32.6	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-3AC13-3..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LH1212-3AC33-3..0	1510	1550	7.2	78	93.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1212-3AC53-3..0	1690	1730	8.3	78	93.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LH1212-3AC73-3..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3BC53-3..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3BC73-3..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4AC33-3..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4AC53-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4AC73-3..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4BC13-3..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4BC33-3..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4BC53-3..0	4630	4730	42.5	78	94.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BC73-3..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-3AC13-4..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG32-2AA3	208
1LH1212-3AC33-4..0	1510	1550	7.2	78	93.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LH1212-3AC53-4..0	1690	1730	8.3	78	93.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1212-3AC73-4..0	1800	1840	9.1	78	93.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1212-3BC53-4..0	2240	2300	14.5	78	93.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LH1212-3BC73-4..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-4AC33-4..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-4AC53-4..0	3000	3070	24	78	94	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4AC73-4..0	3230	3300	27	78	94	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4BC13-4..0	3860	3960	33.8	78	94.5	1700	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4BC33-4..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4BC53-4..0	4630	4730	42.5	78	94.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4BC73-4..0	5050	5150	48.4	78	94.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	COSφ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 660 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3000 rpm, 4-pole															
310	416	315	Δ	100.8	987	94.6	95.3	95	0.89	320	5.4	2171	7500	1LH1222-3AB13-1 ■■■ 0	
390	523	315	Δ	100.7	1241	95.1	95.7	95.5	0.9	395	5.9	2978	7500	1LH1222-3AB33-1 ■■■ 0	
445	597	315	Δ	100.6	1416	95.3	95.9	95.5	0.9	450	6.8	3823	7500	1LH1222-3AB53-1 ■■■ 0	
510	684	315	Δ	100.7	1623	95.4	96	95.8	0.91	510	6.6	4220	7500	1LH1222-3AB73-1 ■■■ 0	
540	724	355	Δ	100.6	1719	95.3	95.9	95.5	0.89	550	5.9	4298	10200	1LH1222-3BB53-1 ■■■ 0	
550	738	355	Δ	100.7	1751	95.2	95.9	95.6	0.89	560	5.4	4027	10200	1LH1222-3BB73-1 ■■■ 0	
1500 rpm, 4-pole															
295	396	315	Δ	50.7	1878	94.1	95.2	95.6	0.88	310	6.1	4883	7500	1LH1222-3AB13-2 ■■■ 0	
370	496	315	Δ	50.6	2355	94.4	95.5	95.9	0.89	380	6.6	6594	7500	1LH1222-3AB33-2 ■■■ 0	
410	550	315	Δ	50.6	2610	94.6	95.6	95.9	0.9	415	7.2	7569	7500	1LH1222-3AB53-2 ■■■ 0	
490	657	315	Δ	50.6	3119	94.8	95.8	96.1	0.9	495	7.4	9357	7500	1LH1222-3AB73-2 ■■■ 0	
565	758	355	Δ	50.5	3597	95.3	96.2	96.4	0.88	580	7.4	11870	10200	1LH1222-3BB53-2 ■■■ 0	
585	784	355	Δ	50.5	3724	95.1	96.2	96.4	0.89	600	6.6	11172	10200	1LH1222-3BB73-2 ■■■ 0	
660	885	400	Δ	50.4	4202	95.4	96	96.4	0.87	690	6.7	11766	16400	1LH1222-4AB33-2 ■■■ 0	
690	925	400	Δ	50.4	4393	95.6	96.1	96.5	0.88	710	7.3	13179	16400	1LH1222-4AB53-2 ■■■ 0	
765	1026	400	Y	50.4	4870	95.8	96.3	96.6	0.88	790	7.9	16071	16400	1LH1222-4AB73-2 ■■■ 0	
900	1207	450	Δ	50.2	5730	96.1	96.5	96.6	0.85	960	8.5	20628	20700	1LH1222-4BB13-2 ■■■ 0	
1005	1348	450	Δ	50.2	6398	96.2	96.6	96.7	0.85	1080	9	24312	20700	1LH1222-4BB33-2 ■■■ 0	
1025	1375	450	Δ	50.2	6525	96.2	96.5	96.6	0.85	1100	9.9	27405	20700	1LH1222-4BB53-2 ■■■ 0	
1170	1569	450	Δ	50.2	7448	96.3	96.6	96.7	0.85	1240	10.8	33516	20700	1LH1222-4BB73-2 ■■■ 0	
1000 rpm, 6-pole															
240	322	315	Y	50.6	2292	93.9	95	95.4	0.82	270	6.6	5501	7500	1LH1222-3AC13-3 ■■■ 0	
290	389	315	Δ	50.5	2769	94.3	95.4	95.6	0.83	320	7	7199	7500	1LH1222-3AC33-3 ■■■ 0	
345	463	315	Δ	50.6	3295	94.3	95.5	95.8	0.84	375	6.6	7908	7500	1LH1222-3AC53-3 ■■■ 0	
380	510	315	Δ	50.5	3629	94.5	95.6	95.8	0.84	415	7	9435	7500	1LH1222-3AC73-3 ■■■ 0	
450	603	355	Δ	50.4	4297	94.5	95.5	95.7	0.86	480	7.5	12032	10200	1LH1222-3BC53-3 ■■■ 0	
510	684	355	Δ	50.4	4870	94.7	95.7	95.7	0.86	540	8.3	14610	10200	1LH1222-3BC73-3 ■■■ 0	
535	717	400	Δ	50.4	5109	95	95.7	96.3	0.85	580	5.9	12262	16400	1LH1222-4AC33-3 ■■■ 0	
615	825	400	Δ	50.4	5873	95.5	96.1	96.5	0.85	660	7.1	16444	16400	1LH1222-4AC53-3 ■■■ 0	
675	905	400	Δ	50.4	6446	95.6	96.2	96.6	0.86	710	7.5	18693	16400	1LH1222-4AC73-3 ■■■ 0	
825	1106	450	Δ	50.3	7878	95.7	96.3	96.7	0.84	890	6.6	19695	20700	1LH1222-4BC13-3 ■■■ 0	
915	1227	450	Δ	50.3	8738	95.9	96.4	96.7	0.84	990	7	23593	20700	1LH1222-4BC33-3 ■■■ 0	
1015	1361	450	Δ	50.3	9693	95.9	96.5	96.8	0.85	1080	6.7	25202	20700	1LH1222-4BC53-3 ■■■ 0	
1085	1455	450	Δ	50.3	10361	96	96.5	96.8	0.86	1140	7.2	29011	20700	1LH1222-4BC73-3 ■■■ 0	
750 rpm, 6-pole															
180	241	315	Y	38.1	2292	92.8	94.1	94.7	0.81	205	6.4	5730	7500	1LH1222-3AC13-4 ■■■ 0	
255	342	315	Δ	38.1	3247	93.1	94.5	95	0.82	290	6.3	7793	7500	1LH1222-3AC33-4 ■■■ 0	
280	375	315	Δ	38.1	3565	93.1	94.5	95.1	0.84	310	6.1	8200	7500	1LH1222-3AC53-4 ■■■ 0	
295	396	315	Δ	38.1	3756	93.1	94.5	95.1	0.85	320	6.1	8639	7500	1LH1222-3AC73-4 ■■■ 0	
365	489	355	Δ	37.9	4647	93.5	94.7	95.1	0.86	390	7.3	13012	10200	1LH1222-3BC53-4 ■■■ 0	
395	530	355	Δ	38	5029	93.5	94.7	95.1	0.87	420	7.2	13578	10200	1LH1222-3BC73-4 ■■■ 0	
435	583	400	Δ	37.9	5539	94.4	95.2	95.9	0.85	470	6.3	14401	16400	1LH1222-4AC33-4 ■■■ 0	
475	637	400	Δ	37.9	6048	94.6	95.4	96.1	0.85	510	6.6	16330	16400	1LH1222-4AC53-4 ■■■ 0	
530	711	400	Δ	37.9	6748	94.8	95.6	96.2	0.86	560	7.1	19569	16400	1LH1222-4AC73-4 ■■■ 0	
590	791	450	Δ	37.8	7512	95.2	95.8	96.3	0.83	650	6.8	20282	20700	1LH1222-4BC13-4 ■■■ 0	
650	872	450	Δ	37.8	8276	95.3	96	96.4	0.84	710	6.8	23173	20700	1LH1222-4BC33-4 ■■■ 0	
735	986	450	Δ	37.8	9358	95.5	96.1	96.5	0.85	790	6.9	26202	20700	1LH1222-4BC53-4 ■■■ 0	
830	1113	450	Δ	37.8	10568	95.6	96.2	96.6	0.85	890	7.1	29590	20700	1LH1222-4BC73-4 ■■■ 0	

For versions, see Article No. supplements and special versions. ■■■

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1222-3AB13-1..0	1300	1340	3.5	78	93.5	3600	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1222-3AB33-1..0	1480	1530	4.4	78	93.5	3600	1XB7 731	6SL3710-1GH34-1AA3	400
1LH1222-3AB53-1..0	1650	1700	5	78	93.5	3600	1XB7 731	6SL3710-1GH34-7AA3	452
1LH1222-3AB73-1..0	1820	1870	5.8	78	93.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-3BB53-1..0	2250	2300	8.3	78	93.5	3300	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-3BB73-1..0	2370	2430	8.9	78	93.5	3300	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-3AB13-2..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1222-3AB33-2..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-1GH34-1AA3	400
1LH1222-3AB53-2..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-1GH34-7AA3	452
1LH1222-3AB73-2..0	1820	1870	5.8	78	93.5	3000	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-3BB53-2..0	2250	2300	8.3	78	93.5	2600	1XB7 731	6SL3710-1GH37-4AA3	710
1LH1222-3BB73-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1222-4AB33-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1222-4AB53-2..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1222-4AB73-2..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-1GH38-1AA3	790
1LH1222-4BB13-2..0	3980	4080	22.8	78	94.5	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LH1222-4BB33-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1222-4BB53-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1222-4BB73-2..0	5050	5150	32.6	78	94.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1222-3AC13-3..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1222-3AC33-3..0	1510	1550	7.2	78	93.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1222-3AC53-3..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LH1222-3AC73-3..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-1GH34-7AA3	452
1LH1222-3BC53-3..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-3BC73-3..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-4AC33-3..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-1GH37-4AA3	710
1LH1222-4AC53-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1222-4AC73-3..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1222-4BC13-3..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LH1222-4BC33-3..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LH1222-4BC53-3..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1222-4BC73-3..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1222-3AC13-4..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GH32-2AA3	208
1LH1222-3AC33-4..0	1510	1550	7.2	78	93.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1222-3AC53-4..0	1690	1730	8.3	78	93.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1222-3AC73-4..0	1800	1840	9.1	78	93.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1222-3BC53-4..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LH1222-3BC73-4..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LH1222-4AC33-4..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-4AC53-4..0	3000	3070	24	78	94	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-4AC73-4..0	3230	3300	27	78	94	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1222-4BC13-4..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1222-4BC33-4..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1222-4BC53-4..0	4630	4730	42.5	78	94.5	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LH1222-4BC73-4..0	5050	5150	48.4	78	94.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated}				
<ul style="list-style-type: none"> Rated motor voltage 730 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
1500 rpm, 4-pole														
210	282	315	Δ	50.4	1337	94.9	96	95.9	0.85	205	8.3	4947	7500	1LH1213-3AB13-2 ■■■ 0
330	443	315	Δ	50.5	2101	95	96	96.2	0.87	310	8	7143	7500	1LH1213-3AB33-2 ■■■ 0 ⁴⁾
385	516	315	Δ	50.5	2451	95	96	96.2	0.88	360	8	8333	7500	1LH1213-3AB53-2 ■■■ 0 ⁴⁾
470	630	315	Δ	50.5	2992	95	96	96.2	0.89	435	7.9	9874	7500	1LH1213-3AB73-2 ■■■ 0
570	764	355	Δ	50.5	3629	95.1	96.3	96.6	0.88	530	6.3	10161	10200	1LH1213-3BB53-2 ■■■ 0
610	818	355	Δ	50.5	3883	95.3	96.3	96.6	0.89	560	6.6	11261	10200	1LH1213-3BB73-2 ■■■ 0
690	925	400	Δ	50.4	4393	95.5	96.1	96.6	0.87	650	6.7	12300	16400	1LH1213-4AB33-2 ■■■ 0
730	979	400	Δ	50.4	4647	95.6	96.3	96.7	0.88	680	7	13012	16400	1LH1213-4AB53-2 ■■■ 0
835	1120	400	Δ	50.3	5316	96	96.5	96.9	0.87	790	8.2	18074	16400	1LH1213-4AB73-2 ■■■ 0
950	1274	450	Δ	50.3	6048	96.3	96.7	97	0.86	900	7.9	19958	20700	1LH1213-4BB13-2 ■■■ 0
1050	1408	450	Δ	50.2	6685	96.4	96.8	97.1	0.85	1000	8.6	24066	20700	1LH1213-4BB33-2 ■■■ 0
1170	1569	450	Δ	50.2	7448	96.5	96.9	97.2	0.85	1120	9.2	29047	20700	1LH1213-4BB53-2 ■■■ 0
1345	1804	450	Δ	50.2	8563	96.7	97.1	97.3	0.86	1280	9.7	34252	20700	1LH1213-4BB73-2 ■■■ 0
1000 rpm, 6-pole														
185	248	315	Y	50.4	1767	94.8	95.7	95.7	0.79	194	8.3	5654	7500	1LH1213-3AC13-3 ■■■ 0 ⁴⁾
250	335	315	Y	50.5	2387	94.8	95.8	95.9	0.82	250	7.9	6922	7500	1LH1213-3AC33-3 ■■■ 0 ⁴⁾
310	416	315	Y	50.5	2960	94.7	95.8	96	0.84	305	7.2	7696	7500	1LH1213-3AC53-3 ■■■ 0 ⁴⁾
355	476	315	Δ	50.5	3390	94.7	95.8	96.1	0.84	350	7.1	8814	7500	1LH1213-3AC73-3 ■■■ 0
465	624	355	Δ	50.5	4440	94.6	95.8	96	0.86	445	7.5	12432	10200	1LH1213-3BC53-3 ■■■ 0
535	717	355	Δ	50.4	5109	94.9	95.9	96.1	0.86	510	7.9	14816	10200	1LH1213-3BC73-3 ■■■ 0
560	751	400	Δ	50.5	5348	95.1	95.9	96.6	0.85	540	5.9	12300	16400	1LH1213-4AC33-3 ■■■ 0
635	852	400	Δ	50.4	6064	95.5	96.2	96.8	0.85	610	6.9	16373	16400	1LH1213-4AC53-3 ■■■ 0
710	952	400	Y	50.4	6780	95.8	96.4	96.9	0.85	690	7.3	19662	16400	1LH1213-4AC73-3 ■■■ 0
840	1126	450	Δ	50.3	8021	95.8	96.5	96.9	0.84	820	6.2	19250	20700	1LH1213-4BC13-3 ■■■ 0
925	1240	450	Δ	50.3	8833	96	96.6	97	0.84	900	6.5	22083	20700	1LH1213-4BC33-3 ■■■ 0
1045	1401	450	Δ	50.3	9979	96.2	96.7	97.1	0.84	1020	6.8	25945	20700	1LH1213-4BC53-3 ■■■ 0
1195	1603	450	Δ	50.3	11411	96.3	96.8	97.2	0.85	1140	7	30810	20700	1LH1213-4BC73-3 ■■■ 0

For versions, see Article No. supplements and special versions. ■■

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1213-3AB13-2..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-7LG32-2AA3	208
1LH1213-3AB33-2..0	1480	1530	4.4	78	93.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1213-3AB53-2..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1213-3AB73-2..0	1820	1870	5.8	78	93.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1213-3BB53-2..0	2250	2300	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-3BB73-2..0	2370	2430	8.9	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-4AB33-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-4AB53-2..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-4AB73-2..0	3280	3350	17.6	78	94	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1213-4BB13-2..0	3980	4080	22.8	78	94.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1213-4BB33-2..0	4260	4360	25.5	78	94.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1213-4BB53-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1213-4BB73-2..0	5050	5150	32.6	78	94.5	2000	1XB7 750	On request	On request
1LH1213-3AC13-3..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG32-2AA3	208
1LH1213-3AC33-3..0	1510	1550	7.2	78	93.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LH1213-3AC53-3..0	1690	1730	8.3	78	93.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1213-3AC73-3..0	1800	1840	9.1	78	93.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LH1213-3BC53-3..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1213-3BC73-3..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-4AC33-3..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-4AC53-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-4AC73-3..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-4BC13-3..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4BC33-3..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1213-4BC53-3..0	4630	4730	42.5	78	94.5	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LH1213-4BC73-3..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated}				
<ul style="list-style-type: none"> Rated motor voltage 660 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
1500 rpm, 4-pole														
215	288	315	Δ	50.5	1369	94.9	96	95.9	0.85	230	8.1	5065	7500	1LH1223-3AB13-2 ■■■ 0
310	416	315	Δ	50.5	1974	95	96	96.2	0.88	320	7.8	6514	7500	1LH1223-3AB33-2 ■■■ 0 ⁴⁾
360	483	315	Δ	50.5	2292	95	96	96.1	0.89	370	8	7793	7500	1LH1223-3AB53-2 ■■■ 0 ⁴⁾
445	597	315	Δ	50.5	2833	95	96	96.2	0.9	450	8.1	9632	7500	1LH1223-3AB73-2 ■■■ 0
580	778	355	Δ	50.5	3692	95.4	96.4	96.6	0.87	600	7.1	11814	10200	1LH1223-3BB53-2 ■■■ 0
600	805	355	Δ	50.5	3820	95.2	96.3	96.6	0.89	610	6.5	11078	10200	1LH1223-3BB73-2 ■■■ 0
675	905	400	Δ	50.4	4297	95.5	96.1	96.6	0.87	710	6.6	11602	16400	1LH1223-4AB33-2 ■■■ 0
715	959	400	Δ	50.4	4552	95.6	96.3	96.7	0.88	740	7	13201	16400	1LH1223-4AB53-2 ■■■ 0
790	1059	400	Y	50.4	5029	95.9	96.4	96.9	0.88	810	7.7	16093	16400	1LH1223-4AB73-2 ■■■ 0
945	1267	450	Δ	50.3	6016	96.3	96.7	97	0.85	1000	8.1	20454	20700	1LH1223-4BB13-2 ■■■ 0
1060	1421	450	Δ	50.3	6748	96.4	96.9	97.1	0.85	1120	8.7	24968	20700	1LH1223-4BB33-2 ■■■ 0
1080	1448	450	Δ	50.2	6875	96.4	96.8	97.1	0.85	1140	9.5	27500	20700	1LH1223-4BB53-2 ■■■ 0
1230	1649	450	Δ	50.2	7830	96.6	97	97.2	0.85	1300	10.3	33669	20700	1LH1223-4BB73-2 ■■■ 0
1000 rpm, 6-pole														
175	235	315	Y	50.4	1671	94.9	95.7	95.7	0.79	200	8.8	5514	7500	1LH1223-3AC13-3 ■■■ 0 ⁴⁾
255	342	315	Δ	50.5	2435	94.8	95.8	95.9	0.82	285	7.8	7062	7500	1LH1223-3AC33-3 ■■■ 0 ⁴⁾
315	422	315	Δ	50.5	3008	94.7	95.8	96.1	0.84	340	7.2	7821	7500	1LH1223-3AC53-3 ■■■ 0 ⁴⁾
360	483	315	Δ	50.5	3438	94.7	95.8	96	0.84	390	7.4	9283	7500	1LH1223-3AC73-3 ■■■ 0
460	617	355	Δ	50.5	4393	94.6	95.8	96.1	0.86	490	7.3	11861	10200	1LH1223-3BC53-3 ■■■ 0
525	704	355	Δ	50.4	5013	94.9	96	96.2	0.86	560	8	15039	10200	1LH1223-3BC73-3 ■■■ 0
545	731	400	Δ	50.5	5204	95.1	95.9	96.6	0.85	580	5.9	11969	16400	1LH1223-4AC33-3 ■■■ 0
630	845	400	Δ	50.4	6016	95.6	96.2	96.8	0.85	670	7	16243	16400	1LH1223-4AC53-3 ■■■ 0
700	939	400	Δ	50.4	6685	95.7	96.4	96.9	0.85	750	7.1	18718	16400	1LH1223-4AC73-3 ■■■ 0
835	1120	450	Δ	50.3	7974	95.9	96.5	96.9	0.83	910	6.4	19935	20700	1LH1223-4BC13-3 ■■■ 0
930	1247	450	Δ	50.3	8881	96.1	96.6	97	0.83	1020	6.8	23979	20700	1LH1223-4BC33-3 ■■■ 0
1035	1388	450	Δ	50.3	9884	96.1	96.6	97.1	0.85	1100	6.5	24710	20700	1LH1223-4BC53-3 ■■■ 0
1105	1482	450	Δ	50.3	10552	96.2	96.7	97.1	0.85	1180	6.9	28490	20700	1LH1223-4BC73-3 ■■■ 0

For versions, see Article No. supplements and special versions. ■■

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1223-3AB13-2..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-1GH32-6AA3	250
1LH1223-3AB33-2..0	1480	1530	4.4	78	93.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1223-3AB53-2..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-1GH34-1AA3	400
1LH1223-3AB73-2..0	1820	1870	5.8	78	93.5	3000	1XB7 731	6SL3710-1GH34-7AA3	452
1LH1223-3BB53-2..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1223-3BB73-2..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1223-4AB33-2..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1223-4AB53-2..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-1GH38-1AA3	790
1LH1223-4AB73-2..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GH41-1AA3	1036
1LH1223-4BB13-2..0	3980	4080	22.8	78	94.5	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LH1223-4BB33-2..0	4260	4360	25.5	78	94.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1223-4BB53-2..0	4610	4710	28.3	78	94.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1223-4BB73-2..0	5050	5150	32.6	78	94.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1223-3AC13-3..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GH32-2AA3	208
1LH1223-3AC33-3..0	1510	1550	7.2	78	93.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LH1223-3AC53-3..0	1690	1730	8.3	78	93.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LH1223-3AC73-3..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LH1223-3BC53-3..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1223-3BC73-3..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LH1223-4AC33-3..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-1GH37-4AA3	710
1LH1223-4AC53-3..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LH1223-4AC73-3..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-1GH38-1AA3	790
1LH1223-4BC13-3..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LH1223-4BC33-3..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LH1223-4BC53-3..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LH1223-4BC73-3..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-2GH41-4AA3	1314

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	COS φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	Hz	Nm			
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3600 rpm, 4-pole																
330	443	315	Δ	120.7	875	94.7	95	94.3	0.88	475	6.3	2188	7500	1LH1212-3AB15-5	■ ■ ■ 0	
415	557	315	Δ	120.6	1101	95.2	95.5	94.9	0.9	580	7.3	3193	7500	1LH1212-3AB35-5	■ ■ ■ 0	
435	583	315	Δ	120.7	1154	95.1	95.4	94.9	0.9	610	6.3	2885	7500	1LH1212-3AB55-5	■ ■ ■ 0	
500	671	315	Δ	120.7	1326	95.3	95.7	95.2	0.91	690	6.7	3448	7500	1LH1212-3AB75-5	■ ■ ■ 0	
3000 rpm, 4-pole																
550	738	355	Δ	100.7	1751	95.2	95.9	95.6	0.89	780	5	3852	10200	1LH1212-3BB55-1	■ ■ ■ 0	
620	831	355	Δ	100.6	1974	95.5	96.1	95.8	0.89	870	5.8	4935	10200	1LH1212-3BB75-1	■ ■ ■ 0	
1800 rpm, 4-pole																
365	489	315	Δ	60.7	1936	94.8	95.8	96	0.87	530	6.1	5034	7500	1LH1212-3AB15-6	■ ■ ■ 0	
450	603	315	Δ	60.7	2387	95	96	96.2	0.89	630	6.3	6206	7500	1LH1212-3AB35-6	■ ■ ■ 0	
495	664	315	Δ	60.7	2626	95	96	96.2	0.9	690	6.5	7090	7500	1LH1212-3AB55-6	■ ■ ■ 0	
630	845	315	Δ	60.6	3342	95.5	96.4	96.5	0.9	870	7.8	10360	7500	1LH1212-3AB75-6	■ ■ ■ 0	
665	892	355	Δ	60.5	3528	95.7	96.5	96.6	0.88	940	6.9	10937	10200	1LH1212-3BB55-6	■ ■ ■ 0	
685	919	355	Δ	60.5	3634	95.5	96.5	96.6	0.89	960	6.3	10175	10200	1LH1212-3BB75-6	■ ■ ■ 0	
750	1006	400	Δ	60.4	3979	95.6	96.1	96.5	0.88	1060	6.7	10743	16400	1LH1212-4AB35-6	■ ■ ■ 0	
820	1100	400	Δ	60.4	4350	95.9	96.3	96.6	0.88	1160	7.7	13485	16400	1LH1212-4AB55-6	■ ■ ■ 0	
905	1214	400	Δ	60.3	4801	96.1	96.5	96.6	0.87	1300	9	17764	16400	1LH1212-4AB75-6	■ ■ ■ 0	
955	1281	450	Δ	60.2	5066	96.2	96.5	96.5	0.84	1420	9.2	19757	20700	1LH1212-4BB15-6	■ ■ ■ 0	
1005	1348	450	Δ	60.2	5332	96.3	96.5	96.6	0.86	1460	9.5	21328	20700	1LH1212-4BB35-6	■ ■ ■ 0	
1200 rpm, 6-pole																
290	389	315	Δ	60.6	2308	94.5	95.6	95.9	0.82	445	6.2	5078	7500	1LH1212-3AC15-7	■ ■ ■ 0	
355	476	315	Δ	60.6	2825	94.8	95.7	96.1	0.84	530	6.3	6497	7500	1LH1212-3AC35-7	■ ■ ■ 0	
425	570	315	Δ	60.6	3382	95.1	96.1	96.2	0.84	630	6.8	8117	7500	1LH1212-3AC55-7	■ ■ ■ 0	
455	610	315	Δ	60.6	3621	95.1	96.1	96.3	0.85	670	6.7	8690	7500	1LH1212-3AC75-7	■ ■ ■ 0	
560	751	355	Δ	60.4	4456	95.2	96.1	96.1	0.86	820	7.9	12922	10200	1LH1212-3BC55-7	■ ■ ■ 0	
610	818	355	Δ	60.4	4854	95.3	96.1	96.1	0.87	880	7.9	13591	10200	1LH1212-3BC75-7	■ ■ ■ 0	
665	892	400	Δ	60.4	5292	95.6	96.2	96.6	0.85	980	6.3	12701	16400	1LH1212-4AC35-7	■ ■ ■ 0	
740	992	400	Δ	60.4	5889	95.9	96.4	96.7	0.85	1080	7.2	15900	16400	1LH1212-4AC55-7	■ ■ ■ 0	
785	1053	400	Δ	60.4	6247	96	96.5	96.8	0.86	1140	7.4	17492	16400	1LH1212-4AC75-7	■ ■ ■ 0	
995	1334	450	Δ	60.4	7918	96	96.5	96.9	0.84	1480	6.2	18211	20700	1LH1212-4BC15-7	■ ■ ■ 0	
1130	1515	450	Δ	60.4	8992	96.1	96.6	97	0.85	1660	6.2	20682	20700	1LH1212-4BC35-7	■ ■ ■ 0	
900 rpm, 6-pole																
250	335	315	Δ	45.6	2653	93.7	94.9	95.4	0.81	390	6.1	6102	7500	1LH1212-3AC15-8	■ ■ ■ 0	
315	422	315	Δ	45.6	3342	94.1	95.3	95.6	0.81	490	6.6	8355	7500	1LH1212-3AC35-8	■ ■ ■ 0	
340	456	315	Δ	45.6	3608	94	95.2	95.6	0.84	510	6	7938	7500	1LH1212-3AC55-8	■ ■ ■ 0	
380	510	315	Δ	45.6	4032	94.1	95.3	95.7	0.85	560	6.1	9274	7500	1LH1212-3AC75-8	■ ■ ■ 0	
435	583	355	Δ	45.5	4615	94.1	95.3	95.6	0.87	630	6.8	11538	10200	1LH1212-3BC55-8	■ ■ ■ 0	
485	650	355	Δ	45.5	5146	94.4	95.5	95.7	0.87	700	7.1	13894	10200	1LH1212-3BC75-8	■ ■ ■ 0	
525	704	400	Δ	45.4	5570	94.8	95.6	96.2	0.85	780	6	13368	16400	1LH1212-4AC35-8	■ ■ ■ 0	
580	778	400	Δ	45.4	6154	95.1	95.8	96.4	0.86	850	6.3	15385	16400	1LH1212-4AC55-8	■ ■ ■ 0	
650	872	400	Δ	45.4	6897	95.3	96	96.5	0.86	950	6.8	18622	16400	1LH1212-4AC75-8	■ ■ ■ 0	
750	1006	450	Δ	45.3	7958	95.6	96.2	96.6	0.84	1120	6.3	19895	20700	1LH1212-4BC15-8	■ ■ ■ 0	
790	1059	450	Δ	45.3	8382	95.7	96.3	96.6	0.84	1180	6.9	22631	20700	1LH1212-4BC35-8	■ ■ ■ 0	
915	1227	450	Δ	45.3	9708	95.9	96.4	96.8	0.84	1360	7.2	27182	20700	1LH1212-4BC55-8	■ ■ ■ 0	
1055	1415	450	Δ	45.3	11194	96	96.5	96.8	0.85	1540	7.1	31343	20700	1LH1212-4BC75-8	■ ■ ■ 0	

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1212-3AB15-5..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LH1212-3AB35-5..0	1480	1530	4.4	78	93.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AB55-5..0	1690	1740	5	78	93.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AB75-5..0	1860	1910	5.8	78	93.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3BB55-1..0	2290	2340	8.3	78	93.5	3300	1XB7 740	6SL3710-7LE38-4AA3	820
1LH1212-3BB75-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-3AB15-6..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AB35-6..0	1520	1570	4.4	78	93.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AB55-6..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AB75-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-3BB55-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-3BB75-6..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-4AB35-6..0	2800	2870	13.6	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4AB55-6..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4AB75-6..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LH1212-4BB15-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1212-4BB35-6..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1212-3AC15-7..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LH1212-3AC35-7..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AC55-7..0	1730	1770	8.3	78	93.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3AC75-7..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3BC55-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LH1212-3BC75-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-4AC35-7..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LH1212-4AC55-7..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4AC75-7..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4BC15-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request
1LH1212-4BC35-7..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1212-3AC15-8..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LH1212-3AC35-8..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AC55-8..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3AC75-8..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1212-3BC55-8..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-3BC75-8..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1212-4AC35-8..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LH1212-4AC55-8..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-4AC75-8..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1212-4BC15-8..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4BC35-8..0	4200	4300	37.8	78	94.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1212-4BC55-8..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LH1212-4BC75-8..0	5050	5150	48.4	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 																
3600 rpm, 4-pole																
340	456	315	Δ	120.6	902	94.8	95	94.3	0.88	530	6.5	2345	7500	1LH1222-3AB15-5	■ ■ ■ 0	
405	543	315	Δ	120.7	1074	95.1	95.4	94.9	0.9	620	6.2	2685	7500	1LH1222-3AB35-5	■ ■ ■ 0	
445	597	315	Δ	120.6	1180	95.2	95.5	94.9	0.9	680	7	3304	7500	1LH1222-3AB55-5	■ ■ ■ 0	
510	684	315	Δ	120.5	1353	95.5	95.8	95.1	0.91	770	8	4194	7500	1LH1222-3AB75-5	■ ■ ■ 0	
3000 rpm, 4-pole																
560	751	355	Δ	100.6	1783	95.4	96	95.6	0.89	860	5.7	4458	10200	1LH1222-3BB55-1	■ ■ ■ 0	
575	771	355	Δ	100.7	1830	95.3	96	95.7	0.89	880	5.2	4209	10200	1LH1222-3BB75-1	■ ■ ■ 0	
1800 rpm, 4-pole																
365	489	315	Δ	60.7	1936	94.8	95.8	96	0.87	580	6.1	5034	7500	1LH1222-3AB15-6	■ ■ ■ 0	
455	610	315	Δ	60.6	2414	95	96	96.2	0.89	700	6.5	6518	7500	1LH1222-3AB35-6	■ ■ ■ 0	
510	684	315	Δ	60.6	2706	95.1	96.1	96.3	0.9	770	6.8	7577	7500	1LH1222-3AB55-6	■ ■ ■ 0	
590	791	315	Δ	60.6	3130	95.3	96.2	96.4	0.9	890	6.8	8764	7500	1LH1222-3AB75-6	■ ■ ■ 0	
625	838	355	Δ	60.6	3316	95.4	96.4	96.6	0.89	960	6.2	8953	10200	1LH1222-3BB55-6	■ ■ ■ 0	
710	952	355	Δ/Δ	60.5	3767	95.7	96.6	96.7	0.89	1080	7.1	11678	10200	1LH1222-3BB75-6	■ ■ ■ 0	
770	1033	400	Δ	60.4	4085	95.8	96.2	96.5	0.87	1200	7.4	12255	16400	1LH1222-4AB35-6	■ ■ ■ 0	
870	1167	400	Δ	60.4	4615	96	96.4	96.7	0.89	1340	7.9	14768	16400	1LH1222-4AB75-6	■ ■ ■ 0	
900	1207	450	Δ	60.2	4775	96.2	96.4	96.4	0.85	1440	9.6	19578	20700	1LH1222-4BB15-6	■ ■ ■ 0	
1200 rpm, 6-pole																
305	409	315	Δ	60.6	2427	94.8	95.7	96	0.81	520	6.6	5825	7500	1LH1222-3AC15-7	■ ■ ■ 0	
360	483	315	Δ	60.6	2865	94.9	95.7	96.1	0.83	590	6.6	6876	7500	1LH1222-3AC35-7	■ ■ ■ 0	
415	557	315	Δ	60.6	3302	95	96	96.2	0.84	680	6.6	7925	7500	1LH1222-3AC55-7	■ ■ ■ 0	
465	624	315	Δ	60.6	3700	95.1	96.1	96.3	0.85	750	6.4	8510	7500	1LH1222-3AC75-7	■ ■ ■ 0	
550	738	355	Δ	60.4	4377	95.2	96.1	96.1	0.86	870	8	12693	10200	1LH1222-3BC55-7	■ ■ ■ 0	
605	811	355	Δ	60.4	4814	95.3	96.2	96.1	0.87	950	8	13961	10200	1LH1222-3BC75-7	■ ■ ■ 0	
645	865	400	Δ	60.4	5133	95.6	96.2	96.6	0.85	1040	6.4	12319	16400	1LH1222-4AC35-7	■ ■ ■ 0	
720	966	400	Δ	60.4	5730	96	96.4	96.7	0.85	1160	7.5	16617	16400	1LH1222-4AC55-7	■ ■ ■ 0	
805	1080	400	Δ	60.4	6406	96.1	96.5	96.8	0.86	1280	7.5	18577	16400	1LH1222-4AC75-7	■ ■ ■ 0	
1030	1381	450	Δ	60.4	8196	96.1	96.5	96.9	0.84	1660	6.3	18851	20700	1LH1222-4BC15-7	■ ■ ■ 0	
900 rpm, 6-pole																
245	329	315	Δ	45.6	2600	93.8	94.9	95.3	0.8	425	6.4	6500	7500	1LH1222-3AC15-8	■ ■ ■ 0	
305	409	315	Δ	45.6	3236	94	95.2	95.5	0.82	510	6.3	7766	7500	1LH1222-3AC35-8	■ ■ ■ 0	
345	463	315	Δ	45.6	3661	94	95.2	95.6	0.84	570	6.1	8420	7500	1LH1222-3AC55-8	■ ■ ■ 0	
375	503	315	Δ	45.6	3979	94	95.2	95.7	0.85	610	5.8	8754	7500	1LH1222-3AC75-8	■ ■ ■ 0	
440	590	355	Δ	45.5	4669	94.3	95.4	95.6	0.86	700	7.2	12606	10200	1LH1222-3BC55-8	■ ■ ■ 0	
500	671	355	Δ	45.4	5305	94.5	95.6	95.7	0.86	800	7.6	14854	10200	1LH1222-3BC75-8	■ ■ ■ 0	
535	717	400	Δ	45.4	5677	95	95.7	96.3	0.84	870	6.3	14193	16400	1LH1222-4AC35-8	■ ■ ■ 0	
590	791	400	Δ	45.4	6260	95.3	96	96.4	0.85	950	7	17528	16400	1LH1222-4AC55-8	■ ■ ■ 0	
640	858	400	Δ	45.4	6791	95.4	96	96.5	0.86	1020	6.8	18336	16400	1LH1222-4AC75-8	■ ■ ■ 0	
720	966	450	Δ	45.3	7639	95.6	96.2	96.6	0.84	1160	6.6	19098	20700	1LH1222-4BC15-8	■ ■ ■ 0	
805	1080	450	Δ	45.3	8541	95.7	96.3	96.7	0.85	1300	6.3	20498	20700	1LH1222-4BC35-8	■ ■ ■ 0	
865	1160	450	Δ	45.3	9178	95.8	96.3	96.8	0.85	1380	6.4	22945	20700	1LH1222-4BC55-8	■ ■ ■ 0	

For versions, see Article No. supplements and special versions. ■ ■

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1222-3AB15-5..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AB35-5..0	1520	1570	4.4	78	93.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AB55-5..0	1690	1740	5	78	93.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AB75-5..0	1860	1910	5.8	78	93.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-3BB55-1..0	2290	2340	8.3	78	93.5	3300	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3BB75-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3AB15-6..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AB35-6..0	1520	1570	4.4	78	93.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AB55-6..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-3AB75-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3BB55-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3BB75-6..0	2540	2590	8.9	78	93.5	2600	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1222-4AB35-6..0	2800	2870	13.6	78	94	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4AB75-6..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4BB15-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LH1222-3AC15-7..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AC35-7..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AC55-7..0	1730	1770	8.3	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3AC75-7..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-3BC55-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-3BC75-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-4AC35-7..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1222-4AC55-7..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4AC75-7..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4BC15-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request
1LH1222-3AC15-8..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LH1222-3AC35-8..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AC55-8..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1222-3AC75-8..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3BC55-8..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1222-3BC75-8..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1222-4AC35-8..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-4AC55-8..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1222-4AC75-8..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1222-4BC15-8..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4BC35-8..0	4200	4300	37.8	78	94.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1222-4BC55-8..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-2GE41-6AA3	1516

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated}				
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
1800 rpm, 4-pole														
300	402	315	Δ	60.5	1592	95.3	96.2	96.2	0.86	435	7.5	5094	7500	1LH1213-3AB15-6 ■■■ 4)
405	543	315	Δ	60.6	2149	95.3	96.2	96.4	0.89	570	7	6232	7500	1LH1213-3AB35-6 ■■■ 4)
460	617	315	Δ	60.6	2440	95.2	96.2	96.4	0.9	640	7	7076	7500	1LH1213-3AB55-6 ■■■ 0
635	852	315	Δ	60.6	3369	95.5	96.4	96.6	0.9	880	7.6	10444	7500	1LH1213-3AB75-6 ■■■ 0
690	925	355	Δ	60.5	3661	95.8	96.7	96.9	0.88	980	6.6	10983	10200	1LH1213-3BB55-6 ■■■ 0
705	945	355	Δ	60.6	3740	95.6	96.6	96.9	0.89	990	6.1	10098	10200	1LH1213-3BB75-6 ■■■ 0
775	1039	400	Δ	60.4	4112	95.7	96.3	96.7	0.87	1120	6.3	10691	16400	1LH1213-4AB35-6 ■■■ 0
855	1147	400	Δ	60.4	4536	96	96.5	96.9	0.87	1220	7.3	13608	16400	1LH1213-4AB55-6 ■■■ 0
955	1281	400	Δ	60.3	5066	96.3	96.7	97	0.87	1360	8.6	17731	16400	1LH1213-4AB75-6 ■■■ 0
1030	1381	450	Δ	60.2	5464	96.5	96.9	97.1	0.84	1520	8.6	20217	20700	1LH1213-4BB15-6 ■■■ 0
1075	1442	450	Δ	60.2	5703	96.5	96.9	97.1	0.86	1560	8.9	21101	20700	1LH1213-4BB35-6 ■■■ 0
1200 rpm, 6-pole														
270	362	315	Δ	60.6	2149	94.7	95.8	96	0.82	415	6.6	5158	7500	1LH1213-3AC15-7 ■■■ 0
360	483	315	Δ	60.6	2865	94.7	95.8	96.1	0.84	540	6.2	6303	7500	1LH1213-3AC35-7 ■■■ 0
435	583	315	Δ	60.6	3462	95.1	96.1	96.3	0.84	650	6.6	8309	7500	1LH1213-3AC55-7 ■■■ 0
460	617	315	Δ	60.6	3661	95.1	96.1	96.4	0.84	690	6.4	8786	7500	1LH1213-3AC75-7 ■■■ 0
585	784	355	Δ	60.5	4655	95.4	96.4	96.5	0.85	860	7.5	12569	10200	1LH1213-3BC55-7 ■■■ 0
635	852	355	Δ	60.5	5053	95.4	96.4	96.5	0.86	920	7.5	13643	10200	1LH1213-3BC75-7 ■■■ 0
685	919	400	Δ	60.4	5451	95.7	96.4	96.9	0.85	1000	6.1	12537	16400	1LH1213-4AC35-7 ■■■ 0
765	1026	400	Δ	60.4	6088	96	96.6	97	0.85	1120	7	16438	16400	1LH1213-4AC55-7 ■■■ 0
815	1093	400	Δ	60.4	6486	96.2	96.7	97.1	0.86	1180	7.1	17512	16400	1LH1213-4AC75-7 ■■■ 0
1020	1368	450	Δ	60.4	8117	96.2	96.7	97.1	0.83	1520	6.1	18669	20700	1LH1213-4BC15-7 ■■■ 0
1155	1549	450	Δ	60.4	9191	96.3	96.8	97.2	0.84	1700	6	21139	20700	1LH1213-4BC35-7 ■■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM B3}$	$m_{IM V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1213-3AB15-6..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-7LE35-0AA3	477
1LH1213-3AB35-6..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1213-3AB55-6..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1213-3AB75-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1213-3BB55-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LE41-2AA3	1230
1LH1213-3BB75-6..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LE41-2AA3	1230
1LH1213-4AB35-6..0	2800	2870	13.6	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1213-4AB55-6..0	3000	3070	15.4	78	94	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1213-4AB75-6..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LH1213-4BB15-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1213-4BB35-6..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1213-3AC15-7..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LH1213-3AC35-7..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LH1213-3AC55-7..0	1730	1770	8.3	78	93.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1213-3AC75-7..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LH1213-3BC55-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1213-3BC75-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LH1213-4AC35-7..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LH1213-4AC55-7..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1213-4AC75-7..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LH1213-4BC15-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request
1LH1213-4BC35-7..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%				Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
1800 rpm, 4-pole															
295	396	315	Δ	60.5	1565	95.3	96.2	96.2	0.86	470	7.5	5165	7500	1LH1223-3AB15-6 ■■■ 4)	
420	563	315	Δ	60.6	2228	95.2	96.2	96.4	0.89	640	7.1	6461	7500	1LH1223-3AB35-6 ■■■ 0	
495	664	315	Δ	60.6	2626	95.2	96.2	96.4	0.9	750	6.9	7353	7500	1LH1223-3AB55-6 ■■■ 0	
595	798	315	Δ	60.6	3157	95.3	96.2	96.5	0.91	890	6.8	8840	7500	1LH1223-3AB75-6 ■■■ 0	
640	858	355	Δ	60.6	3395	95.5	96.6	96.8	0.89	980	6	9167	10200	1LH1223-3BB55-6 ■■■ 0	
735	986	355	Δ/Δ	60.5	3899	95.8	96.8	96.9	0.89	1120	6.8	11697	10200	1LH1223-3BB75-6 ■■■ 0	
805	1080	400	Δ	60.4	4271	95.9	96.4	96.8	0.86	1280	6.9	12386	16400	1LH1223-4AB35-6 ■■■ 0	
905	1214	400	Δ	60.4	4801	96.1	96.6	97	0.88	1400	7.6	14883	16400	1LH1223-4AB75-6 ■■■ 0	
965	1294	450	Δ	60.2	5119	96.4	96.8	97	0.85	1540	9	19452	20700	1LH1223-4BB15-6 ■■■ 0	
1200 rpm, 6-pole															
310	416	315	Δ	60.6	2467	94.8	95.8	96.1	0.81	520	6.6	5921	7500	1LH1223-3AC15-7 ■■■ 0	
365	489	315	Δ	60.6	2905	94.9	95.9	96.2	0.83	600	6.5	6972	7500	1LH1223-3AC35-7 ■■■ 0	
420	563	315	Δ	60.6	3342	95	96	96.3	0.84	680	6.5	8021	7500	1LH1223-3AC55-7 ■■■ 0	
470	630	315	Δ	60.6	3740	95.1	96.1	96.4	0.85	750	6.3	8228	7500	1LH1223-3AC75-7 ■■■ 0	
575	771	355	Δ	60.5	4576	95.4	96.3	96.5	0.86	910	7.7	12355	10200	1LH1223-3BC55-7 ■■■ 0	
635	852	355	Δ	60.5	5053	95.5	96.4	96.6	0.86	1000	7.6	13643	10200	1LH1223-3BC75-7 ■■■ 0	
665	892	400	Δ	60.4	5292	95.7	96.4	96.9	0.85	1060	6.2	12701	16400	1LH1223-4AC35-7 ■■■ 0	
745	999	400	Δ	60.4	5929	96.1	96.6	97	0.84	1200	7.2	16601	16400	1LH1223-4AC55-7 ■■■ 0	
835	1120	400	Δ	60.4	6645	96.2	96.7	97.1	0.85	1340	7.1	18606	16400	1LH1223-4AC75-7 ■■■ 0	
1055	1415	450	Δ	60.4	8395	96.2	96.7	97.2	0.83	1720	6.1	19309	20700	1LH1223-4BC15-7 ■■■ 0	

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pIA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1223-3AB15-6..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-1GE35-0AA3	477
1LH1223-3AB35-6..0	1520	1570	4.4	78	93.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1223-3AB55-6..0	1690	1740	5	78	93.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1223-3AB75-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1223-3BB55-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1223-3BB75-6..0	2540	2590	8.9	78	93.5	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LH1223-4AB35-6..0	2800	2870	13.6	78	94	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1223-4AB75-6..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LH1223-4BB15-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	On request	On request
1LH1223-3AC15-7..0	1330	1370	5.9	78	93.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LH1223-3AC35-7..0	1550	1590	7.2	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1223-3AC55-7..0	1730	1770	8.3	78	93.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LH1223-3AC75-7..0	1840	1880	9.1	78	93.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LH1223-3BC55-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LH1223-3BC75-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-2GE41-1AA3	1092
1LH1223-4AC35-7..0	2830	2900	21.5	78	94	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LH1223-4AC55-7..0	3040	3110	24	78	94	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1223-4AC75-7..0	3270	3340	27	78	94	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LH1223-4BC15-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request

6

- 1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
- 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

- 3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.
- 4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3600 rpm, 4-pole																
315	422	315	Δ	120.7	836	94.4	94.8	94.1	0.88	355	6	2006	7500	1LH1212-3AB16-5 ■■■ 0		
400	536	315	Δ	120.6	1061	95.1	95.4	94.7	0.9	440	7.4	3077	7500	1LH1212-3AB36-5 ■■■ 0		
440	590	315	Δ	120.6	1167	95.1	95.4	94.7	0.9	485	7.7	3501	7500	1LH1212-3AB56-5 ■■■ 0		
505	677	315	Δ	120.5	1340	95.4	95.7	95.1	0.91	550	8	4154	7500	1LH1212-3AB76-5 ■■■ 0		
3000 rpm, 4-pole																
530	711	355	Δ	100.7	1687	95.1	95.8	95.5	0.89	590	5.1	3711	10200	1LH1212-3BB56-1 ■■■ 0		
585	784	355	Δ	100.6	1862	95.3	95.9	95.7	0.89	650	5.5	4469	10200	1LH1212-3BB76-1 ■■■ 0		
1800 rpm, 4-pole																
330	443	315	Δ	60.7	1751	94.5	95.6	95.8	0.88	370	6.2	4553	7500	1LH1212-3AB16-6 ■■■ 0		
440	590	315	Δ	60.6	2334	95.1	96	96.2	0.89	485	7.4	7002	7500	1LH1212-3AB36-6 ■■■ 0		
475	637	315	Δ	60.6	2520	95.1	96	96.2	0.9	520	7.3	7560	7500	1LH1212-3AB56-6 ■■■ 0		
580	778	315	Δ	60.5	3077	95.5	96.3	96.4	0.9	630	8.3	10154	7500	1LH1212-3AB76-6 ■■■ 0		
620	831	355	Δ	60.5	3289	95.6	96.5	96.5	0.88	690	7.2	10525	10200	1LH1212-3BB56-6 ■■■ 0		
680	912	355	Δ	60.4	3608	95.7	96.6	96.6	0.88	760	7.9	12628	10200	1LH1212-3BB76-6 ■■■ 0		
710	952	400	Δ	60.4	3767	95.6	96.1	96.4	0.88	790	6.9	10548	16400	1LH1212-4AB36-6 ■■■ 0		
765	1026	400	Δ	60.4	4058	95.8	96.3	96.5	0.88	850	7.4	12174	16400	1LH1212-4AB56-6 ■■■ 0		
835	1120	400	Δ	60.4	4430	96	96.4	96.6	0.89	920	8.2	14176	16400	1LH1212-4AB76-6 ■■■ 0		
910	1220	450	Δ	60.2	4828	96.1	96.4	96.4	0.85	1060	9.2	18829	20700	1LH1212-4BB16-6 ■■■ 0		
985	1321	450	Δ	60.2	5226	96.2	96.4	96.4	0.84	1160	10.7	24040	20700	1LH1212-4BB36-6 ■■■ 0		
1150	1542	450	Δ	60.2	6101	96.4	96.6	96.5	0.84	1340	10.9	28065	20700	1LH1212-4BB56-6 ■■■ 0		
1200 rpm, 6-pole																
275	369	315	Δ	60.6	2188	94.6	95.6	95.8	0.82	330	7	5470	7500	1LH1212-3AC16-7 ■■■ 0		
335	449	315	Δ	60.5	2666	94.9	95.7	96	0.83	400	7.2	6932	7500	1LH1212-3AC36-7 ■■■ 0		
380	510	315	Δ	60.6	3024	94.9	95.9	96.1	0.84	445	6.8	7258	7500	1LH1212-3AC56-7 ■■■ 0		
420	563	315	Δ	60.5	3342	95	96	96.1	0.85	485	7	8355	7500	1LH1212-3AC76-7 ■■■ 0		
525	704	355	Δ	60.4	4178	95.2	96	95.9	0.85	610	9	13370	10200	1LH1212-3BC56-7 ■■■ 0		
570	764	355	Δ	60.4	4536	95.2	96.1	96	0.86	650	8.7	14062	10200	1LH1212-3BC76-7 ■■■ 0		
635	852	400	Δ	60.4	5053	95.7	96.2	96.6	0.85	740	7	13643	16400	1LH1212-4AC36-7 ■■■ 0		
685	919	400	Δ	60.3	5451	95.9	96.4	96.6	0.85	790	7.7	15808	16400	1LH1212-4AC56-7 ■■■ 0		
750	1006	400	Δ	60.4	5968	95.9	96.4	96.7	0.86	860	7.3	16710	16400	1LH1212-4AC76-7 ■■■ 0		
1025	1375	450	Δ	60.3	8157	96	96.5	96.8	0.83	1220	6.3	18761	20700	1LH1212-4BC16-7 ■■■ 0		
1145	1535	450	Δ	60.3	9112	96.1	96.6	96.9	0.84	1340	6.6	22780	20700	1LH1212-4BC36-7 ■■■ 0		
1235	1656	450	Δ	60.3	9828	96.2	96.7	97	0.85	1420	6.7	24570	20700	1LH1212-4BC56-7 ■■■ 0		
1410	1891	450	Δ	60.3	11220	96.3	96.8	97.1	0.86	1600	6.6	28050	20700	1LH1212-4BC76-7 ■■■ 0		
900 rpm, 6-pole																
225	302	315	Y	45.6	2387	93.5	94.7	95.1	0.81	280	6.4	5729	7500	1LH1212-3AC16-8 ■■■ 0		
295	396	315	Δ	45.5	3130	94.1	95.2	95.5	0.82	360	6.9	8138	7500	1LH1212-3AC36-8 ■■■ 0		
325	436	315	Δ	45.6	3448	94	95.2	95.6	0.84	385	6.4	8275	7500	1LH1212-3AC56-8 ■■■ 0		
360	483	315	Δ	45.5	3820	94.2	95.3	95.6	0.84	425	6.9	9932	7500	1LH1212-3AC76-8 ■■■ 0		
410	550	355	Δ	45.4	4350	94.3	95.3	95.5	0.86	475	7.7	12615	10200	1LH1212-3BC56-8 ■■■ 0		
455	610	355	Δ	45.4	4828	94.4	95.4	95.6	0.87	520	7.8	14001	10200	1LH1212-3BC76-8 ■■■ 0		
505	677	400	Δ	45.4	5358	94.9	95.6	96.2	0.85	590	6.6	13931	16400	1LH1212-4AC36-8 ■■■ 0		
565	758	400	Δ	45.4	5995	95.3	95.9	96.4	0.85	660	7.3	17386	16400	1LH1212-4AC56-8 ■■■ 0		
615	825	400	Δ	45.3	6525	95.5	96.1	96.5	0.85	710	7.7	19575	16400	1LH1212-4AC76-8 ■■■ 0		
735	986	450	Δ	45.3	7799	95.6	96.2	96.6	0.83	870	6.4	19498	20700	1LH1212-4BC16-8 ■■■ 0		
800	1073	450	Δ	45.3	8488	95.6	96.2	96.6	0.85	930	6.5	21220	20700	1LH1212-4BC36-8 ■■■ 0		
910	1220	450	Δ	45.3	9655	95.8	96.3	96.7	0.85	1060	6.9	26069	20700	1LH1212-4BC56-8 ■■■ 0		
965	1294	450	Δ	45.3	10239	95.9	96.4	96.7	0.85	1120	7.5	30717	20700	1LH1212-4BC76-8 ■■■ 0		

For versions, see Article No. supplements and special versions. ■■

Water-cooled motors with water-jacket cooling 1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1212-3AB16-5..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AB36-5..0	1480	1530	4.4	78	93.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3AB56-5..0	1650	1700	5	78	93.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AB76-5..0	1820	1870	5.8	78	93.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BB56-1..0	2250	2300	8.3	78	93.5	3300	1XB7 731	6SL3710-7LG37-4AA3	710
1LH1212-3BB76-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3AB16-6..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AB36-6..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AB56-6..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3AB76-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3BB56-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3BB76-6..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-4AB36-6..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-4AB56-6..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4AB76-6..0	3280	3350	17.6	78	94	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BB16-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-4BB36-6..0	4260	4360	25.5	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-4BB56-6..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1212-3AC16-7..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LH1212-3AC36-7..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AC56-7..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3AC76-7..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BC56-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-3BC76-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4AC36-7..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-4AC56-7..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1212-4AC76-7..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4BC16-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-4BC36-7..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1212-4BC56-7..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request
1LH1212-4BC76-7..0	5050	5150	48.4	78	94.5	1700	1XB7 750	On request	On request
1LH1212-3AC16-8..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1212-3AC36-8..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AC56-8..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1212-3AC76-8..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1212-3BC56-8..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-3BC76-8..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1212-4AC36-8..0	2790	2860	21.5	78	94	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LH1212-4AC56-8..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4AC76-8..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1212-4BC16-8..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1212-4BC36-8..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1212-4BC56-8..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1212-4BC76-8..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 550 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3600 rpm, 4-pole															
315	422	315	Δ	120.6	836	94.6	94.8	94.1	0.89	390	7.2	2424	7500	1LH1222-3AB16-5	■ ■ ■ 0
385	516	315	Δ	120.5	1021	95.1	95.3	94.6	0.89	475	7.8	3165	7500	1LH1222-3AB36-5	■ ■ ■ 0
420	563	315	Δ	120.5	1114	95.1	95.3	94.6	0.9	510	8.7	3788	7500	1LH1222-3AB56-5	■ ■ ■ 0
465	624	315	Δ	120.6	1233	95.2	95.5	95	0.91	560	7	3329	7500	1LH1222-3AB76-5	■ ■ ■ 0
3000 rpm, 4-pole															
520	697	355	Δ	100.7	1655	95.1	95.8	95.5	0.89	640	5.3	3806	10200	1LH1222-3BB56-1	■ ■ ■ 0
575	771	355	Δ	100.6	1830	95.4	96	95.6	0.89	710	6	4758	10200	1LH1222-3BB76-1	■ ■ ■ 0
1800 rpm, 4-pole															
320	429	315	Δ	60.7	1698	94.5	95.5	95.8	0.88	400	6	4245	7500	1LH1222-3AB16-6	■ ■ ■ 0
425	570	315	Δ	60.6	2255	95.1	96	96.1	0.89	520	7.3	6765	7500	1LH1222-3AB36-6	■ ■ ■ 0
470	630	315	Δ	60.6	2493	95.1	96	96.2	0.9	570	7.3	7479	7500	1LH1222-3AB56-6	■ ■ ■ 0
580	778	315	Δ	60.5	3077	95.5	96.3	96.4	0.89	710	8.4	10462	7500	1LH1222-3AB76-6	■ ■ ■ 0
615	825	355	Δ	60.5	3263	95.6	96.5	96.5	0.88	760	7.5	11094	10200	1LH1222-3BB56-6	■ ■ ■ 0
635	852	355	Δ	60.5	3369	95.5	96.5	96.6	0.89	780	6.8	10107	10200	1LH1222-3BB76-6	■ ■ ■ 0
715	959	400	Δ	60.4	3793	95.6	96.1	96.4	0.88	890	7	10620	16400	1LH1222-4AB36-6	■ ■ ■ 0
765	1026	400	Δ	60.4	4058	95.9	96.3	96.5	0.88	950	7.9	12986	16400	1LH1222-4AB56-6	■ ■ ■ 0
830	1113	400	Δ	60.3	4403	96.1	96.4	96.6	0.88	1020	9.1	15851	16400	1LH1222-4AB76-6	■ ■ ■ 0
940	1261	450	Δ	60.2	4987	96.2	96.4	96.5	0.85	1200	8.9	18452	20700	1LH1222-4BB16-6	■ ■ ■ 0
1050	1408	450	Δ	60.2	5570	96.3	96.5	96.6	0.85	1340	10.2	23951	20700	1LH1222-4BB36-6	■ ■ ■ 0
1105	1482	450	Δ	60.2	5862	96.3	96.5	96.6	0.85	1420	10.5	26379	20700	1LH1222-4BB56-6	■ ■ ■ 0
1200 rpm, 6-pole															
260	349	315	Δ	60.6	2069	94.3	95.4	95.7	0.83	345	6.5	4759	7500	1LH1222-3AC16-7	■ ■ ■ 0
330	443	315	Δ	60.5	2626	94.9	95.7	96	0.83	435	7.2	6828	7500	1LH1222-3AC36-7	■ ■ ■ 0
375	503	315	Δ	60.6	2984	94.9	95.7	96.1	0.85	490	6.8	7460	7500	1LH1222-3AC56-7	■ ■ ■ 0
420	563	315	Δ	60.5	3342	95.1	96	96.2	0.84	550	7.1	8689	7500	1LH1222-3AC76-7	■ ■ ■ 0
505	677	355	Δ	60.4	4019	95.1	96	95.9	0.86	640	8.7	12459	10200	1LH1222-3BC56-7	■ ■ ■ 0
555	744	355	Δ	60.3	4417	95.4	96.1	95.9	0.85	710	9.7	15460	10200	1LH1222-3BC76-7	■ ■ ■ 0
640	858	400	Δ	60.4	5093	95.8	96.2	96.6	0.84	830	7.4	14260	16400	1LH1222-4AC36-7	■ ■ ■ 0
675	905	400	Δ	60.4	5371	95.8	96.3	96.6	0.85	870	7.3	15039	16400	1LH1222-4AC56-7	■ ■ ■ 0
755	1012	400	Δ	60.3	6008	96.1	96.5	96.7	0.85	970	8.3	19226	16400	1LH1222-4AC76-7	■ ■ ■ 0
1030	1381	450	Δ	60.3	8196	96	96.5	96.8	0.83	1340	6.6	19670	20700	1LH1222-4BC16-7	■ ■ ■ 0
1105	1482	450	Δ	60.3	8793	96.1	96.6	96.9	0.84	1420	6.7	21983	20700	1LH1222-4BC36-7	■ ■ ■ 0
1255	1683	450	Δ	60.3	9987	96.2	96.7	97	0.85	1600	6.6	24968	20700	1LH1222-4BC56-7	■ ■ ■ 0
900 rpm, 6-pole															
225	302	315	Δ	45.5	2387	93.7	94.9	95.1	0.8	310	7	6445	7500	1LH1222-3AC16-8	■ ■ ■ 0
285	382	315	Δ	45.5	3024	94	95.1	95.4	0.8	395	7.1	8165	7500	1LH1222-3AC36-8	■ ■ ■ 0
325	436	315	Δ	45.5	3448	94	95.2	95.5	0.83	430	6.7	8620	7500	1LH1222-3AC56-8	■ ■ ■ 0
355	476	315	Δ	45.5	3767	94.2	95.3	95.6	0.84	465	6.9	9794	7500	1LH1222-3AC76-8	■ ■ ■ 0
405	543	355	Δ	45.4	4297	94.3	95.3	95.5	0.86	520	7.7	12461	10200	1LH1222-3BC56-8	■ ■ ■ 0
445	597	355	Δ	45.4	4722	94.4	95.4	95.6	0.87	560	8.1	14166	10200	1LH1222-3BC76-8	■ ■ ■ 0
505	677	400	Δ	45.4	5358	95	95.7	96.3	0.85	650	6.6	13931	16400	1LH1222-4AC36-8	■ ■ ■ 0
540	724	400	Δ	45.4	5730	95.2	95.8	96.4	0.85	700	6.8	15471	16400	1LH1222-4AC56-8	■ ■ ■ 0
605	811	400	Δ	45.4	6419	95.4	96	96.5	0.86	770	7.2	18615	16400	1LH1222-4AC76-8	■ ■ ■ 0
680	912	450	Δ	45.3	7215	95.4	96	96.5	0.84	890	6.5	18759	20700	1LH1222-4BC16-8	■ ■ ■ 0
765	1026	450	Δ	45.3	8117	95.6	96.2	96.6	0.85	980	6.4	20293	20700	1LH1222-4BC36-8	■ ■ ■ 0
875	1173	450	Δ	45.3	9284	95.8	96.3	96.7	0.85	1120	6.9	25067	20700	1LH1222-4BC56-8	■ ■ ■ 0
975	1307	450	Δ	45.3	10345	95.8	96.4	96.8	0.86	1240	6.6	26897	20700	1LH1222-4BC76-8	■ ■ ■ 0

For versions, see Article No. supplements and special versions. ■ ■

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1222-3AB16-5..0	1300	1340	3.5	78	93.5	3600	1XB7 731	6SL3710-1GF34-1AA3	400
1LH1222-3AB36-5..0	1480	1530	4.4	78	93.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3AB56-5..0	1650	1700	5	78	93.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3AB76-5..0	1820	1870	5.8	78	93.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3BB56-1..0	2290	2340	8.3	78	93.5	3300	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3BB76-1..0	2410	2470	8.9	78	93.5	3300	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3AB16-6..0	1300	1340	3.5	78	93.5	3000	1XB7 731	6SL3710-1GF34-1AA3	400
1LH1222-3AB36-6..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3AB56-6..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LH1222-3AB76-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3BB56-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1222-3BB76-6..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1222-4AB36-6..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4AB56-6..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4AB76-6..0	3280	3350	17.6	78	94	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4BB16-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1222-4BB36-6..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1222-4BB56-6..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1222-3AC16-7..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LH1222-3AC36-7..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LH1222-3AC56-7..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3AC76-7..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3BC56-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-3BC76-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-4AC36-7..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LH1222-4AC56-7..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4AC76-7..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4BC16-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request
1LH1222-4BC36-7..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1222-4BC56-7..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request
1LH1222-3AC16-8..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LH1222-3AC36-8..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LH1222-3AC56-8..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LH1222-3AC76-8..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3BC56-8..0	2240	2300	14.5	78	93.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-3BC76-8..0	2390	2440	16	78	93.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1222-4AC36-8..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-4AC56-8..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1222-4AC76-8..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1222-4BC16-8..0	3900	4000	33.8	78	94.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4BC36-8..0	4200	4300	37.8	78	94.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1222-4BC56-8..0	4630	4730	42.5	78	94.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1222-4BC76-8..0	5050	5150	48.4	78	94.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated}				
<ul style="list-style-type: none"> Rated motor voltage 610 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
1800 rpm, 4-pole														
255	342	315	Δ	60.5	1353	95.1	96.2	96	0.86	290	7.9	4600	7500	1LH1213-3AB16-6 ■■0
400	536	315	Δ	60.5	2122	95.3	96.2	96.3	0.88	445	7.9	7215	7500	1LH1213-3AB36-6 ■■0
445	597	315	Δ	60.5	2361	95.3	96.2	96.3	0.89	490	7.8	7555	7500	1LH1213-3AB56-6 ■■0
585	784	315	Δ	60.5	3104	95.4	96.3	96.5	0.89	650	7.9	10243	7500	1LH1213-3AB76-6 ■■0
640	858	355	Δ	60.5	3395	95.7	96.6	96.8	0.88	710	7	10525	10200	1LH1213-3BB56-6 ■■0
710	952	355	Δ	60.5	3767	95.9	96.8	96.9	0.88	790	7.6	12808	10200	1LH1213-3BB76-6 ■■0
740	992	400	Δ	60.4	3926	95.7	96.3	96.7	0.87	840	6.5	10600	16400	1LH1213-4AB36-6 ■■0
790	1059	400	Δ	60.4	4191	95.9	96.4	96.8	0.88	880	7.2	12154	16400	1LH1213-4AB56-6 ■■0
875	1173	400	Δ	60.4	4642	96.1	96.6	96.9	0.88	970	7.7	14390	16400	1LH1213-4AB76-6 ■■0
975	1307	450	Δ	60.2	5173	96.4	96.7	96.9	0.85	1120	8.7	19140	20700	1LH1213-4BB16-6 ■■0
1080	1448	450	Δ	60.2	5730	96.5	96.9	97	0.84	1260	9.8	24066	20700	1LH1213-4BB36-6 ■■0
1270	1703	450	Δ	60.2	6738	96.7	97	97.2	0.84	1480	9.8	28300	20700	1LH1213-4BB56-6 ■■0
1200 rpm, 6-pole														
275	369	315	Δ	60.6	2188	94.7	95.8	96	0.82	330	7.1	5470	7500	1LH1213-3AC16-7 ■■0
335	449	315	Δ	60.5	2666	94.9	95.9	96.1	0.83	400	7.1	6932	7500	1LH1213-3AC36-7 ■■0
385	516	315	Δ	60.6	3064	94.8	95.9	96.2	0.84	450	6.6	7354	7500	1LH1213-3AC56-7 ■■0
425	570	315	Δ	60.6	3382	95	96	96.3	0.85	495	6.8	8455	7500	1LH1213-3AC76-7 ■■0
550	738	355	Δ	60.4	4377	95.4	96.3	96.4	0.84	640	8.5	13569	10200	1LH1213-3BC56-7 ■■0
595	798	355	Δ	60.4	4735	95.4	96.4	96.5	0.86	680	8.3	14205	10200	1LH1213-3BC76-7 ■■0
660	885	400	Δ	60.4	5252	95.8	96.4	96.9	0.84	770	6.7	13655	16400	1LH1213-4AC36-7 ■■0
720	966	400	Δ	60.4	5730	96	96.6	97	0.84	840	7.3	16044	16400	1LH1213-4AC56-7 ■■0
775	1039	400	Δ	60.4	6167	96.1	96.6	97	0.86	880	7.1	16651	16400	1LH1213-4AC76-7 ■■0
1040	1395	450	Δ	60.4	8276	96.2	96.7	97.1	0.83	1220	6.3	19035	20700	1LH1213-4BC16-7 ■■0
1180	1582	450	Δ	60.3	9390	96.3	96.8	97.2	0.84	1380	6.4	22536	20700	1LH1213-4BC36-7 ■■0
1270	1703	450	Δ	60.3	10106	96.4	96.9	97.3	0.85	1460	6.5	24254	20700	1LH1213-4BC56-7 ■■0
1450	1944	450	Δ	60.3	11539	96.4	97	97.3	0.85	1660	6.3	27694	20700	1LH1213-4BC76-7 ■■0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1213-3AB16-6..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LH1213-3AB36-6..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1213-3AB56-6..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-3AB76-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-3BB56-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-3BB76-6..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1213-4AB36-6..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4AB56-6..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4AB76-6..0	3280	3350	17.6	78	94	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LH1213-4BB16-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1213-4BB36-6..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1213-4BB56-6..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1213-3AC16-7..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LH1213-3AC36-7..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LH1213-3AC56-7..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LH1213-3AC76-7..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LH1213-3BC56-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-3BC76-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LH1213-4AC36-7..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LH1213-4AC56-7..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4AC76-7..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LH1213-4BC16-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LH1213-4BC36-7..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1213-4BC56-7..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request
1LH1213-4BC76-7..0	5050	5150	48.4	78	94.5	1700	1XB7 750	On request	On request

6

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	1LH1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%			Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 550 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 														
1800 rpm, 4-pole														
230	308	315	Δ	60.5	1220	95.2	96.2	96	0.87	290	8.1	4270	7500	1LH1223-3AB16-6 ■■■ 0
385	516	315	Δ	60.5	2042	95.4	96.2	96.3	0.88	475	8	6739	7500	1LH1223-3AB36-6 ■■■ 0 ⁴⁾
435	583	315	Δ	60.5	2308	95.3	96.2	96.3	0.89	530	7.8	7386	7500	1LH1223-3AB56-6 ■■■ 0
585	784	315	Δ	60.5	3104	95.5	96.3	96.5	0.89	720	8.2	10554	7500	1LH1223-3AB76-6 ■■■ 0
640	858	355	Δ	60.5	3395	95.7	96.7	96.8	0.88	790	7.2	10864	10200	1LH1223-3BB56-6 ■■■ 0
650	872	355	Δ	60.5	3448	95.6	96.6	96.8	0.89	790	6.7	9999	10200	1LH1223-3BB76-6 ■■■ 0
745	999	400	Δ	60.4	3952	95.7	96.3	96.7	0.87	930	6.7	10670	16400	1LH1223-4AB36-6 ■■■ 0
800	1073	400	Δ	60.4	4244	96	96.5	96.8	0.88	990	7.6	12732	16400	1LH1223-4AB56-6 ■■■ 0
890	1194	400	Δ	60.3	4722	96.2	96.6	96.9	0.88	1100	8.4	16055	16400	1LH1223-4AB76-6 ■■■ 0
1005	1348	450	Δ	60.2	5332	96.4	96.8	97	0.85	1280	8.3	18662	20700	1LH1223-4BB16-6 ■■■ 0
1140	1529	450	Δ	60.2	6048	96.6	97	97.1	0.85	1460	9.3	23587	20700	1LH1223-4BB36-6 ■■■ 0
1195	1603	450	Δ	60.2	6340	96.6	96.9	97.1	0.85	1520	9.8	25994	20700	1LH1223-4BB56-6 ■■■ 0
1200 rpm, 6-pole														
235	315	315	Δ	60.5	1870	94.7	95.8	96	0.82	315	7	4675	7500	1LH1223-3AC16-7 ■■■ 0 ⁴⁾
340	456	315	Δ	60.5	2706	94.8	95.8	96.1	0.83	450	6.9	6765	7500	1LH1223-3AC36-7 ■■■ 0
380	510	315	Δ	60.6	3024	94.9	95.9	96.2	0.84	495	6.7	7258	7500	1LH1223-3AC56-7 ■■■ 0
430	577	315	Δ	60.5	3422	95	96	96.3	0.84	560	6.9	8555	7500	1LH1223-3AC76-7 ■■■ 0
525	704	355	Δ	60.4	4178	95.3	96.3	96.4	0.85	670	8.3	12534	10200	1LH1223-3BC56-7 ■■■ 0
585	784	355	Δ	60.4	4655	95.6	96.4	96.4	0.84	760	9	15362	10200	1LH1223-3BC76-7 ■■■ 0
665	892	400	Δ	60.4	5292	95.9	96.5	96.9	0.84	860	7.1	14288	16400	1LH1223-4AC36-7 ■■■ 0
700	939	400	Δ	60.4	5570	96	96.5	97	0.85	900	7	15039	16400	1LH1223-4AC56-7 ■■■ 0
790	1059	400	Δ	60.3	6287	96.2	96.7	97.1	0.85	1000	8	19490	16400	1LH1223-4AC76-7 ■■■ 0
1060	1421	450	Δ	60.4	8435	96.1	96.7	97.1	0.83	1380	6.4	20244	20700	1LH1223-4BC16-7 ■■■ 0
1135	1522	450	Δ	60.3	9032	96.3	96.8	97.2	0.84	1460	6.6	21677	20700	1LH1223-4BC36-7 ■■■ 0
1290	1730	450	Δ	60.3	10265	96.4	96.9	97.3	0.85	1640	6.5	24636	20700	1LH1223-4BC56-7 ■■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for converter operation

Line voltage 575 V, 60 Hz – Premium Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LH1223-3AB16-6..0	1300	1340	3.5	78	93.5	3000	1XB7 730	6SL3710-1GF33-3AA3	320
1LH1223-3AB36-6..0	1480	1530	4.4	78	93.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1223-3AB56-6..0	1650	1700	5	78	93.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1223-3AB76-6..0	1860	1910	5.8	78	93.5	3000	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1223-3BB56-6..0	2290	2340	8.3	78	93.5	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1223-3BB76-6..0	2410	2470	8.9	78	93.5	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1223-4AB36-6..0	2800	2870	13.6	78	94	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AB56-6..0	3000	3070	15.4	78	94	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AB76-6..0	3280	3350	17.6	78	94	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1223-4BB16-6..0	3980	4080	22.8	78	94.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LH1223-4BB36-6..0	4260	4360	25.5	78	94.5	2000	1XB7 750	On request	On request
1LH1223-4BB56-6..0	4610	4710	28.3	78	94.5	2000	1XB7 750	On request	On request
1LH1223-3AC16-7..0	1330	1370	5.9	78	93.5	2600	1XB7 730	6SL3710-1GF33-3AA3	320
1LH1223-3AC36-7..0	1510	1550	7.2	78	93.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LH1223-3AC56-7..0	1690	1730	8.3	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1223-3AC76-7..0	1800	1840	9.1	78	93.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LH1223-3BC56-7..0	2280	2340	14.5	78	93.5	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LH1223-3BC76-7..0	2430	2480	16	78	93.5	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LH1223-4AC36-7..0	2830	2900	21.5	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AC56-7..0	3040	3110	24	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4AC76-7..0	3270	3340	27	78	94	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LH1223-4BC16-7..0	3900	4000	33.8	78	94.5	1700	1XB7 750	On request	On request
1LH1223-4BC36-7..0	4200	4300	37.8	78	94.5	1700	1XB7 750	On request	On request
1LH1223-4BC56-7..0	4630	4730	42.5	78	94.5	1700	1XB7 750	On request	On request

6

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to the type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Utilization according to thermal class 130 (B).

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

Operating values at rated power														1LH1 cast-iron series Version specifically for line operation Article No.	
P_{rated}	P_{rated}	Frame size	Con- nec- tion	f_{rated}	T_{rated}	Effi- ciency class	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	COS- $\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_{LR}/T_{rated}		T_B/T_{rated}
kW	hp	FS		Hz	Nm		%	%	%		A				
• Insulation: Thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 130 (B)															
approx. 1500 rpm, 4-pole															
265	355	315	Δ	50	1708	IE2	94.2	95.4	95.8	0.87	460	5.8	1.3	2	1LH1202-3AB11-2 ■■ 0
355	476	315	Δ	50	2287	IE2	94.8	95.8	96.1	0.88	610	6.4	1.5	2.2	1LH1202-3AB31-2 ■■ 0
425	570	315	Δ	50	2731	IE2	95.1	95.9	96.2	0.87	740	7.5	1.9	2.6	1LH1202-3AB51-2 ■■ 0
490	657	315	Δ	50	3149	IE2	95.3	95.9	96.3	0.88	840	7.7	2	2.6	1LH1202-3AB71-2 ■■ 0
approx. 1000 rpm, 6-pole															
230	308	315	Δ	50	2219	IE2	94.2	95.3	95.6	0.82	425	6.6	1.4	2.2	1LH1202-3AC11-3 ■■ 0
285	382	315	Δ	50	2749	IE2	94.4	95.5	95.8	0.84	510	6.8	1.4	2.2	1LH1202-3AC31-3 ■■ 0
325	436	315	Δ	50	3135	IE2	94.5	95.6	95.9	0.85	580	6.6	1.4	2.2	1LH1202-3AC51-3 ■■ 0
395	530	315	Δ	50	3806	IE2	95	95.7	96	0.83	720	7.7	1.7	2.6	1LH1202-3AC71-3 ■■ 0
approx. 750 rpm, 8-pole															
195	261	315	Δ	50	2523	IE2	92.6	94	94.4	0.77	390	4.7	1	1.6	1LH1202-3AD11-4 ■■ 0
250	335	315	Δ	50	3222	IE2	93.1	94.4	94.6	0.78	495	5.1	1.1	1.7	1LH1202-3AD31-4 ■■ 0
290	389	315	Δ	50	3737	IE2	93.4	94.5	94.7	0.78	570	5.2	1.2	1.8	1LH1202-3AD51-4 ■■ 0
320	429	315	Δ	50	4124	IE2	93.5	94.5	94.8	0.79	620	5.2	1.2	1.7	1LH1202-3AD71-4 ■■ 0
385	516	355	Δ	50	4968	IE2	92.9	94.2	94.8	0.81	730	4.4	1	1.4	1LH1202-3BD51-4 ■■ 0
420	563	355	Δ	50	5420	IE2	93.1	94.3	94.9	0.81	800	4.3	1	1.4	1LH1202-3BD71-4 ■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	Blocking time		Admissible moment of inertia and start-up times when starting up the motor								$L_{p(A)}$, tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Terminal box Type
	$m_{IM B3}$	$m_{IM V1}$	cold	warm	3 × cold		2 × warm		J				
			t_{Br}	t_{Br}	J_{adm}	t_{st}	J_{adm}	t_{st}					
kg	kg	s	s	kgm ²	s	kgm ²	s	kgm ²	kgm ²	dB(A)	dB(A)		
1LH1202-3AB11-2..0	1280	1320	36.5	12.5	265	31	105	11.5	3.5	73	88.5	GT 640	
1LH1202-3AB31-2..0	1490	1530	27	9.5	340	24.5	130	9	4.4	73	88.5	1XB1 621	
1LH1202-3AB51-2..0	1690	1730	17.5	6	375	18	145	7	5	73	88.5	1XB1 631	
1LH1202-3AB71-2..0	1860	1900	15.5	5.5	425	17	175	7	5.8	73	88.5	1XB1 631	
1LH1202-3AC11-3..0	1310	1350	27	9.5	460	23.5	185	9	5.9	68	83.5	GT 640	
1LH1202-3AC31-3..0	1490	1530	25.5	9	540	22	210	8	7.2	68	83.5	GT 640	
1LH1202-3AC51-3..0	1690	1740	27	9.5	640	23.5	250	8.5	8.3	68	83.5	1XB1 621	
1LH1202-3AC71-3..0	1800	1850	20.5	7.5	755	18.5	300	7	9.1	68	83.5	1XB1 621	
1LH1202-3AD11-4..0	1310	1350	41	15	960	47.5	380	17	5.9	72	87.5	GT 640	
1LH1202-3AD31-4..0	1490	1530	35	13	1145	40	450	14.5	7.2	72	87.5	GT 640	
1LH1202-3AD51-4..0	1690	1740	34	12.5	1315	38	530	14	8.3	72	87.5	1XB1 621	
1LH1202-3AD71-4..0	1800	1850	34	12.5	1410	37.5	570	14	9.1	72	87.5	1XB1 621	
1LH1202-3BD51-4..0	2250	2300	37.5	13.5	1020	36	450	14	14.5	72	87.5	1XB1 621	
1LH1202-3BD71-4..0	2420	2480	38.5	14	1125	37	510	15	16	72	87.5	1XB1 631	

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Selection and ordering data

Operating values at rated power														1LH1 cast-iron series Version specifically for line operation Article No.	
P_{rated}	P_{rated}	Frame size	Con- nec- tion	f_{rated}	T_{rated}	Effi- ciency class	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	COS- $\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_{LR}/T_{rated}		T_B/T_{rated}
kW	hp	FS		Hz	Nm		%	%	%		A				
• Insulation: Thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 130 (B)															
approx. 1500 rpm, 4-pole															
285	382	315	Δ	50	1831	IE3	95.1	96	96.1	0.82	530	7.2	1.7	2.6	1LH1203-3AB11-2 ■■ 0
380	510	315	Δ	50	2442	IE3	95.1	96.1	96.3	0.86	670	7.2	1.7	2.5	1LH1203-3AB31-2 ■■ 0
430	577	315	Δ	50	2763	IE3	95.2	96.2	96.3	0.87	740	7.4	1.8	2.5	1LH1203-3AB51-2 ■■ 0
495	664	315	Δ	50	3181	IE3	95.3	96.3	96.5	0.88	850	7.6	1.9	2.6	1LH1203-3AB71-2 ■■ 0
510	684	355	Δ	50	3277	IE3	95.0	96.1	96.4	0.87	880	5.4	1.3	1.9	1LH1203-3BB51-2 ■■ 0
575	771	355	Δ	50	3695	IE3	95.3	96.3	96.6	0.88	990	6	1.5	2.1	1LH1203-3BB71-2 ■■ 0
620	831	400	Δ	50	3974	IE3	95.6	96.2	96.6	0.85	1100	6.5	1.6	2.4	1LH1203-4AB31-2 ■■ 0
690	925	400	Δ	50	4419	IE3	95.9	96.4	96.7	0.85	1220	7.4	1.9	2.7	1LH1203-4AB51-2 ■■ 0
approx. 1000 rpm, 6-pole															
225	302	315	Δ	50	2166	IE3	94.9	95.8	95.8	0.78	435	7.5	1.8	2.8	1LH1203-3AC11-3 ■■ 0
310	416	315	Δ	50	2987	IE3	94.9	95.9	96	0.8	590	7.6	1.7	2.6	1LH1203-3AC31-3 ■■ 0
355	476	315	Δ	50	3421	IE3	95	96	96.1	0.81	660	7.8	1.7	2.7	1LH1203-3AC51-3 ■■ 0
405	543	315	Δ	50	3903	IE3	95.1	96.1	96.2	0.83	740	7.4	1.6	2.5	1LH1203-3AC71-3 ■■ 0
490	657	355	Δ	50	4722	IE3	94.7	95.8	96	0.84	880	7.1	1.6	2	1LH1203-3BC51-3 ■■ 0
530	711	355	Δ	50	5107	IE3	94.8	95.9	96.1	0.85	940	7.1	1.6	2	1LH1203-3BC71-3 ■■ 0
550	738	400	Δ	50	5294	IE3	95.3	96	96.5	0.83	1000	5.8	1.5	2.2	1LH1203-4AC31-3 ■■ 0
660	885	400	Δ	50	6347	IE3	95.8	96.4	96.8	0.85	1160	6.9	1.7	2.6	1LH1203-4AC71-3 ■■ 0
775	1039	450	Δ	50	7453	IE3	95.9	96.4	96.8	0.83	1400	6.4	1.3	2.4	1LH1203-4BC11-3 ■■ 0
890	1194	450	Δ/Δ	50	8559	IE3	95.9	96.5	96.9	0.83	1620	6.2	1.3	2.3	1LH1203-4BC31-3 ■■ 0
approx. 750 rpm, 8-pole															
160	215	315	Δ	50	2056	IE3	93.7	94.8	94.9	0.75	325	5.7	1.2	1.9	1LH1203-3AD11-4 ■■ 0
235	315	315	Δ	50	3024	IE3	93.5	94.8	94.9	0.76	475	5.3	1.2	1.8	1LH1203-3AD31-4 ■■ 0
295	396	315	Δ	50	3802	IE3	93.4	94.8	95.0	0.77	590	5.0	1.1	1.7	1LH1203-3AD51-4 ■■ 0
325	436	315	Δ	50	4188	IE3	93.5	94.8	95.1	0.78	640	5.0	1.1	1.7	1LH1203-3AD71-4 ■■ 0
370	496	355	Δ	50	4775	IE3	93.6	94.8	95.4	0.80	710	4.5	1.0	1.4	1LH1203-3BD51-4 ■■ 0
400	536	355	Δ	50	5162	IE3	93.8	94.9	95.5	0.80	760	4.6	1.0	1.4	1LH1203-3BD71-4 ■■ 0
450	603	400	Δ	50	5799	IE3	93.5	94.6	95.6	0.75	920	4	1.1	1.8	1LH1203-4AD31-4 ■■ 0
495	664	400	Δ	50	6379	IE3	93.7	94.8	95.7	0.77	990	4	1.1	1.8	1LH1203-4AD51-4 ■■ 0
540	724	400	Δ	50	6959	IE3	93.9	95	95.8	0.78	1060	4.2	1.1	1.8	1LH1203-4AD71-4 ■■ 0
655	878	450	Δ	50	8441	IE3	93.8	95	95.9	0.76	1320	4.4	1	1.9	1LH1203-4BD11-4 ■■ 0 ¹⁾
705	945	450	Δ	50	9073	IE3	93.9	95.1	95.9	0.75	1440	4.6	1	1.9	1LH1203-4BD31-4 ■■ 0 ¹⁾
800	1073	450	Δ/Δ	50	10296	IE3	94.3	95.3	96.1	0.76	1600	4.8	1.1	2	1LH1203-4BD51-4 ■■ 0 ¹⁾
925	1240	450	Δ/Δ	50	11888	IE3	94.6	95.3	96.2	0.77	1840	5.2	1.2	2.2	1LH1203-4BD71-4 ■■ 0 ¹⁾

For versions, see Article No. supplements and special versions. ■■

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 400 V, 50 Hz – Premium Efficiency

Motor type	Blocking time		Admissible moment of inertia and start-up times when starting up the motor								J	$L_{\text{pfA, tolerance} +3}$ dB(A) no-load	$L_{\text{WA, tolerance} +3}$ dB(A) no-load	Terminal box Type
	$m_{\text{IM B3}}$	$m_{\text{IM V1}}$	cold	warm	3 × cold		2 × warm							
			t_{Br}	t_{Br}	J_{adm}	t_{st}	J_{adm}	t_{st}						
kg	kg	s	s	kgm ²	s	kgm ²	s	kgm ²	kgm ²	dB(A)	dB(A)			
1LH1203-3AB11-2..0	1280	1320	22.5	9.5	280	21.5	130	9.5	3.5	73	88.5	GT 640		
1LH1203-3AB31-2..0	1490	1530	19	7	310	18	130	7.5	4.4	73	88.5	1XB1 621		
1LH1203-3AB51-2..0	1690	1730	17.5	6	370	18	150	7	5	73	88.5	1XB1 631		
1LH1203-3AB71-2..0	1860	1900	15.5	5.5	395	16	170	6.5	5.8	73	88.5	1XB1 631		
1LH1203-3BB51-2..0	2280	340	29.0	7.5	620	38.5	255	15.5	8.3	73	88.5	1XB1631		
1LH1203-3BB71-2..0	2410	2460	21.5	5.5	600	29	255	12	8.9	73	88.5	1XB1 631		
1LH1203-4AB31-2..0	2790	2860	8.5	5	325	16	170	8	13.6	73	89	1XB1 631		
1LH1203-4AB51-2..0	3000	3070	6	3	325	12	180	6.5	15.4	73	89	1XB1 631		
1LH1203-3AC11-3..0	1310	1350	22	10	495	19.5	255	9.5	5.9	68	83.5	GT 640		
1LH1203-3AC31-3..0	1510	1560	20	7	565	17	230	6.5	7.2	68	83.5	1XB1 621		
1LH1203-3AC51-3..0	1690	1740	19.5	7	605	16	255	6.5	8.3	68	83.5	1XB1 621		
1LH1203-3AC71-3..0	1830	1880	21	7.5	740	18.5	295	7	9.1	68	83.5	1XB1 631		
1LH1203-3BC51-3..0	2280	2330	20.5	7.5	675	18	310	8	14.5	68	83.5	1XB1 631		
1LH1203-3BC71-3..0	2420	2480	20.5	7.5	715	18	330	8	16	68	83.5	1XB1 631		
1LH1203-4AC31-3..0	2830	2900	26	11	1280	34	505	13	21.5	68	84	1XB1 631		
1LH1203-4AC71-3..0	3270	3340	20	7.5	1690	31	665	12	27	68	84	1XB1 631		
1LH1203-4BC11-3..0	3900	4000	17.0	9.0	1820	33.0	850	15.5	33.8	68	84.5	1XB1631		
1LH1203-4BC31-3..0	4340	4440	17.0	7.0	2025	33.0	885	14.5	37.8	68	84.5	2 × 1XB1631		
1LH1203-3AD11-4..0	1310	1350	41.0	23.5	1030	45.5	675	28.0	5.9	72	87.5	GT640		
1LH1203-3AD31-4..0	1490	1530	35.5	16.0	1150	37.0	550	16.5	7.2	72	87.5	GT640		
1LH1203-3AD51-4..0	1690	1740	34.0	12.5	1250	34.0	495	12.5	8.3	72	87.5	1XB1621		
1LH1203-3AD71-4..0	1800	1850	34.5	12.5	1345	34.0	535	12.5	9.1	72	87.5	1XB1621		
1LH1203-3BD51-4..0	2250	2300	38.0	16.5	1095	37.5	570	18.0	14.5	72	87.5	1XB1621		
1LH1203-3BD71-4..0	2420	2480	38.5	17.5	1225	38.5	665	19.0	16.0	72	87.5	1XB1631		
1LH1203-4AD31-4..0	2830	2900	50.5	18.5	2080	54	820	20	21.5	72	88	1XB1 631		
1LH1203-4AD51-4..0	3040	3110	53.5	19.5	2420	58	935	21	24	72	88	1XB1 631		
1LH1203-4AD71-4..0	3270	3340	53.5	20	2675	57.5	1055	21.5	27	72	88	1XB1 631		
1LH1203-4BD11-4..0	3900	4000	69	24	3100	70	1175	25	33.8	72	88.5	1XB1 631		
1LH1203-4BD31-4..0	4200	4300	68.5	23.5	3115	62.5	1260	23.5	37.8	72	88.5	1XB1 631		
1LH1203-4BD51-4..0	4780	4880	66	23.5	3760	60.5	1535	23.5	42.5	72	88.5	2 × 1XB1 631		
1LH1203-4BD71-4..0	5200	5300	57	19	4240	53	1750	21	48.4	72	88.5	2 × 1XB1 631		

1) Utilization according to thermal class 155 (F).

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

Operating values at rated power														1LH1 cast-iron series Version specifically for line operation Article No.	
P_{rated}	P_{rated}	Frame size	Con- nec- tion	f_{rated}	T_{rated}	Effi- ciency class	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	COS- $\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_{LR}/T_{rated}		T_B/T_{rated}
kW	hp	FS		Hz	Nm		%	%	%		A				
• Insulation: Thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 130 (B)															
approx. 1500 rpm, 4-pole															
265	355	315	Y	50	1708	IE2	94.2	95.4	95.8	0.87	265	5.8	1.3	2	1LH1202-3AB14-2 ■■ 0
355	476	315	Y	50	2287	IE2	94.8	95.8	96.1	0.88	350	6.4	1.5	2.2	1LH1202-3AB34-2 ■■ 0
425	570	315	Y	50	2731	IE2	95.1	95.9	96.2	0.87	425	7.5	1.9	2.6	1LH1202-3AB54-2 ■■ 0
490	657	315	Y	50	3149	IE2	95.3	95.9	96.3	0.88	485	7.7	2	2.6	1LH1202-3AB74-2 ■■ 0
approx. 1000 rpm, 6-pole															
230	308	315	Y	50	2219	IE2	94.2	95.3	95.6	0.82	245	6.6	1.4	2.2	1LH1202-3AC14-3 ■■ 0
285	382	315	Y	50	2749	IE2	94.4	95.5	95.8	0.84	295	6.8	1.4	2.2	1LH1202-3AC34-3 ■■ 0
325	436	315	Y	50	3135	IE2	94.5	95.6	95.9	0.85	335	6.6	1.4	2.2	1LH1202-3AC54-3 ■■ 0
395	530	315	Y	50	3806	IE2	95	95.7	96	0.83	415	7.7	1.7	2.6	1LH1202-3AC74-3 ■■ 0
approx. 750 rpm, 8-pole															
195	261	315	Y	50	2523	IE2	92.6	94	94.4	0.77	225	4.7	1	1.6	1LH1202-3AD14-4 ■■ 0
250	335	315	Y	50	3222	IE2	93.1	94.4	94.6	0.78	285	5.1	1.1	1.7	1LH1202-3AD34-4 ■■ 0
290	389	315	Y	50	3737	IE2	93.4	94.5	94.7	0.78	330	5.2	1.2	1.8	1LH1202-3AD54-4 ■■ 0
320	429	315	Y	50	4124	IE2	93.5	94.5	94.8	0.79	360	5.2	1.2	1.7	1LH1202-3AD74-4 ■■ 0
385	516	355	Y	50	4968	IE2	92.9	94.2	94.8	0.81	420	4.4	1	1.4	1LH1202-3BD54-4 ■■ 0
420	563	355	Y	50	5420	IE2	93.1	94.3	94.9	0.81	460	4.3	1	1.4	1LH1202-3BD74-4 ■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	Blocking time		Admissible moment of inertia and start-up times when starting up the motor								$L_{p(A)}$, tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Terminal box Type
	$m_{IM B3}$	$m_{IM V1}$	cold	warm	3 × cold		2 × warm		J				
			t_{Br}	t_{Br}	J_{adm}	t_{st}	J_{adm}	t_{st}					
kg	kg	s	s	kgm ²	s	kgm ²	s	kgm ²	dB(A)	dB(A)			
1LH1202-3AB14-2..0	1280	1320	36.5	12.5	265	31	105	11.5	3.5	73	88.5	GT 640	
1LH1202-3AB34-2..0	1490	1530	27	9.5	340	24.5	130	9	4.4	73	88.5	1XB1 621	
1LH1202-3AB54-2..0	1690	1730	17.5	6	375	18	145	7	5	73	88.5	1XB1 631	
1LH1202-3AB74-2..0	1860	1900	15.5	5.5	425	17	175	7	5.8	73	88.5	1XB1 631	
1LH1202-3AC14-3..0	1310	1350	27	9.5	460	23.5	185	9	5.9	68	83.5	GT 640	
1LH1202-3AC34-3..0	1490	1530	25.5	9	540	22	210	8	7.2	68	83.5	GT 640	
1LH1202-3AC54-3..0	1690	1740	27	9.5	640	23.5	250	8.5	8.3	68	83.5	1XB1 621	
1LH1202-3AC74-3..0	1800	1850	20.5	7.5	755	18.5	300	7	9.1	68	83.5	1XB1 621	
1LH1202-3AD14-4..0	1310	1350	41	15	960	47.5	380	17	5.9	72	87.5	GT 640	
1LH1202-3AD34-4..0	1490	1530	35	13	1145	40	450	14.5	7.2	72	87.5	GT 640	
1LH1202-3AD54-4..0	1690	1740	34	12.5	1315	38	530	14	8.3	72	87.5	1XB1 621	
1LH1202-3AD74-4..0	1800	1850	34	12.5	1410	37.5	570	14	9.1	72	87.5	1XB1 621	
1LH1202-3BD54-4..0	2250	2300	37.5	13.5	1020	36	450	14	14.5	72	87.5	1XB1 621	
1LH1202-3BD74-4..0	2420	2480	38.5	14	1125	37	510	15	16	72	87.5	1XB1 631	

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Selection and ordering data

Operating values at rated power														1LH1 cast-iron series Version specifically for line operation Article No.	
P_{rated}	P_{rated}	Frame size	Con- nec- tion	f_{rated}	T_{rated}	Effi- ciency class	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	COS- $\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_{LR}/T_{rated}		T_B/T_{rated}
kW	hp	FS		Hz	Nm		%	%	%		A				
• Insulation: Thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 130 (B)															
approx. 1500 rpm, 4-pole															
285	382	315	Y	50	1831	IE3	95.1	96	96.1	0.82	305	7.2	1.7	2.6	1LH1203-3AB14-2 ■■■ 0
380	510	315	Y	50	2442	IE3	95.1	96.1	96.3	0.86	385	7.2	1.7	2.5	1LH1203-3AB34-2 ■■■ 0
430	577	315	Y	50	2763	IE3	95.2	96.2	96.3	0.87	430	7.4	1.8	2.5	1LH1203-3AB54-2 ■■■ 0
495	664	315	Y	50	3181	IE3	95.3	96.3	96.5	0.88	490	7.6	1.9	2.6	1LH1203-3AB74-2 ■■■ 0
510	684	355	Y	50	3277	IE3	95.0	96.1	96.4	0.87	510	5.4	1.3	1.9	1LH1203-3BB54-2 ■■■ 0
575	771	355	Y	50	3695	IE3	95.3	96.3	96.6	0.88	570	6	1.5	2.1	1LH1203-3BB74-2 ■■■ 0
620	831	400	Y	50	3974	IE3	95.6	96.2	96.6	0.85	630	6.5	1.6	2.4	1LH1203-4AB34-2 ■■■ 0
690	925	400	Y	50	4419	IE3	95.9	96.4	96.7	0.85	700	7.4	1.9	2.7	1LH1203-4AB54-2 ■■■ 0
730	979	400	Δ	50	4679	IE3	95.8	96.4	96.8	0.87	730	6.9	1.8	2.5	1LH1203-4AB74-2 ■■■ 0
860	1153	450	Δ	50	5504	IE3	96.2	96.6	96.9	0.85	880	7.3	1.8	3	1LH1203-4BB14-2 ■■■ 0
960	1287	450	Δ	50	6144	IE3	96.3	96.6	97	0.86	970	7.4	1.9	3	1LH1203-4BB34-2 ■■■ 0
1050	1408	450	Δ	50	6720	N/A	96.2	96.7	97	0.87	1040	7.6	2	3	1LH1203-4BB54-2 ■■■ 0
1140	1529	450	Δ	50	7291	N/A	96.4	96.8	97.1	0.87	1140	7.5	2.2	3.3	1LH1203-4BB74-2 ■■■ 0
approx. 1000 rpm, 6-pole															
225	302	315	Y	50	2166	IE3	94.9	95.8	95.8	0.78	250	7.5	1.8	2.8	1LH1203-3AC14-3 ■■■ 0
310	416	315	Y	50	2987	IE3	94.9	95.9	96	0.8	340	7.6	1.7	2.6	1LH1203-3AC34-3 ■■■ 0
355	476	315	Y	50	3421	IE3	95	96	96.1	0.81	380	7.8	1.7	2.7	1LH1203-3AC54-3 ■■■ 0
405	543	315	Y	50	3903	IE3	95.1	96.1	96.2	0.83	425	7.4	1.6	2.5	1LH1203-3AC74-3 ■■■ 0
490	657	355	Y	50	4722	IE3	94.7	95.8	96	0.84	510	7.1	1.6	2	1LH1203-3BC54-3 ■■■ 0
530	711	355	Y	50	5107	IE3	94.8	95.9	96.1	0.85	540	7.1	1.6	2	1LH1203-3BC74-3 ■■■ 0
550	738	400	Y	50	5294	IE3	95.3	96	96.5	0.83	580	5.8	1.5	2.2	1LH1203-4AC34-3 ■■■ 0
660	885	400	Y	50	6347	IE3	95.8	96.4	96.8	0.85	670	6.9	1.7	2.6	1LH1203-4AC74-3 ■■■ 0
775	1039	450	Y	50	7453	IE3	95.9	96.4	96.8	0.83	810	6.4	1.3	2.4	1LH1203-4BC14-3 ■■■ 0
890	1194	450	Y/Y	50	8559	IE3	95.9	96.5	96.9	0.83	930	6.2	1.3	2.3	1LH1203-4BC34-3 ■■■ 0
975	1307	450	Δ	50	9376	IE3	96	96.5	97	0.85	990	6.5	1.4	2.4	1LH1203-4BC54-3 ■■■ 0
1115	1495	450	Δ	50	10712	N/A	96.2	96.7	97	0.85	1140	7	1.5	2.6	1LH1203-4BC74-3 ■■■ 0
approx. 750 rpm, 8-pole															
160	215	315	Y	50	2056	IE3	93.7	94.8	94.9	0.75	188	5.7	1.2	1.9	1LH1203-3AD14-4 ■■■ 0
235	315	315	Y	50	3024	IE3	93.5	94.8	94.9	0.76	275	5.3	1.2	1.8	1LH1203-3AD34-4 ■■■ 0
295	396	315	Y	50	3802	IE3	93.4	94.8	95.0	0.77	340	5.0	1.1	1.7	1LH1203-3AD54-4 ■■■ 0
325	436	315	Y	50	4188	IE3	93.5	94.8	95.1	0.78	370	5.0	1.1	1.7	1LH1203-3AD74-4 ■■■ 0
370	496	355	Y	50	4775	IE3	93.6	94.8	95.4	0.80	410	4.5	1.0	1.4	1LH1203-3BD54-4 ■■■ 0
400	536	355	Y	50	5162	IE3	93.8	94.9	95.5	0.80	440	4.6	1.0	1.4	1LH1203-3BD74-4 ■■■ 0
450	603	400	Y	50	5799	IE3	93.5	94.6	95.6	0.75	530	4	1.1	1.8	1LH1203-4AD34-4 ■■■ 0
495	664	400	Y	50	6379	IE3	93.7	94.8	95.7	0.77	570	4	1.1	1.8	1LH1203-4AD54-4 ■■■ 0
540	724	400	Y	50	6959	IE3	93.9	95	95.8	0.78	610	4.2	1.1	1.8	1LH1203-4AD74-4 ■■■ 0
655	878	450	Y	50	8441	IE3	93.8	95	95.9	0.76	760	4.4	1	1.9	1LH1203-4BD14-4 ■■■ 0 ¹⁾
705	945	450	Y	50	9073	IE3	93.9	95.1	95.9	0.75	830	4.6	1	1.9	1LH1203-4BD34-4 ■■■ 0 ¹⁾
800	1073	450	Y/Y	50	10296	IE3	94.3	95.3	96.1	0.76	920	4.8	1.1	2	1LH1203-4BD54-4 ■■■ 0 ¹⁾
925	1240	450	Y/Y	50	11888	IE3	94.6	95.3	96.2	0.77	1060	5.2	1.2	2.2	1LH1203-4BD74-4 ■■■ 0 ¹⁾

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 690 V, 50 Hz – Premium Efficiency

Motor type	Blocking time		Admissible moment of inertia and start-up times when starting up the motor						J	$L_{\text{pfA, tolerance +3 dB(A) no-load}}$	$L_{\text{WA, tolerance +3 dB(A) no-load}}$	Terminal box
	$m_{\text{IM B3}}$	$m_{\text{IM V1}}$	cold	warm	3 × cold		2 × warm					
			t_{Br}	t_{Br}	J_{adm}	t_{st}	J_{adm}	t_{st}				
kg	kg	s	s	kgm ²	s	kgm ²	s	kgm ²	dB(A)	dB(A)	Type	
1LH1203-3AB14-2..0	1280	1320	22.5	9.5	280	21.5	130	9.5	3.5	73	88.5	GT 640
1LH1203-3AB34-2..0	1490	1530	19	7	310	18	130	7.5	4.4	73	88.5	1XB1 621
1LH1203-3AB54-2..0	1690	1730	17.5	6	370	18	150	7	5	73	88.5	1XB1 631
1LH1203-3AB74-2..0	1860	1900	15.5	5.5	395	16	170	6.5	5.8	73	88.5	1XB1 631
1LH1203-3BB54-2..0	2280	2340	29.0	7.5	620	38.5	255	15.5	8.3	73	88.5	1XB1631
1LH1203-3BB74-2..0	2410	2460	21.5	5.5	600	29	255	12	8.9	73	88.5	1XB1 631
1LH1203-4AB34-2..0	2790	2860	8.5	5	325	16	170	8	13.6	73	89	1XB1 631
1LH1203-4AB54-2..0	3000	3070	6	3	325	12	180	6.5	15.4	73	89	1XB1 631
1LH1203-4AB74-2..0	3270	3340	8.5	3.5	425	16	220	8.5	17.6	73	89	1XB1 631
1LH1203-4BB14-2..0	3980	4080	6	2.5	400	13.5	185	6	22.8	73	89.5	1XB1 631
1LH1203-4BB34-2..0	4250	4350	6	2	440	12.5	200	6	25.5	73	89.5	1XB1 631
1LH1203-4BB54-2..0	4610	4710	5.5	1.5	480	12.5	170	4.5	28.3	73	89.5	1XB1 631
1LH1203-4BB74-2..0	5040	5140	5	1.5	555	12	230	5	32.6	73	89.5	1XB1 631
1LH1203-3AC14-3..0	1310	1350	22	10	495	19.5	255	9.5	5.9	68	83.5	GT 640
1LH1203-3AC34-3..0	1510	1560	20	7	565	17	230	6.5	7.2	68	83.5	1XB1 621
1LH1203-3AC54-3..0	1690	1740	19.5	7	605	16	255	6.5	8.3	68	83.5	1XB1 621
1LH1203-3AC74-3..0	1830	1880	21	7.5	740	18.5	295	7	9.1	68	83.5	1XB1 631
1LH1203-3BC54-3..0	2280	2330	20.5	7.5	675	18	310	8	14.5	68	83.5	1XB1 631
1LH1203-3BC74-3..0	2420	2480	20.5	7.5	715	18	330	8	16	68	83.5	1XB1 631
1LH1203-4AC34-3..0	2830	2900	26	11	1280	34	505	13	21.5	68	84	1XB1 631
1LH1203-4AC74-3..0	3270	3340	20	7.5	1690	31	665	12	27	68	84	1XB1 631
1LH1203-4BC14-3..0	3900	4000	17	9	1820	33	850	15.5	33.8	68	84.5	1XB1 631
1LH1203-4BC34-3..0	4340	4440	17	7	2025	33	885	14.5	37.8	68	84.5	2 × 1XB1 631
1LH1203-4BC54-3..0	4630	4730	17.5	7	2295	33.5	1055	15	42.5	68	84.5	1XB1 631
1LH1203-4BC74-3..0	5040	5140	14	5	2380	28	1125	13	48.4	68	84.5	1XB1 631
1LH1203-3AD14-4..0	1310	1350	41.0	23.5	1030	45.5	675	28.0	5.9	72	87.5	GT640
1LH1203-3AD34-4..0	1490	1530	35.5	16.0	1150	37.0	550	16.5	7.2	72	87.5	GT640
1LH1203-3AD54-4..0	1690	1740	34.0	12.5	1250	34.0	495	12.5	8.3	72	87.5	1XB1621
1LH1203-3AD74-4..0	1800	1850	34.5	12.5	1345	34.0	535	12.5	9.1	72	87.5	1XB1621
1LH1203-3BD54-4..0	2250	2300	38.0	16.5	1095	37.5	570	18.0	14.5	72	87.5	1XB1621
1LH1203-3BD74-4..0	2420	2480	38.5	17.5	1225	38.5	665	19.0	16.0	72	87.5	1XB1631
1LH1203-4AD34-4..0	2830	2900	50.5	18.5	2080	54	820	20	21.5	72	88	1XB1 631
1LH1203-4AD54-4..0	3040	3110	53.5	19.5	2420	58	935	21	24	72	88	1XB1 631
1LH1203-4AD74-4..0	3270	3340	53.5	20	2675	57.5	1055	21.5	27	72	88	1XB1 631
1LH1203-4BD14-4..0	3900	4000	69	24	3100	70	1175	25	33.8	72	88.5	1XB1 631
1LH1203-4BD34-4..0	4200	4300	68.5	23.5	3115	62.5	1260	23.5	37.8	72	88.5	1XB1 631
1LH1203-4BD54-4..0	4780	4880	66	23.5	3760	60.5	1535	23.5	42.5	72	88.5	2 × 1XB1 631
1LH1203-4BD74-4..0	5200	5300	57	19	4240	53	1750	21	48.4	72	88.5	2 × 1XB1 631

1) Utilization according to thermal class 155 (F).

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

Operating values at rated power														1LH1 cast-iron series Version specifically for line operation Article No.	
P_{rated}	P_{rated}	Frame size	Con- nec- tion	f_{rated}	T_{rated}	Effi- ciency class	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	COS- $\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_{LR}/T_{rated}		T_B/T_{rated}
kW	hp	FS		Hz	Nm		%	%	%		A				
• Insulation: Thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 130 (B)															
approx. 1800 rpm, 4-pole															
300	402	315	Δ	60	1608	IE2	94.8	95.8	96	0.87	450	5.8	1.2	1.9	1LH1202-3AB15-6 ■■ 0
405	543	315	Δ	60	2170	IE2	95.2	96.1	96.3	0.88	600	6.4	1.4	2.1	1LH1202-3AB35-6 ■■ 0
485	650	315	Δ	60	2593	IE2	95.6	95.9	96.4	0.88	720	7.6	1.7	2.5	1LH1202-3AB55-6 ■■ 0
560	751	315	Δ	60	2994	IE2	95.7	95.9	96.6	0.89	820	7.8	1.8	2.5	1LH1202-3AB75-6 ■■ 0
approx. 1200 rpm, 6-pole															
255	342	315	Δ	60	2046	IE2	94.8	95.7	95.9	0.83	405	6.9	1.3	2.2	1LH1202-3AC15-7 ■■ 0
310	416	315	Δ	60	2488	IE2	95.1	95.7	96.1	0.84	485	7	1.4	2.3	1LH1202-3AC35-7 ■■ 0
360	483	315	Δ	60	2889	IE2	95.1	95.7	96.2	0.86	550	6.8	1.3	2.2	1LH1202-3AC55-7 ■■ 0
440	590	315	Δ	60	3528	IE2	95.5	95.7	96.3	0.84	690	7.8	1.6	2.6	1LH1202-3AC75-7 ■■ 0
approx. 900 rpm, 8-pole															
220	295	315	Δ	60	2361	IE2	93.4	94.7	94.9	0.77	380	4.8	1	1.5	1LH1202-3AD15-8 ■■ 0
285	382	315	Δ	60	3054	IE2	93.8	94.9	95.1	0.78	485	5.1	1	1.6	1LH1202-3AD35-8 ■■ 0
330	443	315	Δ	60	3537	IE2	94.1	94.9	95.3	0.79	550	5.3	1.1	1.7	1LH1202-3AD55-8 ■■ 0
360	483	315	Δ	60	3858	IE2	94.2	94.9	95.3	0.79	600	5.3	1.1	1.7	1LH1202-3AD75-8 ■■ 0
425	570	355	Δ	60	4560	IE2	93.8	94.9	95.3	0.81	690	4.6	0.9	1.4	1LH1202-3BD55-8 ■■ 0
470	630	355	Δ	60	5043	IE2	93.9	94.9	95.4	0.81	770	4.4	0.9	1.3	1LH1202-3BD75-8 ■■ 0

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	Blocking time		Admissible moment of inertia and start-up times when starting up the motor						J	$L_{\text{pIA, tolerance +3 dB(A) no-load}}$	$L_{\text{WA, tolerance +3 dB(A) no-load}}$	Terminal box Type
	$m_{\text{IM B3}}$	$m_{\text{IM V1}}$	cold	warm	3 × cold		2 × warm					
			t_{Br}	t_{Br}	J_{adm}	t_{st}	J_{adm}	t_{st}				
kg	kg	s	s	kgm ²	s	kgm ²	s	kgm ²	dB(A)	dB(A)		
1LH1202-3AB15-6..0	1280	1320	33	13	200	32	80	12	3.5	73	88.5	GT 640
1LH1202-3AB35-6..0	1490	1530	22	8.5	255	25	95	9	4.4	73	88.5	1XB1 621
1LH1202-3AB55-6..0	1660	1700	13.5	5.5	280	18.5	110	7	5	73	88.5	1XB1 621
1LH1202-3AB75-6..0	1860	1900	12	4.5	320	17.5	130	7	5.8	73	88.5	1XB1 631
1LH1202-3AC15-7..0	1310	1350	28	10	345	24.5	140	9	5.9	68	83.5	GT 640
1LH1202-3AC35-7..0	1490	1530	26.5	10	415	23	170	9	7.2	68	83.5	GT 640
1LH1202-3AC55-7..0	1690	1740	28	10	485	24.5	190	9	8.3	68	83.5	1XB1 621
1LH1202-3AC75-7..0	1800	1850	21.5	7.5	570	19	225	7	9.1	68	83.5	1XB1 621
1LH1202-3AD15-8..0	1310	1350	43	15.5	705	48	285	17.5	5.9	72	87.5	GT 640
1LH1202-3AD35-8..0	1490	1530	37	13	830	40	320	14	7.2	72	87.5	GT 640
1LH1202-3AD55-8..0	1690	1740	35.5	13	965	38.5	380	14	8.3	72	87.5	1XB1 621
1LH1202-3AD75-8..0	1800	1850	35.5	13	1045	38	425	14	9.1	72	87.5	1XB1 621
1LH1202-3BD55-8..0	2250	2300	39.5	14.5	750	37.5	340	15	14.5	72	87.5	1XB1 621
1LH1202-3BD75-8..0	2420	2480	40	14.5	810	37.5	365	15	16	72	87.5	1XB1 631

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Selection and ordering data

Operating values at rated power														1LH1 cast-iron series Version specifically for line operation Article No.	
P_{rated}	P_{rated}	Frame size	Con- nec- tion	f_{rated}	T_{rated}	Effi- ciency class	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	COS- $\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_{LR}/T_{rated}		T_B/T_{rated}
kW	hp	FS		Hz	Nm		%	%	%		A				
• Insulation: Thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 130 (B)															
approx. 1800 rpm, 4-pole															
345	463	315	Δ	60	1845	IE3	95.3	96.2	96.3	0.84	540	6.9	1.5	2.4	1LH1203-3AB15-6 ■■■ 0
435	583	315	Δ	60	2326	IE3	95.5	96.4	96.5	0.86	660	7.2	1.6	2.4	1LH1203-3AB35-6 ■■■ 0
490	657	315	Δ	60	2620	IE3	95.6	96.5	96.6	0.87	730	7.5	1.7	2.5	1LH1203-3AB55-6 ■■■ 0
565	758	315	Δ	60	3021	IE3	95.8	96.6	96.7	0.88	830	7.7	1.8	2.5	1LH1203-3AB75-6 ■■■ 0
640	858	355	Δ	60	3422	IE3	95.7	96.6	96.7	0.88	940	6.3	1.4	2.1	1LH1203-3BB75-6 ■■■ 0
685	919	400	Δ	60	3654	IE3	95.8	96.3	96.6	0.86	1040	6.7	1.5	2.4	1LH1203-4AB35-6 ■■■ 0
760	1019	400	Δ	60	4052	IE3	96.1	96.5	96.7	0.86	1140	7.5	1.8	2.7	1LH1203-4AB55-6 ■■■ 0
approx. 1200 rpm, 6-pole															
275	369	315	Δ	60	2205	IE3	95.1	96	96.1	0.8	450	7.6	1.5	2.5	1LH1203-3AC15-7 ■■■ 0
345	463	315	Δ	60	2766	IE3	95.4	96.3	96.3	0.81	560	7.7	1.6	2.6	1LH1203-3AC35-7 ■■■ 0
395	530	315	Δ	60	3164	IE3	95.5	96.4	96.4	0.82	630	7.8	1.6	2.6	1LH1203-3AC55-7 ■■■ 0
450	603	315	Δ	60	3608	IE3	95.6	96.4	96.5	0.84	700	7.7	1.5	2.5	1LH1203-3AC75-7 ■■■ 0
545	731	355	Δ	60	4370	IE3	95.2	96.2	96.3	0.85	840	7.3	1.5	1.9	1LH1203-3BC55-7 ■■■ 0
585	784	355	Δ	60	4687	IE3	95.3	96.3	96.4	0.85	900	7.3	1.5	1.9	1LH1203-3BC75-7 ■■■ 0
610	818	400	Δ	60	4887	IE3	95.7	96.3	96.7	0.84	950	6.1	1.4	2.2	1LH1203-4AC35-7 ■■■ 0
725	972	400	Δ	60	5803	IE3	96.1	96.4	96.9	0.85	1120	7.1	1.7	2.6	1LH1203-4AC75-7 ■■■ 0
950	1274	450	Δ	50	7611	IE3	96	96.4	96.9	0.84	1480	5.9	1.2	2.1	1LH1203-4BC15-7 ■■■ 0
1100	1475	450	Δ/Δ	50	8820	N/A	96	96.6	97	0.84	1700	5.7	1.1	2	1LH1203-4BC35-7 ■■■ 0
approx. 900 rpm, 8-pole															
225	302	315	Δ	60	2414	IE3	93.4	95.0	95.1	0.77	385	4.7	1.0	1.5	1LH1203-3AD15-8 ■■■ 0
285	382	315	Δ	60	3058	IE3	93.9	95.2	95.4	0.78	480	5.1	1.0	1.6	1LH1203-3AD35-8 ■■■ 0
335	449	315	Δ	60	3590	IE3	94.2	95.3	95.5	0.78	570	5.1	1.1	1.7	1LH1203-3AD55-8 ■■■ 0
370	496	315	Δ	60	3965	IE3	94.2	95.4	95.5	0.79	620	5.1	1.1	1.7	1LH1203-3AD75-8 ■■■ 0
410	550	355	Δ	60	4399	IE3	94.4	95.4	95.9	0.80	670	4.7	0.9	1.4	1LH1203-3BD55-8 ■■■ 0
450	603	355	Δ	60	4828	IE3	94.5	95.5	96.0	0.80	740	4.6	0.9	1.4	1LH1203-3BD75-8 ■■■ 0
510	684	400	Δ	60	5466	IE3	94	95.1	95.9	0.76	890	4.1	1	1.7	1LH1203-4AD35-8 ■■■ 0
555	744	400	Δ	60	5948	IE3	94.3	95.3	96	0.77	950	4.1	1	1.7	1LH1203-4AD55-8 ■■■ 0
605	811	400	Δ	60	6484	IE3	94.5	95.4	96.1	0.78	1020	4.2	1.1	1.8	1LH1203-4AD75-8 ■■■ 0
805	1080	450	Δ	50	8637	IE3	93.9	95.2	96.1	0.75	1420	4	0.9	1.7	1LH1203-4BD15-8 ■■■ 0 ¹⁾
865	1160	450	Δ	50	9281	IE3	94	95.3	96.1	0.75	1520	4.2	0.9	1.7	1LH1203-4BD35-8 ■■■ 0
990	1328	450	Δ/Δ	50	10610	IE3	94.4	95.5	96.3	0.76	1720	4.4	0.9	1.8	1LH1203-4BD55-8 ■■■ 0 ¹⁾
1145	1535	450	Δ/Δ	50	12272	N/A	94.7	95.7	96.4	0.77	1960	4.7	1	1.9	1LH1203-4BD75-8 ■■■ 0 ¹⁾

For versions, see Article No. supplements and special versions.

Water-cooled motors with water-jacket cooling

1LH1 motors for line operation

Line voltage 460 V, 60 Hz – Premium Efficiency

Motor type	Blocking time		Admissible moment of inertia and start-up times when starting up the motor								$L_{p(A)}$, tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Terminal box Type
	$m_{IM B3}$	$m_{IM V1}$	cold	warm	3 × cold		2 × warm		J				
			t_{Br}	t_{Br}	J_{adm}	t_{st}	J_{adm}	t_{st}					
kg	kg	s	s	kgm ²	s	kgm ²	s	kgm ²	dB(A)	dB(A)			
1LH1203-3AB15-6..0	1300	1350	18	7	200	21.5	80	8	3.5	73	88.5	1XB1 621	
1LH1203-3AB35-6..0	1490	1530	15	6	235	18.5	95	7	4.4	73	88.5	1XB1 621	
1LH1203-3AB55-6..0	1690	1730	14	5.5	280	18.5	110	7	5	73	88.5	1XB1 631	
1LH1203-3AB75-6..0	1860	1900	12	4.5	295	16.5	125	6.5	5.8	73	88.5	1XB1 631	
1LH1203-3BB75-6..0	2410	2460	17	4.5	360	24	165	10.5	8.9	73	88.5	1XB1 631	
1LH1203-4AB35-6..0	2790	2860	8	4	200	13.5	105	7	13.6	73	89	1XB1 631	
1LH1203-4AB55-6..0	3000	3070	6	3	200	10.5	110	5.5	15.4	73	89	1XB1 631	
1LH1203-3AC15-7..0	1310	1350	23	8	350	19.5	140	7.5	5.9	68	83.5	GT 640	
1LH1203-3AC35-7..0	1510	1560	21	7.5	430	18	175	7	7.2	68	83.5	1XB1 621	
1LH1203-3AC55-7..0	1690	1740	20	7	455	16.5	190	6.5	8.3	68	83.5	1XB1 621	
1LH1203-3AC75-7..0	1800	1850	21.5	7.5	560	19	225	7	9.1	68	83.5	1XB1 621	
1LH1203-3BC55-7..0	2280	2330	21.5	7.5	510	18.5	230	8	14.5	68	83.5	1XB1 631	
1LH1203-3BC75-7..0	2420	2480	21.5	7.5	540	18.5	245	8	16	68	83.5	1XB1 631	
1LH1203-4AC35-7..0	2830	2900	19.5	9	985	35	395	14	21.5	68	84	1XB1 631	
1LH1203-4AC75-7..0	3270	3340	15	6	1230	30.5	505	12.5	27	68	84	1XB1 631	
1LH1203-4BC15-7..0	3900	4000	15	5.5	1075	28	415	11	33.8	68	84.5	1XB1 631	
1LH1203-4BC35-7..0	4340	4440	15	4.5	1190	28	425	10	37.8	68	84.5	2 × 1XB1 631	
1LH1203-3AD15-8..0	1310	1350	43.0	15.0	635	42.5	245	14.5	5.9	72	87.5	GT640	
1LH1203-3AD35-8..0	1490	1530	37.0	13.5	790	36.5	315	13.5	7.2	72	87.5	GT640	
1LH1203-3AD55-8..0	1690	1740	35.5	13.0	915	35.0	360	12.5	8.3	72	87.5	1XB1621	
1LH1203-3AD75-8..0	1800	1850	36.0	12.5	980	34.5	375	12.0	9.1	72	87.5	1XB1621	
1LH1203-3BD55-8..0	2250	2300	39.5	17.5	805	38.5	430	19.0	14.5	72	87.5	1XB1621	
1LH1203-3BD75-8..0	2420	2480	40.0	17.5	880	39.0	475	19.0	16.0	72	87.5	1XB1631	
1LH1203-4AD35-8..0	2830	2900	52.5	16.5	1530	55.5	580	19.5	21.5	72	88	1XB1 631	
1LH1203-4AD55-8..0	3040	3110	55.5	18	1820	60	700	21.5	24	72	88	1XB1 631	
1LH1203-4AD75-8..0	3270	3340	55.5	18	2025	59.5	785	21.5	27	72	88	1XB1 631	
1LH1203-4BD15-8..0	3900	4000	68	16.5	1740	68.5	800	26.5	33.8	72	88.5	1XB1 631	
1LH1203-4BD35-8..0	4200	4300	70.5	18	1840	61.5	890	26	37.8	72	88.5	1XB1 631	
1LH1203-4BD55-8..0	4780	4880	61.5	14	2280	59	1065	25	42.5	72	88.5	2 × 1XB1 631	
1LH1203-4BD75-8..0	5200	5300	50.5	10.5	2685	51.5	1095	19.5	48.4	72	88.5	2 × 1XB1 631	

1) Utilization according to thermal class 155 (F).

Water-cooled motors with water-jacket cooling

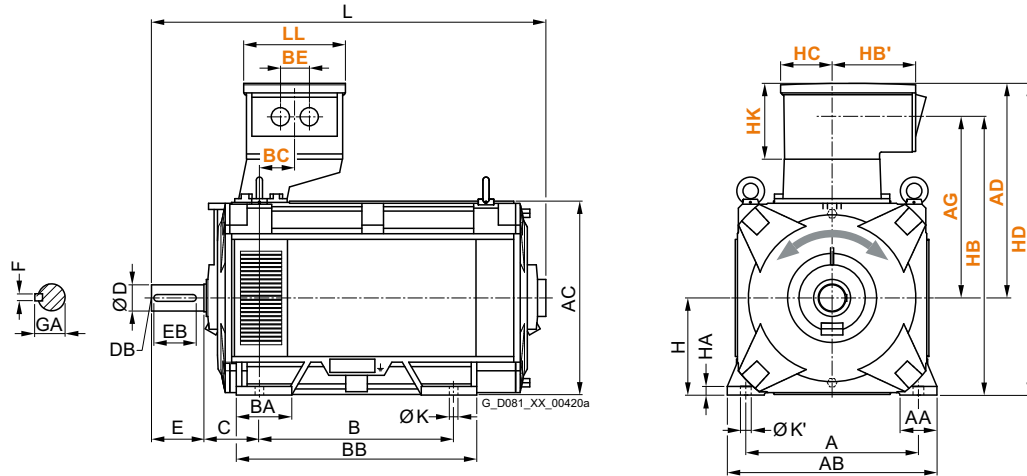
Dimensions

1LH1 motors

Dimensional drawings

Type of construction IM B3

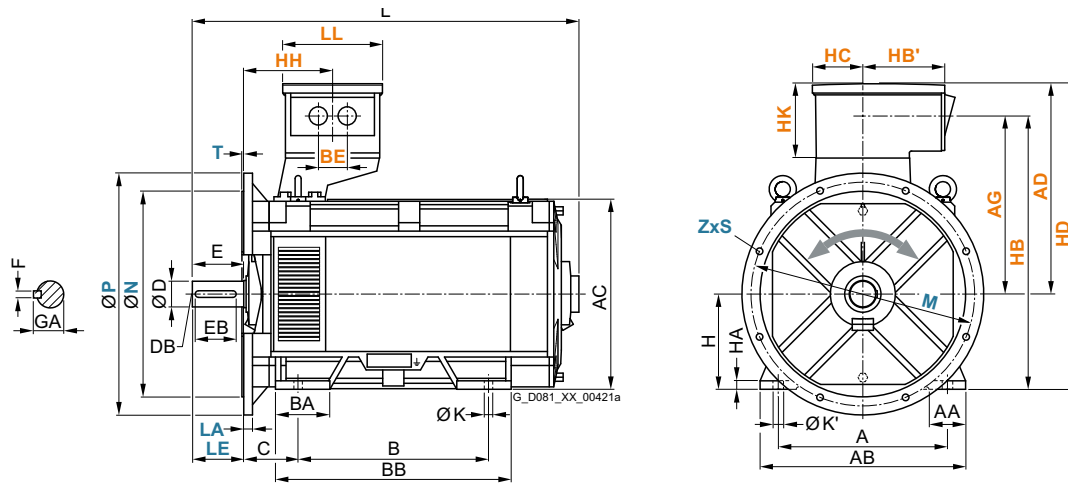
For terminal box dimensions, see page 6/57



6

Types of construction IM B35 and IM V1

For flange dimensions, see page 6/56 (Z = the number of retaining holes),
For terminal box dimensions, see page 6/57



Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																		
			A	AA	AB	AC	B	BA	BB	C	H	HA	K	K'	L ¹⁾	D	DB	E	EB	F	GA
315	4, 6, 8	1LH1...-3A.1.-....	560	120	680	630	630	180	780	180	315	28	28	35	1280	85	M20	170	140	22	90
		1LH1...-3A.3.-....	● 560	120	680	630	630	180	780	200	315	28	28	35	1300	95	M24	170	140	25	100
		1LH1...-3A.5.-....	560	120	680	630	835	180	985	180	315	28	28	35	1420	85	M20	170	140	22	90
		1LH1...-3A.7.-....	● 560	120	680	630	835	180	985	200	315	28	28	35	1440	95	M24	170	140	25	100
355	4, 6, 8	1LH1...-3B.5.-....	630	150	780	710	800	220	980	200	355	35	35	42	1530	95	M24	170	140	25	100
		1LH1...-3B.7.-....	● 630	150	780	710	800	220	980	224	355	28	28	35	1595	100	M24	210	180	28	106
400	4, 6	1LH1...-4A.3.-....	710	150	860	800	900	220	1080	224	400	35	35	42	1710	110	M24	210	180	28	116
		1LH1...-4A.5.-....	● 710	150	860	800	900	220	1080	250	400	35	35	42	1740	120	M24	210	180	32	127
		1LH1...-4A.7.-....																			
450	4, 6	1LH1...-4B.1.-....	800	180	980	900	1000	260	1220	250	450	42	42	50	1725	120	M24	210	180	32	127
		1LH1...-4B.3.-....	● 800	180	980	900	1000	260	1220	280	450	42	42	50	1795	130	M24	250	220	32	137
		1LH1...-4B.5.-....	800	180	980	900	1000	260	1220	250	450	42	42	50	1900	120	M24	210	180	32	127
		1LH1...-4B.7.-....	● 800	180	980	900	1000	260	1220	280	450	42	42	50	1970	130	M24	250	220	32	137

- Bearing design for increased cantilever forces, for type of construction IM B3 only.

Note:

When using an encoder, dimensions L and LM increase by 170 mm for frame size 315, by 190 mm for frame size 355 and by 260 mm for frame size 400 and frame size 450.

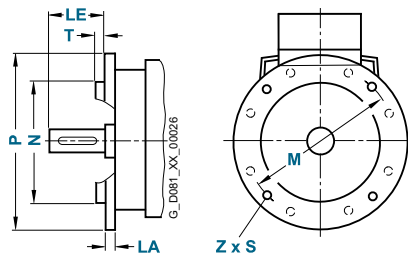
¹⁾ Without encoder

Water-cooled motors with water-jacket cooling

Dimensions

Flanges

Dimensional drawings

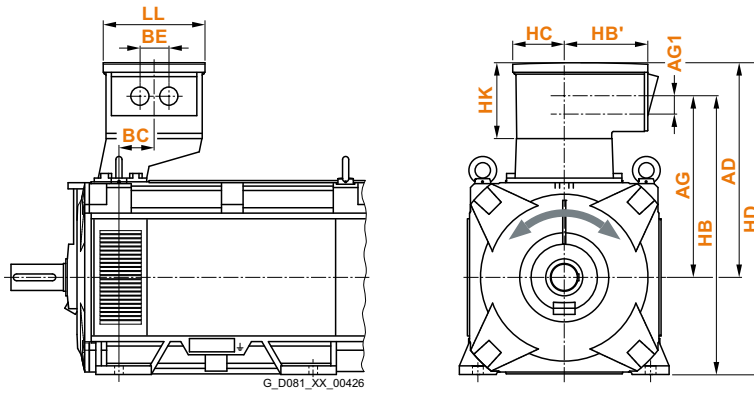


(Z = the number of retaining holes)

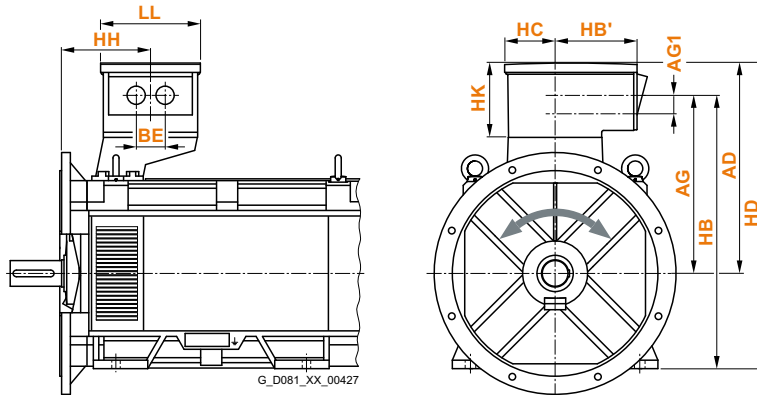
Motor type	Frame size	No. of poles	Type of construction	Flange type	Flange with through holes (FF/A) acc. to DIN 42948	Dimension designation acc. to IEC							
						LA	LE	M	N	P	S	T	Z
1LH1	315	4, 6	IM B35, IM V1	Flange	A 800	29	170	740	680	800	22	6	8
				Flange (order code M61)	A 660	22	170	600	550	660	22	6	8
	355	4, 6	IM B35, IM V1	Flange	A 900	29	170	840	780	900	22	6	8
				Flange (order code M61)	A 660	27	170	600	550	660	22	6	8
	400	4, 6	IM B35, IM V1	Flange	A 1000	28	210	940	880	1000	22	6	8
	450	4, 6	IM B35, IM V1	Flange	A 1150	30	210	1080	1000	1150	26	6	8

Dimensional drawings

Type of construction IM B3



Types of construction IM B35 and IM V1



Water-cooled motors with water-jacket cooling

Dimensions

Terminal boxes

Dimensional drawings (continued)

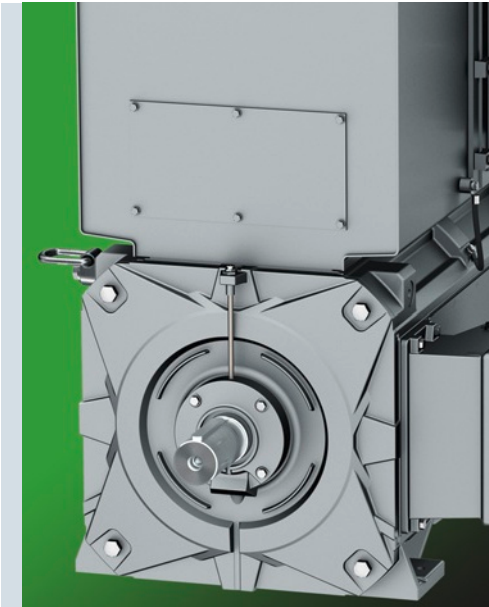
Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LH1	315	4, 6	1XB7730	705	570	–	115	–	885	310	295	180	1020	255	345
			1XB7731	705	570	–	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
			GT640	620	520	–	115	110	835	225	295	155	935	170	310
			1XB1621	700	580	–	115	150	895	305	295	165	1015	250	330
			1XB1631	770	635	–	115	100	950	400	295	175	1085	320	555
	355	4, 6	1XB7730	750	615	–	100	–	970	310	300	180	1105	255	345
			1XB7731	750	615	–	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425
			GT640	665	565	–	100	110	920	225	300	155	1020	170	310
			1XB1621	745	625	–	100	150	980	305	300	165	1100	250	330
			1XB1631	815	680	–	100	100	1035	400	300	175	1170	320	555
	400	4, 6	1XB7730	795	660	–	100	–	1060	310	324	180	1195	255	345
			1XB7731	795	660	–	100	115	1060	310	324	180	1195	255	345
			1XB7740	880	700	60	100	96	1100	365	324	235	1280	340	425
			1XB7750	960	850	65	100	103	1250	405	324	300	1360	420	890
			GT640	710	610	–	100	110	1010	225	324	155	1110	170	310
			1XB1621	790	670	–	100	150	1070	305	324	165	1190	250	330
	450	4, 6	1XB1 631	860	725	–	100	100	1125	400	324	175	1260	320	555
			1XB7730	841	710	–	80	–	1160	310	325	180	1291	255	345
			1XB7731	841	710	–	80	115	1160	310	325	180	1291	255	345
			1XB7740	926	750	60	80	96	1200	365	325	235	1376	340	425
			1XB7750	1006	900	65	80	103	1350	405	325	300	1456	420	890
			GT640	756	660	–	80	110	1110	225	325	155	1206	170	310
1XB1621	836	720	–	80	150	1170	305	325	165	1286	250	330			
1XB1631	906	770	–	80	100	1220	400	325	175	1356	320	555			

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

Water-cooled motors with air-to-water heat exchanger



7/2 1LN1 motors for converter operation

7/2 Line voltage 400 V, 50 Hz

7/2 High Efficiency

7/6 Line voltage 500 V, 50 Hz

7/6 High Efficiency

7/10 Line voltage 690 V, 50 Hz

7/10 High Efficiency

7/14 Line voltage 460 V, 60 Hz

7/14 High Efficiency

7/18 Line voltage 575 V, 60 Hz

7/18 High Efficiency

7/22 Dimensions

7/22 1LN1 motors

7/24 Flanges

7/25 Terminal boxes

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A				
<ul style="list-style-type: none"> Rated motor voltage 425 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
3000 rpm, 4-pole														
350	469	315	Δ	101	1114	94.8	95.8	95.9	0.88	560	4.5	2005	7500	1LN1212-3AB11-1 ■■ 5
440	590	315	Δ	100.9	1401	95.2	96.1	96.2	0.89	700	4.8	2802	7500	1LN1212-3AB31-1 ■■ 5
490	657	315	Δ	100.8	1560	95.4	96.2	96.2	0.9	770	5.2	3276	7500	1LN1212-3AB51-1 ■■ 5
570	764	315	Δ	100.8	1814	95.6	96.4	96.4	0.9	890	5.5	3991	7500	1LN1212-3AB71-1 ■■ 5
670	898	355	Δ/Δ	100.8	2133	95.5	96.4	96.4	0.88	1080	4.4	4053	10200	1LN1212-3BB51-1 ■■ 5
675	905	355	Δ/Δ	100.9	2149	95.3	96.4	96.4	0.88	1080	4.1	3868	10200	1LN1212-3BB71-1 ■■ 5
1500 rpm, 4-pole														
315	422	315	Δ	50.7	2005	94	95.2	95.7	0.88	510	5.6	4812	7500	1LN1212-3AB11-2 ■■ 5
415	557	315	Δ	50.7	2642	94.5	95.7	96.1	0.89	660	6.3	6869	7500	1LN1212-3AB31-2 ■■ 5
455	610	315	Δ	50.6	2897	94.7	95.8	96.1	0.9	720	6.5	7822	7500	1LN1212-3AB51-2 ■■ 5
525	704	315	Δ	50.7	3342	94.7	95.8	96.2	0.9	830	6.3	8689	7500	1LN1212-3AB71-2 ■■ 5
630	845	355	Δ	50.7	4011	94.6	95.9	96.3	0.89	1000	5.1	9225	10200	1LN1212-3BB51-2 ■■ 5
715	959	355	Δ/Δ	50.6	4552	94.9	96.1	96.5	0.89	1140	5.6	11380	10200	1LN1212-3BB71-2 ■■ 5
785	1053	400	Δ	50.5	4997	95.2	95.9	96.5	0.87	1280	5.8	11993	16400	1LN1212-4AB31-2 ■■ 5
880	1180	400	Δ	50.4	5602	95.5	96.2	96.7	0.88	1420	6.6	15125	16400	1LN1212-4AB51-2 ■■ 5
1075	1442	450	Δ	50.3	6844	96.1	96.5	96.8	0.86	1760	7.5	21901	20700	1LN1212-4BB11-2 ■■ 5
1110	1489	450	Δ	50.3	7066	96.1	96.5	96.7	0.87	1800	8.2	24024	20700	1LN1212-4BB31-2 ■■ 5
1000 rpm, 6-pole														
285	382	315	Δ	50.7	2722	93.7	95	95.5	0.82	495	5.8	5716	7500	1LN1212-3AC11-3 ■■ 5
345	463	315	Δ	50.7	3295	94.1	95.3	95.7	0.83	590	5.9	7249	7500	1LN1212-3AC31-3 ■■ 5
395	530	315	Δ	50.7	3772	94.1	95.4	95.8	0.84	670	5.8	7921	7500	1LN1212-3AC51-3 ■■ 5
445	597	315	Δ	50.6	4249	94.4	95.5	95.9	0.84	750	6.2	9773	7500	1LN1212-3AC71-3 ■■ 5
540	724	355	Δ	50.5	5157	94.3	95.5	95.8	0.86	890	6.5	12377	10200	1LN1212-3BC51-3 ■■ 5
615	825	355	Δ	50.5	5873	94.7	95.7	95.9	0.86	1020	7.2	15857	10200	1LN1212-3BC71-3 ■■ 5
695	932	400	Δ	50.5	6637	95.2	95.9	96.5	0.86	1140	5.9	15265	16400	1LN1212-4AC51-3 ■■ 5
790	1059	400	Δ	50.4	7544	95.6	96.2	96.6	0.86	1300	6.8	20369	16400	1LN1212-4AC71-3 ■■ 5
840	1126	450	Δ	50.4	8021	95.6	96.2	96.7	0.85	1400	5.6	16844	20700	1LN1212-4BC11-3 ■■ 5
995	1334	450	Δ	50.3	9502	95.9	96.4	96.8	0.84	1660	6.5	23755	20700	1LN1212-4BC31-3 ■■ 5
750 rpm, 6-pole														
230	308	315	Δ	38.2	2928	92.3	93.8	94.6	0.81	410	5.4	6149	7500	1LN1212-3AC11-4 ■■ 5
285	382	315	Δ	38.2	3629	92.7	94.2	94.9	0.83	495	5.5	7621	7500	1LN1212-3AC31-4 ■■ 5
320	429	315	Δ	38.2	4074	92.7	94.3	95	0.85	540	5.3	8148	7500	1LN1212-3AC51-4 ■■ 5
360	483	315	Δ	38.2	4584	92.8	94.4	95.1	0.85	610	5.2	9168	7500	1LN1212-3AC71-4 ■■ 5
420	563	355	Δ	38.1	5348	92.8	94.3	95	0.87	700	5.7	11766	10200	1LN1212-3BC51-4 ■■ 5
470	630	355	Δ	38.1	5984	93.1	94.6	95.1	0.88	770	5.9	13165	10200	1LN1212-3BC71-4 ■■ 5
515	691	400	Δ	38	6557	93.6	94.7	95.7	0.86	860	5	13114	16400	1LN1212-4AC31-4 ■■ 5
595	798	400	Δ	38	7576	94.2	95.1	95.9	0.86	990	5.6	17425	16400	1LN1212-4AC51-4 ■■ 5
630	845	400	Δ	38	8021	94.3	95.2	96	0.87	1040	5.5	17646	16400	1LN1212-4AC71-4 ■■ 5
690	925	450	Δ	37.9	8785	94.8	95.6	96.3	0.85	1160	5.5	19327	20700	1LN1212-4BC11-4 ■■ 5
800	1073	450	Δ	37.9	10186	95	95.8	96.4	0.84	1360	5.8	23428	20700	1LN1212-4BC31-4 ■■ 5
905	1214	450	Δ	37.9	11523	95.1	95.9	96.5	0.86	1500	5.6	25351	20700	1LN1212-4BC51-4 ■■ 5
985	1321	450	Δ	37.9	12541	95.1	95.9	96.5	0.86	1620	5.6	27590	20700	1LN1212-4BC71-4 ■■ 5

For versions, see Article No. supplements and special versions. ■■

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1212-3AB11-1.5	1600	1650	3.3	79	95.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AB31-1.5	1830	1880	4.2	79	95.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3AB51-1.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LN1212-3AB71-1.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-3BB51-1.5	2860	2920	8	79	96	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-3BB71-1.5	2980	3040	8.7	79	96	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-3AB11-2.5	1600	1650	3.3	79	95.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AB31-2.5	1830	1880	4.2	79	95.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3AB51-2.5	2020	2060	4.8	79	95.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3AB71-2.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-3BB51-2.5	2730	2790	8	79	96	2600	1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-3BB71-2.5	2980	3040	8.7	79	96	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-4AB31-2.5	3360	3430	13.2	79	96.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LN1212-4AB51-2.5	3560	3630	14.9	79	96.5	2200	1XB7 750	On request	On request
1LN1212-4BB11-2.5	4630	4730	22.2	79	97	2000	1XB7 750	On request	On request
1LN1212-4BB31-2.5	4910	5010	24.9	79	97	2000	1XB7 750	On request	On request
1LN1212-3AC11-3.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AC31-3.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AC51-3.5	2050	2100	8.1	79	95.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3AC71-3.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LN1212-3BC51-3.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-3BC71-3.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-4AC51-3.5	3600	3670	23.6	79	96.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4AC71-3.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LN1212-4BC11-3.5	4550	4650	33.2	79	97	1700	1XB7 750	On request	On request
1LN1212-4BC31-3.5	4850	4950	37.2	79	97	1700	1XB7 750	On request	On request
1LN1212-3AC11-4.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LN1212-3AC31-4.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AC51-4.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AC71-4.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3BC51-4.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3BC71-4.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LN1212-4AC31-4.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-4AC51-4.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-4AC71-4.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-4BC11-4.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4BC31-4.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LN1212-4BC51-4.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1212-4BC71-4.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
3000 rpm, 4-pole															
340	456	315	Δ	100.9	1082	94.9	95.8	95.9	0.88	610	4.6	2056	7500	1LN1222-3AB11-1 ■■ 5	
440	590	315	Δ	100.9	1401	95.4	96.2	96.3	0.89	780	5.1	2802	7500	1LN1222-3AB31-1 ■■ 5	
500	671	315	Δ	100.8	1592	95.6	96.3	96.3	0.9	880	5.6	3502	7500	1LN1222-3AB51-1 ■■ 5	
510	684	315	Δ	100.9	1623	95.3	96.2	96.3	0.9	890	4.9	3084	7500	1LN1222-3AB71-1 ■■ 5	
690	925	355	Δ/Δ	100.7	2196	95.7	96.5	96.5	0.89	1220	5	4831	10200	1LN1222-3BB51-1 ■■ 5	
700	939	355	Δ/Δ	100.8	2228	95.6	96.5	96.5	0.89	1240	4.6	4456	10200	1LN1222-3BB71-1 ■■ 5	
1500 rpm, 4-pole															
330	443	315	Δ	50.7	2101	94.2	95.4	95.8	0.87	600	6	5463	7500	1LN1222-3AB11-2 ■■ 5	
405	543	315	Δ	50.6	2578	94.5	95.7	96.1	0.89	720	6.4	6961	7500	1LN1222-3AB31-2 ■■ 5	
460	617	315	Δ	50.6	2928	94.7	95.8	96.2	0.9	810	6.5	7906	7500	1LN1222-3AB51-2 ■■ 5	
535	717	315	Δ	50.6	3406	94.8	95.9	96.3	0.9	940	6.6	9196	7500	1LN1222-3AB71-2 ■■ 5	
645	865	355	Δ/Δ	50.7	4106	94.7	95.9	96.3	0.89	1140	5.3	9444	10200	1LN1222-3BB51-2 ■■ 5	
750	1006	355	Δ/Δ	50.6	4775	95.1	96.2	96.5	0.89	1340	5.8	12415	10200	1LN1222-3BB71-2 ■■ 5	
810	1086	400	Δ	50.5	5157	95.2	96	96.6	0.89	1440	5.7	11861	16400	1LN1222-4AB51-2 ■■ 5	
940	1261	400	Δ	50.4	5984	95.6	96.2	96.7	0.89	1660	6.5	15558	16400	1LN1222-4AB71-2 ■■ 5	
995	1334	450	Δ	50.3	6334	95.9	96.4	96.6	0.86	1820	7.8	20902	20700	1LN1222-4BB11-2 ■■ 5	
1000 rpm, 6-pole															
280	375	315	Δ	50.7	2674	93.7	95	95.5	0.82	550	5.6	5615	7500	1LN1222-3AC11-3 ■■ 5	
345	463	315	Δ	50.6	3295	94.1	95.3	95.7	0.83	660	6	7249	7500	1LN1222-3AC31-3 ■■ 5	
400	536	315	Δ	50.6	3820	94.2	95.4	95.8	0.84	760	6	8404	7500	1LN1222-3AC51-3 ■■ 5	
445	597	315	Δ	50.7	4249	94.3	95.5	95.9	0.85	830	5.8	8923	7500	1LN1222-3AC71-3 ■■ 5	
550	738	355	Δ	50.5	5252	94.5	95.6	95.8	0.86	1020	7	13655	10200	1LN1222-3BC51-3 ■■ 5	
595	798	355	Δ/Δ	50.5	5682	94.6	95.7	95.9	0.87	1080	7.1	14773	10200	1LN1222-3BC71-3 ■■ 5	
640	858	400	Δ	50.5	6112	94.9	95.7	96.4	0.85	1200	5.6	13446	16400	1LN1222-4AC31-3 ■■ 5	
690	925	400	Δ	50.5	6589	95.1	95.8	96.5	0.86	1280	5.6	14496	16400	1LN1222-4AC51-3 ■■ 5	
805	1080	400	Δ	50.4	7687	95.5	96.1	96.6	0.86	1480	6.6	19986	16400	1LN1222-4AC71-3 ■■ 5	
880	1180	450	Δ	50.3	8403	95.8	96.4	96.7	0.84	1660	6.5	21008	20700	1LN1222-4BC11-3 ■■ 5	
750 rpm, 6-pole															
235	315	315	Δ	38.2	2992	92.5	94	94.7	0.81	470	5.4	6283	7500	1LN1222-3AC11-4 ■■ 5	
285	382	315	Δ	38.1	3629	92.9	94.3	95	0.82	560	5.8	7984	7500	1LN1222-3AC31-4 ■■ 5	
325	436	315	Δ	38.2	4138	92.9	94.4	95	0.84	620	5.6	8690	7500	1LN1222-3AC51-4 ■■ 5	
355	476	315	Δ	38.2	4520	92.8	94.4	95.1	0.85	670	5.3	9040	7500	1LN1222-3AC71-4 ■■ 5	
420	563	355	Δ	38.1	5348	92.8	94.4	95	0.87	780	5.7	11766	10200	1LN1222-3BC51-4 ■■ 5	
475	637	355	Δ	38.1	6048	93.1	94.6	95.1	0.88	870	6	13910	10200	1LN1222-3BC71-4 ■■ 5	
515	691	400	Δ	38	6557	93.6	94.7	95.7	0.86	960	5	13770	16400	1LN1222-4AC31-4 ■■ 5	
575	771	400	Δ	38	7321	94	95.1	95.9	0.86	1060	5.4	16106	16400	1LN1222-4AC51-4 ■■ 5	
650	872	400	Δ	38	8276	94.4	95.3	96.1	0.86	1200	5.9	19862	16400	1LN1222-4AC71-4 ■■ 5	
710	952	450	Δ	37.9	9040	94.9	95.7	96.3	0.84	1340	5.4	19888	20700	1LN1222-4BC11-4 ■■ 5	
805	1080	450	Δ	37.9	10250	95	95.8	96.4	0.85	1500	5.5	22550	20700	1LN1222-4BC31-4 ■■ 5	
885	1187	450	Δ	37.9	11268	95	95.8	96.4	0.86	1640	5.5	24790	20700	1LN1222-4BC51-4 ■■ 5	
1000	1341	450	Δ	37.9	12732	95.1	95.9	96.5	0.86	1840	5.4	28010	20700	1LN1222-4BC71-4 ■■ 5	

For versions, see Article No. supplements and special versions. ■■

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1222-3AB11-1.5	1640	1690	3.3	79	95.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AB31-1.5	1830	1880	4.2	79	95.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3AB51-1.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-3AB71-1.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-3BB51-1.5	2860	2920	8	79	96	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LN1222-3BB71-1.5	2980	3040	8.7	79	96	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LN1222-3AB11-2.5	1640	1690	3.3	79	95.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AB31-2.5	1830	1880	4.2	79	95.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AB51-2.5	2020	2060	4.8	79	95.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3AB71-2.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-3BB51-2.5	2860	2920	8	79	96	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LN1222-3BB71-2.5	2980	3040	8.7	79	96	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LN1222-4AB51-2.5	3560	3630	14.9	79	96.5	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LN1222-4AB71-2.5	3840	3910	17.1	79	96.5	2200	1XB7 750	On request	On request
1LN1222-4BB11-2.5	4630	4730	22.2	79	97	2000	1XB7 750	On request	On request
1LN1222-3AC11-3.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LN1222-3AC31-3.5	1850	1900	7	79	95.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AC51-3.5	2050	2100	8.1	79	95.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3AC71-3.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-3BC51-3.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-3BC71-3.5	3000	3060	15.7	79	96	2500	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-4AC31-3.5	3390	3460	21	79	96.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4AC51-3.5	3600	3670	23.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4AC71-3.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LN1222-4BC11-3.5	4550	4650	33.2	79	97	1700	1XB7 750	On request	On request
1LN1222-3AC11-4.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LN1222-3AC31-4.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LN1222-3AC51-4.5	2050	2100	8.1	79	95.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AC71-4.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3BC51-4.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3BC71-4.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-4AC31-4.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-4AC51-4.5	3600	3670	23.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LN1222-4AC71-4.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4BC11-4.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4BC31-4.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LN1222-4BC51-4.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1222-4BC71-4.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									1LN1 cast-iron series	
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2)	Article No.	
<ul style="list-style-type: none"> Rated motor voltage 520 V Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 														
3000 rpm, 4-pole														
330	443	315	Δ	100.8	1050	94.9	95.8	95.8	0.88	435	4.9	2100	7500	1LN1212-3AB12-1 ■■■ 5
440	590	315	Δ	100.7	1401	95.5	96.2	96.2	0.9	560	5.9	3222	7500	1LN1212-3AB32-1 ■■■ 5
485	650	315	Δ	100.7	1544	95.5	96.3	96.2	0.9	620	6.1	3706	7500	1LN1212-3AB52-1 ■■■ 5
500	671	315	Δ	100.9	1592	95.3	96.1	96.2	0.9	640	5.2	3343	7500	1LN1212-3AB72-1 ■■■ 5
665	892	355	Δ	100.7	2117	95.5	96.4	96.4	0.89	860	4.9	4446	10200	1LN1212-3BB52-1 ■■■ 5
680	912	355	Δ	100.8	2165	95.4	96.3	96.4	0.89	880	4.5	4330	10200	1LN1212-3BB72-1 ■■■ 5
1500 rpm, 4-pole														
295	396	315	Δ	50.7	1878	93.9	95.1	95.6	0.88	390	5.9	4695	7500	1LN1212-3AB12-2 ■■■ 5
370	496	315	Δ	50.7	2355	94.3	95.5	95.9	0.89	485	6.2	6123	7500	1LN1212-3AB32-2 ■■■ 5
435	583	315	Δ	50.6	2769	94.6	95.7	96.1	0.9	560	6.9	7753	7500	1LN1212-3AB52-2 ■■■ 5
520	697	315	Δ	50.5	3310	95	96	96.2	0.89	680	7.5	10261	7500	1LN1212-3AB72-2 ■■■ 5
660	885	355	Δ	50.6	4202	94.8	95.9	96.3	0.89	860	5.8	10925	10200	1LN1212-3BB52-2 ■■■ 5
735	986	355	Δ	50.6	4679	95	96.1	96.4	0.89	950	6.3	13101	10200	1LN1212-3BB72-2 ■■■ 5
755	1012	400	Δ	50.5	4806	94.9	95.8	96.4	0.88	990	5.5	11054	16400	1LN1212-4AB32-2 ■■■ 5
825	1106	400	Δ	50.5	5252	95.2	96	96.5	0.89	1080	5.9	12605	16400	1LN1212-4AB52-2 ■■■ 5
920	1234	400	Δ	50.5	5857	95.4	96.1	96.7	0.89	1200	6.3	15228	16400	1LN1212-4AB72-2 ■■■ 5
990	1328	450	Δ	50.3	6303	95.8	96.3	96.6	0.87	1320	7.5	19539	20700	1LN1212-4BB12-2 ■■■ 5
1155	1549	450	Δ	50.3	7353	96	96.5	96.8	0.88	1520	7.1	21324	20700	1LN1212-4BB32-2 ■■■ 5
1330	1784	450	Δ	50.3	8467	96.2	96.6	96.9	0.87	1760	8.1	28788	20700	1LN1212-4BB52-2 ■■■ 5
1410	1891	450	Δ	50.3	8976	96.2	96.6	96.9	0.89	1820	8.3	29621	20700	1LN1212-4BB72-2 ■■■ 5
1000 rpm, 6-pole														
270	362	315	Δ	50.6	2578	93.8	95	95.4	0.82	385	6.1	5672	7500	1LN1212-3AC12-3 ■■■ 5
320	429	315	Δ	50.6	3056	94	95.2	95.6	0.83	450	6.3	7029	7500	1LN1212-3AC32-3 ■■■ 5
360	483	315	Δ	50.6	3438	94	95.2	95.7	0.84	500	6	7564	7500	1LN1212-3AC52-3 ■■■ 5
400	536	315	Δ	50.6	3820	94.1	95.3	95.8	0.85	550	6.2	8786	7500	1LN1212-3AC72-3 ■■■ 5
500	671	355	Δ	50.5	4775	94.3	95.4	95.7	0.86	680	7	12415	10200	1LN1212-3BC52-3 ■■■ 5
565	758	355	Δ	50.5	5395	94.5	95.6	95.7	0.87	750	7.5	14567	10200	1LN1212-3BC72-3 ■■■ 5
630	845	400	Δ	50.4	6016	95	95.7	96.3	0.85	860	6.1	14438	16400	1LN1212-4AC32-3 ■■■ 5
690	925	400	Δ	50.4	6589	95.3	96	96.5	0.85	940	6.5	17131	16400	1LN1212-4AC52-3 ■■■ 5
735	986	400	Δ	50.4	7019	95.3	96	96.5	0.86	990	6.4	17548	16400	1LN1212-4AC72-3 ■■■ 5
845	1133	450	Δ	50.4	8069	95.6	96.2	96.6	0.84	1160	6	18559	20700	1LN1212-4BC12-3 ■■■ 5
975	1307	450	Δ	50.3	9311	95.8	96.4	96.7	0.84	1340	6.6	24209	20700	1LN1212-4BC32-3 ■■■ 5
1065	1428	450	Δ	50.3	10170	95.9	96.4	96.8	0.85	1440	6.7	26442	20700	1LN1212-4BC52-3 ■■■ 5
1220	1636	450	Δ	50.3	11650	96	96.5	96.9	0.86	1640	6.5	29125	20700	1LN1212-4BC72-3 ■■■ 5
750 rpm, 6-pole														
215	288	315	Δ	38.1	2737	92.3	93.8	94.5	0.81	315	5.8	6295	7500	1LN1212-3AC12-4 ■■■ 5
260	349	315	Δ	38.1	3310	92.7	94.1	94.8	0.82	375	5.9	7613	7500	1LN1212-3AC32-4 ■■■ 5
285	382	315	Δ	38.1	3629	92.6	94.1	94.9	0.84	400	5.6	7621	7500	1LN1212-3AC52-4 ■■■ 5
320	429	315	Δ	38.1	4074	93	94.4	95	0.84	450	5.8	9370	7500	1LN1212-3AC72-4 ■■■ 5
405	543	355	Δ	38	5157	93.1	94.5	95	0.87	550	6.6	12893	10200	1LN1212-3BC52-4 ■■■ 5
420	563	355	Δ	38	5348	93.1	94.5	95	0.88	560	6.5	12835	10200	1LN1212-3BC72-4 ■■■ 5
495	664	400	Δ	38	6303	93.5	94.7	95.6	0.86	670	5.2	13236	16400	1LN1212-4AC32-4 ■■■ 5
555	744	400	Δ	38	7066	94.1	95.1	95.9	0.86	750	5.7	16252	16400	1LN1212-4AC52-4 ■■■ 5
590	791	400	Δ	37.9	7512	94.3	95.3	96	0.87	790	6	18029	16400	1LN1212-4AC72-4 ■■■ 5
690	925	450	Δ	37.9	8785	94.7	95.5	96.2	0.85	940	5.6	19327	20700	1LN1212-4BC12-4 ■■■ 5
790	1059	450	Δ	37.9	10059	94.8	95.6	96.3	0.85	1080	5.7	22130	20700	1LN1212-4BC32-4 ■■■ 5
860	1153	450	Δ	37.9	10950	94.8	95.7	96.3	0.86	1160	5.4	22995	20700	1LN1212-4BC52-4 ■■■ 5
990	1328	450	Δ	37.9	12605	95.1	95.8	96.4	0.86	1340	5.7	28991	20700	1LN1212-4BC72-4 ■■■ 5

For versions, see Article No. supplements and special versions. ■■

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1212-3AB12-1.5	1600	1650	3.3	79	95.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3AB32-1.5	1790	1840	4.2	79	95.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AB52-1.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3AB72-1.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BB52-1.5	2730	2790	8	79	96	3300	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-3BB72-1.5	2860	2910	8.7	79	96	3300	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-3AB12-2.5	1600	1650	3.3	79	95.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AB32-2.5	1790	1840	4.2	79	95.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AB52-2.5	1980	2020	4.8	79	95.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AB72-2.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BB52-2.5	2730	2790	8	79	96	2600	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-3BB72-2.5	2860	2910	8.7	79	96	2600	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4AB32-2.5	3360	3430	13.2	79	96.5	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4AB52-2.5	3560	3630	14.9	79	96.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4AB72-2.5	3840	3910	17.1	79	96.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BB12-2.5	4630	4730	22.2	79	97	2000	1XB7 750	On request	On request
1LN1212-4BB32-2.5	4910	5010	24.9	79	97	2000	1XB7 750	On request	On request
1LN1212-4BB52-2.5	5280	5380	27.7	79	97	2000	1XB7 750	On request	On request
1LN1212-4BB72-2.5	5720	5820	32	79	97	2000	1XB7 750	On request	On request
1LN1212-3AC12-3.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AC32-3.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3AC52-3.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AC72-3.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3BC52-3.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BC72-3.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-4AC32-3.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-4AC52-3.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4AC72-3.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4BC12-3.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BC32-3.5	4850	4950	37.2	79	97	1700	1XB7 750	On request	On request
1LN1212-4BC52-3.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1212-4BC72-3.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request
1LN1212-3AC12-4.5	1640	1680	5.7	79	95.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3AC32-4.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AC52-4.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AC72-4.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3BC52-4.5	2690	2740	14.3	79	96	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3BC72-4.5	2830	2890	15.7	79	96	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-4AC32-4.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-4AC52-4.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-4AC72-4.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-4BC12-4.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4BC32-4.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BC52-4.5	5300	5400	41.9	79	97	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BC72-4.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
• Rated motor voltage 480 V															
• Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
• Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3000 rpm, 4-pole															
360	483	315	Δ	100.9	1146	94.9	95.9	95.9	0.88	510	4.6	2177	7500	1LN1222-3AB12-1 ■■ 5	
440	590	315	Δ	100.9	1401	95.2	96.1	96.2	0.89	620	4.9	2802	7500	1LN1222-3AB32-1 ■■ 5	
490	657	315	Δ	100.9	1560	95.3	96.2	96.2	0.9	680	5.1	3120	7500	1LN1222-3AB52-1 ■■ 5	
560	751	315	Δ	100.9	1783	95.5	96.3	96.4	0.9	780	5.2	3744	7500	1LN1222-3AB72-1 ■■ 5	
650	872	355	Δ	100.9	2069	95.4	96.3	96.4	0.88	920	4.2	3931	10200	1LN1222-3BB52-1 ■■ 5	
745	999	355	Δ	100.7	2371	95.7	96.6	96.5	0.89	1040	4.8	4979	10200	1LN1222-3BB72-1 ■■ 5	
1500 rpm, 4-pole															
315	422	315	Δ	50.8	2005	93.9	95.2	95.7	0.88	450	5.4	4612	7500	1LN1222-3AB12-2 ■■ 5	
425	570	315	Δ	50.6	2706	94.6	95.7	96.1	0.88	610	6.4	7306	7500	1LN1222-3AB32-2 ■■ 5	
470	630	315	Δ	50.6	2992	94.7	95.8	96.2	0.9	660	6.5	8078	7500	1LN1222-3AB52-2 ■■ 5	
515	691	315	Δ	50.6	3279	94.8	95.9	96.2	0.9	720	6.5	8853	7500	1LN1222-3AB72-2 ■■ 5	
705	945	355	Δ	50.6	4488	95	96.1	96.4	0.88	1000	5.9	12118	10200	1LN1222-3BB52-2 ■■ 5	
715	959	355	Δ	50.6	4552	94.9	96	96.4	0.89	1000	5.5	10925	10200	1LN1222-3BB72-2 ■■ 5	
785	1053	400	Δ	50.5	4997	95.2	95.9	96.5	0.87	1140	5.6	11993	16400	1LN1222-4AB32-2 ■■ 5	
865	1160	400	Δ	50.5	5507	95.4	96.1	96.6	0.88	1240	6.2	14318	16400	1LN1222-4AB52-2 ■■ 5	
980	1314	400	Δ	50.4	6239	95.7	96.3	96.8	0.88	1400	6.8	17469	16400	1LN1222-4AB72-2 ■■ 5	
1060	1421	450	Δ	50.3	6748	96	96.4	96.7	0.87	1520	7.1	19569	20700	1LN1222-4BB12-2 ■■ 5	
1215	1629	450	Δ	50.3	7735	96.2	96.6	96.8	0.86	1760	7.9	25526	20700	1LN1222-4BB32-2 ■■ 5	
1290	1730	450	Δ	50.3	8212	96.2	96.6	96.9	0.87	1840	7.5	25457	20700	1LN1222-4BB52-2 ■■ 5	
1000 rpm, 6-pole															
265	355	315	Δ	50.7	2531	93.7	95	95.5	0.82	410	5.6	5315	7500	1LN1222-3AC12-3 ■■ 5	
350	469	315	Δ	50.6	3342	94.2	95.3	95.7	0.83	530	6.1	7352	7500	1LN1222-3AC32-3 ■■ 5	
395	530	315	Δ	50.7	3772	94.1	95.4	95.8	0.84	590	5.8	8298	7500	1LN1222-3AC52-3 ■■ 5	
445	597	315	Δ	50.6	4249	94.4	95.5	95.9	0.84	670	6	9348	7500	1LN1222-3AC72-3 ■■ 5	
535	717	355	Δ	50.5	5109	94.2	95.4	95.7	0.87	780	6.4	12262	10200	1LN1222-3BC32-3 ■■ 5	
605	811	355	Δ	50.5	5777	94.5	95.6	95.9	0.87	870	6.9	14443	10200	1LN1222-3BC72-3 ■■ 5	
685	919	400	Δ	50.5	6541	95	95.8	96.4	0.86	1000	5.6	14390	16400	1LN1222-4AC52-3 ■■ 5	
765	1026	400	Δ	50.4	7305	95.4	96.1	96.6	0.86	1120	6.1	17532	16400	1LN1222-4AC72-3 ■■ 5	
840	1126	450	Δ	50.4	8021	95.7	96.3	96.7	0.84	1240	6.1	18448	20700	1LN1222-4BC12-3 ■■ 5	
960	1287	450	Δ	50.4	9167	95.7	96.3	96.8	0.85	1420	5.7	20167	20700	1LN1222-4BC32-3 ■■ 5	
1140	1529	450	Δ	50.3	10886	96	96.5	96.9	0.85	1680	6.6	27215	20700	1LN1222-4BC52-3 ■■ 5	
750 rpm, 6-pole															
230	308	315	Δ	38.2	2928	92.2	93.8	94.6	0.81	365	5.3	6149	7500	1LN1222-3AC12-4 ■■ 5	
285	382	315	Δ	38.2	3629	92.7	94.2	94.9	0.83	440	5.4	7621	7500	1LN1222-3AC32-4 ■■ 5	
315	422	315	Δ	38.2	4011	92.5	94.1	94.9	0.85	475	5.1	8022	7500	1LN1222-3AC52-4 ■■ 5	
345	463	315	Δ	38.2	4393	92.6	94.2	95	0.85	520	5.1	8786	7500	1LN1222-3AC72-4 ■■ 5	
430	577	355	Δ	38.1	5475	93	94.4	95	0.87	630	5.8	12045	10200	1LN1222-3BC52-4 ■■ 5	
475	637	355	Δ	38.1	6048	93.1	94.6	95.1	0.88	690	6	13910	10200	1LN1222-3BC72-4 ■■ 5	
525	704	400	Δ	38	6685	93.6	94.8	95.7	0.86	770	5.1	14039	16400	1LN1222-4AC32-4 ■■ 5	
595	798	400	Δ	38	7576	94.2	95.1	95.9	0.86	880	5.6	17425	16400	1LN1222-4AC52-4 ■■ 5	
655	878	400	Δ	37.9	8340	94.4	95.3	96.1	0.86	960	5.9	20016	16400	1LN1222-4AC72-4 ■■ 5	
685	919	450	Δ	37.9	8722	94.8	95.6	96.2	0.84	1020	5.9	20061	20700	1LN1222-4BC12-4 ■■ 5	
790	1059	450	Δ	37.9	10059	94.9	95.7	96.4	0.85	1160	5.6	22130	20700	1LN1222-4BC32-4 ■■ 5	
915	1227	450	Δ	37.9	11650	95.1	95.9	96.5	0.85	1360	5.5	25630	20700	1LN1222-4BC52-4 ■■ 5	
1030	1381	450	Δ	37.9	13114	95.2	96	96.5	0.86	1500	5.7	30162	20700	1LN1222-4BC72-4 ■■ 5	

For versions, see Article No. supplements and special versions.

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1222-3AB12-1.5	1600	1650	3.3	79	95.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3AB32-1.5	1830	1880	4.2	79	95.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3AB52-1.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3AB72-1.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-3BB52-1.5	2730	2790	8	79	96	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-3BB72-1.5	2860	2910	8.7	79	96	3300	1XB7 740	6SL3710-2GF41-4AA3	1314
1LN1222-3AB12-2.5	1600	1650	3.3	79	95.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LN1222-3AB32-2.5	1830	1880	4.2	79	95.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3AB52-2.5	2020	2060	4.8	79	95.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3AB72-2.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-3BB52-2.5	2730	2790	8	79	96	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-3BB72-2.5	2860	2910	8.7	79	96	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AB32-2.5	3360	3430	13.2	79	96.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4AB52-2.5	3560	3630	14.9	79	96.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4AB72-2.5	3840	3910	17.1	79	96.5	2200	1XB7 750	On request	On request
1LN1222-4BB12-2.5	4630	4730	22.2	79	97	2000	1XB7 750	On request	On request
1LN1222-4BB32-2.5	4910	5010	24.9	79	97	2000	1XB7 750	On request	On request
1LN1222-4BB52-2.5	5280	5380	27.7	79	97	2000	1XB7 750	On request	On request
1LN1222-3AC12-3.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LN1222-3AC32-3.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3AC52-3.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-1GF37-4AA3	710
1LN1222-3AC72-3.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3BC52-3.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-3BC72-3.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AC52-3.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AC72-3.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BC12-3.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BC32-3.5	4850	4950	37.2	79	97	1700	1XB7 750	On request	On request
1LN1222-4BC52-3.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1222-3AC12-4.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LN1222-3AC32-4.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LN1222-3AC52-4.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3AC72-4.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3BC52-4.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3BC72-4.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-4AC32-4.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-4AC52-4.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AC72-4.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4BC12-4.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4BC32-4.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BC52-4.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1222-4BC72-4.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

7

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A				
Rated motor voltage 730 V														
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)														
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150														
3000 rpm, 4-pole														
330	443	315	Δ	100.9	1050	94.8	95.7	95.8	0.88	310	4.8	2100	7500	1LN1212-3AB13-1 ■ ■ 5
435	583	315	Δ	100.8	1385	95.3	96.1	96.2	0.9	400	5.5	3047	7500	1LN1212-3AB33-1 ■ ■ 5
495	664	315	Δ	100.7	1576	95.6	96.3	96.2	0.9	450	6.2	3940	7500	1LN1212-3AB53-1 ■ ■ 5
560	751	315	Δ	100.7	1783	95.6	96.4	96.3	0.91	500	6.1	4279	7500	1LN1212-3AB73-1 ■ ■ 5
675	905	355	Δ	100.8	2149	95.4	96.3	96.4	0.88	630	4.6	4298	10200	1LN1212-3BB53-1 ■ ■ 5
685	919	355	Δ	100.8	2180	95.3	96.3	96.4	0.88	640	4.3	4142	10200	1LN1212-3BB73-1 ■ ■ 5
1500 rpm, 4-pole														
295	396	315	Δ	50.6	1878	94	95.2	95.7	0.88	280	6.1	4883	7500	1LN1212-3AB13-2 ■ ■ 5
385	516	315	Δ	50.6	2451	94.5	95.6	96	0.88	360	6.8	7108	7500	1LN1212-3AB33-2 ■ ■ 5
445	597	315	Δ	50.6	2833	94.7	95.8	96.1	0.89	415	7	8216	7500	1LN1212-3AB53-2 ■ ■ 5
505	677	315	Δ	50.6	3215	94.9	95.9	96.2	0.9	465	7.4	9645	7500	1LN1212-3AB73-2 ■ ■ 5
650	872	355	Δ	50.6	4138	94.7	95.9	96.3	0.89	600	5.6	10345	10200	1LN1212-3BB53-2 ■ ■ 5
705	945	355	Δ	50.6	4488	94.8	95.9	96.3	0.89	650	5.7	11220	10200	1LN1212-3BB73-2 ■ ■ 5
785	1053	400	Δ	50.5	4997	95.1	95.9	96.4	0.87	740	5.9	11993	16400	1LN1212-4AB33-2 ■ ■ 5
835	1120	400	Δ	50.5	5316	95.3	96	96.6	0.88	780	6.1	13290	16400	1LN1212-4AB53-2 ■ ■ 5
980	1314	400	Δ	50.4	6239	95.6	96.2	96.7	0.88	920	7	18093	16400	1LN1212-4AB73-2 ■ ■ 5
1070	1435	450	Δ	50.3	6812	95.9	96.4	96.7	0.87	1000	7.1	19755	20700	1LN1212-4BB13-2 ■ ■ 5
1185	1589	450	Δ	50.3	7544	96.1	96.5	96.8	0.87	1120	7.7	24141	20700	1LN1212-4BB33-2 ■ ■ 5
1345	1804	450	Δ	50.3	8563	96.2	96.6	96.9	0.87	1260	8.1	28258	20700	1LN1212-4BB53-2 ■ ■ 5
1550	2079	450	Δ	50.3	9868	96.4	96.8	97	0.88	1440	8.6	34538	20700	1LN1212-4BB73-2 ■ ■ 5
1000 rpm, 6-pole														
245	329	315	Y	50.6	2340	93.9	95	95.4	0.82	250	6.5	5616	7500	1LN1212-3AC13-3 ■ ■ 5
320	429	315	Y	50.6	3056	93.9	95.1	95.6	0.83	320	6.2	7029	7500	1LN1212-3AC33-3 ■ ■ 5
365	489	315	Y	50.6	3485	94	95.2	95.7	0.84	360	6.1	7667	7500	1LN1212-3AC53-3 ■ ■ 5
410	550	315	Δ	50.6	3915	94.2	95.4	95.8	0.85	400	6.2	9005	7500	1LN1212-3AC73-3 ■ ■ 5
500	671	355	Δ	50.5	4775	94.2	95.3	95.6	0.86	480	7	12415	10200	1LN1212-3BC53-3 ■ ■ 5
570	764	355	Δ	50.5	5443	94.5	95.6	95.7	0.87	540	7.5	14696	10200	1LN1212-3BC73-3 ■ ■ 5
600	805	400	Δ	50.5	5730	94.7	95.6	96.3	0.85	580	5.5	12606	16400	1LN1212-4AC33-3 ■ ■ 5
680	912	400	Δ	50.4	6494	95.2	95.9	96.5	0.85	660	6.4	16235	16400	1LN1212-4AC53-3 ■ ■ 5
745	999	400	Y	50.4	7114	95.5	96.1	96.6	0.86	710	7.1	19919	16400	1LN1212-4AC73-3 ■ ■ 5
845	1133	450	Δ	50.4	8069	95.7	96.2	96.7	0.84	830	6.1	19366	20700	1LN1212-4BC13-3 ■ ■ 5
950	1274	450	Δ	50.3	9072	95.8	96.3	96.7	0.85	920	6.3	21773	20700	1LN1212-4BC33-3 ■ ■ 5
1085	1455	450	Δ	50.3	10361	95.9	96.5	96.8	0.85	1040	6.6	25903	20700	1LN1212-4BC53-3 ■ ■ 5
1240	1663	450	Δ	50.3	11841	96.1	96.6	96.9	0.85	1200	6.6	30787	20700	1LN1212-4BC73-3 ■ ■ 5
750 rpm, 6-pole														
210	282	315	Y	38.1	2674	92.2	93.7	94.4	0.81	220	5.7	6150	7500	1LN1212-3AC13-4 ■ ■ 5
265	355	315	Y	38.1	3374	92.7	94.2	94.8	0.83	270	5.8	7423	7500	1LN1212-3AC33-4 ■ ■ 5
295	396	315	Δ	38.1	3756	92.6	94.1	94.9	0.84	295	5.6	7888	7500	1LN1212-3AC53-4 ■ ■ 5
325	436	315	Δ	38.1	4138	92.9	94.3	95	0.85	320	5.6	8690	7500	1LN1212-3AC73-4 ■ ■ 5
400	536	355	Y	38	5093	93	94.4	94.9	0.87	385	6.6	12733	10200	1LN1212-3BC53-4 ■ ■ 5
455	610	355	Δ	38	5793	93.2	94.6	95.1	0.87	435	6.6	14483	10200	1LN1212-3BC73-4 ■ ■ 5
510	684	400	Δ	38	6494	93.7	94.8	95.7	0.85	500	5.3	14287	16400	1LN1212-4AC33-4 ■ ■ 5
565	758	400	Δ	37.9	7194	94.2	95.1	95.9	0.86	550	5.8	17266	16400	1LN1212-4AC53-4 ■ ■ 5
605	811	400	Δ	38	7703	94.3	95.2	96	0.87	580	5.7	17717	16400	1LN1212-4AC73-4 ■ ■ 5
685	919	450	Δ	37.9	8722	94.7	95.5	96.2	0.85	670	5.5	19188	20700	1LN1212-4BC13-4 ■ ■ 5
785	1053	450	Δ	37.9	9995	94.8	95.6	96.3	0.85	760	5.8	22989	20700	1LN1212-4BC33-4 ■ ■ 5
890	1194	450	Δ	37.9	11332	94.9	95.7	96.3	0.86	860	5.6	24930	20700	1LN1212-4BC53-4 ■ ■ 5
1030	1381	450	Δ	37.9	13114	95.2	95.9	96.5	0.86	990	5.8	30162	20700	1LN1212-4BC73-4 ■ ■ 5

For versions, see Article No. supplements and special versions. ■ ■

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1212-3AB13-1.5	1600	1650	3.3	79	95.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3AB33-1.5	1790	1840	4.2	79	95.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AB53-1.5	1980	2020	4.8	79	95.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3AB73-1.5	2140	2190	5.7	79	95.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3BB53-1.5	2730	2790	8	79	96	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BB73-1.5	2860	2910	8.7	79	96	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3AB13-2.5	1600	1650	3.3	79	95.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3AB33-2.5	1790	1840	4.2	79	95.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AB53-2.5	1980	2020	4.8	79	95.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3AB73-2.5	2140	2190	5.7	79	95.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3BB53-2.5	2730	2790	8	79	96	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BB73-2.5	2860	2910	8.7	79	96	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-4AB33-2.5	3360	3430	13.2	79	96.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-4AB53-2.5	3560	3630	14.9	79	96.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-4AB73-2.5	3840	3910	17.1	79	96.5	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4BB13-2.5	4630	4730	22.2	79	97	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4BB33-2.5	4910	5010	24.9	79	97	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BB53-2.5	5280	5380	27.7	79	97	2000	1XB7 750	On request	On request
1LN1212-4BB73-2.5	5720	5820	32	79	97	2000	1XB7 750	On request	On request
1LN1212-3AC13-3.5	1640	1680	5.7	79	95.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LN1212-3AC33-3.5	1810	1860	7	79	95.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3AC53-3.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AC73-3.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3BC53-3.5	2690	2740	14.3	79	96	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3BC73-3.5	2830	2890	15.7	79	96	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-4AC33-3.5	3350	3420	21	79	96.5	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LN1212-4AC53-3.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-4AC73-3.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-4BC13-3.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-4BC33-3.5	4850	4950	37.2	79	97	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4BC53-3.5	5300	5400	41.9	79	97	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LN1212-4BC73-3.5	5720	5820	47.8	79	97	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-3AC13-4.5	1640	1680	5.7	79	95.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LN1212-3AC33-4.5	1810	1860	7	79	95.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3AC53-4.5	2010	2060	8.1	79	95.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3AC73-4.5	2120	2160	8.9	79	95.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3BC53-4.5	2690	2740	14.3	79	96	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3BC73-4.5	2830	2890	15.7	79	96	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-4AC33-4.5	3350	3420	21	79	96.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-4AC53-4.5	3560	3630	23.6	79	96.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-4AC73-4.5	3790	3860	26.6	79	96.5	2000	1XB7 731	6SL3710-7LG37-4AA3	710
1LN1212-4BC13-4.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-4BC33-4.5	4850	4950	37.2	79	97	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-4BC53-4.5	5300	5400	41.9	79	97	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-4BC73-4.5	5720	5820	47.8	79	97	1700	1XB7 740	6SL3710-7LG41-0AA3	1000

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
• Rated motor voltage 660 V															
• Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
• Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3000 rpm, 4-pole															
335	449	315	Δ	100.8	1066	94.9	95.8	95.8	0.88	350	5	2239	7500	1LN1222-3AB13-1 ■ ■ 5	
420	563	315	Δ	100.8	1337	95.3	96.1	96.2	0.9	425	5.5	2941	7500	1LN1222-3AB33-1 ■ ■ 5	
485	650	315	Δ	100.7	1544	95.6	96.3	96.2	0.9	490	6.3	3860	7500	1LN1222-3AB53-1 ■ ■ 5	
550	738	315	Δ	100.7	1751	95.7	96.4	96.3	0.91	550	6.1	4202	7500	1LN1222-3AB73-1 ■ ■ 5	
655	878	355	Δ	100.7	2085	95.5	96.4	96.4	0.89	670	4.9	4379	10200	1LN1222-3BB53-1 ■ ■ 5	
670	898	355	Δ	100.8	2133	95.4	96.3	96.4	0.88	690	4.4	4053	10200	1LN1222-3BB73-1 ■ ■ 5	
1500 rpm, 4-pole															
300	402	315	Δ	50.7	1910	94.1	95.3	95.7	0.88	315	6	4966	7500	1LN1222-3AB13-2 ■ ■ 5	
380	510	315	Δ	50.6	2419	94.4	95.5	95.9	0.89	390	6.4	6531	7500	1LN1222-3AB33-2 ■ ■ 5	
425	570	315	Δ	50.6	2706	94.6	95.7	96	0.9	430	6.9	7577	7500	1LN1222-3AB53-2 ■ ■ 5	
505	677	315	Δ	50.6	3215	94.8	95.9	96.2	0.9	510	7.2	9324	7500	1LN1222-3AB73-2 ■ ■ 5	
675	905	355	Δ	50.6	4297	94.9	96	96.4	0.88	700	6.1	12032	10200	1LN1222-3BB53-2 ■ ■ 5	
690	925	355	Δ	50.6	4393	94.8	95.9	96.4	0.89	710	5.6	10983	10200	1LN1222-3BB73-2 ■ ■ 5	
770	1033	400	Δ	50.5	4902	95.1	95.9	96.4	0.87	810	5.7	11765	16400	1LN1222-4AB33-2 ■ ■ 5	
825	1106	400	Δ	50.5	5252	95.3	96	96.6	0.88	850	6.1	13130	16400	1LN1222-4AB53-2 ■ ■ 5	
920	1234	400	Y	50.4	5857	95.5	96.2	96.7	0.89	940	6.7	16400	16400	1LN1222-4AB73-2 ■ ■ 5	
1065	1428	450	Δ	50.3	6780	96	96.4	96.7	0.86	1120	7.3	20340	20700	1LN1222-4BB13-2 ■ ■ 5	
1200	1609	450	Δ	50.3	7639	96.1	96.6	96.8	0.87	1240	7.8	24445	20700	1LN1222-4BB33-2 ■ ■ 5	
1245	1670	450	Δ	50.3	7926	96.1	96.5	96.8	0.87	1300	8.4	27741	20700	1LN1222-4BB53-2 ■ ■ 5	
1435	1924	450	Δ	50.2	9135	96.3	96.7	96.9	0.87	1500	8.9	33800	20700	1LN1222-4BB73-2 ■ ■ 5	
1000 rpm, 6-pole															
245	329	315	Y	50.6	2340	93.8	95	95.4	0.82	275	6.4	5616	7500	1LN1222-3AC13-3 ■ ■ 5	
315	422	315	Δ	50.6	3008	94	95.2	95.6	0.83	350	6.4	7219	7500	1LN1222-3AC33-3 ■ ■ 5	
365	489	315	Δ	50.6	3485	94.2	95.3	95.7	0.84	400	6.1	8015	7500	1LN1222-3AC53-3 ■ ■ 5	
410	550	315	Δ	50.6	3915	94.3	95.4	95.8	0.84	450	6.4	9396	7500	1LN1222-3AC73-3 ■ ■ 5	
490	657	355	Δ	50.5	4679	94.2	95.4	95.7	0.87	520	6.9	11698	10200	1LN1222-3BC53-3 ■ ■ 5	
555	744	355	Δ	50.4	5300	94.5	95.6	95.8	0.87	580	7.7	14840	10200	1LN1222-3BC73-3 ■ ■ 5	
585	784	400	Δ	50.5	5586	94.7	95.5	96.2	0.85	630	5.5	11731	16400	1LN1222-4AC33-3 ■ ■ 5	
665	892	400	Δ	50.4	6350	95.3	96	96.5	0.85	710	6.6	16510	16400	1LN1222-4AC53-3 ■ ■ 5	
740	992	400	Δ	50.4	7066	95.5	96.1	96.6	0.86	780	6.8	19078	16400	1LN1222-4AC73-3 ■ ■ 5	
840	1126	450	Δ	50.3	8021	95.7	96.3	96.7	0.84	910	6.4	20053	20700	1LN1222-4BC13-3 ■ ■ 5	
950	1274	450	Δ	50.3	9072	95.9	96.4	96.7	0.84	1020	6.8	23587	20700	1LN1222-4BC33-3 ■ ■ 5	
1075	1442	450	Δ	50.3	10265	95.9	96.4	96.8	0.85	1140	6.3	24636	20700	1LN1222-4BC53-3 ■ ■ 5	
1145	1535	450	Δ	50.3	10934	96	96.5	96.8	0.86	1200	6.8	28428	20700	1LN1222-4BC73-3 ■ ■ 5	
750 rpm, 6-pole															
205	275	315	Y	38.2	2610	92.1	93.7	94.4	0.82	235	5.6	5742	7500	1LN1222-3AC13-4 ■ ■ 5	
270	362	315	Δ	38.1	3438	92.9	94.3	94.9	0.82	305	6	7907	7500	1LN1222-3AC33-4 ■ ■ 5	
300	402	315	Δ	38.1	3820	92.7	94.2	94.9	0.84	330	5.7	8404	7500	1LN1222-3AC53-4 ■ ■ 5	
320	429	315	Δ	38.1	4074	92.7	94.2	94.9	0.85	350	5.6	8555	7500	1LN1222-3AC73-4 ■ ■ 5	
405	543	355	Δ	38	5157	93.1	94.5	95	0.87	430	6.6	12893	10200	1LN1222-3BC53-4 ■ ■ 5	
435	583	355	Δ	38	5539	93.1	94.5	95	0.87	465	6.5	13848	10200	1LN1222-3BC73-4 ■ ■ 5	
505	677	400	Δ	38	6430	93.8	94.8	95.7	0.85	550	5.4	14146	16400	1LN1222-4AC33-4 ■ ■ 5	
550	738	400	Δ	38	7003	94.1	95.1	95.9	0.86	590	5.7	16107	16400	1LN1222-4AC53-4 ■ ■ 5	
610	818	400	Δ	37.9	7767	94.4	95.3	96	0.86	650	6.1	19418	16400	1LN1222-4AC73-4 ■ ■ 5	
695	932	450	Δ	37.9	8849	94.7	95.5	96.2	0.84	760	5.8	20353	20700	1LN1222-4BC13-4 ■ ■ 5	
785	1053	450	Δ	37.9	9995	94.9	95.7	96.3	0.85	840	5.8	22989	20700	1LN1222-4BC33-4 ■ ■ 5	
895	1200	450	Δ	37.9	11395	95	95.8	96.4	0.86	950	5.7	26208	20700	1LN1222-4BC53-4 ■ ■ 5	
1015	1361	450	Δ	37.9	12923	95.1	95.9	96.5	0.86	1080	5.8	29723	20700	1LN1222-4BC73-4 ■ ■ 5	

For versions, see Article No. supplements and special versions. ■ ■

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1222-3AB13-1.5	1600	1650	3.3	79	95.5	3600	1XB7 730	6SL3710-1GH34-1AA3	400
1LN1222-3AB33-1.5	1790	1840	4.2	79	95.5	3600	1XB7 731	6SL3710-1GH34-7AA3	452
1LN1222-3AB53-1.5	1980	2020	4.8	79	95.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LN1222-3AB73-1.5	2140	2190	5.7	79	95.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LN1222-3BB53-1.5	2730	2790	8	79	96	3300	1XB7 740	6SL3710-1GH37-4AA3	710
1LN1222-3BB73-1.5	2860	2910	8.7	79	96	3300	1XB7 740	6SL3710-1GH37-4AA3	710
1LN1222-3AB13-2.5	1600	1650	3.3	79	95.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LN1222-3AB33-2.5	1790	1840	4.2	79	95.5	3000	1XB7 731	6SL3710-1GH34-1AA3	400
1LN1222-3AB53-2.5	1980	2020	4.8	79	95.5	3000	1XB7 731	6SL3710-1GH34-7AA3	452
1LN1222-3AB73-2.5	2140	2190	5.7	79	95.5	3000	1XB7 731	6SL3710-1GH35-8AA3	560
1LN1222-3BB53-2.5	2730	2790	8	79	96	2600	1XB7 740	6SL3710-1GH37-4AA3	710
1LN1222-3BB73-2.5	2860	2910	8.7	79	96	2600	1XB7 740	6SL3710-1GH37-4AA3	710
1LN1222-4AB33-2.5	3360	3430	13.2	79	96.5	2200	1XB7 740	6SL3710-2GH41-1AA3	1036
1LN1222-4AB53-2.5	3560	3630	14.9	79	96.5	2200	1XB7 740	6SL3710-2GH41-1AA3	1036
1LN1222-4AB73-2.5	3840	3910	17.1	79	96.5	2200	1XB7 750	6SL3710-2GH41-1AA3	1036
1LN1222-4BB13-2.5	4630	4730	22.2	79	97	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LN1222-4BB33-2.5	4910	5010	24.9	79	97	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LN1222-4BB53-2.5	5280	5380	27.7	79	97	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LN1222-4BB73-2.5	5720	5820	32	79	97	2000	1XB7 750	6SL3710-2GH41-8EA3	1720
1LN1222-3AC13-3.5	1640	1680	5.7	79	95.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LN1222-3AC33-3.5	1810	1860	7	79	95.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LN1222-3AC53-3.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LN1222-3AC73-3.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-1GH34-7AA3	452
1LN1222-3BC53-3.5	2690	2740	14.3	79	96	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LN1222-3BC73-3.5	2830	2890	15.7	79	96	2500	1XB7 731	6SL3710-1GH37-4AA3	710
1LN1222-4AC33-3.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LN1222-4AC53-3.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LN1222-4AC73-3.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-1GH38-1AA3	790
1LN1222-4BC13-3.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LN1222-4BC33-3.5	4850	4950	37.2	79	97	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LN1222-4BC53-3.5	5300	5400	41.9	79	97	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LN1222-4BC73-3.5	5720	5820	47.8	79	97	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LN1222-3AC13-4.5	1640	1680	5.7	79	95.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LN1222-3AC33-4.5	1810	1860	7	79	95.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LN1222-3AC53-4.5	2010	2060	8.1	79	95.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LN1222-3AC73-4.5	2120	2160	8.9	79	95.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LN1222-3BC53-4.5	2690	2740	14.3	79	96	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LN1222-3BC73-4.5	2830	2890	15.7	79	96	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LN1222-4AC33-4.5	3350	3420	21	79	96.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LN1222-4AC53-4.5	3560	3630	23.6	79	96.5	2000	1XB7 731	6SL3710-1GH37-4AA3	710
1LN1222-4AC73-4.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LN1222-4BC13-4.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LN1222-4BC33-4.5	4850	4950	37.2	79	97	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LN1222-4BC53-4.5	5300	5400	41.9	79	97	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LN1222-4BC73-4.5	5720	5820	47.8	79	97	1700	1XB7 750	6SL3710-2GH41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical limit speed applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 480 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3600 rpm, 4-pole															
415	557	315	Δ	120.8	1101	95.3	95.9	95.8	0.88	590	5.1	2202	7500	1LN1212-3AB15-5	
525	704	315	Δ	120.8	1393	95.7	96.3	96.1	0.89	740	5.7	3204	7500	1LN1212-3AB35-5	
535	717	315	Δ	120.9	1419	95.4	96.1	96	0.89	750	5.1	2838	7500	1LN1212-3AB55-5	
620	831	315	Δ	120.8	1645	95.7	96.3	96.2	0.9	860	5.4	3455	7500	1LN1212-3AB75-5	
3000 rpm, 4-pole															
655	878	355	Δ	100.9	2085	95.3	96.3	96.4	0.88	930	4.2	3753	10200	1LN1212-3BB55-1	
745	999	355	Δ	100.7	2371	95.7	96.6	96.5	0.89	1040	4.8	4979	10200	1LN1212-3BB75-1	
1800 rpm, 4-pole															
370	496	315	Δ	60.7	1963	94.9	95.9	96.1	0.87	530	6.1	5104	7500	1LN1212-3AB15-6	
455	610	315	Δ	60.7	2414	95	96	96.3	0.89	640	6.2	6276	7500	1LN1212-3AB35-6	
500	671	315	Δ	60.7	2653	95.1	96.2	96.4	0.9	690	6.5	6898	7500	1LN1212-3AB55-6	
635	852	315	Δ	60.6	3369	95.6	96.5	96.7	0.9	880	7.7	10444	7500	1LN1212-3AB75-6	
785	1053	355	Δ/Δ	60.6	4165	95.4	96.5	96.7	0.89	1100	5.9	10829	10200	1LN1212-3BB55-6	
800	1073	355	Δ/Δ	60.7	4244	95.3	96.4	96.7	0.89	1120	5.4	10186	10200	1LN1212-3BB75-6	
845	1133	400	Δ	60.5	4483	95.5	96.2	96.6	0.88	1200	5.9	10759	16400	1LN1212-4AB35-6	
950	1274	400	Δ	60.4	5040	95.8	96.4	96.8	0.88	1340	6.7	13608	16400	1LN1212-4AB55-6	
1080	1448	400	Δ	60.4	5730	96.1	96.6	96.9	0.88	1520	7.7	17763	16400	1LN1212-4AB75-6	
1115	1495	450	Δ	60.3	5915	96.2	96.5	96.7	0.86	1620	8.1	20111	20700	1LN1212-4BB15-6	
1175	1576	450	Δ	60.3	6234	96.3	96.6	96.7	0.87	1680	8.3	21196	20700	1LN1212-4BB35-6	
1200 rpm, 6-pole															
310	416	315	Δ	60.7	2467	94.3	95.5	95.9	0.82	475	5.8	5181	7500	1LN1212-3AC15-7	
375	503	315	Δ	60.7	2984	94.6	95.7	96.1	0.84	560	6	6565	7500	1LN1212-3AC35-7	
455	610	315	Δ	60.6	3621	95	96	96.2	0.84	680	6.3	8328	7500	1LN1212-3AC55-7	
485	650	315	Δ	60.6	3860	94.9	96	96.2	0.85	710	6.3	8492	7500	1LN1212-3AC75-7	
620	831	355	Δ	60.5	4934	95.1	96	96.1	0.86	900	7.2	12828	10200	1LN1212-3BC55-7	
670	898	355	Δ	60.5	5332	95.1	96.1	96.2	0.87	960	7.2	13863	10200	1LN1212-3BC75-7	
720	966	400	Δ	60.5	5730	95.4	96.1	96.6	0.85	1060	5.8	12606	16400	1LN1212-4AC35-7	
805	1080	400	Δ	60.4	6406	95.8	96.4	96.7	0.85	1180	6.6	16015	16400	1LN1212-4AC55-7	
845	1133	400	Δ	60.4	6724	95.9	96.5	96.8	0.86	1220	6.9	17482	16400	1LN1212-4AC75-7	
905	1214	450	Δ	60.3	7202	96.2	96.6	96.9	0.84	1340	6.9	18005	20700	1LN1212-4BC15-7	
1060	1421	450	Δ	60.3	8435	96.2	96.7	97	0.85	1560	6.6	21088	20700	1LN1212-4BC35-7	
900 rpm, 6-pole															
270	362	315	Δ	45.7	2865	93.4	94.7	95.3	0.82	420	5.6	6017	7500	1LN1212-3AC15-8	
340	456	315	Δ	45.6	3608	93.9	95.1	95.5	0.82	520	6.2	8298	7500	1LN1212-3AC35-8	
365	489	315	Δ	45.7	3873	93.7	95	95.5	0.85	540	5.6	8133	7500	1LN1212-3AC55-8	
400	536	315	Δ	45.6	4244	93.9	95.1	95.6	0.85	600	5.7	9337	7500	1LN1212-3AC75-8	
485	650	355	Δ	45.6	5146	93.7	95.1	95.5	0.87	710	6	11836	10200	1LN1212-3BC55-8	
545	731	355	Δ	45.5	5783	94	95.2	95.6	0.87	790	6.3	13879	10200	1LN1212-3BC75-8	
595	798	400	Δ	45.5	6313	94.4	95.3	96.1	0.85	880	5.3	13257	16400	1LN1212-4AC35-8	
655	878	400	Δ	45.5	6950	94.7	95.6	96.3	0.86	960	5.6	15290	16400	1LN1212-4AC55-8	
735	986	400	Δ	45.4	7799	95.1	95.8	96.4	0.86	1080	6	18718	16400	1LN1212-4AC75-8	
815	1093	450	Δ	45.4	8647	95.4	96.1	96.6	0.84	1220	5.8	19888	20700	1LN1212-4BC15-8	
875	1173	450	Δ	45.3	9284	95.5	96.2	96.6	0.85	1280	6.4	23210	20700	1LN1212-4BC35-8	
1035	1388	450	Δ	45.3	10982	95.8	96.3	96.8	0.85	1520	6.5	27455	20700	1LN1212-4BC55-8	
1190	1596	450	Δ	45.3	12626	95.8	96.4	96.8	0.85	1740	6.2	30302	20700	1LN1212-4BC75-8	

For versions, see Article No. supplements and special versions.

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1212-3AB15-5.5	1600	1650	3.3	79	95.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AB35-5.5	1830	1880	4.2	79	95.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LN1212-3AB55-5.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LN1212-3AB75-5.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-3BB55-1.5	2730	2790	8	79	96	3300	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-3BB75-1.5	2860	2910	8.7	79	96	3300	1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-3AB15-6.5	1600	1650	3.3	79	95.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AB35-6.5	1830	1880	4.2	79	95.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3AB55-6.5	2020	2060	4.8	79	95.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3AB75-6.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-3BB55-6.5	2860	2920	8	79	96	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-3BB75-6.5	2980	3040	8.7	79	96	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LN1212-4AB35-6.5	3360	3430	13.2	79	96.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4AB55-6.5	3560	3630	14.9	79	96.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LN1212-4AB75-6.5	3840	3910	17.1	79	96.5	2200	1XB7 750	On request	On request
1LN1212-4BB15-6.5	4630	4730	22.2	79	97	2000	1XB7 750	On request	On request
1LN1212-4BB35-6.5	4910	5010	24.9	79	97	2000	1XB7 750	On request	On request
1LN1212-3AC15-7.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LN1212-3AC35-7.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AC55-7.5	2050	2100	8.1	79	95.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3AC75-7.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3BC55-7.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-3BC75-7.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-4AC35-7.5	3390	3460	21	79	96.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4AC55-7.5	3600	3670	23.6	79	96.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4AC75-7.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4BC15-7.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LN1212-4BC35-7.5	4850	4950	37.2	79	97	1700	1XB7 750	On request	On request
1LN1212-3AC15-8.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LN1212-3AC35-8.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AC55-8.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LN1212-3AC75-8.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3BC55-8.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LN1212-3BC75-8.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LN1212-4AC35-8.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-4AC55-8.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LN1212-4AC75-8.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4BC15-8.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LN1212-4BC35-8.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LN1212-4BC55-8.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1212-4BC75-8.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)	
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	
Rated motor voltage 440 V														
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)														
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)														
3600 rpm, 4-pole														
425	570	315	Δ	120.8	1127	95.4	96	95.8	0.88	660	5.3	2367	7500	1LN1222-3AB15-5 ■ ■ 5
495	664	315	Δ	120.9	1313	95.5	96.2	96.1	0.89	760	5.1	2626	7500	1LN1222-3AB35-5 ■ ■ 5
560	751	315	Δ	120.8	1485	95.6	96.2	96	0.9	850	5.6	3267	7500	1LN1222-3AB55-5 ■ ■ 5
650	872	315	Δ	120.7	1724	95.9	96.5	96.2	0.91	970	6.4	4310	7500	1LN1222-3AB75-5 ■ ■ 5
3000 rpm, 4-pole														
680	912	355	Δ/Δ	100.8	2165	95.6	96.5	96.5	0.88	1060	4.6	4330	10200	1LN1222-3BB55-1 ■ ■ 5
690	925	355	Δ/Δ	100.8	2196	95.5	96.4	96.5	0.88	1060	4.3	4172	10200	1LN1222-3BB75-1 ■ ■ 5
1800 rpm, 4-pole														
365	489	315	Δ	60.7	1936	94.9	95.9	96.1	0.87	570	6.2	5034	7500	1LN1222-3AB15-6 ■ ■ 5
455	610	315	Δ	60.6	2414	95.1	96.1	96.3	0.89	700	6.5	6518	7500	1LN1222-3AB35-6 ■ ■ 5
515	691	315	Δ	60.6	2732	95.2	96.2	96.5	0.9	780	6.7	7376	7500	1LN1222-3AB55-6 ■ ■ 5
595	798	315	Δ	60.6	3157	95.4	96.3	96.6	0.91	890	6.8	8840	7500	1LN1222-3AB75-6 ■ ■ 5
710	952	355	Δ/Δ	60.6	3767	95.3	96.3	96.6	0.89	1080	5.5	9041	10200	1LN1222-3BB55-6 ■ ■ 5
840	1126	355	Δ/Δ	60.6	4456	95.5	96.5	96.8	0.89	1280	6	11586	10200	1LN1222-3BB75-6 ■ ■ 5
885	1187	400	Δ	60.4	4695	95.7	96.3	96.7	0.87	1380	6.4	12207	16400	1LN1222-4AB35-6 ■ ■ 5
1015	1361	400	Δ	60.4	5385	95.9	96.5	96.9	0.89	1560	6.8	14540	16400	1LN1222-4AB75-6 ■ ■ 5
1050	1408	450	Δ	60.3	5570	96.1	96.5	96.6	0.86	1660	8.3	19495	20700	1LN1222-4BB15-6 ■ ■ 5
1200 rpm, 6-pole														
330	443	315	Δ	60.6	2626	94.7	95.7	96	0.82	550	6.3	5777	7500	1LN1222-3AC15-7 ■ ■ 5
385	516	315	Δ	60.6	3064	94.8	95.8	96.1	0.83	640	6.1	6741	7500	1LN1222-3AC35-7 ■ ■ 5
440	590	315	Δ	60.6	3501	94.9	95.9	96.2	0.84	720	6.2	8052	7500	1LN1222-3AC55-7 ■ ■ 5
495	664	315	Δ	60.7	3939	94.9	96	96.3	0.85	800	6	8272	7500	1LN1222-3AC75-7 ■ ■ 5
605	811	355	Δ	60.5	4814	95.1	96	96.1	0.86	960	7.3	12516	10200	1LN1222-3BC55-7 ■ ■ 5
670	898	355	Δ/Δ	60.5	5332	95.1	96.1	96.2	0.87	1060	7.2	13863	10200	1LN1222-3BC75-7 ■ ■ 5
700	939	400	Δ	60.5	5570	95.5	96.1	96.6	0.85	1120	5.9	12254	16400	1LN1222-4AC35-7 ■ ■ 5
785	1053	400	Δ	60.4	6247	95.9	96.4	96.7	0.85	1260	6.9	16242	16400	1LN1222-4AC55-7 ■ ■ 5
865	1160	400	Δ	60.4	6883	96	96.5	96.8	0.86	1360	7.1	18584	16400	1LN1222-4AC75-7 ■ ■ 5
930	1247	450	Δ	60.3	7401	96.2	96.6	96.9	0.84	1500	7	19243	20700	1LN1222-4BC15-7 ■ ■ 5
900 rpm, 6-pole														
270	362	315	Δ	45.7	2865	93.4	94.7	95.2	0.81	460	5.9	6303	7500	1LN1222-3AC15-8 ■ ■ 5
325	436	315	Δ	45.6	3448	93.7	95	95.5	0.82	550	5.8	7586	7500	1LN1222-3AC35-8 ■ ■ 5
365	489	315	Δ	45.7	3873	93.7	95	95.6	0.84	600	5.7	8521	7500	1LN1222-3AC55-8 ■ ■ 5
400	536	315	Δ	45.7	4244	93.7	95.1	95.6	0.85	650	5.4	8488	7500	1LN1222-3AC75-8 ■ ■ 5
490	657	355	Δ	45.5	5199	93.9	95.2	95.5	0.87	780	6.4	12478	10200	1LN1222-3BC55-8 ■ ■ 5
560	751	355	Δ	45.5	5942	94.2	95.4	95.7	0.87	890	6.8	14855	10200	1LN1222-3BC75-8 ■ ■ 5
610	818	400	Δ	45.5	6472	94.6	95.5	96.2	0.85	990	5.6	14238	16400	1LN1222-4AC35-8 ■ ■ 5
675	905	400	Δ	45.4	7162	95	95.7	96.4	0.85	1080	6.1	17189	16400	1LN1222-4AC55-8 ■ ■ 5
720	966	400	Δ	45.4	7639	95.1	95.8	96.4	0.86	1140	6.1	18334	16400	1LN1222-4AC75-8 ■ ■ 5
785	1053	450	Δ	45.4	8329	95.4	96.1	96.6	0.84	1280	6	19157	20700	1LN1222-4BC15-8 ■ ■ 5
885	1187	450	Δ	45.4	9390	95.5	96.1	96.7	0.85	1420	5.7	20658	20700	1LN1222-4BC35-8 ■ ■ 5
965	1294	450	Δ	45.4	10239	95.5	96.2	96.7	0.85	1540	5.7	22526	20700	1LN1222-4BC55-8 ■ ■ 5

For versions, see Article No. supplements and special versions. ■ ■

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1222-3AB15-5.5	1640	1690	3.3	79	95.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AB35-5.5	1830	1880	4.2	79	95.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3AB55-5.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-3AB75-5.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-3BB55-1.5	2860	2920	8	79	96	3300	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-3BB75-1.5	2980	3040	8.7	79	96	3300	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-3AB15-6.5	1600	1650	3.3	79	95.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LN1222-3AB35-6.5	1830	1880	4.2	79	95.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AB55-6.5	2020	2060	4.8	79	95.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3AB75-6.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-3BB55-6.5	2860	2920	8	79	96	2600	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-3BB75-6.5	2980	3040	8.7	79	96	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LN1222-4AB35-6.5	3360	3430	13.2	79	96.5	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LN1222-4AB75-6.5	3840	3910	17.1	79	96.5	2200	1XB7 750	On request	On request
1LN1222-4BB15-6.5	4630	4730	22.2	79	97	2000	1XB7 750	On request	On request
1LN1222-3AC15-7.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LN1222-3AC35-7.5	1850	1900	7	79	95.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AC55-7.5	2050	2100	8.1	79	95.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AC75-7.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3BC55-7.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-3BC75-7.5	3000	3060	15.7	79	96	2500	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-4AC35-7.5	3390	3460	21	79	96.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4AC55-7.5	3600	3670	23.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4AC75-7.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LN1222-4BC15-7.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LN1222-3AC15-8.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LN1222-3AC35-8.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LN1222-3AC55-8.5	2050	2100	8.1	79	95.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3AC75-8.5	2160	2200	8.9	79	95.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LN1222-3BC55-8.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LN1222-3BC75-8.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LN1222-4AC35-8.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LN1222-4AC55-8.5	3600	3670	23.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LN1222-4AC75-8.5	3830	3900	26.6	79	96.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4BC15-8.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LN1222-4BC35-8.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LN1222-4BC55-8.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger

1LN1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power									T_B	Mech. torque limit 1) 2)	1LN1 cast-iron series Version specifically for converter operation
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	Article No.	
Rated motor voltage 610 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3600 rpm, 4-pole															
385	516	315	Δ	120.9	1021	95	95.7	95.6	0.88	435	4.9	2042	7500	1LN1212-3AB16-5 ■■■ 5	
505	677	315	Δ	120.7	1340	95.6	96.2	96	0.89	560	5.8	3082	7500	1LN1212-3AB36-5 ■■■ 5	
555	744	315	Δ	120.7	1472	95.6	96.2	95.9	0.9	610	6.1	3533	7500	1LN1212-3AB56-5 ■■■ 5	
635	852	315	Δ	120.7	1684	95.8	96.4	96.1	0.91	690	6.3	4210	7500	1LN1212-3AB76-5 ■■■ 5	
3000 rpm, 4-pole															
630	845	355	Δ	100.8	2005	95.2	96.2	96.3	0.88	700	4.3	3810	10200	1LN1212-3BB56-1 ■■■ 5	
705	945	355	Δ	100.8	2244	95.4	96.4	96.4	0.89	780	4.6	4488	10200	1LN1212-3BB76-1 ■■■ 5	
1800 rpm, 4-pole															
330	443	315	Δ	60.6	1751	94.6	95.7	96	0.88	370	6.2	4553	7500	1LN1212-3AB16-6 ■■■ 5	
440	590	315	Δ	60.6	2334	95.2	96.1	96.3	0.89	485	7.4	7002	7500	1LN1212-3AB36-6 ■■■ 5	
480	644	315	Δ	60.6	2546	95.2	96.2	96.4	0.9	520	7.3	7638	7500	1LN1212-3AB56-6 ■■■ 5	
590	791	315	Δ	60.5	3130	95.6	96.4	96.6	0.9	640	8.1	10016	7500	1LN1212-3AB76-6 ■■■ 5	
740	992	355	Δ	60.6	3926	95.3	96.4	96.6	0.89	820	6.1	10600	10200	1LN1212-3BB56-6 ■■■ 5	
820	1100	355	Δ	60.5	4350	95.5	96.5	96.7	0.89	900	6.6	12615	10200	1LN1212-3BB76-6 ■■■ 5	
905	1214	400	Δ	60.5	4801	95.7	96.3	96.7	0.88	1020	6.2	12003	16400	1LN1212-4AB56-6 ■■■ 5	
1005	1348	400	Δ	60.4	5332	95.8	96.4	96.8	0.89	1100	6.8	14396	16400	1LN1212-4AB76-6 ■■■ 5	
1055	1415	450	Δ	60.3	5597	96.1	96.4	96.6	0.86	1200	8.1	19030	20700	1LN1212-4BB16-6 ■■■ 5	
1185	1589	450	Δ	60.2	6287	96.2	96.5	96.6	0.86	1360	9.1	23891	20700	1LN1212-4BB36-6 ■■■ 5	
1360	1824	450	Δ	60.2	7215	96.4	96.7	96.7	0.86	1540	9.4	28139	20700	1LN1212-4BB56-6 ■■■ 5	
1200 rpm, 6-pole															
300	402	315	Δ	60.6	2387	94.4	95.5	95.8	0.82	365	6.4	5490	7500	1LN1212-3AC16-7 ■■■ 5	
360	483	315	Δ	60.6	2865	94.7	95.7	96	0.83	430	6.7	6876	7500	1LN1212-3AC36-7 ■■■ 5	
405	543	315	Δ	60.6	3223	94.7	95.8	96.1	0.84	475	6.3	7413	7500	1LN1212-3AC56-7 ■■■ 5	
445	597	315	Δ	60.6	3541	94.9	95.9	96.1	0.85	520	6.5	8498	7500	1LN1212-3AC76-7 ■■■ 5	
585	784	355	Δ	60.4	4655	95.1	96	96	0.86	670	8.2	13500	10200	1LN1212-3BC56-7 ■■■ 5	
630	845	355	Δ	60.4	5013	95.1	96	96.1	0.87	710	8	14036	10200	1LN1212-3BC76-7 ■■■ 5	
695	932	400	Δ	60.4	5531	95.5	96.1	96.6	0.85	810	6.4	13274	16400	1LN1212-4AC36-7 ■■■ 5	
755	1012	400	Δ	60.4	6008	95.8	96.3	96.7	0.85	870	7	16222	16400	1LN1212-4AC56-7 ■■■ 5	
810	1086	400	Δ	60.4	6446	95.8	96.4	96.7	0.86	920	6.8	16760	16400	1LN1212-4AC76-7 ■■■ 5	
930	1247	450	Δ	60.3	7401	96.2	96.6	96.8	0.83	1100	7	19243	20700	1LN1212-4BC16-7 ■■■ 5	
1050	1408	450	Δ	60.3	8356	96.2	96.6	96.9	0.84	1220	7.2	22561	20700	1LN1212-4BC36-7 ■■■ 5	
1145	1535	450	Δ	60.3	9112	96.3	96.7	97	0.85	1320	7.2	24602	20700	1LN1212-4BC56-7 ■■■ 5	
1320	1770	450	Δ	60.3	10504	96.4	96.8	97	0.86	1500	7	27310	20700	1LN1212-4BC76-7 ■■■ 5	
900 rpm, 6-pole															
240	322	315	Y	45.6	2546	93.2	94.5	95	0.81	295	6.1	5856	7500	1LN1212-3AC16-8 ■■■ 5	
315	422	315	Δ	45.6	3342	93.9	95	95.4	0.82	385	6.4	8021	7500	1LN1212-3AC36-8 ■■■ 5	
345	463	315	Δ	45.6	3661	93.7	95	95.5	0.84	410	6.1	8054	7500	1LN1212-3AC56-8 ■■■ 5	
380	510	315	Δ	45.6	4032	94	95.2	95.6	0.84	450	6.5	9677	7500	1LN1212-3AC76-8 ■■■ 5	
465	624	355	Δ	45.5	4934	93.9	95.1	95.4	0.87	530	6.9	12335	10200	1LN1212-3BC56-8 ■■■ 5	
515	691	355	Δ	45.5	5464	94	95.2	95.5	0.87	590	6.9	14206	10200	1LN1212-3BC76-8 ■■■ 5	
575	771	400	Δ	45.5	6101	94.5	95.4	96.1	0.85	670	5.8	14032	16400	1LN1212-4AC36-8 ■■■ 5	
645	865	400	Δ	45.4	6844	94.9	95.7	96.3	0.85	750	6.4	17110	16400	1LN1212-4AC56-8 ■■■ 5	
710	952	400	Δ	45.4	7533	95.1	95.9	96.4	0.86	810	6.7	19586	16400	1LN1212-4AC76-8 ■■■ 5	
795	1066	450	Δ	45.4	8435	95.4	96.1	96.6	0.83	940	5.9	19401	20700	1LN1212-4BC16-8 ■■■ 5	
880	1180	450	Δ	45.4	9337	95.4	96.1	96.6	0.84	1040	5.8	21475	20700	1LN1212-4BC36-8 ■■■ 5	
1025	1375	450	Δ	45.3	10876	95.6	96.2	96.7	0.85	1180	6.2	26102	20700	1LN1212-4BC56-8 ■■■ 5	
1095	1468	450	Δ	45.3	11618	95.7	96.3	96.7	0.86	1260	6.6	30207	20700	1LN1212-4BC76-8 ■■■ 5	

For versions, see Article No. supplements and special versions.

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1212-3AB16-5.5	1600	1650	3.3	79	95.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3AB36-5.5	1790	1840	4.2	79	95.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AB56-5.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3AB76-5.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BB56-1.5	2730	2790	8	79	96	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BB76-1.5	2860	2910	8.7	79	96	3300	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-3AB16-6.5	1600	1650	3.3	79	95.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AB36-6.5	1790	1840	4.2	79	95.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AB56-6.5	1980	2020	4.8	79	95.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AB76-6.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BB56-6.5	2730	2790	8	79	96	2600	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-3BB76-6.5	2860	2910	8.7	79	96	2600	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4AB56-6.5	3560	3630	14.9	79	96.5	2200	1XB7 740	6SL3710-7LG41-3AA3	1230
1LN1212-4AB76-6.5	3840	3910	17.1	79	96.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BB16-6.5	4630	4730	22.2	79	97	2000	1XB7 750	6SL3710-7LG37-4AA3	1230
1LN1212-4BB36-6.5	4910	5010	24.9	79	97	2000	1XB7 750	On request	On request
1LN1212-4BB56-6.5	5280	5380	27.7	79	97	2000	1XB7 750	On request	On request
1LN1212-3AC16-7.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AC36-7.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3AC56-7.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3AC76-7.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3BC56-7.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-3BC76-7.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-4AC36-7.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-4AC56-7.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-4AC76-7.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4BC16-7.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BC36-7.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BC56-7.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1212-4BC76-7.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request
1LN1212-3AC16-8.5	1640	1680	5.7	79	95.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LN1212-3AC36-8.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LN1212-3AC56-8.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3AC76-8.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LN1212-3BC56-8.5	2690	2740	14.3	79	96	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LN1212-3BC76-8.5	2830	2890	15.7	79	96	2500	1XB7 731	6SL3710-7LG37-4AA3	710
1LN1212-4AC36-8.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LN1212-4AC56-8.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LN1212-4AC76-8.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LN1212-4BC16-8.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LN1212-4BC36-8.5	4850	4950	37.2	79	97	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LN1212-4BC56-8.5	5300	5400	41.9	79	97	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LN1212-4BC76-8.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LN1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 550 V															
Insulation: thermal class 180 (H), IP54/IP55 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3600 rpm, 4-pole															
405	543	315	Δ	120.8	1074	95.3	95.9	95.7	0.88	500	5.6	2470	7500	1LN1222-3AB16-5 ■ ■ ■ 5	
495	664	315	Δ	120.7	1313	95.6	96.2	96	0.9	600	6.2	3151	7500	1LN1222-3AB36-5 ■ ■ ■ 5	
545	731	315	Δ	120.7	1446	95.7	96.2	95.9	0.9	660	6.7	3760	7500	1LN1222-3AB56-5 ■ ■ ■ 5	
580	778	315	Δ	120.8	1538	95.5	96.2	96	0.9	700	5.6	3384	7500	1LN1222-3AB76-5 ■ ■ ■ 5	
3000 rpm, 4-pole															
620	831	355	Δ	100.8	1974	95.3	96.3	96.3	0.88	770	4.4	3751	10200	1LN1222-3BB56-1 ■ ■ ■ 5	
700	939	355	Δ	100.7	2228	95.6	96.4	96.4	0.89	860	4.9	4679	10200	1LN1222-3BB76-1 ■ ■ ■ 5	
1800 rpm, 4-pole															
320	429	315	Δ	60.7	1698	94.6	95.6	96	0.88	400	6	4245	7500	1LN1222-3AB16-6 ■ ■ ■ 5	
430	577	315	Δ	60.6	2281	95.1	96.1	96.3	0.89	530	7.1	6843	7500	1LN1222-3AB36-6 ■ ■ ■ 5	
475	637	315	Δ	60.6	2520	95.2	96.2	96.4	0.9	580	7.2	7308	7500	1LN1222-3AB56-6 ■ ■ ■ 5	
585	784	315	Δ	60.5	3104	95.6	96.5	96.6	0.89	720	8.3	10554	7500	1LN1222-3AB76-6 ■ ■ ■ 5	
740	992	355	Δ	60.6	3926	95.4	96.4	96.6	0.89	910	6.3	10993	10200	1LN1222-3BB56-6 ■ ■ ■ 5	
755	1012	355	Δ	60.6	4005	95.3	96.3	96.6	0.89	920	5.8	10413	10200	1LN1222-3BB76-6 ■ ■ ■ 5	
825	1106	400	Δ	60.5	4377	95.5	96.1	96.6	0.88	1020	6.1	10943	16400	1LN1222-4AB36-6 ■ ■ ■ 5	
920	1234	400	Δ	60.4	4881	95.7	96.3	96.7	0.88	1140	6.6	12691	16400	1LN1222-4AB56-6 ■ ■ ■ 5	
1030	1381	400	Δ	60.4	5464	95.9	96.5	96.8	0.89	1260	7.4	15846	16400	1LN1222-4AB76-6 ■ ■ ■ 5	
1090	1462	450	Δ	60.3	5783	96.1	96.5	96.6	0.86	1380	7.7	18506	20700	1LN1222-4BB16-6 ■ ■ ■ 5	
1250	1676	450	Δ	60.3	6631	96.3	96.6	96.7	0.86	1580	8.6	23872	20700	1LN1222-4BB36-6 ■ ■ ■ 5	
1295	1737	450	Δ	60.2	6870	96.3	96.6	96.7	0.87	1620	9.2	26106	20700	1LN1222-4BB56-6 ■ ■ ■ 5	
1200 rpm, 6-pole															
280	375	315	Δ	60.7	2228	94.1	95.3	95.7	0.83	370	6	4679	7500	1LN1222-3AC16-7 ■ ■ ■ 5	
355	476	315	Δ	60.6	2825	94.7	95.7	96	0.83	470	6.6	6780	7500	1LN1222-3AC36-7 ■ ■ ■ 5	
400	536	315	Δ	60.6	3183	94.7	95.8	96.1	0.84	520	6.4	7321	7500	1LN1222-3AC56-7 ■ ■ ■ 5	
450	603	315	Δ	60.6	3581	94.9	95.9	96.2	0.85	580	6.7	8594	7500	1LN1222-3AC76-7 ■ ■ ■ 5	
560	751	355	Δ	60.4	4456	95	95.9	96	0.86	710	7.8	12477	10200	1LN1222-3BC56-7 ■ ■ ■ 5	
625	838	355	Δ	60.4	4974	95.2	96.1	96	0.86	790	8.7	15419	10200	1LN1222-3BC76-7 ■ ■ ■ 5	
700	939	400	Δ	60.4	5570	95.7	96.2	96.6	0.85	900	6.8	14482	16400	1LN1222-4AC36-7 ■ ■ ■ 5	
740	992	400	Δ	60.4	5889	95.7	96.3	96.7	0.86	940	6.8	15311	16400	1LN1222-4AC56-7 ■ ■ ■ 5	
800	1073	400	Δ	60.3	6366	96	96.5	96.7	0.85	1020	7.9	19098	16400	1LN1222-4AC76-7 ■ ■ ■ 5	
930	1247	450	Δ	60.3	7401	96.1	96.6	96.8	0.83	1220	7.2	19983	20700	1LN1222-4BC16-7 ■ ■ ■ 5	
1010	1354	450	Δ	60.3	8037	96.2	96.6	96.9	0.84	1300	7.4	21700	20700	1LN1222-4BC36-7 ■ ■ ■ 5	
1170	1569	450	Δ	60.3	9311	96.3	96.7	97	0.85	1500	7.1	25140	20700	1LN1222-4BC56-7 ■ ■ ■ 5	
900 rpm, 6-pole															
245	329	315	Δ	45.6	2600	93.4	94.6	95.1	0.8	340	6.4	6240	7500	1LN1222-3AC16-8 ■ ■ ■ 5	
305	409	315	Δ	45.5	3236	93.8	95	95.3	0.81	415	6.7	8414	7500	1LN1222-3AC36-8 ■ ■ ■ 5	
340	456	315	Δ	45.6	3608	93.8	95.1	95.5	0.83	450	6.4	8659	7500	1LN1222-3AC56-8 ■ ■ ■ 5	
380	510	315	Δ	45.6	4032	93.9	95.1	95.5	0.84	500	6.4	9677	7500	1LN1222-3AC76-8 ■ ■ ■ 5	
455	610	355	Δ	45.5	4828	93.9	95.1	95.5	0.87	580	6.9	12070	10200	1LN1222-3BC56-8 ■ ■ ■ 5	
505	677	355	Δ	45.5	5358	94	95.2	95.5	0.87	640	7.1	13931	10200	1LN1222-3BC76-8 ■ ■ ■ 5	
575	771	400	Δ	45.5	6101	94.6	95.5	96.1	0.85	740	5.8	14032	16400	1LN1222-4AC36-8 ■ ■ ■ 5	
615	825	400	Δ	45.4	6525	94.8	95.6	96.3	0.86	790	6.1	15660	16400	1LN1222-4AC56-8 ■ ■ ■ 5	
685	919	400	Δ	45.4	7268	95.1	95.8	96.4	0.86	870	6.3	18170	16400	1LN1222-4AC76-8 ■ ■ ■ 5	
735	986	450	Δ	45.4	7799	95.2	95.9	96.4	0.84	960	6	18718	20700	1LN1222-4BC16-8 ■ ■ ■ 5	
840	1126	450	Δ	45.4	8913	95.4	96	96.6	0.85	1080	5.8	19609	20700	1LN1222-4BC36-8 ■ ■ ■ 5	
980	1314	450	Δ	45.4	10398	95.6	96.2	96.7	0.85	1260	6.1	24955	20700	1LN1222-4BC56-8 ■ ■ ■ 5	
1095	1468	450	Δ	45.4	11618	95.6	96.2	96.7	0.86	1380	5.9	26721	20700	1LN1222-4BC76-8 ■ ■ ■ 5	

For versions, see Article No. supplements and special versions.

Water-cooled motors with air-to-water heat exchanger 1LN1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LN1222-3AB16-5.5	1600	1650	3.3	79	95.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3AB36-5.5	1830	1880	4.2	79	95.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3AB56-5.5	2020	2060	4.8	79	95.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3AB76-5.5	2180	2230	5.7	79	95.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3BB56-1.5	2730	2790	8	79	96	3300	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-3BB76-1.5	2860	2910	8.7	79	96	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-3AB16-6.5	1600	1650	3.3	79	95.5	3000	1XB7 731	6SL3710-1GF34-1AA3	400
1LN1222-3AB36-6.5	1790	1840	4.2	79	95.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3AB56-6.5	1980	2020	4.8	79	95.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LN1222-3AB76-6.5	2180	2230	5.7	79	95.5	3000	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-3BB56-6.5	2730	2790	8	79	96	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-3BB76-6.5	2860	2910	8.7	79	96	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AB36-6.5	3360	3430	13.2	79	96.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AB56-6.5	3560	3630	14.9	79	96.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4AB76-6.5	3840	3910	17.1	79	96.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BB16-6.5	4630	4730	22.2	79	97	2000	1XB7 750	On request	On request
1LN1222-4BB36-6.5	4910	5010	24.9	79	97	2000	1XB7 750	On request	On request
1LN1222-4BB56-6.5	5280	5380	27.7	79	97	2000	1XB7 750	On request	On request
1LN1222-3AC16-7.5	1640	1680	5.7	79	95.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LN1222-3AC36-7.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3AC56-7.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3AC76-7.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-1GF37-4AA3	710
1LN1222-3BC56-7.5	2730	2780	14.3	79	96	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-3BC76-7.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-4AC36-7.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AC56-7.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4AC76-7.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4BC16-7.5	4550	4650	33.2	79	97	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BC36-7.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BC56-7.5	5300	5400	41.9	79	97	1700	1XB7 750	On request	On request
1LN1222-3AC16-8.5	1640	1680	5.7	79	95.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LN1222-3AC36-8.5	1810	1860	7	79	95.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LN1222-3AC56-8.5	2010	2060	8.1	79	95.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LN1222-3AC76-8.5	2120	2160	8.9	79	95.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LN1222-3BC56-8.5	2690	2740	14.3	79	96	2500	1XB7 731	6SL3710-1GF37-4AA3	710
1LN1222-3BC76-8.5	2870	2930	15.7	79	96	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LN1222-4AC36-8.5	3390	3460	21	79	96.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-4AC56-8.5	3600	3670	23.6	79	96.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LN1222-4AC76-8.5	3830	3900	26.6	79	96.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4BC16-8.5	4550	4650	33.2	79	97	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LN1222-4BC36-8.5	4850	4950	37.2	79	97	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BC56-8.5	5300	5400	41.9	79	97	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LN1222-4BC76-8.5	5720	5820	47.8	79	97	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

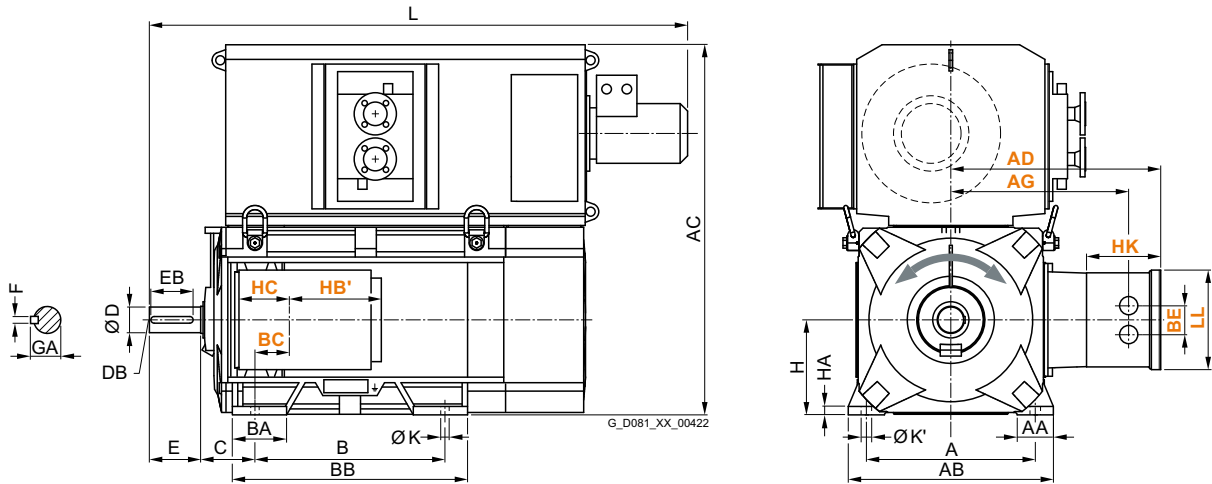
Water-cooled motors with air-to-water heat exchanger Dimensions

1LN1 motors

Dimensional drawings

Type of construction IM B3

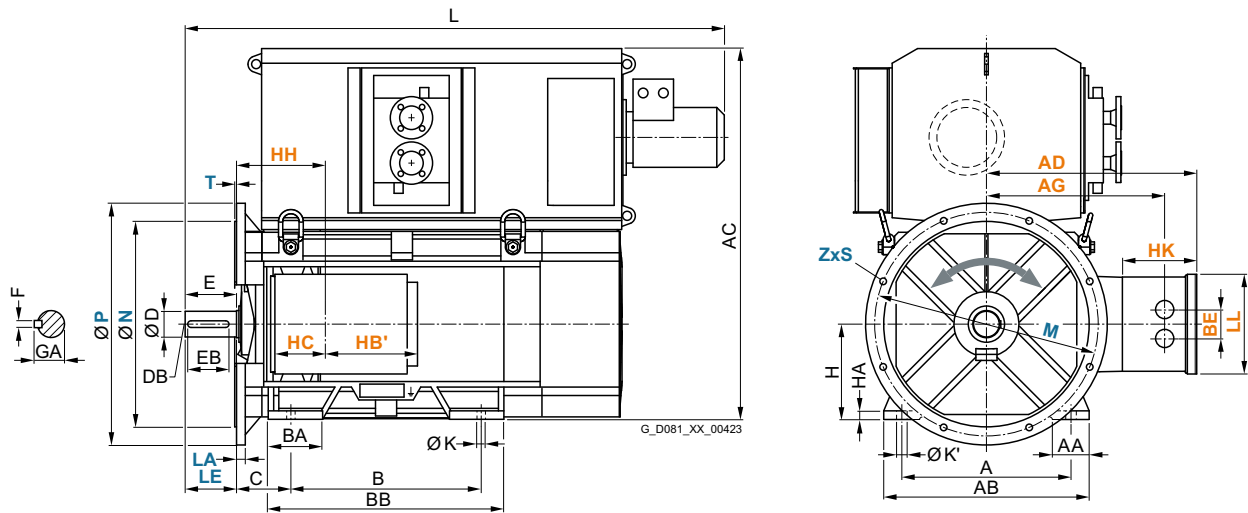
For terminal box dimensions, see page 7/25



7

Types of construction IM B35 and IM V1

For flange dimensions, see page 7/24 (Z = the number of retaining holes)
For terminal box dimensions, see page 7/25



Water-cooled motors with air-to-water heat exchanger

Dimensions

1LN1 motors

Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																		
			A	AA	AB	AC	B	BA	BB	C	H	HA	K	K'	L ¹⁾	D	DB	E	EB	F	GA
315	4, 6	1LN1...-3A.1.-....	560	120	680	1230	630	180	780	180	315	28	28	35	1785	85	M20	170	140	22	90
		1LN1...-3A.3.-....	● 560	120	680	1230	630	180	780	200	315	28	28	35	1805	95	M24	170	140	25	100
		1LN1...-3A.5.-....	560	120	680	1230	835	180	985	180	315	28	28	35	1925	85	M20	170	140	22	90
		1LN1...-3A.7.-....	● 560	120	680	1230	835	180	985	200	315	28	28	35	1945	95	M24	170	140	25	100
355	4, 6	1LN1...-3B.5.-....	630	150	780	1470	800	220	980	200	355	35	35	42	2080	95	M24	170	140	22	100
		1LN1...-3B.7.-....	● 630	150	780	1470	800	220	980	224	355	35	35	42	2145	100	M24	210	180	28	106
400	4, 6	1LN1...-4A.3.-....	710	150	860	1570	900	220	1080	224	400	35	35	42	2405	110	M24	210	180	28	116
		1LN1...-4A.5.-....	● 710	150	860	1570	900	220	1080	250	400	35	35	42	2435	120	M24	210	180	32	127
		1LN1...-4A.7.-....																			
450	4, 6	1LN1...-4B.1.-....	800	180	980	1820	1000	260	1220	250	450	42	42	50	2415	120	M24	210	180	32	127
		1LN1...-4B.3.-....	● 800	180	980	1820	1000	260	1220	280	450	42	42	50	2485	130	M24	250	220	32	137
		1LN1...-4B.5.-....	800	180	980	1820	1000	260	1220	250	450	42	42	50	2590	120	M24	210	180	32	127
		1LN1...-4B.7.-....	● 800	180	980	1820	1000	260	1220	280	450	42	42	50	2660	130	M24	250	220	32	137

- Bearing design for increased cantilever forces, for type of construction IM B3 only.

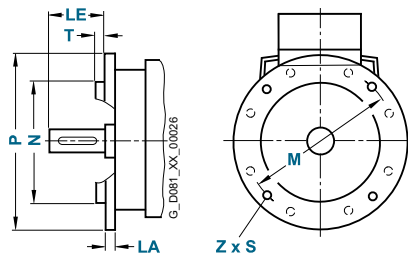
¹⁾ With type of construction IM V1, IM V15, IM V5 dimension L increases due to a protective cover for the fan motor.

Water-cooled motors with air-to-water heat exchanger

Dimensions

Flanges

Dimensional drawings



(Z = the number of retaining holes)

Motor type	Frame size	No. of poles	Type of construction	Flange type	Flange with through holes (FF/A) acc. to DIN 42948	Dimension designation acc. to IEC							
						LA	LE	M	N	P	S	T	Z
1LN1	315	4, 6	IM B35, IM V1	Flange	A 800	29	170	740	680	800	22	6	8
				Flange (order code M61)	A 660	22	170	600	550	660	22	6	8
	355	4, 6	IM B35, IM V1	Flange	A 900	29	170	840	780	900	22	6	8
				Flange (order code M61)	A 660	27	170	600	550	660	22	6	8
	400	4, 6	IM B35, IM V1	Flange	A 1000	28	210	940	880	1000	22	6	8
	450	4, 6	IM B35, IM V1	Flange	A 1150	30	210	1080	1000	1150	26	6	8

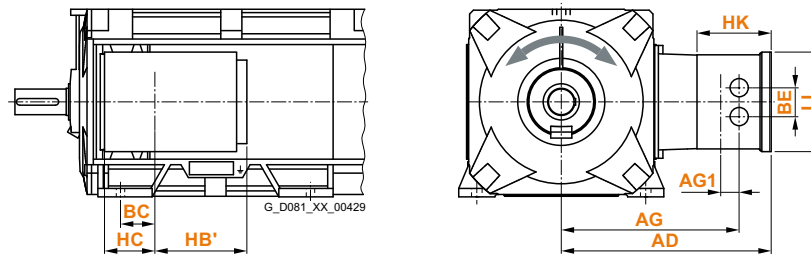
Water-cooled motors with air-to-water heat exchanger

Dimensions

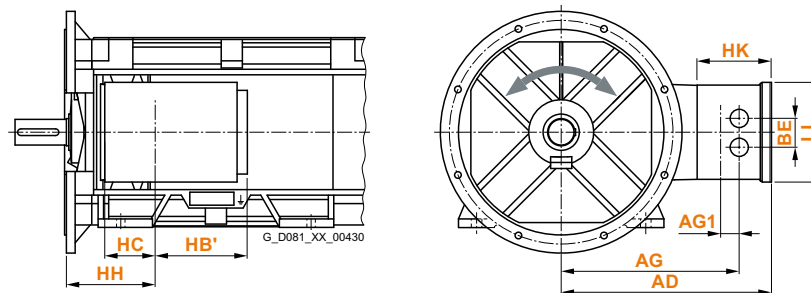
Terminal boxes

Dimensional drawings

Type of construction IM B3



Types of construction IM B35 and IM V1



Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LN1	315	4, 6	1XB7730	705	570	-	115	-	885	310	295	180	1020	255	345
			1XB7731	705	570	-	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
			GT640	620	520	-	115	110	835	225	295	155	935	170	310
			1XB1621	700	580	-	115	150	895	305	295	165	1015	250	330
			1XB1631	770	635	-	115	100	950	400	295	175	1085	320	555
	355	4, 6	1XB7730	750	615	-	100	-	970	310	300	180	1105	255	345
			1XB7731	750	615	-	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425
			GT640	665	565	-	100	110	920	225	300	155	1020	170	310
			1XB1621	745	625	-	100	150	980	305	300	165	1100	250	330
			1XB1631	815	680	-	100	100	1035	400	300	175	1170	320	555
	400	4, 6	1XB7730	795	660	-	100	-	1060	310	324	180	1195	255	345
			1XB7731	795	660	-	100	115	1060	310	324	180	1195	255	345
			1XB7740	880	700	60	100	96	1100	365	324	235	1280	340	425
			1XB7750	960	850	65	100	103	1250	405	324	300	1360	420	890
GT640			710	610	-	100	110	1010	225	324	155	1110	170	310	
1XB1621			790	670	-	100	150	1070	305	324	165	1190	250	330	
450	4, 6	1XB1631	860	725	-	100	100	1125	400	324	175	1260	320	555	
		1XB7730	841	710	-	80	-	1160	310	325	180	1291	255	345	
		1XB7731	841	710	-	80	115	1160	310	325	180	1291	255	345	
		1XB7740	926	750	60	80	96	1200	365	325	235	1376	340	425	
		1XB7750	1006	900	65	80	103	1350	405	325	300	1456	420	890	
		GT640	756	660	-	80	110	1110	225	325	155	1206	170	310	
1XB1621	836	720	-	80	150	1170	305	325	165	1286	250	330			
1XB1631	906	770	-	80	100	1220	400	325	175	1356	320	555			

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

Water-cooled motors with air-to-water heat exchanger

Notes

Self-ventilated motors – open version



8/2 1LL1 motors for converter operation

- 8/2 Line voltage 400 V, 50 Hz
- 8/2 High Efficiency
- 8/6 Line voltage 500 V, 50 Hz
- 8/6 High Efficiency
- 8/10 Line voltage 690 V, 50 Hz
- 8/10 High Efficiency
- 8/14 Line voltage 460 V, 60 Hz
- 8/14 High Efficiency
- 8/18 Line voltage 575 V, 60 Hz
- 8/18 High Efficiency

8/22 Dimensions

- 8/22 1LL1 motors
- 8/24 Flanges
- 8/25 Terminal boxes

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
• Rated motor voltage 425 V															
• Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
• Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
330	443	315	Δ	100.9	1050	94.9	95.7	95.7	0.88	530	4.8	1995	7500	1LL1212-3AB11-1-0	
415	557	315	Δ	100.8	1321	95.3	96.1	96	0.89	660	5.1	2774	7500	1LL1212-3AB31-1-0	
470	630	315	Δ	100.8	1496	95.5	96.3	96.2	0.9	740	5.4	3291	7500	1LL1212-3AB51-1-0	
545	731	315	Δ	100.8	1735	95.7	96.4	96.4	0.91	840	5.8	3990	7500	1LL1212-3AB71-1-0	
670	898	355	Δ/Δ	100.8	2133	94.6	95.3	95	0.88	1080	4.4	4053	10200	1LL1212-3BB51-1-0	
675	905	355	Δ/Δ	100.9	2149	94.5	95.2	95	0.88	1100	4	3868	10200	1LL1212-3BB71-1-0	
1500 rpm, 4-pole															
290	389	315	Δ	50.7	1846	94	95.1	95.3	0.88	470	6.1	4800	7500	1LL1212-3AB11-2-0	
420	563	315	Δ	50.7	2674	94.3	95.3	95.6	0.89	670	6.2	6952	7500	1LL1212-3AB31-2-0	
455	610	315	Δ	50.6	2897	94.4	95.5	95.8	0.9	720	6.5	7822	7500	1LL1212-3AB51-2-0	
530	711	315	Δ	50.7	3374	94.5	95.6	95.9	0.9	840	6.3	8772	7500	1LL1212-3AB71-2-0	
645	865	355	Δ	50.7	4106	94.3	95.5	95.9	0.89	1040	4.9	9033	10200	1LL1212-3BB51-2-0	
735	986	355	Δ/Δ	50.6	4679	94.6	95.8	96.1	0.89	1180	5.4	11230	10200	1LL1212-3BB71-2-0	
785	1053	400	Δ	50.5	4997	94.9	95.6	96.1	0.87	1280	5.8	11993	16400	1LL1212-4AB31-2-0	
890	1194	400	Δ	50.4	5666	95.3	95.9	96.3	0.88	1440	6.5	15298	16400	1LL1212-4AB51-2-0	
1075	1442	450	Δ	50.3	6844	95.8	96.1	96.3	0.86	1760	7.5	21901	20700	1LL1212-4BB11-2-0	
1160	1556	450	Δ	50.3	7385	95.8	96.1	96.3	0.87	1880	7.8	24371	20700	1LL1212-4BB31-2-0	
1000 rpm, 6-pole															
265	355	315	Δ	50.6	2531	93.9	95	95.3	0.82	460	6.2	5821	7500	1LL1212-3AC11-3-0	
330	443	315	Δ	50.6	3151	94.1	95.2	95.6	0.83	570	6.1	7247	7500	1LL1212-3AC31-3-0	
380	510	315	Δ	50.6	3629	94.2	95.3	95.7	0.84	640	6	7984	7500	1LL1212-3AC51-3-0	
425	570	315	Δ	50.6	4058	94.5	95.5	95.8	0.84	720	6.4	9739	7500	1LL1212-3AC71-3-0	
520	697	355	Δ	50.5	4966	94.3	95.4	95.6	0.86	860	6.7	12415	10200	1LL1212-3BC51-3-0	
595	798	355	Δ	50.5	5682	94.6	95.6	95.7	0.86	980	7.5	15341	10200	1LL1212-3BC71-3-0	
675	905	400	Δ	50.4	6446	95.1	95.8	96.3	0.86	1120	6	15470	16400	1LL1212-4AC51-3-0	
780	1046	400	Δ	50.4	7448	95.5	96.1	96.5	0.86	1280	6.9	20110	16400	1LL1212-4AC71-3-0	
850	1140	450	Δ	50.4	8117	95.4	96	96.5	0.85	1420	5.6	17046	20700	1LL1212-4BC11-3-0	
1010	1354	450	Δ	50.3	9645	95.8	96.3	96.6	0.84	1700	6.4	24113	20700	1LL1212-4BC31-3-0	
750 rpm, 6-pole															
205	275	315	Δ	38.1	2610	92.8	94.1	94.6	0.81	365	6.1	6264	7500	1LL1212-3AC11-4-0	
255	342	315	Δ	38.1	3247	93.2	94.5	95	0.82	445	6.1	7793	7500	1LL1212-3AC31-4-0	
290	389	315	Δ	38.1	3692	93.2	94.5	95.1	0.84	495	5.7	8122	7500	1LL1212-3AC51-4-0	
325	436	315	Δ	38.1	4138	93.3	94.7	95.2	0.85	550	5.8	9104	7500	1LL1212-3AC71-4-0	
375	503	355	Δ	38	4775	93.3	94.6	95	0.87	620	6.4	11460	10200	1LL1212-3BC51-4-0	
425	570	355	Δ	38	5411	93.5	94.7	95.2	0.87	700	6.5	13528	10200	1LL1212-3BC71-4-0	
470	630	400	Δ	38	5984	93.9	94.9	95.7	0.86	780	5.5	13165	16400	1LL1212-4AC31-4-0	
545	731	400	Δ	37.9	6939	94.4	95.3	96	0.85	910	6.2	17348	16400	1LL1212-4AC51-4-0	
580	778	400	Δ	37.9	7385	94.5	95.4	96.1	0.87	950	6	17724	16400	1LL1212-4AC71-4-0	
675	905	450	Δ	37.9	8594	94.8	95.6	96.2	0.85	1120	5.7	18907	20700	1LL1212-4BC11-4-0	
775	1039	450	Δ	37.9	9868	95.1	95.8	96.3	0.84	1300	6	23683	20700	1LL1212-4BC31-4-0	
870	1167	450	Δ	37.9	11077	95.1	95.8	96.4	0.86	1440	5.8	25477	20700	1LL1212-4BC51-4-0	
945	1267	450	Δ	37.9	12032	95.2	95.9	96.4	0.86	1560	5.8	27674	20700	1LL1212-4BC71-4-0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM B3}$	$m_{IM V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1212-3AB11-1..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AB31-1..0	1510	1560	4.3	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3AB51-1..0	1690	1730	4.9	79	94.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LL1212-3AB71-1..0	1850	1900	5.7	79	94.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-3BB51-1..0	2410	2460	8.1	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-3BB71-1..0	2530	2580	8.8	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-3AB11-2..0	1290	1330	3.4	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LL1212-3AB31-2..0	1510	1560	4.3	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3AB51-2..0	1690	1730	4.9	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3AB71-2..0	1850	1900	5.7	79	94.5	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-3BB51-2..0	2280	2330	8.1	79	95	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-3BB71-2..0	2530	2580	8.8	79	95	2200	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-4AB31-2..0	2820	2890	14.3	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LL1212-4AB51-2..0	3020	3090	16	79 ⁴⁾	95.5	2200	1XB7 750	On request	On request
1LL1212-4BB11-2..0	4000	4100	23.8	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB31-2..0	4270	4370	26.5	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-3AC11-3..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LL1212-3AC31-3..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AC51-3..0	1720	1760	8.2	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3AC71-3..0	1830	1870	9	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3BC51-3..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-3BC71-3..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-4AC51-3..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LL1212-4AC71-3..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LL1212-4BC11-3..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC31-3..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-3AC11-4..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-7LE33-8AA3	370
1LL1212-3AC31-4..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LL1212-3AC51-4..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AC71-4..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3BC51-4..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3BC71-4..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-4AC31-4..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LL1212-4AC51-4..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-4AC71-4..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-4BC11-4..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LL1212-4BC31-4..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LL1212-4BC51-4..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC71-4..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
Rated motor voltage 380 V																
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)																
Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)																
3000 rpm, 4-pole																
320	429	315	Δ	100.9	1019	94.9	95.7	95.6	0.88	580	4.8	2038	7500	1LL1222-3AB11-1-0		
410	550	315	Δ	100.8	1305	95.4	96.1	96.1	0.9	720	5.5	2871	7500	1LL1222-3AB31-1-0		
475	637	315	Δ	100.7	1512	95.6	96.3	96.3	0.9	830	5.9	3478	7500	1LL1222-3AB51-1-0		
490	657	315	Δ	100.9	1560	95.4	96.2	96.3	0.9	860	5	3120	7500	1LL1222-3AB71-1-0		
690	925	355	Δ/Δ	100.7	2196	94.9	95.5	95.1	0.89	1240	4.9	4831	10200	1LL1222-3BB51-1-0		
700	939	355	Δ/Δ	100.8	2228	94.8	95.4	95.1	0.89	1260	4.5	4456	10200	1LL1222-3BB71-1-0		
1500 rpm, 4-pole																
320	429	315	Δ	50.7	2037	94	95.1	95.3	0.87	590	6.1	5500	7500	1LL1222-3AB11-2-0		
415	557	315	Δ	50.7	2642	94.2	95.3	95.6	0.89	740	6.2	6869	7500	1LL1222-3AB31-2-0		
465	624	315	Δ	50.7	2960	94.4	95.5	95.8	0.9	820	6.4	7992	7500	1LL1222-3AB51-2-0		
540	724	315	Δ	50.7	3438	94.6	95.6	96	0.9	950	6.5	9283	7500	1LL1222-3AB71-2-0		
655	878	355	Δ/Δ	50.7	4170	94.4	95.6	95.9	0.89	1160	5.2	9591	10200	1LL1222-3BB51-2-0		
765	1026	355	Δ/Δ	50.6	4870	94.8	95.9	96.1	0.89	1360	5.7	12662	10200	1LL1222-3BB71-2-0		
815	1093	400	Δ	50.5	5188	95	95.7	96.2	0.89	1460	5.7	11932	16400	1LL1222-4AB51-2-0		
960	1287	400	Δ	50.5	6112	95.3	96	96.4	0.89	1700	6.4	15891	16400	1LL1222-4AB71-2-0		
1030	1381	450	Δ	50.3	6557	95.6	96	96.1	0.86	1900	7.5	20982	20700	1LL1222-4BB11-2-0		
1000 rpm, 6-pole																
260	349	315	Δ	50.6	2483	93.8	95	95.3	0.82	510	6	5711	7500	1LL1222-3AC11-3-0		
335	449	315	Δ	50.6	3199	94.1	95.2	95.6	0.83	640	6.2	7358	7500	1LL1222-3AC31-3-0		
380	510	315	Δ	50.6	3629	94.3	95.4	95.7	0.84	720	6.3	8347	7500	1LL1222-3AC51-3-0		
425	570	315	Δ	50.6	4058	94.4	95.5	95.8	0.85	800	6	8928	7500	1LL1222-3AC71-3-0		
530	711	355	Δ	50.5	5061	94.5	95.5	95.6	0.86	980	7.2	13665	10200	1LL1222-3BC51-3-0		
585	784	355	Δ/Δ	50.5	5586	94.6	95.6	95.7	0.87	1060	7.3	14524	10200	1LL1222-3BC71-3-0		
620	831	400	Δ	50.5	5921	94.9	95.6	96.2	0.85	1160	5.8	13618	16400	1LL1222-4AC31-3-0		
675	905	400	Δ	50.5	6446	95	95.7	96.3	0.86	1240	5.8	14826	16400	1LL1222-4AC51-3-0		
790	1059	400	Δ	50.4	7544	95.5	96.1	96.5	0.86	1460	6.7	19614	16400	1LL1222-4AC71-3-0		
900	1207	450	Δ	50.4	8594	95.7	96.2	96.5	0.84	1700	6.3	20626	20700	1LL1222-4BC11-3-0		
750 rpm, 6-pole																
210	282	315	Δ	38.1	2674	93	94.3	94.8	0.81	420	6	6150	7500	1LL1222-3AC11-4-0		
260	349	315	Δ	38.1	3310	93.2	94.5	95	0.82	510	6.3	8275	7500	1LL1222-3AC31-4-0		
290	389	315	Δ	38.1	3692	93.4	94.6	95.1	0.83	560	6.2	8861	7500	1LL1222-3AC51-4-0		
320	429	315	Δ	38.1	4074	93.3	94.6	95.2	0.85	600	5.9	8963	7500	1LL1222-3AC71-4-0		
380	510	355	Δ	38	4838	93.2	94.6	95	0.87	700	6.3	11611	10200	1LL1222-3BC51-4-0		
430	577	355	Δ	38	5475	93.5	94.7	95.1	0.87	790	6.6	13688	10200	1LL1222-3BC71-4-0		
470	630	400	Δ	38	5984	94	94.9	95.7	0.86	870	5.6	13165	16400	1LL1222-4AC31-4-0		
520	697	400	Δ	37.9	6621	94.4	95.3	96	0.86	960	6	15890	16400	1LL1222-4AC51-4-0		
585	784	400	Δ	37.9	7448	94.7	95.5	96.1	0.86	1080	6.5	19365	16400	1LL1222-4AC71-4-0		
690	925	450	Δ	37.9	8785	94.9	95.6	96.2	0.84	1300	5.6	19327	20700	1LL1222-4BC11-4-0		
780	1046	450	Δ	37.9	9931	95	95.7	96.3	0.85	1460	5.7	22841	20700	1LL1222-4BC31-4-0		
850	1140	450	Δ	37.9	10823	95.1	95.8	96.4	0.86	1560	5.8	24893	20700	1LL1222-4BC51-4-0		
960	1287	450	Δ	37.9	12223	95.1	95.9	96.4	0.86	1760	5.7	28113	20700	1LL1222-4BC71-4-0		

For versions, see Article No. supplements and special versions.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 400 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1222-3AB11-1..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-1PE36-6AA0	640
1LL1222-3AB31-1..0	1510	1560	4.3	79	94.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LL1222-3AB51-1..0	1690	1730	4.9	79	94.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-3AB71-1..0	1850	1900	5.7	79	94.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-3BB51-1..0	2410	2460	8.1	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LL1222-3BB71-1..0	2530	2580	8.8	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LL1222-3AB11-2..0	1290	1330	3.4	79	94.5	2500	1XB7 731	6SL3710-1PE36-6AA0	640
1LL1222-3AB31-2..0	1510	1560	4.3	79	94.5	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-3AB51-2..0	1690	1730	4.9	79	94.5	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-3AB71-2..0	1850	1900	5.7	79	94.5	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-3BB51-2..0	2410	2460	8.1	79	95	2200	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LL1222-3BB71-2..0	2530	2580	8.8	79	95	2200	2 x 1XB7 740	6SL3710-2GE41-6AA3	1516
1LL1222-4AB51-2..0	3020	3090	16	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LL1222-4AB71-2..0	3300	3370	18.2	79 ⁴⁾	95.5	2200	1XB7 750	On request	On request
1LL1222-4BB11-2..0	4000	4100	23.8	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-3AC11-3..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AC31-3..0	1540	1580	7.1	79	94.5	2500	1XB7 740	6SL3710-1PE36-6AA0	640
1LL1222-3AC51-3..0	1720	1760	8.2	79	94.5	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LL1222-3AC71-3..0	1830	1870	9	79	94.5	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-3BC51-3..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-2GE41-1AA3	1092
1LL1222-3BC71-3..0	2550	2600	15.8	79	95	2200	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LL1222-4AC31-3..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LL1222-4AC51-3..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LL1222-4AC71-3..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LL1222-4BC11-3..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1222-3AC11-4..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LL1222-3AC31-4..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AC51-4..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AC71-4..0	1830	1870	9	79	94.5	2500	1XB7 740	6SL3710-1PE36-6AA0	640
1LL1222-3BC51-4..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-1PE37-4AA0	710
1LL1222-3BC71-4..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-4AC31-4..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-4AC51-4..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-4AC71-4..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LL1222-4BC11-4..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LL1222-4BC31-4..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LL1222-4BC51-4..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1222-4BC71-4..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
Rated motor voltage 520 V																
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)																
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150																
3000 rpm, 4-pole																
305	409	315	Δ	100.8	971	94.9	95.6	95.5	0.89	400	5.4	2136	7500	1LL1212-3AB12-1	■ ■ ■ 0	
410	550	315	Δ	100.7	1305	95.5	96.1	96	0.9	530	6.2	3263	7500	1LL1212-3AB32-1	■ ■ ■ 0	
455	610	315	Δ	100.7	1448	95.6	96.3	96.1	0.9	580	6.5	3765	7500	1LL1212-3AB52-1	■ ■ ■ 0	
480	644	315	Δ	100.8	1528	95.4	96.2	96.2	0.9	620	5.4	3362	7500	1LL1212-3AB72-1	■ ■ ■ 0	
670	898	355	Δ	100.7	2133	94.6	95.3	94.9	0.89	880	4.8	4479	10200	1LL1212-3BB52-1	■ ■ ■ 0	
680	912	355	Δ	100.8	2165	94.5	95.3	95	0.88	900	4.4	4114	10200	1LL1212-3BB72-1	■ ■ ■ 0	
1500 rpm, 4-pole																
275	369	315	Δ	50.6	1751	93.8	95.1	95.1	0.88	365	6.3	4728	7500	1LL1212-3AB12-2	■ ■ ■ 0	
375	503	315	Δ	50.7	2387	94	95.1	95.4	0.89	490	6.2	6206	7500	1LL1212-3AB32-2	■ ■ ■ 0	
440	590	315	Δ	50.6	2801	94.4	95.4	95.7	0.9	570	6.7	7843	7500	1LL1212-3AB52-2	■ ■ ■ 0	
530	711	315	Δ	50.6	3374	94.7	95.7	95.9	0.9	680	7.5	10459	7500	1LL1212-3AB72-2	■ ■ ■ 0	
655	878	355	Δ	50.6	4170	94.6	95.7	95.9	0.89	850	5.9	10842	10200	1LL1212-3BB52-2	■ ■ ■ 0	
730	979	355	Δ	50.5	4647	94.8	95.8	96.1	0.89	950	6.3	13012	10200	1LL1212-3BB72-2	■ ■ ■ 0	
755	1012	400	Δ	50.5	4806	94.7	95.4	95.9	0.88	1000	5.5	11054	16400	1LL1212-4AB32-2	■ ■ ■ 0	
835	1120	400	Δ	50.5	5316	94.9	95.6	96.1	0.89	1080	5.9	12758	16400	1LL1212-4AB52-2	■ ■ ■ 0	
940	1261	400	Δ	50.5	5984	95.1	95.8	96.3	0.89	1220	6.2	14960	16400	1LL1212-4AB72-2	■ ■ ■ 0	
1030	1381	450	Δ	50.3	6557	95.5	95.9	96.1	0.87	1380	7.1	19671	20700	1LL1212-4BB12-2	■ ■ ■ 0	
1180	1582	450	Δ	50.3	7512	95.7	96.2	96.4	0.88	1540	7	21785	20700	1LL1212-4BB32-2	■ ■ ■ 0	
1380	1851	450	Δ	50.3	8785	96	96.3	96.5	0.87	1820	7.9	28112	20700	1LL1212-4BB52-2	■ ■ ■ 0	
1515	2032	450	Δ	50.3	9645	95.9	96.4	96.6	0.89	1960	7.7	29900	20700	1LL1212-4BB72-2	■ ■ ■ 0	
1000 rpm, 6-pole																
250	335	315	Δ	50.6	2387	93.9	95	95.3	0.82	355	6.6	5729	7500	1LL1212-3AC12-3	■ ■ ■ 0	
305	409	315	Δ	50.6	2913	94.1	95.2	95.4	0.83	430	6.6	7283	7500	1LL1212-3AC32-3	■ ■ ■ 0	
345	463	315	Δ	50.6	3295	94	95.2	95.5	0.84	480	6.2	7578	7500	1LL1212-3AC52-3	■ ■ ■ 0	
385	516	315	Δ	50.6	3676	94.2	95.3	95.6	0.85	530	6.4	8822	7500	1LL1212-3AC72-3	■ ■ ■ 0	
485	650	355	Δ	50.5	4631	94.2	95.3	95.4	0.86	660	7.2	12504	10200	1LL1212-3BC52-3	■ ■ ■ 0	
545	731	355	Δ	50.4	5204	94.5	95.5	95.6	0.87	730	7.8	14571	10200	1LL1212-3BC72-3	■ ■ ■ 0	
605	811	400	Δ	50.4	5777	95	95.7	96.2	0.85	830	6.3	14443	16400	1LL1212-4AC32-3	■ ■ ■ 0	
675	905	400	Δ	50.4	6446	95.2	95.9	96.3	0.85	920	6.7	16760	16400	1LL1212-4AC52-3	■ ■ ■ 0	
725	972	400	Δ	50.4	6923	95.3	95.9	96.4	0.86	980	6.4	17308	16400	1LL1212-4AC72-3	■ ■ ■ 0	
865	1160	450	Δ	50.4	8260	95.4	96	96.4	0.84	1200	5.8	18172	20700	1LL1212-4BC12-3	■ ■ ■ 0	
1000	1341	450	Δ	50.3	9549	95.7	96.2	96.5	0.84	1380	6.4	23873	20700	1LL1212-4BC32-3	■ ■ ■ 0	
1095	1468	450	Δ	50.3	10456	95.8	96.3	96.6	0.85	1480	6.5	26140	20700	1LL1212-4BC52-3	■ ■ ■ 0	
1240	1663	450	Δ	50.3	11841	95.9	96.4	96.7	0.86	1660	6.4	29603	20700	1LL1212-4BC72-3	■ ■ ■ 0	
750 rpm, 6-pole																
190	255	315	Δ	38	2419	92.8	94.1	94.5	0.8	280	6.6	6289	7500	1LL1212-3AC12-4	■ ■ ■ 0	
235	315	315	Δ	38	2992	93	94.4	94.8	0.82	335	6.6	7779	7500	1LL1212-3AC32-4	■ ■ ■ 0	
260	349	315	Δ	38.1	3310	93	94.4	94.9	0.84	365	6.1	7613	7500	1LL1212-3AC52-4	■ ■ ■ 0	
295	396	315	Δ	38.1	3756	93.3	94.6	95.1	0.84	410	6.4	9014	7500	1LL1212-3AC72-4	■ ■ ■ 0	
365	489	355	Δ	37.9	4647	93.4	94.6	95	0.86	500	7.3	13012	10200	1LL1212-3BC52-4	■ ■ ■ 0	
390	523	355	Δ	38	4966	93.3	94.6	95	0.87	530	6.8	12912	10200	1LL1212-3BC72-4	■ ■ ■ 0	
445	597	400	Δ	38	5666	93.9	94.9	95.7	0.85	610	5.7	13032	16400	1LL1212-4AC32-4	■ ■ ■ 0	
510	684	400	Δ	37.9	6494	94.3	95.2	95.9	0.86	690	6.1	16235	16400	1LL1212-4AC52-4	■ ■ ■ 0	
555	744	400	Δ	37.9	7066	94.5	95.3	96	0.86	750	6.3	18372	16400	1LL1212-4AC72-4	■ ■ ■ 0	
675	905	450	Δ	37.9	8594	94.7	95.5	96.1	0.84	930	5.7	18907	20700	1LL1212-4BC12-4	■ ■ ■ 0	
765	1026	450	Δ	37.9	9740	94.9	95.6	96.2	0.85	1040	5.9	22402	20700	1LL1212-4BC32-4	■ ■ ■ 0	
825	1106	450	Δ	37.9	10504	94.9	95.7	96.3	0.86	1120	5.6	23109	20700	1LL1212-4BC52-4	■ ■ ■ 0	
950	1274	450	Δ	37.8	12096	95.1	95.8	96.4	0.86	1280	6	29030	20700	1LL1212-4BC72-4	■ ■ ■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pFA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1212-3AB12-1..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AB32-1..0	1470	1520	4.3	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3AB52-1..0	1650	1690	4.9	79	94.5	3600	1XB7 731	6SL3710-7LG37-4AA3	710
1LL1212-3AB72-1..0	1850	1900	5.7	79	94.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BB52-1..0	2280	2330	8.1	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-3BB72-1..0	2400	2460	8.8	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-3AB12-2..0	1290	1330	3.4	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AB32-2..0	1470	1520	4.3	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3AB52-2..0	1650	1690	4.9	79	94.5	2500	1XB7 731	6SL3710-7LG37-4AA3	710
1LL1212-3AB72-2..0	1850	1900	5.7	79	94.5	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BB52-2..0	2280	2330	8.1	79	95	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-3BB72-2..0	2400	2460	8.8	79	95	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4AB32-2..0	2820	2890	14.3	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4AB52-2..0	3020	3090	16	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4AB72-2..0	3300	3370	18.2	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BB12-2..0	4000	4100	23.8	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB32-2..0	4270	4370	26.5	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB52-2..0	4630	4730	29.3	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB72-2..0	5060	5160	33.6	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-3AC12-3..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AC32-3..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3AC52-3..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3AC72-3..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BC52-3..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BC72-3..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-4AC32-3..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-4AC52-3..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4AC72-3..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4BC12-3..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BC32-3..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC52-3..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC72-3..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-3AC12-4..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LL1212-3AC32-4..0	1500	1540	7.1	79	94.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LL1212-3AC52-4..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AC72-4..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3BC52-4..0	2230	2290	14.3	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BC72-4..0	2380	2430	15.8	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-4AC32-4..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4AC52-4..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4AC72-4..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-4BC12-4..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4BC32-4..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LL1212-4BC52-4..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BC72-4..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	Nm			
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
330	443	315	Δ	100.8	1050	95	95.8	95.7	0.88	470	5	2205	7500	1LL1222-3AB12-1	
415	557	315	Δ	100.8	1321	95.3	96.1	96	0.89	580	5.2	2774	7500	1LL1222-3AB32-1	
465	624	315	Δ	100.8	1480	95.4	96.2	96.2	0.9	650	5.3	3108	7500	1LL1222-3AB52-1	
535	717	315	Δ	100.8	1703	95.6	96.4	96.4	0.9	740	5.5	3747	7500	1LL1222-3AB72-1	
655	878	355	Δ	100.9	2085	94.4	95.2	94.9	0.88	940	4.2	3753	10200	1LL1222-3BB52-1	
745	999	355	Δ/Δ	100.8	2371	94.9	95.6	95.2	0.89	1060	4.8	4979	10200	1LL1222-3BB72-1	
1500 rpm, 4-pole															
285	382	315	Δ	50.7	1814	93.9	95.1	95.3	0.88	410	5.9	4716	7500	1LL1222-3AB12-2	
425	570	315	Δ	50.6	2706	94.4	95.4	95.7	0.88	610	6.4	7306	7500	1LL1222-3AB32-2	
475	637	315	Δ	50.7	3024	94.5	95.5	95.8	0.9	660	6.5	8165	7500	1LL1222-3AB52-2	
530	711	315	Δ	50.7	3374	94.5	95.6	95.9	0.9	740	6.3	8772	7500	1LL1222-3AB72-2	
720	966	355	Δ	50.6	4584	94.7	95.8	96.1	0.88	1020	5.8	11918	10200	1LL1222-3BB52-2	
735	986	355	Δ	50.7	4679	94.5	95.7	96.1	0.89	1040	5.3	11230	10200	1LL1222-3BB72-2	
790	1059	400	Δ	50.5	5029	94.9	95.6	96.1	0.87	1140	5.6	12070	16400	1LL1222-4AB32-2	
875	1173	400	Δ	50.5	5570	95.2	95.8	96.2	0.88	1240	6.2	13925	16400	1LL1222-4AB52-2	
1005	1348	400	Δ	50.4	6398	95.4	96	96.4	0.88	1440	6.6	17275	16400	1LL1222-4AB72-2	
1070	1435	450	Δ	50.3	6812	95.7	96.1	96.2	0.87	1540	7	19755	20700	1LL1222-4BB12-2	
1235	1656	450	Δ	50.3	7862	95.9	96.3	96.4	0.87	1780	7.8	25945	20700	1LL1222-4BB32-2	
1335	1790	450	Δ	50.3	8499	95.9	96.3	96.5	0.88	1900	7.3	25497	20700	1LL1222-4BB52-2	
1000 rpm, 6-pole															
245	329	315	Δ	50.6	2340	93.8	95	95.3	0.82	380	6	5382	7500	1LL1222-3AC12-3	
335	449	315	Δ	50.6	3199	94.2	95.3	95.6	0.83	510	6.3	7358	7500	1LL1222-3AC32-3	
380	510	315	Δ	50.6	3629	94.2	95.3	95.7	0.84	570	6	7984	7500	1LL1222-3AC52-3	
425	570	315	Δ	50.6	4058	94.4	95.5	95.8	0.84	640	6.3	9333	7500	1LL1222-3AC72-3	
515	691	355	Δ	50.5	4918	94.2	95.3	95.6	0.86	760	6.5	11803	10200	1LL1222-3BC52-3	
590	791	355	Δ	50.5	5634	94.5	95.5	95.7	0.87	850	7.1	14648	10200	1LL1222-3BC72-3	
660	885	400	Δ	50.5	6303	95	95.7	96.3	0.86	960	5.8	14497	16400	1LL1222-4AC52-3	
745	999	400	Δ	50.4	7114	95.3	96	96.5	0.86	1080	6.4	17785	16400	1LL1222-4AC72-3	
860	1153	450	Δ	50.4	8212	95.5	96.1	96.5	0.84	1280	5.9	18888	20700	1LL1222-4BC12-3	
965	1294	450	Δ	50.4	9215	95.6	96.2	96.6	0.85	1420	5.7	20273	20700	1LL1222-4BC32-3	
1150	1542	450	Δ	50.3	10982	95.9	96.4	96.7	0.85	1680	6.6	27455	20700	1LL1222-4BC52-3	
750 rpm, 6-pole															
205	275	315	Δ	38.1	2610	92.7	94.1	94.7	0.81	325	5.9	6003	7500	1LL1222-3AC12-4	
255	342	315	Δ	38.1	3247	93.2	94.5	95	0.82	395	6.1	7793	7500	1LL1222-3AC32-4	
285	382	315	Δ	38.1	3629	93	94.4	95	0.84	430	5.7	7984	7500	1LL1222-3AC52-4	
310	416	315	Δ	38.1	3947	93.2	94.5	95.1	0.85	465	5.7	8683	7500	1LL1222-3AC72-4	
390	523	355	Δ	38	4966	93.3	94.6	95.1	0.87	570	6.5	11918	10200	1LL1222-3BC52-4	
425	570	355	Δ	38	5411	93.5	94.8	95.2	0.87	620	6.6	14069	10200	1LL1222-3BC72-4	
480	644	400	Δ	38	6112	94	95	95.8	0.85	710	5.5	13446	16400	1LL1222-4AC32-4	
540	724	400	Δ	37.9	6875	94.4	95.3	96	0.85	800	6.2	17188	16400	1LL1222-4AC52-4	
610	818	400	Δ	37.9	7767	94.6	95.5	96.1	0.86	890	6.4	20194	16400	1LL1222-4AC72-4	
680	912	450	Δ	37.9	8658	94.7	95.5	96.1	0.84	1020	5.9	19913	20700	1LL1222-4BC12-4	
770	1033	450	Δ	37.9	9804	95	95.7	96.3	0.85	1140	5.7	22549	20700	1LL1222-4BC32-4	
880	1180	450	Δ	37.9	11205	95.2	95.9	96.4	0.85	1300	5.8	25771	20700	1LL1222-4BC52-4	
990	1328	450	Δ	37.9	12605	95.2	95.9	96.5	0.86	1440	5.9	28991	20700	1LL1222-4BC72-4	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 500 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1222-3AB12-1..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AB32-1..0	1470	1520	4.3	79	94.5	3600	1XB7 731	6SL3710-1GF37-4AA3	710
1LL1222-3AB52-1..0	1690	1730	4.9	79	94.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-3AB72-1..0	1850	1900	5.7	79	94.5	3600	1XB7 740	6SL3710-1GF38-1AA3	790
1LL1222-3BB52-1..0	2280	2330	8.1	79 ⁴⁾	95	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-3BB72-1..0	2530	2580	8.8	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-2GF41-4AA3	1314
1LL1222-3AB12-2..0	1290	1330	3.4	79	94.5	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LL1222-3AB32-2..0	1510	1560	4.3	79	94.5	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-3AB52-2..0	1690	1730	4.9	79	94.5	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-3AB72-2..0	1850	1900	5.7	79	94.5	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LL1222-3BB52-2..0	2280	2330	8.1	79	95	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-3BB72-2..0	2400	2460	8.8	79	95	2200	1XB7 740	6SL3710-2GF41-4AA3	1314
1LL1222-4AB32-2..0	2820	2890	14.3	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4AB52-2..0	3020	3090	16	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4AB72-2..0	3300	3370	18.2	79 ⁴⁾	95.5	2200	1XB7 750	On request	On request
1LL1222-4BB12-2..0	4000	4100	23.8	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-4BB32-2..0	4270	4370	26.5	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-4BB52-2..0	4630	4730	29.3	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-3AC12-3..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LL1222-3AC32-3..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AC52-3..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-1GF37-4AA3	710
1LL1222-3AC72-3..0	1830	1870	9	79	94.5	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-3BC52-3..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-1GF38-1AA3	790
1LL1222-3BC72-3..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4AC52-3..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4AC72-3..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC12-3..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC32-3..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1222-4BC52-3..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1222-3AC12-4..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-1GF34-1AA3	400
1LL1222-3AC32-4..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LL1222-3AC52-4..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LL1222-3AC72-4..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3BC52-4..0	2230	2290	14.3	79	95	2200	1XB7 731	6SL3710-1GF37-4AA3	710
1LL1222-3BC72-4..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-4AC32-4..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-4AC52-4..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LL1222-4AC72-4..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4BC12-4..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4BC32-4..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC52-4..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC72-4..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 730 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
310	416	315	Δ	100.8	987	94.8	95.6	95.5	0.88	290	5.2	2073	7500	1LL1212-3AB13-1 ■■■ 0	
410	550	315	Δ	100.7	1305	95.3	96.1	96	0.9	375	5.9	3132	7500	1LL1212-3AB33-1 ■■■ 0	
475	637	315	Δ	100.7	1512	95.6	96.3	96.2	0.9	435	6.4	3931	7500	1LL1212-3AB53-1 ■■■ 0	
530	711	315	Δ	100.7	1687	95.7	96.4	96.3	0.91	480	6.3	4218	7500	1LL1212-3AB73-1 ■■■ 0	
675	905	355	Δ	100.8	2149	94.6	95.2	94.9	0.88	640	4.6	4298	10200	1LL1212-3BB53-1 ■■■ 0	
690	925	355	Δ	100.9	2196	94.4	95.2	95	0.88	650	4.2	3953	10200	1LL1212-3BB73-1 ■■■ 0	
1500 rpm, 4-pole															
280	375	315	Δ	50.6	1783	93.8	95.1	95.1	0.87	270	6.3	4992	7500	1LL1212-3AB13-2 ■■■ 0	
390	523	315	Δ	50.6	2483	94.2	95.3	95.5	0.89	365	6.7	6952	7500	1LL1212-3AB33-2 ■■■ 0	
450	603	315	Δ	50.6	2865	94.5	95.5	95.8	0.89	420	6.9	8309	7500	1LL1212-3AB53-2 ■■■ 0	
515	691	315	Δ	50.6	3279	94.6	95.6	95.9	0.9	475	7.2	9837	7500	1LL1212-3AB73-2 ■■■ 0	
645	865	355	Δ	50.6	4106	94.5	95.6	95.9	0.89	600	5.6	10265	10200	1LL1212-3BB53-2 ■■■ 0	
700	939	355	Δ	50.6	4456	94.6	95.7	96	0.89	650	5.7	11586	10200	1LL1212-3BB73-2 ■■■ 0	
785	1053	400	Δ	50.5	4997	94.9	95.5	96	0.87	750	5.8	11993	16400	1LL1212-4AB33-2 ■■■ 0	
845	1133	400	Δ	50.5	5379	95	95.7	96.2	0.88	790	6	13448	16400	1LL1212-4AB53-2 ■■■ 0	
1000	1341	400	Δ	50.4	6366	95.4	96	96.4	0.88	940	6.9	17825	16400	1LL1212-4AB73-2 ■■■ 0	
1070	1435	450	Δ	50.3	6812	95.6	96	96.2	0.87	1020	7	19755	20700	1LL1212-4BB13-2 ■■■ 0	
1210	1623	450	Δ	50.3	7703	95.8	96.2	96.4	0.87	1140	7.5	23879	20700	1LL1212-4BB33-2 ■■■ 0	
1380	1851	450	Δ	50.3	8785	96	96.3	96.5	0.87	1300	7.9	28991	20700	1LL1212-4BB53-2 ■■■ 0	
1625	2179	450	Δ	50.3	10345	96.2	96.5	96.7	0.88	1520	8.1	34139	20700	1LL1212-4BB73-2 ■■■ 0	
1000 rpm, 6-pole															
230	308	315	Y	50.5	2196	93.9	95	95.2	0.81	235	6.9	5710	7500	1LL1212-3AC13-3 ■■■ 0	
305	409	315	Y	50.6	2913	94	95.1	95.4	0.83	305	6.5	6991	7500	1LL1212-3AC33-3 ■■■ 0	
350	469	315	Y	50.6	3342	94.1	95.2	95.6	0.84	345	6.4	7687	7500	1LL1212-3AC53-3 ■■■ 0	
395	530	315	Δ	50.6	3772	94.3	95.4	95.7	0.85	385	6.5	8676	7500	1LL1212-3AC73-3 ■■■ 0	
480	644	355	Δ	50.5	4584	94.2	95.2	95.4	0.86	465	7.2	12377	10200	1LL1212-3BC53-3 ■■■ 0	
550	738	355	Δ	50.4	5252	94.4	95.5	95.6	0.86	530	7.7	14706	10200	1LL1212-3BC73-3 ■■■ 0	
575	771	400	Δ	50.5	5491	94.7	95.5	96.1	0.85	560	5.7	12080	16400	1LL1212-4AC33-3 ■■■ 0	
665	892	400	Δ	50.4	6350	95.2	95.8	96.3	0.85	650	6.5	16510	16400	1LL1212-4AC53-3 ■■■ 0	
740	992	400	Y	50.4	7066	95.5	96	96.4	0.86	710	7.1	19785	16400	1LL1212-4AC73-3 ■■■ 0	
870	1167	450	Δ	50.4	8308	95.5	96	96.4	0.84	850	6	19108	20700	1LL1212-4BC13-3 ■■■ 0	
970	1301	450	Δ	50.3	9263	95.6	96.2	96.5	0.85	940	6.2	22231	20700	1LL1212-4BC33-3 ■■■ 0	
1100	1475	450	Δ	50.3	10504	95.8	96.3	96.6	0.85	1060	6.5	26260	20700	1LL1212-4BC53-3 ■■■ 0	
1255	1683	450	Δ	50.3	11984	96	96.5	96.8	0.85	1220	6.5	29960	20700	1LL1212-4BC73-3 ■■■ 0	
750 rpm, 6-pole															
185	248	315	Y	38	2355	92.7	94	94.5	0.81	192	6.6	6123	7500	1LL1212-3AC13-4 ■■■ 0	
240	322	315	Y	38.1	3056	93.1	94.4	94.9	0.83	240	6.5	7334	7500	1LL1212-3AC33-4 ■■■ 0	
265	355	315	Δ	38.1	3374	93.1	94.4	95	0.84	265	6.2	8098	7500	1LL1212-3AC53-4 ■■■ 0	
300	402	315	Δ	38.1	3820	93.2	94.5	95.1	0.85	295	6.1	8786	7500	1LL1212-3AC73-4 ■■■ 0	
360	483	355	Y	37.9	4584	93.4	94.6	94.9	0.86	350	7.2	12377	10200	1LL1212-3BC53-4 ■■■ 0	
410	550	355	Δ	37.9	5220	93.6	94.7	95.1	0.87	395	7.3	14616	10200	1LL1212-3BC73-4 ■■■ 0	
460	617	400	Δ	37.9	5857	94.1	95	95.7	0.85	450	5.9	14057	16400	1LL1212-4AC33-4 ■■■ 0	
515	691	400	Δ	37.9	6557	94.4	95.3	95.9	0.85	500	6.4	17048	16400	1LL1212-4AC53-4 ■■■ 0	
555	744	400	Δ	37.9	7066	94.5	95.3	96	0.86	540	6.2	17665	16400	1LL1212-4AC73-4 ■■■ 0	
670	898	450	Δ	37.9	8531	94.7	95.5	96.1	0.85	650	5.7	18768	20700	1LL1212-4BC13-4 ■■■ 0	
760	1019	450	Δ	37.9	9677	94.9	95.6	96.2	0.85	740	5.9	22257	20700	1LL1212-4BC33-4 ■■■ 0	
850	1140	450	Δ	37.9	10823	95	95.7	96.3	0.86	820	5.9	24893	20700	1LL1212-4BC53-4 ■■■ 0	
990	1328	450	Δ	37.8	12605	95.3	95.9	96.5	0.86	950	6	30252	20700	1LL1212-4BC73-4 ■■■ 0	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1212-3AB13-1..0	1290	1330	3.4	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LL1212-3AB33-1..0	1470	1520	4.3	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AB53-1..0	1650	1690	4.9	79	94.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3AB73-1..0	1810	1860	5.7	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BB53-1..0	2280	2330	8.1	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BB73-1..0	2400	2460	8.8	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3AB13-2..0	1290	1330	3.4	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LL1212-3AB33-2..0	1470	1520	4.3	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AB53-2..0	1650	1690	4.9	79	94.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3AB73-2..0	1810	1860	5.7	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BB53-2..0	2280	2330	8.1	79	95	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BB73-2..0	2400	2460	8.8	79	95	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4AB33-2..0	2820	2890	14.3	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-4AB53-2..0	3020	3090	16	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-4AB73-2..0	3300	3370	18.2	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4BB13-2..0	4000	4100	23.8	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG41-3AA3	1230
1LL1212-4BB33-2..0	4270	4370	26.5	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BB53-2..0	4630	4730	29.3	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB73-2..0	5060	5160	33.6	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-3AC13-3..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LL1212-3AC33-3..0	1500	1540	7.1	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LL1212-3AC53-3..0	1680	1720	8.2	79	94.5	2500	1XB7 730	6SL3710-7LG34-1AA3	400
1LL1212-3AC73-3..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3BC53-3..0	2230	2290	14.3	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BC73-3..0	2380	2430	15.8	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-4AC33-3..0	2810	2880	22.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-4AC53-3..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4AC73-3..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4BC13-3..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-4BC33-3..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4BC53-3..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BC73-3..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-3AC13-4..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-7LG32-2AA3	208
1LL1212-3AC33-4..0	1500	1540	7.1	79	94.5	2500	1XB7 730	6SL3710-7LG32-6AA3	250
1LL1212-3AC53-4..0	1680	1720	8.2	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LL1212-3AC73-4..0	1790	1830	9	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LL1212-3BC53-4..0	2230	2290	14.3	79	95	2200	1XB7 730	6SL3710-7LG34-1AA3	400
1LL1212-3BC73-4..0	2380	2430	15.8	79	95	2200	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-4AC33-4..0	2810	2880	22.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-4AC53-4..0	3020	3090	24.7	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-4AC73-4..0	3250	3320	27.7	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-4BC13-4..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4BC33-4..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-4BC53-4..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-4BC73-4..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{LR} / I _{rated}	T _B	Mech. torque limit 1) 2)		
kW	hp	FS		Hz	Nm	%	%	%		A	Nm	Nm		
Rated motor voltage 660 V														
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)														
Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)														
3000 rpm, 4-pole														
310	416	315	Δ	100.8	987	95	95.7	95.6	0.89	320	5.4	2171	7500	1LL1222-3AB13-1 ■■■ 0
395	530	315	Δ	100.7	1257	95.3	96	95.9	0.9	400	5.8	3017	7500	1LL1222-3AB33-1 ■■■ 0
460	617	315	Δ	100.7	1464	95.6	96.3	96.2	0.9	465	6.6	3806	7500	1LL1222-3AB53-1 ■■■ 0
520	697	315	Δ	100.7	1655	95.7	96.4	96.3	0.91	520	6.5	4303	7500	1LL1222-3AB73-1 ■■■ 0
660	885	355	Δ	100.7	2101	94.6	95.2	94.9	0.89	680	4.8	4412	10200	1LL1222-3BB53-1 ■■■ 0
670	898	355	Δ	100.8	2133	94.5	95.2	94.9	0.88	700	4.4	4053	10200	1LL1222-3BB73-1 ■■■ 0
1500 rpm, 4-pole														
280	375	315	Δ	50.6	1783	94	95.1	95.2	0.88	295	6.4	4992	7500	1LL1222-3AB13-2 ■■■ 0
380	510	315	Δ	50.6	2419	94.1	95.2	95.5	0.89	390	6.4	6531	7500	1LL1222-3AB33-2 ■■■ 0
430	577	315	Δ	50.6	2737	94.3	95.4	95.7	0.9	440	6.8	7664	7500	1LL1222-3AB53-2 ■■■ 0
510	684	315	Δ	50.6	3247	94.6	95.6	95.9	0.9	520	7.1	9416	7500	1LL1222-3AB73-2 ■■■ 0
670	898	355	Δ	50.6	4265	94.7	95.8	96	0.88	700	6.1	11942	10200	1LL1222-3BB53-2 ■■■ 0
685	919	355	Δ	50.6	4361	94.6	95.7	96	0.89	700	5.7	10903	10200	1LL1222-3BB73-2 ■■■ 0
770	1033	400	Δ	50.5	4902	94.8	95.5	96	0.87	810	5.7	11765	16400	1LL1222-4AB33-2 ■■■ 0
835	1120	400	Δ	50.5	5316	95	95.7	96.1	0.88	870	5.9	13290	16400	1LL1222-4AB53-2 ■■■ 0
945	1267	400	Y	50.4	6016	95.3	95.9	96.3	0.89	970	6.5	16243	16400	1LL1222-4AB73-2 ■■■ 0
1070	1435	450	Δ	50.3	6812	95.7	96.1	96.2	0.86	1140	7.1	20436	20700	1LL1222-4BB13-2 ■■■ 0
1215	1629	450	Δ	50.3	7735	95.9	96.2	96.4	0.87	1260	7.7	24752	20700	1LL1222-4BB33-2 ■■■ 0
1315	1763	450	Δ	50.3	8372	95.8	96.2	96.4	0.87	1380	7.9	27628	20700	1LL1222-4BB53-2 ■■■ 0
1555	2085	450	Δ	50.3	9899	96	96.4	96.6	0.88	1600	8.4	33657	20700	1LL1222-4BB73-2 ■■■ 0
1000 rpm, 6-pole														
220	295	315	Y	50.5	2101	94	95	95.2	0.81	250	7.1	5673	7500	1LL1222-3AC13-3 ■■■ 0
305	409	315	Δ	50.6	2913	94	95.1	95.4	0.83	340	6.6	6991	7500	1LL1222-3AC33-3 ■■■ 0
355	476	315	Δ	50.6	3390	94.2	95.3	95.6	0.84	390	6.3	7797	7500	1LL1222-3AC53-3 ■■■ 0
395	530	315	Δ	50.6	3772	94.3	95.4	95.7	0.84	430	6.7	9430	7500	1LL1222-3AC73-3 ■■■ 0
475	637	355	Δ	50.5	4536	94.2	95.3	95.4	0.87	500	7.2	11794	10200	1LL1222-3BC53-3 ■■■ 0
540	724	355	Δ	50.4	5157	94.5	95.5	95.6	0.86	580	7.7	14955	10200	1LL1222-3BC73-3 ■■■ 0
565	758	400	Δ	50.5	5395	94.7	95.5	96.1	0.85	610	5.6	11869	16400	1LL1222-4AC33-3 ■■■ 0
660	885	400	Δ	50.4	6303	95.2	95.8	96.3	0.85	710	6.6	16388	16400	1LL1222-4AC53-3 ■■■ 0
730	979	400	Δ	50.4	6971	95.4	96	96.4	0.86	770	6.9	18822	16400	1LL1222-4AC73-3 ■■■ 0
865	1160	450	Δ	50.3	8260	95.5	96.1	96.4	0.84	940	6.2	19824	20700	1LL1222-4BC13-3 ■■■ 0
985	1321	450	Δ	50.3	9406	95.7	96.2	96.5	0.84	1060	6.6	23515	20700	1LL1222-4BC33-3 ■■■ 0
1085	1455	450	Δ	50.3	10361	95.7	96.3	96.6	0.85	1160	6.2	24866	20700	1LL1222-4BC53-3 ■■■ 0
1175	1576	450	Δ	50.3	11220	95.8	96.3	96.7	0.86	1240	6.6	29172	20700	1LL1222-4BC73-3 ■■■ 0
750 rpm, 6-pole														
180	241	315	Y	38.1	2292	92.7	94	94.5	0.81	205	6.4	5730	7500	1LL1222-3AC13-4 ■■■ 0
245	329	315	Δ	38	3119	93.2	94.5	94.9	0.82	275	6.7	7798	7500	1LL1222-3AC33-4 ■■■ 0
270	362	315	Δ	38.1	3438	93.2	94.5	95	0.84	300	6.3	8251	7500	1LL1222-3AC53-4 ■■■ 0
290	389	315	Δ	38.1	3692	93.1	94.5	95	0.85	315	6.2	8492	7500	1LL1222-3AC73-4 ■■■ 0
365	489	355	Δ	37.9	4647	93.4	94.6	95	0.86	390	7.3	13012	10200	1LL1222-3BC53-4 ■■■ 0
395	530	355	Δ	38	5029	93.4	94.6	95	0.87	420	7.2	13578	10200	1LL1222-3BC73-4 ■■■ 0
460	617	400	Δ	37.9	5857	94.1	95	95.7	0.85	500	5.9	14057	16400	1LL1222-4AC33-4 ■■■ 0
505	677	400	Δ	37.9	6430	94.4	95.2	95.9	0.86	540	6.3	16075	16400	1LL1222-4AC53-4 ■■■ 0
560	751	400	Δ	37.9	7130	94.6	95.4	96	0.86	600	6.6	19251	16400	1LL1222-4AC73-4 ■■■ 0
675	905	450	Δ	37.9	8594	94.7	95.5	96.1	0.84	740	5.9	20626	20700	1LL1222-4BC13-4 ■■■ 0
760	1019	450	Δ	37.9	9677	94.9	95.6	96.2	0.85	820	5.9	22257	20700	1LL1222-4BC33-4 ■■■ 0
855	1147	450	Δ	37.8	10886	95	95.8	96.3	0.86	910	6	26126	20700	1LL1222-4BC53-4 ■■■ 0
970	1301	450	Δ	37.8	12350	95.2	95.9	96.4	0.86	1020	6.2	29640	20700	1LL1222-4BC73-4 ■■■ 0

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 690 V, 50 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1222-3AB13-1..0	1290	1330	3.4	79	94.5	3600	1XB7 730	6SL3710-1GH33-3AA3	320
1LL1222-3AB33-1..0	1470	1520	4.3	79	94.5	3600	1XB7 731	6SL3710-1GH34-1AA3	400
1LL1222-3AB53-1..0	1650	1690	4.9	79	94.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LL1222-3AB73-1..0	1810	1860	5.7	79	94.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LL1222-3BB53-1..0	2280	2330	8.1	79 ⁴⁾	95	3300	1XB7 740	6SL3710-1GH37-4AA3	710
1LL1222-3BB73-1..0	2400	2460	8.8	79 ⁴⁾	95	3300	1XB7 740	6SL3710-1GH37-4AA3	710
1LL1222-3AB13-2..0	1290	1330	3.4	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LL1222-3AB33-2..0	1470	1520	4.3	79	94.5	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LL1222-3AB53-2..0	1650	1690	4.9	79	94.5	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LL1222-3AB73-2..0	1810	1860	5.7	79	94.5	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LL1222-3BB53-2..0	2280	2330	8.1	79	95	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LL1222-3BB73-2..0	2400	2460	8.8	79	95	2200	1XB7 740	6SL3710-1GH37-4AA3	710
1LL1222-4AB33-2..0	2820	2890	14.3	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GH41-1AA3	1036
1LL1222-4AB53-2..0	3020	3090	16	79 ⁴⁾	95.5	2200	1XB7 740	6SL3710-2GH41-1AA3	1036
1LL1222-4AB73-2..0	3300	3370	18.2	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GH41-1AA3	1036
1LL1222-4BB13-2..0	4000	4100	23.8	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LL1222-4BB33-2..0	4270	4370	26.5	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LL1222-4BB53-2..0	4630	4730	29.3	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-5AA3	1462
1LL1222-4BB73-2..0	5060	5160	33.6	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GH41-8EA3	1720
1LL1222-3AC13-3..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-1GH32-6AA3	250
1LL1222-3AC33-3..0	1500	1540	7.1	79	94.5	2500	1XB7 730	6SL3710-1GH34-1AA3	400
1LL1222-3AC53-3..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-1GH34-1AA3	400
1LL1222-3AC73-3..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LL1222-3BC53-3..0	2230	2290	14.3	79	95	2200	1XB7 731	6SL3710-1GH35-8AA3	560
1LL1222-3BC73-3..0	2380	2430	15.8	79	95	2200	1XB7 731	6SL3710-1GH37-4AA3	710
1LL1222-4AC33-3..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LL1222-4AC53-3..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LL1222-4AC73-3..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GH38-1AA3	790
1LL1222-4BC13-3..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LL1222-4BC33-3..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LL1222-4BC53-3..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LL1222-4BC73-3..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LL1222-3AC13-4..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-1GH32-2AA3	208
1LL1222-3AC33-4..0	1500	1540	7.1	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LL1222-3AC53-4..0	1680	1720	8.2	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LL1222-3AC73-4..0	1790	1830	9	79	94.5	2500	1XB7 730	6SL3710-1GH33-3AA3	320
1LL1222-3BC53-4..0	2230	2290	14.3	79	95	2200	1XB7 731	6SL3710-1GH34-1AA3	400
1LL1222-3BC73-4..0	2380	2430	15.8	79	95	2200	1XB7 731	6SL3710-1GH34-7AA3	452
1LL1222-4AC33-4..0	2810	2880	22.1	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LL1222-4AC53-4..0	3020	3090	24.7	79 ⁴⁾	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LL1222-4AC73-4..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LL1222-4BC13-4..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LL1222-4BC33-4..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LL1222-4BC53-4..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LL1222-4BC73-4..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GH41-1AA3	1036

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 480 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3600 rpm, 4-pole															
335	449	315	Δ	120.7	889	95.4	95.9	95.5	0.88	475	6.3	2223	7500	1LL1212-3AB15-5	
415	557	315	Δ	120.6	1101	95.8	96.2	95.8	0.9	580	7.3	3193	7500	1LL1212-3AB35-5	
440	590	315	Δ	120.7	1167	95.8	96.3	96	0.9	610	6.3	2918	7500	1LL1212-3AB55-5	
505	677	315	Δ	120.7	1340	95.9	96.5	96.2	0.91	690	6.7	3484	7500	1LL1212-3AB75-5	
3000 rpm, 4-pole															
655	878	355	Δ	100.9	2085	94.4	95.2	94.9	0.88	940	4.2	3753	10200	1LL1212-3BB55-1	
750	1006	355	Δ/Δ	100.8	2387	94.9	95.6	95.2	0.89	1060	4.8	5013	10200	1LL1212-3BB75-1	
1800 rpm, 4-pole															
340	456	315	Δ	60.6	1804	94.8	95.7	95.8	0.87	490	6.6	5051	7500	1LL1212-3AB15-6	
420	563	315	Δ	60.6	2228	95	95.9	96.1	0.89	590	6.8	6238	7500	1LL1212-3AB35-6	
465	624	315	Δ	60.6	2467	95.2	96.1	96.2	0.9	650	6.9	6908	7500	1LL1212-3AB55-6	
590	791	315	Δ	60.5	3130	95.7	96.5	96.5	0.89	830	8.2	10329	7500	1LL1212-3AB75-6	
795	1066	355	Δ/Δ	60.6	4218	95.2	96.1	96.3	0.89	1120	5.8	10967	10200	1LL1212-3BB55-6	
810	1086	355	Δ/Δ	60.7	4297	95	96.1	96.3	0.89	1140	5.3	10313	10200	1LL1212-3BB75-6	
885	1187	400	Δ	60.5	4695	95.2	95.8	96.2	0.88	1260	5.6	10799	16400	1LL1212-4AB35-6	
1000	1341	400	Δ	60.5	5305	95.5	96	96.4	0.88	1420	6.3	13263	16400	1LL1212-4AB55-6	
1165	1562	400	Δ	60.4	6181	95.8	96.3	96.6	0.88	1660	7.1	17307	16400	1LL1212-4AB75-6	
1215	1629	450	Δ	60.3	6446	95.9	96.2	96.2	0.86	1760	7.4	19983	20700	1LL1212-4BB15-6	
1290	1730	450	Δ	60.3	6844	95.9	96.2	96.3	0.88	1840	7.6	21216	20700	1LL1212-4BB35-6	
1200 rpm, 6-pole															
305	409	315	Δ	60.7	2427	94.2	95.3	95.6	0.82	470	5.8	5097	7500	1LL1212-3AC15-7	
375	503	315	Δ	60.7	2984	94.5	95.6	95.8	0.84	560	6	6565	7500	1LL1212-3AC35-7	
455	610	315	Δ	60.6	3621	94.9	95.8	96	0.84	680	6.3	8328	7500	1LL1212-3AC55-7	
485	650	315	Δ	60.6	3860	94.8	95.8	96.1	0.85	720	6.2	8492	7500	1LL1212-3AC75-7	
625	838	355	Δ	60.5	4974	94.9	95.8	95.8	0.86	910	7.1	12932	10200	1LL1212-3BC55-7	
665	892	355	Δ	60.5	5292	95	95.9	95.9	0.87	960	7.2	13759	10200	1LL1212-3BC75-7	
725	972	400	Δ	60.5	5769	95.3	95.9	96.3	0.85	1060	5.8	12692	16400	1LL1212-4AC35-7	
820	1100	400	Δ	60.4	6525	95.6	96.2	96.5	0.85	1200	6.5	16313	16400	1LL1212-4AC55-7	
870	1167	400	Δ	60.4	6923	95.8	96.3	96.6	0.86	1260	6.7	18000	16400	1LL1212-4AC75-7	
970	1301	450	Δ	60.3	7719	95.9	96.3	96.5	0.84	1440	6.4	18526	20700	1LL1212-4BC15-7	
1110	1489	450	Δ	60.3	8833	96	96.4	96.7	0.85	1620	6.3	20316	20700	1LL1212-4BC35-7	
900 rpm, 6-pole															
250	335	315	Δ	45.6	2653	93.6	94.8	95.2	0.81	390	6.1	6102	7500	1LL1212-3AC15-8	
315	422	315	Δ	45.6	3342	94	95.2	95.4	0.81	490	6.6	8355	7500	1LL1212-3AC35-8	
345	463	315	Δ	45.6	3661	93.8	95.1	95.5	0.84	520	5.8	8054	7500	1LL1212-3AC55-8	
380	510	315	Δ	45.6	4032	94	95.2	95.6	0.85	560	6.1	9274	7500	1LL1212-3AC75-8	
455	610	355	Δ	45.5	4828	93.9	95.1	95.4	0.87	660	6.5	11587	10200	1LL1212-3BC55-8	
515	691	355	Δ	45.5	5464	94.1	95.2	95.5	0.87	750	6.6	13660	10200	1LL1212-3BC75-8	
555	744	400	Δ	45.5	5889	94.6	95.4	96	0.85	820	5.7	12956	16400	1LL1212-4AC35-8	
625	838	400	Δ	45.5	6631	94.8	95.6	96.2	0.86	910	5.9	15251	16400	1LL1212-4AC55-8	
705	945	400	Δ	45.4	7480	95.1	95.8	96.3	0.86	1020	6.3	18700	16400	1LL1212-4AC75-8	
810	1086	450	Δ	45.4	8594	95.3	95.9	96.4	0.84	1200	5.9	19766	20700	1LL1212-4BC15-8	
885	1187	450	Δ	45.3	9390	95.4	96	96.4	0.85	1300	6.3	22536	20700	1LL1212-4BC35-8	
1030	1381	450	Δ	45.3	10929	95.7	96.2	96.6	0.85	1520	6.5	27323	20700	1LL1212-4BC55-8	
1170	1569	450	Δ	45.3	12414	95.8	96.3	96.7	0.85	1720	6.3	31035	20700	1LL1212-4BC75-8	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1212-3AB15-5..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-7LE35-0AA3	477
1LL1212-3AB35-5..0	1470	1520	4.3	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AB55-5..0	1690	1730	4.9	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3AB75-5..0	1850	1900	5.7	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3BB55-1..0	2280	2330	8.1	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-3BB75-1..0	2530	2580	8.8	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-3AB15-6..0	1290	1330	3.4	79	94.5	2700	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AB35-6..0	1470	1520	4.3	79	94.5	2700	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AB55-6..0	1690	1730	4.9	79	94.5	2700	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3AB75-6..0	1850	1900	5.7	79	94.5	2700	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-3BB55-6..0	2410	2460	8.1	79	95	2500	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-3BB75-6..0	2530	2580	8.8	79	95	2500	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-4AB35-6..0	2820	2890	13.9	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LL1212-4AB55-6..0	3020	3090	15.7	79 ⁴⁾	95.5	2200	1XB7 750	On request	On request
1LL1212-4AB75-6..0	3290	3360	17.9	79 ⁴⁾	95.5	2200	1XB7 750	On request	On request
1LL1212-4BB15-6..0	3990	4090	23.3	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB35-6..0	4260	4360	26	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-3AC15-7..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LL1212-3AC35-7..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AC55-7..0	1720	1760	8.2	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3AC75-7..0	1830	1870	9	79	94.5	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3BC55-7..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-3BC75-7..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-4AC35-7..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LL1212-4AC55-7..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LL1212-4AC75-7..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LL1212-4BC15-7..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC35-7..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-3AC15-8..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-7LE35-0AA3	477
1LL1212-3AC35-8..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AC55-8..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3AC75-8..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-7LE36-1AA3	590
1LL1212-3BC55-8..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-7LE37-5AA3	725
1LL1212-3BC75-8..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-7LE38-4AA3	820
1LL1212-4AC35-8..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE38-4AA3	820
1LL1212-4AC55-8..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LL1212-4AC75-8..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LL1212-4BC15-8..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LL1212-4BC35-8..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LL1212-4BC55-8..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC75-8..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 440 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3600 rpm, 4-pole															
340	456	315	Δ	120.6	902	95.5	95.9	95.5	0.88	530	6.5	2345	7500	1LL1222-3AB15-5	
400	536	315	Δ	120.7	1061	95.7	96.2	95.9	0.9	610	6.3	2653	7500	1LL1222-3AB35-5	
450	603	315	Δ	120.6	1194	95.9	96.4	96	0.9	680	7	3343	7500	1LL1222-3AB55-5	
510	684	315	Δ	120.5	1353	96.1	96.5	96.1	0.91	760	8.2	4330	7500	1LL1222-3AB75-5	
3000 rpm, 4-pole															
680	912	355	Δ/Δ	100.8	2165	94.7	95.4	95	0.88	1060	4.6	4330	10200	1LL1222-3BB55-1	
690	925	355	Δ/Δ	100.9	2196	94.6	95.3	95.1	0.88	1080	4.2	4172	10200	1LL1222-3BB75-1	
1800 rpm, 4-pole															
340	456	315	Δ	60.6	1804	94.8	95.7	95.8	0.87	540	6.6	5051	7500	1LL1222-3AB15-6	
420	563	315	Δ	60.6	2228	95.1	96	96.1	0.89	650	7	6461	7500	1LL1222-3AB35-6	
475	637	315	Δ	60.6	2520	95.3	96.2	96.3	0.9	720	7.2	7560	7500	1LL1222-3AB55-6	
550	738	315	Δ	60.6	2918	95.4	96.3	96.4	0.9	830	7.3	8754	7500	1LL1222-3AB75-6	
735	986	355	Δ/Δ	60.7	3899	94.9	96	96.2	0.89	1120	5.3	8968	10200	1LL1222-3BB55-6	
850	1140	355	Δ/Δ	60.6	4509	95.3	96.2	96.4	0.89	1300	5.9	11723	10200	1LL1222-3BB75-6	
925	1240	400	Δ	60.5	4907	95.4	95.9	96.2	0.87	1460	6.1	12268	16400	1LL1222-4AB35-6	
1080	1448	400	Δ	60.5	5730	95.6	96.2	96.5	0.89	1660	6.4	14898	16400	1LL1222-4AB75-6	
1160	1556	450	Δ	60.3	6154	95.8	96.1	96.1	0.87	1820	7.6	19077	20700	1LL1222-4BB15-6	
1200 rpm, 6-pole															
325	436	315	Δ	60.6	2586	94.5	95.5	95.7	0.82	540	6.4	5948	7500	1LL1222-3AC15-7	
385	516	315	Δ	60.6	3064	94.6	95.6	95.9	0.83	640	6.1	6741	7500	1LL1222-3AC35-7	
440	590	315	Δ	60.6	3501	94.8	95.8	96	0.84	720	6.2	8052	7500	1LL1222-3AC55-7	
495	664	315	Δ	60.7	3939	94.8	95.9	96.1	0.85	800	6	8272	7500	1LL1222-3AC75-7	
605	811	355	Δ	60.5	4814	94.9	95.8	95.8	0.86	960	7.3	12516	10200	1LL1222-3BC55-7	
675	905	355	Δ/Δ	60.5	5371	95	95.9	95.9	0.87	1060	7.1	13965	10200	1LL1222-3BC75-7	
705	945	400	Δ	60.5	5610	95.3	95.9	96.3	0.85	1140	5.8	12342	16400	1LL1222-4AC35-7	
800	1073	400	Δ	60.4	6366	95.7	96.2	96.5	0.85	1280	6.8	16552	16400	1LL1222-4AC55-7	
895	1200	400	Δ	60.4	7122	95.8	96.3	96.6	0.86	1420	6.8	18517	16400	1LL1222-4AC75-7	
995	1334	450	Δ	60.3	7918	95.9	96.3	96.6	0.84	1620	6.5	19003	20700	1LL1222-4BC15-7	
900 rpm, 6-pole															
245	329	315	Δ	45.6	2600	93.7	94.8	95.1	0.8	425	6.4	6500	7500	1LL1222-3AC15-8	
305	409	315	Δ	45.6	3236	93.9	95	95.4	0.82	510	6.3	7766	7500	1LL1222-3AC35-8	
345	463	315	Δ	45.6	3661	93.9	95.1	95.5	0.84	570	6.1	8420	7500	1LL1222-3AC55-8	
375	503	315	Δ	45.6	3979	93.9	95.2	95.6	0.85	610	5.8	8754	7500	1LL1222-3AC75-8	
465	624	355	Δ	45.5	4934	94	95.1	95.4	0.87	740	6.8	12335	10200	1LL1222-3BC55-8	
520	697	355	Δ	45.5	5517	94.4	95.4	95.6	0.87	820	7.4	14896	10200	1LL1222-3BC75-8	
575	771	400	Δ	45.5	6101	94.7	95.5	96.1	0.85	930	5.9	14642	16400	1LL1222-4AC35-8	
645	865	400	Δ	45.4	6844	95	95.7	96.3	0.85	1040	6.4	17110	16400	1LL1222-4AC55-8	
680	912	400	Δ	45.4	7215	95.2	95.8	96.4	0.86	1080	6.4	18759	16400	1LL1222-4AC75-8	
785	1053	450	Δ	45.4	8329	95.3	95.9	96.4	0.84	1280	6	19157	20700	1LL1222-4BC15-8	
875	1173	450	Δ	45.4	9284	95.4	96	96.5	0.85	1400	5.8	20425	20700	1LL1222-4BC35-8	
955	1281	450	Δ	45.4	10133	95.5	96.1	96.6	0.85	1540	5.7	23306	20700	1LL1222-4BC55-8	

For versions, see Article No. supplements and special versions.

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 460 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1222-3AB15-5..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AB35-5..0	1510	1560	4.3	79	94.5	3600	1XB7 740	6SL3710-1PE36-6AA0	640
1LL1222-3AB55-5..0	1690	1730	4.9	79	94.5	3600	1XB7 740	6SL3710-1PE37-4AA0	710
1LL1222-3AB75-5..0	1850	1900	5.7	79	94.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-3BB55-1..0	2410	2460	8.1	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LL1222-3BB75-1..0	2530	2580	8.8	79 ⁴⁾	95	3300	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LL1222-3AB15-6..0	1290	1330	3.4	79	94.5	2700	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AB35-6..0	1510	1560	4.3	79	94.5	2700	1XB7 740	6SL3710-1PE36-6AA0	710
1LL1222-3AB55-6..0	1690	1730	4.9	79	94.5	2700	1XB7 740	6SL3710-1GE37-5AA3	725
1LL1222-3AB75-6..0	1850	1900	5.7	79	94.5	2700	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-3BB55-6..0	2410	2460	8.1	79	95	2500	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LL1222-3BB75-6..0	2530	2580	8.8	79	95	2500	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LL1222-4AB35-6..0	2820	2890	13.9	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LL1222-4AB75-6..0	3290	3360	17.9	79 ⁴⁾	95.5	2200	1XB7 750	On request	On request
1LL1222-4BB15-6..0	3990	4090	23.3	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-3AC15-7..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AC35-7..0	1540	1580	7.1	79	94.5	2500	1XB7 740	6SL3710-1PE36-6AA0	640
1LL1222-3AC55-7..0	1720	1760	8.2	79	94.5	2500	1XB7 740	6SL3710-1GE37-5AA3	725
1LL1222-3AC75-7..0	1830	1870	9	79	94.5	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-3BC55-7..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-3BC75-7..0	2550	2600	15.8	79	95	2200	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LL1222-4AC35-7..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LL1222-4AC55-7..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LL1222-4AC75-7..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LL1222-4BC15-7..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1222-3AC15-8..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-1PE34-6AA0	450
1LL1222-3AC35-8..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AC55-8..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-1PE35-8AA0	570
1LL1222-3AC75-8..0	1830	1870	9	79	94.5	2500	1XB7 740	6SL3710-1PE36-6AA0	640
1LL1222-3BC55-8..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-3BC75-8..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-1GE38-4AA3	820
1LL1222-4AC35-8..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GE41-0AA3	960
1LL1222-4AC55-8..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LL1222-4AC75-8..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LL1222-4BC15-8..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LL1222-4BC35-8..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LL1222-4BC55-8..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

4) Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A				
Rated motor voltage 610 V														
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)														
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150														
3600 rpm, 4-pole														
315	422	315	Δ	120.7	836	95.2	95.7	95.3	0.88	355	6	2006	7500	1LL1212-3AB16-5 ■■■ 0
400	536	315	Δ	120.6	1061	95.7	96.1	95.7	0.9	440	7.4	3077	7500	1LL1212-3AB36-5 ■■■ 0
445	597	315	Δ	120.6	1180	95.8	96.3	95.9	0.9	485	7.7	3540	7500	1LL1212-3AB56-5 ■■■ 0
505	677	315	Δ	120.5	1340	96	96.4	96.1	0.91	540	8.1	4154	7500	1LL1212-3AB76-5 ■■■ 0
3000 rpm, 4-pole														
630	845	355	Δ	100.9	2005	94.3	95	94.7	0.88	710	4.2	3609	10200	1LL1212-3BB56-1 ■■■ 0
705	945	355	Δ	100.8	2244	94.6	95.3	95	0.89	790	4.5	4488	10200	1LL1212-3BB76-1 ■■■ 0
1800 rpm, 4-pole														
305	409	315	Δ	60.6	1618	94.6	95.5	95.6	0.88	345	6.7	4530	7500	1LL1212-3AB16-6 ■■■ 0
400	536	315	Δ	60.5	2122	95.2	96	96	0.88	450	8	7003	7500	1LL1212-3AB36-6 ■■■ 0
445	597	315	Δ	60.5	2361	95.2	96.1	96.2	0.89	490	7.8	7555	7500	1LL1212-3AB56-6 ■■■ 0
545	731	315	Δ	60.5	2891	95.6	96.4	96.4	0.89	600	8.7	10119	7500	1LL1212-3AB76-6 ■■■ 0
745	999	355	Δ	60.6	3952	95.1	96	96.2	0.89	830	6	10670	10200	1LL1212-3BB56-6 ■■■ 0
825	1106	355	Δ	60.5	4377	95.3	96.2	96.3	0.89	910	6.6	12693	10200	1LL1212-3BB76-6 ■■■ 0
955	1281	400	Δ	60.5	5066	95.3	95.9	96.3	0.88	1080	5.9	12158	16400	1LL1212-4AB56-6 ■■■ 0
1075	1442	400	Δ	60.5	5703	95.5	96.1	96.4	0.89	1180	6.4	14258	16400	1LL1212-4AB76-6 ■■■ 0
1165	1562	450	Δ	60.3	6181	95.7	96	96.1	0.87	1320	7.4	18543	20700	1LL1212-4BB16-6 ■■■ 0
1315	1763	450	Δ	60.3	6976	95.9	96.2	96.2	0.87	1480	8.4	23718	20700	1LL1212-4BB36-6 ■■■ 0
1505	2018	450	Δ	60.3	7984	96.1	96.4	96.4	0.87	1700	8.6	27944	20700	1LL1212-4BB56-6 ■■■ 0
1200 rpm, 6-pole														
295	396	315	Δ	60.6	2348	94.3	95.3	95.5	0.82	355	6.5	5400	7500	1LL1212-3AC16-7 ■■■ 0
360	483	315	Δ	60.6	2865	94.6	95.5	95.7	0.83	430	6.7	6876	7500	1LL1212-3AC36-7 ■■■ 0
405	543	315	Δ	60.6	3223	94.6	95.6	95.8	0.84	475	6.3	7413	7500	1LL1212-3AC56-7 ■■■ 0
450	603	315	Δ	60.6	3581	94.7	95.7	95.9	0.85	520	6.5	8236	7500	1LL1212-3AC76-7 ■■■ 0
590	791	355	Δ	60.4	4695	94.9	95.7	95.7	0.86	680	8	13616	10200	1LL1212-3BC56-7 ■■■ 0
640	858	355	Δ	60.4	5093	94.9	95.8	95.8	0.87	730	7.7	14260	10200	1LL1212-3BC76-7 ■■■ 0
700	939	400	Δ	60.4	5570	95.4	95.9	96.3	0.85	810	6.4	13368	16400	1LL1212-4AC36-7 ■■■ 0
760	1019	400	Δ	60.4	6048	95.6	96.1	96.4	0.85	880	6.9	16330	16400	1LL1212-4AC56-7 ■■■ 0
835	1120	400	Δ	60.4	6645	95.6	96.2	96.5	0.86	960	6.6	16613	16400	1LL1212-4AC76-7 ■■■ 0
995	1334	450	Δ	60.3	7918	95.9	96.3	96.5	0.83	1180	6.5	19003	20700	1LL1212-4BC16-7 ■■■ 0
1120	1502	450	Δ	60.3	8913	96	96.4	96.6	0.84	1300	6.8	22283	20700	1LL1212-4BC36-7 ■■■ 0
1215	1629	450	Δ	60.3	9669	96.1	96.5	96.7	0.85	1400	6.8	25139	20700	1LL1212-4BC56-7 ■■■ 0
1385	1857	450	Δ	60.3	11021	96.2	96.6	96.8	0.86	1580	6.7	27553	20700	1LL1212-4BC76-7 ■■■ 0
900 rpm, 6-pole														
225	302	315	Y	45.6	2387	93.3	94.5	94.9	0.81	280	6.4	5729	7500	1LL1212-3AC16-8 ■■■ 0
295	396	315	Δ	45.5	3130	94	95.1	95.3	0.82	360	6.9	8138	7500	1LL1212-3AC36-8 ■■■ 0
325	436	315	Δ	45.6	3448	93.9	95.1	95.4	0.84	385	6.4	8275	7500	1LL1212-3AC56-8 ■■■ 0
360	483	315	Δ	45.5	3820	94.1	95.2	95.5	0.84	425	6.9	9932	7500	1LL1212-3AC76-8 ■■■ 0
435	583	355	Δ	45.5	4615	94	95.1	95.3	0.86	500	7.3	12461	10200	1LL1212-3BC56-8 ■■■ 0
485	650	355	Δ	45.5	5146	94.1	95.2	95.4	0.87	550	7.4	13894	10200	1LL1212-3BC76-8 ■■■ 0
540	724	400	Δ	45.4	5730	94.6	95.4	96	0.85	630	6.1	13752	16400	1LL1212-4AC36-8 ■■■ 0
610	818	400	Δ	45.4	6472	95	95.7	96.2	0.85	710	6.7	17474	16400	1LL1212-4AC56-8 ■■■ 0
680	912	400	Δ	45.4	7215	95.2	95.8	96.3	0.86	780	7	20202	16400	1LL1212-4AC76-8 ■■■ 0
800	1073	450	Δ	45.4	8488	95.3	95.9	96.4	0.83	950	5.9	19522	20700	1LL1212-4BC16-8 ■■■ 0
880	1180	450	Δ	45.4	9337	95.3	95.9	96.4	0.84	1040	5.8	21475	20700	1LL1212-4BC36-8 ■■■ 0
1010	1354	450	Δ	45.3	10716	95.5	96.1	96.5	0.85	1180	6.2	25718	20700	1LL1212-4BC56-8 ■■■ 0
1095	1468	450	Δ	45.3	11618	95.6	96.2	96.6	0.86	1260	6.6	30207	20700	1LL1212-4BC76-8 ■■■ 0

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1212-3AB16-5..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AB36-5..0	1470	1520	4.3	79	94.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3AB56-5..0	1650	1690	4.9	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3AB76-5..0	1810	1860	5.7	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BB56-1..0	2280	2330	8.1	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BB76-1..0	2400	2460	8.8	79 ⁴⁾	95	3300	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-3AB16-6..0	1290	1330	3.4	79	94.5	2700	1XB7 730	6SL3710-7LG34-1AA3	400
1LL1212-3AB36-6..0	1470	1520	4.3	79	94.5	2700	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3AB56-6..0	1650	1690	4.9	79	94.5	2700	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3AB76-6..0	1850	1900	5.7	79	94.5	2700	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BB56-6..0	2280	2330	8.1	79	95	2500	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-3BB76-6..0	2400	2460	8.8	79	95	2500	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4AB56-6..0	3020	3090	15.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4AB76-6..0	3290	3360	17.9	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BB16-6..0	3990	4090	23.3	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB36-6..0	4260	4360	26	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-4BB56-6..0	4620	4720	28.8	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1212-3AC16-7..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AC36-7..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3AC56-7..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3AC76-7..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BC56-7..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-3BC76-7..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-4AC36-7..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-4AC56-7..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LL1212-4AC76-7..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4BC16-7..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BC36-7..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC56-7..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-4BC76-7..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1212-3AC16-8..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-7LG33-3AA3	320
1LL1212-3AC36-8..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AC56-8..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LL1212-3AC76-8..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LL1212-3BC56-8..0	2230	2290	14.3	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-3BC76-8..0	2380	2430	15.8	79	95	2200	1XB7 731	6SL3710-7LG35-8AA3	560
1LL1212-4AC36-8..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4AC56-8..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LL1212-4AC76-8..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LL1212-4BC16-8..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LL1212-4BC36-8..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LL1212-4BC56-8..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LL1212-4BC76-8..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

1LL1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LL1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 550 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G120P, SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 																
3600 rpm, 4-pole																
315	422	315	Δ	120.6	836	95.4	95.8	95.3	0.89	390	7.2	2424	7500	1LL1222-3AB16-5 ■■■ 0		
385	516	315	Δ	120.5	1021	95.7	96.1	95.6	0.89	475	7.8	3165	7500	1LL1222-3AB36-5 ■■■ 0		
425	570	315	Δ	120.5	1127	95.9	96.2	95.8	0.9	520	8.5	3832	7500	1LL1222-3AB56-5 ■■■ 0		
470	630	315	Δ	120.6	1247	95.8	96.4	96.1	0.91	560	7	3367	7500	1LL1222-3AB76-5 ■■■ 0		
3000 rpm, 4-pole																
625	838	355	Δ	100.8	1989	94.4	95.1	94.7	0.88	780	4.4	3779	10200	1LL1222-3BB56-1 ■■■ 0		
700	939	355	Δ	100.7	2228	94.7	95.4	95	0.89	870	4.9	4679	10200	1LL1222-3BB76-1 ■■■ 0		
1800 rpm, 4-pole																
300	402	315	Δ	60.6	1592	94.5	95.4	95.6	0.88	375	6.4	4298	7500	1LL1222-3AB16-6 ■■■ 0		
395	530	315	Δ	60.5	2096	95.1	95.9	96	0.88	490	7.7	6707	7500	1LL1222-3AB36-6 ■■■ 0		
440	590	315	Δ	60.5	2334	95.2	96.1	96.2	0.89	540	7.7	7469	7500	1LL1222-3AB56-6 ■■■ 0		
540	724	315	Δ	60.5	2865	95.6	96.4	96.4	0.89	660	9	10601	7500	1LL1222-3AB76-6 ■■■ 0		
740	992	355	Δ	60.6	3926	95.1	96.1	96.2	0.89	910	6.3	10993	10200	1LL1222-3BB56-6 ■■■ 0		
760	1019	355	Δ	60.6	4032	95	96	96.2	0.89	930	5.7	10080	10200	1LL1222-3BB76-6 ■■■ 0		
865	1160	400	Δ	60.5	4589	95.2	95.8	96.1	0.88	1080	5.7	10555	16400	1LL1222-4AB36-6 ■■■ 0		
970	1301	400	Δ	60.5	5146	95.4	95.9	96.3	0.88	1200	6.2	12865	16400	1LL1222-4AB56-6 ■■■ 0		
1110	1489	400	Δ	60.4	5889	95.6	96.2	96.5	0.89	1360	6.8	15900	16400	1LL1222-4AB76-6 ■■■ 0		
1190	1596	450	Δ	60.3	6313	95.8	96.1	96.1	0.86	1520	7	18308	20700	1LL1222-4BB16-6 ■■■ 0		
1350	1810	450	Δ	60.3	7162	96	96.3	96.3	0.87	1700	8	23635	20700	1LL1222-4BB36-6 ■■■ 0		
1435	1924	450	Δ	60.3	7613	96	96.3	96.3	0.88	1780	8.4	25884	20700	1LL1222-4BB56-6 ■■■ 0		
1200 rpm, 6-pole																
275	369	315	Δ	60.7	2188	94	95.1	95.4	0.83	365	6.1	4814	7500	1LL1222-3AC16-7 ■■■ 0		
355	476	315	Δ	60.6	2825	94.5	95.5	95.7	0.83	470	6.6	6780	7500	1LL1222-3AC36-7 ■■■ 0		
405	543	315	Δ	60.6	3223	94.6	95.6	95.8	0.84	530	6.3	7413	7500	1LL1222-3AC56-7 ■■■ 0		
450	603	315	Δ	60.6	3581	94.8	95.8	96	0.85	580	6.7	8594	7500	1LL1222-3AC76-7 ■■■ 0		
560	751	355	Δ	60.5	4456	94.8	95.7	95.7	0.86	710	7.8	12477	10200	1LL1222-3BC56-7 ■■■ 0		
635	852	355	Δ	60.4	5053	95	95.9	95.8	0.86	810	8.5	15159	10200	1LL1222-3BC76-7 ■■■ 0		
705	945	400	Δ	60.4	5610	95.5	96	96.3	0.85	910	6.8	14586	16400	1LL1222-4AC36-7 ■■■ 0		
750	1006	400	Δ	60.4	5968	95.5	96.1	96.4	0.86	950	6.7	14920	16400	1LL1222-4AC56-7 ■■■ 0		
850	1140	400	Δ	60.4	6764	95.8	96.3	96.5	0.86	1080	7.5	18939	16400	1LL1222-4AC76-7 ■■■ 0		
995	1334	450	Δ	60.3	7918	95.9	96.3	96.5	0.83	1300	6.8	19795	20700	1LL1222-4BC16-7 ■■■ 0		
1085	1455	450	Δ	60.3	8634	96	96.4	96.6	0.84	1400	6.8	21585	20700	1LL1222-4BC36-7 ■■■ 0		
1230	1649	450	Δ	60.3	9788	96.1	96.5	96.7	0.85	1580	6.7	24470	20700	1LL1222-4BC56-7 ■■■ 0		
900 rpm, 6-pole																
230	308	315	Δ	45.6	2440	93.5	94.6	94.9	0.8	320	6.8	6344	7500	1LL1222-3AC16-8 ■■■ 0		
285	382	315	Δ	45.5	3024	93.9	95	95.2	0.81	390	7.2	8165	7500	1LL1222-3AC36-8 ■■■ 0		
325	436	315	Δ	45.5	3448	93.9	95.1	95.4	0.83	430	6.7	8620	7500	1LL1222-3AC56-8 ■■■ 0		
355	476	315	Δ	45.5	3767	94.1	95.2	95.5	0.84	465	6.9	9794	7500	1LL1222-3AC76-8 ■■■ 0		
430	577	355	Δ	45.5	4562	94	95.1	95.3	0.86	550	7.2	12317	10200	1LL1222-3BC56-8 ■■■ 0		
475	637	355	Δ	45.4	5040	94.1	95.2	95.4	0.87	600	7.5	14112	10200	1LL1222-3BC76-8 ■■■ 0		
540	724	400	Δ	45.4	5730	94.7	95.5	96.1	0.85	700	6.1	13752	16400	1LL1222-4AC36-8 ■■■ 0		
585	784	400	Δ	45.4	6207	94.9	95.6	96.2	0.86	750	6.4	15518	16400	1LL1222-4AC56-8 ■■■ 0		
655	878	400	Δ	45.4	6950	95.1	95.8	96.3	0.86	830	6.7	18070	16400	1LL1222-4AC76-8 ■■■ 0		
745	999	450	Δ	45.4	7905	95.1	95.7	96.2	0.84	970	6	18182	20700	1LL1222-4BC16-8 ■■■ 0		
845	1133	450	Δ	45.4	8966	95.2	95.9	96.4	0.85	1080	5.8	19725	20700	1LL1222-4BC36-8 ■■■ 0		
975	1307	450	Δ	45.3	10345	95.5	96.1	96.5	0.85	1260	6.1	24828	20700	1LL1222-4BC56-8 ■■■ 0		
1080	1448	450	Δ	45.4	11459	95.5	96.1	96.6	0.86	1380	5.9	26356	20700	1LL1222-4BC76-8 ■■■ 0		

For versions, see Article No. supplements and special versions. ■■

Self-ventilated motors – open version 1LL1 motors for converter operation

Line voltage 575 V, 60 Hz – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LL1222-3AB16-5..0	1290	1330	3.4	79	94.5	3600	1XB7 731	6SL3710-1GF34-1AA3	400
1LL1222-3AB36-5..0	1470	1520	4.3	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AB56-5..0	1650	1690	4.9	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AB76-5..0	1810	1860	5.7	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3BB56-1..0	2280	2330	8.1	79	95	3300	1XB7 740	6SL3710-1GF38-1AA3	790
1LL1222-3BB76-1..0	2400	2460	8.8	79	95	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-3AB16-6..0	1290	1330	3.4	79	94.5	2700	1XB7 731	6SL3710-1GF34-1AA3	400
1LL1222-3AB36-6..0	1470	1520	4.3	79	94.5	2700	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AB56-6..0	1650	1690	4.9	79	94.5	2700	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AB76-6..0	1850	1900	5.7	79	94.5	2700	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-3BB56-6..0	2280	2330	8.1	79	95	2500	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-3BB76-6..0	2400	2460	8.8	79	95	2500	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4AB36-6..0	2820	2890	13.9	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4AB56-6..0	3020	3090	15.7	79 ⁴⁾	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4AB76-6..0	3290	3360	17.9	79 ⁴⁾	95.5	2200	1XB7 750	On request	On request
1LL1222-4BB16-6..0	3990	4090	23.3	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-4BB36-6..0	4260	4360	26	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-4BB56-6..0	4620	4720	28.8	79 ⁴⁾	95.5	2000	1XB7 750	On request	On request
1LL1222-3AC16-7..0	1320	1360	5.8	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LL1222-3AC36-7..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AC56-7..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3AC76-7..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-1GF37-4AA3	710
1LL1222-3BC56-7..0	2270	2330	14.3	79	95	2200	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-3BC76-7..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-2GF38-6AA3	836
1LL1222-4AC36-7..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4AC56-7..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4AC76-7..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC16-7..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC36-7..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1222-4BC56-7..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request
1LL1222-3AC16-8..0	1320	1360	5.8	79	94.5	2500	1XB7 730	6SL3710-1GF33-3AA3	320
1LL1222-3AC36-8..0	1500	1540	7.1	79	94.5	2500	1XB7 731	6SL3710-1GF34-1AA3	400
1LL1222-3AC56-8..0	1680	1720	8.2	79	94.5	2500	1XB7 731	6SL3710-1GF34-7AA3	452
1LL1222-3AC76-8..0	1790	1830	9	79	94.5	2500	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3BC56-8..0	2230	2290	14.3	79	95	2200	1XB7 731	6SL3710-1GF35-8AA3	560
1LL1222-3BC76-8..0	2420	2470	15.8	79	95	2200	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-4AC36-8..0	2850	2920	22.1	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF37-4AA3	710
1LL1222-4AC56-8..0	3060	3130	24.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LL1222-4AC76-8..0	3290	3360	27.7	79 ⁴⁾	95.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LL1222-4BC16-8..0	3920	4020	34.8	79 ⁴⁾	95.5	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LL1222-4BC36-8..0	4220	4320	38.8	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC56-8..0	4640	4740	43.5	79 ⁴⁾	95.5	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LL1222-4BC76-8..0	5060	5160	49.4	79 ⁴⁾	95.5	1700	1XB7 750	On request	On request

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

⁴⁾ Standard version with fan for clockwise rotation. For counterclockwise rotation order code **K98** is required.

Self-ventilated motors – open version

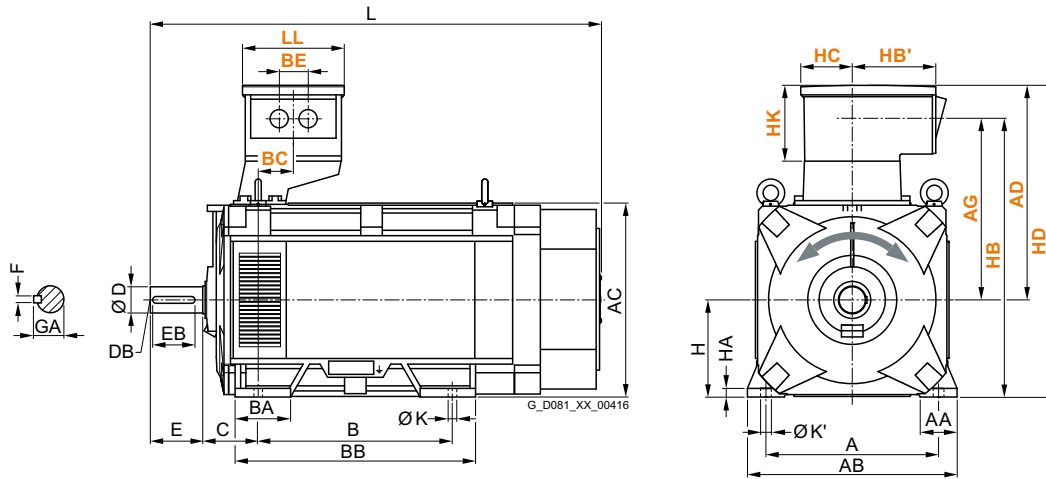
Dimensions

1LL1 motors

Dimensional drawings

Type of construction IM B5

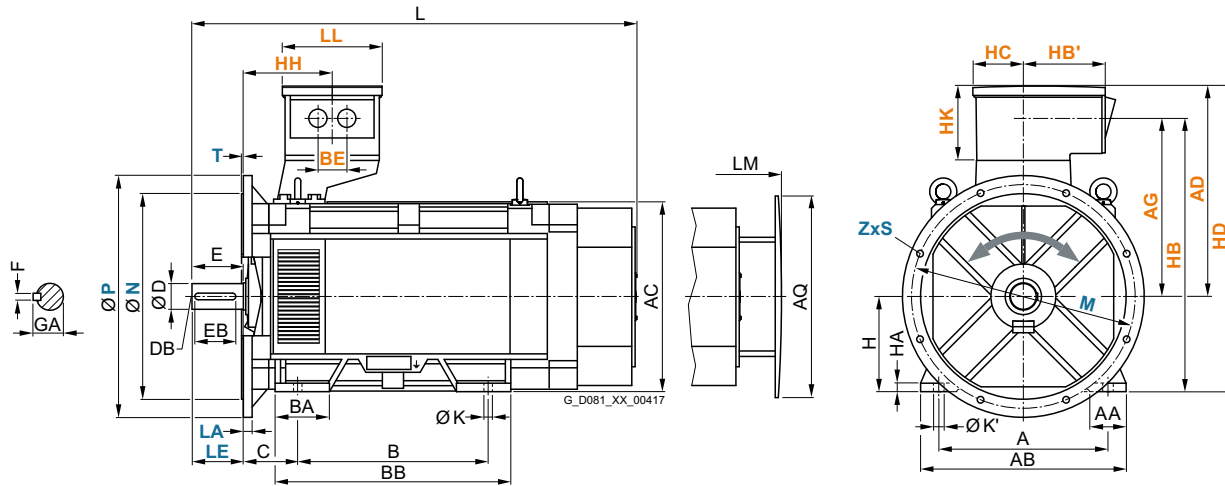
For terminal box dimensions, see page 8/25



Types of construction IM B35 and IM V1

For flange dimensions, see page 8/24 (Z = the number of retaining holes)

For terminal box dimensions, see page 8/25



Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																				
			A	AA	AB	AC	AQ	B	BA	BB	C	H	HA	K	K'	L	LM	D	DB	E	EB	F	GA
315	4, 6	1LL1...-3A.1.-....	560	120	680	630	670	630	180	780	180	315	28	28	35	1470	1615	85	M20	170	140	22	90
		1LL1...-3A.3.-....	● 560	120	680	630	670	630	180	780	200	315	28	28	35	1490	1635	95	M24	170	140	25	100
		1LL1...-3A.5.-....	560	120	680	630	670	835	180	985	180	315	28	28	35	1610	1755	85	M20	170	140	22	90
		1LL1...-3A.7.-....	● 560	120	680	630	670	835	180	985	200	315	28	28	35	1630	1775	95	M24	170	140	25	100
355	4, 6	1LL1...-3B.5.-....	630	150	780	710	750	800	220	980	200	355	35	35	42	1735	1905	95	M24	170	140	25	100
		1LL1...-3B.7.-....	● 630	150	780	710	750	800	220	980	224	355	35	35	42	1800	1970	100	M24	210	180	28	106
400	4, 6	1LL1...-4A.3.-....	710	150	860	800	850	900	220	1080	224	400	35	35	42	1955	2120	110	M24	210	180	28	116
		1LL1...-4A.5.-....	● 710	150	860	800	850	900	220	1080	250	400	35	35	42	1980	2145	120	M24	210	180	32	127
		1LL1...-4A.7.-....																					
450	4, 6	1LL1...-4B.1.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2000	2170	120	M24	210	180	32	127
		1LL1...-4B.3.-....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2070	2240	130	M24	250	220	32	137
		1LL1...-4B.5.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2170	2340	120	M24	210	180	32	127
		1LL1...-4B.7.-....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2240	2410	130	M24	250	220	32	137

- Bearing design for increased cantilever forces, for type of construction IM B3 only.

Note:

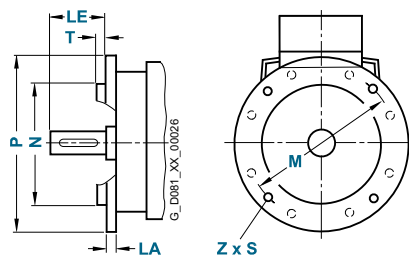
When using an encoder, dimensions L and LM increase by 170 mm for frame size 315, by 190 mm for frame size 355 and by 260 mm for frame size 400 and frame size 450.

Self-ventilated motors – open version

Dimensions

Flanges

Dimensional drawings

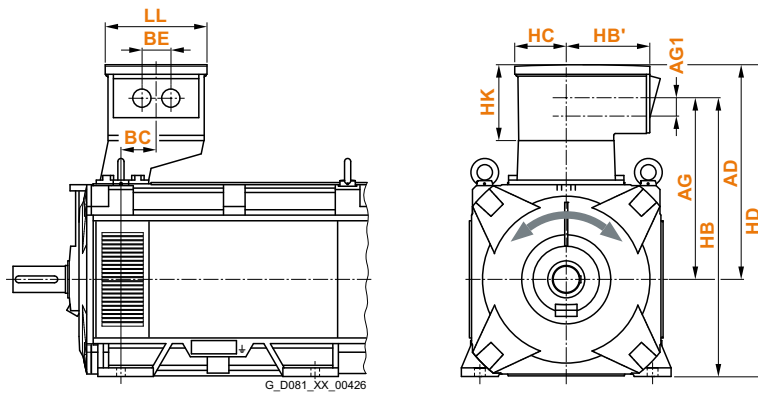


(Z = the number of retaining holes)

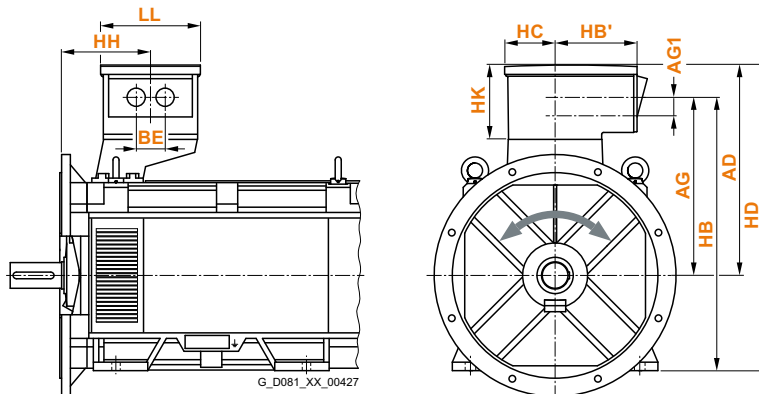
Motor type	Frame size	No. of poles	Type of construction	Flange type	Flange with through holes (FF/A) acc. to DIN 42948	Dimension designation acc. to IEC							
						LA	LE	M	N	P	S	T	Z
1LL1	315	4, 6	IM B35, IM V1	Flange	A 800	29	170	740	680	800	22	6	8
				Flange (order code M61)	A 660	22	170	600	550	660	22	6	8
	355	4, 6	IM B35, IM V1	Flange	A 900	29	170	840	780	900	22	6	8
				Flange (order code M61)	A 660	27	170	600	550	660	22	6	8
	400	4, 6	IM B35, IM V1	Flange	A 1000	28	210	940	880	1000	22	6	8
	450	4, 6	IM B35, IM V1	Flange	A 1150	30	210	1080	1000	1150	26	6	8

Dimensional drawings

Type of construction IM B3



Types of construction IM B35 and IM V1



Self-ventilated motors – open version

Dimensions

Terminal boxes

Dimensional drawings (continued)

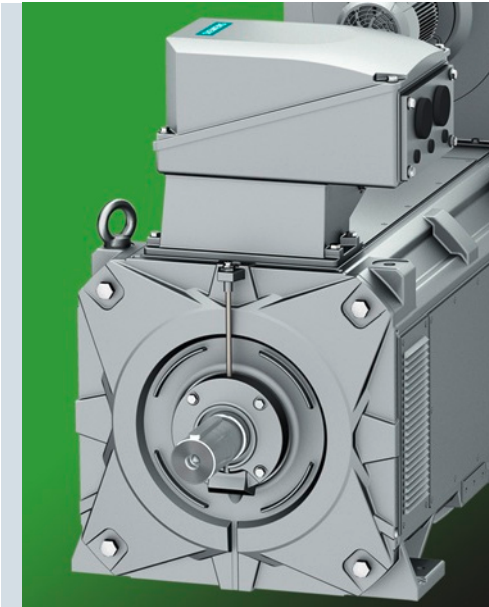
Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LL1	315	4, 6	1XB7730	705	570	–	115	–	885	310	295	180	1020	255	345
			1XB7731	705	570	–	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
			GT640	620	520	–	115	110	835	225	295	155	935	170	310
			1XB1621	700	580	–	115	150	895	305	295	165	1015	250	330
			1XB1631	770	635	–	115	100	950	400	295	175	1085	320	555
	355	4, 6	1XB7730	750	615	–	100	–	970	310	300	180	1105	255	345
			1XB7731	750	615	–	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425
			GT640	665	565	–	100	110	920	225	300	155	1020	170	310
			1XB1621	745	625	–	100	150	980	305	300	165	1100	250	330
			1XB1631	815	680	–	100	100	1035	400	300	175	1170	320	555
	400	4, 6	1XB7730	795	660	–	100	–	1060	310	324	180	1195	255	345
			1XB7731	795	660	–	100	115	1060	310	324	180	1195	255	345
			1XB7740	880	700	60	100	96	1100	365	324	235	1280	340	425
			1XB7750	960	850	65	100	103	1250	405	324	300	1360	420	890
			GT640	710	610	–	100	110	1010	225	324	155	1110	170	310
			1XB1621	790	670	–	100	150	1070	305	324	165	1190	250	330
	450	4, 6	1XB1631	860	725	–	100	100	1125	400	324	175	1260	320	555
			1XB7730	841	710	–	80	–	1160	310	325	180	1291	255	345
			1XB7731	841	710	–	80	115	1160	310	325	180	1291	255	345
			1XB7740	926	750	60	80	96	1200	365	325	235	1376	340	425
			1XB7750	1006	900	65	80	103	1350	405	325	300	1456	420	890
			GT640	756	660	–	80	110	1110	225	325	155	1206	170	310
			1XB1621	836	720	–	80	150	1170	305	325	165	1286	250	330
			1XB1631	906	770	–	80	100	1220	400	325	175	1356	320	555

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

Force-ventilated motors – open version



9/2 1LP1 motors for converter operation

- 9/2 Line voltage 400 V, 50 Hz
- 9/2 High Efficiency – low noise
- 9/6 High Efficiency – increased power
- 9/10 Line voltage 500 V, 50 Hz
- 9/10 High Efficiency – low noise
- 9/14 High Efficiency – increased power
- 9/18 Line voltage 690 V, 50 Hz
- 9/18 High Efficiency – low noise
- 9/22 High Efficiency – increased power
- 9/26 Line voltage 460 V, 60 Hz
- 9/26 High Efficiency – low noise
- 9/30 High Efficiency – increased power
- 9/34 Line voltage 575 V, 60 Hz
- 9/34 High Efficiency – low noise
- 9/38 High Efficiency – increased power

9/42 Dimensions

- 9/42 1LP1 motors
- 9/42 • Radially mounted equipment unit
- 9/44 • Axially mounted equipment unit
- 9/46 Flanges
- 9/47 Terminal boxes

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power							I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A				
Rated motor voltage 425 V														
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)														
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150														
3000 rpm, 4-pole														
335	449	315	Δ	100.9	1066	94.8	95.7	95.7	0.88	540	4.7	2025	7500	1LP1212-3AB11-1
420	563	315	Δ	100.9	1337	95.2	96.1	96.1	0.89	670	5	2674	7500	1LP1212-3AB31-1
470	630	315	Δ	100.8	1496	95.5	96.3	96.2	0.9	740	5.4	3291	7500	1LP1212-3AB51-1
545	731	315	Δ	100.8	1735	95.7	96.4	96.4	0.91	840	5.8	3990	7500	1LP1212-3AB71-1
685	919	355	Δ/Δ	100.8	2180	95.4	96.4	96.4	0.88	1100	4.3	4142	10200	1LP1212-3BB51-1
690	925	355	Δ/Δ	100.9	2196	95.3	96.3	96.4	0.88	1100	4	3953	10200	1LP1212-3BB71-1
1500 rpm, 4-pole														
305	409	315	Δ	50.7	1942	94.1	95.3	95.7	0.88	495	5.8	4855	7500	1LP1212-3AB11-2
405	543	315	Δ	50.6	2578	94.6	95.7	96.1	0.89	650	6.4	6961	7500	1LP1212-3AB31-2
445	597	315	Δ	50.6	2833	94.7	95.8	96.2	0.9	700	6.7	7649	7500	1LP1212-3AB51-2
510	684	315	Δ	50.6	3247	94.8	95.9	96.3	0.9	800	6.6	8767	7500	1LP1212-3AB71-2
640	858	355	Δ	50.7	4074	94.6	95.8	96.3	0.89	1020	5	9370	10200	1LP1212-3BB51-2
725	972	355	Δ/Δ	50.6	4615	94.9	96	96.4	0.89	1160	5.5	11538	10200	1LP1212-3BB71-2
755	1012	400	Δ	50.5	4806	95.3	96	96.5	0.87	1220	6.1	12015	16400	1LP1212-4AB31-2
850	1140	400	Δ	50.4	5411	95.6	96.2	96.7	0.88	1360	6.9	15151	16400	1LP1212-4AB51-2
880	1180	400	Δ	50.5	5602	95.4	96.1	96.7	0.89	1400	6	13445	16400	1LP1212-4AB71-2
1095	1468	450	Δ	50.3	6971	96.1	96.5	96.8	0.86	1800	7.3	21610	20700	1LP1212-4BB11-2
1185	1589	450	Δ	50.3	7544	96	96.5	96.8	0.87	1920	7.7	24141	20700	1LP1212-4BB31-2
1000 rpm, 6-pole														
280	375	315	Δ	50.7	2674	93.8	95	95.5	0.82	490	5.8	5883	7500	1LP1212-3AC11-3
345	463	315	Δ	50.7	3295	94.1	95.3	95.7	0.83	590	5.9	7249	7500	1LP1212-3AC31-3
390	523	315	Δ	50.7	3724	94.2	95.4	95.8	0.84	660	5.8	8193	7500	1LP1212-3AC51-3
435	583	315	Δ	50.6	4154	94.5	95.6	95.9	0.84	740	6.3	9554	7500	1LP1212-3AC71-3
545	731	355	Δ	50.5	5204	94.3	95.4	95.8	0.86	900	6.4	12490	10200	1LP1212-3BC51-3
630	845	355	Δ	50.5	6016	94.6	95.6	95.9	0.86	1040	7	15642	10200	1LP1212-3BC71-3
645	865	400	Δ	50.5	6159	94.6	95.5	96.3	0.85	1080	5.1	12318	16400	1LP1212-4AC31-3
725	972	400	Δ	50.5	6923	95	95.8	96.4	0.86	1200	5.6	15231	16400	1LP1212-4AC51-3
830	1113	400	Δ	50.4	7926	95.5	96.1	96.6	0.86	1360	6.5	19815	16400	1LP1212-4AC71-3
860	1153	450	Δ	50.4	8212	95.5	96.2	96.7	0.85	1420	5.6	17245	20700	1LP1212-4BC11-3
1035	1388	450	Δ	50.4	9884	95.9	96.4	96.8	0.84	1740	6.2	23722	20700	1LP1212-4BC31-3
750 rpm, 6-pole														
230	308	315	Δ	38.2	2928	92.3	93.8	94.6	0.81	410	5.4	6149	7500	1LP1212-3AC11-4
285	382	315	Δ	38.2	3629	92.7	94.2	94.9	0.83	495	5.5	7621	7500	1LP1212-3AC31-4
315	422	315	Δ	38.2	4011	92.8	94.3	95	0.85	530	5.4	8022	7500	1LP1212-3AC51-4
350	469	315	Δ	38.2	4456	93	94.5	95.2	0.85	590	5.4	8912	7500	1LP1212-3AC71-4
425	570	355	Δ	38.1	5411	92.7	94.3	94.9	0.87	700	5.7	11363	10200	1LP1212-3BC51-4
485	650	355	Δ	38.1	6175	92.9	94.4	95.1	0.88	790	5.8	13585	10200	1LP1212-3BC71-4
530	711	400	Δ	38.1	6748	93.4	94.6	95.6	0.86	880	4.9	13496	16400	1LP1212-4AC31-4
615	825	400	Δ	38	7830	94	95	95.9	0.86	1020	5.5	17226	16400	1LP1212-4AC51-4
655	878	400	Δ	38	8340	94.1	95.1	96	0.87	1080	5.3	18348	16400	1LP1212-4AC71-4
705	945	450	Δ	37.9	8976	94.7	95.6	96.2	0.85	1180	5.4	18850	20700	1LP1212-4BC11-4
810	1086	450	Δ	37.9	10313	95	95.8	96.4	0.84	1360	5.8	23720	20700	1LP1212-4BC31-4
920	1234	450	Δ	37.9	11714	95	95.8	96.4	0.86	1520	5.5	25771	20700	1LP1212-4BC51-4
1000	1341	450	Δ	37.9	12732	95.1	95.9	96.5	0.86	1640	5.5	28010	20700	1LP1212-4BC71-4

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1212-3AB11-1...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AB31-1...	1580	1630	4.2	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AB51-1...	1750	1800	4.8	79	94.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1212-3AB71-1...	1920	1960	5.7	79	94.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1212-3BB51-1...	2480	2530	8	79	95	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-3BB71-1...	2600	2650	8.7	79	95	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-3AB11-2...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AB31-2...	1580	1630	4.2	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AB51-2...	1750	1800	4.8	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AB71-2...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1212-3BB51-2...	2350	2400	8	79	95	2600	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-3BB71-2...	2600	2650	8.7	79	95	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-4AB31-2...	2920	2990	13.2	79	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4AB51-2...	3130	3200	14.9	79	95.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1212-4AB71-2...	3400	3470	17.1	79	95.5	2200	1XB7 750	On request	On request
1LP1212-4BB11-2...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB31-2...	4360	4460	24.9	79	96	2000	1XB7 750	On request	On request
1LP1212-3AC11-3...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AC31-3...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AC51-3...	1790	1830	8.1	79	94.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AC71-3...	1890	1940	8.9	79	94.5	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1212-3BC51-3...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1212-3BC71-3...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-4AC31-3...	2960	3030	21	79	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4AC51-3...	3170	3240	23.6	79	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4AC71-3...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1212-4BC11-3...	4000	4100	33.2	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC31-3...	4300	4400	37.2	79	96	1700	1XB7 750	On request	On request
1LP1212-3AC11-4...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LP1212-3AC31-4...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AC51-4...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AC71-4...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3BC51-4...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3BC71-4...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1212-4AC31-4...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1212-4AC51-4...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-4AC71-4...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4BC11-4...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4BC31-4...	4300	4400	37.2	79	96	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1212-4BC51-4...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC71-4...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	T _B			
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	Article No.	
<ul style="list-style-type: none"> Rated motor voltage 380 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3000 rpm, 4-pole															
325	436	315	Δ	100.9	1035	94.9	95.7	95.7	0.88	590	4.7	1967	7500	1LP1222-3AB11-1 ■■■■	
420	563	315	Δ	100.8	1337	95.4	96.1	96.1	0.89	750	5.3	2808	7500	1LP1222-3AB31-1 ■■■■	
475	637	315	Δ	100.7	1512	95.6	96.4	96.3	0.9	830	5.9	3478	7500	1LP1222-3AB51-1 ■■■■	
490	657	315	Δ	100.9	1560	95.4	96.2	96.3	0.9	860	5	3120	7500	1LP1222-3AB71-1 ■■■■	
710	952	355	Δ/Δ	100.7	2260	95.7	96.5	96.5	0.89	1260	4.9	4746	10200	1LP1222-3BB51-1 ■■■■	
720	966	355	Δ/Δ	100.8	2292	95.6	96.5	96.5	0.88	1280	4.5	4355	10200	1LP1222-3BB71-1 ■■■■	
1500 rpm, 4-pole															
320	429	315	Δ	50.6	2037	94.3	95.4	95.8	0.87	590	6.1	5296	7500	1LP1222-3AB11-2 ■■■■	
400	536	315	Δ	50.6	2546	94.6	95.7	96	0.89	710	6.5	6874	7500	1LP1222-3AB31-2 ■■■■	
450	603	315	Δ	50.6	2865	94.8	95.8	96.2	0.9	790	6.7	8022	7500	1LP1222-3AB51-2 ■■■■	
520	697	315	Δ	50.6	3310	94.9	95.9	96.3	0.9	920	6.7	9268	7500	1LP1222-3AB71-2 ■■■■	
650	872	355	Δ/Δ	50.7	4138	94.7	95.9	96.3	0.89	1160	5.2	9517	10200	1LP1222-3BB51-2 ■■■■	
755	1012	355	Δ/Δ	50.6	4806	95	96.2	96.5	0.89	1340	5.8	12496	10200	1LP1222-3BB71-2 ■■■■	
795	1066	400	Δ	50.5	5061	95.3	96	96.6	0.89	1420	5.8	12146	16400	1LP1222-4AB51-2 ■■■■	
935	1254	400	Δ	50.4	5952	95.6	96.2	96.7	0.89	1660	6.5	15475	16400	1LP1222-4AB71-2 ■■■■	
1040	1395	450	Δ	50.3	6621	95.9	96.4	96.6	0.86	1900	7.5	20525	20700	1LP1222-4BB11-2 ■■■■	
1000 rpm, 6-pole															
280	375	315	Δ	50.7	2674	93.7	95	95.5	0.82	550	5.6	5615	7500	1LP1222-3AC11-3 ■■■■	
350	469	315	Δ	50.7	3342	94.1	95.3	95.7	0.83	670	5.9	7352	7500	1LP1222-3AC31-3 ■■■■	
390	523	315	Δ	50.6	3724	94.3	95.5	95.8	0.84	740	6.1	8565	7500	1LP1222-3AC51-3 ■■■■	
440	590	315	Δ	50.7	4202	94.4	95.5	95.9	0.85	820	5.9	8824	7500	1LP1222-3AC71-3 ■■■■	
555	744	355	Δ	50.5	5300	94.5	95.5	95.8	0.86	1020	7	13250	10200	1LP1222-3BC51-3 ■■■■	
625	838	355	Δ/Δ	50.5	5968	94.5	95.6	95.9	0.87	1140	6.8	14920	10200	1LP1222-3BC71-3 ■■■■	
665	892	400	Δ	50.5	6350	94.8	95.6	96.3	0.85	1240	5.4	13335	16400	1LP1222-4AC31-3 ■■■■	
720	966	400	Δ	50.5	6875	94.9	95.7	96.4	0.86	1320	5.4	14438	16400	1LP1222-4AC51-3 ■■■■	
845	1133	400	Δ	50.4	8069	95.4	96.1	96.6	0.86	1560	6.3	20173	16400	1LP1222-4AC71-3 ■■■■	
915	1227	450	Δ	50.4	8738	95.8	96.3	96.7	0.84	1720	6.2	20971	20700	1LP1222-4BC11-3 ■■■■	
750 rpm, 6-pole															
235	315	315	Δ	38.2	2992	92.5	94	94.7	0.81	470	5.4	6283	7500	1LP1222-3AC11-4 ■■■■	
290	389	315	Δ	38.2	3692	92.8	94.3	94.9	0.82	570	5.7	8122	7500	1LP1222-3AC31-4 ■■■■	
320	429	315	Δ	38.1	4074	93	94.4	95.1	0.84	610	5.7	8963	7500	1LP1222-3AC51-4 ■■■■	
350	469	315	Δ	38.2	4456	92.9	94.4	95.1	0.85	660	5.4	8912	7500	1LP1222-3AC71-4 ■■■■	
425	570	355	Δ	38.1	5411	92.8	94.3	95	0.87	790	5.6	11363	10200	1LP1222-3BC51-4 ■■■■	
485	650	355	Δ	38.1	6175	93	94.5	95.1	0.88	890	5.9	13585	10200	1LP1222-3BC71-4 ■■■■	
535	717	400	Δ	38.1	6812	93.4	94.6	95.6	0.86	1000	4.8	13624	16400	1LP1222-4AC31-4 ■■■■	
585	784	400	Δ	38	7448	94	95	95.9	0.86	1080	5.3	15641	16400	1LP1222-4AC51-4 ■■■■	
675	905	400	Δ	38	8594	94.3	95.2	96	0.86	1260	5.5	19766	16400	1LP1222-4AC71-4 ■■■■	
720	966	450	Δ	37.9	9167	94.8	95.7	96.3	0.84	1360	5.3	19251	20700	1LP1222-4BC11-4 ■■■■	
820	1100	450	Δ	37.9	10441	94.9	95.7	96.4	0.85	1540	5.4	22970	20700	1LP1222-4BC31-4 ■■■■	
895	1200	450	Δ	37.9	11395	95	95.8	96.4	0.86	1660	5.4	25069	20700	1LP1222-4BC51-4 ■■■■	
1020	1368	450	Δ	37.9	12987	95	95.8	96.5	0.86	1880	5.3	27273	20700	1LP1222-4BC71-4 ■■■■	

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1222-3AB11-1...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AB31-1...	1580	1630	4.2	79	94.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3AB51-1...	1750	1800	4.8	79	94.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1222-3AB71-1...	1920	1960	5.7	79	94.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1222-3BB51-1...	2480	2530	8	79	95	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1222-3BB71-1...	2600	2650	8.7	79	95	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1222-3AB11-2...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AB31-2...	1580	1630	4.2	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3AB51-2...	1750	1800	4.8	79	94.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3AB71-2...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1222-3BB51-2...	2480	2530	8	79	95	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1222-3BB71-2...	2600	2650	8.7	79	95	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1222-4AB51-2...	3130	3200	14.9	79	95.5	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1222-4AB71-2...	3400	3470	17.1	79	95.5	2200	1XB7 750	On request	On request
1LP1222-4BB11-2...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1222-3AC11-3...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AC31-3...	1600	1650	7	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3AC51-3...	1790	1830	8.1	79	94.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3AC71-3...	1890	1940	8.9	79	94.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3BC51-3...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1222-3BC71-3...	2620	2670	15.7	79	95	2500	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1222-4AC31-3...	2960	3030	21	79	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4AC51-3...	3170	3240	23.6	79	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4AC71-3...	3400	3470	26.6	79	95.5	2000	1XB7 750	On request	On request
1LP1222-4BC11-3...	4000	4100	33.2	79	96	1700	1XB7 750	On request	On request
1LP1222-3AC11-4...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LP1222-3AC31-4...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AC51-4...	1790	1830	8.1	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3AC71-4...	1890	1940	8.9	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3BC51-4...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3BC71-4...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1222-4AC31-4...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1222-4AC51-4...	3170	3240	23.6	79	95.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LP1222-4AC71-4...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4BC11-4...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1222-4BC31-4...	4300	4400	37.2	79	96	1700	1XB7 750	On request	On request
1LP1222-4BC51-4...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1222-4BC71-4...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	Article No.				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm			
<ul style="list-style-type: none"> Rated motor voltage 425 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3000 rpm, 4-pole																
370	496	315	Δ	101	1178	94.5	95.5	95.7	0.87	600	4.2	2003	7500	1LP1312-3AB11-1 ■■■■		
465	624	315	Δ	101	1480	94.9	95.9	96	0.89	740	4.6	2664	7500	1LP1312-3AB31-1 ■■■■		
530	711	315	Δ	100.9	1687	95.2	96.1	96.2	0.9	830	4.8	3205	7500	1LP1312-3AB51-1 ■■■■		
615	825	315	Δ	100.9	1958	95.4	96.3	96.4	0.9	960	5.1	3916	7500	1LP1312-3AB71-1 ■■■■		
725	972	355	Δ/Δ	101	2308	95.1	96.3	96.4	0.87	1180	3.7	3924	10200	1LP1312-3BB71-1 ■■■■		
1500 rpm, 4-pole																
320	429	315	Δ	50.7	2037	93.8	95.1	95.6	0.88	520	5.5	4889	7500	1LP1312-3AB11-2 ■■■■		
450	603	315	Δ	50.7	2865	94.1	95.3	95.8	0.89	720	5.8	6876	7500	1LP1312-3AB31-2 ■■■■		
500	671	315	Δ	50.7	3183	94.2	95.4	95.9	0.9	790	5.9	7639	7500	1LP1312-3AB51-2 ■■■■		
575	771	315	Δ	50.7	3661	94.3	95.5	96	0.91	900	5.8	8786	7500	1LP1312-3AB71-2 ■■■■		
670	898	355	Δ/Δ	50.7	4265	94.4	95.7	96.2	0.89	1060	4.8	9383	10200	1LP1312-3BB51-2 ■■■■		
760	1019	355	Δ/Δ	50.7	4838	94.7	95.9	96.4	0.89	1200	5.3	11611	10200	1LP1312-3BB71-2 ■■■■		
825	1106	400	Δ	50.5	5252	95.1	95.8	96.5	0.87	1340	5.5	12080	16400	1LP1312-4AB31-2 ■■■■		
940	1261	400	Δ	50.5	5984	95.4	96.1	96.6	0.88	1500	6.2	14960	16400	1LP1312-4AB51-2 ■■■■		
1195	1603	450	Δ	50.3	7608	96	96.5	96.8	0.86	1960	6.6	21302	20700	1LP1312-4BB11-2 ■■■■		
1295	1737	450	Δ	50.3	8244	95.9	96.5	96.8	0.87	2100	6.9	23908	20700	1LP1312-4BB31-2 ■■■■		
1000 rpm, 6-pole																
270	362	315	Δ	50.6	2578	93.8	95	95.4	0.82	470	6.1	5929	7500	1LP1312-3AC11-3 ■■■■		
370	496	315	Δ	50.7	3533	93.6	95	95.5	0.83	640	5.5	7066	7500	1LP1312-3AC31-3 ■■■■		
425	570	315	Δ	50.7	4058	93.7	95.1	95.6	0.84	720	5.4	8116	7500	1LP1312-3AC51-3 ■■■■		
480	644	315	Δ	50.7	4584	94	95.3	95.7	0.84	810	5.7	9626	7500	1LP1312-3AC71-3 ■■■■		
565	758	355	Δ	50.6	5395	94.1	95.4	95.7	0.87	920	6.3	12408	10200	1LP1312-3BC51-3 ■■■■		
650	872	355	Δ/Δ	50.5	6207	94.5	95.6	95.8	0.86	1080	6.8	15518	10200	1LP1312-3BC71-3 ■■■■		
670	898	400	Δ	50.6	6398	94.4	95.4	96.2	0.85	1120	4.9	12156	16400	1LP1312-4AC31-3 ■■■■		
760	1019	400	Δ	50.5	7257	94.9	95.7	96.4	0.86	1260	5.4	15240	16400	1LP1312-4AC51-3 ■■■■		
880	1180	400	Δ	50.4	8403	95.3	96	96.6	0.86	1440	6.2	20167	16400	1LP1312-4AC71-3 ■■■■		
935	1254	450	Δ	50.4	8929	95.3	96.1	96.6	0.84	1580	5	16965	20700	1LP1312-4BC11-3 ■■■■		
1120	1502	450	Δ	50.4	10695	95.7	96.3	96.8	0.85	1860	5.8	23529	20700	1LP1312-4BC31-3 ■■■■		
750 rpm, 6-pole																
250	335	315	Δ	38.3	3183	91.6	93.3	94.3	0.81	450	4.9	6366	7500	1LP1312-3AC11-4 ■■■■		
310	416	315	Δ	38.2	3947	92	93.8	94.6	0.83	540	5	7499	7500	1LP1312-3AC31-4 ■■■■		
345	463	315	Δ	38.3	4393	92	93.8	94.7	0.85	590	4.8	7907	7500	1LP1312-3AC51-4 ■■■■		
385	516	315	Δ	38.3	4902	92.2	94	94.8	0.85	650	4.9	8824	7500	1LP1312-3AC71-4 ■■■■		
435	583	355	Δ	38.1	5539	92.6	94.2	94.9	0.87	720	5.5	11632	10200	1LP1312-3BC51-4 ■■■■		
500	671	355	Δ	38.1	6366	92.8	94.3	95	0.88	820	5.5	13369	10200	1LP1312-3BC71-4 ■■■■		
555	744	400	Δ	38.1	7066	93.1	94.5	95.5	0.85	940	4.5	13425	16400	1LP1312-4AC31-4 ■■■■		
650	872	400	Δ	38	8276	93.8	94.9	95.8	0.86	1080	5.2	17380	16400	1LP1312-4AC51-4 ■■■■		
690	925	400	Δ	38	8785	93.9	95	95.9	0.87	1140	5	18449	16400	1LP1312-4AC71-4 ■■■■		
765	1026	450	Δ	37.9	9740	94.4	95.4	96.1	0.85	1280	5	19480	20700	1LP1312-4BC11-4 ■■■■		
890	1194	450	Δ	37.9	11332	94.7	95.6	96.3	0.84	1500	5.2	23797	20700	1LP1312-4BC31-4 ■■■■		
1005	1348	450	Δ	37.9	12796	94.7	95.6	96.3	0.86	1660	5	25592	20700	1LP1312-4BC51-4 ■■■■		
1095	1468	450	Δ	37.9	13942	94.8	95.7	96.4	0.86	1800	5	27884	20700	1LP1312-4BC71-4 ■■■■		

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1312-3AB11-1...	1430	1480	3.3	85	100.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3AB31-1...	1620	1670	4.2	85	100.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3AB51-1...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-3AB71-1...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-3BB71-1...	2640	2700	8.7	85	101	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-3AB11-2...	1390	1440	3.3	85	100.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AB31-2...	1620	1670	4.2	85	100.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3AB51-2...	1790	1840	4.8	85	100.5	3000	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3AB71-2...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-3BB51-2...	2520	2580	8	85	101	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-3BB71-2...	2640	2700	8.7	85	101	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-4AB31-2...	2950	3020	13.2	85	101.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1312-4AB51-2...	3160	3230	14.9	85	101.5	2200	1XB7 750	On request	On request
1LP1312-4BB11-2...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB31-2...	4390	4490	24.9	85	102	2000	1XB7 750	On request	On request
1LP1312-3AC11-3...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LP1312-3AC31-3...	1640	1690	7	85	100.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3AC51-3...	1830	1870	8.1	85	100.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3AC71-3...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3BC51-3...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-3BC71-3...	2660	2720	15.7	85	101	2500	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-4AC31-3...	2990	3060	21	85	101.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1312-4AC51-3...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1312-4AC71-3...	3430	3500	26.6	85	101.5	2000	1XB7 750	On request	On request
1LP1312-4BC11-3...	4040	4140	33.2	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC31-3...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1312-3AC11-4...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LP1312-3AC31-4...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AC51-4...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AC71-4...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3BC51-4...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3BC71-4...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-4AC31-4...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-4AC51-4...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1312-4AC71-4...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1312-4BC11-4...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1312-4BC31-4...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC51-4...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC71-4...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
Rated motor voltage 380 V																
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)																
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)																
3000 rpm, 4-pole																
360	483	315	Δ	101	1146	94.5	95.5	95.6	0.88	650	4.3	2063	7500	1LP1322-3AB11-1	■■■■	
470	630	315	Δ	100.9	1496	95	96	96.1	0.89	840	4.7	2842	7500	1LP1322-3AB31-1	■■■■	
540	724	315	Δ	100.9	1719	95.4	96.2	96.3	0.9	950	5.2	3610	7500	1LP1322-3AB51-1	■■■■	
550	738	315	Δ	101	1751	95	96	96.2	0.89	980	4.4	3152	7500	1LP1322-3AB71-1	■■■■	
750	1006	355	Δ/Δ	100.8	2387	95.6	96.5	96.5	0.88	1340	4.6	4774	10200	1LP1322-3BB51-1	■■■■	
760	1019	355	Δ/Δ	100.9	2419	95.4	96.4	96.5	0.88	1360	4.2	4354	10200	1LP1322-3BB71-1	■■■■	
1500 rpm, 4-pole																
355	476	315	Δ	50.7	2260	93.8	95.1	95.6	0.87	650	5.5	5424	7500	1LP1322-3AB11-2	■■■■	
445	597	315	Δ	50.7	2833	94.1	95.3	95.8	0.89	800	5.7	6799	7500	1LP1322-3AB31-2	■■■■	
505	677	315	Δ	50.7	3215	94.2	95.5	96	0.9	890	5.9	8038	7500	1LP1322-3AB51-2	■■■■	
585	784	315	Δ	50.7	3724	94.4	95.6	96.1	0.9	1040	5.9	9310	7500	1LP1322-3AB71-2	■■■■	
685	919	355	Δ/Δ	50.7	4361	94.5	95.8	96.3	0.89	1220	4.9	9594	10200	1LP1322-3BB51-2	■■■■	
795	1066	355	Δ/Δ	50.6	5061	94.9	96.1	96.4	0.89	1420	5.5	12653	10200	1LP1322-3BB71-2	■■■■	
860	1153	400	Δ	50.5	5475	95.1	95.9	96.5	0.89	1540	5.4	12045	16400	1LP1322-4AB51-2	■■■■	
1015	1361	400	Δ	50.5	6462	95.4	96.1	96.7	0.89	1800	6	15509	16400	1LP1322-4AB71-2	■■■■	
1145	1535	450	Δ	50.3	7289	95.8	96.3	96.7	0.87	2100	6.7	20409	20700	1LP1322-4BB11-2	■■■■	
1000 rpm, 6-pole																
265	355	315	Δ	50.7	2531	93.7	95	95.4	0.82	520	5.9	5568	7500	1LP1322-3AC11-3	■■■■	
375	503	315	Δ	50.7	3581	93.7	95	95.5	0.83	720	5.5	7162	7500	1LP1322-3AC31-3	■■■■	
430	577	315	Δ	50.7	4106	93.8	95.1	95.6	0.84	820	5.5	8623	7500	1LP1322-3AC51-3	■■■■	
480	644	315	Δ	50.7	4584	93.9	95.2	95.7	0.85	900	5.3	9168	7500	1LP1322-3AC71-3	■■■■	
575	771	355	Δ/Δ	50.5	5491	94.3	95.5	95.8	0.86	1060	6.7	13728	10200	1LP1322-3BC51-3	■■■■	
645	865	355	Δ/Δ	50.5	6159	94.4	95.5	95.8	0.87	1180	6.5	14782	10200	1LP1322-3BC71-3	■■■■	
695	932	400	Δ	50.5	6637	94.6	95.5	96.3	0.85	1300	5.2	13274	16400	1LP1322-4AC31-3	■■■■	
755	1012	400	Δ	50.5	7210	94.7	95.6	96.4	0.86	1400	5.1	14420	16400	1LP1322-4AC51-3	■■■■	
895	1200	400	Δ	50.5	8547	95.3	96	96.6	0.86	1640	6	19658	16400	1LP1322-4AC71-3	■■■■	
995	1334	450	Δ	50.4	9502	95.6	96.2	96.7	0.84	1880	5.7	20904	20700	1LP1322-4BC11-3	■■■■	
750 rpm, 6-pole																
255	342	315	Δ	38.3	3247	91.8	93.5	94.4	0.82	510	5	6169	7500	1LP1322-3AC11-4	■■■■	
315	422	315	Δ	38.2	4011	92.2	93.8	94.6	0.82	620	5.2	8022	7500	1LP1322-3AC31-4	■■■■	
350	469	315	Δ	38.2	4456	92.3	93.9	94.8	0.84	670	5.2	8912	7500	1LP1322-3AC51-4	■■■■	
380	510	315	Δ	38.3	4838	92.2	94	94.8	0.85	720	4.9	9192	7500	1LP1322-3AC71-4	■■■■	
440	590	355	Δ	38.1	5602	92.6	94.2	94.9	0.87	820	5.4	11764	10200	1LP1322-3BC51-4	■■■■	
500	671	355	Δ	38.1	6366	92.9	94.4	95	0.88	910	5.7	14005	10200	1LP1322-3BC71-4	■■■■	
555	744	400	Δ	38.1	7066	93.2	94.5	95.5	0.86	1040	4.7	13425	16400	1LP1322-4AC31-4	■■■■	
625	838	400	Δ	38	7958	93.6	94.8	95.7	0.86	1160	4.9	15916	16400	1LP1322-4AC51-4	■■■■	
710	952	400	Δ	38	9040	94.1	95.1	95.9	0.87	1320	5.3	19888	16400	1LP1322-4AC71-4	■■■■	
790	1059	450	Δ	37.9	10059	94.5	95.4	96.2	0.84	1500	4.8	19112	20700	1LP1322-4BC11-4	■■■■	
895	1200	450	Δ	37.9	11395	94.6	95.5	96.2	0.85	1680	5	22790	20700	1LP1322-4BC31-4	■■■■	
975	1307	450	Δ	37.9	12414	94.7	95.6	96.3	0.86	1800	5	24828	20700	1LP1322-4BC51-4	■■■■	
1115	1495	450	Δ	37.9	14197	94.7	95.7	96.4	0.86	2050	4.9	26974	20700	1LP1322-4BC71-4	■■■■	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 400 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1322-3AB11-1...	1430	1480	3.3	85	100.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AB31-1...	1620	1670	4.2	85	100.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-3AB51-1...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-3AB71-1...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1322-3BB51-1...	2520	2580	8	85	101	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1322-3BB71-1...	2640	2700	8.7	85	101	3300	2 x 1XB7 740	6SL3710-2GE41-6AA3	1516
1LP1322-3AB11-2...	1430	1480	3.3	85	100.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AB31-2...	1620	1670	4.2	85	100.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1322-3AB51-2...	1790	1840	4.8	85	100.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-3AB71-2...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1322-3BB51-2...	2520	2580	8	85	101	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1322-3BB71-2...	2640	2700	8.7	85	101	2600	2 x 1XB7 740	6SL3710-2GE41-6AA3	1516
1LP1322-4AB51-2...	3160	3230	14.9	85	101.5	2200	1XB7 750	On request	On request
1LP1322-4AB71-2...	3430	3500	17.1	85	101.5	2200	1XB7 750	On request	On request
1LP1322-4BB11-2...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1322-3AC11-3...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1322-3AC31-3...	1640	1690	7	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AC51-3...	1830	1870	8.1	85	100.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1322-3AC71-3...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-3BC51-3...	2510	2570	14.3	85	101	2500	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1322-3BC71-3...	2660	2720	15.7	85	101	2500	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1322-4AC31-3...	2990	3060	21	85	101.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1322-4AC51-3...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1322-4AC71-3...	3430	3500	26.6	85	101.5	2000	1XB7 750	On request	On request
1LP1322-4BC11-3...	4040	4140	33.2	85	102	1700	1XB7 750	On request	On request
1LP1322-3AC11-4...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1322-3AC31-4...	1640	1690	7	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AC51-4...	1830	1870	8.1	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AC71-4...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3BC51-4...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1322-3BC71-4...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-4AC31-4...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1322-4AC51-4...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1322-4AC71-4...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1322-4BC11-4...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1322-4BC31-4...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC51-4...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC71-4...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power								I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A					
Rated motor voltage 520 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
315	422	315	Δ	100.8	1003	94.9	95.7	95.6	0.88	415	5.2	2106	7500	1LP1212-3AB12-1	
415	557	315	Δ	100.7	1321	95.4	96.1	96	0.9	530	6.2	3303	7500	1LP1212-3AB32-1	
460	617	315	Δ	100.7	1464	95.6	96.3	96.2	0.9	590	6.4	3660	7500	1LP1212-3AB52-1	
480	644	315	Δ	100.8	1528	95.4	96.2	96.2	0.9	620	5.4	3362	7500	1LP1212-3AB72-1	
680	912	355	Δ	100.7	2165	95.5	96.4	96.4	0.89	880	4.8	4547	10200	1LP1212-3BB52-1	
700	939	355	Δ	100.8	2228	95.3	96.3	96.4	0.88	920	4.3	4233	10200	1LP1212-3BB72-1	
1500 rpm, 4-pole															
285	382	315	Δ	50.7	1814	94	95.2	95.6	0.88	380	6.1	4716	7500	1LP1212-3AB12-2	
360	483	315	Δ	50.6	2292	94.4	95.5	95.9	0.89	470	6.4	6188	7500	1LP1212-3AB32-2	
420	563	315	Δ	50.6	2674	94.7	95.8	96.1	0.9	540	7.1	7755	7500	1LP1212-3AB52-2	
505	677	315	Δ	50.5	3215	95.1	96	96.3	0.89	660	7.8	10288	7500	1LP1212-3AB72-2	
675	905	355	Δ	50.6	4297	94.7	95.9	96.3	0.89	880	5.7	10743	10200	1LP1212-3BB52-2	
755	1012	355	Δ	50.6	4806	94.9	96	96.4	0.89	980	6.1	12976	10200	1LP1212-3BB72-2	
815	1093	400	Δ	50.5	5188	95.2	96	96.5	0.89	1060	6	12451	16400	1LP1212-4AB52-2	
915	1227	400	Δ	50.5	5825	95.4	96.1	96.7	0.89	1180	6.4	15145	16400	1LP1212-4AB72-2	
1035	1388	450	Δ	50.3	6589	95.8	96.3	96.6	0.87	1380	7.1	19767	20700	1LP1212-4BB12-2	
1210	1623	450	Δ	50.3	7703	96	96.5	96.8	0.88	1580	6.8	21568	20700	1LP1212-4BB32-2	
1420	1904	450	Δ	50.3	9040	96.2	96.6	96.9	0.87	1880	7.6	28928	20700	1LP1212-4BB52-2	
1540	2065	450	Δ	50.3	9804	96.1	96.6	96.9	0.89	1980	7.6	29412	20700	1LP1212-4BB72-2	
1000 rpm, 6-pole															
270	362	315	Δ	50.6	2578	93.8	95	95.4	0.82	385	6.1	5672	7500	1LP1212-3AC12-3	
320	429	315	Δ	50.6	3056	94	95.2	95.6	0.83	450	6.3	7029	7500	1LP1212-3AC32-3	
355	476	315	Δ	50.6	3390	94	95.2	95.7	0.84	495	6	7458	7500	1LP1212-3AC52-3	
395	530	315	Δ	50.6	3772	94.2	95.4	95.8	0.85	540	6.3	8676	7500	1LP1212-3AC72-3	
510	684	355	Δ	50.5	4870	94.2	95.3	95.6	0.86	690	6.9	12175	10200	1LP1212-3BC32-3	
580	778	355	Δ	50.5	5539	94.4	95.5	95.7	0.87	780	7.2	14955	10200	1LP1212-3BC72-3	
645	865	400	Δ	50.5	6159	94.9	95.7	96.3	0.85	880	5.9	14166	16400	1LP1212-4AC32-3	
720	966	400	Δ	50.4	6875	95.2	95.9	96.4	0.85	980	6.3	17188	16400	1LP1212-4AC52-3	
775	1039	400	Δ	50.4	7401	95.2	95.9	96.5	0.86	1040	6.1	17762	16400	1LP1212-4AC72-3	
875	1173	450	Δ	50.4	8356	95.5	96.1	96.6	0.84	1200	5.8	18383	20700	1LP1212-4BC12-3	
1025	1375	450	Δ	50.3	9788	95.7	96.3	96.7	0.84	1400	6.3	23491	20700	1LP1212-4BC32-3	
1125	1509	450	Δ	50.3	10743	95.8	96.4	96.8	0.85	1520	6.3	25783	20700	1LP1212-4BC52-3	
1285	1723	450	Δ	50.4	12271	95.9	96.5	96.9	0.86	1720	6.2	29450	20700	1LP1212-4BC72-3	
750 rpm, 6-pole															
215	288	315	Δ	38.1	2737	92.3	93.8	94.5	0.81	315	5.8	6295	7500	1LP1212-3AC12-4	
265	355	315	Δ	38.1	3374	92.6	94.1	94.7	0.83	375	5.9	7760	7500	1LP1212-3AC32-4	
285	382	315	Δ	38.1	3629	92.6	94.1	94.9	0.84	400	5.6	7621	7500	1LP1212-3AC52-4	
320	429	315	Δ	38.1	4074	93	94.4	95	0.84	450	5.8	8963	7500	1LP1212-3AC72-4	
415	557	355	Δ	38	5284	93	94.4	94.9	0.87	560	6.5	12682	10200	1LP1212-3BC52-4	
440	590	355	Δ	38	5602	92.9	94.3	94.9	0.88	590	6.1	12885	10200	1LP1212-3BC72-4	
510	684	400	Δ	38	6494	93.4	94.6	95.5	0.86	700	5	12988	16400	1LP1212-4AC32-4	
580	778	400	Δ	38	7385	93.9	94.9	95.8	0.86	790	5.4	16247	16400	1LP1212-4AC52-4	
630	845	400	Δ	38	8021	94.1	95.1	95.9	0.87	850	5.6	18448	16400	1LP1212-4AC72-4	
705	945	450	Δ	37.9	8976	94.6	95.5	96.2	0.85	960	5.5	18850	20700	1LP1212-4BC12-4	
805	1080	450	Δ	37.9	10250	94.8	95.6	96.3	0.85	1100	5.6	22550	20700	1LP1212-4BC32-4	
870	1167	450	Δ	37.9	11077	94.8	95.6	96.3	0.86	1180	5.3	23262	20700	1LP1212-4BC52-4	
1015	1361	450	Δ	37.9	12923	95	95.8	96.4	0.86	1360	5.7	28431	20700	1LP1212-4BC72-4	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1212-3AB12-1...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-3AB32-1...	1540	1590	4.2	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AB52-1...	1710	1760	4.8	79	94.5	3600	1XB7 731	6SL3710-7LG37-4AA3	710
1LP1212-3AB72-1...	1920	1960	5.7	79	94.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BB52-1...	2350	2400	8	79	95	3300	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-3BB72-1...	2470	2530	8.7	79	95	3300	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-3AB12-2...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AB32-2...	1540	1590	4.2	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AB52-2...	1710	1760	4.8	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AB72-2...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BB52-2...	2350	2400	8	79	95	2600	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-3BB72-2...	2470	2530	8.7	79	95	2600	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4AB52-2...	3130	3200	14.9	79	95.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4AB72-2...	3400	3470	17.1	79	95.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BB12-2...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB32-2...	4360	4460	24.9	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB52-2...	4710	4810	27.7	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB72-2...	5150	5250	32	79	96	2000	1XB7 750	On request	On request
1LP1212-3AC12-3...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AC32-3...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-3AC52-3...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AC72-3...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3BC52-3...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BC72-3...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4AC32-3...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-4AC52-3...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4AC72-3...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-7LG41-3AA3	1230
1LP1212-4BC12-3...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BC32-3...	4300	4400	37.2	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC52-3...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC72-3...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request
1LP1212-3AC12-4...	1390	1430	5.7	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3AC32-4...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AC52-4...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AC72-4...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-3BC52-4...	2300	2360	14.3	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3BC72-4...	2450	2500	15.7	79	95	2500	1XB7 731	6SL3710-7LG37-4AA3	710
1LP1212-4AC32-4...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4AC52-4...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4AC72-4...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-4BC12-4...	4000	4100	33.2	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4BC32-4...	4300	4400	37.2	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BC52-4...	4730	4830	41.9	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BC72-4...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size FS	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
• Rated motor voltage 480 V															
• Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
• Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3000 rpm, 4-pole															
330	443	315	Δ	100.8	1050	95	95.8	95.7	0.88	470	5	2205	7500	1LP1222-3AB12-1 ■■■■	
420	563	315	Δ	100.8	1337	95.2	96.1	96.1	0.89	590	5.1	2808	7500	1LP1222-3AB32-1 ■■■■	
470	630	315	Δ	100.8	1496	95.4	96.2	96.2	0.9	650	5.3	3142	7500	1LP1222-3AB52-1 ■■■■	
535	717	315	Δ	100.8	1703	95.6	96.4	96.4	0.9	740	5.5	3747	7500	1LP1222-3AB72-1 ■■■■	
670	898	355	Δ	100.9	2133	95.3	96.3	96.4	0.88	950	4.1	3839	10200	1LP1222-3BB52-1 ■■■■	
765	1026	355	Δ/Δ	100.8	2435	95.7	96.5	96.5	0.89	1080	4.7	4870	10200	1LP1222-3BB72-1 ■■■■	
1500 rpm, 4-pole															
305	409	315	Δ	50.7	1942	94	95.2	95.7	0.88	440	5.5	4661	7500	1LP1222-3AB12-2 ■■■■	
415	557	315	Δ	50.6	2642	94.7	95.7	96.1	0.88	590	6.6	7398	7500	1LP1222-3AB32-2 ■■■■	
455	610	315	Δ	50.6	2897	94.8	95.8	96.2	0.9	630	6.8	8112	7500	1LP1222-3AB52-2 ■■■■	
510	684	315	Δ	50.6	3247	94.8	95.9	96.3	0.9	710	6.6	8767	7500	1LP1222-3AB72-2 ■■■■	
715	959	355	Δ	50.6	4552	95	96.1	96.4	0.88	1020	5.8	11835	10200	1LP1222-3BB52-2 ■■■■	
725	972	355	Δ	50.6	4615	94.8	96	96.4	0.89	1020	5.4	11076	10200	1LP1222-3BB72-2 ■■■■	
770	1033	400	Δ	50.5	4902	95.2	95.9	96.5	0.87	1120	5.7	11765	16400	1LP1222-4AB32-2 ■■■■	
855	1147	400	Δ	50.4	5443	95.4	96.1	96.6	0.88	1220	6.3	14152	16400	1LP1222-4AB52-2 ■■■■	
980	1314	400	Δ	50.4	6239	95.7	96.3	96.8	0.88	1400	6.8	17469	16400	1LP1222-4AB72-2 ■■■■	
1085	1455	450	Δ	50.3	6907	95.9	96.4	96.7	0.87	1560	6.9	20030	20700	1LP1222-4BB12-2 ■■■■	
1275	1710	450	Δ	50.3	8117	96.2	96.6	96.9	0.87	1820	7.6	25974	20700	1LP1222-4BB32-2 ■■■■	
1375	1844	450	Δ	50.3	8754	96.1	96.6	96.9	0.88	1940	7.1	25387	20700	1LP1222-4BB52-2 ■■■■	
1000 rpm, 6-pole															
265	355	315	Δ	50.7	2531	93.7	95	95.5	0.82	410	5.6	5315	7500	1LP1222-3AC12-3 ■■■■	
355	476	315	Δ	50.6	3390	94.1	95.3	95.7	0.83	540	5.9	7458	7500	1LP1222-3AC32-3 ■■■■	
390	523	315	Δ	50.6	3724	94.2	95.4	95.8	0.84	590	5.8	8193	7500	1LP1222-3AC52-3 ■■■■	
435	583	315	Δ	50.6	4154	94.4	95.6	95.9	0.84	650	6.2	9554	7500	1LP1222-3AC72-3 ■■■■	
540	724	355	Δ	50.6	5157	94.2	95.4	95.7	0.87	780	6.4	11861	10200	1LP1222-3BC52-3 ■■■■	
620	831	355	Δ	50.5	5921	94.5	95.6	95.9	0.87	900	6.7	14803	10200	1LP1222-3BC72-3 ■■■■	
640	858	400	Δ	50.5	6112	94.5	95.5	96.2	0.85	950	5	12224	16400	1LP1222-4AC32-3 ■■■■	
710	952	400	Δ	50.5	6780	94.9	95.7	96.4	0.86	1040	5.4	14238	16400	1LP1222-4AC52-3 ■■■■	
805	1080	400	Δ	50.5	7687	95.2	96	96.6	0.86	1180	5.8	17680	16400	1LP1222-4AC72-3 ■■■■	
875	1173	450	Δ	50.4	8356	95.6	96.2	96.7	0.84	1300	5.8	18383	20700	1LP1222-4BC12-3 ■■■■	
985	1321	450	Δ	50.4	9406	95.6	96.3	96.8	0.85	1440	5.6	19753	20700	1LP1222-4BC32-3 ■■■■	
1180	1582	450	Δ	50.3	11268	96	96.5	96.9	0.85	1740	6.4	28170	20700	1LP1222-4BC52-3 ■■■■	
750 rpm, 6-pole															
230	308	315	Δ	38.2	2928	92.2	93.8	94.6	0.81	365	5.3	6149	7500	1LP1222-3AC12-4 ■■■■	
285	382	315	Δ	38.2	3629	92.7	94.2	94.9	0.83	440	5.4	7621	7500	1LP1222-3AC32-4 ■■■■	
310	416	315	Δ	38.2	3947	92.6	94.2	95	0.84	470	5.2	7894	7500	1LP1222-3AC52-4 ■■■■	
340	456	315	Δ	38.2	4329	92.7	94.3	95	0.85	510	5.2	8658	7500	1LP1222-3AC72-4 ■■■■	
435	583	355	Δ	38.1	5539	92.9	94.4	95	0.87	640	5.7	12186	10200	1LP1222-3BC52-4 ■■■■	
485	650	355	Δ	38.1	6175	93	94.5	95.1	0.88	700	5.9	14202	10200	1LP1222-3BC72-4 ■■■■	
545	731	400	Δ	38.1	6939	93.4	94.7	95.6	0.86	800	4.9	13878	16400	1LP1222-4AC32-4 ■■■■	
610	818	400	Δ	38	7767	94	95	95.9	0.86	900	5.4	17087	16400	1LP1222-4AC52-4 ■■■■	
685	919	400	Δ	38	8722	94.3	95.2	96	0.86	1000	5.7	20061	16400	1LP1222-4AC72-4 ■■■■	
710	952	450	Δ	37.9	9040	94.7	95.5	96.2	0.84	1060	5.7	19888	20700	1LP1222-4BC12-4 ■■■■	
805	1080	450	Δ	37.9	10250	94.9	95.7	96.3	0.85	1200	5.4	22550	20700	1LP1222-4BC32-4 ■■■■	
930	1247	450	Δ	37.9	11841	95.1	95.9	96.5	0.85	1380	5.4	26050	20700	1LP1222-4BC52-4 ■■■■	
1050	1408	450	Δ	37.9	13369	95.2	95.9	96.5	0.86	1540	5.5	29412	20700	1LP1222-4BC72-4 ■■■■	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1222-3AB12-1...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AB32-1...	1540	1590	4.2	79	94.5	3600	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1222-3AB52-1...	1750	1800	4.8	79	94.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-3AB72-1...	1920	1960	5.7	79	94.5	3600	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1222-3BB52-1...	2350	2400	8	79	95	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-3BB72-1...	2600	2650	8.7	79	95	3300	2 x 1XB7 740	6SL3710-2GF41-4AA3	1314
1LP1222-3AB12-2...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1222-3AB32-2...	1540	1590	4.2	79	94.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1222-3AB52-2...	1750	1800	4.8	79	94.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-3AB72-2...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-3BB52-2...	2350	2400	8	79	95	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-3BB72-2...	2470	2530	8.7	79	95	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AB32-2...	2920	2990	13.2	79	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4AB52-2...	3130	3200	14.9	79	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4AB72-2...	3400	3470	17.1	79	95.5	2200	1XB7 750	On request	On request
1LP1222-4BB12-2...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1222-4BB32-2...	4360	4460	24.9	79	96	2000	1XB7 750	On request	On request
1LP1222-4BB52-2...	4710	4810	27.7	79	96	2000	1XB7 750	On request	On request
1LP1222-3AC12-3...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1222-3AC32-3...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AC52-3...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1222-3AC72-3...	1890	1940	8.9	79	94.5	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-3BC52-3...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1222-3BC72-3...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AC32-3...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AC52-3...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-2GF41-4AA3	1314
1LP1222-4AC72-3...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC12-3...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC32-3...	4300	4400	37.2	79	96	1700	1XB7 750	On request	On request
1LP1222-4BC52-3...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1222-3AC12-4...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LP1222-3AC32-4...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1222-3AC52-4...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AC72-4...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3BC52-4...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-3BC72-4...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-4AC32-4...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LP1222-4AC52-4...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AC72-4...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4BC12-4...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC32-4...	4300	4400	37.2	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC52-4...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1222-4BC72-4...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	Article No.		
<ul style="list-style-type: none"> Rated motor voltage 520 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3000 rpm, 4-pole																
355	476	315	Δ	100.9	1130	94.5	95.5	95.6	0.88	470	4.6	2147	7500	1LP1312-3AB12-1		
470	630	315	Δ	100.8	1496	95.2	96	96	0.9	600	5.5	3291	7500	1LP1312-3AB32-1		
525	704	315	Δ	100.8	1671	95.3	96.1	96.2	0.9	670	5.6	3676	7500	1LP1312-3AB52-1		
540	724	315	Δ	100.9	1719	95	96	96.1	0.9	690	4.8	3266	7500	1LP1312-3AB72-1		
725	972	355	Δ	100.8	2308	95.4	96.3	96.4	0.88	950	4.5	4616	10200	1LP1312-3BB52-1		
735	986	355	Δ	100.9	2340	95.2	96.3	96.4	0.88	960	4.1	4212	10200	1LP1312-3BB72-1		
1500 rpm, 4-pole																
285	382	315	Δ	50.7	1814	93.9	95.1	95.5	0.88	380	6.1	4716	7500	1LP1312-3AB12-2		
405	543	315	Δ	50.7	2578	93.8	95.1	95.7	0.9	530	5.7	6187	7500	1LP1312-3AB32-2		
475	637	315	Δ	50.7	3024	94.2	95.4	95.9	0.9	610	6.3	7862	7500	1LP1312-3AB52-2		
575	771	315	Δ	50.6	3661	94.6	95.7	96.1	0.9	740	6.9	10251	7500	1LP1312-3AB72-2		
710	952	355	Δ	50.6	4520	94.5	95.8	96.2	0.89	920	5.4	10848	10200	1LP1312-3BB52-2		
800	1073	355	Δ	50.6	5093	94.7	95.9	96.3	0.89	1040	5.7	13242	10200	1LP1312-3BB72-2		
880	1180	400	Δ	50.5	5602	95	95.9	96.5	0.89	1140	5.6	12885	16400	1LP1312-4AB52-2		
990	1328	400	Δ	50.5	6303	95.2	96	96.6	0.89	1280	5.9	15127	16400	1LP1312-4AB72-2		
1135	1522	450	Δ	50.3	7226	95.7	96.2	96.6	0.87	1500	6.5	19510	20700	1LP1312-4BB12-2		
1300	1743	450	Δ	50.3	8276	95.9	96.4	96.8	0.88	1700	6.3	21518	20700	1LP1312-4BB32-2		
1515	2032	450	Δ	50.3	9645	96.1	96.6	96.9	0.88	1980	7.1	27971	20700	1LP1312-4BB52-2		
1665	2233	450	Δ	50.3	10600	96	96.6	97	0.89	2150	6.9	29680	20700	1LP1312-4BB72-2		
1000 rpm, 6-pole																
260	349	315	Δ	50.6	2483	93.8	95	95.4	0.82	370	6.3	5711	7500	1LP1312-3AC12-3		
335	449	315	Δ	50.6	3199	93.7	95	95.4	0.83	470	6.1	7038	7500	1LP1312-3AC32-3		
375	503	315	Δ	50.7	3581	93.7	95	95.5	0.84	520	5.7	7520	7500	1LP1312-3AC52-3		
435	583	315	Δ	50.7	4154	93.6	95	95.5	0.85	600	5.6	8723	7500	1LP1312-3AC72-3		
525	704	355	Δ	50.5	5013	94.1	95.3	95.6	0.86	710	6.7	12533	10200	1LP1312-3BC32-3		
605	811	355	Δ	50.5	5777	94.3	95.4	95.7	0.87	810	7	14443	10200	1LP1312-3BC72-3		
680	912	400	Δ	50.5	6494	94.7	95.6	96.3	0.85	930	5.6	14287	16400	1LP1312-4AC32-3		
760	1019	400	Δ	50.5	7257	95	95.8	96.4	0.85	1040	5.9	16691	16400	1LP1312-4AC52-3		
820	1100	400	Δ	50.5	7830	95	95.8	96.4	0.86	1100	5.7	18009	16400	1LP1312-4AC72-3		
940	1261	450	Δ	50.4	8976	95.3	96	96.6	0.84	1300	5.3	18850	20700	1LP1312-4BC12-3		
1100	1475	450	Δ	50.4	10504	95.6	96.2	96.7	0.85	1500	5.9	24159	20700	1LP1312-4BC32-3		
1190	1596	450	Δ	50.4	11364	95.7	96.3	96.8	0.85	1620	5.9	26137	20700	1LP1312-4BC52-3		
1370	1837	450	Δ	50.4	13083	95.8	96.4	96.9	0.86	1840	5.8	28783	20700	1LP1312-4BC72-3		
750 rpm, 6-pole																
235	315	315	Δ	38.2	2992	91.6	93.2	94.2	0.81	345	5.3	6283	7500	1LP1312-3AC12-4		
280	375	315	Δ	38.2	3565	92.1	93.7	94.5	0.83	400	5.6	7487	7500	1LP1312-3AC32-4		
310	416	315	Δ	38.2	3947	91.9	93.6	94.5	0.85	435	5.1	7894	7500	1LP1312-3AC52-4		
355	476	315	Δ	38.2	4520	92.2	93.8	94.7	0.85	495	5.3	9040	7500	1LP1312-3AC72-4		
425	570	355	Δ	38	5411	92.9	94.3	94.9	0.87	580	6.3	12986	10200	1LP1312-3BC52-4		
455	610	355	Δ	38.1	5793	92.7	94.2	94.9	0.88	610	5.9	12745	10200	1LP1312-3BC72-4		
520	697	400	Δ	38	6621	93.2	94.5	95.5	0.86	710	4.9	13242	16400	1LP1312-4AC32-4		
605	811	400	Δ	38	7703	93.7	94.8	95.7	0.86	820	5.2	16176	16400	1LP1312-4AC52-4		
655	878	400	Δ	38	8340	93.9	95	95.8	0.87	880	5.4	18348	16400	1LP1312-4AC72-4		
770	1033	450	Δ	37.9	9804	94.2	95.3	96	0.85	1060	5	19608	20700	1LP1312-4BC12-4		
875	1173	450	Δ	37.9	11141	94.5	95.4	96.1	0.85	1200	5.1	22282	20700	1LP1312-4BC32-4		
945	1267	450	Δ	37.9	12032	94.4	95.4	96.2	0.86	1280	4.9	22861	20700	1LP1312-4BC52-4		
1100	1475	450	Δ	37.9	14006	94.8	95.6	96.3	0.86	1480	5.2	29413	20700	1LP1312-4BC72-4		

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1312-3AB12-1...	1390	1440	3.3	85	100.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AB32-1...	1620	1670	4.2	85	100.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3AB52-1...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3AB72-1...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3BB52-1...	2390	2450	8	85	101	3300	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-3BB72-1...	2520	2570	8.7	85	101	3300	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-3AB12-2...	1390	1440	3.3	85	100.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3AB32-2...	1580	1630	4.2	85	100.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AB52-2...	1790	1840	4.8	85	100.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3AB72-2...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-3BB52-2...	2390	2450	8	85	101	2600	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-3BB72-2...	2520	2570	8.7	85	101	2600	1XB7 740	6SL3710-7LG41-3AA3	1230
1LP1312-4AB52-2...	3160	3230	14.9	85	101.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4AB72-2...	3430	3500	17.1	85	101.5	2200	1XB7 750	On request	On request
1LP1312-4BB12-2...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB32-2...	4390	4490	24.9	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB52-2...	4750	4850	27.7	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB72-2...	5180	5280	32	85	102	2000	1XB7 750	On request	On request
1LP1312-3AC12-3...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3AC32-3...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AC52-3...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AC72-3...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3BC52-3...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3BC72-3...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-4AC32-3...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-4AC52-3...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-7LG41-3AA3	1230
1LP1312-4AC72-3...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BC12-3...	4040	4140	33.2	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC32-3...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC52-3...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC72-3...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request
1LP1312-3AC12-4...	1430	1470	5.7	85	100.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LP1312-3AC32-4...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3AC52-4...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-3AC72-4...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3BC52-4...	2350	2400	14.3	85	101	2500	1XB7 731	6SL3710-7LG37-4AA3	710
1LP1312-3BC72-4...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4AC32-4...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4AC52-4...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-4AC72-4...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-4BC12-4...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BC32-4...	4340	4440	37.2	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BC52-4...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC72-4...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power										1LP1 cast-iron series Version specifically for converter operation Article No.
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\phi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_B	Mech. torque limit 1) 2)	
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	
Rated motor voltage 480 V														
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)														
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)														
3000 rpm, 4-pole														
380	510	315	Δ	101	1210	94.6	95.6	95.7	0.88	540	4.4	2178	7500	1LP1322-3AB12-1 ■■■■
470	630	315	Δ	101	1496	94.9	95.9	96	0.89	660	4.6	2693	7500	1LP1322-3AB32-1 ■■■■
525	704	315	Δ	100.9	1671	95.1	96.1	96.2	0.89	740	4.7	3175	7500	1LP1322-3AB52-1 ■■■■
605	811	315	Δ	100.9	1926	95.3	96.2	96.3	0.9	840	4.8	3659	7500	1LP1322-3AB72-1 ■■■■
705	945	355	Δ	100.9	2244	95.2	96.2	96.4	0.87	1020	3.8	3815	10200	1LP1322-3BB52-1 ■■■■
810	1086	355	Δ/Δ	100.8	2578	95.6	96.5	96.6	0.88	1140	4.4	4898	10200	1LP1322-3BB72-1 ■■■■
1500 rpm, 4-pole														
305	409	315	Δ	50.7	1942	93.8	95.1	95.6	0.88	440	5.5	4661	7500	1LP1322-3AB12-2 ■■■■
460	617	315	Δ	50.7	2928	94.2	95.4	95.9	0.89	650	6	7320	7500	1LP1322-3AB32-2 ■■■■
515	691	315	Δ	50.7	3279	94.2	95.5	96	0.9	720	5.9	8198	7500	1LP1322-3AB52-2 ■■■■
575	771	315	Δ	50.7	3661	94.3	95.5	96	0.9	800	5.9	8786	7500	1LP1322-3AB72-2 ■■■■
750	1006	355	Δ/Δ	50.6	4775	94.8	96	96.4	0.89	1060	5.5	11938	10200	1LP1322-3BB52-2 ■■■■
760	1019	355	Δ/Δ	50.7	4838	94.6	95.9	96.4	0.89	1080	5.1	11127	10200	1LP1322-3BB72-2 ■■■■
830	1113	400	Δ	50.5	5284	95	95.8	96.5	0.87	1200	5.3	11625	16400	1LP1322-4AB32-2 ■■■■
925	1240	400	Δ	50.5	5889	95.3	96	96.6	0.88	1320	5.8	14134	16400	1LP1322-4AB52-2 ■■■■
1065	1428	400	Δ	50.5	6780	95.5	96.2	96.7	0.89	1500	6.4	17628	16400	1LP1322-4AB72-2 ■■■■
1175	1576	450	Δ	50.3	7480	95.9	96.4	96.8	0.87	1680	6.3	19448	20700	1LP1322-4BB12-2 ■■■■
1380	1851	450	Δ	50.3	8785	96.1	96.6	96.9	0.87	1980	6.9	25477	20700	1LP1322-4BB32-2 ■■■■
1465	1965	450	Δ	50.3	9326	96.1	96.6	96.9	0.88	2050	6.7	25180	20700	1LP1322-4BB52-2 ■■■■
1000 rpm, 6-pole														
250	335	315	Δ	50.6	2387	93.7	95	95.4	0.82	385	5.9	5251	7500	1LP1322-3AC12-3 ■■■■
385	516	315	Δ	50.7	3676	93.6	95	95.5	0.83	590	5.4	7352	7500	1LP1322-3AC32-3 ■■■■
430	577	315	Δ	50.7	4106	93.6	95	95.6	0.84	650	5.3	8212	7500	1LP1322-3AC52-3 ■■■■
480	644	315	Δ	50.7	4584	93.9	95.2	95.7	0.84	720	5.6	9626	7500	1LP1322-3AC72-3 ■■■■
560	751	355	Δ	50.6	5348	94.1	95.3	95.7	0.87	810	6.1	12300	10200	1LP1322-3BC52-3 ■■■■
640	858	355	Δ	50.5	6112	94.4	95.5	95.8	0.87	930	6.5	14669	10200	1LP1322-3BC72-3 ■■■■
665	892	400	Δ	50.6	6350	94.3	95.4	96.2	0.85	990	4.8	12065	16400	1LP1322-4AC32-3 ■■■■
745	999	400	Δ	50.5	7114	94.7	95.6	96.3	0.86	1080	5.2	14228	16400	1LP1322-4AC52-3 ■■■■
850	1140	400	Δ	50.5	8117	95.1	95.9	96.5	0.86	1240	5.5	17857	16400	1LP1322-4AC72-3 ■■■■
940	1261	450	Δ	50.4	8976	95.4	96.1	96.7	0.84	1400	5.4	18850	20700	1LP1322-4BC12-3 ■■■■
1070	1435	450	Δ	50.4	10218	95.4	96.2	96.7	0.85	1580	5.1	20436	20700	1LP1322-4BC32-3 ■■■■
1280	1717	450	Δ	50.4	12223	95.9	96.4	96.9	0.85	1880	5.9	28113	20700	1LP1322-4BC52-3 ■■■■
750 rpm, 6-pole														
250	335	315	Δ	38.3	3183	91.5	93.3	94.2	0.82	395	4.9	6048	7500	1LP1322-3AC12-4 ■■■■
305	409	315	Δ	38.2	3883	92.1	93.8	94.6	0.83	470	5.1	7766	7500	1LP1322-3AC32-4 ■■■■
335	449	315	Δ	38.3	4265	91.9	93.7	94.6	0.85	510	4.8	7677	7500	1LP1322-3AC52-4 ■■■■
370	496	315	Δ	38.3	4711	91.9	93.8	94.7	0.85	560	4.7	8480	7500	1LP1322-3AC72-4 ■■■■
450	603	355	Δ	38.1	5730	92.7	94.3	94.9	0.87	660	5.6	12033	10200	1LP1322-3BC52-4 ■■■■
500	671	355	Δ	38.1	6366	92.8	94.4	95	0.88	720	5.7	14005	10200	1LP1322-3BC72-4 ■■■■
565	758	400	Δ	38.1	7194	93.2	94.5	95.6	0.85	850	4.6	13669	16400	1LP1322-4AC32-4 ■■■■
645	865	400	Δ	38	8212	93.8	94.9	95.8	0.86	950	5.2	17245	16400	1LP1322-4AC52-4 ■■■■
725	972	400	Δ	38	9231	94	95.1	95.9	0.86	1060	5.4	20308	16400	1LP1322-4AC72-4 ■■■■
765	1026	450	Δ	37.9	9740	94.4	95.3	96.1	0.84	1140	5.3	20454	20700	1LP1322-4BC12-4 ■■■■
880	1180	450	Δ	37.9	11205	94.6	95.5	96.2	0.85	1300	5	22410	20700	1LP1322-4BC32-4 ■■■■
1015	1361	450	Δ	37.9	12923	94.8	95.7	96.4	0.85	1500	5	25846	20700	1LP1322-4BC52-4 ■■■■
1150	1542	450	Δ	37.9	14642	94.9	95.7	96.4	0.86	1680	5	29284	20700	1LP1322-4BC72-4 ■■■■

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 500 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1322-3AB12-1...	1390	1440	3.3	85	100.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3AB32-1...	1620	1670	4.2	85	100.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3AB52-1...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1322-3AB72-1...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-3BB52-1...	2390	2450	8	85	101	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-3BB72-1...	2640	2700	8.7	85	101	3300	2 x 1XB7 740	6SL3710-2GF41-4AA3	1314
1LP1322-3AB12-2...	1390	1440	3.3	85	100.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1322-3AB32-2...	1620	1670	4.2	85	100.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3AB52-2...	1790	1840	4.8	85	100.5	3000	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1322-3AB72-2...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-2GF38-6AA3	836
1LP1322-3BB52-2...	2520	2580	8	85	101	2600	2 x 1XB7 740	6SL3710-2GF41-4AA3	1314
1LP1322-3BB72-2...	2640	2700	8.7	85	101	2600	2 x 1XB7 740	6SL3710-2GF41-4AA3	1314
1LP1322-4AB32-2...	2950	3020	13.2	85	101.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4AB52-2...	3160	3230	14.9	85	101.5	2200	1XB7 750	On request	On request
1LP1322-4AB72-2...	3430	3500	17.1	85	101.5	2200	1XB7 750	On request	On request
1LP1322-4BB12-2...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1322-4BB32-2...	4390	4490	24.9	85	102	2000	1XB7 750	On request	On request
1LP1322-4BB52-2...	4750	4850	27.7	85	102	2000	1XB7 750	On request	On request
1LP1322-3AC12-3...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LP1322-3AC32-3...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1322-3AC52-3...	1830	1870	8.1	85	100.5	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3AC72-3...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1322-3BC52-3...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-2GF38-6AA3	836
1LP1322-3BC72-3...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC32-3...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC52-3...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4AC72-3...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4BC12-3...	4040	4140	33.2	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC32-3...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC52-3...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1322-3AC12-4...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LP1322-3AC32-4...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3AC52-4...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3AC72-4...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3BC52-4...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3BC72-4...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1322-4AC32-4...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC52-4...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC72-4...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4BC12-4...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4BC32-4...	4340	4440	37.2	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4BC52-4...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC72-4...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
Rated motor voltage 730 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3000 rpm, 4-pole															
315	422	315	Δ	100.8	1003	94.8	95.6	95.6	0.88	295	5.1	2106	7500	1LP1212-3AB13-1	
415	557	315	Δ	100.7	1321	95.3	96.1	96	0.9	380	5.8	3038	7500	1LP1212-3AB33-1	
475	637	315	Δ	100.7	1512	95.6	96.3	96.2	0.9	435	6.4	3931	7500	1LP1212-3AB53-1	
530	711	315	Δ	100.7	1687	95.7	96.4	96.3	0.91	480	6.3	4218	7500	1LP1212-3AB73-1	
695	932	355	Δ	100.8	2212	95.4	96.3	96.4	0.88	650	4.5	4424	10200	1LP1212-3BB53-1	
705	945	355	Δ	100.9	2244	95.2	96.3	96.4	0.88	660	4.1	4039	10200	1LP1212-3BB73-1	
1500 rpm, 4-pole															
290	389	315	Δ	50.6	1846	94.1	95.2	95.6	0.88	275	6.2	4984	7500	1LP1212-3AB13-2	
375	503	315	Δ	50.6	2387	94.6	95.6	95.9	0.88	355	6.9	7161	7500	1LP1212-3AB33-2	
430	577	315	Δ	50.6	2737	94.8	95.9	96.1	0.89	400	7.3	8211	7500	1LP1212-3AB53-2	
490	657	315	Δ	50.5	3119	94.9	96	96.2	0.9	450	7.6	9669	7500	1LP1212-3AB73-2	
660	885	355	Δ	50.6	4202	94.6	95.9	96.3	0.89	610	5.5	10505	10200	1LP1212-3BB53-2	
715	959	355	Δ	50.6	4552	94.7	95.9	96.3	0.89	660	5.6	11380	10200	1LP1212-3BB73-2	
765	1026	400	Δ	50.5	4870	95.2	95.9	96.5	0.87	730	5.9	12175	16400	1LP1212-4AB33-2	
825	1106	400	Δ	50.5	5252	95.3	96	96.6	0.88	770	6.1	13130	16400	1LP1212-4AB53-2	
975	1307	400	Δ	50.4	6207	95.6	96.2	96.7	0.88	910	7.1	18000	16400	1LP1212-4AB73-2	
1085	1455	450	Δ	50.3	6907	95.9	96.4	96.7	0.87	1020	7	20030	20700	1LP1212-4BB13-2	
1245	1670	450	Δ	50.3	7926	96	96.5	96.8	0.87	1180	7.3	23778	20700	1LP1212-4BB33-2	
1420	1904	450	Δ	50.3	9040	96.2	96.6	96.9	0.87	1340	7.6	28928	20700	1LP1212-4BB53-2	
1675	2246	450	Δ	50.3	10663	96.4	96.8	97	0.88	1560	7.9	34122	20700	1LP1212-4BB73-2	
1000 rpm, 6-pole															
245	329	315	Y	50.6	2340	93.9	95	95.4	0.82	250	6.5	5616	7500	1LP1212-3AC13-3	
320	429	315	Y	50.6	3056	93.9	95.1	95.6	0.83	320	6.2	7029	7500	1LP1212-3AC33-3	
360	483	315	Y	50.6	3438	94.1	95.3	95.7	0.84	355	6.2	7907	7500	1LP1212-3AC53-3	
405	543	315	Δ	50.6	3867	94.3	95.4	95.8	0.85	395	6.3	8894	7500	1LP1212-3AC73-3	
505	677	355	Δ	50.5	4822	94.2	95.3	95.6	0.86	485	6.9	12055	10200	1LP1212-3BC53-3	
585	784	355	Δ	50.5	5586	94.4	95.5	95.7	0.87	560	7.2	15082	10200	1LP1212-3BC73-3	
620	831	400	Δ	50.5	5921	94.6	95.5	96.2	0.85	600	5.3	12434	16400	1LP1212-4AC33-3	
715	959	400	Δ	50.4	6828	95.1	95.8	96.4	0.85	690	6.1	16387	16400	1LP1212-4AC53-3	
795	1066	400	Y	50.4	7592	95.4	96	96.6	0.86	760	6.7	19739	16400	1LP1212-4AC73-3	
880	1180	450	Δ	50.4	8403	95.6	96.2	96.6	0.84	860	5.9	19327	20700	1LP1212-4BC13-3	
995	1334	450	Δ	50.4	9502	95.7	96.3	96.7	0.85	960	6.1	21855	20700	1LP1212-4BC33-3	
1135	1522	450	Δ	50.3	10838	95.9	96.4	96.8	0.85	1100	6.3	26011	20700	1LP1212-4BC53-3	
1300	1743	450	Δ	50.3	12414	96	96.6	96.9	0.85	1260	6.3	29794	20700	1LP1212-4BC73-3	
750 rpm, 6-pole															
210	282	315	Y	38.1	2674	92.2	93.7	94.4	0.81	220	5.7	6150	7500	1LP1212-3AC13-4	
270	362	315	Y	38.1	3438	92.6	94.1	94.8	0.83	275	5.6	7564	7500	1LP1212-3AC33-4	
290	389	315	Δ	38.1	3692	92.7	94.2	94.9	0.84	290	5.7	8122	7500	1LP1212-3AC53-4	
325	436	315	Δ	38.2	4138	92.9	94.3	95	0.85	320	5.6	8690	7500	1LP1212-3AC73-4	
405	543	355	Y	38	5157	93	94.4	94.9	0.87	390	6.5	12377	10200	1LP1212-3BC53-4	
465	624	355	Δ	38	5921	93.1	94.5	95	0.87	445	6.5	14210	10200	1LP1212-3BC73-4	
525	704	400	Δ	38	6685	93.6	94.7	95.6	0.85	520	5.1	14039	16400	1LP1212-4AC33-4	
580	778	400	Δ	38	7385	94	95	95.9	0.86	560	5.7	16986	16400	1LP1212-4AC53-4	
630	845	400	Δ	38	8021	94.1	95.1	95.9	0.87	600	5.6	17646	16400	1LP1212-4AC73-4	
700	939	450	Δ	37.9	8913	94.6	95.5	96.2	0.85	680	5.4	18717	20700	1LP1212-4BC13-4	
805	1080	450	Δ	37.9	10250	94.8	95.6	96.2	0.85	780	5.6	22550	20700	1LP1212-4BC33-4	
900	1207	450	Δ	37.9	11459	94.9	95.7	96.3	0.86	860	5.6	25210	20700	1LP1212-4BC53-4	
1050	1408	450	Δ	37.9	13369	95.2	95.9	96.5	0.86	1000	5.7	30749	20700	1LP1212-4BC73-4	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1212-3AB13-1...	1350	1400	3.3	79	94.5	3600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3AB33-1...	1540	1590	4.2	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AB53-1...	1710	1760	4.8	79	94.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-3AB73-1...	1880	1920	5.7	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3BB53-1...	2350	2400	8	79	95	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BB73-1...	2470	2530	8.7	79	95	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3AB13-2...	1350	1400	3.3	79	94.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3AB33-2...	1540	1590	4.2	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AB53-2...	1710	1760	4.8	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AB73-2...	1880	1920	5.7	79	94.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-3BB53-2...	2350	2400	8	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BB73-2...	2470	2530	8.7	79	95	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4AB33-2...	2920	2990	13.2	79	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4AB53-2...	3130	3200	14.9	79	95.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4AB73-2...	3400	3470	17.1	79	95.5	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4BB13-2...	4080	4180	22.2	79	96	2000	1XB7 740	6SL3710-7LG41-3AA3	1230
1LP1212-4BB33-2...	4360	4460	24.9	79	96	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BB53-2...	4710	4810	27.7	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB73-2...	5150	5250	32	79	96	2000	1XB7 750	On request	On request
1LP1212-3AC13-3...	1390	1430	5.7	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LP1212-3AC33-3...	1560	1610	7	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3AC53-3...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AC73-3...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3BC53-3...	2300	2360	14.3	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3BC73-3...	2450	2500	15.7	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-4AC33-3...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4AC53-3...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4AC73-3...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4BC13-3...	4000	4100	33.2	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-4BC33-3...	4300	4400	37.2	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4BC53-3...	4730	4830	41.9	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BC73-3...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request
1LP1212-3AC13-4...	1390	1430	5.7	79	94.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LP1212-3AC33-4...	1560	1610	7	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3AC53-4...	1750	1790	8.1	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3AC73-4...	1850	1900	8.9	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3BC53-4...	2300	2360	14.3	79	95	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3BC73-4...	2450	2500	15.7	79	95	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-4AC33-4...	2920	2990	21	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-4AC53-4...	3130	3200	23.6	79	95.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-4AC73-4...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4BC13-4...	4000	4100	33.2	79	96	1700	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4BC33-4...	4300	4400	37.2	79	96	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4BC53-4...	4730	4830	41.9	79	96	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-4BC73-4...	5150	5250	47.8	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version
 1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 660 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3000 rpm, 4-pole															
320	429	315	Δ	100.8	1019	94.9	95.7	95.6	0.89	330	5.3	2242	7500	1LP1222-3AB13-1	
395	530	315	Δ	100.7	1257	95.3	96.1	96	0.9	400	5.8	3017	7500	1LP1222-3AB33-1	
460	617	315	Δ	100.7	1464	95.6	96.3	96.2	0.9	465	6.6	3806	7500	1LP1222-3AB53-1	
525	704	315	Δ	100.7	1671	95.7	96.4	96.3	0.91	520	6.5	4178	7500	1LP1222-3AB73-1	
675	905	355	Δ	100.8	2149	95.5	96.4	96.4	0.89	690	4.7	4298	10200	1LP1222-3BB53-1	
690	925	355	Δ	100.8	2196	95.3	96.3	96.4	0.88	710	4.3	4172	10200	1LP1222-3BB73-1	
1500 rpm, 4-pole															
295	396	315	Δ	50.7	1878	94.1	95.3	95.7	0.88	310	6.1	4883	7500	1LP1222-3AB13-2	
370	496	315	Δ	50.6	2355	94.4	95.6	95.9	0.89	380	6.6	6594	7500	1LP1222-3AB33-2	
410	550	315	Δ	50.6	2610	94.7	95.8	96.1	0.9	415	7.2	7569	7500	1LP1222-3AB53-2	
490	657	315	Δ	50.6	3119	94.9	95.9	96.2	0.9	495	7.4	9357	7500	1LP1222-3AB73-2	
690	925	355	Δ	50.6	4393	94.9	96	96.3	0.88	710	6	11861	10200	1LP1222-3BB53-2	
695	932	355	Δ	50.6	4425	94.7	95.9	96.3	0.89	710	5.6	11063	10200	1LP1222-3BB73-2	
755	1012	400	Δ	50.5	4806	95.1	95.9	96.5	0.87	790	5.9	12015	16400	1LP1222-4AB33-2	
815	1093	400	Δ	50.5	5188	95.3	96	96.6	0.88	840	6.2	12970	16400	1LP1222-4AB53-2	
920	1234	400	Y	50.4	5857	95.5	96.2	96.7	0.89	940	6.7	16400	16400	1LP1222-4AB73-2	
1090	1462	450	Δ	50.3	6939	96	96.4	96.7	0.87	1140	7.1	20817	20700	1LP1222-4BB13-2	
1250	1676	450	Δ	50.3	7958	96.1	96.6	96.8	0.87	1300	7.5	24670	20700	1LP1222-4BB33-2	
1340	1797	450	Δ	50.3	8531	96.1	96.5	96.8	0.88	1380	7.9	27299	20700	1LP1222-4BB53-2	
1585	2126	450	Δ	50.3	10090	96.2	96.7	96.9	0.88	1620	8.3	33297	20700	1LP1222-4BB73-2	
1000 rpm, 6-pole															
245	329	315	Y	50.6	2340	93.8	95	95.4	0.82	275	6.4	5616	7500	1LP1222-3AC13-3	
320	429	315	Δ	50.6	3056	94	95.2	95.6	0.83	355	6.3	7029	7500	1LP1222-3AC33-3	
365	489	315	Δ	50.6	3485	94.2	95.3	95.7	0.84	400	6.1	8015	7500	1LP1222-3AC53-3	
400	536	315	Δ	50.6	3820	94.4	95.5	95.8	0.84	435	6.7	9550	7500	1LP1222-3AC73-3	
500	671	355	Δ	50.5	4775	94.2	95.3	95.6	0.86	530	6.8	11938	10200	1LP1222-3BC53-3	
575	771	355	Δ	50.5	5491	94.4	95.5	95.7	0.87	610	7.3	14826	10200	1LP1222-3BC73-3	
605	811	400	Δ	50.5	5777	94.6	95.5	96.2	0.85	650	5.3	12132	16400	1LP1222-4AC33-3	
710	952	400	Δ	50.4	6780	95.1	95.9	96.4	0.85	760	6.2	16272	16400	1LP1222-4AC53-3	
780	1046	400	Δ	50.4	7448	95.3	96	96.5	0.86	830	6.4	18620	16400	1LP1222-4AC73-3	
880	1180	450	Δ	50.4	8403	95.6	96.2	96.6	0.84	950	6.2	19327	20700	1LP1222-4BC13-3	
1005	1348	450	Δ	50.3	9597	95.8	96.3	96.7	0.84	1080	6.4	23993	20700	1LP1222-4BC33-3	
1115	1495	450	Δ	50.4	10647	95.8	96.4	96.8	0.85	1200	6	24488	20700	1LP1222-4BC53-3	
1220	1636	450	Δ	50.3	11650	95.9	96.4	96.8	0.86	1280	6.4	29125	20700	1LP1222-4BC73-3	
750 rpm, 6-pole															
205	275	315	Y	38.2	2610	92.1	93.7	94.4	0.82	235	5.6	5742	7500	1LP1222-3AC13-4	
275	369	315	Δ	38.1	3501	92.8	94.2	94.8	0.82	310	5.9	8052	7500	1LP1222-3AC33-4	
290	389	315	Δ	38.1	3692	92.9	94.3	95	0.84	320	5.9	8492	7500	1LP1222-3AC53-4	
315	422	315	Δ	38.1	4011	92.8	94.3	95	0.85	345	5.6	8824	7500	1LP1222-3AC73-4	
410	550	355	Δ	38	5220	93	94.4	95	0.87	435	6.5	13050	10200	1LP1222-3BC53-4	
445	597	355	Δ	38	5666	93	94.4	95	0.88	470	6.4	13598	10200	1LP1222-3BC73-4	
515	691	400	Δ	38	6557	93.7	94.8	95.7	0.85	560	5.3	14425	16400	1LP1222-4AC33-4	
575	771	400	Δ	38	7321	93.9	95	95.8	0.86	620	5.4	16106	16400	1LP1222-4AC53-4	
640	858	400	Δ	37.9	8149	94.2	95.2	95.9	0.86	680	5.8	19558	16400	1LP1222-4AC73-4	
710	952	450	Δ	37.9	9040	94.6	95.5	96.2	0.83	780	5.6	19888	20700	1LP1222-4BC13-4	
800	1073	450	Δ	37.9	10186	94.8	95.6	96.3	0.85	860	5.6	22409	20700	1LP1222-4BC33-4	
905	1214	450	Δ	37.9	11523	94.9	95.7	96.4	0.86	960	5.7	25351	20700	1LP1222-4BC53-4	
1035	1388	450	Δ	37.9	13178	95.1	95.8	96.4	0.86	1100	5.7	30309	20700	1LP1222-4BC73-4	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1222-3AB13-1...	1350	1400	3.3	79	94.5	3600	1XB7 730	6SL3710-1GH34-1AA3	400
1LP1222-3AB33-1...	1540	1590	4.2	79	94.5	3600	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1222-3AB53-1...	1710	1760	4.8	79	94.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1222-3AB73-1...	1880	1920	5.7	79	94.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1222-3BB53-1...	2350	2400	8	79	95	3300	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-3BB73-1...	2470	2530	8.7	79	95	3300	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-3AB13-2...	1350	1400	3.3	79	94.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LP1222-3AB33-2...	1540	1590	4.2	79	94.5	3000	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1222-3AB53-2...	1710	1760	4.8	79	94.5	3000	1XB7 731	6SL3710-1GH34-7AA3	452
1LP1222-3AB73-2...	1880	1920	5.7	79	94.5	3000	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1222-3BB53-2...	2350	2400	8	79	95	2600	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-3BB73-2...	2470	2530	8.7	79	95	2600	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-4AB33-2...	2920	2990	13.2	79	95.5	2200	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1222-4AB53-2...	3130	3200	14.9	79	95.5	2200	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1222-4AB73-2...	3400	3470	17.1	79	95.5	2200	1XB7 750	6SL3710-2GH41-1AA3	1036
1LP1222-4BB13-2...	4080	4180	22.2	79	96	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1222-4BB33-2...	4360	4460	24.9	79	96	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1222-4BB53-2...	4710	4810	27.7	79	96	2000	1XB7 750	6SL3710-2GH41-5AA3	1462
1LP1222-4BB73-2...	5150	5250	32	79	96	2000	1XB7 750	6SL3710-2GH41-8EA3	1720
1LP1222-3AC13-3...	1390	1430	5.7	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LP1222-3AC33-3...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1222-3AC53-3...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1222-3AC73-3...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-1GH34-7AA3	452
1LP1222-3BC53-3...	2300	2360	14.3	79	95	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1222-3BC73-3...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-4AC33-3...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-4AC53-3...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1222-4AC73-3...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1222-4BC13-3...	4000	4100	33.2	79	96	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1222-4BC33-3...	4300	4400	37.2	79	96	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1222-4BC53-3...	4730	4830	41.9	79	96	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1222-4BC73-3...	5150	5250	47.8	79	96	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1222-3AC13-4...	1390	1430	5.7	79	94.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LP1222-3AC33-4...	1560	1610	7	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LP1222-3AC53-4...	1750	1790	8.1	79	94.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LP1222-3AC73-4...	1850	1900	8.9	79	94.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LP1222-3BC53-4...	2300	2360	14.3	79	95	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LP1222-3BC73-4...	2450	2500	15.7	79	95	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1222-4AC33-4...	2920	2990	21	79	95.5	2000	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1222-4AC53-4...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-4AC73-4...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1222-4BC13-4...	4000	4100	33.2	79	96	1700	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1222-4BC33-4...	4300	4400	37.2	79	96	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1222-4BC53-4...	4730	4830	41.9	79	96	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1222-4BC73-4...	5150	5250	47.8	79	96	1700	1XB7 750	6SL3710-2GH41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
• Rated motor voltage 730 V																
• Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)																
• Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150																
3000 rpm, 4-pole																
350	469	315	Δ	100.9	1114	94.4	95.4	95.5	0.88	330	4.5	2117	7500	1LP1312-3AB13-1		
465	624	315	Δ	100.8	1480	95	95.9	96	0.89	430	5.1	3108	7500	1LP1312-3AB33-1		
545	731	315	Δ	100.8	1735	95.3	96.2	96.2	0.9	500	5.6	3990	7500	1LP1312-3AB53-1		
605	811	315	Δ	100.8	1926	95.4	96.2	96.3	0.91	550	5.5	4237	7500	1LP1312-3AB73-1		
735	986	355	Δ	100.9	2340	95.3	96.3	96.4	0.88	690	4.2	4446	10200	1LP1312-3BB53-1		
740	992	355	Δ	100.9	2355	95.1	96.2	96.4	0.88	690	4	4004	10200	1LP1312-3BB73-1		
1500 rpm, 4-pole																
295	396	315	Δ	50.6	1878	93.9	95.1	95.5	0.88	280	6.1	4883	7500	1LP1312-3AB13-2		
420	563	315	Δ	50.7	2674	94.1	95.3	95.7	0.89	390	6.3	6952	7500	1LP1312-3AB33-2		
485	650	315	Δ	50.6	3088	94.3	95.5	95.9	0.9	445	6.5	8338	7500	1LP1312-3AB53-2		
555	744	315	Δ	50.6	3533	94.5	95.6	96	0.9	510	6.7	9892	7500	1LP1312-3AB73-2		
695	932	355	Δ	50.7	4425	94.5	95.7	96.2	0.89	650	5.2	10178	10200	1LP1312-3BB53-2		
755	1012	355	Δ	50.7	4806	94.5	95.8	96.3	0.89	700	5.3	11534	10200	1LP1312-3BB73-2		
830	1113	400	Δ	50.5	5284	95	95.8	96.4	0.87	790	5.5	12153	16400	1LP1312-4AB33-2		
895	1200	400	Δ	50.5	5698	95.1	95.9	96.5	0.88	840	5.6	13105	16400	1LP1312-4AB53-2		
1060	1421	400	Δ	50.4	6748	95.5	96.2	96.7	0.88	990	6.5	18220	16400	1LP1312-4AB73-2		
1180	1582	450	Δ	50.3	7512	95.8	96.4	96.8	0.87	1120	6.2	19531	20700	1LP1312-4BB13-2		
1350	1810	450	Δ	50.3	8594	96	96.5	96.8	0.87	1280	6.6	24063	20700	1LP1312-4BB33-2		
1520	2038	450	Δ	50.3	9677	96.1	96.6	96.9	0.88	1420	7.1	28063	20700	1LP1312-4BB53-2		
1790	2400	450	Δ	50.3	11395	96.3	96.8	97.1	0.88	1660	7.3	34185	20700	1LP1312-4BB73-2		
1000 rpm, 6-pole																
235	315	315	Y	50.6	2244	93.8	95	95.3	0.82	240	6.8	5610	7500	1LP1312-3AC13-3		
320	429	315	Y	50.6	3056	93.8	95	95.5	0.83	320	6.2	7029	7500	1LP1312-3AC33-3		
390	523	315	Y	50.7	3724	93.6	95	95.5	0.84	385	5.7	7820	7500	1LP1312-3AC53-3		
445	597	315	Δ	50.7	4249	93.8	95.1	95.6	0.85	435	5.7	8923	7500	1LP1312-3AC73-3		
525	704	355	Δ	50.5	5013	94	95.2	95.6	0.86	510	6.6	12031	10200	1LP1312-3BC53-3		
605	811	355	Δ	50.5	5777	94.3	95.4	95.7	0.87	580	7	15020	10200	1LP1312-3BC73-3		
645	865	400	Δ	50.5	6159	94.4	95.4	96.2	0.85	630	5.1	12318	16400	1LP1312-4AC33-3		
740	992	400	Δ	50.5	7066	95	95.8	96.4	0.86	710	5.9	16252	16400	1LP1312-4AC53-3		
825	1106	400	Y	50.4	7878	95.3	96	96.5	0.86	790	6.4	19695	16400	1LP1312-4AC73-3		
945	1267	450	Δ	50.4	9024	95.4	96.1	96.6	0.84	930	5.5	18950	20700	1LP1312-4BC13-3		
1065	1428	450	Δ	50.4	10170	95.5	96.2	96.7	0.85	1040	5.6	22374	20700	1LP1312-4BC33-3		
1215	1629	450	Δ	50.4	11602	95.7	96.4	96.8	0.85	1180	5.9	26685	20700	1LP1312-4BC53-3		
1395	1871	450	Δ	50.4	13321	95.9	96.5	96.9	0.86	1320	6	30638	20700	1LP1312-4BC73-3		
750 rpm, 6-pole																
225	302	315	Y	38.2	2865	91.6	93.2	94.1	0.81	235	5.4	6017	7500	1LP1312-3AC13-4		
290	389	315	Y	38.2	3692	92	93.7	94.5	0.84	290	5.3	7384	7500	1LP1312-3AC33-4		
315	422	315	Δ	38.2	4011	92	93.7	94.6	0.84	315	5.2	8022	7500	1LP1312-3AC53-4		
355	476	315	Δ	38.2	4520	92.1	93.9	94.7	0.85	350	5.1	8588	7500	1LP1312-3AC73-4		
415	557	355	Y	38	5284	92.9	94.3	94.9	0.87	400	6.3	12682	10200	1LP1312-3BC53-4		
470	630	355	Δ	38	5984	93.1	94.5	95	0.87	450	6.4	14362	10200	1LP1312-3BC73-4		
550	738	400	Δ	38	7003	93.3	94.5	95.5	0.85	540	4.9	14006	16400	1LP1312-4AC33-4		
615	825	400	Δ	38	7830	93.8	94.9	95.7	0.86	600	5.3	17226	16400	1LP1312-4AC53-4		
665	892	400	Δ	38	8467	93.8	94.9	95.8	0.87	640	5.2	17781	16400	1LP1312-4AC73-4		
765	1026	450	Δ	37.9	9740	94.2	95.3	96	0.85	750	4.9	19480	20700	1LP1312-4BC13-4		
875	1173	450	Δ	37.9	11141	94.4	95.4	96.1	0.85	850	5.2	22282	20700	1LP1312-4BC33-4		
980	1314	450	Δ	37.9	12478	94.5	95.5	96.2	0.86	940	5.1	24956	20700	1LP1312-4BC53-4		
1150	1542	450	Δ	37.9	14642	94.9	95.7	96.4	0.86	1100	5.2	30748	20700	1LP1312-4BC73-4		

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1312-3AB13-1...	1390	1440	3.3	85	100.5	3600	1XB7 730	6SL3710-7LG34-1AA3	400
1LP1312-3AB33-1...	1580	1630	4.2	85	100.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-3AB53-1...	1750	1800	4.8	85	100.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AB73-1...	1920	1960	5.7	85	100.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3BB53-1...	2390	2450	8	85	101	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3BB73-1...	2520	2570	8.7	85	101	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3AB13-2...	1390	1440	3.3	85	100.5	3000	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1312-3AB33-2...	1580	1630	4.2	85	100.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3AB53-2...	1750	1800	4.8	85	100.5	3000	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-3AB73-2...	1920	1960	5.7	85	100.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3BB53-2...	2390	2450	8	85	101	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3BB73-2...	2520	2570	8.7	85	101	2600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4AB33-2...	2950	3020	13.2	85	101.5	2200	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-4AB53-2...	3160	3230	14.9	85	101.5	2200	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-4AB73-2...	3430	3500	17.1	85	101.5	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-4BB13-2...	4120	4220	22.2	85	102	2000	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BB33-2...	4390	4490	24.9	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB53-2...	4750	4850	27.7	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB73-2...	5180	5280	32	85	102	2000	1XB7 750	On request	On request
1LP1312-3AC13-3...	1430	1470	5.7	85	100.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LP1312-3AC33-3...	1600	1650	7	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1312-3AC53-3...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3AC73-3...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-3BC53-3...	2350	2400	14.3	85	101	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3BC73-3...	2490	2550	15.7	85	101	2500	1XB7 731	6SL3710-7LG37-4AA3	710
1LP1312-4AC33-3...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4AC53-3...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4AC73-3...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-4BC13-3...	4040	4140	33.2	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-4BC33-3...	4340	4440	37.2	85	102	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LP1312-4BC53-3...	4770	4870	41.9	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BC73-3...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request
1LP1312-3AC13-4...	1430	1470	5.7	85	100.5	2600	1XB7 730	6SL3710-7LG32-6AA3	250
1LP1312-3AC33-4...	1600	1650	7	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1312-3AC53-4...	1790	1830	8.1	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1312-3AC73-4...	1890	1940	8.9	85	100.5	2600	1XB7 730	6SL3710-7LG34-1AA3	400
1LP1312-3BC53-4...	2350	2400	14.3	85	101	2500	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3BC73-4...	2490	2550	15.7	85	101	2500	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-4AC33-4...	2950	3020	21	85	101.5	2000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-4AC53-4...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4AC73-4...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4BC13-4...	4040	4140	33.2	85	102	1700	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-4BC33-4...	4340	4440	37.2	85	102	1700	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-4BC53-4...	4770	4870	41.9	85	102	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-4BC73-4...	5180	5280	47.8	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}	T _B Nm	Mech. torque limit 1) 2) Nm	
Rated motor voltage 660 V														
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)														
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)														
3000 rpm, 4-pole														
360	483	315	Δ	100.9	1146	94.5	95.5	95.6	0.88	375	4.6	2177	7500	1LP1322-3AB13-1 ■■■■
440	590	315	Δ	100.8	1401	95	95.9	96	0.89	450	5.2	2942	7500	1LP1322-3AB33-1 ■■■■
530	711	315	Δ	100.8	1687	95.4	96.2	96.2	0.9	540	5.7	3880	7500	1LP1322-3AB53-1 ■■■■
600	805	315	Δ	100.8	1910	95.4	96.3	96.3	0.91	600	5.6	4202	7500	1LP1322-3AB73-1 ■■■■
715	959	355	Δ	100.8	2276	95.3	96.3	96.4	0.88	740	4.4	4324	10200	1LP1322-3BB53-1 ■■■■
725	972	355	Δ	100.9	2308	95.2	96.2	96.4	0.88	750	4.1	4154	10200	1LP1322-3BB73-1 ■■■■
1500 rpm, 4-pole														
305	409	315	Δ	50.7	1942	93.8	95.1	95.6	0.88	320	5.9	5049	7500	1LP1322-3AB13-2 ■■■■
410	550	315	Δ	50.7	2610	93.9	95.2	95.7	0.89	425	5.9	6525	7500	1LP1322-3AB33-2 ■■■■
465	624	315	Δ	50.7	2960	94.1	95.4	95.9	0.9	475	6.3	7696	7500	1LP1322-3AB53-2 ■■■■
555	744	315	Δ	50.7	3533	94.4	95.6	96	0.9	560	6.6	9539	7500	1LP1322-3AB73-2 ■■■■
730	979	355	Δ	50.6	4647	94.7	95.9	96.3	0.88	760	5.6	11618	10200	1LP1322-3BB53-2 ■■■■
740	992	355	Δ	50.7	4711	94.5	95.8	96.3	0.89	760	5.2	11306	10200	1LP1322-3BB73-2 ■■■■
815	1093	400	Δ	50.5	5188	95	95.8	96.4	0.87	860	5.4	11932	16400	1LP1322-4AB33-2 ■■■■
880	1180	400	Δ	50.5	5602	95.1	95.9	96.5	0.88	910	5.7	12885	16400	1LP1322-4AB53-2 ■■■■
995	1334	400	Y	50.5	6334	95.4	96.1	96.6	0.89	1020	6.1	16468	16400	1LP1322-4AB73-2 ■■■■
1185	1589	450	Δ	50.3	7544	95.9	96.4	96.7	0.87	1240	6.5	20369	20700	1LP1322-4BB13-2 ■■■■
1355	1817	450	Δ	50.3	8626	96	96.5	96.9	0.87	1420	6.7	24153	20700	1LP1322-4BB33-2 ■■■■
1445	1938	450	Δ	50.3	9199	96	96.5	96.8	0.88	1480	7.2	26677	20700	1LP1322-4BB53-2 ■■■■
1715	2300	450	Δ	50.3	10918	96.2	96.6	96.9	0.88	1760	7.5	32754	20700	1LP1322-4BB73-2 ■■■■
1000 rpm, 6-pole														
235	315	315	Y	50.6	2244	93.8	95	95.3	0.82	265	6.7	5610	7500	1LP1322-3AC13-3 ■■■■
330	443	315	Δ	50.6	3151	93.7	95	95.4	0.83	365	6.1	7247	7500	1LP1322-3AC33-3 ■■■■
400	536	315	Δ	50.7	3820	93.6	95	95.5	0.85	435	5.6	8022	7500	1LP1322-3AC53-3 ■■■■
445	597	315	Δ	50.6	4249	93.9	95.1	95.6	0.84	485	6	9348	7500	1LP1322-3AC73-3 ■■■■
520	697	355	Δ	50.5	4966	94	95.2	95.6	0.87	550	6.5	11918	10200	1LP1322-3BC53-3 ■■■■
595	798	355	Δ	50.5	5682	94.3	95.5	95.7	0.87	630	7.1	14773	10200	1LP1322-3BC73-3 ■■■■
630	845	400	Δ	50.5	6016	94.4	95.4	96.1	0.85	680	5.1	12032	16400	1LP1322-4AC33-3 ■■■■
740	992	400	Δ	50.5	7066	95	95.8	96.4	0.85	790	5.9	16252	16400	1LP1322-4AC53-3 ■■■■
825	1106	400	Δ	50.4	7878	95.2	95.9	96.5	0.86	880	6.1	18907	16400	1LP1322-4AC73-3 ■■■■
945	1267	450	Δ	50.4	9024	95.5	96.1	96.6	0.84	1020	5.7	19853	20700	1LP1322-4BC13-3 ■■■■
1075	1442	450	Δ	50.4	10265	95.7	96.3	96.7	0.85	1140	6.1	23609	20700	1LP1322-4BC33-3 ■■■■
1200	1609	450	Δ	50.4	11459	95.6	96.3	96.8	0.86	1260	5.7	25210	20700	1LP1322-4BC53-3 ■■■■
1290	1730	450	Δ	50.3	12319	95.8	96.4	96.8	0.86	1360	6	28334	20700	1LP1322-4BC73-3 ■■■■
750 rpm, 6-pole														
220	295	315	Y	38.2	2801	91.5	93.2	94.1	0.82	250	5.3	5602	7500	1LP1322-3AC13-4 ■■■■
300	402	315	Δ	38.2	3820	92.1	93.7	94.5	0.83	335	5.5	8022	7500	1LP1322-3AC33-4 ■■■■
320	429	315	Δ	38.2	4074	92.2	93.8	94.6	0.84	355	5.3	8148	7500	1LP1322-3AC53-4 ■■■■
345	463	315	Δ	38.2	4393	92	93.8	94.7	0.85	380	5.1	8786	7500	1LP1322-3AC73-4 ■■■■
420	563	355	Δ	38	5348	92.9	94.4	94.9	0.87	445	6.4	12835	10200	1LP1322-3BC53-4 ■■■■
460	617	355	Δ	38	5857	92.8	94.3	94.9	0.88	485	6.2	13471	10200	1LP1322-3BC73-4 ■■■■
545	731	400	Δ	38	6939	93.4	94.6	95.5	0.85	590	5	13878	16400	1LP1322-4AC33-4 ■■■■
600	805	400	Δ	38	7639	93.7	94.8	95.7	0.86	640	5.3	16042	16400	1LP1322-4AC53-4 ■■■■
670	898	400	Δ	38	8531	94	95	95.9	0.87	710	5.6	19621	16400	1LP1322-4AC73-4 ■■■■
775	1039	450	Δ	37.9	9868	94.4	95.3	96.1	0.84	850	5.2	20723	20700	1LP1322-4BC13-4 ■■■■
870	1167	450	Δ	37.9	11077	94.5	95.4	96.2	0.85	940	5.1	22154	20700	1LP1322-4BC33-4 ■■■■
990	1328	450	Δ	37.9	12605	94.6	95.5	96.3	0.86	1060	5.1	25210	20700	1LP1322-4BC53-4 ■■■■
1125	1509	450	Δ	37.9	14324	94.8	95.7	96.4	0.86	1200	5.2	30080	20700	1LP1322-4BC73-4 ■■■■

For versions, see Article No. supplements and special versions. ■■■■

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 690 V, 50 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1322-3AB13-1...	1390	1440	3.3	85	100.5	3600	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1322-3AB33-1...	1580	1630	4.2	85	100.5	3600	1XB7 731	6SL3710-1GH34-7AA3	452
1LP1322-3AB53-1...	1750	1800	4.8	85	100.5	3600	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1322-3AB73-1...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1322-3BB53-1...	2390	2450	8	85	101	3300	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1322-3BB73-1...	2520	2570	8.7	85	101	3300	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1322-3AB13-2...	1390	1440	3.3	85	100.5	3000	1XB7 730	6SL3710-1GH33-3AA3	320
1LP1322-3AB33-2...	1580	1630	4.2	85	100.5	3000	1XB7 731	6SL3710-1GH34-7AA3	452
1LP1322-3AB53-2...	1750	1800	4.8	85	100.5	3000	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1322-3AB73-2...	1920	1960	5.7	85	100.5	3000	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1322-3BB53-2...	2390	2450	8	85	101	2600	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1322-3BB73-2...	2520	2570	8.7	85	101	2600	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1322-4AB33-2...	2950	3020	13.2	85	101.5	2200	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1322-4AB53-2...	3160	3230	14.9	85	101.5	2200	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1322-4AB73-2...	3430	3500	17.1	85	101.5	2200	1XB7 750	6SL3710-2GH41-1AA3	1036
1LP1322-4BB13-2...	4120	4220	22.2	85	102	2000	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1322-4BB33-2...	4390	4490	24.9	85	102	2000	1XB7 750	6SL3710-2GH41-5AA3	1462
1LP1322-4BB53-2...	4750	4850	27.7	85	102	2000	1XB7 750	6SL3710-2GH41-8EA3	1720
1LP1322-4BB73-2...	5180	5280	32	85	102	2000	1XB7 750	6SL3710-2GH42-0EA3	1940
1LP1322-3AC13-3...	1430	1470	5.7	85	100.5	2600	1XB7 730	6SL3710-1GH33-3AA3	320
1LP1322-3AC33-3...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1322-3AC53-3...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-1GH34-7AA3	452
1LP1322-3AC73-3...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1322-3BC53-3...	2350	2400	14.3	85	101	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1322-3BC73-3...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1322-4AC33-3...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1322-4AC53-3...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-1GH38-1AA3	790
1LP1322-4AC73-3...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1322-4BC13-3...	4040	4140	33.2	85	102	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1322-4BC33-3...	4340	4440	37.2	85	102	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1322-4BC53-3...	4770	4870	41.9	85	102	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1322-4BC73-3...	5180	5280	47.8	85	102	1700	1XB7 750	6SL3710-2GH41-5AA3	1462
1LP1322-3AC13-4...	1430	1470	5.7	85	100.5	2600	1XB7 730	6SL3710-1GH32-6AA3	250
1LP1322-3AC33-4...	1600	1650	7	85	100.5	2600	1XB7 730	6SL3710-1GH34-1AA3	400
1LP1322-3AC53-4...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1322-3AC73-4...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-1GH34-1AA3	400
1LP1322-3BC53-4...	2350	2400	14.3	85	101	2500	1XB7 731	6SL3710-1GH34-7AA3	452
1LP1322-3BC73-4...	2490	2550	15.7	85	101	2500	1XB7 731	6SL3710-1GH35-8AA3	560
1LP1322-4AC33-4...	2950	3020	21	85	101.5	2000	1XB7 731	6SL3710-1GH37-4AA3	710
1LP1322-4AC53-4...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1322-4AC73-4...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-1GH37-4AA3	710
1LP1322-4BC13-4...	4040	4140	33.2	85	102	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1322-4BC33-4...	4340	4440	37.2	85	102	1700	1XB7 740	6SL3710-2GH41-1AA3	1036
1LP1322-4BC53-4...	4770	4870	41.9	85	102	1700	1XB7 750	6SL3710-2GH41-4AA3	1314
1LP1322-4BC73-4...	5180	5280	47.8	85	102	1700	1XB7 750	6SL3710-2GH41-4AA3	1314

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										T _B	Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}					
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	Article No.		
<ul style="list-style-type: none"> Rated motor voltage 480 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 																
3600 rpm, 4-pole																
365	489	315	Δ	120.7	968	95.2	95.7	95.3	0.88	520	5.7	2226	7500	1LP1212-3AB15-5		
455	610	315	Δ	120.6	1207	95.6	96.1	95.7	0.9	630	6.7	3138	7500	1LP1212-3AB35-5		
470	630	315	Δ	120.8	1247	95.6	96.1	95.9	0.9	650	5.9	2868	7500	1LP1212-3AB55-5		
540	724	315	Δ	120.7	1432	95.8	96.3	96.1	0.9	750	6.2	3580	7500	1LP1212-3AB75-5		
3000 rpm, 4-pole																
670	898	355	Δ	100.9	2133	95.3	96.3	96.4	0.88	950	4.1	3839	10200	1LP1212-3BB55-1		
765	1026	355	Δ/Δ	100.8	2435	95.7	96.5	96.5	0.89	1080	4.7	4870	10200	1LP1212-3BB75-1		
1800 rpm, 4-pole																
360	483	315	Δ	60.6	1910	94.9	95.9	96.1	0.87	520	6.2	5157	7500	1LP1212-3AB15-6		
440	590	315	Δ	60.6	2334	95.1	96.1	96.3	0.89	620	6.4	6302	7500	1LP1212-3AB35-6		
490	657	315	Δ	60.6	2600	95.2	96.2	96.5	0.9	680	6.6	7020	7500	1LP1212-3AB55-6		
620	831	315	Δ	60.5	3289	95.7	96.5	96.7	0.9	860	7.9	10525	7500	1LP1212-3AB75-6		
795	1066	355	Δ/Δ	60.6	4218	95.4	96.4	96.7	0.89	1120	5.8	10967	10200	1LP1212-3BB55-6		
805	1080	355	Δ/Δ	60.7	4271	95.3	96.4	96.7	0.89	1120	5.4	10250	10200	1LP1212-3BB75-6		
825	1106	400	Δ	60.5	4377	95.6	96.2	96.6	0.88	1180	6	10505	16400	1LP1212-4AB35-6		
930	1247	400	Δ	60.4	4934	95.8	96.4	96.8	0.88	1320	6.8	13322	16400	1LP1212-4AB55-6		
1075	1442	400	Δ	60.4	5703	96.1	96.6	96.9	0.88	1520	7.7	17679	16400	1LP1212-4AB75-6		
1185	1589	450	Δ	60.3	6287	96.2	96.6	96.7	0.86	1720	7.6	20118	20700	1LP1212-4BB15-6		
1270	1703	450	Δ	60.3	6738	96.2	96.6	96.8	0.88	1800	7.7	21562	20700	1LP1212-4BB35-6		
1200 rpm, 6-pole																
310	416	315	Δ	60.7	2467	94.3	95.5	95.9	0.82	475	5.8	5181	7500	1LP1212-3AC15-7		
380	510	315	Δ	60.7	3024	94.6	95.7	96	0.84	570	5.9	6350	7500	1LP1212-3AC35-7		
450	603	315	Δ	60.6	3581	95	96	96.2	0.84	670	6.4	8236	7500	1LP1212-3AC55-7		
475	637	315	Δ	60.6	3780	95	96	96.3	0.84	710	6.3	8694	7500	1LP1212-3AC75-7		
625	838	355	Δ	60.5	4974	95	96	96.1	0.86	910	7.1	12932	10200	1LP1212-3BC55-7		
685	919	355	Δ	60.5	5451	95.1	96	96.2	0.87	990	7	13628	10200	1LP1212-3BC75-7		
750	1006	400	Δ	60.5	5968	95.3	96	96.6	0.85	1100	5.6	12533	16400	1LP1212-4AC35-7		
845	1133	400	Δ	60.4	6724	95.7	96.3	96.7	0.86	1220	6.4	16138	16400	1LP1212-4AC55-7		
895	1200	400	Δ	60.4	7122	95.8	96.4	96.8	0.86	1300	6.5	17805	16400	1LP1212-4AC75-7		
965	1294	450	Δ	60.3	7679	96.1	96.6	96.9	0.84	1440	6.4	18430	20700	1LP1212-4BC15-7		
1120	1502	450	Δ	60.4	8913	96.2	96.6	97	0.85	1640	6.2	20500	20700	1LP1212-4BC35-7		
900 rpm, 6-pole																
270	362	315	Δ	45.7	2865	93.4	94.7	95.3	0.82	420	5.6	6017	7500	1LP1212-3AC15-8		
340	456	315	Δ	45.6	3608	93.9	95.1	95.5	0.82	520	6.2	8298	7500	1LP1212-3AC35-8		
360	483	315	Δ	45.7	3820	93.7	95	95.5	0.85	540	5.6	8022	7500	1LP1212-3AC55-8		
395	530	315	Δ	45.6	4191	93.9	95.2	95.6	0.85	590	5.8	9220	7500	1LP1212-3AC75-8		
490	657	355	Δ	45.6	5199	93.7	95	95.5	0.87	710	6	11438	10200	1LP1212-3BC55-8		
560	751	355	Δ	45.6	5942	93.9	95.2	95.6	0.87	810	6.2	13667	10200	1LP1212-3BC75-8		
615	825	400	Δ	45.5	6525	94.2	95.3	96.1	0.85	910	5.1	13050	16400	1LP1212-4AC35-8		
680	912	400	Δ	45.5	7215	94.6	95.5	96.2	0.86	1000	5.4	15152	16400	1LP1212-4AC55-8		
775	1039	400	Δ	45.5	8223	94.9	95.7	96.4	0.87	1120	5.7	18913	16400	1LP1212-4AC75-8		
820	1100	450	Δ	45.4	8700	95.4	96.1	96.6	0.84	1220	5.8	19140	20700	1LP1212-4BC15-8		
915	1227	450	Δ	45.4	9708	95.4	96.1	96.6	0.85	1340	6.1	23299	20700	1LP1212-4BC35-8		
1070	1435	450	Δ	45.3	11353	95.7	96.3	96.7	0.85	1580	6.2	27247	20700	1LP1212-4BC55-8		
1220	1636	450	Δ	45.4	12945	95.8	96.4	96.8	0.85	1800	6	31068	20700	1LP1212-4BC75-8		

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1212-3AB15-5...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AB35-5...	1580	1630	4.2	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AB55-5...	1750	1800	4.8	79	94.5	3600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AB75-5...	1920	1960	5.7	79	94.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1212-3BB55-1...	2350	2400	8	79	95	3300	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1212-3BB75-1...	2600	2650	8.7	79	95	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-3AB15-6...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AB35-6...	1580	1630	4.2	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AB55-6...	1750	1800	4.8	79	94.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AB75-6...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1212-3BB55-6...	2480	2530	8	79	95	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-3BB75-6...	2600	2650	8.7	79	95	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-4AB35-6...	2920	2990	13.2	79	95.5	2200	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4AB55-6...	3130	3200	14.9	79	95.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1212-4AB75-6...	3400	3470	17.1	79	95.5	2200	1XB7 750	On request	On request
1LP1212-4BB15-6...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB35-6...	4360	4460	24.9	79	96	2000	1XB7 750	On request	On request
1LP1212-3AC15-7...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LP1212-3AC35-7...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AC55-7...	1790	1830	8.1	79	94.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3AC75-7...	1890	1940	8.9	79	94.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3BC55-7...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1212-3BC75-7...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-4AC35-7...	2960	3030	21	79	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4AC55-7...	3170	3240	23.6	79	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4AC75-7...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1212-4BC15-7...	4000	4100	33.2	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC35-7...	4300	4400	37.2	79	96	1700	1XB7 750	On request	On request
1LP1212-3AC15-8...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LP1212-3AC35-8...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AC55-8...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3AC75-8...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1212-3BC55-8...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1212-3BC75-8...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1212-4AC35-8...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1212-4AC55-8...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1212-4AC75-8...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4BC15-8...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1212-4BC35-8...	4300	4400	37.2	79	96	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1212-4BC55-8...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC75-8...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}	T _B	Article No.		
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3600 rpm, 4-pole															
370	496	315	Δ	120.7	981	95.3	95.8	95.3	0.88	580	6	2354	7500	1LP1222-3AB15-5	
435	583	315	Δ	120.7	1154	95.5	96	95.7	0.89	670	5.8	2654	7500	1LP1222-3AB35-5	
485	650	315	Δ	120.7	1287	95.7	96.2	95.9	0.9	740	6.5	3346	7500	1LP1222-3AB55-5	
560	751	315	Δ	120.6	1485	95.9	96.4	96.1	0.91	840	7.4	4307	7500	1LP1222-3AB75-5	
3000 rpm, 4-pole															
695	932	355	Δ/Δ	100.8	2212	95.6	96.5	96.5	0.88	1080	4.5	4424	10200	1LP1222-3BB55-1	
700	939	355	Δ/Δ	100.9	2228	95.4	96.4	96.5	0.88	1080	4.2	4233	10200	1LP1222-3BB75-1	
1800 rpm, 4-pole															
360	483	315	Δ	60.6	1910	94.9	95.9	96.1	0.87	570	6.2	5157	7500	1LP1222-3AB15-6	
445	597	315	Δ	60.6	2361	95.1	96.1	96.3	0.89	680	6.7	6611	7500	1LP1222-3AB35-6	
500	671	315	Δ	60.6	2653	95.3	96.3	96.5	0.9	760	6.9	7428	7500	1LP1222-3AB55-6	
580	778	315	Δ	60.6	3077	95.4	96.4	96.6	0.9	880	6.9	8616	7500	1LP1222-3AB75-6	
735	986	355	Δ/Δ	60.7	3899	95.2	96.3	96.6	0.89	1120	5.3	8968	10200	1LP1222-3BB55-6	
850	1140	355	Δ/Δ	60.6	4509	95.5	96.5	96.8	0.89	1300	5.9	11723	10200	1LP1222-3BB75-6	
865	1160	400	Δ	60.5	4589	95.7	96.3	96.7	0.88	1340	6	11473	16400	1LP1222-4AB55-6	
1010	1354	400	Δ	60.4	5358	95.9	96.5	96.9	0.89	1540	6.9	15002	16400	1LP1222-4AB75-6	
1115	1495	450	Δ	60.3	5915	96.1	96.5	96.6	0.87	1740	7.9	19520	20700	1LP1222-4BB15-6	
1200 rpm, 6-pole															
330	443	315	Δ	60.6	2626	94.7	95.7	96	0.82	550	6.3	5777	7500	1LP1222-3AC15-7	
395	530	315	Δ	60.7	3143	94.7	95.8	96.1	0.83	650	6	6915	7500	1LP1222-3AC35-7	
435	583	315	Δ	60.6	3462	94.9	96	96.2	0.84	710	6.3	7963	7500	1LP1222-3AC55-7	
490	657	315	Δ	60.6	3899	95	96	96.3	0.85	790	6	8578	7500	1LP1222-3AC75-7	
615	825	355	Δ	60.5	4894	95	96	96.1	0.86	980	7.1	12724	10200	1LP1222-3BC55-7	
685	919	355	Δ/Δ	60.5	5451	95.1	96.1	96.2	0.87	1080	7	13628	10200	1LP1222-3BC75-7	
725	972	400	Δ	60.5	5769	95.4	96.1	96.6	0.85	1160	5.7	12692	16400	1LP1222-4AC35-7	
825	1106	400	Δ	60.4	6565	95.8	96.3	96.7	0.85	1320	6.6	16413	16400	1LP1222-4AC55-7	
920	1234	400	Δ	60.4	7321	95.9	96.4	96.8	0.86	1460	6.6	18303	16400	1LP1222-4AC75-7	
1000	1341	450	Δ	60.3	7958	96.1	96.6	96.9	0.84	1620	6.5	19099	20700	1LP1222-4BC15-7	
900 rpm, 6-pole															
265	355	315	Δ	45.6	2812	93.5	94.7	95.2	0.8	460	5.9	6468	7500	1LP1222-3AC15-8	
330	443	315	Δ	45.7	3501	93.7	94.9	95.4	0.83	550	5.8	7702	7500	1LP1222-3AC35-8	
360	483	315	Δ	45.6	3820	93.8	95.1	95.6	0.84	590	5.8	8404	7500	1LP1222-3AC55-8	
395	530	315	Δ	45.7	4191	93.8	95.1	95.6	0.85	640	5.5	8382	7500	1LP1222-3AC75-8	
500	671	355	Δ	45.5	5305	93.9	95.1	95.5	0.87	790	6.3	12201	10200	1LP1222-3BC55-8	
575	771	355	Δ	45.5	6101	94.1	95.3	95.6	0.87	910	6.6	15253	10200	1LP1222-3BC75-8	
635	852	400	Δ	45.5	6738	94.5	95.4	96.1	0.85	1020	5.4	14150	16400	1LP1222-4AC35-8	
700	939	400	Δ	45.5	7427	94.8	95.6	96.3	0.85	1140	5.8	17082	16400	1LP1222-4AC55-8	
755	1012	400	Δ	45.5	8011	94.9	95.7	96.4	0.87	1180	5.9	18425	16400	1LP1222-4AC75-8	
805	1080	450	Δ	45.4	8541	95.4	96	96.6	0.84	1300	5.9	19644	20700	1LP1222-4BC15-8	
905	1214	450	Δ	45.4	9602	95.4	96.1	96.6	0.85	1460	5.6	21124	20700	1LP1222-4BC35-8	
985	1321	450	Δ	45.4	10451	95.5	96.2	96.7	0.85	1580	5.6	22992	20700	1LP1222-4BC55-8	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1222-3AB15-5...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AB35-5...	1580	1630	4.2	79	94.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3AB55-5...	1750	1800	4.8	79	94.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3AB75-5...	1920	1960	5.7	79	94.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1222-3BB55-1...	2480	2530	8	79	95	3300	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1222-3BB75-1...	2600	2650	8.7	79	95	3300	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1222-3AB15-6...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AB35-6...	1580	1630	4.2	79	94.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3AB55-6...	1750	1800	4.8	79	94.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3AB75-6...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1222-3BB55-6...	2480	2530	8	79	95	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1222-3BB75-6...	2600	2650	8.7	79	95	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1222-4AB55-6...	3130	3200	14.9	79	95.5	2200	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4AB75-6...	3400	3470	17.1	79	95.5	2200	1XB7 750	On request	On request
1LP1222-4BB15-6...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1222-3AC15-7...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AC35-7...	1600	1650	7	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3AC55-7...	1790	1830	8.1	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3AC75-7...	1890	1940	8.9	79	94.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3BC55-7...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1222-3BC75-7...	2620	2670	15.7	79	95	2500	2 x 1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1222-4AC35-7...	2960	3030	21	79	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4AC55-7...	3170	3240	23.6	79	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4AC75-7...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1222-4BC15-7...	4000	4100	33.2	79	96	1700	1XB7 750	On request	On request
1LP1222-3AC15-8...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-1GE35-0AA3	477
1LP1222-3AC35-8...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AC55-8...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1222-3AC75-8...	1890	1940	8.9	79	94.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1222-3BC55-8...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1222-3BC75-8...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1222-4AC35-8...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1222-4AC55-8...	3170	3240	23.6	79	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4AC75-8...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4BC15-8...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1222-4BC35-8...	4300	4400	37.2	79	96	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1222-4BC55-8...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 480 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3600 rpm, 4-pole															
415	557	315	Δ	120.8	1101	95	95.7	95.5	0.88	590	5.1	2202	7500	1LP1312-3AB15-5	
525	704	315	Δ	120.8	1393	95.5	96.1	95.9	0.89	740	5.7	3204	7500	1LP1312-3AB35-5	
540	724	315	Δ	120.9	1432	95.4	96.1	96	0.89	760	5	2864	7500	1LP1312-3AB55-5	
620	831	315	Δ	120.8	1645	95.6	96.3	96.2	0.9	860	5.4	3455	7500	1LP1312-3AB75-5	
3000 rpm, 4-pole															
705	945	355	Δ	100.9	2244	95.2	96.2	96.4	0.87	1020	3.8	3815	10200	1LP1312-3BB55-1	
810	1086	355	Δ/Δ	100.8	2578	95.6	96.5	96.6	0.88	1140	4.4	4898	10200	1LP1312-3BB75-1	
1800 rpm, 4-pole															
405	543	315	Δ	60.7	2149	94.4	95.8	95.9	0.88	580	5.6	5158	7500	1LP1312-3AB15-6	
495	664	315	Δ	60.7	2626	94.6	95.8	96.1	0.89	700	5.7	6302	7500	1LP1312-3AB35-6	
550	738	315	Δ	60.7	2918	94.8	95.9	96.3	0.9	770	5.8	7003	7500	1LP1312-3AB55-6	
705	945	315	Δ	60.6	3740	95.3	96.3	96.6	0.9	980	6.9	10472	7500	1LP1312-3AB75-6	
840	1126	355	Δ/Δ	60.6	4456	95.3	96.3	96.6	0.89	1180	5.5	10694	10200	1LP1312-3BB55-6	
850	1140	355	Δ/Δ	60.7	4509	95.1	96.3	96.6	0.89	1200	5.1	10371	10200	1LP1312-3BB75-6	
895	1200	400	Δ	60.5	4748	95.4	96.1	96.6	0.88	1280	5.5	10920	16400	1LP1312-4AB35-6	
1010	1354	400	Δ	60.5	5358	95.7	96.3	96.7	0.88	1440	6.2	13395	16400	1LP1312-4AB55-6	
1180	1582	400	Δ	60.4	6260	96	96.5	96.9	0.88	1680	7	17528	16400	1LP1312-4AB75-6	
1315	1763	450	Δ	60.3	6976	96.2	96.6	96.8	0.87	1880	6.9	19533	20700	1LP1312-4BB15-6	
1410	1891	450	Δ	60.3	7480	96.2	96.6	96.8	0.88	2000	6.9	20944	20700	1LP1312-4BB35-6	
1200 rpm, 6-pole															
340	456	315	Δ	60.8	2706	93.8	95.2	95.7	0.82	520	5.3	5141	7500	1LP1312-3AC15-7	
415	557	315	Δ	60.7	3302	94.1	95.4	95.9	0.84	620	5.4	6274	7500	1LP1312-3AC35-7	
495	664	315	Δ	60.7	3939	94.6	95.8	96.1	0.84	740	5.8	8272	7500	1LP1312-3AC55-7	
525	704	315	Δ	60.7	4178	94.6	95.7	96.1	0.85	780	5.7	8774	7500	1LP1312-3AC75-7	
650	872	355	Δ	60.5	5173	94.9	95.9	96.1	0.86	950	6.8	12933	10200	1LP1312-3BC55-7	
710	952	355	Δ	60.5	5650	95	96	96.1	0.87	1020	6.8	13560	10200	1LP1312-3BC75-7	
780	1046	400	Δ	60.5	6207	95.2	96	96.6	0.85	1140	5.4	12414	16400	1LP1312-4AC35-7	
890	1194	400	Δ	60.5	7082	95.6	96.2	96.7	0.86	1300	6	16289	16400	1LP1312-4AC55-7	
940	1261	400	Δ	60.4	7480	95.8	96.3	96.8	0.86	1360	6.2	17952	16400	1LP1312-4AC75-7	
1020	1368	450	Δ	60.4	8117	96	96.5	96.9	0.84	1520	6.1	18669	20700	1LP1312-4BC15-7	
1190	1596	450	Δ	60.4	9470	96.1	96.6	97	0.84	1760	5.8	20834	20700	1LP1312-4BC35-7	
900 rpm, 6-pole															
295	396	315	Δ	45.8	3130	92.8	94.3	95	0.82	460	5.1	5947	7500	1LP1312-3AC15-8	
370	496	315	Δ	45.7	3926	93.4	94.8	95.3	0.82	570	5.7	8245	7500	1LP1312-3AC35-8	
395	530	315	Δ	45.7	4191	93.1	94.6	95.3	0.85	590	5.1	7963	7500	1LP1312-3AC55-8	
435	583	315	Δ	45.7	4615	93.3	94.8	95.4	0.85	650	5.3	9230	7500	1LP1312-3AC75-8	
505	677	355	Δ	45.6	5358	93.6	94.9	95.4	0.87	740	5.8	11788	10200	1LP1312-3BC55-8	
570	764	355	Δ	45.6	6048	93.8	95.1	95.5	0.88	820	6.1	13910	10200	1LP1312-3BC75-8	
640	858	400	Δ	45.6	6791	94.1	95.1	96	0.85	950	4.9	13582	16400	1LP1312-4AC35-8	
715	959	400	Δ	45.5	7586	94.4	95.4	96.2	0.86	1040	5.2	15172	16400	1LP1312-4AC55-8	
815	1093	400	Δ	45.5	8647	94.7	95.6	96.3	0.87	1180	5.5	19023	16400	1LP1312-4AC75-8	
905	1214	450	Δ	45.4	9602	95.1	95.9	96.5	0.84	1360	5.2	19204	20700	1LP1312-4BC15-8	
980	1314	450	Δ	45.4	10398	95.3	96	96.5	0.85	1440	5.7	22876	20700	1LP1312-4BC35-8	
1150	1542	450	Δ	45.4	12202	95.5	96.2	96.7	0.85	1700	5.8	28065	20700	1LP1312-4BC55-8	
1330	1784	450	Δ	45.4	14112	95.6	96.3	96.8	0.86	1940	5.6	31046	20700	1LP1312-4BC75-8	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1312-3AB15-5...	1390	1440	3.3	85	100.5	3600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AB35-5...	1620	1670	4.2	85	100.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3AB55-5...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3AB75-5...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-3BB55-1...	2390	2450	8	85	101	3300	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-3BB75-1...	2640	2700	8.7	85	101	3300	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-3AB15-6...	1390	1440	3.3	85	100.5	3000	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AB35-6...	1620	1670	4.2	85	100.5	3000	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3AB55-6...	1790	1840	4.8	85	100.5	3000	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3AB75-6...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-3BB55-6...	2520	2580	8	85	101	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-3BB75-6...	2640	2700	8.7	85	101	2600	2 x 1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-4AB35-6...	2950	3020	13.2	85	101.5	2200	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1312-4AB55-6...	3160	3230	14.9	85	101.5	2200	1XB7 750	On request	On request
1LP1312-4AB75-6...	3430	3500	17.1	85	101.5	2200	1XB7 750	On request	On request
1LP1312-4BB15-6...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB35-6...	4390	4490	24.9	85	102	2000	1XB7 750	On request	On request
1LP1312-3AC15-7...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AC35-7...	1640	1690	7	85	100.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3AC55-7...	1830	1870	8.1	85	100.5	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3AC75-7...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3BC55-7...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-3BC75-7...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-4AC35-7...	2990	3060	21	85	101.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1312-4AC55-7...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1312-4AC75-7...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1312-4BC15-7...	4040	4140	33.2	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC35-7...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1312-3AC15-8...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-7LE35-0AA3	477
1LP1312-3AC35-8...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AC55-8...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-7LE36-1AA3	590
1LP1312-3AC75-8...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-7LE37-5AA3	725
1LP1312-3BC55-8...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-3BC75-8...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-7LE38-4AA3	820
1LP1312-4AC35-8...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-7LE41-0AA3	960
1LP1312-4AC55-8...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-7LE41-2AA3	1230
1LP1312-4AC75-8...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-7LE41-2AA3	1230
1LP1312-4BC15-8...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-7LE41-4AA3	1370
1LP1312-4BC35-8...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC55-8...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC75-8...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	Article No.	
<ul style="list-style-type: none"> Rated motor voltage 440 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM) 															
3600 rpm, 4-pole															
425	570	315	Δ	120.8	1127	95.1	95.7	95.5	0.88	660	5.3	2367	7500	1LP1322-3AB15-5	
495	664	315	Δ	120.9	1313	95.3	96	95.8	0.89	760	5.1	2626	7500	1LP1322-3AB35-5	
560	751	315	Δ	120.8	1485	95.6	96.2	96	0.9	850	5.6	3267	7500	1LP1322-3AB55-5	
650	872	315	Δ	120.7	1724	95.8	96.4	96.2	0.91	970	6.4	4310	7500	1LP1322-3AB75-5	
3000 rpm, 4-pole															
735	986	355	Δ/Δ	100.8	2340	95.5	96.4	96.5	0.88	1140	4.3	4446	10200	1LP1322-3BB55-1	
745	999	355	Δ/Δ	100.9	2371	95.3	96.3	96.5	0.88	1160	4	4031	10200	1LP1322-3BB75-1	
1800 rpm, 4-pole															
400	536	315	Δ	60.7	2122	94.4	95.8	95.9	0.88	620	5.7	5093	7500	1LP1322-3AB15-6	
500	671	315	Δ	60.7	2653	94.7	95.8	96.2	0.89	770	5.9	6633	7500	1LP1322-3AB35-6	
565	758	315	Δ	60.7	2997	94.9	96	96.3	0.9	860	6.1	7493	7500	1LP1322-3AB55-6	
650	872	315	Δ	60.7	3448	95	96.1	96.4	0.91	980	6.2	8620	7500	1LP1322-3AB75-6	
770	1033	355	Δ/Δ	60.7	4085	95	96.2	96.6	0.89	1180	5	8987	10200	1LP1322-3BB55-6	
895	1200	355	Δ/Δ	60.6	4748	95.4	96.4	96.7	0.89	1360	5.6	11870	10200	1LP1322-3BB75-6	
940	1261	400	Δ	60.5	4987	95.6	96.2	96.6	0.87	1480	6	12468	16400	1LP1322-4AB35-6	
1095	1468	400	Δ	60.5	5809	95.8	96.4	96.9	0.89	1680	6.3	14523	16400	1LP1322-4AB75-6	
1255	1683	450	Δ	60.3	6658	96.1	96.5	96.7	0.87	1960	7	19308	20700	1LP1322-4BB15-6	
1200 rpm, 6-pole															
360	483	315	Δ	60.7	2865	94.3	95.4	95.8	0.82	600	5.7	5730	7500	1LP1322-3AC15-7	
425	570	315	Δ	60.7	3382	94.3	95.5	95.9	0.83	700	5.6	6764	7500	1LP1322-3AC35-7	
480	644	315	Δ	60.7	3820	94.5	95.7	96	0.84	780	5.7	8022	7500	1LP1322-3AC55-7	
535	717	315	Δ	60.7	4257	94.6	95.8	96.1	0.85	860	5.5	8514	7500	1LP1322-3AC75-7	
635	852	355	Δ	60.5	5053	94.9	96	96.1	0.86	1000	7	12633	10200	1LP1322-3BC55-7	
710	952	355	Δ/Δ	60.5	5650	95	96	96.2	0.87	1120	6.8	13560	10200	1LP1322-3BC75-7	
760	1019	400	Δ	60.5	6048	95.2	96	96.6	0.85	1220	5.4	12701	16400	1LP1322-4AC35-7	
865	1160	400	Δ	60.4	6883	95.7	96.3	96.7	0.85	1380	6.3	16519	16400	1LP1322-4AC55-7	
975	1307	400	Δ	60.4	7759	95.8	96.4	96.8	0.86	1540	6.2	18622	16400	1LP1322-4AC75-7	
1065	1428	450	Δ	60.4	8475	96	96.5	96.9	0.84	1720	6.1	18645	20700	1LP1322-4BC15-7	
900 rpm, 6-pole															
290	389	315	Δ	45.7	3077	92.9	94.4	95	0.81	500	5.5	6462	7500	1LP1322-3AC15-8	
360	483	315	Δ	45.7	3820	93.1	94.6	95.2	0.83	600	5.4	7640	7500	1LP1322-3AC35-8	
395	530	315	Δ	45.7	4191	93.2	94.7	95.3	0.84	650	5.3	8382	7500	1LP1322-3AC55-8	
430	577	315	Δ	45.7	4562	93.2	94.7	95.4	0.85	700	5	8668	7500	1LP1322-3AC75-8	
515	691	355	Δ	45.6	5464	93.7	95	95.5	0.87	820	6.1	12567	10200	1LP1322-3BC55-8	
595	798	355	Δ	45.5	6313	94	95.2	95.6	0.87	940	6.4	15151	10200	1LP1322-3BC75-8	
660	885	400	Δ	45.5	7003	94.3	95.3	96.1	0.85	1060	5.2	14706	16400	1LP1322-4AC35-8	
740	992	400	Δ	45.5	7852	94.7	95.5	96.3	0.85	1200	5.5	17274	16400	1LP1322-4AC55-8	
795	1066	400	Δ	45.5	8435	94.8	95.6	96.3	0.87	1260	5.5	18557	16400	1LP1322-4AC75-8	
875	1173	450	Δ	45.4	9284	95.1	95.9	96.5	0.84	1420	5.4	19496	20700	1LP1322-4BC15-8	
990	1328	450	Δ	45.4	10504	95.1	95.9	96.6	0.85	1600	5.1	21008	20700	1LP1322-4BC35-8	
1065	1428	450	Δ	45.4	11300	95.3	96	96.6	0.85	1720	5.1	22600	20700	1LP1322-4BC55-8	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 460 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1322-3AB15-5...	1430	1480	3.3	85	100.5	3600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AB35-5...	1620	1670	4.2	85	100.5	3600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1322-3AB55-5...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-3AB75-5...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1322-3BB55-1...	2520	2580	8	85	101	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1322-3BB75-1...	2640	2700	8.7	85	101	3300	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1322-3AB15-6...	1430	1480	3.3	85	100.5	3000	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AB35-6...	1620	1670	4.2	85	100.5	3000	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1322-3AB55-6...	1790	1840	4.8	85	100.5	3000	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-3AB75-6...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1322-3BB55-6...	2520	2580	8	85	101	2600	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1322-3BB75-6...	2640	2700	8.7	85	101	2600	2 x 1XB7 740	6SL3710-2GE41-6AA3	1516
1LP1322-4AB35-6...	2950	3020	13.2	85	101.5	2200	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1322-4AB75-6...	3430	3500	17.1	85	101.5	2200	1XB7 750	On request	On request
1LP1322-4BB15-6...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1322-3AC15-7...	1470	1510	5.7	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AC35-7...	1640	1690	7	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AC55-7...	1830	1870	8.1	85	100.5	2600	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1322-3AC75-7...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-3BC55-7...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-2GE41-1AA3	1092
1LP1322-3BC75-7...	2660	2720	15.7	85	101	2500	2 x 1XB7 740	6SL3710-2GE41-4AA3	1340
1LP1322-4AC35-7...	2990	3060	21	85	101.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1322-4AC55-7...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1322-4AC75-7...	3430	3500	26.6	85	101.5	2000	1XB7 750	On request	On request
1LP1322-4BC15-7...	4040	4140	33.2	85	102	1700	1XB7 750	On request	On request
1LP1322-3AC15-8...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-1GE36-1AA3	590
1LP1322-3AC35-8...	1640	1690	7	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AC55-8...	1830	1870	8.1	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3AC75-8...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-1GE37-5AA3	725
1LP1322-3BC55-8...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-1GE38-4AA3	820
1LP1322-3BC75-8...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-1GE41-0AA3	960
1LP1322-4AC35-8...	2990	3060	21	85	101.5	2000	1XB7 750	6SL3710-2GE41-1AA3	1092
1LP1322-4AC55-8...	3200	3270	23.6	85	101.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1322-4AC75-8...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-2GE41-4AA3	1340
1LP1322-4BC15-8...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-2GE41-6AA3	1516
1LP1322-4BC35-8...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC55-8...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
Rated motor voltage 610 V																
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)																
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150																
3600 rpm, 4-pole																
340	456	315	Δ	120.8	902	95	95.5	95.1	0.88	385	5.5	1984	7500	1LP1212-3AB16-5		
440	590	315	Δ	120.6	1167	95.5	96	95.6	0.9	480	6.8	3151	7500	1LP1212-3AB36-5		
480	644	315	Δ	120.6	1273	95.7	96.2	95.8	0.9	520	7.2	3564	7500	1LP1212-3AB56-5		
550	738	315	Δ	120.6	1459	95.8	96.3	96	0.91	590	7.4	4231	7500	1LP1212-3AB76-5		
3000 rpm, 4-pole																
635	852	355	Δ	100.9	2021	95.2	96.2	96.3	0.88	710	4.2	3638	10200	1LP1212-3BB56-1		
720	966	355	Δ	100.8	2292	95.4	96.4	96.4	0.89	790	4.5	4584	10200	1LP1212-3BB76-1		
1800 rpm, 4-pole																
325	436	315	Δ	60.6	1724	94.7	95.7	96	0.88	365	6.3	4655	7500	1LP1212-3AB16-6		
430	577	315	Δ	60.6	2281	95.2	96.1	96.3	0.88	480	7.5	7071	7500	1LP1212-3AB36-6		
465	624	315	Δ	60.6	2467	95.3	96.2	96.4	0.9	510	7.5	7648	7500	1LP1212-3AB56-6		
570	764	315	Δ	60.5	3024	95.6	96.5	96.6	0.89	630	8.3	9979	7500	1LP1212-3AB76-6		
760	1019	355	Δ	60.6	4032	95.3	96.3	96.6	0.89	840	5.9	10483	10200	1LP1212-3BB56-6		
845	1133	355	Δ	60.5	4483	95.5	96.5	96.7	0.89	930	6.4	12552	10200	1LP1212-3BB76-6		
890	1194	400	Δ	60.5	4722	95.7	96.3	96.7	0.88	990	6.4	12277	16400	1LP1212-4AB56-6		
1005	1348	400	Δ	60.4	5332	95.8	96.4	96.8	0.89	1100	6.8	14396	16400	1LP1212-4AB76-6		
1120	1502	450	Δ	60.3	5942	96.1	96.4	96.6	0.87	1260	7.7	19014	20700	1LP1212-4BB16-6		
1290	1730	450	Δ	60.3	6844	96.2	96.6	96.7	0.86	1460	8.5	23954	20700	1LP1212-4BB36-6		
1515	2032	450	Δ	60.3	8037	96.4	96.7	96.9	0.87	1700	8.6	28130	20700	1LP1212-4BB56-6		
1200 rpm, 6-pole																
295	396	315	Δ	60.6	2348	94.5	95.5	95.8	0.82	355	6.5	5400	7500	1LP1212-3AC16-7		
365	489	315	Δ	60.6	2905	94.7	95.7	96	0.83	435	6.6	6972	7500	1LP1212-3AC36-7		
395	530	315	Δ	60.6	3143	94.8	95.8	96.1	0.84	465	6.5	7229	7500	1LP1212-3AC56-7		
440	590	315	Δ	60.6	3501	94.9	95.9	96.2	0.85	510	6.7	8402	7500	1LP1212-3AC76-7		
590	791	355	Δ	60.4	4695	95.1	96	96	0.86	680	8	13616	10200	1LP1212-3BC56-7		
650	872	355	Δ	60.5	5173	95	96	96.1	0.87	740	7.6	13967	10200	1LP1212-3BC76-7		
725	972	400	Δ	60.5	5769	95.5	96.1	96.6	0.85	840	6.2	13269	16400	1LP1212-4AC36-7		
795	1066	400	Δ	60.4	6326	95.7	96.3	96.7	0.85	920	6.6	15815	16400	1LP1212-4AC56-7		
855	1147	400	Δ	60.4	6804	95.7	96.3	96.7	0.86	980	6.4	17010	16400	1LP1212-4AC76-7		
990	1328	450	Δ	60.3	7878	96.1	96.5	96.8	0.83	1160	6.6	18907	20700	1LP1212-4BC16-7		
1130	1515	450	Δ	60.3	8992	96.1	96.6	96.9	0.84	1320	6.7	22480	20700	1LP1212-4BC36-7		
1210	1623	450	Δ	60.3	9629	96.3	96.7	97	0.85	1400	6.8	25035	20700	1LP1212-4BC56-7		
1405	1884	450	Δ	60.3	11181	96.3	96.8	97.1	0.86	1600	6.6	27953	20700	1LP1212-4BC76-7		
900 rpm, 6-pole																
240	322	315	Y	45.6	2546	93.2	94.5	95	0.81	295	6.1	5856	7500	1LP1212-3AC16-8		
320	429	315	Δ	45.6	3395	93.8	95	95.4	0.82	390	6.3	8148	7500	1LP1212-3AC36-8		
335	449	315	Δ	45.6	3554	93.8	95.1	95.5	0.84	395	6.3	8174	7500	1LP1212-3AC56-8		
375	503	315	Δ	45.6	3979	94	95.2	95.6	0.84	445	6.6	9948	7500	1LP1212-3AC76-8		
470	630	355	Δ	45.5	4987	93.8	95.1	95.4	0.87	540	6.8	12468	10200	1LP1212-3BC56-8		
525	704	355	Δ	45.5	5570	93.9	95.2	95.5	0.87	600	6.8	13925	10200	1LP1212-3BC76-8		
595	798	400	Δ	45.5	6313	94.4	95.3	96	0.85	700	5.5	13889	16400	1LP1212-4AC36-8		
675	905	400	Δ	45.4	7162	94.8	95.6	96.3	0.85	790	6.1	17189	16400	1LP1212-4AC56-8		
745	999	400	Δ	45.4	7905	95	95.8	96.4	0.86	860	6.3	19763	16400	1LP1212-4AC76-8		
820	1100	450	Δ	45.4	8700	95.3	96	96.5	0.83	970	5.7	19140	20700	1LP1212-4BC16-8		
905	1214	450	Δ	45.4	9602	95.3	96	96.6	0.85	1040	5.8	21124	20700	1LP1212-4BC36-8		
1050	1408	450	Δ	45.4	11141	95.5	96.2	96.7	0.85	1220	6	25624	20700	1LP1212-4BC56-8		
1160	1556	450	Δ	45.3	12308	95.6	96.2	96.7	0.86	1320	6.3	30770	20700	1LP1212-4BC76-8		

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1212-3AB16-5...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AB36-5...	1540	1590	4.2	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AB56-5...	1710	1760	4.8	79	94.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AB76-5...	1880	1920	5.7	79	94.5	3600	1XB7 731	6SL3710-7LG37-4AA3	710
1LP1212-3BB56-1...	2350	2400	8	79	95	3300	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BB76-1...	2470	2530	8.7	79	95	3300	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-3AB16-6...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AB36-6...	1540	1590	4.2	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AB56-6...	1710	1760	4.8	79	94.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AB76-6...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BB56-6...	2350	2400	8	79	95	2600	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-3BB76-6...	2470	2530	8.7	79	95	2600	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4AB56-6...	3130	3200	14.9	79	95.5	2200	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4AB76-6...	3400	3470	17.1	79	95.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BB16-6...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB36-6...	4360	4460	24.9	79	96	2000	1XB7 750	On request	On request
1LP1212-4BB56-6...	4710	4810	27.7	79	96	2000	1XB7 750	On request	On request
1LP1212-3AC16-7...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AC36-7...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-3AC56-7...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3AC76-7...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3BC56-7...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-3BC76-7...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4AC36-7...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-4AC56-7...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4AC76-7...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4BC16-7...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BC36-7...	4300	4400	37.2	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC56-7...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1212-4BC76-7...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request
1LP1212-3AC16-8...	1390	1430	5.7	79	94.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1212-3AC36-8...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AC56-8...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1212-3AC76-8...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1212-3BC56-8...	2300	2360	14.3	79	95	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1212-3BC76-8...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4AC36-8...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1212-4AC56-8...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1212-4AC76-8...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1212-4BC16-8...	4000	4100	33.2	79	96	1700	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1212-4BC36-8...	4300	4400	37.2	79	96	1700	1XB7 740	6SL3710-7LG41-3AA3	1230
1LP1212-4BC56-8...	4730	4830	41.9	79	96	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1212-4BC76-8...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Selection and ordering data

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power									T _B	Mech. torque limit 1) 2)	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cos φ _{rated} , 4/4	I _{rated}	I _{LR} / I _{rated}				
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm		
Rated motor voltage 550 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)															
3600 rpm, 4-pole															
345	463	315	Δ	120.6	915	95.2	95.6	95.2	0.89	425	6.6	2379	7500	1LP1222-3AB16-5	
420	563	315	Δ	120.6	1114	95.5	96	95.5	0.9	510	7.3	3231	7500	1LP1222-3AB36-5	
465	624	315	Δ	120.5	1233	95.7	96.1	95.7	0.9	560	7.9	3822	7500	1LP1222-3AB56-5	
505	677	315	Δ	120.7	1340	95.7	96.2	95.9	0.91	610	6.4	3350	7500	1LP1222-3AB76-5	
3000 rpm, 4-pole															
640	858	355	Δ	100.8	2037	95.3	96.2	96.3	0.88	790	4.3	3870	10200	1LP1222-3BB56-1	
720	966	355	Δ	100.8	2292	95.5	96.4	96.4	0.89	880	4.8	4813	10200	1LP1222-3BB76-1	
1800 rpm, 4-pole															
315	422	315	Δ	60.7	1671	94.6	95.6	95.9	0.88	395	6	4345	7500	1LP1222-3AB16-6	
415	557	315	Δ	60.6	2202	95.2	96.1	96.2	0.89	510	7.4	6826	7500	1LP1222-3AB36-6	
460	617	315	Δ	60.6	2440	95.3	96.2	96.4	0.9	560	7.4	7320	7500	1LP1222-3AB56-6	
570	764	315	Δ	60.5	3024	95.7	96.5	96.6	0.89	700	8.5	10584	7500	1LP1222-3AB76-6	
760	1019	355	Δ	60.6	4032	95.3	96.4	96.6	0.89	930	6.1	10886	10200	1LP1222-3BB56-6	
775	1039	355	Δ	60.6	4112	95.2	96.3	96.6	0.89	950	5.6	10280	10200	1LP1222-3BB76-6	
815	1093	400	Δ	60.5	4324	95.5	96.2	96.6	0.88	1020	6.1	10810	16400	1LP1222-4AB36-6	
905	1214	400	Δ	60.4	4801	95.7	96.3	96.7	0.88	1120	6.7	12963	16400	1LP1222-4AB56-6	
1030	1381	400	Δ	60.4	5464	95.9	96.5	96.8	0.89	1260	7.4	15846	16400	1LP1222-4AB76-6	
1155	1549	450	Δ	60.3	6127	96.1	96.5	96.7	0.86	1460	7.3	18381	20700	1LP1222-4BB16-6	
1355	1817	450	Δ	60.3	7188	96.3	96.7	96.8	0.87	1700	8	23720	20700	1LP1222-4BB36-6	
1425	1911	450	Δ	60.3	7560	96.3	96.7	96.8	0.87	1780	8.4	25704	20700	1LP1222-4BB56-6	
1200 rpm, 6-pole															
280	375	315	Δ	60.7	2228	94.1	95.3	95.7	0.83	370	6	4679	7500	1LP1222-3AC16-7	
360	483	315	Δ	60.6	2865	94.7	95.7	96	0.83	475	6.6	6876	7500	1LP1222-3AC36-7	
395	530	315	Δ	60.6	3143	94.8	95.8	96.1	0.84	520	6.4	7229	7500	1LP1222-3AC56-7	
445	597	315	Δ	60.6	3541	94.9	96	96.2	0.85	570	6.8	8498	7500	1LP1222-3AC76-7	
570	764	355	Δ	60.5	4536	95	95.9	96	0.86	730	7.6	12247	10200	1LP1222-3BC56-7	
650	872	355	Δ	60.4	5173	95.2	96	96	0.86	830	8.3	15519	10200	1LP1222-3BC76-7	
730	979	400	Δ	60.4	5809	95.6	96.2	96.6	0.85	940	6.5	14523	16400	1LP1222-4AC36-7	
775	1039	400	Δ	60.4	6167	95.6	96.2	96.7	0.86	980	6.5	14801	16400	1LP1222-4AC56-7	
870	1167	400	Δ	60.4	6923	95.9	96.4	96.7	0.86	1100	7.3	19384	16400	1LP1222-4AC76-7	
995	1334	450	Δ	60.3	7918	96	96.5	96.8	0.83	1300	6.8	19795	20700	1LP1222-4BC16-7	
1075	1442	450	Δ	60.3	8555	96.2	96.6	96.9	0.84	1400	6.8	22243	20700	1LP1222-4BC36-7	
1240	1663	450	Δ	60.3	9868	96.2	96.7	97	0.85	1580	6.7	24670	20700	1LP1222-4BC56-7	
900 rpm, 6-pole															
245	329	315	Δ	45.6	2600	93.4	94.6	95.1	0.8	340	6.4	6240	7500	1LP1222-3AC16-8	
310	416	315	Δ	45.6	3289	93.7	95	95.3	0.81	425	6.6	8223	7500	1LP1222-3AC36-8	
340	456	315	Δ	45.6	3608	93.8	95.1	95.5	0.83	450	6.4	8659	7500	1LP1222-3AC56-8	
375	503	315	Δ	45.6	3979	94	95.2	95.6	0.84	490	6.5	9550	7500	1LP1222-3AC76-8	
465	624	355	Δ	45.5	4934	93.8	95.1	95.4	0.87	590	6.7	12335	10200	1LP1222-3BC56-8	
520	697	355	Δ	45.5	5517	93.9	95.1	95.5	0.87	660	6.8	13793	10200	1LP1222-3BC76-8	
600	805	400	Δ	45.5	6366	94.4	95.4	96.1	0.85	780	5.5	14005	16400	1LP1222-4AC36-8	
645	865	400	Δ	45.5	6844	94.7	95.5	96.2	0.86	820	5.8	15741	16400	1LP1222-4AC56-8	
720	966	400	Δ	45.4	7639	95	95.7	96.4	0.86	920	6	18334	16400	1LP1222-4AC76-8	
770	1033	450	Δ	45.4	8170	95.1	95.8	96.4	0.84	1000	5.8	17974	20700	1LP1222-4BC16-8	
870	1167	450	Δ	45.4	9231	95.3	96	96.6	0.85	1120	5.6	20308	20700	1LP1222-4BC36-8	
1010	1354	450	Δ	45.4	10716	95.5	96.1	96.7	0.85	1300	5.9	24647	20700	1LP1222-4BC56-8	
1130	1515	450	Δ	45.4	11990	95.5	96.2	96.7	0.86	1440	5.7	26378	20700	1LP1222-4BC76-8	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, low noise – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1222-3AB16-5...	1350	1400	3.3	79	94.5	3600	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1222-3AB36-5...	1540	1590	4.2	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AB56-5...	1710	1760	4.8	79	94.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AB76-5...	1920	1960	5.7	79	94.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-3BB56-1...	2350	2400	8	79	95	3300	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1222-3BB76-1...	2470	2530	8.7	79	95	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-3AB16-6...	1350	1400	3.3	79	94.5	3000	1XB7 731	6SL3710-1GF34-1AA3	400
1LP1222-3AB36-6...	1540	1590	4.2	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AB56-6...	1710	1760	4.8	79	94.5	3000	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AB76-6...	1920	1960	5.7	79	94.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-3BB56-6...	2350	2400	8	79	95	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-3BB76-6...	2470	2530	8.7	79	95	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AB36-6...	2920	2990	13.2	79	95.5	2200	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AB56-6...	3130	3200	14.9	79	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4AB76-6...	3400	3470	17.1	79	95.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BB16-6...	4080	4180	22.2	79	96	2000	1XB7 750	On request	On request
1LP1222-4BB36-6...	4360	4460	24.9	79	96	2000	1XB7 750	On request	On request
1LP1222-4BB56-6...	4710	4810	27.7	79	96	2000	1XB7 750	On request	On request
1LP1222-3AC16-7...	1390	1430	5.7	79	94.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LP1222-3AC36-7...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AC56-7...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3AC76-7...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1222-3BC56-7...	2340	2400	14.3	79	95	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1222-3BC76-7...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-2GF38-6AA3	836
1LP1222-4AC36-7...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AC56-7...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4AC76-7...	3400	3470	26.6	79	95.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC16-7...	4000	4100	33.2	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC36-7...	4300	4400	37.2	79	96	1700	1XB7 750	On request	On request
1LP1222-4BC56-7...	4730	4830	41.9	79	96	1700	1XB7 750	On request	On request
1LP1222-3AC16-8...	1390	1430	5.7	79	94.5	2600	1XB7 730	6SL3710-1GF34-1AA3	400
1LP1222-3AC36-8...	1560	1610	7	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1222-3AC56-8...	1750	1790	8.1	79	94.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1222-3AC76-8...	1850	1900	8.9	79	94.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1222-3BC56-8...	2300	2360	14.3	79	95	2500	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1222-3BC76-8...	2490	2540	15.7	79	95	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1222-4AC36-8...	2960	3030	21	79	95.5	2000	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1222-4AC56-8...	3170	3240	23.6	79	95.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LP1222-4AC76-8...	3400	3470	26.6	79	95.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4BC16-8...	4000	4100	33.2	79	96	1700	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1222-4BC36-8...	4300	4400	37.2	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC56-8...	4730	4830	41.9	79	96	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1222-4BC76-8...	5150	5250	47.8	79	96	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power									T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}				
Rated motor voltage 610 V															
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)															
Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150															
3600 rpm, 4-pole															
385	516	315	Δ	120.9	1021	94.7	95.4	95.3	0.88	435	4.9	2042	7500	1LP1312-3AB16-5 ■■■■	
505	677	315	Δ	120.7	1340	95.4	96	95.8	0.89	560	5.8	3082	7500	1LP1312-3AB36-5 ■■■■	
560	751	315	Δ	120.7	1485	95.5	96.1	95.9	0.9	610	6.1	3564	7500	1LP1312-3AB56-5 ■■■■	
640	858	315	Δ	120.7	1698	95.7	96.3	96.1	0.91	690	6.3	4245	7500	1LP1312-3AB76-5 ■■■■	
3000 rpm, 4-pole															
680	912	355	Δ	100.9	2165	95	96.1	96.3	0.87	770	3.9	3681	10200	1LP1312-3BB56-1 ■■■■	
760	1019	355	Δ	100.9	2419	95.3	96.3	96.4	0.88	850	4.2	4354	10200	1LP1312-3BB76-1 ■■■■	
1800 rpm, 4-pole															
355	476	315	Δ	60.7	1883	94.2	95.8	95.9	0.88	400	5.8	4519	7500	1LP1312-3AB16-6 ■■■■	
485	650	315	Δ	60.6	2573	94.8	95.9	96.1	0.89	540	6.6	7204	7500	1LP1312-3AB36-6 ■■■■	
530	711	315	Δ	60.6	2812	94.9	95.9	96.3	0.9	580	6.6	7592	7500	1LP1312-3AB56-6 ■■■■	
655	878	315	Δ	60.6	3475	95.2	96.2	96.5	0.9	720	7.2	10078	7500	1LP1312-3AB76-6 ■■■■	
800	1073	355	Δ	60.6	4244	95.1	96.2	96.5	0.89	880	5.7	10610	10200	1LP1312-3BB56-6 ■■■■	
895	1200	355	Δ	60.6	4748	95.3	96.4	96.6	0.89	990	6	12820	10200	1LP1312-3BB76-6 ■■■■	
965	1294	400	Δ	60.5	5119	95.5	96.2	96.7	0.88	1080	5.9	12286	16400	1LP1312-4AB56-6 ■■■■	
1090	1462	400	Δ	60.5	5783	95.7	96.3	96.8	0.89	1200	6.3	14458	16400	1LP1312-4AB76-6 ■■■■	
1260	1690	450	Δ	60.3	6685	96	96.4	96.7	0.87	1420	6.8	18718	20700	1LP1312-4BB16-6 ■■■■	
1455	1951	450	Δ	60.3	7719	96.2	96.6	96.8	0.87	1640	7.4	23929	20700	1LP1312-4BB36-6 ■■■■	
1665	2233	450	Δ	60.3	8833	96.4	96.7	96.9	0.87	1880	7.6	27382	20700	1LP1312-4BB56-6 ■■■■	
1200 rpm, 6-pole															
325	436	315	Δ	60.7	2586	94	95.2	95.6	0.82	395	5.9	5431	7500	1LP1312-3AC16-7 ■■■■	
400	536	315	Δ	60.7	3183	94.3	95.4	95.8	0.83	480	6	7003	7500	1LP1312-3AC36-7 ■■■■	
440	590	315	Δ	60.7	3501	94.3	95.5	95.9	0.84	520	5.8	7352	7500	1LP1312-3AC56-7 ■■■■	
485	650	315	Δ	60.6	3860	94.5	95.6	96	0.85	560	6.1	8492	7500	1LP1312-3AC76-7 ■■■■	
615	825	355	Δ	60.5	4894	95	95.9	96	0.86	710	7.7	13214	10200	1LP1312-3BC56-7 ■■■■	
675	905	355	Δ	60.5	5371	94.9	95.9	96	0.87	770	7.3	13965	10200	1LP1312-3BC76-7 ■■■■	
755	1012	400	Δ	60.5	6008	95.4	96	96.5	0.85	880	5.9	13218	16400	1LP1312-4AC36-7 ■■■■	
835	1120	400	Δ	60.4	6645	95.6	96.2	96.7	0.86	960	6.4	15948	16400	1LP1312-4AC56-7 ■■■■	
905	1214	400	Δ	60.4	7202	95.6	96.2	96.7	0.87	1020	6.2	16565	16400	1LP1312-4AC76-7 ■■■■	
1040	1395	450	Δ	60.4	8276	96	96.5	96.8	0.83	1220	6.3	19035	20700	1LP1312-4BC16-7 ■■■■	
1200	1609	450	Δ	60.4	9549	96.1	96.6	96.9	0.84	1400	6.3	21963	20700	1LP1312-4BC36-7 ■■■■	
1285	1723	450	Δ	60.3	10226	96.2	96.7	97	0.85	1480	6.4	24542	20700	1LP1312-4BC56-7 ■■■■	
1495	2005	450	Δ	60.4	11897	96.2	96.7	97.1	0.86	1700	6.2	27363	20700	1LP1312-4BC76-7 ■■■■	
900 rpm, 6-pole															
260	349	315	Y	45.7	2759	92.6	94.1	94.8	0.82	320	5.6	5794	7500	1LP1312-3AC16-8 ■■■■	
350	469	315	Δ	45.7	3714	93.3	94.6	95.2	0.82	425	5.8	8171	7500	1LP1312-3AC36-8 ■■■■	
375	503	315	Δ	45.7	3979	93.2	94.6	95.3	0.84	445	5.6	8356	7500	1LP1312-3AC56-8 ■■■■	
415	557	315	Δ	45.6	4403	93.5	94.8	95.3	0.84	495	5.9	9687	7500	1LP1312-3AC76-8 ■■■■	
485	650	355	Δ	45.5	5146	93.7	95	95.4	0.87	560	6.5	12350	10200	1LP1312-3BC56-8 ■■■■	
545	731	355	Δ	45.5	5783	93.8	95.1	95.5	0.87	620	6.5	13879	10200	1LP1312-3BC76-8 ■■■■	
625	838	400	Δ	45.5	6631	94.2	95.2	96	0.85	730	5.3	13925	16400	1LP1312-4AC36-8 ■■■■	
710	952	400	Δ	45.5	7533	94.6	95.5	96.2	0.85	830	5.8	17326	16400	1LP1312-4AC56-8 ■■■■	
790	1059	400	Δ	45.5	8382	94.8	95.6	96.3	0.86	910	6	20117	16400	1LP1312-4AC76-8 ■■■■	
890	1194	450	Δ	45.4	9443	95.1	95.9	96.5	0.83	1060	5.3	18886	20700	1LP1312-4BC16-8 ■■■■	
980	1314	450	Δ	45.4	10398	95.1	95.9	96.5	0.85	1140	5.3	21836	20700	1LP1312-4BC36-8 ■■■■	
1140	1529	450	Δ	45.4	12096	95.3	96.1	96.6	0.85	1320	5.6	26611	20700	1LP1312-4BC56-8 ■■■■	
1225	1643	450	Δ	45.4	12998	95.5	96.1	96.7	0.86	1400	6	29895	20700	1LP1312-4BC76-8 ■■■■	

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version 1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1312-3AB16-5...	1390	1440	3.3	85	100.5	3600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-3AB36-5...	1580	1630	4.2	85	100.5	3600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AB56-5...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3AB76-5...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3BB56-1...	2390	2450	8	85	101	3300	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-3BB76-1...	2520	2570	8.7	85	101	3300	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-3AB16-6...	1390	1440	3.3	85	100.5	3000	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3AB36-6...	1580	1630	4.2	85	100.5	3000	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AB56-6...	1750	1800	4.8	85	100.5	3000	1XB7 731	6SL3710-7LG37-4AA3	710
1LP1312-3AB76-6...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-3BB56-6...	2390	2450	8	85	101	2600	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-3BB76-6...	2520	2570	8.7	85	101	2600	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-4AB56-6...	3160	3230	14.9	85	101.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4AB76-6...	3430	3500	17.1	85	101.5	2200	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BB16-6...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB36-6...	4390	4490	24.9	85	102	2000	1XB7 750	On request	On request
1LP1312-4BB56-6...	4750	4850	27.7	85	102	2000	1XB7 750	On request	On request
1LP1312-3AC16-7...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-7LG34-1AA3	400
1LP1312-3AC36-7...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AC56-7...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3AC76-7...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3BC56-7...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-3BC76-7...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-4AC36-7...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-4AC56-7...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-4AC76-7...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-7LG41-3AA3	1230
1LP1312-4BC16-7...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BC36-7...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC56-7...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC76-7...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request
1LP1312-3AC16-8...	1430	1470	5.7	85	100.5	2600	1XB7 730	6SL3710-7LG33-3AA3	320
1LP1312-3AC36-8...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-3AC56-8...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-7LG34-7AA3	452
1LP1312-3AC76-8...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3BC56-8...	2350	2400	14.3	85	101	2500	1XB7 731	6SL3710-7LG35-8AA3	560
1LP1312-3BC76-8...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-7LG37-4AA3	710
1LP1312-4AC36-8...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-7LG38-1AA3	790
1LP1312-4AC56-8...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-7LG38-8AA3	880
1LP1312-4AC76-8...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-7LG41-0AA3	1000
1LP1312-4BC16-8...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BC36-8...	4340	4440	37.2	85	102	1700	1XB7 750	6SL3710-7LG41-3AA3	1230
1LP1312-4BC56-8...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1312-4BC76-8...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Selection and ordering data

P _{rated} kW	P _{rated} hp	Frame size	Con- nec- tion	Operating values at rated power										T _B Nm	Mech. torque limit 1) 2) Nm	1LP1 cast-iron series Version specifically for converter operation Article No.
				f _{rated} Hz	T _{rated} Nm	η _{rated} , 5/4 %	η _{rated} , 4/4 %	η _{rated} , 3/4 %	cos φ _{rated} , 4/4	I _{rated} A	I _{LR} / I _{rated}					
Rated motor voltage 550 V																
Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F)																
Converter operation with uncontrolled infeed – SINAMICS G130, SINAMICS G150, SINAMICS S120 (BLM, SLM)																
3600 rpm, 4-pole																
400	536	315	Δ	120.8	1061	95.1	95.6	95.4	0.88	500	5.6	2440	7500	1LP1322-3AB16-5		
490	657	315	Δ	120.7	1300	95.4	96	95.7	0.9	600	6.2	3250	7500	1LP1322-3AB36-5		
550	738	315	Δ	120.7	1459	95.6	96.2	95.9	0.9	670	6.6	3793	7500	1LP1322-3AB56-5		
585	784	315	Δ	120.8	1552	95.5	96.2	96	0.9	710	5.5	3414	7500	1LP1322-3AB76-5		
3000 rpm, 4-pole																
670	898	355	Δ	100.9	2133	95.1	96.2	96.3	0.88	830	4.1	3839	10200	1LP1322-3BB56-1		
765	1026	355	Δ	100.8	2435	95.4	96.4	96.4	0.89	940	4.5	4870	10200	1LP1322-3BB76-1		
1800 rpm, 4-pole																
340	456	315	Δ	60.7	1804	94.2	95.4	95.8	0.88	425	5.6	4330	7500	1LP1322-3AB16-6		
470	630	315	Δ	60.6	2493	94.7	95.8	96.1	0.89	580	6.5	6731	7500	1LP1322-3AB36-6		
525	704	315	Δ	60.7	2785	94.8	95.9	96.3	0.9	640	6.5	7520	7500	1LP1322-3AB56-6		
655	878	315	Δ	60.6	3475	95.3	96.2	96.5	0.9	790	7.5	10425	7500	1LP1322-3AB76-6		
805	1080	355	Δ	60.6	4271	95.2	96.3	96.6	0.89	990	5.8	11105	10200	1LP1322-3BB56-6		
820	1100	355	Δ	60.7	4350	95	96.2	96.5	0.89	1000	5.3	10005	10200	1LP1322-3BB76-6		
885	1187	400	Δ	60.5	4695	95.4	96.1	96.6	0.88	1100	5.6	10799	16400	1LP1322-4AB36-6		
980	1314	400	Δ	60.5	5199	95.6	96.2	96.7	0.88	1220	6.1	12998	16400	1LP1322-4AB56-6		
1125	1509	400	Δ	60.4	5968	95.8	96.4	96.8	0.89	1380	6.7	16114	16400	1LP1322-4AB76-6		
1280	1717	450	Δ	60.3	6791	96.1	96.5	96.7	0.87	1600	6.6	18336	20700	1LP1322-4BB16-6		
1485	1991	450	Δ	60.3	7878	96.3	96.7	96.9	0.87	1860	7.2	23634	20700	1LP1322-4BB36-6		
1585	2126	450	Δ	60.3	8409	96.3	96.7	96.9	0.88	1960	7.5	26068	20700	1LP1322-4BB56-6		
1200 rpm, 6-pole																
300	402	315	Δ	60.7	2387	93.7	95	95.5	0.83	400	5.6	4774	7500	1LP1322-3AC16-7		
395	530	315	Δ	60.7	3143	94.2	95.4	95.8	0.83	520	6	6915	7500	1LP1322-3AC36-7		
435	583	315	Δ	60.7	3462	94.3	95.5	95.9	0.84	570	5.9	7270	7500	1LP1322-3AC56-7		
490	657	315	Δ	60.6	3899	94.5	95.7	96	0.85	630	6.2	8578	7500	1LP1322-3AC76-7		
590	791	355	Δ	60.5	4695	94.9	95.9	96	0.86	750	7.4	12207	10200	1LP1322-3BC56-7		
675	905	355	Δ	60.4	5371	95.1	96	96	0.86	860	8	15576	10200	1LP1322-3BC76-7		
765	1026	400	Δ	60.4	6088	95.5	96.1	96.6	0.85	980	6.3	14611	16400	1LP1322-4AC36-7		
810	1086	400	Δ	60.4	6446	95.5	96.2	96.6	0.86	1020	6.2	14826	16400	1LP1322-4AC56-7		
930	1247	400	Δ	60.4	7401	95.8	96.3	96.7	0.86	1180	6.8	19243	16400	1LP1322-4AC76-7		
1060	1421	450	Δ	60.3	8435	96	96.5	96.8	0.83	1380	6.4	20244	20700	1LP1322-4BC16-7		
1145	1535	450	Δ	60.3	9112	96.1	96.6	96.9	0.84	1480	6.5	21869	20700	1LP1322-4BC36-7		
1320	1770	450	Δ	60.3	10504	96.2	96.7	97	0.85	1680	6.3	25210	20700	1LP1322-4BC56-7		
900 rpm, 6-pole																
270	362	315	Δ	45.7	2865	92.8	94.2	94.8	0.81	370	5.9	6303	7500	1LP1322-3AC16-8		
330	443	315	Δ	45.6	3501	93.4	94.7	95.1	0.82	445	6.3	8402	7500	1LP1322-3AC36-8		
375	503	315	Δ	45.6	3979	93.3	94.6	95.2	0.84	495	5.8	8754	7500	1LP1322-3AC56-8		
410	550	315	Δ	45.6	4350	93.4	94.8	95.3	0.84	540	5.9	9570	7500	1LP1322-3AC76-8		
480	644	355	Δ	45.5	5093	93.7	95	95.4	0.87	610	6.5	12223	10200	1LP1322-3BC56-8		
540	724	355	Δ	45.5	5730	93.8	95.1	95.4	0.87	690	6.5	13752	10200	1LP1322-3BC76-8		
625	838	400	Δ	45.5	6631	94.3	95.2	96	0.85	810	5.3	13925	16400	1LP1322-4AC36-8		
675	905	400	Δ	45.5	7162	94.5	95.4	96.1	0.86	860	5.6	15756	16400	1LP1322-4AC56-8		
765	1026	400	Δ	45.5	8117	94.8	95.6	96.3	0.87	970	5.7	18669	16400	1LP1322-4AC76-8		
820	1100	450	Δ	45.4	8700	94.9	95.7	96.4	0.84	1080	5.4	18270	20700	1LP1322-4BC16-8		
935	1254	450	Δ	45.4	9921	95	95.8	96.5	0.85	1200	5.2	19842	20700	1LP1322-4BC36-8		
1085	1455	450	Δ	45.4	11512	95.3	96	96.6	0.85	1400	5.5	25326	20700	1LP1322-4BC56-8		
1220	1636	450	Δ	45.4	12945	95.3	96.1	96.7	0.86	1540	5.3	27185	20700	1LP1322-4BC76-8		

For versions, see Article No. supplements and special versions.

Force-ventilated motors – open version

1LP1 motors for converter operation

Line voltage 575 V, 60 Hz, increased power – High Efficiency

Motor type	$m_{IM\ B3}$	$m_{IM\ V1}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box	Preferred SINAMICS converters – other SINAMICS converters also possible	Base-load current I_L
	kg	kg	kgm ²	dB(A)	dB(A)	rpm	Type	Type	A
1LP1322-3AB16-5...	1390	1440	3.3	85	100.5	3600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3AB36-5...	1620	1670	4.2	85	100.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3AB56-5...	1790	1840	4.8	85	100.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3AB76-5...	1960	2000	5.7	85	100.5	3600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3BB56-1...	2390	2450	8	85	101	3300	1XB7 740	6SL3710-2GF38-6AA3	836
1LP1322-3BB76-1...	2520	2570	8.7	85	101	3300	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-3AB16-6...	1390	1440	3.3	85	100.5	3000	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1322-3AB36-6...	1580	1630	4.2	85	100.5	3000	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1322-3AB56-6...	1790	1840	4.8	85	100.5	3000	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3AB76-6...	1960	2000	5.7	85	100.5	3000	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1322-3BB56-6...	2390	2450	8	85	101	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-3BB76-6...	2520	2570	8.7	85	101	2600	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AB36-6...	2950	3020	13.2	85	101.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4AB56-6...	3160	3230	14.9	85	101.5	2200	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4AB76-6...	3430	3500	17.1	85	101.5	2200	1XB7 750	On request	On request
1LP1322-4BB16-6...	4120	4220	22.2	85	102	2000	1XB7 750	On request	On request
1LP1322-4BB36-6...	4390	4490	24.9	85	102	2000	1XB7 750	On request	On request
1LP1322-4BB56-6...	4750	4850	27.7	85	102	2000	1XB7 750	On request	On request
1LP1322-3AC16-7...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LP1322-3AC36-7...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3AC56-7...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-1GF37-4AA3	710
1LP1322-3AC76-7...	1930	1980	8.9	85	100.5	2600	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3BC56-7...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-1GF38-1AA3	790
1LP1322-3BC76-7...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC36-7...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC56-7...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC76-7...	3430	3500	26.6	85	101.5	2000	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4BC16-7...	4040	4140	33.2	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC36-7...	4340	4440	37.2	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC56-7...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1322-3AC16-8...	1430	1470	5.7	85	100.5	2600	1XB7 731	6SL3710-1GF34-1AA3	400
1LP1322-3AC36-8...	1600	1650	7	85	100.5	2600	1XB7 731	6SL3710-1GF34-7AA3	452
1LP1322-3AC56-8...	1790	1830	8.1	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3AC76-8...	1890	1940	8.9	85	100.5	2600	1XB7 731	6SL3710-1GF35-8AA3	560
1LP1322-3BC56-8...	2390	2440	14.3	85	101	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-3BC76-8...	2530	2590	15.7	85	101	2500	1XB7 740	6SL3710-1GF37-4AA3	710
1LP1322-4AC36-8...	2990	3060	21	85	101.5	2000	1XB7 740	6SL3710-2GF38-6AA3	836
1LP1322-4AC56-8...	3200	3270	23.6	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4AC76-8...	3430	3500	26.6	85	101.5	2000	1XB7 740	6SL3710-2GF41-1AA3	1036
1LP1322-4BC16-8...	4040	4140	33.2	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4BC36-8...	4340	4440	37.2	85	102	1700	1XB7 750	6SL3710-2GF41-4AA3	1314
1LP1322-4BC56-8...	4770	4870	41.9	85	102	1700	1XB7 750	On request	On request
1LP1322-4BC76-8...	5180	5280	47.8	85	102	1700	1XB7 750	On request	On request

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Force-ventilated motors – open version

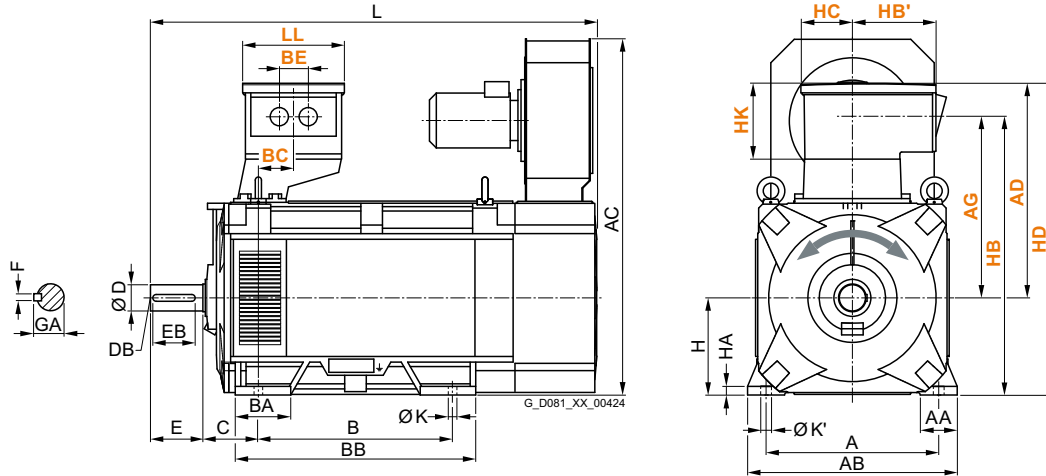
Dimensions

1LP1 motors – Radially mounted equipment unit

Dimensional drawings

Type of construction IM B3

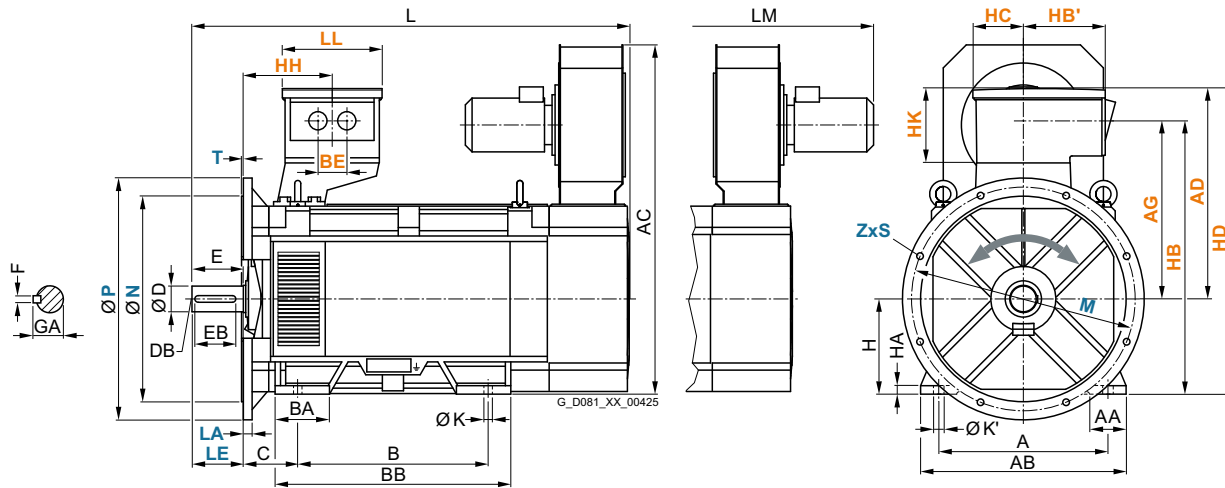
For terminal box dimensions, see page 9/47



Types of construction IM B35 and IM V1

For flange dimensions, see page 9/46 (Z = the number of retaining holes)

For terminal box dimensions, see page 9/47



Force-ventilated motors – open version

Dimensions

1LP1 motors – Radially mounted equipment unit

Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																				
			A	AA	AB	AC	B	BA	BB	C	H	HA	K	K'	L ¹⁾	LM ¹⁾	D	DB	E	EB	F	GA	
315	4, 6	1LP12...-3A.1.-....	560	120	680	1155	630	180	780	180	315	28	28	35	1450	1725	85	M20	170	140	22	90	
		1LP12...-3A.3.-....	● 560	120	680	1155	630	180	780	200	315	28	28	35	1470	1745	95	M24	170	140	25	100	
		1LP14...-3A.1.-....																					
		1LP14...-3A.3.-....																					
		1LP12...-3A.5.-....	560	120	680	1155	835	180	985	180	315	28	28	35	1590	1865	85	M20	170	140	22	90	
		1LP12...-3A.7.-....	● 560	120	680	1155	835	180	985	200	315	28	28	35	1610	1885	95	M24	170	140	25	100	
	4, 6	1LP14...-3A.5.-....																					
		1LP14...-3A.7.-....																					
		1LP13...-3A.1.-....	560	120	680	1245	630	180	780	180	315	28	28	35	1450	1810	85	M20	170	140	22	90	
		1LP13...-3A.3.-....	● 560	120	680	1245	630	180	780	200	315	28	28	35	1470	1830	95	M24	170	140	25	100	
		1LP15...-3A.1.-....																					
		1LP15...-3A.3.-....																					
355	4, 6	1LP13...-3A.5.-....	560	120	680	1245	835	180	985	180	315	28	28	35	1590	1950	85	M20	170	140	22	90	
		1LP13...-3A.7.-....	● 560	120	680	1245	835	180	985	200	315	28	28	35	1610	1970	95	M24	170	140	25	100	
		1LP15...-3A.5.-....																					
		1LP15...-3A.7.-....																					
		1LP12...-3B.5.-....	630	150	780	1305	800	220	980	200	355	35	35	42	1730	2015	95	M24	170	140	25	100	
		1LP12...-3B.7.-....	● 630	150	780	1305	800	220	980	224	355	35	35	42	1795	2075	100	M24	210	180	28	106	
	4, 6	1LP14...-3B.5.-....																					
		1LP14...-3B.7.-....																					
		1LP13...-3B.5.-....	630	150	780	1305	800	220	980	200	355	35	35	42	1730	2070	95	M24	170	140	25	100	
		1LP13...-3B.7.-....	● 630	150	780	1305	800	220	980	224	355	25	35	42	1795	2135	100	M24	210	180	28	106	
		1LP15...-3B.5.-....																					
		1LP15...-3B.7.-....																					
400	4, 6	1LP12...-4A.3.-....	710	150	860	1535	900	220	1080	224	400	35	35	42	1960	2240	110	M24	210	180	28	116	
		1LP12...-4A.5.-....	● 710	150	860	1535	900	220	1080	250	400	35	35	42	1985	2265	120	M24	210	180	32	127	
		1LP12...-4A.7.-....																					
		1LP14...-4A.3.-....																					
		1LP14...-4A.5.-....																					
		1LP14...-4A.7.-....																					
	4, 6	1LP13...-4A.3.-....	710	150	860	1535	900	220	1080	224	400	35	35	42	1960	2330	110	M24	210	180	28	116	
		1LP13...-4A.5.-....	● 710	150	860	1535	900	220	1080	250	400	35	35	42	1985	2355	120	M24	210	180	32	127	
		1LP13...-4A.7.-....																					
		1LP15...-4A.3.-....																					
		1LP15...-4A.5.-....																					
		1LP15...-4A.7.-....																					
450	4, 6	1LP12...-4B.1.-....	800	180	980	1635	1000	260	1220	250	450	42	42	50	1970	2250	120	M24	210	180	32	127	
		1LP12...-4B.3.-....	● 800	180	980	1635	1000	260	1220	280	450	42	42	50	2040	2320	130	M24	250	220	32	137	
		1LP14...-4B.1.-....																					
		1LP14...-4B.3.-....																					
		1LP12...-4B.5.-....	800	180	980	1635	1000	260	1220	250	450	42	42	50	2145	2425	120	M24	210	180	32	127	
		1LP12...-4B.7.-....	● 800	180	980	1635	1000	260	1220	280	450	42	42	50	2215	2495	130	M24	250	220	32	137	
	4, 6	1LP14...-4B.5.-....																					
		1LP14...-4B.7.-....																					
		1LP13...-4B.1.-....	800	180	980	1635	1000	260	1220	250	450	42	42	50	1970	2340	120	M24	210	180	32	127	
		1LP13...-4B.3.-....	● 800	180	980	1635	1000	260	1220	280	450	42	42	50	2040	2410	130	M24	250	220	32	137	
		1LP15...-4B.1.-....																					
		1LP15...-4B.3.-....																					
4, 6	1LP13...-4B.5.-....	800	180	980	1635	1000	260	1220	250	450	42	42	50	2145	2515	120	M24	210	180	32	127		
	1LP13...-4B.7.-....	● 800	180	980	1635	1000	260	1220	280	450	42	42	50	2215	2585	130	M24	250	220	32	137		
	1LP15...-4B.5.-....																						
	1LP15...-4B.7.-....																						

● Bearing design for increased cantilever forces, for type of construction IM B3 only.

¹⁾ With types of construction IM V1, IM V15, IM V5, dimension LM increases due to a protective cover for the fan motor.

Force-ventilated motors – open version

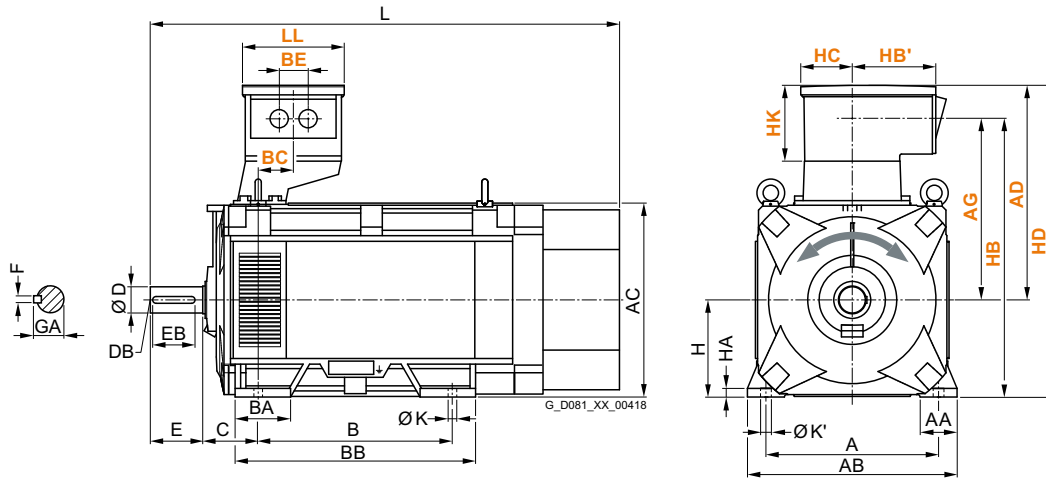
Dimensions

1LP1 motors – Axially mounted equipment unit

Dimensional drawings

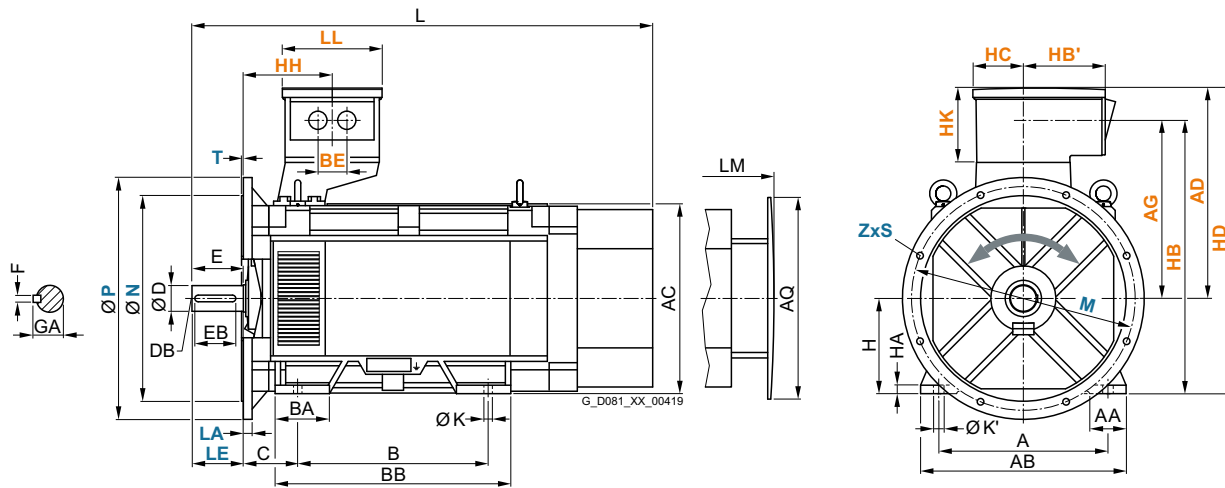
Type of construction IM B3

For terminal box dimensions, see page 9/47



Types of construction IM B35 and IM V1

For flange dimensions, see page 9/46 (Z = the number of retaining holes)
For terminal box dimensions, see page 9/47



Force-ventilated motors – open version

Dimensions

1LP1 motors – Axially mounted equipment unit

Dimensional drawings (continued)

Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																				
			A	AA	AB	AC	AQ	B	BA	BB	C	H	HA	K	K'	L	LM	D	DB	E	EB	F	GA
315	4, 6	1LP12...-3A.1.-....	560	120	680	630	670	630	180	780	180	315	28	28	35	1610	1770	85	M20	170	140	22	90
		1LP12...-3A.3.-....	● 560	120	680	630	670	630	180	780	200	315	28	28	35	1630	1790	95	M24	170	140	25	100
		1LP14...-3A.1.-....	560	120	680	630	670	630	180	780	180	315	28	28	35	1610	1770	85	M20	170	140	22	90
		1LP14...-3A.3.-....	● 560	120	680	630	670	630	180	780	200	315	28	28	35	1630	1790	95	M24	170	140	25	100
		1LP12...-3A.5.-....	560	120	680	630	670	835	180	985	180	315	28	28	35	1750	1910	85	M20	170	140	22	90
		1LP12...-3A.7.-....	● 560	120	680	630	670	835	180	985	200	315	28	28	35	1770	1930	95	M24	170	140	25	100
355	4, 6	1LP12...-3B.5.-....	630	150	780	710	750	800	220	980	200	355	35	35	42	2130	2315	95	M24	170	140	25	100
		1LP12...-3B.7.-....	● 630	150	780	710	750	800	220	980	224	355	35	35	42	2195	2380	100	M24	210	180	28	106
		1LP14...-3B.5.-....	630	150	780	710	750	800	220	980	200	355	35	35	42	2130	2315	95	M24	170	140	25	100
400	4, 6	1LP12...-4A.3.-....	710	150	860	800	850	900	220	1080	224	400	35	35	42	2325	2485	110	M24	210	180	28	116
		1LP12...-4A.5.-....	● 710	150	860	800	850	900	220	1080	250	400	35	35	42	2350	2510	120	M24	210	180	32	127
		1LP12...-4A.7.-....	710	150	860	800	850	900	220	1080	224	400	35	35	42	2325	2485	110	M24	210	180	28	116
		1LP14...-4A.3.-....	710	150	860	800	850	900	220	1080	224	400	35	35	42	2325	2485	110	M24	210	180	28	116
		1LP14...-4A.5.-....	● 710	150	860	800	850	900	220	1080	250	400	35	35	42	2350	2510	120	M24	210	180	32	127
450	4, 6	1LP12...-4B.1.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2330	2505	120	M24	210	180	32	127
		1LP12...-4B.3.-....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2400	2575	130	M24	250	220	32	137
		1LP14...-4B.1.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2330	2505	120	M24	210	180	32	127
		1LP14...-4B.3.-....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2400	2575	130	M24	250	220	32	137
		1LP12...-4B.5.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2505	2680	120	M24	210	180	32	127
		1LP12...-4B.7.-....	● 800	180	980	900	950	1000	260	1220	280	450	42	42	50	2575	2750	130	M24	250	220	32	137

- Bearing design for increased cantilever forces, for type of construction IM B3 only.

Note:

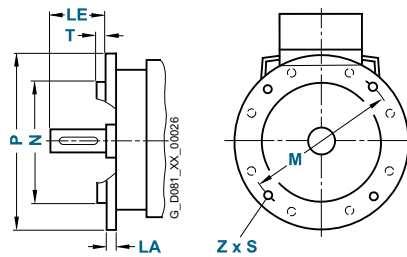
When using an encoder, dimensions L and LM increase by 170 mm for frame size 315, by 190 mm for frame size 355 and by 260 mm for frame size 400 and frame size 450.

Force-ventilated motors – open version

Dimensions

Flanges

Dimensional drawings

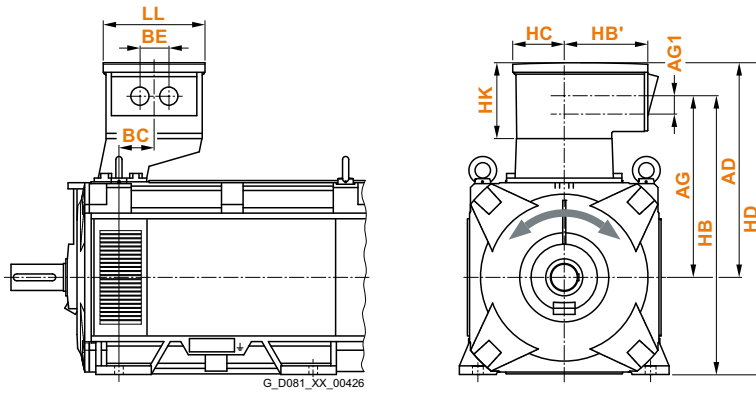


(Z = the number of retaining holes)

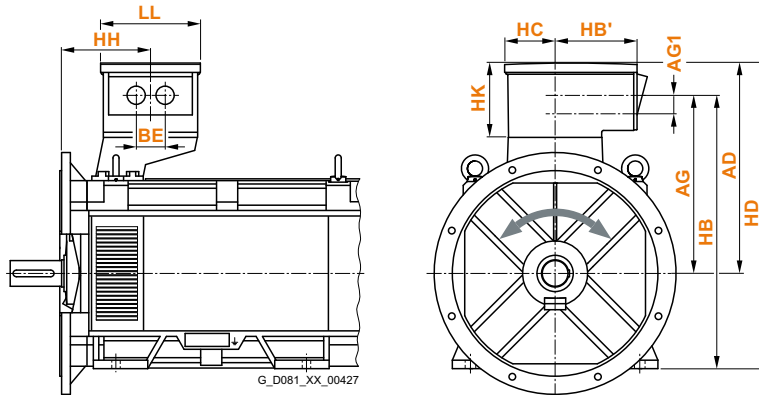
Motor type	Frame size	No. of poles	Type of construction	Flange type	Flange with through holes (FF/A) acc. to DIN 42948	Dimension designation acc. to IEC							
						LA	LE	M	N	P	S	T	Z
1LP1	315	4, 6	IM B35, IM V1	Flange	A 800	29	170	740	680	800	22	6	8
				Flange (order code M61)	A 660	22	170	600	550	660	22	6	8
	355	4, 6	IM B35, IM V1	Flange	A 900	29	170	840	780	900	22	6	8
				Flange (order code M61)	A 660	27	170	600	550	660	22	6	8
	400	4, 6	IM B35, IM V1	Flange	A 1000	28	210	940	880	1000	22	6	8
	450	4, 6	IM B35, IM V1	Flange	A 1150	30	210	1080	1000	1150	26	6	8

Dimensional drawings

Type of construction IM B3



Types of construction IM B35 and IM V1



Force-ventilated motors – open version

Dimensions

Terminal boxes

Dimensional drawings (continued)

Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LP1	315	4, 6	1XB7730	705	570	–	115	–	885	310	295	180	1020	255	345
			1XB7731	705	570	–	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
			GT640	620	520	–	115	110	835	225	295	155	935	170	310
			1XB1621	700	580	–	115	150	895	305	295	165	1015	250	330
			1XB1631	770	635	–	115	100	950	400	295	175	1085	320	555
	355	4, 6	1XB7730	750	615	–	100	–	970	310	300	180	1105	255	345
			1XB7731	750	615	–	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425
			GT640	665	565	–	100	110	920	225	300	155	1020	170	310
			1XB1621	745	625	–	100	150	980	305	300	165	1100	250	330
			1XB1631	815	680	–	100	100	1035	400	300	175	1170	320	555
	400	4, 6	1XB7730	795	660	–	100	–	1060	310	324	180	1195	255	345
			1XB7731	795	660	–	100	115	1060	310	324	180	1195	255	345
			1XB7740	880	700	60	100	96	1100	365	324	235	1280	340	425
			1XB7750	960	850	65	100	103	1250	405	324	300	1360	420	890
			GT640	710	610	–	100	110	1010	225	324	155	1110	170	310
			1XB1621	790	670	–	100	150	1070	305	324	165	1190	250	330
	450	4, 6	1XB1 631	860	725	–	100	100	1125	400	324	175	1260	320	555
			1XB7730	841	710	–	80	–	1160	310	325	180	1291	255	345
			1XB7731	841	710	–	80	115	1160	310	325	180	1291	255	345
			1XB7740	926	750	60	80	96	1200	365	325	235	1376	340	425
			1XB7750	1006	900	65	80	103	1350	405	325	300	1456	420	890
			GT640	756	660	–	80	110	1110	225	325	155	1206	170	310
			1XB1621	836	720	–	80	150	1170	305	325	165	1286	250	330
			1XB1631	906	770	–	80	100	1220	400	325	175	1356	320	555

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

Explosion-proof motors



10/2 **Technical information**

10/2 Overview

10/2 Classification of zones

10/2 Types of protection

10/3 Certification

10/3 Overview of SIMOTICS FD

1MM, 1MH, 1MQ, 1MN

explosion-proof motors

10/4 Benefits

10/4 Application

10/5 Technical specifications

10/5 General information

10/5 Type of protection Ex nA for use in Zone 2

10/5 Type of protection Ex tc for use in Zone 22

10/6 Converter (1MM1, 1MH1, 1MQ1, 1MN1) or line operation (1MH1)

10/8 VIK version

10/8 Coolant temperature

10/8 Special mounting technology

Explosion-proof motors

Technical information

Overview

In many industrial and public sectors, explosion protection or explosion hazards are ever-present, e.g. in the chemical industry, in refineries, on drilling platforms, at gas stations, in feed manufacturing and in sewage treatment plants.

The risk of explosion is always present when gases, fumes, mist or dust are mixed with oxygen in the air in an explosive ratio close to sources of ignition that are able to release the so-called minimum ignition energy.

In the chemical and petrochemical industries in particular, when crude oil and natural gas are transported, or in mining, milling (e.g. grain and granular solids), this can result in serious injury to persons and damage to equipment.

To ensure maximum safety in these areas, legislators in most countries have implemented appropriate legislation in the form of laws and regulations based on national and international standards.

Explosion-protected equipment is designed such that an explosion can be prevented when it is used properly.

The explosion-protected equipment can be designed in accordance with various types of protection.

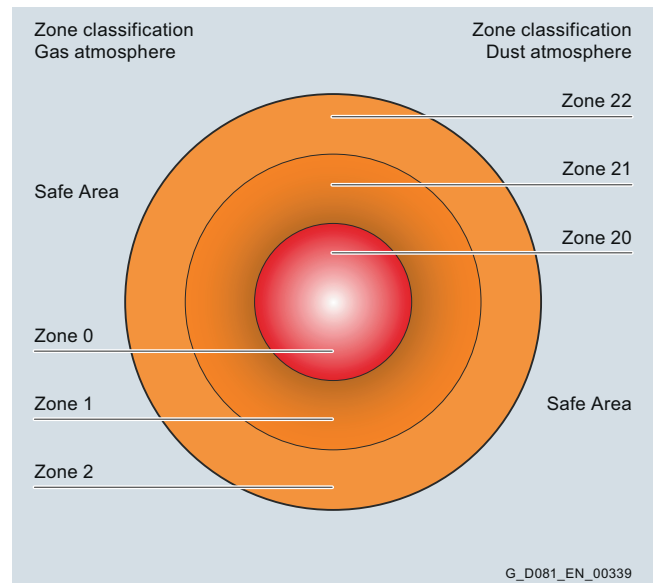
The local conditions must be subdivided into specified zones by the user with the assistance of the responsible authorities in accordance with the frequency of occurrence of an explosion hazard. Device (equipment) categories are assigned to these zones. The zones are then subdivided into possible types of protection and therefore into possible equipment (product) types.

Classification of zones

Areas subject to explosion hazard are divided into zones. Division into zones depends on the chronological and geographical probability of the presence of a hazardous, potentially explosive atmosphere. Information and specifications for classification of the zones are laid down in the following standards:

- IEC/EN 60079-10-1 for gas atmospheres
- IEC/EN 60079-10-2 for dust atmospheres

Further, a distinction is made between various explosion groups as well as temperature classes and these are included in the hazard assessment.



Depending on the particular zone and therefore the associated hazard, operating equipment must comply with defined minimum requirements regarding the type of protection. The different types of protection require corresponding measures to prevent ignition that should be implemented at the motor in order to prevent a surrounding explosive atmosphere from being ignited.

Zone	Zone definition acc. to	Assigned types of protection	Category according to 94/9/EC
Gas ¹⁾ Dust ¹⁾	IEC/EN 60079-10-1 for gas atmospheres IEC/EN 60079-10-2 for dust atmospheres		
2	– An area in which in normal operation it is expected that an explosive gas atmosphere will occur only rarely and then only briefly .	Ex nA	3G
–	22 An area in which in normal operation it is expected that an explosive gas atmosphere in the form of a cloud of dust in air will occur only rarely and then only briefly .	Ex tc ²⁾	3D

Types of protection

Type of protection "Non-sparking" **Ex nA** acc. to IEC/EN 60079-15

The type of protection **Ex nA** ensures that a motor in normal operation as well as when operated under deviating conditions as specified in the standard is not in a position to ignite a surrounding explosive gas atmosphere.

Type of protection "Dust explosion protection" **Ex tc** acc. to IEC/EN 60079-31

This type of protection applies for electrical equipment protected using an housing and with limited surface temperature for use in areas in which combustible dust can occur in concentration levels that could cause a fire or an explosion.

Explosion-proof motors for converter operation

In principle, explosion-proof motors can be operated with converters. Particular attention must be paid to the interaction between the motor and converter system, especially with regard to the following aspects:

- The harmonic content of the supply voltage increases the motor temperature, so the power of the motor must be reduced (see derating)
- Lower cooling of the motor at speeds below the rated speed
- Voltage stress on the motor winding
- Bearing currents

¹⁾ Motors which are certified for gas or dust protection must not be used in hybrid mixtures! Hybrid mixtures: When explosive gas and dust atmospheres occur simultaneously.

²⁾ Motors are not approved for operation in environments containing conductive dust.

Overview (continued)

Certification

IEC motors for use in hazardous zones are certified according to the IEC/EN 60079-0, IEC/EN 60079-15 or IEC/EN 60079-31 standards and EC Directive 2014/34/EU and are marked according to the following schematic:

Example "explosion-proof enclosure":	CE	0158		II	2	G	Ex	de	IIC	T4	X
CE marking											
Number of the certifying "notified" body (e.g. 0158 = EXAM) (not zones 2, 22)											
Explosion protection marking (symbol)											
Device group:				I = Underground II = All other areas							
Category Part 1 (zone):				1 (Zone 0/20), 2 (Zone 1/21), 3 (Zone 2/22)							
Category Part 2 (Ex atmosphere)				G = Gas D = Dust							
Explosion protected equipment											
Type of protection (e.g. nA or tc)											
Explosion group and explosion subgroup				II = Gas (IIA, IIB or IIC) III = Dust (IIIA, IIIB or IIIC)							
Temperature class or max. surface temperature											
T1 = 450 °C T2 = 300 °C T3 = 200 °C T4 = 135 °C											
Special conditions according to the operating instructions or EC type examination certificate											

Additional information on the subject of explosion protection, types of protection and zones is provided in the Siemens brochure "Explosion Protection".

Overview of SIMOTICS FD 1MM, 1MH, 1MQ, 1MN explosion-proof motors

SIMOTICS FD explosion-proof motors (1MM, 1MH, 1MQ, 1MN) correspond to the SIMOTICS FD non-explosion-proof motors (1LM, 1LH, 1LQ, 1LN). All technical data can be found in the selection and ordering data for the non-Ex motors 1LM, 1LH, 1LQ, 1LN (sections 4 to 7 of the catalog), whereby the rated power is derated in accordance with defined factors. For reduction/derating factors, see "Technical specifications" section "Derating".

To order explosion-proof motors, the letter "L" in position 2 of the Article No. for non-Ex motors must be replaced with the letter "M".

The table below contains a complete overview of our explosion-proof motors, their types of protection and their assignment to categories. It is important to note that depending on whether the motor is used for converter operation or line operation, different order codes are required in order to uniquely select the required motor.

Sector	Category	Zone	Frequency of occurrence of the Ex atmosphere	Type of protection	Temperature class, max. surface temperature	Degree of protection	Motor type (pos. 1 to 4 of the Article No.)	Operation	Order code	Utilization acc. to thermal class	Standard
Gases and vapors (G)	3G	2	rarely or briefly	Ex nA IIC (Non-sparking)	T1 – T3	IP55	1MM1 1MH1 1MQ1 ¹⁾ 1MN1	Line (1MH1)	M72	130 (B)	IEC/EN 60079-0
								Converter	M73	155 (F)	IEC/EN 60079-15
Dust (D)	3D	22	rarely or briefly	Ex tc IIIB (non-conductive dust)	T125 °C	IP55	1MM1 1MH1 1MQ1 1MN1	Line (1MH1)	M35	130 (B)	IEC/EN 60079-0
								Converter	M39	155 (F)	IEC/EN 60079-31

¹⁾ 1MQ1 motors are only certified for explosion group/explosion subgroup IIB.

Explosion-proof motors

Technical information

Benefits

The explosion-proof motors from Siemens offer the user numerous advantages:

- The motors are designed to IEC/EN 60079-0 and IEC/EN 60079-15 or IEC/EN 60079-31 and EC Directive 2014/34/EU. As product supplier, Siemens accepts responsibility for compliance with the applicable product standards for the selected equipment.
- By using this product, the plant operating company satisfies Directive 1999/92/EC in accordance with Appendix II B. The plant operating company is responsible for correct selection and proper use of the equipment.
- Comprehensive series of Ex motors for protection against gas and dust.
- Individual versions of motors are possible thanks to the numerous catalog order codes.
- Further special versions are possible on request.
- The Operating Instructions (Compact) are available in all the official EU languages as well as Russian and Chinese.

Application

The explosion-proof motors are used in the following sectors to prevent explosion hazards that result in serious injury to persons and severe damage to equipment:

- Chemical and petrochemical industry
- Pumping crude oil and natural gas
- Gas works
- Gas supply companies
- Petrol stations
- Coking plants
- Mills (e.g. grain, solids)
- Sewage treatment plants
- Wood processing (e.g. sawdust, tree resin)
- Other industries subject to explosion hazards

Technical specifications

General information

Ex motors in vertical type of construction with shaft extension pointing down must have a protective cover (position 14 of Article No.: **G**).

Detailed Operating Instructions (Compact) are supplied as standard with explosion-proof motors as hard copies in English and German. Translations are also available in all the other official EU languages as well as in Russian and Chinese.

For all explosion-proof motors, designs according to UL (order code **D31**) and CSA (order code **D40**) are not possible.

Motor connection

For 1MM1, 1MH1, 1MQ1 and 1MN1 motors in the explosion-proof design, the cable entry plate is supplied undrilled as standard. This enables you to adapt the number and size of the holes to the installation conditions. The cable entry can be rotated by 180°.

1MH1 motors for line operation in conjunction with order code **D36** (statement of conformity) and/or **D37** (IEC Ex certificate) is replaced by the GT 640 terminal box assigned in tables 6/22 ff by the terminal box 1XB1621.

The certificates for the motors for hazardous areas are stored with the documentation in the Drive Technology Configurator (DT Configurator).

Certified motor protection switches/tripping units must always be used for motor protection, see [Catalog IC 10](#).

When metal armored cables are routed into the auxiliary terminal boxes, the metal shield must only be grounded once: either in the auxiliary terminal box or in the control room of the operator.

In the case of SIMOTICS FD motors 1MM1, 1MH1, 1MQ1 and 1MN1, monitoring of the bearing temperature is only mandatory for Zone 22 (order code **A72**).


Type of protection Ex nA for use in Zone 2

- Design for Zone 2 for line operation (order code **M72**)
- Version for Zone 2 for converter operation (order code **M73**)

1MM1, 1MH1, 1MQ1¹⁾ and 1MN1 motors are modified for this purpose in the "Non-sparking" design and are suitable for use in hazardous areas of Zone 2 for temperature classes T1 to T3. The maximum surface temperature that can occur during operation is below the limit temperature of the respective temperature class. The ventilation system complies with IEC/EN 60079-0/-15/-31. The motors are equipped with an external grounding terminal. The terminal box is designed for Ex e type of protection.

Ambient temperature -0 to +60 °C, whereby derating applies from 40 °C upwards. Other temperatures are available on request.

The rating plate or the additional rating plate contains the text:

 II 3G Ex nA IIC T3

Type of protection Ex tc for use in Zone 22

Ex tc in accordance with IEC/EN 60079-31 for Zone 22 with non-conductive dust (IP55)

- Version for Zone 22 for line operation (order code **M35**)
- Version for Zone 22 for converter operation (order code **M39**)

1MM1, 1MH1, 1MQ1 and 1MN1 motors are modified for this purpose for use in zones subject to dust and explosion hazards. The surface temperature is ≤125 °C for rated operation.

The motors are equipped with an external grounding terminal.

Certification:

- Zone 22: EC Declaration of Conformity, conformity declaration IECEx Certificate of Conformity

Identification on the rating plate (additional rating plate for SIMOTICS FD motors):

- Zone 22:  II 3D Ex tc IIB T125 °C

Ambient temperature -0 to +60 °C, whereby derating applies from 40 °C upwards. Other temperatures are available on request.

This version can be ordered with the note "Operation in Zone 2 or Zone 22".

¹⁾ 1MQ1 motors are only certified for explosion group/explosion subgroup IIB.

Explosion-proof motors

Technical information

Technical specifications (continued)

Converter (1MM1, 1MH1, 1MQ1, 1MN1) or line operation (1LH1)

With converter operation, the torque reduction factors must be configured according to the table in the section "Derating". The torque reduction factors for constant torque drives will be configured, on request, on specification of the speed control range and the required torque.

For converter operation, Ex motors must always be monitored using PTC thermistors. Certified tripping units are required for this purpose, see [Catalog IC 10](#).

Explosion-proof motors 1MM1, 1MH1, 1MQ1 and 1MN1

The motors of the 1MM1, 1MH1, 1MQ1 and 1MN1 series are available in Ex nA (Zone 2) or Ex tc (Zone 22) types of protection. The motors have PTC thermistors for alarm and tripping in accordance with thermal class 155 (F),

Ambient temperatures are possible in the range from -20 up to +60 °C, whereby above +40 °C, additional power derating applies. An inquiry is required for different ambient temperatures.

External metal fans are used as standard with 1MM1 motors. The following motors are equipped as standard with a unidirectional external metal fan:

- 1MM1...-3BB...-1...
- 1MM1...-4A...-...
- 1MM1...-4B...-...

When ordering these motors, order code **K37** must be specified for clockwise rotation or order code **K38** for counterclockwise rotation.

An EC Declaration of Conformity is enclosed with every motor. In the case of motors for converter operation, the following information must be supplied in the order or inquiry in plain text:

- For a constant torque drive (order code **B61**: $T = \text{const.}$) or drives for fans, pumps and compressors (order code **B60**: $T \sim n^2$)
- Load torque
- Speed control range
- Utilized thermal class that the motor should or must comply with

Note:

Motors of the 1L.1 series (non-Ex motors) are utilized in accordance with thermal class 180 (H)/155 (F). Derating of motors of the 1M.1 series (Ex motors) results in a corresponding reduction in thermal utilization.

These specifications regarding operation are labelled on an additional rating plate on the motor (see also section "Additional rating plate" under "Rating plate labeling" on page 10/7).

Type of protection Ex nA for use in Zone 2

The motors are modified for operation in Zone 2 and designed for compliance with temperature class T3 (maximum surface temperature of 200 °C inside the motor).

- Design for Zone 2 for line operation – order code **M72**:
Standard utilization in accordance with thermal class 130 (B). Utilization in accordance with thermal class 155 (F) with service factor (order code **C14**) possible on request.
- Version for Zone 2 for converter operation – order code **M73**:

Depending on the power derating, the standard utilization lies between thermal Class 130 (B) and 155 (F). In constant torque drives (order code **B61**: $T = \text{const.}$) the thermal utilization depends on the value of the load torque and the speed control range (→ 130 (B) and/or 155 (F)). The maximum possible constant torque is dependent on the speed control range and the cooling method of the motor → thermal torque limit characteristic.

IEC/EN 60079-15 specifies that the motor and converter must be tested as a unit. As an alternative, however, it is also admissible for the thermal response to be determined by a calculation. The thermal response of the motors for operation on Siemens converters is known, so a system test is not generally required for drives for fans, pumps and compressors. Please inquire as to whether a system test is necessary or not in the case of a constant torque drive → constant torque drives on request only.

The following identification is included on an additional rating plate on the motor:

II 3G Ex nA IIC T3 Gc, IEC/EN 60079

Type of protection Ex tc for use in Zone 22 for non-conductive dust

The motors are modified for operation in Zone 22 and designed such that an external motor surface temperature of 125 °C is not exceeded.

For the 1MM1, 1MH1, 1MQ1¹⁾ and 1MN1 motor series, monitoring of the bearing temperature is required for operation in Zone 22. These motors are therefore equipped with bearing temperature sensors as standard.

- Version for Zone 22 for line operation – order code **M35**:
Standard utilization in accordance with thermal class 130 (B). Utilization in accordance with thermal class 155 (F) with service factor (order code **C14**) possible on request.
- Version for Zone 22 for converter operation – order code **M39**:
Depending on the power derating, the standard utilization lies between thermal Class 130 (B) and 155 (F). In constant torque drives (order code **B61**: $T = \text{const.}$) the thermal utilization depends on the value of the load torque and the speed control range (→ 130 (B) and/or 155 (F)). The maximum possible constant torque is dependent on the speed control range and the cooling method of the motor → thermal torque limit characteristic. When configuring these motors, therefore, it is important to note that the maximum admissible torque, as a function of speed, is not exceeded. Please inquire as to whether a system test is necessary or not in the case of a constant torque drive → constant torque drives on request only.

The following identification is included on an additional rating plate on the motor:

II 3D Ex tc IIIB T125 °C Dc, IEC/EN 60079

Operation on non-Siemens converter

It is normally necessary to inquire regarding operation of the motors on a non-Siemens converter, regardless of the type of protection and torque characteristic of the driven machine. A test must be performed to ensure that the temperature limits are complied with. This should take place at the customer's premises (not possible in the factory).

¹⁾ 1MQ1 motors are only certified for explosion group/explosion subgroup IIB.

Technical specifications (continued)Derating

In comparison to non-Ex motors, the rated power of Ex motors is reduced. Derating is performed in accordance with defined factors. The reference power here is the rated power of the non-Ex motor.



Derating factors for motors of the 1M.1 series

Motor type	Zone (order code)					
	Zone 2 (M72)		Zone 2 (M73)		Zone 22 (M35)	
	Torque (order code)					
	$T \sim n^2$ (B60)	$T \sim n^2$ (B60)	$T = \text{const.}$ (B61)	$T \sim n^2$ (B60)	$T \sim n^2$ (B60)	$T = \text{const.}$ (B61)
1MM1	–	0.9	O.R.	–	0.8	O.R.
1MQ1	–	0.9	O.R.	–	0.8	O.R.
1MH1	1	0.9	O.R.	1	0.9	O.R.
1MN1	–	0.9	O.R.	–	1	O.R.

O.R. On request

Rating plate labeling**Rating plate**

In contrast to the non-Ex motor, the rating plate specifies that the voltage tolerance is compliant with IEC/EN 60034-1, Zone A.

SIEMENS							
3~ Mot. 1MM1 222-3AB71-2AA0-Z SIMOTICS FD NoN- 9900006060001 / 2014							
m: 1.8 t IP 55 IM B3 Ta: -20...+40°C Th.Cl.: 180(H) Util.:155(F)							
nmax: 2500 1/min IEC/EN 60034-1							
U [V]	I [A]	P [kW]	cosφ	n [1/min]	f [Hz]		Eff.
380 Δ)	580	320	0.87	1500	50.30)		96.2%
Mot. design: ONLY FOR SINAMICS WITH OPT. PULSE PATTERNS (p1802=19)							
Line supply: 400V/50Hz							
*) VARIATIONS ACC. TO IEC/EN 60034-1, ZONE A							
							
Made in Germany D-90441 Nürnberg 							

Valid for:

Order code **M72**: Zone 2 for line motors
 Order code **M73**: Zone 2 for converter motors
 Order code **M35**: Zone 22 for line motors
 Order code **M39**: Zone 22 for converter motors

If, in addition to order codes **M72**, **M73**, **M35** or **M39**, order code **D36** (conformity statement) and/or **D37** (IEC Ex certificate) is also specified in the order, the corresponding certificate numbers will be stamped on the rating plate.

Additional rating plate

The Ex motors have an additional rating plate containing additional information as required by standard EN 60079-0 with regard to converter operation.

- Speed or frequency control range, e.g. 150 ... 1500 rpm
- Torque characteristics and max. torque, e.g.
 $T \sim n^2$, $T_{\max} = 2037 \text{ Nm}$
- Converter type, e.g. SINAMICS
- Min. pulse frequency, e.g. 1250 Hz

Valid for:

Order code **M73**: Zone 2 for converter motors
 Order code **M39**: Zone 22 for converter motors
 Order code **B60**: $T \sim n^2$

If, in addition to order codes **M72**, **M73**, **M35** or **M39**, order code **D36** (conformity statement) and/or **D37** (IEC Ex certificate) is also specified in the order, the corresponding certificate numbers will be stamped on the rating plate.

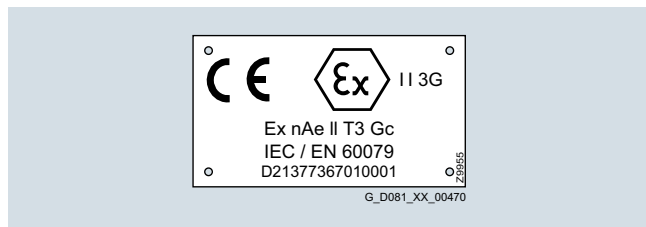
Explosion-proof motors

Technical information

Technical specifications (continued)

Ex plate

Zone 2:



Note:

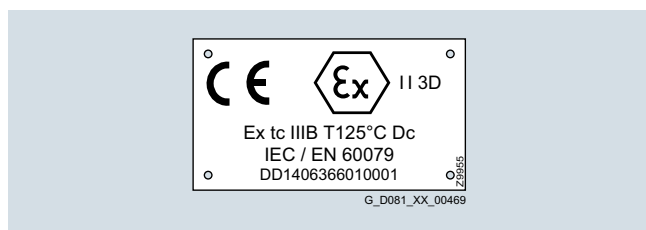
The letter(s) between "Ex nA" and "II T3 Gc" vary according to the additional components of the motor (e.g. temperature sensor, anti-condensation heating, etc.).

Valid for:

Order code **M72**: Zone 2 for line motors

Order code **M73**: Zone 2 for converter motors

Zone 22:



Valid for:

Order code **M35**: Zone 22 for line motors

Order code **M39**: Zone 22 for converter motors

VIK version

The recommendations of the VIK (Verband der Industriellen Energie und Kraftwirtschaft e. V.) describe the requirements for three-phase induction motors as often required by the chemical industry:

VIK standard version:

1L.1 + order code **K30** – "VIK" marking on the rating plate
Rating plate

VIK Ex n version:

1M.1 + order code **K30** – "VIK" marking on rating plate;
"Ex nA IIC T3 Gc" on an additional rating plate in accordance with Directive 2014/34/EU

Both motor versions include the technology for Zone 2 in "Non-sparking" type of protection. In accordance with the technical requirements of VIK, motors can be supplied in frame sizes 315, 355, 400 and 450.

Coolant temperature

Coolant temperature -40 to +40 °C for explosion-proof motor

For all 1MM1, 1MH1, 1MQ1¹⁾ and 1MN1 motors in explosion protection types Ex nA or Ex tc (Zone 2/22), the operating ambient temperature range can be optionally extended to -40°C. Extensive technical measures are necessary in this case.

Special mounting technology

"Special mounting technology" comprises technology that is compatible with explosion-proof motors.

Explosion-proof motors can be implemented in a broader range of applications when explosion-proof rotary pulse encoders or explosion-proof separately driven fans are mounted.

The use of a separately driven fan is recommended to increase motor utilization at low speeds and to limit noise generation at speeds significantly higher than the synchronous speed.

1MQ1 and 1MN1 motors are optionally available with a declaration of conformity according to 2014/34/EU issued by an independent testing body for Zone 2 motors (Ex nA) (order code **D36**)²⁾. For 1MQ1 motors, the paint color of the separately driven fan is always black. An IEC Ex certificate (order code **D37**) is not available for 1MQ1 and 1MN1 motors.

Explosion-proof rotary pulse encoder

The rotary pulse encoder can only be mounted on a standard non-drive end (NDE), i.e. a second shaft extension or protective cover cannot be supplied. In the case of a vertical mounting position for motors of the 1MM1 series, therefore, a suitable cover must be implemented by the customer to prevent small parts from falling into the fan cover (see also standard IEC/EN 60079-0).

The type of protection of the rotary pulse encoder must be observed. The relevant data are stamped on the rating plate of the rotary pulse encoder.

When an explosion-proof rotary pulse encoder is mounted, the length of the motor increases by dimension l. For an explanation of the additional dimensions and weights, see "Dimensions and weights of explosion-proof rotary pulse encoders" on the website of the encoder manufacturer.

HOG 10 and HOG 11 rotary pulse encoders

The HOG 10 and HOG 11 rotary pulse encoders have an extremely rugged design and are therefore ideally suited to difficult operating conditions.

The following order codes are available for explosion-proof rotary pulse encoders (ATEX):

- **H73**: HOG 10 D 1024 I
- **H83**: HOG 10 DN 2048
- **H88**: HOG 11 DN 1024 I (16 mm) special corrosion protection

Encoder mounting for use below -20 °C and above +40 °C is available on request.

Please consult the manufacturer's website for further information and technical data of the encoders.

Manufacturers of rotary pulse encoders

Types: HOG 10, HOG 11:

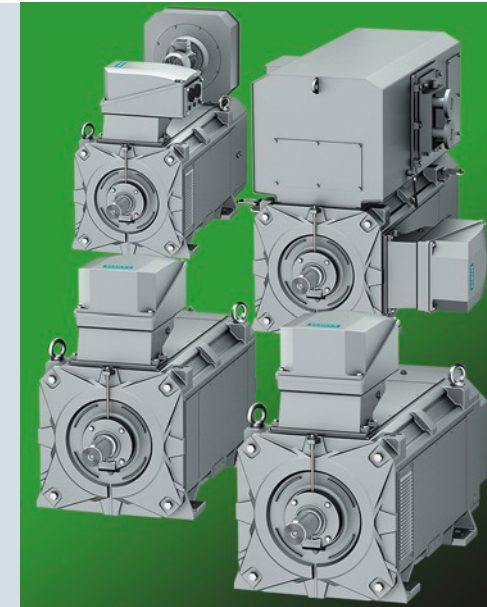
Baumer Hübner GmbH
Max-Dohrn-Str. 2+4
10589 Berlin, Germany
Tel. +49 30 6 90 03-0
Fax +49 30 6 90 03-1 04

www.baumerhuebner.com

E-mail: info@baumerhuebner.com

¹⁾ 1MQ1 motors are only certified for explosion group/explosion subgroup IIB.

²⁾ For 1MQ1 motors, frame size 315, an axially mounted separately driven fan (16th position of the Article No. = 1) is not available.

Article No. supplements and special versions

11/2	Voltages
11/2	Selection and ordering data
11/3	Rated speeds
11/3	Selection and ordering data
11/5	Types of construction
11/5	Selection and ordering data
11/6	Terminal box position
11/6	Selection and ordering data
11/7	Separately driven fan position/ heat exchanger position
11/7	Selection and ordering data
11/8	Mechanical speed limit
11/8	Selection and ordering data
11/9	Options
11/9	Motors without explosion protection
11/21	Explosion-proof motors

Article No. supplements and special versions

Rated speeds

Selection and ordering data


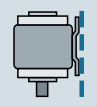
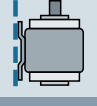
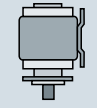
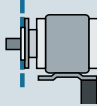
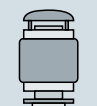


Special versions	Speed description 13th position of the Article No.	System description 6th position of the Article No.	Voltage code 12th position of the Article No.	Additional identification code with order code and plain text if required	Catalog section																							
					4				5				6				7				8				9			
					Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version															
with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger				with self-ventilation				with forced ventilation								
				1.M1				1.Q1				1.H1				1.N1				1LL1				1LP1				
Frame size																												
1..1.....■... 1..1.■.....■... 1..1.....■.....				Order code	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
50 Hz systems																												
3000 rpm	1 Line operation	0	400 V, 50 Hz	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		4	690 V, 50 Hz	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	2 Converter operation	1	400 V, 50 Hz	1	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-			
		2	500 V, 50 Hz	2	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-			
		3	690 V, 50 Hz	3	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-			
		4	690 V, 50 Hz	3	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-	□	□	-	-			
		4	460 V, 60 Hz	5	-	✓	□	-	-	✓	□	-	-	✓	□	-	-	✓	□	-	-	✓	□	-				
		6	575 V, 60 Hz	6	-	✓	□	-	-	✓	□	-	-	✓	□	-	-	✓	□	-	-	✓	□	-				
1500 rpm	2 Line operation	0	400 V, 50 Hz	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		4	690 V, 50 Hz	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	2 Converter operation	1	400 V, 50 Hz	1	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		2	500 V, 50 Hz	2	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		3	690 V, 50 Hz	3	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		4	690 V, 50 Hz	3	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		4	460 V, 60 Hz	5	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
		6	575 V, 60 Hz	6	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
1000 rpm	3 Line operation	0	400 V, 50 Hz	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		4	690 V, 50 Hz	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	3 Converter operation	1	400 V, 50 Hz	1	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		2	500 V, 50 Hz	2	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		3	690 V, 50 Hz	3	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		4	690 V, 50 Hz	3	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		4	460 V, 60 Hz	5	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
		6	575 V, 60 Hz	6	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
750 rpm	4 Line operation	0	400 V, 50 Hz	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		4	690 V, 50 Hz	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	4 Converter operation	1	400 V, 50 Hz	1	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		2	500 V, 50 Hz	2	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		3	690 V, 50 Hz	3	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		4	690 V, 50 Hz	3	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□			
		4	460 V, 60 Hz	5	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
		6	575 V, 60 Hz	6	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				

For legends and footnotes, see page 11/4.

Article No. supplements and special versions

Types of construction

Selection and ordering data

Types of construction	Type of construction code 14th position of the Article No.	Catalog section																								
		4				5				6				7				8				9				
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version																
		with self-ventilation 1.M1				with forced ventilation 1.Q1				with water-jacket cooling 1.H1				with heat exchanger 1.N1				with self-ventilation 1LL1				with forced ventilation 1LP1				
		Frame size																								
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	
Without flange																										
IM B3		A	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
IM V5		C	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
IM V6		D	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
With flange																										
IM V15		E	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
IM B5 with support foot		F	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
IM V1 with protective cover		G	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IM V1 without protective cover		J	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
IM B35		K	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Standard version
- ✓ With additional price
- Not possible
- O.R. On request

Article No. supplements and special versions

Terminal box position

Selection and ordering data

Terminal box position	Terminal box position code 15th position of the Article No.	Catalog section																							
		4				5				6				7				8				9			
		Air-cooled, enclosed version								Water-cooled version								Air-cooled, open version							
		with self-ventilation 1.M1				with forced ventilation 1.Q1				with water-jacket cooling 1.H1				with heat exchanger 1.N1				with self-ventilation 1LL1				with forced ventilation 1LP1			
		Frame size																							
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Terminal box position																									
Standard version (terminal box on DE top)	A	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	□	□	□	□	□	□	□	□
Version with one terminal box																									
Terminal box on DE right-hand	B	○	○	○	○	○	○	○	○	○	○	○	○	□	□	□	□	-	-	-	-	-	-	-	-
Terminal box on DE left-hand	C	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-	-	-	-	-	-	-
Terminal box on NDE top ¹⁾	D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Terminal box on NDE right-hand ¹⁾	E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Terminal box on NDE left-hand ¹⁾	F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Version with two terminal boxes																									
Terminal boxes both top (NDE and DE)	K	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Terminal boxes both left-hand (NDE and DE)	L	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-
Terminal boxes both right-hand (NDE and DE)	M	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-
Terminal boxes both on DE (right-hand and left-hand)	N	-	-	-	-	-	-	-	-	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-
Terminal boxes both on NDE (right-hand and left-hand)	P	-	-	-	-	-	-	-	-	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-

- Standard version
- Without additional price
- ✓ With additional price
- Not possible
- O. R. On request

¹⁾ Possible terminal box positions dependent on separately driven fan position.

Article No. supplements and special versions

Separately driven fan position/heat exchanger position

Selection and ordering data

Separately driven fan position/Heat exchanger position	Separately driven fan/heat exchanger position code 16th position of the Article No.	Catalog section																							
		4				5				6				7				8				9			
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version															
		with self-ventilation 1.M1				with forced ventilation 1.Q1				with water-jacket cooling 1.H1				with heat exchanger 1.N1				with self-ventilation 1LL1				with forced ventilation 1LP1			
		Frame size																							
	1..1...-.....-	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Separately driven fan position/heat exchanger position																									
No separately driven fan, no heat exchanger	0	□	□	□	□	-	-	-	-	□	□	□	□	-	-	-	-	□	□	□	□	-	-	-	-
Separately driven fan for air-cooled motors																									
Separately driven fan unit NDE, axial ¹⁾	1	-	-	-	-	✓ ²⁾	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓
Separately driven fan unit NDE, top	2	-	-	-	-	□	□	□	□	-	-	-	-	-	-	-	-	-	-	-	-	□	□	□	□
Separately driven fan unit NDE, right-hand	3	-	-	-	-	○	○	○	○	-	-	-	-	-	-	-	-	-	-	-	-	○	○	○	○
Separately driven fan unit NDE, left-hand	4	-	-	-	-	○	○	○	○	-	-	-	-	-	-	-	-	-	-	-	-	○	○	○	○
Heat exchanger for modular motors																									
Heat exchanger, top	5	-	-	-	-	-	-	-	-	-	-	-	-	□	□	□	□	-	-	-	-	-	-	-	-

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

¹⁾ Not available for increased power motors (5th position of the Article No.: **3, 5**).

²⁾ Not available for explosion-proof motors (2nd position of the Article No.: **M**).

Article No. supplements and special versions

Mechanical limit speed

Selection and ordering data

Mechanical speed limit for non-standard type of construction, bearings or flange sizes

The mechanical speed limit for type of construction IM B3 is entered in the selection and ordering data tables in accordance with the cooling method. The mechanical speed limit may change if the type of construction, bearings, flange size or mounted brake are different. The relevant lowest mechanical speed limit from the following tables shall apply.

Mechanical speed limit for non-standard type of construction, bearings or flange sizes

Type of construction	Order code	Motor type							
		1..1...-3AB...-Z	1..1...-3AC...-Z	1..1...-3BB...-Z	1..1...-3BC...-Z	1..1...-4AB...-Z	1..1...-4AC...-Z	1..1...-4BB...-Z	1..1...-4BC...-Z
		rpm	rpm	rpm	rpm	rpm	rpm	rpm	rpm
IM B3	K20	2600	2600	2400	2400	2000	2000	1900	1700
IM B35	–	3600	2600	3300	2500	2200	2000	2000	1700
	M61	3600	2600	3000	2400	–	–	–	–
IM B5	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.
IM V1	–	2500	2500	2000	2000	2000	2000	1800	1700
	M61	1500	1500	1000	1000	–	–	–	–
IM V15, IM V5, IM V6	–	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.	O. R.

O. R. On request

Mechanical speed limit for brake mounting

Order code	Motor type			
	1L ■ ...-3A...-Z H N P Q	1L ■ ...-3B...-Z H N P Q	1L ■ ...-4A...-Z H N P Q	1L ■ ...-4B...-Z H N P Q
	rpm	rpm	rpm	rpm
H47	2200 (Stromag NFA 160)	1900 (Stromag NFA 250)	1600 (Stromag NFA 400)	–
J48 (230 V AC)	3200 (Pintsch-Bubbenzer SFB 160)	–	–	–
J49 (230 V AC)	3200 (Pintsch-Bubbenzer SFB 160 SH)	–	–	–
J56 (230 V AC)	3200 (Pintsch-Bubbenzer SFB 160 H)	3200 (Pintsch-Bubbenzer SFB 160 H)	–	–
J57 (230 V AC)	–	2800 (Pintsch-Bubbenzer SFB 250 SH)	–	–
J58 (230 V AC)	–	2800 (Pintsch-Bubbenzer SFB 250 H)	–	–
J59 (400 V AC)	–	–	2800 (Pintsch-Bubbenzer SFB 250 H)	–
J66 (400 V AC)	–	–	2500 (Pintsch-Bubbenzer SFB 400 SH)	–
J67 (400 V AC)	–	–	2500 (Pintsch-Bubbenzer SFB 400 H)	2500 (Pintsch-Bubbenzer SFB 400 H)
J68 (400 V AC)	–	–	–	2200 (Pintsch-Bubbenzer SFB 630 SH)
J69 (400 V AC)	–	–	–	2200 (Pintsch-Bubbenzer SFB 630 H)

Article No. supplements and special versions
Options

Motors without explosion protection

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																							
		4				5				6				7				8				9			
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version															
		with self-ventilation		with forced ventilation		with water-jacket cooling		with heat exchanger		with self-ventilation		with forced ventilation													
		1LM1		1LQ1		1LH1		1LN1		1LL1		1LP1													
		Frame size																							
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
	1L.1...-.....-Z Order code																								
Preferred motors																									
Standardline ³⁵⁾	B20	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor protection – winding monitoring																									
6 PTC thermistors for alarm and tripping without lightning arresters ⁶⁾	A12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 temperature sensors KTY 84-130		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
6 temperature sensors KTY 84-130	A27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Pt1000 resistance thermometers (4 terminals) ⁴⁸⁾	A36	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Pt1000 resistance thermometers (12 terminals) ⁴⁸⁾	A37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Pt100 resistance thermometers ⁶⁾	A61	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Pt100 resistance thermometers, 3-wire circuit from auxiliary terminal box (option M50 or M88) ⁶⁾	A64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection – bearing monitoring																									
2 Pt100 screw-in resistance thermometers in basic circuit for rolling-contact bearings	A72	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Pt100 screw-in resistance thermometers in basic circuit for rolling-contact bearings, 3-wire circuit from auxiliary terminal box	A78	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Pt100 double screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings	A80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection – other monitoring functions																									
Leakage water detection ²⁹⁾	H08	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
MCM Box with CMS2000 plus evaluation unit for temperature ³⁰⁾	M49	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor connection – terminal box																									
Subsequently rotatable main connection box ^{9) 57)}	J12	□	□	□	□	□	□	□	□	✓	✓	✓	✓	□	□	□	□	□	□	□	□	□	□	□	□
Two-part plate on connection box ^{1) 10)}	K06	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
Larger connection box 1XB1631 ^{1) 9) 31)}	L00	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
Undrilled entry plate	L01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Larger connection box 1XB1621 ^{1) 9)}	M58	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
Cable entry with MCT frame ^{1) 41)}	M59	-	-	-	-	-	-	-	-	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-	-	-	-	-
Connection box 1XB7731 ²⁹⁾	M70	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box 1XB7740 ^{9) 29) 31)}	M71	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box 1XB7750 ^{9) 26) 29)}	M78	-	-	✓	✓	-	-	✓	✓	-	-	✓	✓	-	-	✓	✓	-	-	✓	✓	-	-	✓	✓
PE connection without cable lug	Q00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Motors without explosion protection

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																							
		4				5				6				7				8				9			
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version															
		with self-ventilation		with forced ventilation		with water-jacket cooling		with heat exchanger		with self-ventilation		with forced ventilation													
		1LM1		1LQ1		1LH1		1LN1		1LL1		1LP1													
		Frame size																							
1L.1.....-Z Order code		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450				
Motor connection – terminal box – cable entry																									
Cable entry from right-hand ⁹⁾	L51	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□				
Cable entry from left-hand ⁹⁾	L52	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
Cable entry from DE ⁹⁾	L61	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
Cable entry from NDE ⁹⁾	L62	○	○	○	○	○	○	○	○	○	○	○	□	□	□	□	○	○	○	○	○				
Cable entry from the bottom ⁹⁾	L63	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
Cable entry from the top ⁹⁾	N83	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
Motor connection – auxiliary terminal box																									
DIN 89280 cable gland, maximum configuration ⁸⁾	K57	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
6 cables protruding, 1.5 m long ¹⁾	L48	-	-	-	-	-	-	-	-	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-				
6 cables protruding, 3 m long ¹⁾	L49	-	-	-	-	-	-	-	-	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-				
Auxiliary connection box 1XB3020	L97	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Auxiliary connection box 1XB9016 (cast-iron) ³⁰⁾	M50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Auxiliary connection box 1XB9015 (stainless steel) ³⁰⁾	M51	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Auxiliary connection box 1XB9014 (aluminum) ³⁰⁾	M88	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Anti-condensation heating																									
Anti-condensation heating for 230 V	K45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Anti-condensation heating for 115 V	K46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Anti-condensation heating for 400 V	L08	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Anti-condensation heating for 500 V ²⁾	L09	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Winding modification																									
Design with 2 galvanically separated windings for operation with converter ²⁾	C21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Ventilation																									
Filter for self ventilation ¹⁹⁾	G13	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-				
Filter for forced ventilation ^{16) 32)}	G12	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	✓	✓				
Metal external fan	K35	✓	✓	□	□	-	-	-	-	-	-	-	-	-	-	-	✓	✓	□	□	-				
Separately driven fan with non-standard voltage and/or frequency ^{3) 16)}	Y81 • and customer specifications	-	-	-	-	O.R.	O.R.	O.R.	O.R.	-	-	-	-	O.R.	O.R.	O.R.	O.R.	-	-	-	O.R.				
Bearings and lubrication																									
Measuring nipple for SPM shock pulse measurement for bearing inspection ¹⁵⁾	G50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Shock pulse measurement, fixed sensor and distributor box	H05	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.				
Shock pulse measurement, complete alarm box ³⁰⁾	H07	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Prepared for vibration sensor SPLUS CMS2000 VIB-SENSOR S01 ¹⁵⁾	H69	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				

For legends and footnotes, see page 11/32.

Article No. supplements and special versions
Options

Motors without explosion protection

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																															
		4				5				6				7				8				9											
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version																							
		with self-ventilation		with forced ventilation		with water-jacket cooling		with heat exchanger		with self-ventilation		with forced ventilation																					
		1LM1		1LQ1		1LH1		1LN1		1LL1		1LP1																					
		Frame size																															
	1L.1...-...-Z Order code	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450								
Bearings and lubrication (continued)																																	
Bearing design for increased cantilever forces ^{18) 20)}	K20	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.
Spent grease removal	K41	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic re-lubricating device EasyMatic ^{12) 30)}	N30	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	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.
Automatic re-lubricating device STAR CONTROL TIME M120 ^{12) 30)}	N31	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	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.
Automatic re-lubricating device STAR CONTROL IMPULSE L250 ^{12) 30)}	N32	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	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.
Balance and vibration quantity																																	
Vibration quantity level B ^{5) 21) 22)}	K02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-key balancing	L68	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft																																	
Second standard shaft extension ^{14) 39) 40)}	K16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shaft extension with standard dimensions, without feather keyway	K42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-standard cylindrical shaft extension	Y55 • and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pressure oil connection for cylindrical shaft end instead of feather key connection	Y85 • and customer specifications	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	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.
Direction of rotation																																	
Anti-clockwise direction, unidirectional fan ⁴²⁾	K98	-	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Both directions of rotation ⁵³⁾	K99	□	□	O.R.	O.R.	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	O.R.	O.R.	□	□	□	□	□	□	□	□
Degrees of protection																																	
IP65 degree of protection ²⁰⁾	K50	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IP56 degree of protection (non-heavy-sea) ²⁰⁾	K52	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pipe connection																																	
Pipe connection without socket on NDE from right-hand ²⁷⁾	K77	-	-	-	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Pipe connection without socket on NDE from left-hand ²⁷⁾	K78	-	-	-	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Pipe connection without socket on NDE from top ²⁷⁾	K79	-	-	-	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Water connection and material																																	
Cooling water pipes in stainless steel instead of copper	M85	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water connection from top	K61	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water connection from right-hand	K62	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water connection from left-hand	K63	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Motors without explosion protection

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																												
		4				5				6				7				8				9								
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version																				
		with self-ventilation		with forced ventilation		with water-jacket cooling		with heat exchanger		with self-ventilation		with forced ventilation																		
		1LM1		1LQ1		1LH1		1LN1		1LL1		1LP1																		
		Frame size																												
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450					
		1L.1...-.....-Z Order code																												
Special mounting technology – encoders (continued)																														
Mounting a special type of encoder ³⁸⁾	Y70 • and encoder designation	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	
Mounting of HOG 10 DN 1024 I + centrifugal switch, (speed rpm), terminal box protection against humidity ^{11) 16) 38)}	Y74 • and desired speed ... rpm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Mounting of HOG 10 DN 1024 I + centrifugal switch, (speed rpm), terminal box protection against dust ^{11) 16) 38)}	Y76 • and desired speed ... rpm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special mounting technology – prepared for encoder mounting																														
Prepared for mounting of LL 861 900 220 ³⁸⁾	H78	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Prepared for mounting of HOG 10 D 1024 I ^{11) 29) 38)}	H80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Special mounting technology – brakes																														
Mounting of brake (incl. the brake from Stromag) ¹⁷⁾	H47	-	-	-	-	O.R.	O.R.	O.R.	-	O.R.	O.R.	O.R.	-	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-	-	-	O.R.	O.R.	O.R.	-
Mounting of the holding brake SFB 160, 1600 Nm, 230 V, Pintsch-Bubbenzer ¹⁷⁾	J48	-	-	-	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
Mounting of the holding brake SFB 160 SH, 2100 Nm, 230 V, Pintsch-Bubbenzer ¹⁷⁾	J49	-	-	-	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
Mounting of the holding brake SFB 160 H, 2500 Nm, 230 V, Pintsch-Bubbenzer ¹⁷⁾	J56	-	-	-	-	O.R.	O.R.	-	-	O.R.	O.R.	-	-	O.R.	O.R.	-	-	-	-	-	-	-	-	-	-	-	O.R.	O.R.	-	-
Mounting of the holding brake SFB 250 SH, 3300 Nm, 230 V, Pintsch-Bubbenzer ¹⁷⁾	J57	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	-	-	-	-	-	-	O.R.	-	-
Mounting of the holding brake SFB 250 H, 4000 Nm, 230 V, Pintsch-Bubbenzer ¹⁷⁾	J58	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	-	-	-	-	-	-	O.R.	-	-
Mounting of the holding brake SFB 250 H, 4000 Nm, 400 V, Pintsch-Bubbenzer ¹⁷⁾	J59	-	-	-	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	-	-	-	-	O.R.	-
Mounting of the holding brake SFB 400 SH, 5200 Nm, 400 V, Pintsch-Bubbenzer ¹⁷⁾	J66	-	-	-	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	-	-	-	-	O.R.	-
Mounting of the holding brake SFB 400 H, 6300 Nm, 400 V, Pintsch-Bubbenzer ¹⁷⁾	J67	-	-	-	-	-	-	-	-	O.R.	O.R.	-	-	O.R.	O.R.	-	-	O.R.	O.R.	-	-	O.R.	O.R.	-	-	-	-	-	O.R.	O.R.
Mounting of the holding brake SFB 630 SH, 8000 Nm, 400 V, Pintsch-Bubbenzer ¹⁷⁾	J68	-	-	-	-	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	O.R.	-
Mounting of the holding brake SFB 630 H, 10000 Nm, 400 V, Pintsch-Bubbenzer ¹⁷⁾	J69	-	-	-	-	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	O.R.	-

Article No. supplements and special versions

Options

Motors without explosion protection

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																							
		4				5				6				7				8				9			
		Air-cooled, enclosed version								Water-cooled version								Air-cooled, open version							
		with self-ventilation 1LM1				with forced ventilation 1LQ1				with water-jacket cooling 1LH1				with heat exchanger 1LN1				with self-ventilation 1LL1				with forced ventilation 1LP1			
1L.1...-...-Z Order code		Frame size																							
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Special mounting technology – prepared for brake mounting																									
Prepared for mounting of the holding brake SFB for shaft height 315 ¹⁷⁾	J06	-	-	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	✓
Prepared for mounting of the holding brake SFB for shaft height 355 ¹⁷⁾	J07	-	-	-	-	O.R.	-	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	-	O.R.	-	-	-
Prepared for mounting of the holding brake SFB for shaft height 400 ¹⁷⁾	J08	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	-	O.R.	-	-
Prepared for mounting of the holding brake SFB for shaft height 450 ¹⁷⁾	J09	-	-	-	-	-	-	O.R.	-	-	-	O.R.	-	-	-	O.R.	-	-	-	-	-	-	-	O.R.	-
Documentation																									
Printed German/English Operating Instructions enclosed	B23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Paintwork coat thickness measurement protocol	B29	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrical data sheet	B31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Order-specific dimension drawing	B32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard test schedule	B34	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing report	B35	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Load characteristics	B37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recommended spare parts	B38	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Production schedule: Generated once	B43	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Production schedule: Updated every two weeks	B44	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Production schedule: Updated monthly	B45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Order-specific test schedule	B48	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Starting curve (Torque-speed and Current speed curve) ^{1) 56)}	B50	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
Equivalent circuit diagram	B51	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thermal torque limit curve ²⁾	B52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thermal limit curve	B53	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dynamic foundation load	B54	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Documentation languages																									
Czech	D54	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Polish	D55	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Russian	D56	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Japanese	D57	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Danish	D62	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Romanian	D71	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Italian	D72	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Finnish	D73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dutch	D74	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Turkish	D75	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
French	D77	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spanish es-ES	D78	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Portuguese pt-PT	D79	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bulgarian	D80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions
Options

Motors without explosion protection

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																							
		4				5				6				7				8				9			
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version															
		with self-ventilation		with forced ventilation		with water-jacket cooling		with heat exchanger		with self-ventilation		with forced ventilation													
		1LM1		1LQ1		1LH1		1LN1		1LL1		1LP1													
		Frame size																							
1L.1...-.....-Z Order code		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Test certificates (continued)																									
Recording of current and torque curves with torque metering shaft during starting, with acceptance ^{1) 34)}	F35	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Measurement of locked-rotor torque and current, without acceptance ^{1) 34)}	F52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Measurement of locked-rotor torque and current, with acceptance ^{1) 34)}	F53	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Noise measurement in no-load operation, with noise analysis, without acceptance	F62	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Noise measurement in no-load operation, with noise analysis, with acceptance	F63	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Type test with heat run for horizontal motors, without acceptance ^{22) 33)}	F82	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance ^{22) 33)}	F83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, without acceptance ^{23) 33)}	F92	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance ^{23) 33)}	F93	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump drives																									
Commissioning of the classification society by Siemens	E88	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Commissioning of the classification society by third party	E89	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Pump drive for sea water desalination plants certified according to Lloyd's Register ^{36) 51)}	E90	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Marine non-essential service – technical design																									
Design according to ABS for non-essential service ^{7) 51)}	X00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to BV for non-essential service ^{7) 51)}	X01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to DNV GL for non-essential service ^{7) 51)}	X03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to KR for non-essential service ^{7) 51)}	X05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to LR for non-essential service ^{7) 51)}	X06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Marine essential service – technical design																									
Design according to ABS for essential service ^{7) 51)}	X10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to BV for essential service ^{7) 51)}	X11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to CCS for essential service ^{7) 51)}	X12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to DNV GL for essential service ^{7) 51)}	X13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to KR for essential service ^{7) 51)}	X15	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Design according to LR for essential service ^{7) 51)}	X16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Motors without explosion protection

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																							
		4				5				6				7				8				9			
		Air-cooled, enclosed version				Water-cooled version				Air-cooled, open version															
		with self-ventilation		with forced ventilation		with water-jacket cooling		with heat exchanger		with self-ventilation		with forced ventilation													
		1LM1		1LQ1		1LH1		1LN1		1LL1		1LP1													
		Frame size																							
	1L.1...-.....-Z Order code	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Marine essential service for propulsion – certification (continued)																									
Certification for the first motor ordered according to LR for essential service, propulsion	N52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Certification for second and additional motors ordered acc. to LR for essential service, propulsion	N53	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Marine essential service for propulsion – testing																									
Tests for the first motor ordered according to ABS for essential service, propulsion	X60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the second and additional motors ordered acc. to ABS for essential service, propulsion	X61	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the first motor ordered according to BV for essential service, propulsion	X62	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the second and additional motors ordered acc. to BV for essential service, propulsion	X63	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the first motor ordered according to CCS for essential service, propulsion	X64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the second and additional motors ordered acc. to CCS for essential service, propulsion	X65	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the first motor ordered according to DNV GL for essential service, propulsion	X66	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the second and additional motors ordered acc. to DNV GL for essential service, propulsion	X67	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the first motor ordered according to KR for essential service, propulsion	X70	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the second and additional motors ordered acc. to KR for essential service, propulsion	X71	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the first motor ordered according to LR for essential service, propulsion	X72	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Tests for the second and additional motors ordered acc. to LR for essential service, propulsion	X73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Marine – additional options for essential service and essential service for propulsion																									
Motor for ship application, with higher ambient temperature and/or use of temperature class 180 (H) utilized according to 130 (B)	E80	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	-	-	-	-	-	-	-	-
Tests in the presence of representatives of the customer (in addition to the inspector of the classification society)	X99	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Article No. supplements and special versions
Options

Explosion-proof motors

Selection and ordering data

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version								Water-cooled version							
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger cooling			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
	1M.1-Z Order code	315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Motor protection – winding monitoring																	
6 PTC thermistors for alarm and tripping without lightning arresters ⁶⁾	A12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 temperature sensors KTY 84-130		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
6 temperature sensors KTY 84-130	A27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Pt1000 resistance thermometers (4 terminals) ⁴⁸⁾	A36	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Pt1000 resistance thermometers (12 terminals) ⁴⁸⁾	A37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Pt100 resistance thermometers ⁶⁾	A61	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 PT 100 resistance thermometers, 3-wire circuit from auxiliary terminal box (option M50 or M88) ⁶⁾	A64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection – bearing monitoring																	
2 Pt100 screw-in resistance thermometers in basic circuit for rolling-contact bearings	A72	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Pt100 screw-in resistance thermometers in basic circuit for rolling-contact bearings, 3-wire circuit from auxiliary terminal box	A78	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Pt100 double screw-in resistance thermometers in 3-wire circuit for rolling-contact bearings	A80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor protection – other monitoring functions																	
Leakage water detection ²⁹⁾	H08	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Motor connection – terminal box																	
Subsequently rotatable main connection box ^{9) 57)}	J12	□	□	□	□	□	□	□	□	✓	✓	✓	✓	□	□	□	□
Larger connection box 1XB1631 ^{1) 9) 31)}	L00	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Undrilled entry plate	L01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Larger connection box 1XB1621 ^{1) 9)}	M58	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Connection box 1XB7731 ²⁹⁾	M70	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box 1XB7740 ^{9) 29) 31)}	M71	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection box 1XB7750 ^{9) 26) 29)}	M78	-	-	✓	✓	-	-	✓	✓	-	-	✓	✓	-	-	✓	✓
PE connection without cable lug	Q00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Motor connection – terminal box – cable entry																	
Cable entry from right-hand ⁹⁾	L51	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-
Cable entry from left-hand ⁹⁾	L52	○	○	○	○	○	○	○	○	○	○	○	○	-	-	-	-
Cable entry from DE ⁹⁾	L61	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Cable entry from NDE ⁹⁾	L62	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Cable entry from the bottom ⁹⁾	L63	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Cable entry from the top ⁹⁾	N83	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section																	
		4				5				6				7					
		Air-cooled, enclosed version								Water-cooled version									
with self-ventilation								with forced ventilation				with water-jacket cooling				with heat exchanger			
1MM1								1MQ1				1MH1				1MN1			
Frame size																			
1M.1...-.....-Z Order code																			
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450		
Motor connection – auxiliary terminal box																			
DIN 89280 cable gland, maximum configuration ⁸⁾	K57	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
6 cables protruding, 1.5 m long ¹⁾	L48	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	–	–	–	–		
6 cables protruding, 3 m long ¹⁾	L49	–	–	–	–	–	–	–	–	O.R.	O.R.	O.R.	O.R.	–	–	–	–		
Auxiliary connection box 1XB3020	L97	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Auxiliary connection box 1XB9016 (cast-iron) ³⁰⁾	M50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Auxiliary connection box 1XB9015 (stainless steel) ³⁰⁾	M51	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Auxiliary connection box 1XB9014 (aluminum) ³⁰⁾	M88	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Anti-condensation heating																			
Anti-condensation heating for 230 V	K45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Anti-condensation heating for 115 V	K46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Anti-condensation heating for 400 V	L08	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Anti-condensation heating for 500 V ²⁾	L09	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Winding modification																			
Design with 2 galvanically separated windings for operation with converter ²⁾	C21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Ventilation																			
Metal external fan	K35	✓	✓	□	□	–	–	–	–	–	–	–	–	–	–	–	–		
Separately driven fan with non-standard voltage ^{3) 16)}	Y81 • and customer specifications	–	–	–	–	O.R.	O.R.	O.R.	O.R.	–	–	–	–	O.R.	O.R.	O.R.	O.R.		
Bearings and lubrication																			
Measuring nipple for SPM shock pulse measurement for bearing inspection ¹⁵⁾	G50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Shock pulse measurement, fixed sensor and distributor box	H05	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.		
Bearing design for increased cantilever forces ^{18) 20)}	K20	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.	✓	✓	✓	O.R.		
Spent grease removal	K41	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Balance and vibration quantity																			
Vibration quantity level B ^{5) 21) 22)}	K02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Full-key balancing	L68	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Shaft																			
Second standard shaft extension ^{14) 39) 40)}	K16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–	–	–		
Shaft extension with standard dimensions, without feather keyway	K42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Non-standard cylindrical shaft extension	Y55 • and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Pressure oil connection for cylindrical shaft end instead of feather key connection	Y85 • and customer specifications	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.		

For legends and footnotes, see page 11/32.

Article No. supplements and special versions
Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version								Water-cooled version							
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
1M.1...-.....-Z Order code		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Direction of rotation																	
Anti-clockwise direction, unidirectional fan ⁴²⁾	K98	-	✓	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-
Both directions of rotation ⁵³⁾	K99	□	□	O.R.	O.R.	□	□	□	□	□	□	□	□	□	□	□	□
Degrees of protection																	
IP65 degree of protection ²⁰⁾	K50	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
IP56 degree of protection (non-heavy-sea) ²⁰⁾	K52	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	✓	✓	✓	✓	✓	✓	✓	✓
Pipe connection																	
Pipe connection without socket on NDE from right-hand ²⁷⁾	K77	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Pipe connection without socket on NDE from left-hand ²⁷⁾	K78	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Pipe connection without socket on NDE from top ²⁷⁾	K79	-	-	-	-	✓	✓	✓	✓	-	-	-	-	-	-	-	-
Water connection and material																	
Cooling water pipes in stainless steel instead of copper	M85	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Water connection from top	K61	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Water connection from right-hand	K62	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Water connection from left-hand	K63	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Mechanical options																	
Motor mounting material for mounting on steel foundation ²⁵⁾	L31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting a coupling provided ⁵⁾	L17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rust-resistant screws (externally) ²⁸⁾	M27	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Flange version A660 instead of standard version ²⁴⁾	M61	✓	✓	-	-	✓	✓	-	-	✓	✓	-	-	✓	✓	-	-
Colors and paint finish																	
Standard finish in RAL 7030 stone gray		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Unpainted (only cast-iron parts primed)	K23	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Special finish in RAL 7030 stone gray	K26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard finish in other colors	Y53 • and standard finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special finish in other colors	Y54 • and special finish RAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rating plate and additional plates																	
Second rating plate, loose	K31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional rating plate with identification codes	Y82 • and customer specifications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Utilization																	
Temperature class 180 (H), used acc. to 130 (B) ⁴⁶⁾	C10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version				Water-cooled version											
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
	1M.1.....-Z Order code																
Coolant temperature and installation altitude																	
Coolant temperature -50 to +40 °C	D02	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-
Coolant temperature -40 to +40 °C	D03	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-
Coolant temperature -30 to +40 °C	D04	✓	✓	✓	✓	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-
Coolant temperature 45 °C ⁵⁴⁾	D11	O	O	O	O	O	O	O	O	-	-	-	-	-	-	-	-
Coolant temperature 50 °C ⁵⁴⁾	D12	O	O	O	O	O	O	O	O	-	-	-	-	-	-	-	-
Coolant temperature 55 °C ⁵⁴⁾	D13	O	O	O	O	O	O	O	O	-	-	-	-	-	-	-	-
Coolant temperature 60 °C ⁵⁴⁾	D14	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	-	-	-	-	-	-	-	-
Cooling water temperature 30 °C ⁵⁴⁾	D15	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Cooling water temperature 35 °C ⁵⁴⁾	D16	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Cooling water temperature 40 °C ⁵⁴⁾	D17	-	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Special ambient conditions																	
Increased air humidity/temperature with 30 to 60 g water per m ³ of air ¹⁶⁾	C19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increased air humidity/temperature with 60 to 100 g water per m ³ of air ¹⁶⁾	C26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Outdoor use with high salinity or areas with almost continuous condensation (corrosivity grade C5-M/ C5-I) ^{16) 50) 51)}	E81	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Outdoor use with moderate salinity (corrosivity grade C4) ^{16) 50)}	E82	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Outdoor use with low salinity (corrosivity grade C3) ^{16) 50)}	E83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Use in sulfurous atmosphere ^{16) 51)}	M06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design in accordance with standards and specifications																	
Electrical according to NEMA MG1-12	D30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ex certification for China (CQST)	D32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
declaration for conformity in accordance with 2014/34/EU of an independent body for motors of Zone 2 (Ex nA) resp. Zone 22 (non conductive dust, Ex tc) ^{41) 44)}	D36	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
IEC-Ex certificate for motors of Zone 2 (Ex nA) resp. Zone 22 (non conductive dust, Ex tc) ⁴¹⁾	D37	O.R.	O.R.	O.R.	O.R.	-	-	-	-	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Design according to ATEX, IEC-Ex																	
Square load curve $T \sim t^2$ ^{4) 44) 55)}	B60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Constant load curve $T = \text{const}$ ^{4) 44)}	B61	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
VIK version ³⁷⁾	K30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 22 for non-conductive dust (IP55) for line operation ¹⁾	M35	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-

Article No. supplements and special versions
Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version								Water-cooled version							
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
	1M.1...-.....-Z Order code																
Design according to ATEX, IEC-Ex (continued)																	
Design for Zone 22 for non-conductive dust (IP55) for converter operation ²⁾ _{13) 44)}	M39	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design for Zone 2 for line operation Ex nA II T3 according to IEC/EN 60079-15 ¹⁾	M72	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Design for Zone 2 for converter operation Ex nA II T3 according to IEC/EN 60079-15 ²⁾ _{13) 44)}	M73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special mounting technology – encoders																	
Mounting of HOG 10 D 1024 I ^{11) 29) 38)}	H73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 DN 2048 ^{11) 29) 38)}	H83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 11 DN 2048 ^{11) 29) 38)}	H84	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 11 DN 1024 I (16 mm) with special anti-corrosion protection ^{11) 29) 38)}	H88	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I with terminal box/protection against dust ^{11) 29) 38)}	N05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I with terminal box/protection against dust (zero signal) ^{11) 29) 38)}	N06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 D 1024 I with terminal box/protection against humidity ^{11) 29) 38)}	N07	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting of HOG 10 DN 1024 I with terminal box/protection against humidity (zero signal) ^{11) 29) 38)}	N08	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mounting a special type of encoder ³⁸⁾	Y70 • and encoder designation	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Special mounting technology – prepared for encoder mounting																	
Prepared for mounting of HOG 10 D 1024 I ^{11) 29) 38)}	H80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Documentation																	
Printed German/English Operating Instructions enclosed	B23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Paintwork coat thickness measurement protocol	B29	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrical data sheet	B31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Order-specific dimension drawing	B32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standard test schedule	B34	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Balancing report	B35	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Load characteristics	B37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recommended spare parts	B38	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Production schedule: Generated once	B43	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Production schedule: Updated every two weeks	B44	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Production schedule: Updated monthly	B45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Order-specific test schedule	B48	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version with self-ventilation				with forced ventilation				Water-cooled version with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
	1M.1...-.....-Z Order code																
Documentation (continued)																	
Starting curve (Torque-speed and Current speed curve) ^{1) 56)}	B50	-	-	-	-	-	-	-	-	✓	✓	✓	✓	-	-	-	-
Equivalent circuit diagram	B51	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thermal torque limit curve ²⁾	B52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thermal limit curve	B53	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dynamic foundation load	B54	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Documentation languages																	
Czech	D54	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Polish	D55	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Russian	D56	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Japanese	D57	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Danish	D62	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Romanian	D71	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Italian	D72	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Finnish	D73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dutch	D74	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Turkish	D75	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
French	D77	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spanish es-ES	D78	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Portuguese pt-PT	D79	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bulgarian	D80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Norwegian	D81	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hungarian	D82	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Swedish	D83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chinese	D84	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Serbian	D91	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability																	
Extension of liability for defects by 12 months up to a total of 24 months from initial shipment	Q80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 18 months up to a total of 30 months from initial shipment	Q81	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 24 months up to a total of 36 months from initial shipment	Q82	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 30 months up to a total of 42 months from initial shipment	Q83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 36 months up to a total of 48 months from initial shipment	Q84	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extension of liability for defects by 48 months up to a total of 60 months from initial shipment	Q85	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Article No. supplements and special versions
Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version with self-ventilation				with forced ventilation				Water-cooled version with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
1M.1...-.....-Z Order code		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Test certificates																	
Standard test (routine test) with acceptance	F01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Visual acceptance and report handover with acceptance	F03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature-rise test, without acceptance ³³⁾	F04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature-rise test with acceptance ³³⁾	F05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording of short-circuit characteristic and determination of short-circuit losses, without acceptance ³³⁾	F16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording of short-circuit characteristic and determination of short-circuit losses, with acceptance ³³⁾	F17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording of load characteristic, without acceptance ³³⁾	F18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording of load characteristic, with acceptance ³³⁾	F19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Noise measurement in no-load operation, no noise analysis, without acceptance	F28	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Noise measurement in no-load operation, no noise analysis, with acceptance	F29	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Recording of current and torque curves with torque metering shaft during starting, without acceptance ^{1) 34)}	F34	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recording of current and torque curves with torque metering shaft during starting, with acceptance ^{1) 34)}	F35	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Measurement of locked-rotor torque and current, without acceptance ^{1) 34)}	F52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Measurement of locked-rotor torque and current, with acceptance ^{1) 34)}	F53	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Noise measurement in no-load operation, with noise analysis, without acceptance	F62	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Noise measurement in no-load operation, with noise analysis, with acceptance	F63	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Type test with heat run for horizontal motors, without acceptance ^{22) 33)}	F82	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for horizontal motors, with acceptance ^{22) 33)}	F83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, without acceptance ^{23) 33)}	F92	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Type test with heat run for vertical motors, with acceptance ^{23) 33)}	F93	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump drives																	
Commissioning of the classification society by Siemens	E88	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Commissioning of the classification society by third party	E89	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pump drive for sea water desalination plants certified according to Lloyd's Register ^{36) 51)}	E90	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version								Water-cooled version							
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
1M.1...-.....-Z Order code		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
Marine non-essential service – technical design																	
Design according to ABS for non-essential service ^{7) 51)}	X00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to BV for non-essential service ^{7) 51)}	X01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to DNV GL for non-essential service ^{7) 51)}	X03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to KR for non-essential service ^{7) 51)}	X05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to LR for non-essential service ^{7) 51)}	X06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine essential service – technical design																	
Design according to ABS for essential service ^{7) 51)}	X10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to BV for essential service ^{7) 51)}	X11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to CCS for essential service ^{7) 51)}	X12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to DNV GL for essential service ^{7) 51)}	X13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to KR for essential service ^{7) 51)}	X15	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to LR for essential service ^{7) 51)}	X16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine essential service – certification																	
Certification for the first motor ordered according to ABS for essential service	J70	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the second and additional motors ordered according to ABS for essential service	J71	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to BV for essential service	J72	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the second and additional motors ordered according to BV for essential service	J73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to CCS for essential service	J74	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the second and additional motors ordered according to CCS for essential service	J75	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to DNV GL for essential service	J76	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the second and additional motors ordered according to DNV GL for essential service	J77	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to KR for essential service	J80	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the second and additional motors ordered according to KR for essential service	J81	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to LR for essential service	J82	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the second and additional motors ordered according to LR for essential service	J83	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version								Water-cooled version							
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
	1M.1...-.....-Z Order code																
Marine essential service – testing																	
Tests for the first motor ordered according to ABS for essential service	X30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered according to ABS for essential service	X31	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to ABS for essential service	X32	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered according to BV for essential service	X33	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to CCS for essential service	X34	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered according to CCS for essential service	X35	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to DNV GL for essential service	X36	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered according to DNV GL for essential service	X37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to KR for essential service	X40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered according to KR for essential service	X41	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to LR for essential service	X42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered according to LR for essential service	X43	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine essential service for propulsion – technical design																	
Design according to ABS for essential service, propulsion ^{7) 51)}	X20	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to BV for essential service, propulsion ^{7) 51)}	X21	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to CCS for essential service, propulsion ^{7) 51)}	X22	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to DNV GL for essential service, propulsion ^{7) 51)}	X23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to KR for essential service, propulsion ^{7) 51)}	X25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design according to LR for essential service, propulsion ^{7) 51)}	X26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine essential service for propulsion – certification																	
Certification for the first motor ordered according to ABS for essential service, propulsion	N40	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for second and additional motors ordered according to ABS for essential service, propulsion	N41	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to BV for essential service, propulsion	N42	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version								Water-cooled version							
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
	1M.1.....-Z Order code																
Marine essential service for propulsion – certification (continued)																	
Certification for second and additional motors ordered acc. to BV for essential service, propulsion	N43	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to CCS for essential service, propulsion	N44	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for second and additional motors ordered acc. to CCS for essential service, propulsion	N45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to DNV GL for essential service, propulsion	N46	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for second and additional motors ordered acc. to DNV GL for essential service, propulsion	N47	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to KR for essential service, propulsion	N50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for second and additional motors ordered acc. to KR for essential service, propulsion	N51	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for the first motor ordered according to LR for essential service, propulsion	N52	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Certification for second and additional motors ordered acc. to LR for essential service, propulsion	N53	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Marine essential service for propulsion																	
Tests for the first motor ordered according to ABS for essential service, propulsion	X60	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered acc. to ABS for essential service, propulsion	X61	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to BV for essential service, propulsion	X62	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered acc. to BV for essential service, propulsion	X63	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to CCS for essential service, propulsion	X64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered acc. to CCS for essential service, propulsion	X65	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to DNV GL for essential service, propulsion	X66	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered acc. to DNV GL for essential service, propulsion	X67	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to KR for essential service, propulsion	X70	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Article No. supplements and special versions
Options

Explosion-proof motors

Special versions	Additional identification code -Z with order code and plain text if required	Catalog section															
		4				5				6				7			
		Air-cooled, enclosed version								Water-cooled version							
		with self-ventilation				with forced ventilation				with water-jacket cooling				with heat exchanger			
		1MM1				1MQ1				1MH1				1MN1			
		Frame size															
		315	355	400	450	315	355	400	450	315	355	400	450	315	355	400	450
	1M.1...-.....-Z Order code																
Marine essential service for propulsion (continued)																	
Tests for the second and additional motors ordered acc. to KR for essential service, propulsion	X71	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the first motor ordered according to LR for essential service, propulsion	X72	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tests for the second and additional motors ordered acc. to LR for essential service, propulsion	X73	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special operating conditions																	
Motor for ship application, with higher ambient temperature and/or use of temperature class 180 (H) utilized according to 130 (B)	E80	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Tests in the presence of representatives of the customer (in addition to the inspector of the classification society)	X99	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For legends and footnotes, see page 11/32.

Article No. supplements and special versions

Options

Legends and footnotes

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

- ¹⁾ Only available with motors for line operation (DOL motors; 6th position of the Article No.: **0**).
- ²⁾ Only available with motors for converter operation (VSD motors; 6th position of the Article No.: **1, 2, 3, 4**).
- ³⁾ The following information is required in plain text when ordering: Voltage and frequency.
- ⁴⁾ The following information is required in plain text when ordering: Torque and speed/frequency control range. Ordering is only possible in combination with order codes **M72, M73, M35** or **M39**.
- ⁵⁾ Not available in combination with order code **K16** or **K20**.
- ⁶⁾ For additional information regarding motor protection, see page 2/11.
- ⁷⁾ Only in combination with the stainless steel auxiliary terminal box (order code **M51**).
- ⁸⁾ Only available for standard cable entry. Special cable entry incl. Cable glands on request.
- ⁹⁾ Only available for permissible mounting positions, see page 2/14.
- ¹⁰⁾ Order code **K06** only in combination with order codes **L00** and **M58**.
- ¹¹⁾ Order code **D36** is not available for explosion-proof motors.
- ¹²⁾ Not available in combination with order code **K50**.
- ¹³⁾ Order code **B60** or **B61** must be ordered additionally.
- ¹⁴⁾ Only available for types of construction IM B3, IM V5, IM V6, IM V15 and IM V1 (14th position of the Article No.: **A, C, D, E, J**).
- ¹⁵⁾ Only available with 16th position of the Article No.: **0, 1, 2** or **5** (separately driven fan position/heat exchanger position).
- ¹⁶⁾ Not available for separately driven fan unit axial on NDE side (16th position of the Article No.: **1**).
- ¹⁷⁾ Only available for types of construction IM B3 and IM B35 (14th position of the Article No.: **A, K**).
- ¹⁸⁾ Only available for type of construction IM B3 (14th position of the Article No.: **A**).
- ¹⁹⁾ Not available for encoder mounting.
- ²⁰⁾ Only available for rated speeds below 3000 rpm (13th position of the Article No.: **2, 3, 4, 6, 7, 8**).
- ²¹⁾ Not available for rated speed of 3600 rpm (13th position of the Article No.: **5**).
- ²²⁾ Only available for types of construction IM B3, IM B5 with support foot and IM B35 (14th position of the Article No.: **A, F, K**).
- ²³⁾ Only available for types of construction IM V5, IM V6, IM V15 and IM V1 (14th position of the Article No.: **C, D, G, J**).
- ²⁴⁾ Only available for types of construction IM V15, IM V1 and IM B35 (14th position of the Article No.: **E, G, J, K**). Not available for rated speeds of 1800 rpm, 3000 rpm, 3600 rpm (13th position of the Article No.: **1, 5, 6**).
- ²⁵⁾ Only available for types of construction IM B3 and IM B35 (14th position of the Article No.: **A, K**).
- ²⁶⁾ Only available for frame size 400 (8th and 9th position of the Article No.: **4 A**).
- ²⁷⁾ Specify identical mounting position of pipe connection by selecting the order code and Article No. (16th position of the Article No.: **2, 3** or **4**).
- ²⁸⁾ For 1.Q1, 1.N1 and 1LP motors, only available for the main motor. Not available for the separately driven fan motor.
- ²⁹⁾ Order code **D37** is not available for explosion-proof motors.
- ³⁰⁾ In some instances constraints apply with regard to the terminal box position (15th position of the Article No.) and the separately driven fan/heat exchanger position (16th position of the Article No.): For more information about possible combinations, refer to the Drive Technology Configurator (DT Configurator): www.siemens.com/dt-configurator.
- ³¹⁾ In frame size 315 (8th and 9th position of the Article No.: **3 A**) only available for the 15th position of the Article No.: **A** to **F** (terminal box position).
- ³²⁾ Not available in conjunction with a pipe connection (order codes **K77, K78, K79**).
- ³³⁾ Testing is performed with sinusoidal infeed. Only available for an electrical rated frequency below 70 Hz.
- ³⁴⁾ Testing is performed on the supply system. Only available for an electrical rated frequency of 50 Hz.
- ³⁵⁾ Only available for 1LM1 motors in 4-pole version, type of construction IM B3, terminal box position code (15th position of the Article No.) **A, B**, or **C**, line voltage 400 V, 50 Hz and 460 V, 60 Hz. Only the following order codes can be ordered in combination with the preferred motors: **A12, A61, A72, G50, H70, H73, K45, K46, K57, L00, L97, Y53**.
- ³⁶⁾ Sector solution for pump drive certified according to Lloyds Register LR-T-3601 (Rev. 9 of August 2008), (Electric Motors higher than 100 hp) and LR-T-3601 (Rev. 8 of August 2008), (Vertical Electric Motors higher than 100 hp). Only combinations of order codes **E88 + E90** or **E89 + E90** can be ordered.
- ³⁷⁾ Version of motors for Zone 2 without Ex nA II marking. Ex motors for converter operation are derated with respect to non-Ex motors and temperature class 155 (F) is no longer fully utilized. For utilization according to temperature class 130 (B), in accordance with VIK recommendation, order code **C10** is additionally required.
- ³⁸⁾ Order code **L97** is included in the scope of supply in the case of 1.Q1, 1LP1 and 1.N1.
- ³⁹⁾ Not available in combination with order code **K20**. One encoder is available (order codes **H65** and **H66**).
- ⁴⁰⁾ For motors with the 1.M1 and 1LL1 cooling methods, the maximum torque for the second shaft extension is reduced by 50 %.
- ⁴¹⁾ As a variation from the standard, only terminal boxes 1XB1621 and 1XB1631 are available.
- ⁴²⁾ Only available for 1.M1 and 1.L1 frame size 355 in combination with rated speed of 3000 rpm (13th position of the Article No.: **1**).
- ⁴³⁾ Only available for rated motor voltages of $U_{rated} \leq 600$ V.
- ⁴⁴⁾ Not available for frame size 315 in conjunction with a separately driven fan unit mounted axially at the NDE (16th position of the Article No.: **1**).
- ⁴⁵⁾ Available as standard version for motors for converter operation (6th position of the Article No.: **1, 2, 3, 4**) and optional with motors for line operation (6th position of the Article No.: **0**).
- ⁴⁶⁾ Available as standard version for motors for line operation (6th position of the Article No.: **0**) and optional with motors for converter operation (6th position of the Article No.: **1, 2, 3, 4**).
- ⁴⁷⁾ As a variation from the standard, the cable entry is undrilled.
- ⁴⁸⁾ Not available in combination with order code **D31** or **D40**.
- ⁴⁹⁾ Only available in combination with order code **K16**.
- ⁵⁰⁾ For 1.P1 motors only for crane motors (5th position of the Article No.: **6**) available with constraints for mounting.
- ⁵¹⁾ Only order code **H88** available as encoder.
- ⁵²⁾ Standard version for frame size 355 with rated speed 3000 rpm (13th position of the Article No.: **1**).
- ⁵³⁾ Available on request for frame size 355 with rated speed 3000 rpm (13th position of the Article No.: **1**).
- ⁵⁴⁾ The motor power has to be reduced (page 3/2 "Ambient conditions and installation altitude").
- ⁵⁵⁾ The motor power has to be reduced if necessary (page 10/7 "Derating").
- ⁵⁶⁾ Without customer specifications the motor starting curve is calculated. If an additional moment of inertia and/or a concrete load characteristic curve is also to be calculated, customer specifications are necessary.
- ⁵⁷⁾ With additional price for motors for line operation (DOL motors; 6th position of the Article No.: **0**). Standard version for motors for converter operation (VSD motors; 6th position of the Article No.: **1, 2, 3, 4**).

Application-specific motors

**12/2 Marine applications**

- 12/2 [Overview](#)
- 12/3 Classification societies
- 12/4 [Benefits](#)
- 12/4 [Application](#)
- 12/5 [Technical specifications](#)
- 12/5 Housing version
- 12/5 Water cooling
- 12/5 Motor connection
- 12/5 Specifications of the individual classification authorities with order codes for ordering SIMOTICS FD motors in marine design
- 12/6 Temperature class and coolant temperature
- 12/7 Rating plate and acceptance test certificate
- 12/7 Degree of protection
- 12/7 Winding and motor protection
- 12/7 Paint finish
- 12/7 Recommended special versions
- 12/7 [More information](#)
- 12/7 Ordering notes
- 12/8 Ordering examples

12/10 Chemical industry

- 12/10 [Overview](#)
- 12/10 VIK version
- 12/10 [Application](#)
- 12/10 Options for special environments
- 12/10 Other options for the chemical industry

12/11 Water & waste water

- 12/11 [Overview](#)
- 12/11 [Application](#)
- 12/11 Product range for the water & waste water option packages
- 12/11 Quotation and ordering processes for option package
- 12/12 Technical content of the option package
- 12/12 Additional mandatory options
- 12/12 Additional option recommended by the manufacturer

12/13 Crane motors for hoisting gear

- 12/13 [Overview](#)
- 12/13 Benefits
- 12/13 Application
- 12/13 Technical specifications
- 12/13 • Duty types
- 12/14 • General technical specifications
- 12/14 • Maximum torque for the second shaft extension
- 12/15 [Article number code](#)
- 12/15 Selection and ordering data
- 12/16 [1LM16 crane motors – self-ventilated, enclosed version](#)
- 12/16 Selection and ordering data
- 12/18 [1LQ16 crane motors – force-ventilated, enclosed version](#)
- 12/18 Selection and ordering data
- 12/20 [1LP16 crane motors – force-ventilated, open version](#)
- 12/20 Selection and ordering data
- 12/22 [Dimensions](#)
- 12/22 Dimensional drawings
- 12/22 • 1LM16 crane motors
- 12/23 • 1LP16 and 1LQ16 crane motors
- 12/24 • Terminal boxes

12/25 Energy storage devices

- 12/25 [Overview](#)
- 12/25 Benefits
- 12/25 Application
- 12/25 Function
- 12/26 Technical specifications
- 12/26 • General technical specifications
- 12/27 Article number code
- 12/27 Selection and ordering data
- 12/28 [1LQ17, 1LH17 and 1LP17 energy storage devices](#)
- 12/28 Selection and ordering data
- 12/28 • 1LQ17 energy storage devices – force-cooled, enclosed version
- 12/28 • 1LH17 energy storage devices – water-cooled with water-jacket cooling
- 12/28 • 1LP17 energy storage devices – force-ventilated, open version
- 12/30 [Dimensions](#)
- 12/30 Dimensional drawings
- 12/30 • 1LH17 energy storage devices
- 12/31 • 1LP17 and 1LQ17 energy storage devices
- 12/32 • Terminal boxes

Application-specific motors

Marine applications

Overview



SIMOTICS FD motors (air-cooled and water-cooled) in marine design have been developed for operation below deck onboard ships. An inquiry has to be submitted for motors for operation on deck or for offshore applications in order to clarify any special measures that may need to be taken regarding the conditions of use and installation. The thermal utilization of the motors is matched to the generally higher ambient temperatures on board. If the application demands compliance with additional regulations, such as explosion protection, the appropriate motor series must be chosen.

The motors onboard ships are subdivided into three classes of importance by the marine classification societies in collaboration with customers, depending on the application:

- **Essential Service for Propulsion** or also Primary Essential Service
- **Essential Service** or also Secondary Essential Service or Important Service
- **Non-essential Service** or also Non-important Service

As the assignment of a drive to one of the importance classes has a direct impact on the scope of the marine options, this must be known when ordering the motor.

The following services of the motor manufacturer are associated with the classes:

	Class of importance		
	Essential Service for Propulsion	Essential Service	Non-essential Service
General breakdown	Drives integrated into the propulsion system of the ship.	Safety-related drives whose failure must not cause loss of maneuverability of the ship, nor place onboard safety at risk.	Drives and systems that are outside the responsibility of the classification societies.
Typical applications	Propeller drive, dynamic positioning drives, booster drives and shaft generators	Lateral thrust units, anchor winches, oil and ballast pumps, fire-fighting pumps	Pumps for service water, winches, dredging pumps, fans
Design	In accordance with regulations of the classification society	Acceptance test certificate 3.2 according to EN 10204	In accordance with ambient conditions of the classification society
Acceptance test certificate	Acceptance test certificate 3.2 according to EN 10204		Acceptance test certificate 3.1 according to EN 10204 ¹⁾
Individual acceptance by classification society	Will be performed. Motor is assigned an individual certificate of the classification society.		Not required A declaration of conformity is provided with the motor.
Ordering several identical motors	Differentiation between the first motor and additional ones must be realized when ordering using an order code.		No distinction
Rating plate data	Information about ambient conditions of the classification society		
Stamp of the classification society	Stamp on the shaft ²⁾ and motor housing		No stamp

¹⁾ Certificate is not stipulated by every classification society, but is always issued according to the internal quality standards within the scope of a routine test.

²⁾ Provided that it is specified that the classification society supervises construction.

Overview (continued)

Classification societies

Society	Abbreviation	Location
American Bureau of Shipping	ABS	USA
Bureau Veritas	BV	France
China Classification Society	CCS	China
Det Norske Veritas	DNV GL	Germany
Korean Register	KR	Korea
Lloyds Register	LR	UK
Nippon Class	NK	Japan
Russian Maritime Register of Shipping	RMRS	Russia

Other national classifications can be provided on request.

Regulations of the individual classification societies for motors:

Classification society	Coolant temperature CT		Admissible temperature rise limit according to the classification society		Rated power limit for individual acceptance test	Mandatory construction supervision
	Water cooling	Air cooling	Temperature class			
	°C	°C	130 (B)	155 (F), $P_{\text{rated}} < 5000 \text{ kW}$	kW	kW
ABS	38	50	70	95	≥ 100	–
BV	38	45	75	100	≥ 100	≥ 500
CCS	38	45	75	100	≥ 50	≥ 50
DNV GL	38	45	75	100	≥ 100	–
KR	38	45	75	100	≥ 7,5	–
LR	38	45	70	95	≥ 100	≥ 100
NK	38	45	75	100	All power ratings	–
RMRS	38	45	75	95	≥ 100	–

Application-specific motors

Marine applications

Benefits

The marine motors offer the user a number of advantages and benefits:

- Cast-iron version is suitable for corrosive atmospheres especially for high humidity levels and salty air
- Variable-speed drives verifiably reduce the energy consumption
- Water cooling supports installation in small rooms and offers a higher power yield than air cooling for the same frame size
- Increased corrosion protection using specially designed paint finishes is available
- Marine motors can be supplied for use in areas to be protected against explosion of Zone 2
- In depth know-how regarding customer requirements
- Worldwide service network with 24 hour service hotline for motors and converters

Application

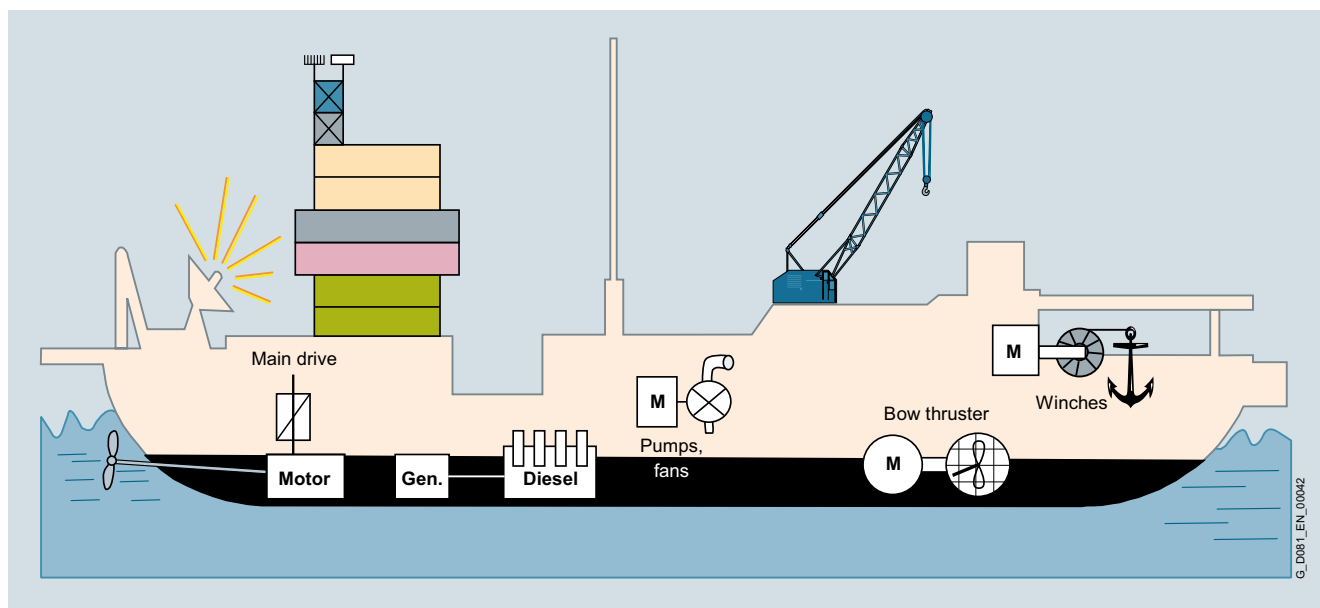
Our marine motors are generally designed for use onboard ships (installed below deck):

- Applications onboard ships as main and auxiliary drives below deck, e.g.:
 - Fans (air conditioning systems, refrigeration plants)
 - Pumps (for fire-extinguishing or ballast water, fuels, oils)
 - Compressors
 - Bow thrusters and Azimuth drives
 - Main propulsion drives
 - Booster drives and shaft generators (power take-in / power take-off mode)
 - Ex motors for hazardous zones

If the marine motors are to be put to use on deck or in the off-shore industry, an inquiry has to be submitted in order to clarify any special measures that may need to be taken regarding the conditions of use and installation.

Typical applications are:

- Coastal areas, e.g. oil rigs, drilling ships
- Winches
- Pumps
- Compressors
- Crane drives



Typical applications

G_D061_EN_00042

Technical specifications

Housing version

SIMOTICS FD motors are designed with a rugged low-vibration cast-iron housing.

Water cooling

For optimum utilization of the marine environment, two water-cooling concepts are available for SIMOTICS FD motors:

- Conventional with air-to-water heat exchanger. In this case, the warm air is routed from within the motor to a heat exchanger. After cooling here, it is drawn back into the machine again.
- The cooling water flows through a meander tube that is pressed into the stator core. The coolant is then extremely close to the points where the heat is generated and can therefore cool extremely efficiently.

Both concepts support the use of fresh water and are provided with measures that prevent the ingress of water into the motor interior, e.g. use of double-pipe cooler.

Cooling with seawater is possible with an air-to-water heat exchanger.

Motor connection

An undrilled entry plate is provided as standard, drilled entry plates with or without cable glands are available on request.

All marine motors generally have an external grounding terminal.

Specifications of the individual classification societies with order codes for ordering SIMOTICS FD motors in marine design

SIMOTICS FD in marine design

Cooling method	Type designation
Water-cooled motors with heat exchanger for converter operation, IC86W cooling method	1LN/1MN
Water-cooled motors with water-jacket cooling for line and converter operation, IC71W cooling method	1LH/1MH
Air-cooled motors for converter operation (self-ventilated), IC411 cooling method	1LM/1MM
Air-cooled motors with mounted separately driven fan for converter operation, IC416 cooling method	1LQ/1MQ

SIMOTICS FD motors for marine applications must be ordered with classification-specific options. This ensures that both the mechanical design of the motor and the tests are performed exactly in accordance with the instructions provided by the respective classification society.

There are four categories of classification-specific options:

- 1 *Design options* define the marine-compatible technical design in accordance with the definitions of the classification society in association with the international standards and practices of our engineers.
- 2 *Certification options* define the scope of the test certificates and cover all the expenses of the classification society and Siemens.
- 3 *Test options* define the scope of the individual tests for final acceptance of the motor in the presence of an inspector of the respective classification society. A class-specific type test is performed on the first motor, and a routine test is performed on all subsequent motors.
- 4 *Additional options* for variations and special conditions – specify the customer's request to participate in the tests at the factory, or to define requirements that deviate from the standards of the classification society.

The options of the categories listed above are combined with each other depending on the class of importance, classification society and other conditions.

If motors are to be designed according to the specifications of several classification societies, a special inquiry is necessary.

Motors for Non-essential Services

The technical design is in accordance with the ambient operating conditions specified by the classification society. One of the marine design options must be ordered by specifying the respective order code **X00**, **X01**, **X12**¹⁾, **X03**, **X04**, **X05** or **X06** (depending on the classification society), acceptance tests are not required. There is no distinction between ordering an individual motor or several motors.

Non-essential Service	Order codes for options in accordance with the classification society (Article No. with additional identification code -Z and order code)					
	ABS	BV	CCS	DNV GL	KR	LR
Technical version	X00	X01	X12 ¹⁾	X03	X05	X06

Motors for Essential Services

The technical design is in accordance with regulations of the classification society: Options with the order codes **X10** to **X16**. An acceptance test certificate 3.2 according to EN 10204 and a product certificate of the classification society is provided with each motor. The options with order codes **J70** to **J82** (first motor), or **J71** to **J83** (additional motors) define the costs for certification of the motor.

Depending on the classification society, the test steps are controlled by the options with order codes **X30** to **X42** for the first motor (even numbers) and **X31** to **X43** for the additional motors (uneven numbers).

¹⁾ Non-essential Service is handled by CCS in the same manner as Essential Service.

Application-specific motors

Marine applications

Technical specifications (continued)

Essential Service	Order codes for options in accordance with the classification society (Article No. with additional identification code -Z and order code)					
	ABS	BV	CCS	DNV GL	KR	LR
Technical version						
	X10	X11	X12	X13	X15	X16
Certification						
• First motor	J70	J72	J74	J76	J80	J82
• Additional motors	J71	J73	J75	J77	J81	J83
Acceptance tests with classification						
• First motor	X30	X32	X34	X36	X40	X42
• Additional motors	X31	X33	X35	X37	X41	X43
Tests in the presence of representatives of the customer (in addition to the inspector of the classification society)						
	X99					

Motors for Essential Services for Propulsion

The technical design is in accordance with regulations of the classification society: Options with the order codes **X20** to **X26**. An acceptance test certificate 3.2 according to EN 10204 and a product certificate of the classification society is provided with each motor. The options with order codes **N40** to **N52** (first motor), or **N41** to **N53** (additional motors) define the costs for certification of the motor.

Depending on the classification society, the test steps are controlled by the options with order codes **X60** to **X72** for the first motor (even numbers) and **X61** to **X73** for the additional motors (uneven numbers).

Essential Service for Propulsion	Order codes for options in accordance with the classification society (Article No. with additional identification code -Z and order code)					
	ABS	BV	CCS	DNV GL	KR	LR
Technical version						
	X20	X21	X22	X23	X25	X26
Certification						
• First motor	N40	N42	N44	N46	N50	N52
• Additional motors	N41	N43	N45	N47	N51	N53
Acceptance tests with classification						
• First motor	X60	X62	X64	X66	X70	X72
• Additional motors	X61	X63	X65	X67	X71	X73
Tests in the presence of representatives of the customer (in addition to the inspector of the classification society)						
	X99					

Additional options

Order code X99:

According to regulations, the acceptance tests are performed in the presence of an inspector of the classification society. If the customer or his representative is required to be present during the tests, order code **X99** must be specified. In this case, the ordering party will be informed as to the dates in the form of an invitation.

All other tests can be ordered separately via the standard options for industrial motors. They will be performed in addition to the specified measurements. You will find the complete range of options for tests in section 11 of the catalog "Article No. supplements and special versions" under "Options".

Notice!

All options that can be ordered with order codes must also be ordered using these order codes.

If, for example, a motor according to the ABS classification is required for an ambient temperature of 45 °C, in addition to the order codes for marine options, order code **D11** must also be specified.

Scope of design options X00 to X26

The design options include all classification-specific technical measures. These options are bundles of additional modifications and accessories which make a motor marine-compatible as well as classification-compliant and application-compatible.

Temperature class and coolant temperature

Standard motors

Most classification societies specify a coolant temperature of CT 45 °C and a cooling water temperature of 38 °C for utilization according to temperature class 155 (F). Motors according to the ABS classification that specify CT 50 °C are an exception. As a result of the increased cooling air and cooling water temperatures specified by the classification societies the reduction factors on page 3/2 shall be taken into account.



More detailed information is available on request.

Technical specifications (continued)

Rating plate and acceptance test certificate

The rating plate indicates the relevant classification society and the associated coolant temperature. The housings of all certified motors are stamped with the certificate number and identifier of the society or testing agency, in accordance with regulations. These stamps are in the vicinity of the rating plate.

The results of the acceptance test are supplied with the motor certificate and the motor.

SIEMENS							
3~ Mot. 1LN1 222-3AB53-2AB5-Z SIMOTICS FD NoN- H61484511010001 / 2016							
m: 1.98 t IP 55 IM B3 Ta: -20...+50°C Th.Cl.: 180(H) Util.:155(F)							
nmax: 3000 1/min IEC/EN 60034-1							
U [V]	I [A]	P [kW]	cosφ	n [1/min]	f [Hz]		Eff.
660 Δ	375	366	0.89	1500	50.40		96.0%
Mot. design: ONLY FOR SINAMICS WITH OPT. PULSE PATTERNS (p1802=19)							
Line supply: 690V/50Hz							
MARINE EQUIPMENT / CLASSIFICATION SOCIETY: ABS							
MAX. WASSERDRUCK / WATER PRESSURE 6 BAR							
KÜHLW./COOL.WATER 115 L/MIN, 38°C							
							
Made in Germany D-90441 Nürnberg 							

Degree of protection

The degrees of protection as specified in the catalog apply. For IP56 (non-heavy sea, order code **K52**) the formation of ice must be avoided. The additional information "non-heavy-sea" means that the machine must not be flooded or submerged by a wave.

Winding and motor protection

To monitor the winding and, if specified by the marine classification society, to monitor the bearings, the motors are equipped with PTC thermistors, temperature sensors or resistance thermometers. All water-cooled motors are equipped with leak sensors as protection against leaks in the cooling circuit. The complete scope of standard accessories depends on the marine classification society and importance class.

More information

Ordering notes

The fees of the classification societies for necessary authorizations, individual acceptance inspections and certificates are included in the order code.

Paint finish

The option of the technical design (**X00** to **X06**, **X10** to **X16** or **X20** to **X26**) of a marine motor includes a paint finish with greater paint thickness in accordance with EN ISO 12944-5 C4.

With unprotected installation on deck or in offshore applications a more corrosion-resistant paint finish is required.

The order code **E81** includes a paint finish according to EN ISO 12944-5 C5-M.

Special paint colors are available on request.

Recommended special versions

- Rust-resistant screws (externally) – Order code **M27**
- Shock Pulse Measurement (SPM) nipple for monitoring the bearing vibration for essential and non-essential motors – Order code **G50**
- Mounting of 2 Pt100 screw-in resistance thermometers in basic circuit for rolling-contact bearings for essential and non-essential motors – Order code **A72**
- IP56 degree of protection (non-heavy-sea) – the additional information "non-heavy-sea" means that the machine must not be flooded or submerged by a wave – Order code **K52**
- An inquiry has to be submitted for marine motors for unprotected installation on deck or for offshore applications in order to clarify any special measures that may need to be taken regarding the conditions of use and installation.

Application-specific motors

Marine applications

More information (continued)

For selection and ordering data, see sections 4 to 10 of the catalog.

Ordering examples

Selection criteria	Requirement	Structure of the Article No.
1st ordering example: 5 motors for Non-Essential Service according to ABS (American Bureau of Shipping), USA		
Motor type	SIMOTICS FD self-ventilated, IC411 cooling method, IP55 degree of protection	1LM1■■■■-■■■■■-■■■■■
Motor series	Low-noise standard version	1LM12■■■-■■■■■-■■■■■
System description	Operation on SINAMICS converter with uncontrolled infeed	1LM12 2■-■■■■■-■■■■■
Efficiency	Premium Efficiency	1LM12 2 3-■■■■■-■■■■■
Frame size	315	1LM12 2 3-3 A■■■-■■■■■
No. of poles	4-pole	1LM12 2 3-3 AB■■■-■■■■■
Laminated core length	average	1LM12 2 3-3 AB 5■-■■■■■
Line voltage and frequency	690 V, 50 Hz – VSD	1LM12 2 3-3 AB 5 3-■■■■■
Rated speed	1500 rpm	1LM12 2 3-3 AB 5 3-2■■■■■
Type of construction	IM B3	1LM12 2 3-3 AB 5 3-2 A■■■
Terminal box position	Standard version (terminal box on DE top)	1LM12 2 3-3 AB 5 3-2 AA■
Separately driven fan position	No separately driven fan/heat exchanger	1LM12 2 3-3 AB 5 3-2 AA 0
Special versions	Technical version according to ABS, CT (air) = 50 °C, temperature class 155 (F) used acc. to 155 (F) incl.: Insulated bearing at NDE, coated internal surfaces and special external coating with 240 µm, 3 PTC thermistors for alarm and tripping in the winding	1LM12 2 3-3 AB 5 3-2 AA 0-Z X00
	Article No. for all 5 motors	1LM12 2 3-3 AB 5 3-2 AA 0-Z X04
2nd ordering example: 5 motors for essential service according to BV (Bureau Veritas), France		
Motor type	Motor of example 1	1LM12 2 3-3 AB 5 3-2 AA 0
Special versions		
1st motor	Technical version according to BV, CT (air) = 45 °C, temperature class 155 (F) used acc. to 155 (F) incl.: Insulated bearing at NDE, coated internal surfaces and special external coating with 240 µm, 3 PTC thermistors for alarm and tripping in the winding	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11
	Certification required for first ordered motor acc. to BV	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11+J72
	Tests required for first ordered motor acc. to BV	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11+J72+X32
	Article No. for 1st motor	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11+J72+X32
4 additional motors	Technical version according to BV, CT (air) = 45 °C, temperature class 155 (F) used acc. to 155 (F) incl.: Insulated bearing at NDE, coated internal surfaces and special external coating with 240 µm, 3 PTC thermistors for alarm and tripping in the winding	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11
	Certification required for additional ordered motors acc. to BV	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11+J73
	Tests required for additional ordered motors acc. to BV	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11+J73+X33
	Article No. for the additional 4 motors	1LM12 2 3-3 AB 5 3-2 AA 0-Z X11+J73+X33

More information (continued)

Ordering examples (continued)

Selection criteria	Requirement	Structure of the Article No.
3rd ordering example: 2 motors for Essential Service for Propulsion according to DNV GL (Det Norske Veritas – Germanischer Lloyd), Germany		
Motor type	SIMOTICS FD water-cooled, IC71W cooling method, IP55 degree of protection	1LH1 ■■■■ – ■■■■■■ – ■■■■
Motor series	Low-noise standard version	1LH1 2 ■■■■ – ■■■■■■ – ■■■■
System description	Operation on SINAMICS converter with controlled infeed	1LH1 2 1 ■■ – ■■■■■■ – ■■■■
Efficiency	Premium Efficiency	1LH1 2 1 3 – ■■■■■■ – ■■■■
Frame size	315	1LH1 2 1 3 – 3 A ■■■■ – ■■■■
No. of poles	4-pole	1LH1 2 1 3 – 3 A B ■■■■ – ■■■■
Laminated core length	average	1LH1 2 1 3 – 3 A B 5 ■■ – ■■■■
Line voltage and frequency	690 V, 50 Hz – VSD	1LH1 2 1 3 – 3 A B 5 3 – ■■■■
Rated speed	1500 rpm	1LH1 2 1 3 – 3 A B 5 3 – 2 ■■■■
Type of construction	IM B3	1LH1 2 1 3 – 3 A B 5 3 – 2 A ■■■■
Terminal box position	Terminal box on DE right-hand	1LH1 2 1 3 – 3 A B 5 3 – 2 A B ■■
Separately driven fan position	No separately driven fan/heat exchanger	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0
Special versions		
1st motor	Technical version according to DNV, CT (water) = 32 °C, temperature class 155 (F) used acc. to 155 (F) incl.: Insulated bearing at NDE, coated internal surfaces and special external coating with 240 µm, 6 × Pt100 in the stator winding, PT100 for monitoring the bearing temperature, cables routed externally in stainless steel hoses, heating, leakage sensor, SPM nipple	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13
	Certification required for first ordered motor acc. to DNV	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13+J76
	Tests required for first ordered motor acc. to DNV	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13+J76+X36
This option is not mandatory!	Tests in the presence of representatives of the customer (in addition to the inspector of the classification society)	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13+J76+X36+X99
	Article No. for 1st motor	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13+J76+X36+X99
Additional motor	Technical version according to DNV, CT (water) = 32 °C, temperature class 155 (F) used acc. to 155 (F) incl.: Insulated bearing at NDE, coated internal surfaces and special external coating with 240 µm, 6 × Pt100 in the stator winding, PT100 for monitoring the bearing temperature, cables routed externally in stainless steel hoses, heating, leakage sensor, SPM nipple	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13
	Certification required for additional ordered motors acc. to DNV	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13+J77
	Tests required for additional ordered motors acc. to DNV	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13+J77+X37
	Article No. for the second motor	1LH1 2 1 3 – 3 A B 5 3 – 2 A B 0 - Z X13+J77+X37

Application-specific motors

Chemical industry

Overview

In the chemical industry, motors are subjected to external influences in the extreme. Operation in hazardous areas and aggressive atmospheres, in particular, result in a need to protect the motor using special measures.

To ensure safe and reliable operation, it is important to verify the following:

- Explosion protection
- Degree of protection
- Ambient conditions

To meet the requirements of the chemical industry, SIMOTICS FD motors are available in a large number of industry-specific versions.

VIK version

The recommendations of the VIK (Verband der Industriellen Energie und Kraftwirtschaft e. V.) describe the requirements for three-phase induction motors as often required by the chemical industry:

- VIK standard version:
1L.1 + order code **K30** – "VIK" marking on the rating plate
- VIK Ex n version:
1M.1 + order code **K30** – "VIK" marking on rating plate;
"Ex nA IIC T3 Gc" on an additional rating plate in accordance with Directive 2014/34/EU

Both motor versions include the technology for Zone 2 in "Non-sparking" type of protection. In accordance with the technical requirements of VIK, motors can be supplied in frame sizes 315, 355, 400 and 450.

Application

Options for special environments

In the chemical industry, a wide range of different environmental conditions occur. Through a series of options, the motors can be adapted to the conditions at the installation site.

Order code	Characteristics
K26	Outdoor use: Exposure to the weather admissible, minimal chemical pollution (SO ₂), direct solar radiation; Special finish in RAL 7030 stone gray (corrosivity category C2)
E83	Outdoor use: Municipal and industrial atmospheres, moderate chemical pollution (SO ₂), minimal salinity, direct exposure to weather; special finish (corrosivity category C3)
E82	Outdoor use: Industrial areas and coastal areas with moderate salinity, direct exposure to weather, frequent condensation, special finish (corrosivity category C4)
E81	Outdoor use: Coastal and offshore areas with a high level of pollution and almost continuous condensation or industrial areas with high levels of humidity or corrosive atmospheres; special finish (corrosivity category C5-M/C5-I)
M06	Special case: Sulfurous atmosphere; special finish (corrosivity category C3)

Other options for the chemical industry

Additional options are listed below that are typically required for applications in the chemical industry.

Order code	Characteristics
M72	Design for Zone 2 for line operation Ex nA II T3 according to IEC/EN 60079-15
M73	Design for Zone 2 for converter operation, with derating Ex nA II T3 according to IEC/EN 60079-15
M35	Design for Zone 22 for non-conductive dust (IP55) for line operation
M39	Design for Zone 22 for non-conductive dust (IP55) for converter operation, derating
K52	IP56 degree of protection (non-heavy sea)
K50	IP65 degree of protection
M27	Rust-resistant screws

Overview

Siemens motors and converters ensure optimized pumping processes and maximum availability for minimum operating costs. The full benefit is realized when Siemens drive components interact as a system, because the motors and converters are perfectly tuned to each other as early as the development stage and then subjected to tests for ruggedness under real conditions. The drive systems are therefore characterized by a high level of availability and maximum efficiency.

Furthermore, using variable-speed drive technology, volumetric flow can be controlled much more accurately and faster than using mechanical control components for adaptation to actual demand. The advantages are, for example, noticeably higher safety and quality for drinking water from desalination plants. Variable-speed operation also opens up an enormous potential for savings which frequently results in a SINAMICS frequency converter paying for itself after just a few months of operation.

For this reason, an option package has been specially designed for the low-voltage motors of the SIMOTICS FD series in combination with a SINAMICS frequency converter for pump drives. This simplifies offer and order processing, in particular, for pump drives used in desalination plants and similar applications with certification in accordance with the Lloyds Register.

Application

Product range for the water & waste water option packages

Motor version	Cooling method	Motor type	Frame size	Operating mode
Air-cooled, enclosed version with self-ventilation	IC411	1LM1	315 ... 450	VSD
Air-cooled, enclosed version with forced ventilation	IC416	1LQ1	315 ... 450	VSD
Water-cooled version with water-jacket cooling	IC71W	1LH1	315 ... 450	VSD, DOL
Water-cooled version with heat exchanger	IC86W	1LN1	315 ... 450	VSD
Air-cooled, open version with self-ventilation	IC01	1LL1	315 ... 450	VSD
Air-cooled, open version with forced ventilation	IC06	1LP1	315 ... 450	VSD

The water option package has not been approved for use in hazardous areas.

Quotation and ordering processes for option package

The water option package has the following order code:

Additional identification code -Z with order code	Description
E90	Pump drive for seawater desalination plants certified according to Lloyds Register

Commissioning of the classification society must also be specified. It is possible to specify whether Siemens or the contractual partner of Siemens should commission the classification society. The relevant order code must be specified in the order.

Additional identification code -Z with order code	Description
E88	Commissioning of the classification society by Siemens
E89	Commissioning of the classification society by third party

Application-specific motors

Water & waste water

Application (continued)

Technical content of the option package

Order code **E90** comprises the following technical content:

Document "Balancing report"

The following acceptance tests will be performed by Lloyds Register in the Siemens factory at Nuremberg:

Inspection	Remarks
Material used	Certificate of the shaft according to EN 10204-3.1 Certificate for laminated core and copper according to EN 10204-2.1
Weld seams	Weld seams according to EN 287-1 Testing Welders – Welding – Part 1: Steels; German version EN 287-1:2004 + A2:2006
Housing drawings	Site supervision / inspection
Air gap measurements	No measurement, the theoretically determined value based on stator bore and rotor external diameter can be provided on request for an additional charge
Rotor design	Site supervision / inspection
Winding design	Site supervision / inspection
Winding insulation	Site supervision / inspection
Design, balancing	Site supervision / inspection
Motor dimensions, feet dimensions	Site supervision / inspection
Axial rotor play	No measurement, guaranteed value is stated in the documentation
First critical speed	No measurement, depending on the motor type the machines are subcritical or supercritical
Paints and varnishes	Certificate for layer thickness measurement

Additional mandatory options

The following options must be ordered separately when the "Water" option package is ordered:

Additional identification code -Z with order code	Description
F29	Noise measurement (in no-load operation), no noise analysis, with acceptance
F53	Measurement of locked-rotor torque and current, with acceptance
F59	Vibration analysis with acceptance test according to IEC 60034-14
F01	Routine test with customer acceptance test
	or
F83	Type test with heat run for horizontal motors (IM B3), with acceptance
	or
F93	Type test with heat run for vertical motors (IM V1), with acceptance

Additional option recommended by the manufacturer

Based on many years of experience in the field of motors, it is recommended that a special paint finish is applied to them.

Additional identification code -Z with order code	Description
K26	Special finish

Overview

The SIMOTICS FD 1L.16 crane motors have been specially designed for the application-specific requirements encountered during hoisting duty in crane installations. The focus is on cranes located in seaports that are often exposed to adverse weather conditions, which means that special measures must be taken here to protect the motors against corrosion and the ingress of dust and water. The squirrel-cage motors with the IVIC-C premium insulation system are suitable for operation with a SINAMICS S120 converter. Since the crane motors in particular operate over a large speed range during converter operation, you must check – alongside the usual design criteria such as thermal load (effective torque) and maximum acceleration torque – whether the motor can still generate the required maximum torque in the field weakening range.

The three-phase induction motors are either force-ventilated in IP55 degree of protection (1LQ16) or IP23 (1LIP16) or self-ventilated in IP55 degree of protection (1LM16)

Detailed configuring information for crane motors can be found in Catalog CR 1 "Drive and Control Components for Cranes".

The innovations in the field of modern crane installations place ever higher demands on compact induction motors. The compact 1L.16 induction motor covers the increased performance requirements, e.g. for intermittent duty S3 – 25% with up to 2.1 MW. This motor series is a converter solution which has been specially developed for use in conjunction with the SINAMICS S120 drive system.

The 1L.16 induction motors have the following distinguishing features:

- Force-ventilated and self-ventilated induction motors with squirrel-cage rotor in IP55 degree of protection
- Force-ventilated induction motors with squirrel-cage rotor in IP23 degree of protection
- The motors are force-ventilated as standard by a radially mounted separately driven fan unit
- A second shaft extension is possible as an option
- The 1LM16 crane motors comprise as standard a bidirectional fan impeller (for frame sizes 400 and 450 it is not necessary here to select order code **K99**).
- The degree of protection of the 1LQ16 and 1LM16 motors can optionally be increased to IP56 (non-heavy-sea) (order code **K52**). The additional information "non-heavy-sea" means that the machine must not be flooded or submerged by a wave.

Externally mounted encoder systems are available as an option. For the optional version of the motor with a second shaft extension, the bearing-free incremental encoder MHGE 200 (order code **H65**) is available.

The crane motors must be protected by placing them under a roof or enclosing them. If they are enclosed, an adequate supply of air must be ensured. For installation in salt-laden or humid ambient air, the motor must be ordered with improved corrosion protection (order codes **E83**, **E82**, **E81** or **C19**, **C26**).

Benefits

The crane motors are distinguished by the following design criteria:

- High overload torque at rated speed
- Large field-weakening range as well as high torque also at max. mechanical speed
- Low moment of inertia
- Optimized for line voltage 480 V and operation with SINAMICS S120 with controlled infeed (ALM)

The following features of the SIMOTICS FD motor platform also apply to the SIMOTICS FD crane motors:

- Low-voltage motor series optimized for converter operation
- High level of flexibility due to modular design principle
- Host of possible uses thanks to various design variants
- Rugged cast-iron housing
- Wide range of options
- Generously dimensioned terminal boxes
- Wide speed setting ranges
- Compact unit with high power density
- High rotational accuracy, even at very low speeds
- Fitted as standard with regreasing system and insulated NDE bearing – optionally with spent grease removal and automatic regreasing system

Application

The Siemens crane motors are particularly suitable for harsh hoisting duty. These rugged motors have:

- High degree of protection in conjunction with ordering options for increased corrosion protection and are thus especially suitable for adverse conditions of use
- Torque reserves that allow high short-time overloads
- High torque and low intrinsic moment of inertia for optimum acceleration
- The particularly rugged IVIC-C premium insulation system that permanently withstands the increased voltage loads encountered during hoisting duty

For other crane applications, such as trolley, the SIMOTICS FD platform offers further motor series. The selection and ordering data can be found in chapters 4 to 9.

Technical specifications

Duty types

Motor type	Overload factors for short-time duty – duty type S2			for intermittent, periodic duty – duty type S3				
	10 min	30 min	60 min	15 %	25 %	40 %	60 %	80 %
1.M.....	1.80	1.20	1.10	2.10	1.65	1.40	1.16	1.02
1.P.....	1.70	1.15	1.05	2.20	1.75	1.47	1.22	1.07
1.Q.....	1.80	1.20	1.10					

With 1LQ1 and 1LP1 it is not permitted for the cooling to be interrupted.

Application-specific motors

Crane motors for hoisting gear

Technical specifications (continued)

General technical specifications

Type of motor	IEC low-voltage motors SIMOTICS FD Cranes
Frame sizes	315, 355, 400, 450
Rated power	140 ... 1200 kW
Rated speed	750, 900, 1000 rpm
Rated torque	1783 ... 11459 Nm
Versions	Air-cooled, enclosed version <ul style="list-style-type: none"> • with self-ventilation (IC411) • with forced ventilation (IC416) Air-cooled, open version <ul style="list-style-type: none"> • with forced ventilation (IC06)
Version in accordance with standards and specifications	<ul style="list-style-type: none"> • UL (order code D31) • CSA (order code D40) • Import to the Eurasian customs union (order code D47)
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	Temperature class 180 (H) DURIGNIT IR 2000, IVIC-C premium insulation system
Degree of protection in accordance with EN 60034-5 (IEC 60034-5)	As standard: IP55: Air-cooled, enclosed version IP23: Air-cooled, open version
Cooling in accordance with EN 60034-6 (IEC 60034-6)	<ul style="list-style-type: none"> • Self-ventilated motors 1LM16 (IC411) • Force-ventilated motors 1LQ16 (IC416, radially mounted separately driven fan) • Force-ventilated, open-circuit ventilated motors 1LP16 (IC06, radially mounted separately driven fan)
Permissible coolant temperature and installation altitude	As standard: Air-cooled motors: Coolant temperature -20 ... +40 °C, installation altitude up to 1000 m above sea level
Standard voltages in accordance with EN 60038 (IEC 60038)	<ul style="list-style-type: none"> • 480 V • Separately driven fan motor: 400 V, 50 Hz – order code Y81 for separately driven fan with special voltage
Type of construction according to EN 60034-7 (IEC 60034-7)	IM B3 (foot-mounted design without flange)
Paint finish Suitability of paint finish for climate group according to IEC 60721, Part 2-1	As standard: color RAL 7030 stone gray
Vibration severity level according to EN 60034-14 (IEC 60034-14)	Level A (normal) Optionally: level B (with special vibration requirements)
Shaft extension according to DIN 748 (IEC 60072)	Balance type: half-key balancing as standard
Sound pressure level according to EN ISO 1680 (tolerance +3 dB)	85 dB(A) for boundary conditions see "Technical information" on page 2/7
Weights	The relevant weight is listed in the selection and ordering data for the required motor.
Modular mounting concept	<ul style="list-style-type: none"> • Prepared for mounting of rotary pulse encoder or brake. • Incremental encoder HTL 1024 POG 10 (Baumer-Hübner) • Incremental encoder HOG 10, HOG 11 (Baumer-Hübner) • Bearing-free incremental encoder MHGE 200 (Baumer-Hübner) – with continuous hollow shaft
Options	See "Article No. supplements and special versions"

Note:

The rated motor data is specified in the selection and ordering data for a rated pulse frequency of 1.25 kHz and optimized pulse patterns.

Maximum torque for the second shaft extension (order code K16)

Motor	1LM16				1LQ16 and 1LP16				
	IC411				IC416 and IC06				
Shaft height	315	355	400	450	315	355	400	450	
Diameter	mm	85	95	110	120	85	95	110	120
DE shaft extension									
Mechanical torque limit shaft extension (DE) ¹⁾	Nm	7500	10200	16400	20700	7500	10200	16400	20700
Diameter	mm	75	80	100	110	85	95	110	120
Second shaft extension (NDE)									
Mechanical torque limit for second shaft extension (NDE) ¹⁾	Nm	5300	5800	12300	16100	7500	10200	16400	20700

¹⁾ The mechanical torque limit is equivalent to the max. permissible breakdown torque (permanently designed with safety factor 1.5) and applies to rising converter operation.

Application-specific motors

Crane motors for hoisting gear

1LM16 crane motors – self-ventilated, enclosed version – line voltage 480 V – High Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LM16 cast-iron series Version specifically for con- verter operation
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\phi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_B	Article No.		
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	▲ New	
<ul style="list-style-type: none"> Rated motor voltage 500 V Insulation: thermal class 180 (H), IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 (ALM) 															
1000 rpm, 4-pole															
195	261	315	Δ	33.7	1862	94.2	95.1	95.2	0.85	280	9.2	7448	7500	▲ 1LM1612-3AB38-3A 0	
250	335	315	Δ	33.7	2387	94.5	95.3	95.3	0.86	350	10.6	10742	7500	▲ 1LM1612-3AB78-3A 0	
320	429	355	Δ	33.7	3056	94.9	95.7	95.7	0.86	450	9.1	13141	10200	▲ 1LM1612-3BB78-3A 0	
435	583	400	Δ	33.6	4154	95.4	95.8	96.1	0.85	620	10.2	18278	16400	▲ 1LM1612-4AB78-3A 0	
655	878	450	Δ	33.5	6255	95.9	96.2	96.4	0.83	950	10.3	28773	20700	▲ 1LM1612-4BB58-3A 0	
900 rpm, 4-pole															
170	228	315	Δ	30.4	1804	93.9	94.8	94.9	0.84	245	9.5	7396	7500	▲ 1LM1612-3AB38-8A 0	
220	295	315	Δ	30.3	2334	94.1	95.0	95.1	0.86	310	10.0	9803	7500	▲ 1LM1612-3AB78-8A 0	
285	382	355	Δ	30.3	3024	94.4	95.4	95.6	0.87	395	8.5	11794	10200	▲ 1LM1612-3BB78-8A 0	
400	536	400	Δ	30.3	4244	95.2	95.7	96.0	0.85	570	9.8	17825	16400	▲ 1LM1612-4AB78-8A 0	
595	798	450	Δ	30.2	6313	95.7	96.1	96.4	0.84	850	9.8	27777	20700	▲ 1LM1612-4BB58-8A 0	
750 rpm, 4-pole															
140	188	315	Δ	25.4	1783	93.1	94.2	94.6	0.85	200	8.9	6775	7500	▲ 1LM1612-3AB38-4A 0	
190	255	315	Δ	25.4	2419	93.6	94.6	94.8	0.86	270	9.6	9918	7500	▲ 1LM1612-3AB78-4A 0	
240	322	355	Δ	25.3	3056	94.1	95.1	95.3	0.86	340	8.6	12224	10200	▲ 1LM1612-3BB78-4A 0	
345	463	400	Δ	25.3	4393	94.7	95.4	95.8	0.86	485	9.3	17572	16400	▲ 1LM1612-4AB78-4A 0	
485	650	450	Δ	25.2	6175	95.4	95.9	96.2	0.84	700	9.5	26553	20700	▲ 1LM1612-4BB58-4A 0	

For versions, see Article No. supplements and special versions

Application-specific motors

Crane motors for hoisting gear

1LM16 crane motors – self-ventilated, enclosed version – line voltage 480 V – High Efficiency

Motor type	$m_{IM\ B3}$	J	L_{pTA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box
	kg	kgm ²	dB(A)	dB(A)	rpm	Type
1LM1612-3AB38-3A.0	1500	4.4	85	100.5	2500	1XB7 730
1LM1612-3AB78-3A.0	1840	5.9	85	100.5	2500	1XB7 730
1LM1612-3BB78-3A.0	2400	9.0	85	101.0	2200	1XB7 731
1LM1612-4AB78-3A.0	2520	18.7	85	101.5	2000	1XB7 740
1LM1612-4BB58-3A.0	3570	29.9	85	101.5	1700	1XB7 750
1LM1612-3AB38-8A.0	1500	4.4	85	101.0	2500	1XB7 730
1LM1612-3AB78-8A.0	1840	5.9	85	101.0	2500	1XB7 730
1LM1612-3BB78-8A.0	2400	9.0	85	101.0	2200	1XB7 731
1LM1612-4AB78-8A.0	2480	18.7	85	102.0	2000	1XB7 731
1LM1612-4BB58-8A.0	3570	29.9	85	102.0	1700	1XB7 740
1LM1612-3AB38-4A.0	1500	4.4	85	101.0	2500	1XB7 730
1LM1612-3AB78-4A.0	1840	5.9	85	101.0	2500	1XB7 730
1LM1612-3BB78-4A.0	2400	9.0	85	101.0	2200	1XB7 730
1LM1612-4AB78-4A.0	2480	18.7	85	102.0	2000	1XB7 731
1LM1612-4BB58-4A.0	3570	29.9	85	102.0	1700	1XB7 740

1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Application-specific motors

Crane motors for hoisting gear

1LQ16 crane motors – force-ventilated, enclosed version – line voltage 480 V – High Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LQ16 cast-iron series Version specifically for con- verter operation
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\varphi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_B	Article No.		
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	▲ New	
<ul style="list-style-type: none"> Rated motor voltage 500 V Insulation: thermal class 180 (H), IP55 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 (ALM) 															
1000 rpm, 4-pole															
230	308	315	Δ	33.8	2196	93.8	95.0	95.3	0.87	320	8.0	7466	7500	▲ 1LQ1612-3AB38-3A ■■	
300	402	315	Δ	33.7	2865	94.3	95.3	95.5	0.88	415	8.9	10601	7500	▲ 1LQ1612-3AB78-3A ■■	
385	516	355	Δ	33.7	3676	94.7	95.8	96.0	0.88	530	7.7	12866	10200	▲ 1LQ1612-3BB78-3A ■■	
535	717	400	Δ	33.6	5109	95.3	95.9	96.3	0.87	740	8.5	18392	16400	▲ 1LQ1612-4AB78-3A ■■	
790	1059	450	Δ	33.6	7544	95.8	96.3	96.6	0.86	1100	8.9	28667	20700	▲ 1LQ1612-4BB58-3A ■■	
900 rpm, 4-pole															
205	275	315	Δ	30.4	2175	93.4	94.6	95	0.87	290	8.0	7395	7500	▲ 1LQ1612-3AB38-8A ■■	
265	355	315	Δ	30.4	2812	93.6	94.8	95.2	0.89	365	8.5	9842	7500	▲ 1LQ1612-3AB78-8A ■■	
345	463	355	Δ	30.4	3661	94.1	95.3	95.7	0.88	475	7.1	11715	10200	▲ 1LQ1612-3BB78-8A ■■	
500	671	400	Δ	30.3	5305	94.9	95.6	96.2	0.87	690	8.1	18037	16400	▲ 1LQ1612-4AB78-8A ■■	
740	992	450	Δ	30.3	7852	95.5	96.1	96.6	0.87	1020	8.2	27482	20700	▲ 1LQ1612-4BB58-8A ■■	
750 rpm, 4-pole															
170	228	315	Δ	25.5	2165	92.3	93.8	94.4	0.88	240	7.4	6712	7500	▲ 1LQ1612-3AB38-4A ■■	
235	315	315	Δ	25.4	2992	92.9	94.3	94.8	0.89	325	8	9874	7500	▲ 1LQ1612-3AB78-4A ■■	
300	402	355	Δ	25.4	3820	93.4	94.8	95.3	0.88	415	7.1	12224	10200	▲ 1LQ1612-3BB78-4A ■■	
440	590	400	Δ	25.3	5602	94.2	95.1	95.8	0.88	610	7.4	17366	16400	▲ 1LQ1612-4AB78-4A ■■	
635	852	450	Δ	25.3	8085	94.9	95.7	96.3	0.87	880	7.5	25872	20700	▲ 1LQ1612-4BB58-4A ■■	

For versions, see Article No. supplements and special versions

Application-specific motors

Crane motors for hoisting gear

1LQ16 crane motors – force-ventilated, enclosed version – line voltage 480 V – High Efficiency

Motor type	$m_{IM\ B3}$	J	L_{pTA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box
	kg	kgm ²	dB(A)	dB(A)	rpm	Type
1LQ1612-3AB38-3A..	1400	4.4	85	100.5	2600	1XB7 730
1LQ1612-3AB78-3A..	1740	5.8	85	100.5	2600	1XB7 731
1LQ1612-3BB78-3A..	2270	8.9	85	101.0	2500	1XB7 731
1LQ1612-4AB78-3A..	2350	17.6	85	101.5	2000	1XB7 740
1LQ1612-4BB58-3A..	3350	28.3	85	102.0	1700	1XB7 750
1LQ1612-3AB38-8A..	1400	4.4	85	100.5	2600	1XB7 730
1LQ1612-3AB78-8A..	1740	5.8	85	100.5	2600	1XB7 731
1LQ1612-3BB78-8A..	2270	8.9	85	101.0	2500	1XB7 731
1LQ1612-4AB78-8A..	2350	17.6	85	101.5	2000	1XB7 740
1LQ1612-4BB58-8A..	3350	28.3	85	102.0	1700	1XB7 740
1LQ1612-3AB38-4A..	1400	4.4	85	100.5	2600	1XB7 730
1LQ1612-3AB78-4A..	1740	5.8	85	100.5	2600	1XB7 730
1LQ1612-3BB78-4A..	2270	8.9	85	101.0	2500	1XB7 731
1LQ1612-4AB78-4A..	2350	17.6	85	101.5	2000	1XB7 740
1LQ1612-4BB58-4A..	3350	28.3	85	102.0	1700	1XB7 740

- 1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
- 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

- 3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Application-specific motors

Crane motors for hoisting gear

1LP16 crane motors – force-ventilated, open version – line voltage 480 V – High Efficiency

Selection and ordering data

P_{rated}	P_{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LP16 cast-iron series Version specifically for con- verter operation
				f_{rated}	T_{rated}	$\eta_{rated, 5/4}$	$\eta_{rated, 4/4}$	$\eta_{rated, 3/4}$	$\cos\phi_{rated, 4/4}$	I_{rated}	I_{LR}/I_{rated}	T_B	Article No.		
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	▲ New	
<ul style="list-style-type: none"> Rated motor voltage 500 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 (ALM) 															
1000 rpm, 4-pole															
300	402	315	Δ	33.9	2865	92.7	94.2	94.9	0.89	415	6.2	7449	7500	▲ 1LP1612-3AB38-3A ■■	
395	530	315	Δ	33.9	3772	93.3	94.6	95.2	0.90	540	6.8	10562	7500	▲ 1LP1612-3AB78-3A ■■	
590	791	355	Δ	34.0	5634	93.1	94.7	95.4	0.89	810	5.1	12958	10200	▲ 1LP1612-3BB78-3A ■■	
810	1086	400	Δ	33.8	7735	94.1	95.1	96.0	0.88	1120	5.6	18564	16400	▲ 1LP1612-4AB78-3A ■■	
1200	1609	450	Δ	33.7	11459	95.0	95.9	96.5	0.88	1640	5.9	28648	20700	▲ 1LP1612-4BB58-3A ■■	
900 rpm, 4-pole															
285	382	315	Δ	30.6	3024	91.7	93.4	94.4	0.89	395	5.9	7560	7500	▲ 1LP1612-3AB38-8A ■■	
370	496	315	Δ	30.6	3926	92.1	93.7	94.6	0.90	510	6.1	9815	7500	▲ 1LP1612-3AB78-8A ■■	
525	704	355	Δ	30.7	5570	92.1	93.9	94.9	0.90	720	4.6	11697	10200	▲ 1LP1612-3BB78-8A ■■	
740	992	400	Δ	30.5	7852	93.6	94.7	95.7	0.88	1020	5.5	18060	16400	▲ 1LP1612-4AB78-8A ■■	
1065	1428	450	Δ	30.4	11300	94.6	95.5	96.3	0.88	1460	5.7	27120	20700	▲ 1LP1612-4BB58-8A ■■	
750 rpm, 4-pole															
220	295	315	Δ	25.6	2801	90.7	92.6	93.8	0.89	310	5.7	6722	7500	▲ 1LP1612-3AB38-4A ■■	
310	416	315	Δ	25.6	3947	91.4	93.2	94.2	0.90	425	6.1	9868	7500	▲ 1LP1612-3AB78-4A ■■	
450	603	355	Δ	25.7	5730	91.2	93.2	94.4	0.89	630	4.6	12033	10200	▲ 1LP1612-3BB78-4A ■■	
630	845	400	Δ	25.5	8021	92.6	94.0	95.2	0.89	870	5.2	17646	16400	▲ 1LP1612-4AB78-4A ■■	
885	1187	450	Δ	25.4	11268	93.8	94.9	95.9	0.88	1220	5.4	25916	20700	▲ 1LP1612-4BB58-4A ■■	

For versions, see Article No. supplements and special versions

Application-specific motors

Crane motors for hoisting gear

1LP16 crane motors – force-ventilated, open version – line voltage 480 V – High Efficiency

Motor type	$m_{IM\ B3}$	J	L_{pTA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box
	kg	kgm ²	dB(A)	dB(A)	rpm	Type
1LP1612-3AB38-3A..	1400	4.2	85	100.5	2600	1XB7 731
1LP1612-3AB78-3A..	1730	5.7	85	100.5	2600	1XB7 731
1LP1612-3BB78-3A..	2300	8.7	85	101.0	2500	1XB7 740
1LP1612-4AB78-3A..	2350	17.1	85	101.5	2000	1XB7 750
1LP1612-4BB58-3A..	3350	27.7	85	102.0	1700	1XB7 750
1LP1612-3AB38-8A..	1400	4.2	85	100.5	2600	1XB7 731
1LP1612-3AB78-8A..	1730	5.7	85	100.5	2600	1XB7 731
1LP1612-3BB78-8A..	2300	8.7	85	101.0	2500	1XB7 740
1LP1612-4AB78-8A..	2350	17.1	85	101.5	2000	1XB7 740
1LP1612-4BB58-8A..	3350	27.7	85	102.0	1700	1XB7 750
1LP1612-3AB38-4A..	1400	4.2	85	100.5	2600	1XB7 730
1LP1612-3AB78-4A..	1730	5.7	85	100.5	2600	1XB7 731
1LP1612-3BB78-4A..	2300	8.7	85	101.0	2500	1XB7 740
1LP1612-4AB78-4A..	2350	17.1	85	101.5	2000	1XB7 740
1LP1612-4BB58-4A..	3350	27.7	85	102.0	1700	1XB7 750

- 1) The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).
- 2) The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

- 3) The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Application-specific motors

Crane motors for hoisting gear

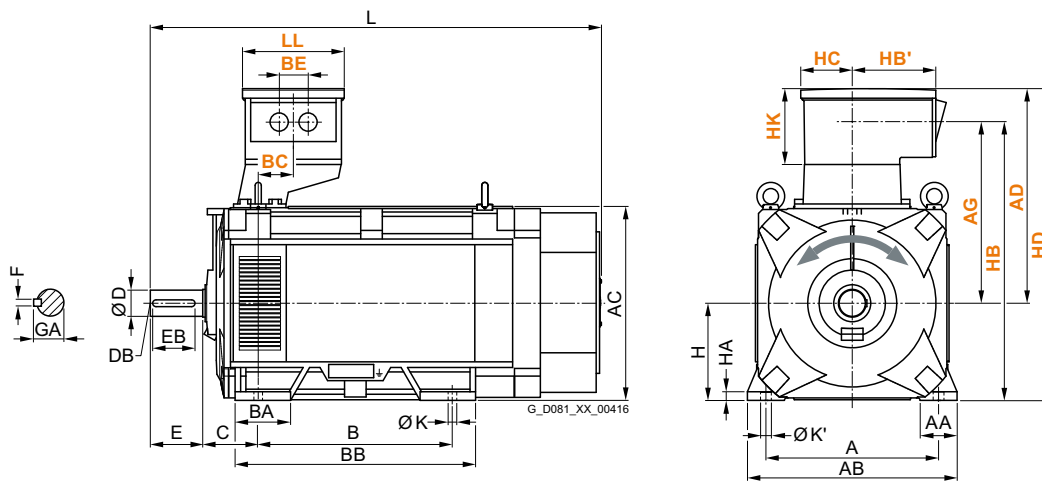
Dimensions

Dimensional drawings

1LM16 crane motors

Type of construction IM B3

For terminal box dimensions, see page 12/24



Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																			
			A	AA	AB	AC	AQ	B	BA	BB	C	H	HA	K	K'	L ¹⁾	D	DB	E	EB	F	GA
315	4	1LM16...-3A.3.-....	560	120	680	630	670	630	180	780	180	315	28	28	35	1470	85	M20	170	140	22	90
		1LM16...-3A.7.-....	560	120	680	630	670	835	180	985	180	315	28	28	35	1610	85	M20	170	140	22	90
355	4	1LM16...-3B.7.-....	630	150	780	710	750	800	220	980	200	355	35	35	42	1735	95	M24	170	140	25	100
400	4	1LM16...-4A.7.-....	710	150	860	800	850	900	220	1080	224	400	35	35	42	1955	110	M24	210	180	28	116
450	4	1LM16...-4B.5.-....	800	180	980	900	950	1000	260	1220	250	450	42	42	50	2170	120	M24	210	180	32	127

¹⁾ If an encoder is used, dimension L is increased.

Application-specific motors Crane motors for hoisting gear

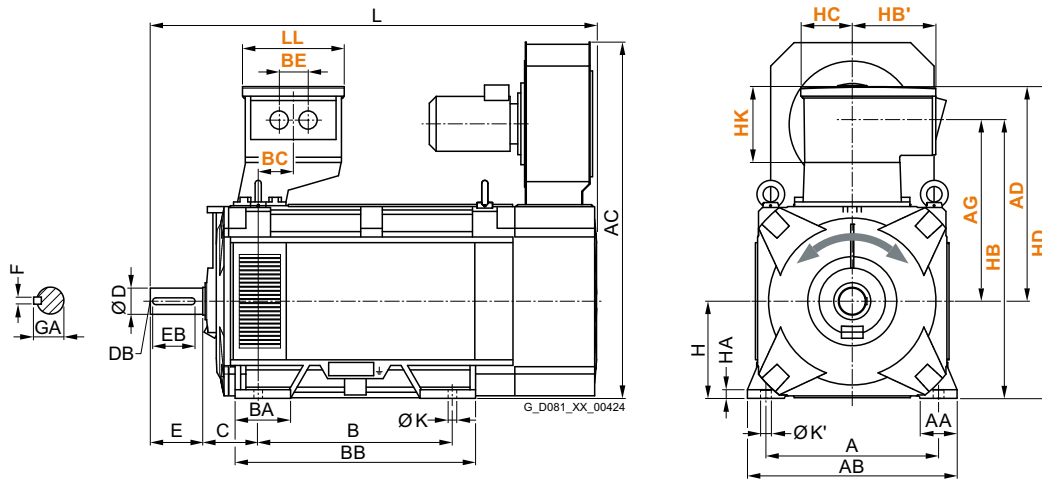
Dimensions

Dimensional drawings (continued)

1LP16 and 1LQ16 crane motors

Type of construction IM B3

For terminal box dimensions, see page 12/24



Frame size	No. of poles	Motor type	Dimension designation acc. to IEC																		
			A	AA	AB	AC	B	BA	BB	C	H	HA	K	K'	L ¹⁾	D	DB	E	EB	F	GA
315	4	1LP16...-3A.3.-....	560	120	680	1245	630	180	780	180	315	28	28	35	1450	85	M20	170	140	22	90
		1LQ16...-3A.3.-....	560	120	680	1245	835	180	985	180	315	28	28	35	1590	85	M20	170	140	22	90
355	4	1LP16...-3B.7.-....	630	150	780	1305	800	220	980	200	355	35	35	42	1730	95	M24	170	140	25	100
		1LQ16...-3B.7.-....	630	150	780	1305	800	220	980	200	355	35	35	42	1730	95	M24	170	140	25	100
400	4	1LP16...-4A.7.-....	710	150	860	1535	900	220	1080	224	400	35	35	42	1960	110	M24	210	180	28	116
		1LQ16...-4A.7.-....	710	150	860	1535	900	220	1080	224	400	35	35	42	1960	110	M24	210	180	28	116
450	4	1LP16...-4B.5.-....	800	180	980	1635	1000	260	1220	250	450	42	42	50	2145	120	M24	210	180	32	127
		1LQ16...-4B.5.-....	800	180	980	1635	1000	260	1220	250	450	42	42	50	2145	120	M24	210	180	32	127

¹⁾ If an encoder is used, dimension L is increased.

Application-specific motors

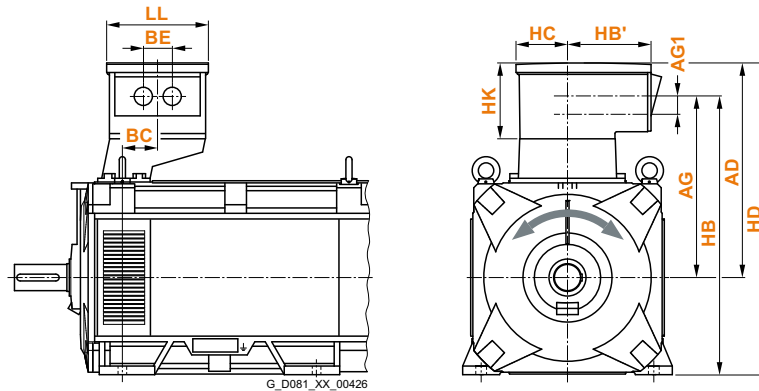
Crane motors for hoisting gear

Dimensions

Dimensional drawings (continued)

Terminal boxes

Type of construction IM B3



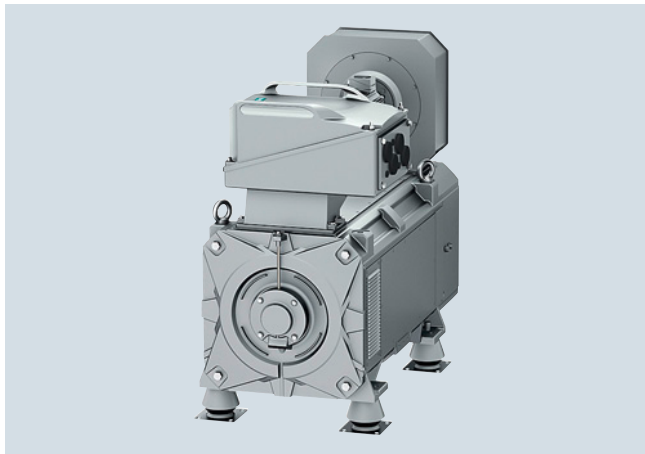
Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LM16, 1LP16, 1LQ16	315	4	1XB7730	705	570	-	115	-	885	310	295	180	1020	255	345
			1XB7731	705	570	-	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
	355	4	1XB7730	750	615	-	100	-	970	310	300	180	1105	255	345
			1XB7731	750	615	-	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425
	400	4	1XB7730	795	660	-	100	-	1060	310	324	180	1195	255	345
			1XB7731	795	660	-	100	115	1060	310	324	180	1195	255	345
			1XB7740	880	700	60	100	96	1100	365	324	235	1280	340	425
			1XB7750	960	850	65	100	103	1250	405	324	300	1360	420	890
	450	4	1XB7730	841	710	-	80	-	1160	310	325	180	1291	255	345
			1XB7731	841	710	-	80	115	1160	310	325	180	1291	255	345
1XB7740			926	750	60	80	96	1200	365	325	235	1376	340	425	
1XB7750			1006	900	65	80	103	1350	405	325	300	1456	420	890	

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

Overview



The energy storage devices can be integrated in drive systems that are used for dynamic energy management. Three different cooling methods are possible:

- Forced ventilation 1LQ17 (IC416; degree of protection IP55)
- Forced ventilation 1LP17 (IC06; degree of protection IP23)
- Water-jacket cooling 1LH17 (IC71W; degree of protection IP55)

Torque transmission via the shaft is not envisaged, which is why the energy storage devices are designed without a shaft extension.

To increase the maximum speed the energy storage devices are supplied with vibration dampers which are mounted as standard on the feet of the stator housing. Without vibration dampers the maximum speeds are reduced to the values of the motors in chapters 4 to 9.

The standard version of the energy storage devices comprises two hybrid bearings for preventing bearing currents:

- Frame size 315: DIN 625-6218-C3
- Frame size 355: DIN 625-6220-C3

Benefits

The main benefit of the SIMOTICS FD energy storage devices is in combination with SINAMICS converters – as an optimized drive system – in highly dynamic energy conversion.

This has been achieved in particular by an adapted winding, an increase in the maximum speed and with maximum intrinsic moment of inertia.

A further benefit is that no protective measures on account of rotating parts are required as there is no shaft extension.

Application

The SIMOTICS FD 1L.17 energy storage devices have been optimized for applications in which converter-fed induction motors are used as kinetic energy stores. They are rotating energy storage devices without shaft extension, preferably for pressing plants or comparable applications in which for a brief period a large amount of electrical energy needs to be converted into mechanical energy or vice versa depending on the process.

Function

The motors are operated permanently with a base speed in no-load duty and – in order to absorb energy – are accelerated to a significantly higher speed. If energy is to be removed from the rotating storage device, the drive is operated in generator mode and braked electrically down to base speed. Acceleration is then performed with maximum torque or at the current limit of the converter.

Application-specific motors

Energy storage devices

Technical specifications

General technical specifications

Type of motor IEC	IEC low-voltage motors SIMOTICS FD energy storage devices
Frame sizes	315, 355
Rated power	275 ... 670 kW
Rated speed	2000 ... 1800 rpm
Rated torque	1313 ... 3554 Nm
Versions	Air-cooled, enclosed version <ul style="list-style-type: none"> • with forced ventilation (IC416) Water-cooled version <ul style="list-style-type: none"> • with water-jacket cooling (IC71W) Air-cooled, open version <ul style="list-style-type: none"> • with forced ventilation (IC06)
Version in accordance with standards and specifications	<ul style="list-style-type: none"> • UL (order code D31) • CSA (order code D40) • Import to the Eurasian customs union (order code D47)
Insulation of the stator winding in accordance with EN 60034-1 (IEC 60034-1)	Temperature class 180 (H) DURIGNIT IR 2000, IVIC-C premium insulation system
Degree of protection in accordance with EN 60034-5 (IEC 60034-5)	As standard IP55/IP54: Air-cooled, enclosed version; water-cooled version (IP55 without rotary pulse encoder and with POG 10 rotary pulse encoder, IP54 with all other rotary pulse encoders) IP23: Air-cooled, open version
Cooling in accordance with EN 60034-6 (IEC 60034-6)	<ul style="list-style-type: none"> • Force-ventilated motors 1LQ17 (IC416, radially mounted separately driven fan) • Water-cooled motors 1LH17 (IC71W) • Force-ventilated, open-circuit ventilated motors 1LP17 (IC06, radially mounted separately driven fan)
Permissible coolant temperature and installation altitude	As standard Air-cooled motors: Coolant temperature -20 ... +40 °C, installation altitude up to 1000 m above sea level Water-cooled motors: Cooling water inlet temperature +5 ... +25 °C, installation altitude up to 1000 m above sea level
Standard voltages in accordance with EN 60038 (IEC 60038)	<ul style="list-style-type: none"> • 480 V • Separately driven fan motor: 400 V, 50 Hz – order code Y81 for separately driven fan with special voltage
Type of construction according to EN 60034-7 (IEC 60034-7)	IM B3 (foot-mounted design without flange)
Paint finish Suitability of paint finish for climate group according to IEC 60721, Part 2-1	As standard: color RAL 7030 stone gray
Vibration severity level according to EN 60034-14 (IEC 60034-14)	Level A (normal)
Shaft extension according to DIN 748 (IEC 60072)	Energy storage devices are designed without shaft extension
Sound pressure level according to EN ISO 1680 (tolerance +3 dB)	The relevant sound pressure level is listed in the selection and ordering data for the required motor. For boundary conditions see "Technical information" on page 2/7
Weights	The relevant weight is listed in the selection and ordering data for the required motor.
Modular mounting concept	<ul style="list-style-type: none"> • Prepared for mounting of rotary pulse encoder or brake. • Incremental encoder HTL 1024 POG 10 (Baumer-Hübner) • Incremental encoder HOG 10, HOG 11 (Baumer-Hübner)
Options	See "Article No. supplements and special versions"

Note:

The rated motor data is specified in the selection and ordering data for a rated pulse frequency of 2.5 kHz and space-vector modulation.

Selection and ordering data

Structure of the article numbers for SIMOTICS FD energy storage devices

Structure of the Article No.:		Position: 1 2 3 4 5 6 7 - 8 9 10 11 12 - 13 14 15 16																Order code
SIMOTICS FD energy storage devices																		
1st to 4th position: Digit, letter, letter, digit	Motors without explosion protection Water-cooled with water-jacket cooling, IC71W Air-cooled, enclosed version with forced ventilation, IC416 Air-cooled, open version with forced ventilation, IC06	1	L															
5th position: Digit	Motor series Energy storage devices					7												
6th position: Digit	System description Operation on SINAMICS converter with controlled infeed						1											
7th position: Digit	Efficiency Premium Efficiency							3										
8th and 9th position: Digit, letter	Frame size 315 355									3	A							
10th position: Letter	No. of poles 4-pole											B						
11th position: Digit	Laminated core length 1 (for frame size 315) 5 (for frame size 355)												1					
12th position: Digit	Line voltage 480 V													8				
13th position: Digit	Rated speed 1800 rpm 2000 rpm ¹⁾														6			
14th position: Letter	Type of construction IM B3																A	
15th position: Letter	Terminal box position Standard version (terminal box on DE top) Version with one terminal box Terminal box on DE right Terminal box on DE left Terminal box on NDE top Terminal box on NDE right Terminal box on NDE left																	A B C D E F
16th position: Digit	Separately driven fan – heat exchanger position No separately driven fan, no heat exchanger Separately driven fan position for air-cooled motors Separately driven fan unit NDE top Separately driven fan unit NDE right Separately driven fan unit NDE left																	0 2 3 4
Additional identification code	Different rated speed $n_{rated} = 2000$ rpm																	N2A

¹⁾ The energy storage devices in frame size 315 are designed for a rated speed of $n_{rated} = 2000$ rpm. They are ordered in conjunction with order code **N2A** (without additional price).

Application-specific motors

Energy storage devices

1LQ17, 1LH17 and 1LP17 energy storage devices – line voltage 480 V – Premium Efficiency

Selection and ordering data

1LQ17 energy storage devices – force-cooled, enclosed version

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LQ17 cast-iron series		
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cosφ _{rated} , 4/4	I _{rated}	I _{LR} /I _{rated}	T _B	Article No.		Order code		
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	▲ New			
<ul style="list-style-type: none"> Rated motor voltage 500 V Insulation: thermal class 180 (H), IP55 degree of protection (with speed encoder IP54), utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 (ALM) 																	
2000 rpm																	
275	369	315	Δ	67.1	1313	95.7	96.3	96.1	0.83	395	9.3	5383	7500	▲	1LQ1713-3AB18-9A	■	N2A
1800 rpm																	
500	671	355	Δ	60.3	2653	96.4	97.1	97.0	0.84	710	9.6	11939	10200	▲	1LQ1713-3BB58-6A	■	–

For versions, see Article No. supplements and special versions

1LH17 energy storage devices – water-cooled with water-jacket cooling

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LH17 cast-iron series		
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cosφ _{rated} , 4/4	I _{rated}	I _{LR} /I _{rated}	T _B	Article No.		Order code		
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	▲ New			
<ul style="list-style-type: none"> Rated motor voltage 500 V Insulation: thermal class 180 (H), IP55 degree of protection (with speed encoder IP54), utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 (ALM) 																	
2000 rpm, 4-pole																	
310	416	315	Δ	67.1	1480	95.6	96.3	96.2	0.85	435	8.5	5328	7500	▲	1LH1713-3AB18-9A	■	0 N2A
1800 rpm, 4-pole																	
560	751	355	Δ	60.4	2971	96.2	97.0	96.9	0.86	780	8.8	11884	10200	▲	1LH1713-3BB58-6A	■	0 –

For versions, see Article No. supplements and special versions

1LP17 energy storage devices – force-ventilated, open version

P _{rated}	P _{rated}	Frame size	Con- nec- tion	Operating values at rated power										Mech. torque limit 1) 2)	1LP17 cast-iron series		
				f _{rated}	T _{rated}	η _{rated} , 5/4	η _{rated} , 4/4	η _{rated} , 3/4	cosφ _{rated} , 4/4	I _{rated}	I _{LR} /I _{rated}	T _B	Article No.		Order code		
kW	hp	FS		Hz	Nm	%	%	%		A		Nm	Nm	▲ New			
<ul style="list-style-type: none"> Rated motor voltage 500 V Insulation: thermal class 180 (H), IP23 degree of protection, utilization in accordance with thermal class 155 (F) Converter operation with controlled infeed – SINAMICS S120 (ALM), SINAMICS S150 (ALM) 																	
2000 rpm, 4-pole																	
325	436	315	Δ	67.1	1552	95.7	96.4	96.4	0.85	460	8.0	5432	7500	▲	1LP1713-3AB18-9A	■	N2A
1800 rpm, 4-pole																	
670	898	355	Δ	60.4	3554	96.1	97.0	97.1	0.87	920	7.4	11728	10200	▲	1LP1713-3BB58-6A	■	–

For versions, see Article No. supplements and special versions

Application-specific motors

Energy storage devices

1LQ17, 1LH17 and 1LP17 energy storage devices – line voltage 480 V – Premium Efficiency

Motor type	Order code	$m_{IM\ B3}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box
		kg	kgm ²	dB(A)	dB(A)	rpm	Type
1LQ1713-3AB18-9A..	N2A	1220	12.1	85	100.5	3600	1XB7 731
1LQ1713-3BB58-6A..	–	2180	21.2	85	101.0	3300	1XB7 740

Motor type	Order code	$m_{IM\ B3}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box
		kg	kgm ²	dB(A)	dB(A)	rpm	Type
1LH1713-3AB18-9A..	N2A	1300	12.1	78	93.5	3600	1XB7 731
1LH1713-3BB58-6A..	–	2290	21.2	78	93.5	3300	1XB7 740

Motor type	Order code	$m_{IM\ B3}$	J	L_{pA} , tolerance +3 dB(A) no-load	L_{WA} , tolerance +3 dB(A) no-load	Mech. speed limit ³⁾	Terminal box
		kg	kgm ²	dB(A)	dB(A)	rpm	Type
1LP1713-3AB18-9A..	N2A	1210	12.1	85	100.5	3600	1XB7 731
1LP1713-3BB58-6A..	–	2170	21.2	85	101.0	3300	1XB7 740

¹⁾ The mechanical torque limit applies to rising load (direction of rotation of the shaft does not change).

²⁾ The mechanical torque limit is limited by the strength of the shaft extension and the breakdown torque is limited by the motor's electrical design. The minimum of both torques is the maximum overload torque for the motor.

³⁾ The mechanical speed limit takes into account the cooling type of the relevant motor and applies to type of construction IM B3. A reduced mechanical speed limit applies in part to different types of construction or bearings, see page 11/8.

Application-specific motors

Energy storage devices

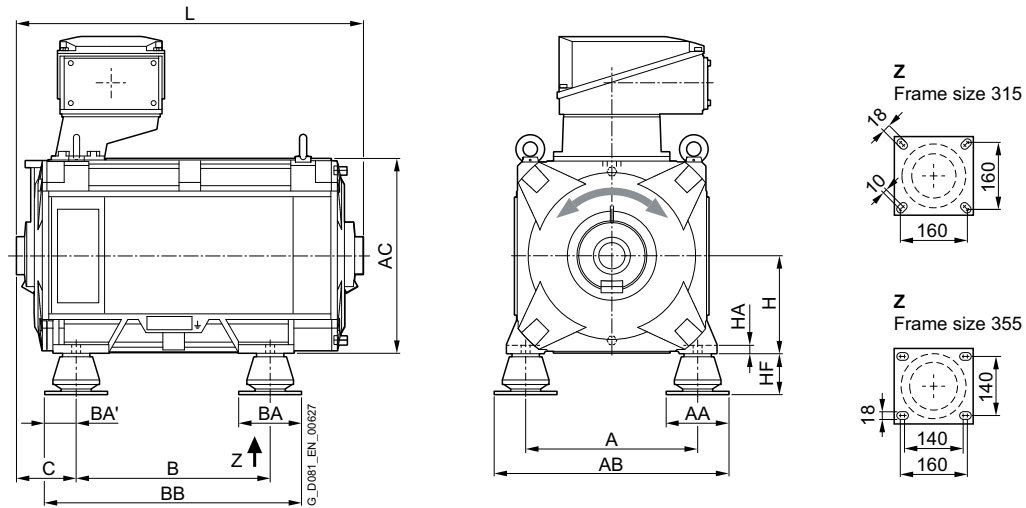
Dimensions

Dimensional drawings

1LH17 energy storage devices

Type of construction IM B3

For terminal box dimensions, see page 12/32



Frame size	No. of poles	Motor type	Dimension designation acc. to IEC												
			A	AA	AB	AC	B	BA	BA'	BB	C	H	HA	HF	L ¹⁾
315	4	1LH17...-3A.1.-....	560	200	765	630	630	200	100	830	194	315	28	130	1125
355	4	1LH17...-3B.5.-....	630	180	815	710	800	190	95	990	207	355	35	142	1365

Note:

When using an encoder, dimension L is increased by 170 mm for frame size 315 and by 190 mm for frame size 355.

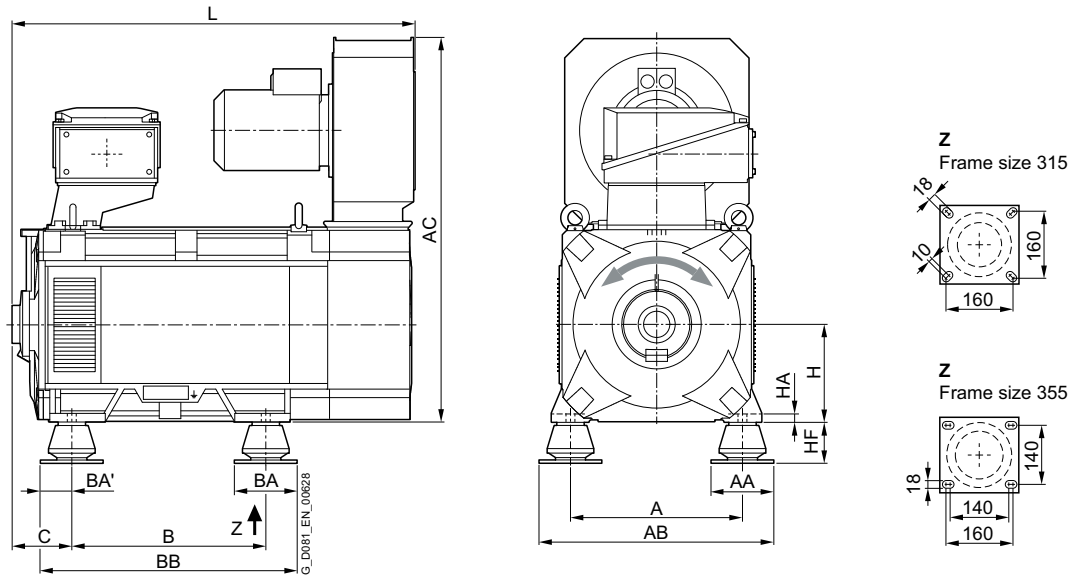
¹⁾ If an encoder is used, dimension L is increased.

Dimensional drawings (continued)

1LP17 and 1LQ17 energy storage devices

Type of construction IM B3

For terminal box dimensions, see page 12/32



Frame size	No. of poles	Motor type	Dimension designation acc. to IEC												
			A	AA	AB	AC	B	BA	BA'	BB	C	H	HA	HF	L ¹⁾
315	4	1LP17...-3A.1-... 1LQ17...-3A.1-... 1LQ17...-3A.1-...	560	200	765	1245	630	200	100	830	194	315	28	130	1310
355	4	1LP17...-3B.5-... 1LQ17...-3B.5-... 1LQ17...-3B.5-...	630	180	815	1305	800	190	95	990	207	355	35	142	1565

Note:

When using an encoder, dimension L is increased by 170 mm for frame size 315 and by 190 mm for frame size 355.

¹⁾ If an encoder is used, dimension L is increased.

Application-specific motors

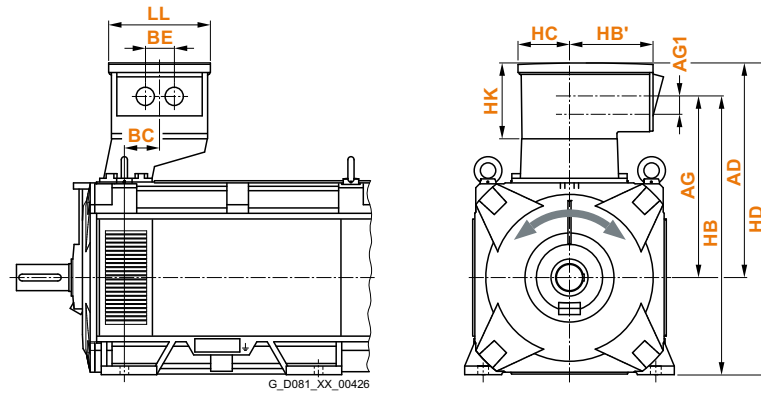
Energy storage devices

Dimensions

Dimensional drawings (continued)

Terminal boxes

Type of construction IM B3



Motor type	Frame size	No. of poles	Terminal box	Dimension designation acc. to IEC											
				AD	AG	AG1	BC	BE	HB	HB'	HH	HC	HD	HK	LL
1LH17, 1LP17, 1LQ17	315	4	1XB7730	705	570	-	115	-	885	310	295	180	1020	255	345
			1XB7731	705	570	-	115	115	885	310	295	180	1020	255	345
			1XB7740	790	610	60	115	96	925	365	295	235	1105	340	425
	355	4	1XB7730	750	615	-	100	-	970	310	300	180	1105	255	345
			1XB7731	750	615	-	100	115	970	310	300	180	1105	255	345
			1XB7740	835	655	60	100	96	1010	365	300	235	1190	340	425

Note:

The number and position of cable glands varies depending on the terminal box type. Dimension BE specifies the minimum distance between two glands.

For additional information about terminal boxes, see page 2/14.

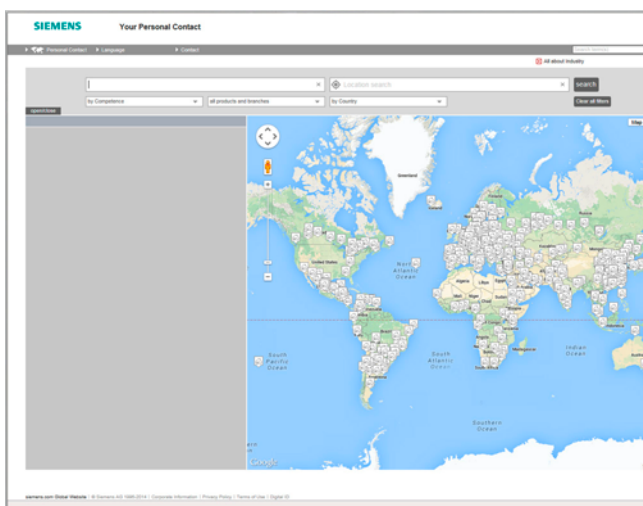
Appendix



13/2	Partner at Siemens
13/3	Online Services
13/3	<u>Information and Ordering Options on the Internet and DVD</u>
13/3	The Future of Manufacturing on the Internet
13/3	Product Selection Using the Interactive CA 01 Automation and Drives Catalog
13/3	Easy Shopping with the Industry Mall
13/4	<u>Information and Download Center</u>
	<u>Social Media, Mobile Media</u>
13/4	Downloading Catalogs
13/4	Social und Mobile Media
13/5	Industry Services
13/5	Unleash potential – with services from Siemens
13/5	Increase your performance – with Industry Services
13/6	<u>Industry Services – Portfolio overview</u>
13/6	Plant Data Services
13/6	Training Services
13/6	Support and Consulting Services
13/6	Spare Parts Services
13/7	Repair Services
13/7	Field and Maintenance Services
13/7	Retrofit and Modernization Services
13/7	Service Programs and Agreements
13/8	<u>Online Support</u>
13/8	Online Support-App
13/9	Indexes
13/9	Subject index
13/12	Article number index
13/15	Metal surcharges
13/15	<u>Explanation of the raw material/ metal surcharges</u>
13/15	Surcharge calculation
13/15	Structure of the metal factor
13/15	Weight method
13/15	Percentage method
13/15	Metal factor examples
13/16	<u>Explanation of the raw material/ metal surcharges for dysprosium and neodym (rare earths)</u>
13/16	Surcharge calculation
13/16	Three-month average price
13/16	Structure of the metal factor
13/16	Weight method
13/16	Metal factor examples
13/17	<u>Values of the metal factor</u>
13/18	Conditions of sale and delivery
13/18	General provisions
13/18	Prices
13/18	Additional terms and conditions
13/18	Export regulations

Appendix

Partner at Siemens



At Siemens we are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Digital Factory and Process Industries and Drives.

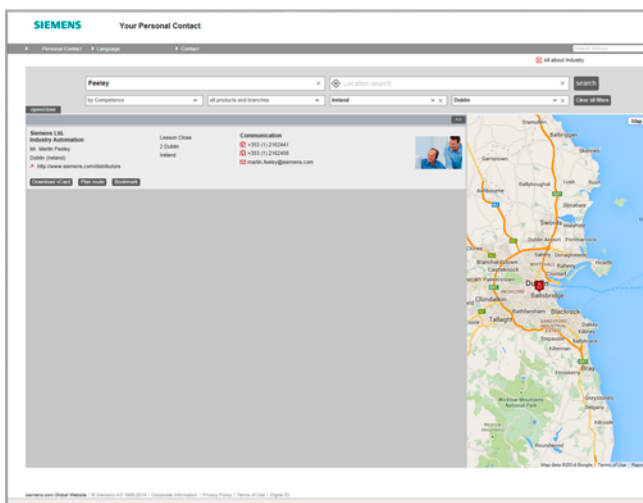
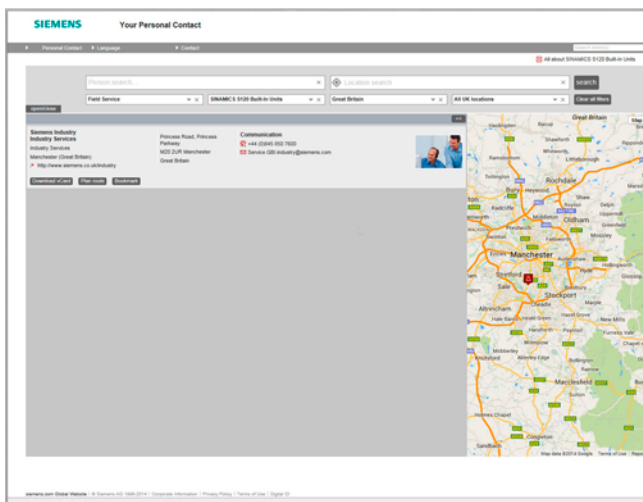
Your personal contact can be found in our Contacts Database at: www.siemens.com/automation-contact

You start by selecting

- the required competence,
- products and branches,
- a country,
- a city

or by a

- location search or
- person search.



The Future of Manufacturing on the Internet



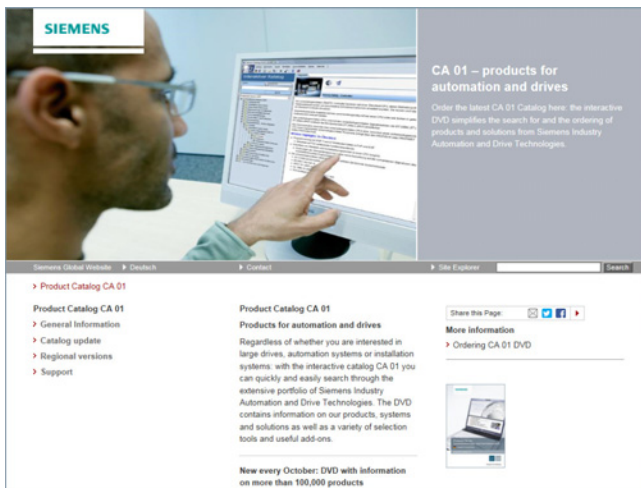
Detailed knowledge of the range of products and services available is essential when planning and engineering automation systems. It goes without saying that this information must always be as up-to-date as possible.

Industry is on the threshold of the fourth industrial revolution as digitization now follows after the automation of production. The goals are to increase productivity and efficiency, speed, and quality. In this way, companies can remain competitive on the path to the future of industry.

You will find everything you need to know about products, systems and services on the internet at:

www.siemens.com/industry

Product Selection Using the Interactive CA 01 Automation and Drives Catalog



Detailed information together with user-friendly interactive functions:

The CA 01 interactive catalog covers more than 100,000 products, thus providing a comprehensive overview of the product range provided by Siemens.

You will find everything you need here for solving tasks in the fields of automation, switching, installation and drives. All information is provided over a user interface that is both user-friendly and intuitive.

You can order the CA 01 product catalog from your Siemens sales contact or in the Information and Download Center:

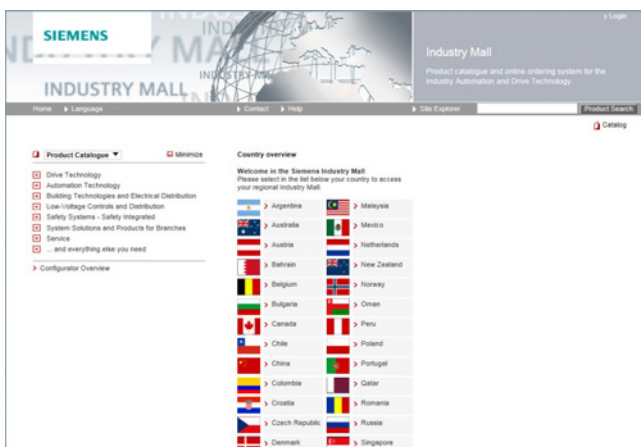
www.siemens.com/industry/infocenter

Information about the CA 01 interactive catalog can be found on the Internet at:

www.siemens.com/automation/ca01

or on DVD.

Easy Shopping with the Industry Mall



The Industry Mall is the electronic ordering platform of Siemens AG on the Internet. Here you have online access to a huge range of products presented in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure, from selection through ordering to tracking and tracing, to be carried out online. Availability checks, customer-specific discounts and bid creation are also possible.

Numerous additional functions are provided for your support. For example, powerful search functions make it easy to select the required products. Configurators enable you to configure complex product and system components quickly and easily. CAx data types are also provided here.

You can find the Industry Mall on the Internet at:

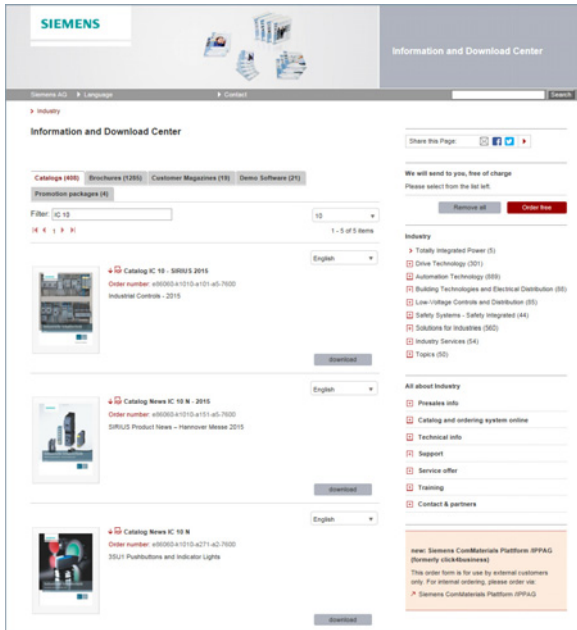
www.siemens.com/industrymall

Appendix

Online Services

Information and Download Center, Social Media, Mobile Media

Downloading Catalogs



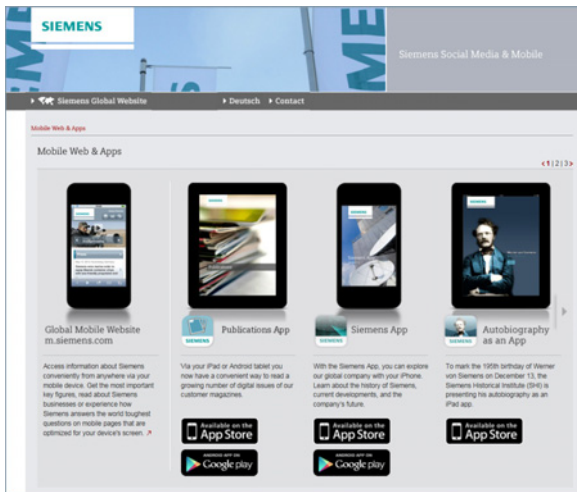
In addition to numerous other useful documents, you can also find the catalogs listed on the back inside cover of this catalog in the Information and Download Center. You can download these catalogs in PDF format without having to register.

The filter dialog above the first catalog displayed makes it possible to carry out targeted searches. If you enter "MD 3" for example, you will find both the MD 30.1 and MD 31.1 catalogs. If you enter "IC 10", both the IC 10 catalog and the associated news or add-ons are displayed.

Visit us at:

www.siemens.com/industry/infocenter

Social and Mobile Media



Connect with Siemens through social media: visit our social networking sites for a wealth of useful information, demos on products and services, the opportunity to provide feedback, to exchange information and ideas with customers and other Siemens employees, and much, much more. Stay in the know and follow us on the ever-expanding global network of social media.

To find out more about Siemens' current social media activities, visit us at:

www.siemens.com/socialmedia

Or via our product pages at:

www.siemens.com/automation or www.siemens.com/drives

Connect with Siemens Industry at our central access point to read all the news on the future of manufacturing, watch current videos and inform yourself about all the latest industry developments:

www.siemens.com/future-of-manufacturing

Discover the world of Siemens.

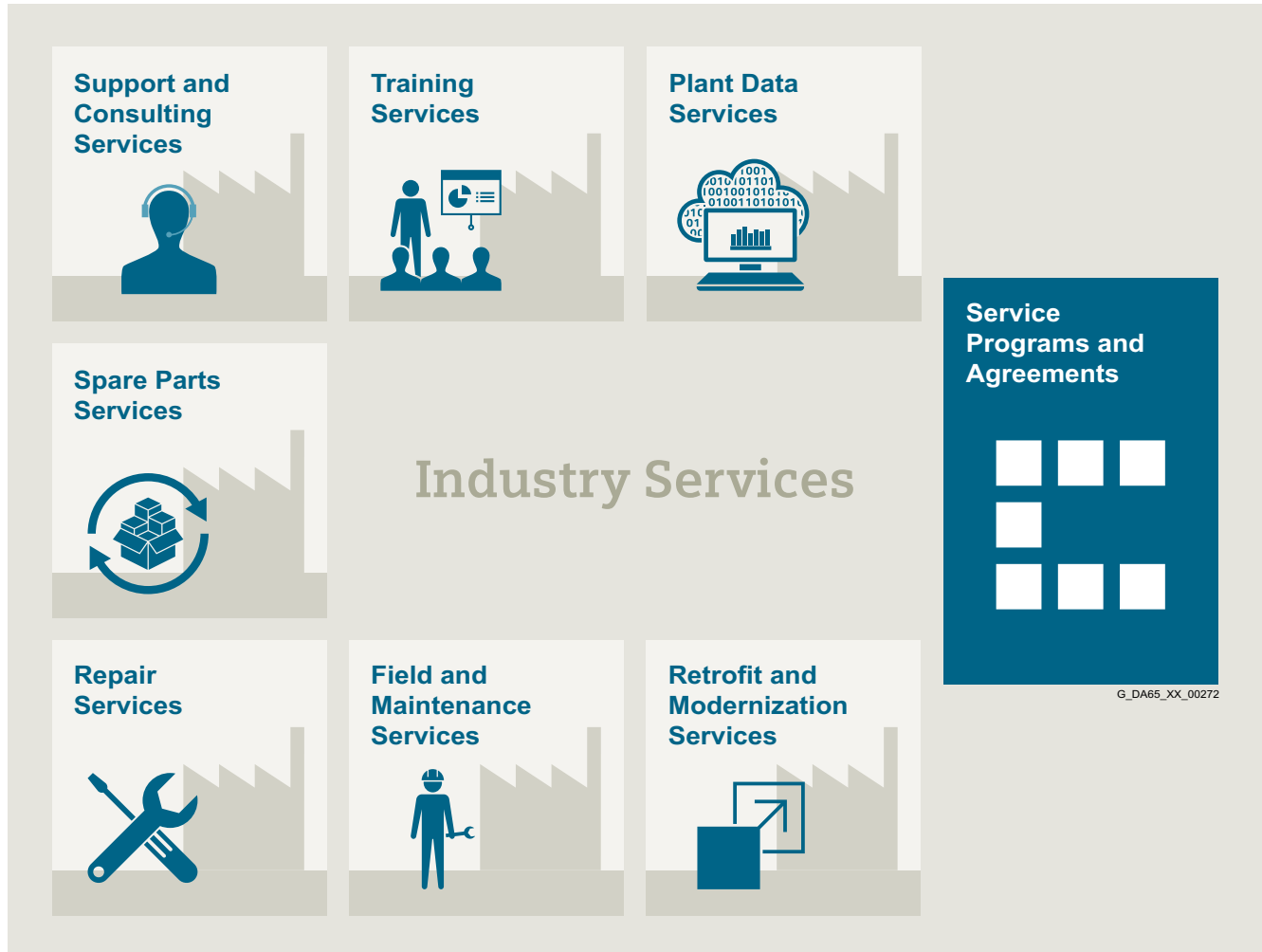
We are also constantly expanding our offering of cross-platform apps for smartphones and tablets. You will find the current Siemens apps at the App Store (iOS) or at Google Play (Android):

<https://itunes.apple.com/en/app/siemens/id452698392?mt=8>

<https://play.google.com/store/search?q=siemens>

The Siemens app, for example, tells you all about the history, latest developments and future plans of the company – with informative pictures, fascinating reports and the most recent press releases.



Overview
Unleash potential – with services from Siemens


G_DA65_XX_00272

Increase your performance – with Industry Services

Optimizing the productivity of your equipment and operations can be a challenge, especially with constantly changing market conditions. Working with our service experts makes it easier. We understand your industry's unique processes and provide the services needed so that you can better achieve your business goals.

You can count on us to maximize your uptime and minimize your downtime, increasing your operations' productivity and reliability. When your operations have to be changed quickly to meet a new demand or business opportunity, our services give you the flexibility to adapt. Of course, we take care that your production is protected against cyber threats. We assist in keeping your operations as energy and resource efficient as possible and reducing your total cost of ownership. As a trendsetter, we ensure that you can capitalize on the opportunities of digitalization and by applying data analytics to enhance decision making: You can be sure that your plant reaches its full potential and retains this over the longer lifespan.

You can rely on our highly dedicated team of engineers, technicians and specialists to deliver the services you need – safely, professionally and in compliance with all regulations. We are there for you, where you need us, when you need us.

Appendix

Industry Services

Industry Services – Portfolio overview

Overview

Plant Data Services



Make your industrial processes transparent to gain improvements in productivity, asset availability, and energy efficiency.

Production data is generated, filtered and translated with intelligent analytics to enhance decision-making.

This is done whilst taking data security into consideration and with continuous protection against cyber attack threats.

www.industry.siemens.com/services/global/en/portfolio/plant-data-services/Pages/index.aspx

Support and Consulting Services



Industry Online Support site for comprehensive information, application examples, FAQs and support requests.

Technical and Engineering Support for advice and answers for all inquiries about functionality, handling, and fault clearance.

Information & Consulting Services, e.g. SIMATIC System Audit; clarity about the state and service capability of your automation system or Lifecycle Information Services; transparency on the lifecycle of the products in your plants.

www.industry.siemens.com/services/global/en/portfolio/support-consulting/Pages/index.aspx

Training Services



From the basics and advanced to specialist skills, SITRAIN courses provide expertise right from the manufacturer – and encompass the entire spectrum of Siemens products and systems for the industry.

Worldwide, SITRAIN courses are available wherever you need a training course in more than 170 locations in over 60 countries.

www.industry.siemens.com/services/global/en/portfolio/training/Pages/index.aspx

Spare Parts Services



Are available worldwide for smooth and fast supply of spare parts – and thus optimal plant availability. Genuine spare parts are available for up to ten years. Logistic experts take care of procurement, transport, custom clearance, storage and order management. Reliable logistics processes ensure that components reach their destination as needed.

Asset optimization services help you design a strategy for parts supply where your investment and carrying costs are reduced and the risk of obsolescence is avoided.

www.industry.siemens.com/services/global/en/portfolio/spare_parts/Pages/index.aspx

Overview (continued)

Repair Services



Are offered on-site and in regional repair centers for fast restoration of faulty devices' functionality.

Also available are extended repair services, which include additional diagnostic and repair measures, as well as emergency services.

www.industry.siemens.com/services/global/en/portfolio/repair_services/Pages/index.aspx

Retrofit and Modernization Services



Provide a cost-effective solution for the expansion of entire plants, optimization of systems or upgrading existing products to the latest technology and software, e.g. migration services for automation systems.

Service experts support projects from planning through commissioning and, if desired over the entire extended lifespan, e.g. Retrofit for Integrated Drive Systems for an extended lifetime of your machines and plants

www.industry.siemens.com/services/global/en/portfolio/retrofit-modernization/Pages/index.aspx

Field and Maintenance Services



Siemens specialists are available globally to provide expert field and maintenance services, including commissioning, functional testing, preventive maintenance and fault clearance.

All services can be included in customized service agreements with defined reaction times or fixed maintenance intervals.

www.industry.siemens.com/services/global/en/portfolio/field_service/Pages/index.aspx

Service Programs and Agreements



A technical Service Program or Agreement enables you to easily bundle a wide range of services into a single annual or multi-year agreement.

You pick the services you need to match your unique requirements or fill gaps in your organization's maintenance capabilities.

Programs and agreements can be customized as KPI-based and/or performance-based contracts.

www.industry.siemens.com/services/global/en/portfolio/service_programs/Pages/index.aspx

Appendix

Industry Services

Online Support

Overview

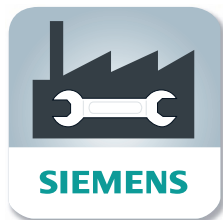


Online Support is a comprehensive information system for all questions relating to products, systems, and solutions that Siemens has developed for industry over time. With more than 300,000 documents, examples and tools, it offers users of automation and drive technology a way to quickly find up-to-date information. The 24-hour service enables direct, central access to detailed product information as well as numerous solution examples for programming, configuration and application.

The content, in six languages, is increasingly multimedia-based – and now also available as a mobile app. Online support's "Technical Forum" offers users the opportunity to share information with each other. The "Support Request" option can be used to contact Siemens' technical support experts. The latest content, software updates, and news via newsletters and Twitter ensure that industry users are always up to date.

www.siemens.com/industry/online-support

Online Support App



Using the Online Support app, you can access over 300,000 documents covering all Siemens industrial products – anywhere, any time. Regardless of whether you need help implementing your project, fault-finding, expanding your system or are planning a new machine.

You have access to FAQs, manuals, certificates, characteristic curves, application examples, product notices (e.g. announcements of new products) and information on successor products in the event that a product is discontinued.

Just scan the product code printed on the product directly using the camera of your mobile device to immediately see all technical information available on this product at a glance. The graphical CAx information (3D model, circuit diagrams or EPLAN macros) is also displayed. You can forward this information to your workplace using the e-mail function.

The search function retrieves product information and articles and supports you with a personalized suggestion list. You can find your favorite pages – articles you need frequently – under "mySupport". You also receive selected news on new functions, important articles or events in the News section.

Scan the QR code
for information on
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	Page		Page
A		D	
Additional axial load for motors in the basic version	2/21	Damping	3/18
Additional conditions	13/18	Definite Purpose – SIMOTICS DP	1/2
Additional mandatory options – water & waste water	12/12	Definition of water properties	3/12
Additional options recommended by the manufacturer – water & waste water	12/12	Degree of protection – marine motors	12/7
Admissible cantilever forces at 50 Hz for motors with reinforced bearings	2/22	Design of the SIMOTICS FD motor series	2/4
Admissible materials for the overall cooling circuit	3/13	Dimensions	4/42, 5/62, 6/54, 7/22, 8/22, 9/42
Ambient conditions	3/2	Dimensions 1LH1 motors	6/54
Ambient conditions and installation altitude	3/2	Dimensions 1LH17 energy storage devices	12/30
Anti-condensation heating	2/11	Dimensions 1LL1 motors	8/22
Anti-freeze	3/13	Dimensions 1LM1 motors	4/42
Appendix	13/1	Dimensions 1LM16 crane motors.....	12/22
Applicable standards and specifications	2/5	Dimensions 1LN1 motors	7/22
Application-specific motors	12/2	Dimensions 1LP1 motors – Axially mounted equipment unit	9/44
Article No. supplements and special versions	11/1	Dimensions 1LP1 motors – Radially mounted equipment unit	9/42
Article number code	1/6	Dimensions 1LP16 and 1LQ16 crane motors	12/23
Article number code – Crane motors.....	12/15	Dimensions 1LP17 and 1LQ17 energy storage devices.....	12/31
Article number code – energy storage devices	12/27	Dimensions 1LQ1 motors – Axially mounted equipment unit	5/64
Assignment of coupling types to SIMOTICS FD motors	3/19	Dimensions 1LQ1 motors – Radially mounted equipment unit	5/62
Assignment of motor versions/cooling water quality	3/12	Dimensions flanges	4/44, 5/66, 6/56, 7/24, 8/24, 9/46
Assignment, connection thread water-cooled 1LH1 motors	3/12	Dimensions terminal boxes ...	4/45, 5/67, 6/57, 7/25, 8/25, 9/47, 12/24, 12/32
A-weighted sound pressure level under no-load operation on a SINAMICS converter	3/11	Downloading catalogs	13/4
B		Drive system engineering – detail level 2	3/7
Bearing assignment	2/19	Duty types	3/3
Bearing currents, reduction	2/8	E	
Bearing lifetime (nominal lifetime)	2/20	Easy shopping with the Industry Mall	13/3
Bearing system	2/20	Electrical insulation	3/18
Bearings	2/19	EMC	3/11
Bearings and lubrication	2/19	Energy & Environmental Services	13/8
Benefits	10/4, 12/4	Energy storage devices	12/25
Benefits of the SIMOTICS FD motor series	1/4	• 1LH17 energy storage devices – water-cooled with water-jacket cooling.....	12/28
Biocides	3/13	• 1LP17 energy storage devices – force-ventilated, open version.....	12/28
C		• 1LQ17 energy storage devices – force-ventilated, enclosed version.....	12/28
Calculating the DOL starting time	2/12	• 1LQ17, 1LH17 and 1LP17 energy storage devices.....	12/28
Catalog versions	3/9	Engineering the drive system	3/5
Catalog versions and special versions	3/9	Explanation of the raw material/metal surcharges	13/15
Certification – explosion-proof motors	10/3	Explanation of the raw material/metal surcharges for dysprosium and Neodymium (rare earths)	13/16
Chemical industry – marine motors	12/10	Explosion-proof motors.....	10/1
Classification of zones – explosion-proof motors	10/2	Explosion-proof -SIMOTICS XP	1/2
Conditions of sale and delivery/export regulations	13/18	Export regulations	13/18
Connection and terminal boxes	2/14	F	
Controlled infeed	3/5	Field Services	13/7
Converter (1MM1, 1MH1, 1MQ1, 1MN1) or line operation (1LH1)	10/6	FLENDER couplings – part of the drive system	3/16
Coolant additives	3/13	Flexible Duty – SIMOTICS FD	1/2
Coolant temperature – SIMOTICS FD Explosion-Proof motors	10/8	For customers with a registered office in Germany	13/18
Cooling circuit in the application	3/12	For customers with a registered office outside Germany	13/18
Cooling water quality	3/12	Forced ventilation	2/7
Coupling behavior under overload conditions	3/18	Force-ventilated motors – enclosed version	5/1
Couplings	3/16	Force-ventilated motors – open version	9/1
Crane motors	12/13	G	
• 1LM16 crane motors – self-ventilated, enclosed version.....	12/16	General information	10/5
• 1LP16 crane motors – force-ventilated, open version.....	12/20	General provisions	13/18
• 1LQ16 crane motors – force-ventilated, enclosed version	12/18	General Purpose – SIMOTICS GP	1/2
		General technical specifications	1/5
		General technical specifications – crane motors	12/14
		General technical specifications – energy storage devices	12/26
		Grease lifetime	2/20

Appendix

Indexes

Subject index

	Page		Page
H			
Heat exchanger position	11/7		
High Torque – SIMOTICS HT	1/2		
Horizontal integration	6		
Housing version – marine motors	12/5		
I			
Increased power – High Efficiency	5/2, 5/18, 5/30, 5/42, 5/54		
Industry Services	13/5		
Industry Services for the entire life cycle	13/6		
Information and ordering options on the Internet and on DVD	13/3		
Inhibitors, anti-freeze, biocides	3/13		
Installation altitude	3/2		
Insulated bearings for converter operation	2/20		
Insulation	2/7		
Integrated Drive Systems	6		
Integration in automation	6		
Introduction	1/1		
L			
Legends and footnotes	11/34		
Life cycle integration	6		
Lubrication	2/19		
M			
Marine classification societies – marine motors	12/3		
Materials in the motor cooling circuit	3/13		
Materials used in the motor (cooling circuit)	3/13		
Maximum overload torques	2/10		
Mechanical loads	2/10		
Mechanical speed limit	11/8		
Metal factor examples	13/15		
Modernization & Optimization Services	13/9		
More information	2/10		
Motor condition monitoring based on SIPLUS CMS2000	3/15		
Motor connection	2/11		
Motor connection – marine motors	12/5		
Motor protection	2/11		
Motors specially designed for converter operation	2/6		
Motors specially designed for line operation (1LH1)	2/11		
Motors 1LH1 – technical information	2/3		
Motors 1LH1 for converter operation	6/2		
• Line voltage 400 V, 50 Hz	6/2		
- High Efficiency	6/2		
- Premium Efficiency	6/6		
• Line voltage 460 V, 60 Hz	6/26		
- High Efficiency	6/26		
- Premium Efficiency	6/30		
• Line voltage 500 V, 50 Hz	6/10		
- High Efficiency	6/10		
- Premium Efficiency	6/14		
• Line voltage 575 V, 60 Hz	6/34		
- High Efficiency	6/34		
- Premium Efficiency	6/38		
• Line voltage 690 V, 50 Hz	6/18		
- High Efficiency	6/18		
- Premium Efficiency	6/22		
Motors 1LH1 for line operation 6/42			
• Line voltage 400 V, 50 Hz	6/42		
- High Efficiency	6/42		
- Premium Efficiency	6/44		
• Line voltage 460 V, 60 Hz	6/50		
- High Efficiency	6/50		
- Premium Efficiency	6/52		
• Line voltage 690 V, 50 Hz	6/18		
- High Efficiency	6/18		
- Premium Efficiency	6/22		
M (continued)			
Motors 1LL1 – technical information	2/2		
Motors 1LL1 for converter operation	8/2		
• Line voltage 400 V, 50 Hz – High Efficiency	8/2		
• Line voltage 460 V, 60 Hz – High Efficiency	8/14		
• Line voltage 500 V, 50 Hz – High Efficiency	8/6		
• Line voltage 575 V, 60 Hz – High Efficiency	818		
• Line voltage 690 V, 50 Hz – High Efficiency	8/10		
Motors 1LM1 – technical information	2/2		
Motors 1LM1 for converter operation	4/2		
• Line voltage 400 V, 50 Hz	4/2		
- High Efficiency	4/2		
- Premium Efficiency	4/6		
• Line voltage 460 V, 60 Hz	4/26		
- High Efficiency	4/26		
- Premium Efficiency	4/30		
• Line voltage 500 V, 50 Hz	4/10		
- High Efficiency	4/10		
- Premium Efficiency	4/14		
• Line voltage 575 V, 60 Hz	4/34		
- High Efficiency	4/34		
- Premium Efficiency	4/38		
• Line voltage 690 V, 50 Hz	4/18		
- High Efficiency	4/18		
- Premium Efficiency	4/22		
Motors 1LN1 – technical information	2/3		
Motors 1LN1 for converter operation	7/2		
• Line voltage 400 V, 50 Hz – High Efficiency	7/2		
• Line voltage 460 V, 60 Hz – High Efficiency	7/14		
• Line voltage 500 V, 50 Hz – High Efficiency	7/6		
• Line voltage 575 V, 60 Hz – High Efficiency	7/18		
• Line voltage 690 V, 50 Hz – High Efficiency	7/10		
Motors 1LP1 – technical information	2/2		
Motors 1LP1 for converter operation	9/2		
• Line voltage 400 V, 50 Hz	9/2		
- Increased power – High Efficiency	9/6		
- Low noise – High Efficiency	9/2		
• Line voltage 460 V, 60 Hz	9/26		
- Increased power – High Efficiency	9/30		
- Low noise – High Efficiency	9/26		
• Line voltage 500 V, 50 Hz	9/10		
- Increased power – High Efficiency	9/14		
- Low noise – High Efficiency	9/10		
• Line voltage 575 V, 60 Hz	9/34		
- Increased power – High Efficiency	9/38		
- Low noise – High Efficiency	9/34		
• Line voltage 690 V, 50 Hz	9/18		
- Increased power – High Efficiency	9/22		
- Low noise – High Efficiency	9/18		
Motors 1LQ1 – technical information	2/2		
Motors 1LQ1 for converter operation	5/2		
• Line voltage 400 V, 50 Hz	5/2		
- Increased power – High Efficiency	5/6		
- Low noise – High Efficiency	5/2		
- Premium Efficiency	5/10		
• Line voltage 460 V, 60 Hz	5/38		
- Increased power – High Efficiency	5/42		
- Low noise – High Efficiency	5/38		
- Premium Efficiency	5/46		
• Line voltage 500 V, 50 Hz	5/14		
- Increased power – High Efficiency	5/18		
- Low noise – High Efficiency	5/14		
- Premium Efficiency	5/22		
• Line voltage 575 V, 60 Hz	5/50		
- Increased power – High Efficiency	5/54		
- Low noise – High Efficiency	5/50		
- Premium Efficiency	5/58		
• Line voltage 690 V, 50 Hz	5/26		
- Increased power – High Efficiency	5/30		
- Low noise – High Efficiency	5/26		
- Premium Efficiency	5/34		

	Page		Page
N			
Noise	2/7		
Noise emission when operated on a SINAMICS converter	3/11		
O			
Online Support and Online Support App	13/6		
Options	1/9		
Options for engineering the drive system	3/6		
Options for special environments – chemical industry	12/10		
Options, explosion-proof motors	11/22		
Options, motors without explosion protection	11/9		
Ordering examples – marine motors	12/8		
Ordering notes – marine motors	12/7		
Orientation	1/2		
Other options for the chemical industry	12/10		
Overload	3/18		
Overview	2/2		
Overview – technical information	2/2		
Overview of explosion-proof SIMOTICS FD 1MM, 1MH, 1MQ, 1MN	10/3		
Overview of product lines	1/3		
P			
Paint finish – marine motors	12/7		
Partner at Siemens	13/2		
Percentage method	13/15		
Performance features of the SIMOTICS FD series	1/3		
Plant Maintenance & Condition Monitoring	13/9		
Possible cooling circuits of the SIMOTICS FD motor series	3/12		
Power supplied from a converter	3/4		
Prices	13/18		
Product range for the water & waste water option packages	12/11		
Product selection using the interactive catalog CA 01 for automation and drive technology	13/3		
Q			
Quotation and ordering processes for option package	12/11		
R			
Rated motor speeds	3/9		
Rated motor voltages dependent on the line voltages and Infeed	3/7		
Rated speeds	11/3, 3/9		
Rated voltage	2/6		
Rating plate and acceptance test certificate – marine motors	12/7		
Rating plate data	2/6, 10/7		
Recommended SINAMICS converters	3/9		
Recommended special versions – marine motors	12/7		
Reduced base-load currents IL for SINAMICS converters	3/10		
Reducing bearing currents	2/8		
Regreasing	2/20		
Regreasing intervals	2/20		
Repair Services	13/7		
S			
Self-ventilated motors – enclosed version	4/1		
Self-ventilated motors – open version	8/1		
Separately driven fan position/heat exchanger position	11/7		
Service contracts	13/9		
Severe Duty – SIMOTICS SD	1/2		
Shaft misalignment	3/17		
Shaft seal and degree of protection	2/20		
Shipbuilding	12/2		
Siemens Integrated Drive Systems	3/16		
SIMOTICS – Low-voltage motors for line and converter operation	1/2		
SIMOTICS FD	3/2		
SIMOTICS FD motor on alternative converters	3/8		
SIMOTICS FD motor on SINAMICS converter	3/8		
Simple motor selection – detail level 1	3/7		
S (continued)			
SINAMICS converters, recommended	3/9		
Single-joint couplings	3/17		
SIPLUS CMS	3/14		
SIPLUS CMS condition monitoring systems for the continuous condition monitoring of motors	3/14		
Spare Parts	13/7		
Special technology – explosion-proof motors	10/8		
Special versions	3/11, 11/9		
Specifications	2/5		
Specifications of the individual classification authorities with order codes for ordering SIMOTICS FD motors in marine design	12/5		
Standard designs of Siemens FLENDER couplings	3/16		
Standards	2/5		
Starting procedure for three-phase motors with squirrel-cage rotor	2/13		
Stress, mechanical	2/10		
Structure of catalog motor selection tables	3/2		
Structure of the metal factor	13/15, 13/16		
Surcharge calculation	13/15, 13/16		
System components	3/1		
T			
Technical Consulting & Engineering Support	13/8		
Technical content of the option package – water & waste water	12/12		
Technical information	2/1		
Technical information – explosion-proof motors	10/2		
Technical Support	13/6		
Temperature class and coolant temperature – marine motors	12/6		
Terminal box mounting positions	2/14		
Terminal box position	11/6		
The basic design of the SIMOTICS FD motor series	2/4		
The future of industry in the WWW	13/3		
The SIMOTICS family of motors	1/2		
Thermal torque limits (continuous duty)	2/8		
Three-months	13/16		
Three-months average price	13/16		
Torque characteristic	2/11		
Totally Integrated Automation (TIA)	2		
Totally Integrated Power (TIP)	4		
Training	13/8		
Transnorm – SIMOTICS TN	1/2		
Two-joint couplings	3/17		
Type of protection Ex nA for use in Zone 2 – explosion-proof Motors	10/5		
Type of protection Ex tc for use in Zone 22 – explosion-proof Motors	10/5		
Types of construction	11/5		
Types of protection – explosion-proof motors	10/2		
U			
Uncontrolled infeed	3/4		
V			
Values of the metal factor	13/17		
Version for potentially explosive atmospheres	3/18		
VIK design	10/8, 12/10		
Voltages	11/2		
W			
Water & waste water	12/11		
Water cooling	2/10, 12/5		
Water cooling (1LH1 and 1LN1 motors)	3/12		
Water-cooled motors with air-to-water heat exchanger	7/1		
Water-cooled motors with water-jacket cooling	6/1		
Weight method	13/15, 13/16		
Winding and motor protection – marine motors	12/7		
Y			
Your machines and plant can do more – with Industry Services.	13/5		

Article number index

Article No.	Page	Article No.	Page
6SL3710-2GF.		6SL3710-7LG.	
6SL3710-2GF38-6AA3	4/13, 4/17, 4/37, 5/17, 5/21, 5/25, 5/53, 5/57, 5/61, 6/13, 6/37, 8/9, 8/21, 9/13, 9/37, 9/41	6SL3710-7LG31-5AA3	4/19
6SL3710-2GF41-1AA3	4/13, 4/17, 4/37, 4/41, 5/17, 5/21, 5/25, 5/53, 5/57, 5/61, 6/13, 6/17, 6/37, 6/41, 7/21, 8/9, 8/21, 9/13, 9/17, 9/37, 9/41	6SL3710-7LG31-8AA3	4/19, 4/23, 4/39, 5/27, 5/31
6SL3710-2GF41-4AA3	4/13, 4/17, 4/37, 4/41, 5/17, 5/21, 5/25, 5/53, 5/57, 5/61, 6/13, 6/17, 6/37, 6/41, 7/21, 8/9, 8/21, 9/13, 9/17, 9/37, 9/41	6SL3710-7LG32-2AA3	4/11, 4/19, 4/23, 4/35, 5/27, 5/35, 6/19, 6/23, 8/11
6SL3710-2GH.		6SL3710-7LG32-6AA3	4/11, 4/15, 4/19, 4/23, 4/35, 5/15, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/19, 6/23, 8/11, 9/19, 9/23
6SL3710-2GH41-1AA3	4/21, 4/25, 5/29, 5/33, 5/37, 6/21, 6/25, 7/13, 8/13, 9/21, 9/25	6SL3710-7LG33-3AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/19, 9/23, 9/35, 9/39
6SL3710-2GH41-4AA3	4/21, 4/25, 5/29, 5/33, 5/37, 6/21, 6/25, 7/13, 8/13, 9/21, 9/25	6SL3710-7LG34-1AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-2GH41-5AA3	8/13, 9/21, 9/25	6SL3710-7LG34-7AA3	4/11, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 5/59, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-2GH41-8EA3	7/13, 8/13, 9/21, 9/25	6SL3710-7LG35-8AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-2GH42-0EA3	9/25	6SL3710-7LG37-4AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-7LE.		6SL3710-7LG38-1AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-7LE33-1AA3	4/3, 4/7, 4/27, 5/3	6SL3710-7LG38-8AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-7LE33-8AA3	4/3, 4/7, 4/27, 4/31, 5/7, 5/11, 5/39, 5/43, 5/47, 6/3, 6/7, 8/3	6SL3710-7LG41-0AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-7LE35-0AA3	4/3, 4/7, 4/27, 4/31, 5/3, 5/7, 5/11, 5/39, 5/43, 5/47, 6/3, 6/27, 6/31, 7/3, 8/3, 8/15, 9/3, 9/7, 9/27, 9/31	6SL3710-7LG41-3AA3	4/11, 4/15, 4/19, 4/23, 4/35, 4/39, 5/15, 5/19, 5/23, 5/27, 5/31, 5/35, 5/51, 5/55, 6/11, 6/15, 6/19, 6/23, 6/35, 6/39, 7/7, 7/11, 7/19, 8/7, 8/11, 8/19, 9/11, 9/15, 9/19, 9/23, 9/35, 9/39
6SL3710-7LE36-1AA3	4/3, 4/7, 4/27, 4/31, 5/3, 5/7, 5/11, 5/39, 5/43, 5/47, 6/3, 6/7, 6/27, 6/31, 7/15, 8/3, 8/15, 9/3, 9/7, 9/27, 9/31	E86060	
6SL3710-7LE37-5AA3	4/3, 4/7, 4/27, 4/31, 5/3, 5/7, 5/11, 5/39, 5/43, 5/47, 6/3, 6/7, 6/27, 6/31, 7/15, 8/3, 8/15, 9/3, 9/7, 9/27, 9/31	E86060-D4001-A510-D7-7600	
6SL3710-7LE38-4AA3	4/3, 4/7, 4/27, 4/31, 5/3, 5/7, 5/11, 5/39, 5/43, 5/47, 6/3, 6/7, 6/27, 7/3, 8/3, 8/15, 9/3, 9/7, 9/27, 9/31	U2, 1	
6SL3710-7LE41-0AA3	4/3, 4/7, 4/27, 4/31, 5/3, 5/7, 5/11, 5/39, 5/43, 6/3, 6/7, 6/27, 6/31, 5/47, 7/15, 8/3, 8/15, 9/3, 9/7, 9/27, 9/31		
6SL3710-7LE41-2AA3	4/3, 4/7, 4/27, 4/31, 5/39, 5/43, 5/47, 5/3, 5/7, 5/11, 6/3, 6/7, 6/27, 6/31, 7/15, 8/3, 8/15, 9/3, 9/7, 9/27, 9/31		
6SL3710-7LE41-4AA3	4/3, 4/27, 4/31, 5/3, 5/7, 5/39, 5/43, 5/47, 6/3, 6/7, 6/27, 6/31, 7/3, 7/15, 8/15, 9/3, 9/7, 9/27, 9/31		

Appendix

Indexes

Notes

Overview¹⁾

Surcharge calculation

To compensate for variations in the price of the raw materials silver, copper, aluminum, lead, gold, dysprosium²⁾ and/or neodym²⁾, surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The surcharges are calculated in accordance with the following criteria:

- Basic official price of the raw material
Basic official price from the day prior to receipt of the order or prior to release order (daily price) for³⁾
 - Silver (sales price, processed)
 - Gold (sales price, processed)
- and for⁴⁾
 - Copper (lower DEL notation + 1 %)
 - Aluminum (aluminum in cables)
 - Lead (lead in cables)
- Metal factor of the products
Certain products are displayed with a metal factor. The metal factor determines the official price (for those raw materials concerned) as of which the metal surcharges are applied and the calculation method used (weight or percentage method). An exact explanation is given below.

Structure of the metal factor

The metal factor consists of several digits; the first digit indicates whether the percentage method of calculation refers to the list price or a possible discounted price (customer net price) (L = list price / N = customer net price).

The remaining digits indicate the method of calculation used for the respective raw material. If no surcharge is added for a raw material, a "-" is used.

1st digit	List or customer net price using the percentage method
2nd digit	for silver (AG)
3rd digit	for copper (CU)
4th digit	for aluminum (AL)
5th digit	for lead (PB)
6th digit	for gold (AU)
7th digit	for dysprosium (Dy) ²⁾
8th digit	for neodym (Nd) ²⁾

Weight method

The weight method uses the basic official price, the daily price and the raw material weight. In order to calculate the surcharge, the basic official price must be subtracted from the daily price. The difference is then multiplied by the raw material weight.

The basic official price can be found in the table below using the number (1 to 9) of the respective digit of the metal factor. The raw material weight can be found in the respective product descriptions.

Percentage method

Use of the percentage method is indicated by the letters A-Z at the respective digit of the metal factor.

The surcharge is increased - dependent on the deviation of the daily price compared with the basic official price - using the percentage method in "steps" and consequently offers surcharges that remain constant within the framework of this "step range". A higher percentage rate is charged for each new step. The respective percentage level can be found in the table below.

Metal factor examples

L E A - - - - -	<ul style="list-style-type: none"> Basis for % surcharge: List price Silver Basis 150 €, Step 50 €, 0.5 % Copper Basis 150 €, Step 50 €, 0.1 % No surcharge for aluminum No surcharge for lead No surcharge for gold No surcharge for dysprosium No surcharge for neodym
N - A 6 - - - - -	<ul style="list-style-type: none"> Basis for % surcharge: Customer net price No surcharge for silver Copper Basis 150 €, Step 50 €, 0.1 % Aluminum acc. to weight, basic offic. price 225 € No surcharge for lead No surcharge for gold No surcharge for dysprosium No surcharge for neodym
- - 3 - - - - -	<ul style="list-style-type: none"> No basis necessary No surcharge for silver Copper acc. to weight, basic official price 150 € No surcharge for aluminum No surcharge for lead No surcharge for gold No surcharge for dysprosium No surcharge for neodym

1) Refer to the separate explanation on the next page regarding the raw materials dysprosium and neodym (= rare earths).

2) For a different method of calculation, refer to the separate explanation for these raw materials on the next page.

3) Source: Umicore, Hanau (www.metalsmanagement.umicore.com).

4) Source: Schutzvereinigung DEL-Notiz e.V. (www.del-notiz.org).

Appendix

Metal surcharges

Explanation of the raw material/metal surcharges for dysprosium and neodym (rare earths)

Overview

Surcharge calculation

To compensate for variations in the price of the raw materials silver¹⁾, copper¹⁾, aluminum¹⁾, lead¹⁾, gold¹⁾, dysprosium and/or neodym, surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. The surcharge for dysprosium and neodym is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The surcharge is calculated in accordance with the following criteria:

- Basic official price of the raw material²⁾
Three-month basic average price (see below) in the period before the quarter in which the order was received or the release order took place (= average official price) for
 - dysprosium (Dy metal, 99 % min. FOB China; USD/kg)
 - neodym (Nd metal, 99 % min. FOB China; USD/kg)
- Metal factor of the products
Certain products are displayed with a metal factor. The metal factor indicates (for those raw materials concerned) the basic official price as of which the surcharges for dysprosium and neodym are calculated using the weight method. An exact explanation of the metal factor is given below.

Three-month average price

The prices of rare earths vary according to the foreign currency, and there is no freely accessible stock exchange listing. This makes it more difficult for all parties involved to monitor changes in price. In order to avoid continuous adjustment of the surcharges, but to still ensure fair, transparent pricing, an average price is calculated over a three-month period using the average monthly foreign exchange rate from USD to EUR (source: European Central Bank). Since not all facts are immediately available at the start of each month, a one-month buffer is allowed before the new average price applies.

Examples of calculation of the average official price:

Period for calculation of the average price:	Period during which the order/release order is effected and the average price applies:
Sep 2012 - Nov 2012	Q1 in 2013 (Jan - Mar)
Dec 2012 - Feb 2013	Q2 in 2013 (Apr - Jun)
Mar 2013 - May 2013	Q3 in 2013 (Jul - Sep)
Jun 2013 - Aug 2013	Q4 in 2013 (Oct - Dec)

Structure of the metal factor

The metal factor consists of several digits; the first digit is not relevant to the calculation of dysprosium and neodym.

The remaining digits indicate the method of calculation used for the respective raw material. If no surcharge is added for a raw material, a "-" is used.

1st digit	List or customer net price using the percentage method
2nd digit	for silver (AG) ¹⁾
3rd digit	for copper (CU) ¹⁾
4th digit	for aluminum (AL) ¹⁾
5th digit	for lead (PB) ¹⁾
6th digit	for gold (AU) ¹⁾
7th digit	for dysprosium (Dy)
8th digit	for neodym (Nd)

Weight method

The weight method uses the basic official price, the average price and the raw material weight. In order to calculate the surcharge, the basic official price must be subtracted from the average price. The difference is then multiplied by the raw material weight.

The basic official price can be found in the table below using the number (1 to 9) of the respective digit of the metal factor. Your Sales contact can inform you of the raw material weight.

Metal factor examples

----- 7 1	
↑	No basis necessary
↑	No surcharge for silver
↑	No surcharge for copper
↑	No surcharge for aluminum
↑	No surcharge for lead
↑	No surcharge for gold
↑	Dysprosium acc. to weight, basic official price 300 €
↑	Neodym acc. to weight, basic official price 50 €

1) For a different method of calculation, refer to the separate explanation for these raw materials on the previous page.

2) Source: Asian Metal Ltd (www.asianmetal.com)

Overview

Percentage method	Basic official price in €	Step range in €	% surcharge 1st step	% surcharge 2nd step	% surcharge 3rd step	% surcharge 4th step	% surcharge per additional step	
			Price in € 150.01 - 200.00	Price in € 200.01 - 250.00	Price in € 250.01 - 300.00	Price in € 300.01 - 350.00		
A	150	50	0.1	0.2	0.3	0.4	0.1	
B	150	50	0.2	0.4	0.6	0.8	0.2	
C	150	50	0.3	0.6	0.9	1.2	0.3	
D	150	50	0.4	0.8	1.2	1.6	0.4	
E	150	50	0.5	1.0	1.5	2.0	0.5	
F	150	50	0.6	1.2	1.8	2.4	0.6	
G	150	50	1.0	2.0	3.0	4.0	1.0	
H	150	50	1.2	2.4	3.6	4.8	1.2	
I	150	50	1.6	3.2	4.8	6.4	1.6	
J	150	50	1.8	3.6	5.4	7.2	1.8	
			175.01 - 225.00	225.01 - 275.00	275.01 - 325.00	325.01 - 375.00		
O	175	50	0.1	0.2	0.3	0.4	0.1	
P	175	50	0.2	0.4	0.6	0.8	0.2	
R	175	50	0.5	1.0	1.5	2.0	0.5	
			225.01 - 275.00	275.01 - 325.00	325.01 - 375.00	375.01 - 425.00		
S	225	50	0.2	0.4	0.6	0.8	0.2	
U	225	50	1.0	2.0	3.0	4.0	1.0	
V	225	50	1.0	1.5	2.0	3.0	1.0	
W	225	50	1.2	2.5	3.5	4.5	1.0	
			150.01 - 175.00	175.01 - 200.00	200.01 - 225.00	225.01 - 250.00		
Y	150	25	0.3	0.6	0.9	1.2	0.3	
			400.01 - 425.00	425.01 - 450.00	450.01 - 475.00	475.01 - 500.00		
Z	400	25	0.1	0.2	0.3	0.4	0.1	
Price basis (1st digit)								
L	Calculation based on the list price							
N	Calculation based on the customer net price (discounted list price)							
Weight method	Basic official price in €							
1	50	Calculation based on raw material weight						
2	100							
3	150							
4	175							
5	200							
6	225							
7	300							
8	400							
9	555							
Miscellaneous								
-	No metal surcharge							

Appendix

Conditions of sale and delivery

1. General Provisions

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note that the scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

1.1 For customers with a seat or registered office in Germany

For customers with a seat or registered office in Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"¹⁾ and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office in Germany"¹⁾ and,
- for other supplies and services, the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"¹⁾.

1.2 For customers with a seat or registered office outside Germany

For customers with a seat or registered office outside Germany, the following applies subordinate to the T&C:

- the "General Terms of Payment"¹⁾ and,
- for software products, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or Registered Office outside of Germany"¹⁾ and
- for other supplies and/or services, the "General Conditions for Supplies of Siemens Industry for Customers with a Seat or Registered Office outside of Germany"¹⁾.

2. Prices

The prices are in € (Euro) ex point of delivery, exclusive of packaging.

The sales tax (value added tax) is not included in the prices. It shall be charged separately at the respective rate according to the applicable statutory legal regulations.

Prices are subject to change without prior notice. We will charge the prices valid at the time of delivery.

To compensate for variations in the price of raw materials (e.g. silver, copper, aluminum, lead, gold, dysprosium and neodym), surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The metal factor of a product indicates the basic official price (for those raw materials concerned) as of which the surcharges on the price of the product are applied, and with what method of calculation.

You will find a detailed explanation of the metal factor on the page headed "Metal surcharges".

To calculate the surcharge (except in the cases of dysprosium and neodym), the official price from the day prior to that on which the order was received or the release order was effected is used.

To calculate the surcharge applicable to dysprosium and neodym ("rare earths"), the corresponding three-month basic average price in the quarter prior to that in which the order was received or the release order was effected is used with a one-month buffer (details on the calculation can be found in the explanation of the metal factor).

3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches apply only to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the individual pages of this catalog - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

4. Export regulations

We shall not be obligated to fulfill any agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes and/or other sanctions.

Export of goods listed in this catalog may be subject to licensing requirements. We will indicate in the delivery details whether licenses are required under German, European and US export lists. Goods labeled with "AL" not equal to "N" are subject to European or German export authorization when being exported out of the EU. Goods labeled with "ECCN" not equal to "N" are subject to US re-export authorization.

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