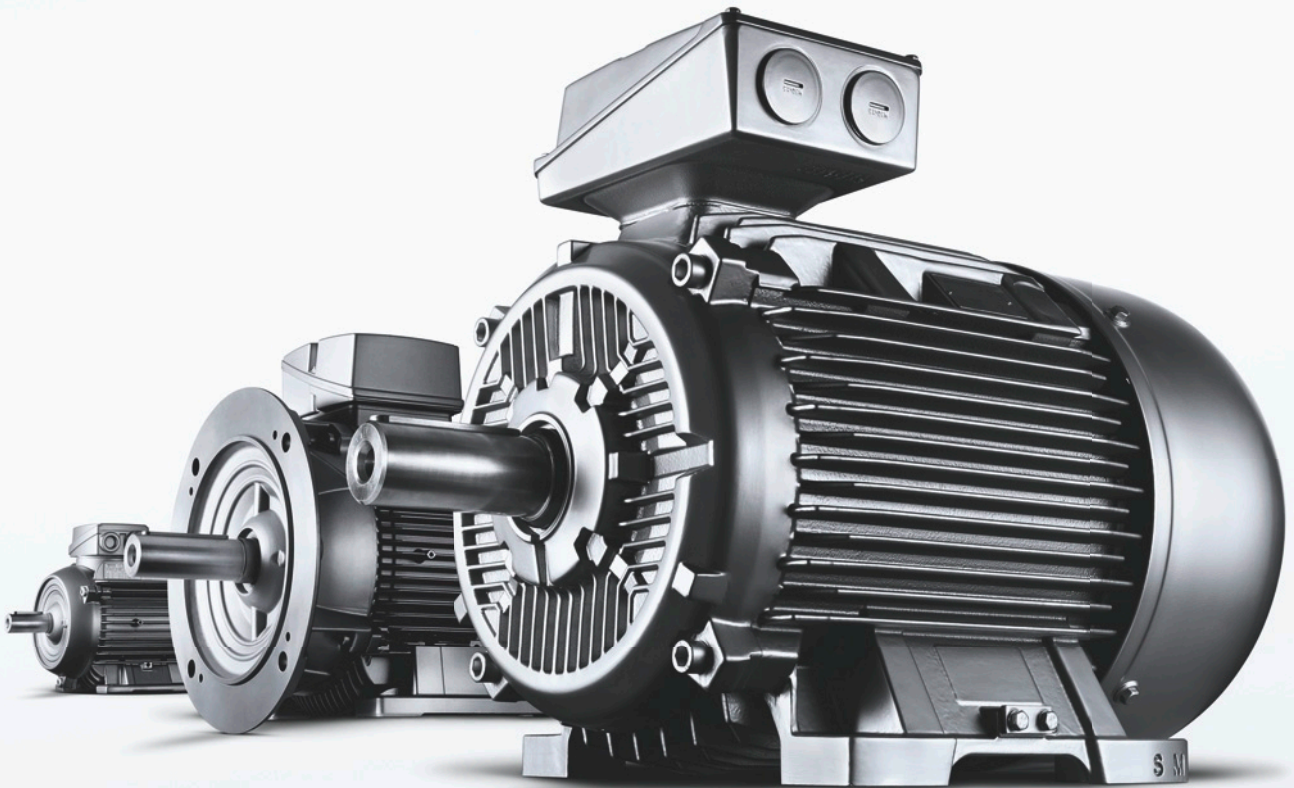


SIEMENS



Motors

SIMOTICS

Low-Voltage Motors

Distribution Line and Option Line

Ordering
Brochure

Edition
04/2018

[siemens.com/drives](https://www.siemens.com/drives)

Ordering Brochure
SIMOTICS Low-Voltage Motors
Distribution Line and Option Line · 04/2018

Supersedes:

- SIMOTICS Low-Voltage Motors
Distribution offering and 1LE0 option line
Ordering Brochure 07.2014
- SIMOTICS GP 1LE0 Low-Voltage Motors
Catalog D 81.5N 09.2011
Article No.: E20001-K0369-C600-X-5D00

Additional information is provided in the following documents and/or links:

- SIMOTICS Low-Voltage Motors
Catalog D 81.1 · 2018
Article No.: E86060-K5581-A111-B1-7600
- Energy saving/Energy-saving program SinaSave
Further information regarding energy savings and the energy-saving program SinaSave can be found at the following internet addresses:
www.siemens.com/sinasave
www.siemens.com/energysaving
- Selection tool DT Configurator
The DT Configurator covers the product range of low-voltage motors and MICROMASTER 4 / SINAMICS inverters and converters as well as frequency converters for SIMATIC ET 200 distributed I/O. The range of available products is being continuously expanded.

Individual products:
 - 2D/3D-model generator for motors and converters
 - Data sheet generator
 - Start-up calculation for motors
 - Comprehensive product-specific documentationwww.siemens.com/dt-configurator
- Additional documentation
You will find all information material, such as brochures, catalogs, manuals and operating instructions for standard drive systems up-to-date on the Internet at the address
www.siemens.com/motors/printmaterial

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

- Further information about
Drive Systems > Variable-Speed Drives, e.g.,
SINAMICS and Motors for Single-Axis Drives Built-In Inverters D 31.1
 - SINAMICS and Motors for Single-Axis Drives Distributed Inverters D 31.2
 - SINAMICS G130 Drive Converter Chassis Units D 11
SINAMICS G150 Drive Converter Cabinet Units
 - SINAMICS S120 Chassis Format Units and Cabinet Modules D 21.3
- can be obtained at
www.siemens.com/industry/infocenter

This brochure is only applicable in designated countries for the following regions:

- Asia
- Africa
- Middle East
- South America

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Introduction

General overview

SIMOTICS – The name for the widest range of motors in the world

With 150 years of experience, we have driven motor technology forward, optimized them and played a decisive role in defining them.

Based on over 150 years of experience Siemens offers with SIMOTICS the most comprehensive range of motors for industrial applications proven with more than 40 million Siemens motors and drives installed around the world.

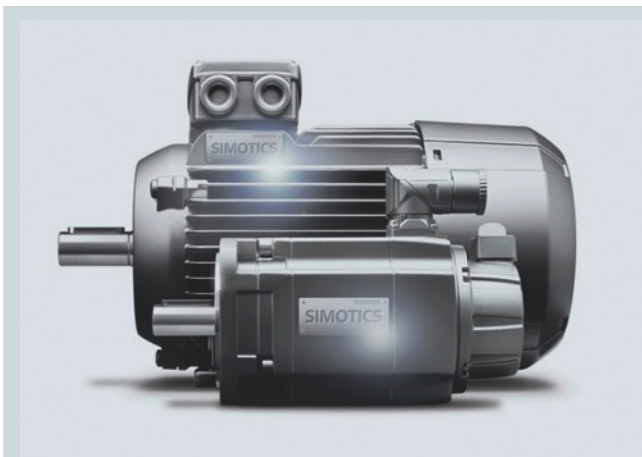
Our low-voltage motors meet the latest efficiency standards and stand for highest quality, reliability and compactness. Our motors are optimally integrated into the drive train. They are perfectly harmonized for the use with SIRIUS motor starters and SINAMICS frequency converters.

Our foundation of outstanding quality is the unparalleled experience from numerous Siemens production facilities around the world and close to our customers. This is how our experience drives your success!

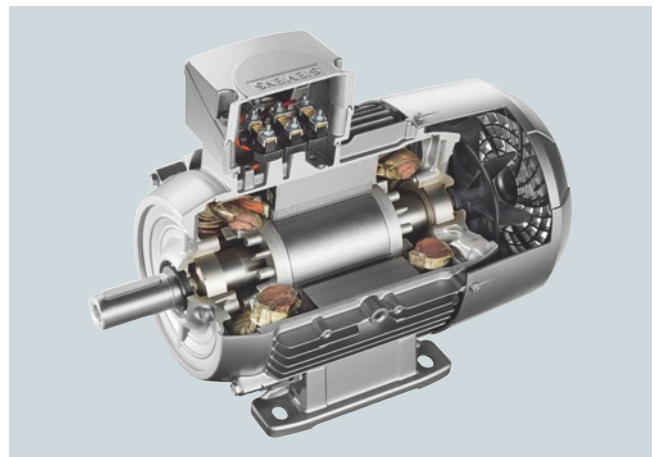
Siemens is present in more than 190 countries around the world and a true local global player. We manufacture locally serving the individual markets. All of our products are based on one common global quality and design standard derived from our German engineering roots adapted to global market requirements.

We are present in your local market, understand your market's needs and also comply with local requirements and standards.

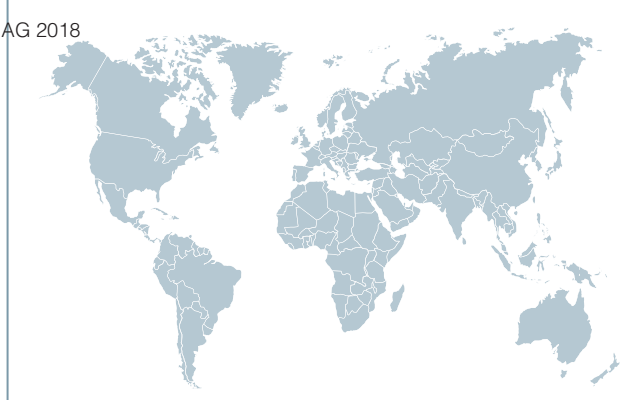
Let us show you how our experience and our partnership will drive your success with a new motors series specifically defined for the distribution business.



SIMOTICS low-voltage motors



Cut-away aluminum motor



This brochure is using all of our 150 years experience and focuses on our SIMOTICS low-voltage IEC motors, especially defined for the distribution market. It covers cast-iron motor series for general purpose. Additional offering is always available from our standard motor catalog portfolio. For further information, please refer to Catalog D 81.1. We comply with the latest efficiency standards and describe motors for IE1, IE2 and IE3 efficiencies.

Although Siemens also has ranges for specific solutions for IE4 efficiency, these are still considered specialized and are not described in this document. In addition to these general IE1, IE2 and IE3 solutions, Siemens can also provide specific variants for specific markets i.e. in India, China etc. In such instances please consult your local Siemens representative.

Our motor offering for the distribution market already includes the most common features required in your local market and country, e.g. drain holes, embedded PTCs and more.



IE1, IE2 & IE3 Cast-iron motors (1LE0)

- Frame size: 80 – 355
- Rated output: 0.55 – 315 kW
- No. of poles: 2, 4 and 6
- Voltage & frequency: Up to 690 V ±10%, 50 Hz, 60 Hz
- Type of construction: IM B3 and other types of construction
- Service factors: SF 1.1 for IE1 and IE2 motors
SF 1.15 for IE3 motors



SIMOTICS 1LE0 Cast-iron motor

Product highlights

1. **Wide range of options** – can be selected according to specific customer requirements. The 1LE0 Option Line motor is a standard motor without any built-in options.
2. **Fulfill voltage and construction requirements** – The Distribution Line and Option Line offer additional selection of rated voltages and mounting types.
3. **Easy retrofit and upgrade to higher efficiency class** – due to harmonized design dimensions throughout the whole 1LE0 motor family.
4. **Common user and spare parts** – are applicable within the 1LE0 motor line (Distribution Line and Option Line).
5. **Increase plant and system availability** – Options of winding protection, insulated bearing and separately driven fan enhance (Option Line) the availability and thus reliability of the system.
6. **Rotatable terminal box**
7. **Global support** – worldwide warranty and service

Application note

- **Pump:** Energy saving for quadratic torque load with variable speed operation
- **Fan:** Ideal for flow control application
- **Material handling:** Effectively working with continuous and intermittent periodic duties. Reliable operation.



Pump



Fan

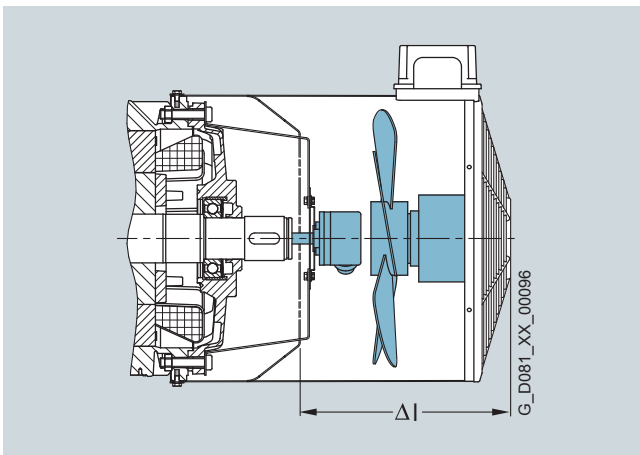
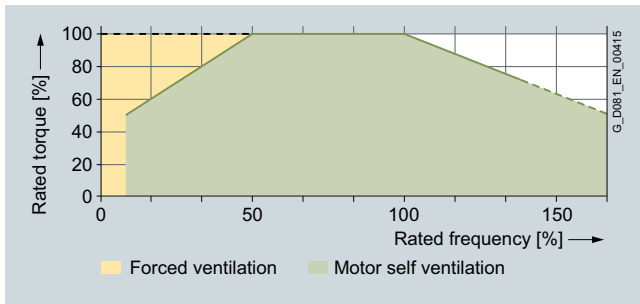


Material handling

Flexible control options

With separately driven fan (Option Line), the motor can be worked with inverter in constant torque operation. This is the result of continuous full speed ventilation of forced fan option.

Working with SINAMICS, you can rely on a drive family with flexible control options – with V/f control as well as vector control. As a result, applications can be addressed with basic speed control and with higher speed precision with encoderless vector control or with encoder.



Motor with encoder and separately driven fan

Highlight features

Highlight motor options

- **Insulated bearing, encoder and separately driven fan** to increase reliability for converter operation
- **KTY 84-130 and Pt100 sensors** are additional protections that can evaluate motor temperature for alarm and tripping.
- **Measuring nipple** for SPM shock pulse measurement for bearing inspection
- **Vibration severity level B** according to IEC 60034-14
- **Rotation of terminal box** on right or left hand side of the motor drive end

SIMOTICS Low-Voltage Motors – Key features

In order to maximize inventory turn rates, minimize complexity, decrease stock levels and minimize your investment required, we defined a specific distribution portfolio already including most common required features as standard. In addition we offer an additional selection of options with which you can modify the distribution offering even more.

Besides we can always offer you the most comprehensive motor portfolio made to order for all applications and industries available from our standard catalog portfolio D 81.1.

The low-voltage motor unique key features:

1. Low vibration

The low vibration results from our precision manufacturing and the use of defined and controlled quality components. The quality bearings used augment this and result in longer life and lower noise. See chapter 2 – Technical features.

2. Drain hole as standard (only Distribution Line)

Drain holes as standard make sure condensed water does not stay inside of the motor. This is especially important in humid environment and big temperature deltas.

3. Bearings for high cantilever forces and longer lifetime (only Distribution Line for IE2 and IE3)

Bearings in our motors are not only designed for high cantilever forces, but also to make sure the motors run smooth.

4. True IP55 as standard

Our IP55 design covers a vast majority of applications and is tested and proven for full lifetime, plus you have the full modification possibility within IP55 rating.

5. F to B thermal class for built-in reserve

The Siemens motors are rated at normal sinusoidal voltage with a class B (130 °C) temperature rise. The windings are rated to class F (155 °C) thus allowing for reserve for the additional losses associated with variable speed drive operation and / or higher ambient temperature and / or overload conditions when operating directly on-line. F to F is possible for converter operation.

6. Converter operation for variable speed as standard

For all motors offered up to 460 V converter operation is possible as standard configuration – no special option or series is needed. Insulation bearing option code available for FS 250 and above.

7. Embedded thermal protection 3 × PTC

Thermal protection with PTC thermistors with 3 embedded temperature sensors for tripping is provided in our IE2 & IE3 motors in the Distribution Line above frame size 112 as standard version.

8. Global motor platform

Our motor design is based on one global motor platform with the same look and feel on all low-voltage motor IEC products.

9. Prepared for easy modification and mount auxiliaries

Our distribution motors are equipped with metal fan cover and center hole on non-drive end shaft for easy modification and mount auxiliaries.

For details on the above mentioned key features, please see chapter 2 "Technical features".

SIMOTICS Low-Voltage Motors – Special features

| | | SIMOTICS General Purpose | | | | | |
|-----------------------------|---|---|---|---|---|---|---|
| | | Cast-iron series | | | | | |
| | | IE1 | IE2 | IE3 | IE1 | IE2 | IE3 |
| Efficiency class | Series | 1LE0102 | 1LE0101 | 1LE0103 | 1LE0022 | 1LE0021 | 1LE0023 |
| DOL | Voltage up to | 690 V ±10% | 690 V ±10% | 690 V ±10% | 690 V ±10% | 690 V ±10% | 690 V ±10% |
| | Frequency | 50 Hz / 60 Hz +3% / -5% | 50 Hz / 60 Hz +3% / -5% | 50 Hz / 60 Hz +3% / -5% | 50 Hz / 60 Hz +3% / -5% | 50 Hz / 60 Hz +3% / -5% | 50 Hz / 60 Hz +3% / -5% |
| Converter operation up to | | 460 V _{rms} + 10% | 460 V _{rms} + 10% | 460 V _{rms} + 10% | 460 V _{rms} + 10% | 460 V _{rms} + 10% | 460 V _{rms} + 10% |
| Frame sizes | | 80 ... 355 | 80 ... 355 | 80 ... 355 | 80 ... 355 | 80 ... 355 | 80 ... 355 |
| Type of construction | Standard | IM B3 | IM B3 | IM B3 | IM B3 | IM B3 | IM B3 |
| | Optional | IM B35, IM B5 ^(c) , IM V1, IM B14 | IM B35, IM B5 ^(c) , IM V1, IM B14 | IM B35, IM B5 ^(c) , IM V1, IM B14 | IM B35, IM B5 ^(c) , IM V1, IM B14 | IM B35, IM B5 ^(c) , IM V1, IM B14 | IM B35, IM B5 ^(c) , IM V1, IM B14 |
| Bearing designation | Bearing 62 C | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) |
| | Bearing 63 C | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) | <input type="checkbox"/> ^(a) |
| Others | Metal fan cover | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Metal rating plate | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Drain hole | <input type="checkbox"/> ^(b) | <input type="checkbox"/> ^(b) | <input type="checkbox"/> ^(b) | ✓ | ✓ | ✓ |
| | Center hole at non-drive end prepared for auxiliary mountings | – | <input type="checkbox"/> ^(b) | <input type="checkbox"/> ^(b) | ✓ | ✓ | ✓ |
| | Space heater | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Motor protection 3 × PTC | | ✓ | <input type="checkbox"/> ^(b) | <input type="checkbox"/> ^(b) | ✓ | ✓ | ✓ |
| Certificate | Extra rating plate for voltage tolerance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | CE marking | – ^(c) | <input type="checkbox"/> ^(d) | <input type="checkbox"/> | – | <input type="checkbox"/> ^(d) | <input type="checkbox"/> |
| | Routine test | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Standard color | Stone gray (RAL 7030) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Prep. for easy modification | | – | <input type="checkbox"/> | <input type="checkbox"/> | – | – | – |

= Standard

✓ = Option

– = Not available

(a) = The limit for converter operation is 460 V_{rms} +10%.

(b) = Depending on frame size and/or number of poles, please see respective sections.

(c) = CE marking is valid for power rating.

(d) = Only motors smaller 0.75 kW

For converter operation with the powers specified in the ordering brochure, the motors are used according to temperature class 155 (F), i.e. in this case neither a service factor > 1 nor an increased coolant temperature is possible.

TIP



On our SIMOTICS GP 1LE0 motors we have an additional sticker mentioning voltage deviation as standard. On our other product line, deviations should be mentioned, please add option code B07.

TIP



All our motors are shown as 400 V as the nominal standard. The IEC 60034 regulations state that the rating plate data is only valid at the specific given voltage. In practice, all listed 400 V motors may be used at connection voltages 400 V ±5%. The motors will function well, although there would be deviations from the nominal electrical rating plate data. All 1LE0 motors will have a sticker in addition on the cowl as standard giving the nominal connection voltage as 400 V ±5%. According to the standard, motors can also be operated at 400 V ±10% (Category B), only longer operation is not recommended.

Technical features

Applicable standards and specifications

| Title | IEC |
|---|------------------------|
| Efficiency classes and efficiencies | IEC 60034-30-1:30-2014 |
| Rotating electrical machines – Part 1: Rating and performance | IEC 60034-1 |
| Rotating electrical machines – Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles) | IEC 60034-2 |
| Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification | IEC 60034-5 |
| Rotating electrical machines – Part 6: Methods of cooling (IC Code) | IEC 60034-6 |
| Rotating electrical machines – Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code) | IEC 60034-7 |
| Rotating electrical machines – Part 8: Terminal markings and direction of rotation | IEC 60034-8 |
| Rotating electrical machines – Part 9: Noise limits | IEC 60034-9 |
| Rotating electrical machines – Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher – Measurement, evaluation and limits of vibration severity | IEC 60034-14 |
| Rotating electrical machines – Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080 | IEC 60072-1 |
| Classification of environmental conditions Part 2-1: Environmental conditions appearing in nature – Temperature and humidity | IEC 60721-2-1 |
| Standard voltages | IEC 60038 |
| Electrical insulation – Thermal classification | IEC 60085 |

IEC 60034-1 differentiates between Category A (combination of voltage deviation $\pm 5\%$ and frequency deviation $\pm 2\%$) and Category B (combination of voltage deviation $\pm 10\%$ and frequency deviation $+3\% / -5\%$) for voltage and frequency fluctuations.

The motors can supply their rated torque in both Category A and B. In Category A, the temperature rise is approximately 10 K higher than during normal operation.

| Standard 60034-1 | Category A | Category B |
|--|--|--|
| Voltage deviation | ±5% | ±10% |
| Frequency deviation | ±2% | 3% / -5% |
| Rating plate data stamped with rated voltage a (e.g. 230 V) | a ±5% (e.g. 230 V ±5%) | a ±10% (e.g. 230 V ±10%) |
| Rating plate data stamped with rated voltage ranges b to c (e.g. 220 V to 240 V) | b -5% to c +5% (e.g. 220 V -5% to 240 V +5%) | b -10% to c +10% (e.g. 220 V -10% to 240 V +10%) |

In Category B, the standard does not recommend extended operation, so it is not permissible for explosion-proof motors. See "Rating plate and extra rating plates" for details of the rating plate inscriptions and corresponding examples. The selection and ordering data state the rated current at 400 V. The IEC 60038 standard specifies a tolerance of ±10% for line voltages of 230 V, 400 V and 690 V. Rotors are dynamically balanced with half key. This corresponds to vibration quantity level A.

Tolerance for electrical data

- Efficiency η at
 - $P_{rated} \leq 150 \text{ kW}$: $-0.15 \times (1 - \eta)$
 - $P_{rated} > 150 \text{ kW}$: $-0.10 \times (1 - \eta)$
 - With η being a decimal number
- Power factor $-(1 - \cos \varphi) / 6$
 - Minimum absolute value: 0.02
 - Maximum absolute value: 0.07
- Slip ±20% (for motors < 1 kW ±30% is admissible)
- Locked-rotor current +20%
- Locked-rotor torque -15% to +25%
- Breakdown torque -10%
- Moment of inertia ±10%

| Limits (rms values) for max. vibration quantity of vibration distance (s), vibration speed (v) and acceleration (a) for the shaft height H | | | | | | | | | | |
|--|----------------------|----------------------|-------------------|--------------------------------|-----------------|-------------------|--------------------------------|-----------------|-------------------|--------------------------------|
| Vibration quantity level | Machine installation | Shaft height H in mm | | | | | | | | |
| | | 56 ≤ H ≤ 132 | | | 132 < H ≤ 280 | | | H > 280 | | |
| | | s_{rms} μm | v_{rms} mm/s | a_{rms} mm/s ² | s_{rms} μm | v_{rms} mm/s | a_{rms} mm/s ² | s_{rms} μm | v_{rms} mm/s | a_{rms} mm/s ² |
| A | Free suspension | 25 | 1.6 | 2.5 | 35 | 2.2 | 3.5 | 45 | 2.8 | 4.4 |
| | Rigid clamping | 21 | 1.3 | 2.0 | 29 | 1.8 | 2.8 | 37 | 2.3 | 3.6 |
| B | Free suspension | 11 | 0.7 | 1.1 | 18 | 1.1 | 1.7 | 29 | 1.8 | 2.8 |
| | Rigid clamping | - | - | - | 14 | 0.9 | 1.4 | 24 | 1.5 | 2.4 |

Efficiency

Standardization of the efficiency classes

Different energy efficiency standards exist worldwide for induction motors: To promote international standardization, the international standard IEC 60034-30-1-1 03/2014 (Rotating electrical machines – Part 30-1: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code) was created. This groups low-voltage asynchronous motors into new efficiency classes (first released in October 2008).

Applicability (excerpt)

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

- Low-voltage motors up to 1000 V (50/60 Hz with line operation)
- Rating: 0.12 to 1000 kW; with 2, 4, 6, or 8 poles
- Operating mode: S1

The efficiencies in IEC 60034-30-1 are based on the method for determining losses according to IEC 60034-2-1:2014.

Standardization of the efficiency classes

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

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

| IEC 60034-30-1 | NEMA MG1 | GB 18613-2012 |
|-------------------|---------------------------|---------------|
| IE4 ¹⁾ | | Grade 1 (IE4) |
| IE3 | Premium Efficient (60 Hz) | Grade 2 (IE3) |
| IE2 | Energy Efficient (60 Hz) | Grade 3 (IE2) |

¹⁾ Defined in IEC/TS 60034-31.

Comparison of IE efficiency classes

Note:

All efficiency classes are stated with reference to 50 Hz data (unless specified otherwise).



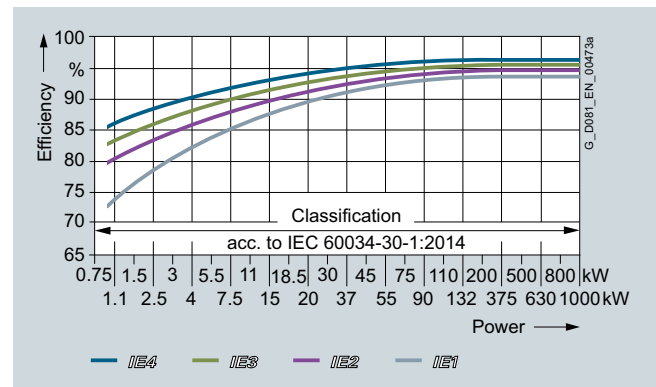
We comply with the latest efficiency standards and describe motors from IE1 to IE3 efficiencies. Although Siemens also has ranges for specific solutions for IE4 efficiency, these are still considered specialized and are not described in this document.

Measuring method according to IEC 60034-2-1:2014 for determining the efficiency

With this measuring method, motor losses are no longer applied as a percentage, but are determined by standard methods. The nominal efficiencies are therefore reduced from EFF1 to IE2 and from EFF2 to IE1, even though there have been no technical or physical changes to the motors.

Previously: $P_{LL} = 0.5\%$ of P_1 (consumed power; IEC 60034-2)
 Now: P_{LL} = individual measurement (IEC 60034-1)

P_{LL} = load-dependent supplementary losses



IE1-IE4 efficiencies, 4-pole, 50 Hz, according to power



Did you know

The better the efficiency of a motor, the lower the internal heat loss. The lower the heat loss, the lower the temperature rise. Higher efficiency IE2 motors run cooler than same size IE1 motors. That increases the electrical life expectancy of an IE2 motor.

Background information

Comprehensive laws have been introduced in the European Union with the objective of reducing energy consumption and therefore CO₂ emissions. EU Directive 640/2009 concerns the energy consumption or efficiency of induction motors in the industrial environment. This Directive is now in force in every country of the European Economic Area.

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

www.siemens.com/international-efficiency

Exceptions to the EU Directive

- Motors that are designed to be operated totally submerged in a liquid;
- Motors fully integrated into a product (e.g. a gear unit, pump, fan or compressor) whose energy efficiency cannot be measured independently of the product;
- Motors that are specially designed for operation under the following conditions:
 - At altitudes greater than 4000 meters above sea level;
 - At ambient temperatures above 60 °C;
 - At maximum operating temperatures above 400 °C;
 - At ambient temperatures below –30 °C
 - With cooling liquid temperatures at the product intake of below 5 °C or above 25 °C;
 - With cooling liquid temperatures at the product intake of below 5 °C or above 25 °C;
 - In hazardous areas in the context of Directive 94/9/EU of the European Parliament and Council;
- Brake motors

The following motors are not involved:

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

The following changes came into effect on the dates below:

Since July 27, 2014, the following exceptions have been valid in accordance with EU Regulation 04/2014:

- At altitudes exceeding 4000 m (above sea level)
- Where ambient temperatures exceed 60 °C
- At ambient temperatures of less than –30 °C, or less than 0 °C with water cooling
- Where coolant temperatures at the inlet to a product are less than 0 °C or exceed 32 °C

Since January 1, 2015:

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

Beginning January 1, 2017:

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

Changes in accordance with EU Motor Regulation 640/2009

Low-voltage motors with a power ranging from 0.75 to < 7 kW, from January 1, 2017, and low-voltage motors with a power ranging from 7.5 to 375 kW with efficiency class IE2, have been labeled as follows since January 1, 2015:



This obligation applies only within the European Economic Area. Correct application is the sole responsibility of the customer.

Other potential restrictions as described in the technical documentation may apply to converter operation and must be taken into account!

The following are generally recommended for converter operation:

- Motor temperature detection by embedded temperature sensor
- Bearing insulation with frame size 225 and larger

Abbreviations

NEMA: National Electrical Manufacturers Association

IEC: International Electrotechnical Commission

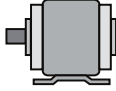
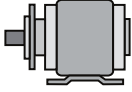
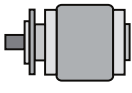
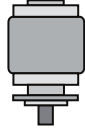
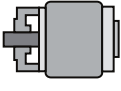
EEA: European Economic Area

Types of construction

In addition to the basic IM B3 type of construction, motors can also be supplied in other types of construction. We provide most commonly used types of constructions in our selection for you, as well as possibility for own modification by user parts.

The possible versions in our selection for a particular motor type can be taken from the table below.

Standard types of construction and special types of construction

| Type of construction according to IEC 60034-7 | | Frame size | 16 Digits Article No. 14 th position of the Article No. |
|---|---|------------|--|
| IM B3 |  | 80 to 355 | A |
| IM B35 |  | 80 to 355 | J |
| IM B5 |  | 80 to 315 | F |
| IM V1 |  | 80 to 355 | G |
| IM B14 |  | 80 to 160 | K |

Did you know

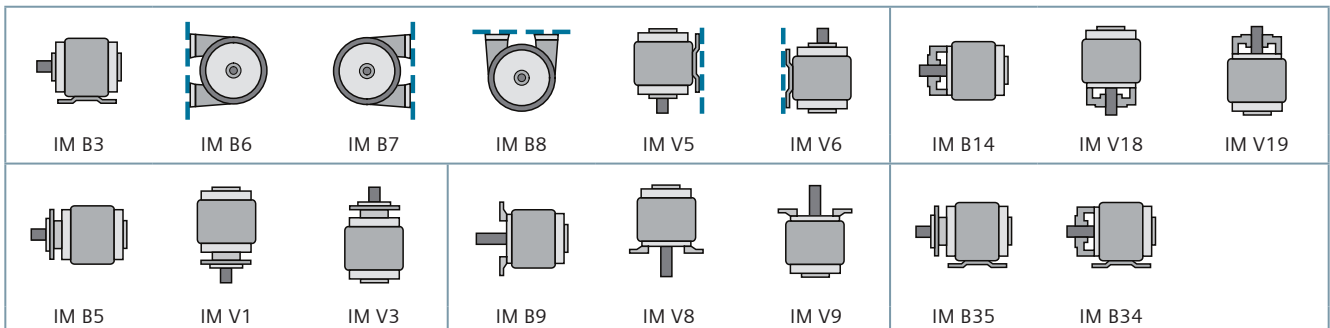
When mounting the motors in diverse orientations consider the location of the drain hole – it must be at the lowest point to drain water.

Apart from the distribution portfolio covered types of construction, here is the general overview of the possible types of construction. Many of them can be achieved by modifying this offered portfolio. Anything else can still be supplied out of our standard catalog portfolio, see D 81.1

TIP

Mounting motors in orientations other than these intended could lead to mechanical or structural premature failure. If in any doubt, please consult your Siemens partner.

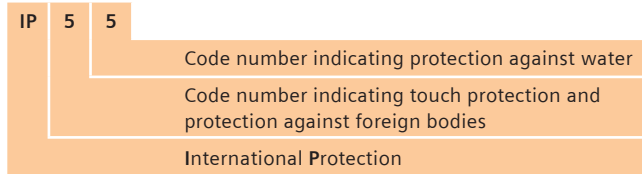
Types of construction



Types of construction according to DIN IEC 34, Part 7

IP rating

The IP code (or Ingress Protection Rating, sometimes also interpreted as International Protection Rating) consists of the letters IP followed by two digits or one digit and one letter and an optional letter. As defined in international standard IEC 60529, IP code classifies and rates the degrees of protection provided against the intrusion of solid objects, dust, accidental contact, and water in mechanical casings and with electrical enclosures.



TIP



Some manufacturers offer sealing and protection above IP55. Although it is available as an option, Siemens prefers a true IP55 as a default standard.

- IP55 covers the vast majority of applications as it offers dust and rain protection
- The IP55 is stable over the life of the motor. Higher protections can need maintenance or an exact assembly to ensure that the higher protection is real and not just on paper.
- Modifications can be made on an IP55 motor whilst maintaining that degree of protection.

Solids, first digit

The first digit indicates the level of protection that the enclosure provides against access to hazardous parts (e.g., electrical conductors, moving parts) and the ingress of solid foreign objects.

| Level | Object size protected against | Effective against |
|-------|-------------------------------|--|
| 0 | – | No protection against contact and ingress of objects |
| 1 | > 50 mm | Any large surface of the body, such as the back of a hand, but no protection against deliberate contact with a body part |
| 2 | > 12.5 mm | Fingers or similar objects |
| 3 | > 2.5 mm | Tools, thick wires, etc. |
| 4 | > 1 mm | Most wires, screws, etc. |
| 5 | Dust protected | Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment; complete protection against contact |
| 6 | Dust tight | No ingress of dust; complete protection against contact |

TIP



A suitable degree of protection should be selected depending on the operating and environmental conditions. Siemens offers a standard which is most suitable and applicable over the lifetime of a motor such as true IP55 standard.

Liquids, second digit

Protection of the equipment inside the enclosure against harmful ingress of water.

| Level | Protected against | Testing for | Details |
|-------|--------------------------------------|--|--|
| 0 | Not protected | – | – |
| 1 | Dripping water | Dripping water (vertically falling drops) shall have no harmful effect. | Test duration: 10 minutes Water equivalent to 1 mm rainfall per minute |
| 2 | Dripping water when tilted up to 15° | Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15° from its normal position. | Test duration: 10 minutes Water equivalent to 3 mm rainfall per minute |
| 3 | Spraying water | Water falling as a spray at any angle up to 60° from the vertical shall have no harmful effect. | Test duration: 5 minutes Water volume: 0.7 liters per minute Pressure: 80–100 kN/m ² |
| 4 | Splashing water | Water splashing against the enclosure from any direction shall have no harmful effect. | Test duration: 5 minutes Water volume: 10 liters per minute Pressure: 80–100 kN/m ² |
| 5 | Water jets | Water projected by a nozzle (6.3 mm) against enclosure from any direction shall have no harmful effects. | Test duration: at least 3 minutes Water volume: 12.5 liters per minute Pressure: 30 kN/m ² at distance of 3 m |
| 6 | Powerful water jets | Water projected in powerful jets (12.5 mm nozzle) against the enclosure from any direction shall have no harmful effects. | Test duration: at least 3 minutes Water volume: 100 liters per minute Pressure: 100 kN/m ² at distance of 3 m |
| 7 | Immersion up to 1 m | Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 m of submersion). | Test duration: 30 minutes Immersion at depth of 1 m |
| 8 | Immersion beyond 1 m | The equipment is suitable for continuous immersion in water under conditions which shall be specified by the manufacturer. Normally, this will mean that the equipment is hermetically sealed. However, with certain types of equipment, it can mean that water can enter but only in such a manner that it produces no harmful effects. | Test duration: continuous immersion in water Depth specified by manufacturer |

Thermal class

The Siemens motors are rated at normal sinusoidal voltage with a class B (130 °C) temperature rise. The windings are rated to class F (155 °C) thus allowing for reserve for the additional losses associated with variable speed drive operation and/or higher ambient temperature and/or over-load conditions.

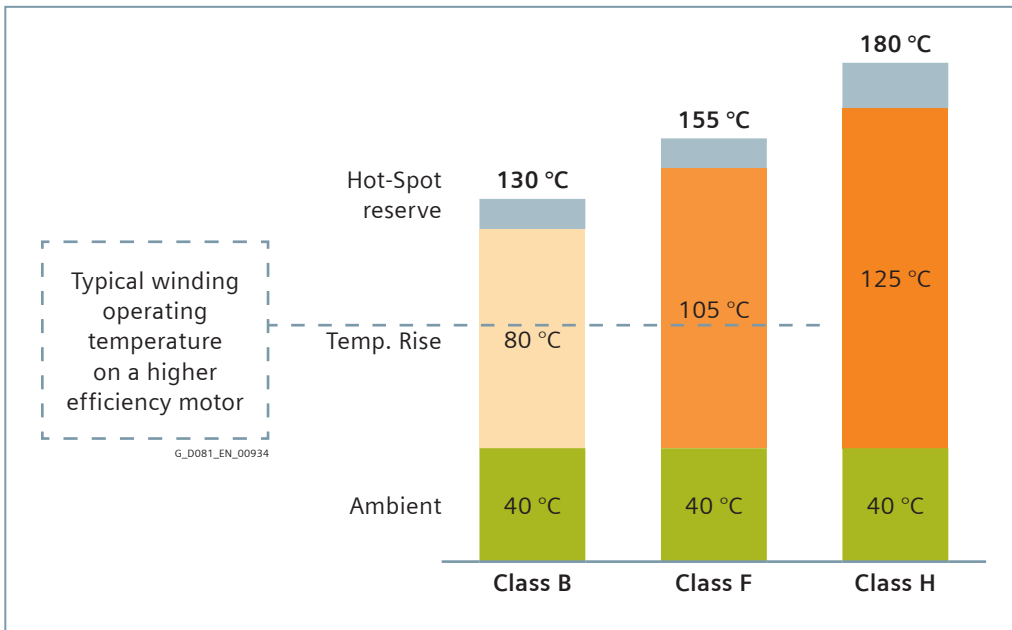
The temperature rise of the winding of the motor is important. It provides a great insight into the design of the motor and its life expectancy. The cooler a motor runs the better its life expectancy and longer its life. Siemens builds motors to a minimum of class F (155 °C) on all material – continuous operation for a very long life expectancy.

- Class B (130 °C) is the normal utilization – even better.
- Class H (180 °C) is reserved for special application motors.
- Class H motors are considered detrimental for normal use due to the degradation of the overall life expectancy of paint and bearings.
- At class H the outside surface temperature can exceed an unsafe 100 °C.

The more efficient the motor, the less heat it produces – to the extent that modern motors often only run with internal temperatures of 95 °C – much cooler than the limits set by the standards.

Siemens uses double coated wires with DURIGNIT insulation materials and capable varnishes – we consider all components including electrical connections and bearing grease – our motors are true class F under all circumstances – with reserve built in on top.

A claim to class H could be made but that would not reflect the true life expectancy which you would expect.



Did you know



Although Siemens uses class H wire, we do not rate our motors for class H operation. The electrical life expectancy at class F is four times greater than at class H. If used at class B or cooler 400000 hours and more are not exceptional.

TIP



Siemens builds motors with reserve: The motors are capable to operate at least at 155 °C (class F) but we only rate at a nominal 130 °C (class B).

- An IE1 motor can be operated at 10% overload or at 50 °C ambient temperature.
- An IE2 motor can be operated at 15% overload or at 55 °C ambient temperature.

Rating plates

1LE0 series

| | | | | | | | | | |
|---|----|-------------------|---------|--------------|-------|-----------|---------|--|--|
| G_D081_EN_00358 | | | | | | | | | |
| SIEMENS | | | | | | | | | |
| Made in P.R.China | | | | | | | | | |
| SIEMENS STANDARD MOTORS LTD. | | | | | | | | | |
| 3~MOT.1LE0102-2AB43-4AA4-Z 200L IMB3 IP55 LMH-0209/800003888993/004 | | | | | | | | | |
| V | Hz | kW | A | EFF. | cos φ | r/min | EFF.Cl. | | |
| 400/690 Δ/Y | 50 | 30 | 56/32.5 | 90.7% | 0.85 | 1470 | IE1 | | |
| 460 Δ | 60 | 33.5 | 48.5 | 91.7% | 0.85 | 1765 | | | |
| BRG DE 6312ZJ C3 | | BRG NDE 6312ZJ C3 | | Th.Cl.155(F) | | AMB 40 °C | | | |
| IEC60034 | | | | | | | | | |
| Net: 238 kg | | | | | | | | | |

Legend:

- | | |
|---------------------------------|-----------------------------|
| 1 Three-phase low-voltage motor | 11 Efficiency |
| 2 Article No. | 12 Rated speed |
| 3 Serial number | 13 Machine weight [kg] |
| 4 Type of construction | 14 Standards |
| 5 Degree of protection | 15 Temperature class |
| 6 Rated voltage | 16 Frame size |
| 7 Frequency [Hz] | 17 Ambient temperature |
| 8 Rated output [kW] | 18 Bearing at drive end |
| 9 Rated current [A] | 19 Bearing at non-drive end |
| 10 Power factor [cos φ] | 20 Efficiency class |
| | 21 Balance method |

| | | | | | | | | | |
|--|----|-----------------|--------|--------------|-------|----------|---------|--|--|
| SIEMENS | | | | | | | | | |
| Made in P.R.China | | | | | | | | | |
| SIEMENS STANDARD MOTORS LTD. | | | | | | | | | |
| 3~MOT.1LE0101-2DB03-4AA4 280S IMB3 IP55 LMH- | | | | | | | | | |
| V | Hz | kW | A | EFF. | cos φ | r/min | EFF.Cl. | | |
| 400/690 Δ/Y | 50 | 75 | 132/77 | 94.0% | 0.87 | 1485 | IE2 | | |
| 460 Δ | 60 | 84 | 128 | 94.5% | 0.87 | 1780 | IE1 | | |
| BRG DE 6317 C3 | | BRG NDE 6317 C3 | | Th.Cl.155(F) | | AMB 40°C | | | |
| GREASE: Unirex N3 | | | | | | | | | |
| Re-grease interval: 5000h | | Quantity: 30g | | | | | | | |
| IEC60034 | | | | | | | | | |
| Net: 555 kg | | | | | | | | | |

| | | | | | | | | | |
|---|----|-----------------|--------|----------------|-------|-----------------------|---------|--|--|
| SIEMENS | | | | | | | | | |
| Made in P.R.China | | | | | | | | | |
| SIEMENS STANDARD MOTORS LTD. | | | | | | | | | |
| 3~MOT. 0CV3280B 1LE0023-2DB03-4AA4 LMH- | | | | | | | | | |
| V | Hz | kW | A | EFF. | cos φ | r/min | EFF.Cl. | | |
| 400/690 Δ/Y | 50 | 75 | 133/77 | 95.0% | 0.86 | 1485 | IE3 | | |
| 460 Δ | 60 | 84 | 129 | 95.2% | 0.86 | 1782 | IE2 | | |
| BRG DE 6317 C3 | | BRG NDE 6317 C3 | | 280S IMB3 IP55 | | Th.Cl.155(F) AMB 40°C | | | |
| GREASE: Unirex N3 | | | | | | | | | |
| Re-grease interval: 5000h | | Quantity: 30g | | | | | | | |
| IEC60034 | | | | | | | | | |
| Net: 595 kg | | | | | | | | | |

| | | | | | | | | | |
|--|----|-----------------|--------|--------------|-------|----------|---------|--|--|
| SIEMENS | | | | | | | | | |
| Made in P.R.China | | | | | | | | | |
| SIEMENS STANDARD MOTORS LTD. | | | | | | | | | |
| 3~MOT.1LE0021-2DB03-4AA4 280S IMB3 IP55 LMH- | | | | | | | | | |
| V | Hz | kW | A | EFF. | cos φ | r/min | EFF.Cl. | | |
| 400/690 Δ/Y | 50 | 75 | 132/77 | 94.0% | 0.87 | 1485 | IE2 | | |
| 460 Δ | 60 | 84 | 128 | 94.5% | 0.87 | 1780 | IE1 | | |
| BRG DE 6317 C3 | | BRG NDE 6317 C3 | | Th.Cl.155(F) | | AMB 40°C | | | |
| GREASE: Unirex N3 | | | | | | | | | |
| Re-grease interval: 5000h | | Quantity: 30g | | | | | | | |
| IEC60034 | | | | | | | | | |
| Net: 555 kg | | | | | | | | | |

| | | | | | | | | | |
|---|----|-----------------|--------|----------------|-------|-----------------------|---------|--|--|
| SIEMENS | | | | | | | | | |
| Made in P.R.China | | | | | | | | | |
| SIEMENS STANDARD MOTORS LTD. | | | | | | | | | |
| 3~MOT. 0CV3280B 1LE0103-2DB03-4AA4 LMH- | | | | | | | | | |
| V | Hz | kW | A | EFF. | cos φ | r/min | EFF.Cl. | | |
| 400/690 Δ/Y | 50 | 75 | 133/77 | 95.0% | 0.86 | 1485 | IE3 | | |
| 460 Δ | 60 | 84 | 129 | 95.2% | 0.86 | 1782 | IE2 | | |
| BRG DE 6317 C3 | | BRG NDE 6317 C3 | | 280S IMB3 IP55 | | Th.Cl.155(F) AMB 40°C | | | |
| GREASE: Unirex N3 | | | | | | | | | |
| Re-grease interval: 5000h | | Quantity: 30g | | | | | | | |
| IEC60034 | | | | | | | | | |
| Net: 595 kg | | | | | | | | | |

Derating

Environmental

- Degree of motor protection IP55 (IEC 60034-5).
- Altitude shall not exceed 1000 m above sea level (IEC 60034-1).
- Allowed air temperature between –20 and 40 °C (IEC 60034-1).
- Permitted relative humidity:
 - –20 °C < T < 20 °C: 100%
 - 20 °C < T < 30 °C: 95%
 - 30 °C < T < 40 °C: 55%

For higher coolant temperatures and / or site altitudes higher than 1000 m above sea level, the specified motor must be reduced by using the factor k_{HT} . This results in an admissible output (P_{adm}) of the motor:

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

Reduction factor k_{HT} for different site altitudes and / or coolant temperature

| Site altitude above sea level m | Ambient temperature/coolant temperature | | | | | |
|------------------------------------|---|------------|-------|-------|-------|-------|
| | < 30 °C | 30 ~ 40 °C | 45 °C | 50 °C | 55 °C | 60 °C |
| 1000 | 1.07 | 1.00 | 0.96 | 0.92 | 0.87 | 0.82 |
| 1500 | 1.04 | 0.97 | 0.93 | 0.89 | 0.84 | 0.79 |
| 2000 | 1.00 | 0.94 | 0.90 | 0.86 | 0.82 | 0.77 |
| 2500 | 0.96 | 0.90 | 0.86 | 0.83 | 0.78 | 0.74 |
| 3000 | 0.92 | 0.86 | 0.82 | 0.79 | 0.75 | 0.70 |
| 3500 | 0.88 | 0.82 | 0.79 | 0.75 | 0.71 | 0.67 |
| 4000 | 0.82 | 0.77 | 0.74 | 0.71 | 0.67 | 0.63 |

Note:

If operating conditions exceed above values, please contact our local sales office for the selection of catalog motors.

Anti-condensation

Moisture is present in the air around us. Under the correct circumstances it can condensate. The warmer the air the higher the possible moisture content. As air cools the moisture carrying content reduces to the point when the moisture condenses – called the “dew point”.

This condition can be met several times a day under normal operation, as a motor operates and cools at differing times of the day.

Smaller motors are less susceptible than larger motors due to the smaller volume of moist air possible in the motor. Dew moisture condenses and accumulates in a motor, which is seen as water collection. The water accumulates at the lowest point of the motor. It often does no harm as long as the collection point is below the level of the electrical system.

Two points that need to be paid attention to are, first, how much water there is in the air and when it will condensate. The second is, whether it will do any harm.

| Relative humidity | Temperature | | | | | | | |
|-------------------|-------------|-------|-------|-------|-------|-------|-------|-------|
| | 20 °C | 30 °C | 40 °C | 50 °C | 60 °C | 70 °C | 80 °C | 90 °C |
| 10% | 2 | 3 | 5 | 8 | 13 | 20 | 29 | 42 |
| 15% | 3 | 5 | 8 | 12 | 19 | 30 | 44 | 63 |
| 20% | 3 | 6 | 10 | 17 | 26 | 39 | 58 | 84 |
| 25% | 4 | 8 | 13 | 21 | 32 | 49 | 73 | 105 |
| 30% | 5 | 9 | 15 | 25 | 39 | 59 | 87 | 126 |
| 35% | 6 | 11 | 18 | 29 | 45 | 69 | 102 | 146 |
| 40% | 7 | 12 | 20 | 33 | 52 | 79 | 116 | 167 |
| 45% | 8 | 14 | 23 | 37 | 58 | 89 | 131 | 188 |
| 50% | 9 | 15 | 26 | 41 | 65 | 98 | 145 | 209 |
| 55% | 10 | 17 | 28 | 46 | 71 | 108 | 160 | 230 |
| 60% | 10 | 19 | 31 | 50 | 78 | 118 | 174 | 251 |
| 65% | 11 | 20 | 33 | 54 | 84 | 128 | 189 | 272 |
| 70% | 12 | 21 | 36 | 58 | 91 | 138 | 203 | 293 |
| 75% | 13 | 23 | 38 | 62 | 97 | 148 | 218 | 314 |
| 80% | 14 | 24 | 41 | 66 | 104 | 157 | 233 | 335 |
| 85% | 15 | 26 | 43 | 70 | 110 | 167 | 247 | 356 |
| 90% | 16 | 27 | 46 | 74 | 117 | 177 | 262 | 377 |
| 95% | 16 | 29 | 49 | 79 | 123 | 187 | 276 | 398 |
| 100% | 17 | 30 | 51 | 83 | 130 | 197 | 291 | 419 |

If operating conditions exceed temperatures of 60 °C, please contact our local sales office for the selection of catalog motors.

The table shows the weight of moisture contained in the air, given as g/m³.

The local temperature is on the X-axis and the local relative humidity is shown on the Y-axis.

Blue fields show normal conditions.

Yellow fields show higher moisture – for motors FS ≥ 112 a drain hole is recommended.

For orange colored fields a drain hole is recommended and for more important motors a heating is also recommended (separate space heater or winding heating).



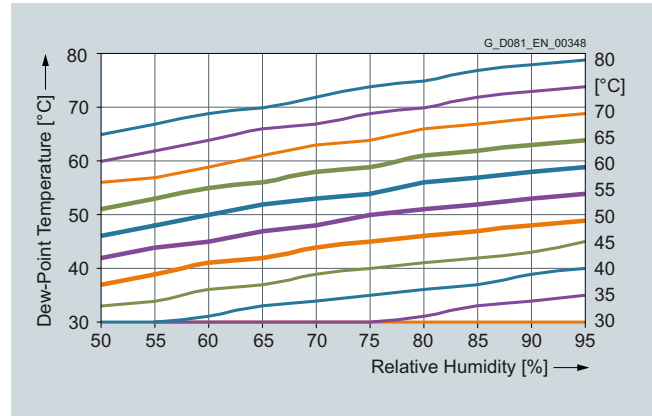
TIP

In humid climates, during motor cool down the air inside contracts, pulling in fresh, warm, humid air. This humidity condensates inside the motor, forming water droplets. Those water droplets have to drain.

Therefore on many motors, especially the larger ones, Siemens has foreseen drain holes as standard.

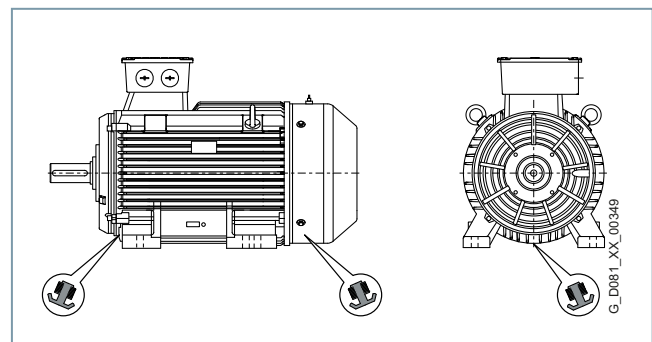
Anti-condensation heating can be provided for motors where there is a danger that moisture condensation will form on the winding due to the climatic situation. This anti-condensation heater warms up the air in the motor to a temperature above the dew point temperature in order to prevent condensation forming inside the motor. The anti-condensation heating must not be switched on while the motor is operating.

The graphic shows the temperature at which the moisture in the air will condensate to water. The lines on the right show the local temperature. The X-axis gives the local relative humidity. The "dew point" temperature can be read on the Y-axis.



TIP

Another possible solution is to connect a voltage to the stator terminals U1 and V1 that should be between 4 and 10% of the rated motor voltage. Approximately 20 to 30% of the rated current is sufficient in order to achieve an adequate temperature rise to avoid condensation.



Drain hole location

Motor protection

PTC thermistor temperature sensors are predominantly used for thermistor motor protection devices (alarm or shutdown) for motors. These thermistors are generally integrated in the winding overhang. As a consequence, the stator winding is directly protected. The temperature difference between alarm and shutdown (trip) is 10 K.

When a limit temperature is reached (nominal tripping temperature), the resistance of PTC thermistors will have a step change. This is evaluated by a tripping unit and can be used to open auxiliary circuits.

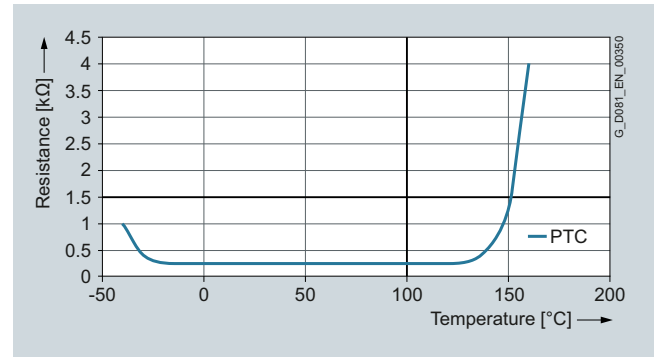
Thermal protection with PTC thermistors with 3 embedded temperature sensors for tripping is provided in our IE2 motors above frame size 112 as standard version.

Anyhow it can be selected as an option for our IE1 motors and IE2 motors with frame size less than 132. Connection can be done through 2 auxiliary terminals in the terminal box.

TIP



3 × PTC to wire have already been embedded in our 1LE0 IE2 motors as standard version.



Note:

The PTC thermistors themselves cannot be subjected to high currents and voltages. This would result in destruction of the semiconductor. The switching hysteresis of the PTC thermistor and tripping unit is low, which supports fast restarting of the drive. Motors with this type of protection are recommended for heavy duty starting, switching duty, extreme changes in load, high ambient temperatures or fluctuating supply systems.

Converter application

The insulation system of our motors is capable for converter operation as standard.

For sinusoidal (mains) supplies 690 V_{rms} 50 Hz with:

- phase to phase 1200 V_{rms} capability
- phase to ground 900 V_{rms} capability

For converter operation, as standard:

- 460 V_{rms} max. frequency limited by motor maximum speed 5000 V/μs

Converter application

Our motors are suitable for pumps, fans, compressors, textile machines and mechanical machine applications where variable or constant speed is required.

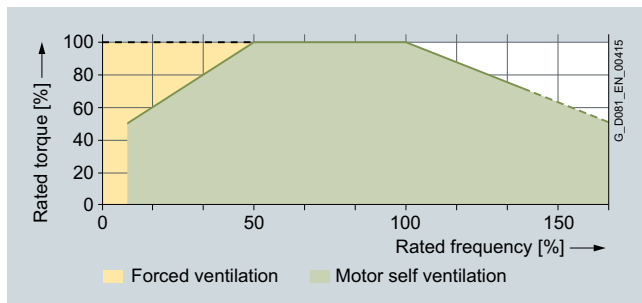
In applications where the motor is driven by a converter, the degree of electrical interference depends on the type of converter used (type, number of IGBTs, interference suppression measures, and manufacturer), cabling, distance and application requirements. The installation guidelines of the converter manufacturer with regards to electromagnetic compatibility must be considered at all times during the design and implementation phases.

At rated output with converter operation, the motors will be used in temperature class 155 (F). To prevent damage as a result of bearing currents, insulated bearings are recommended to be assembled for frame size 250 and above. Please inquire Siemens about the detailed information of insulated bearing.

Converter operation

The standard insulation of our motors is designed such that operation is possible on the converter at mains voltage up to 460 V.

Our motors are capable for converter operation with certain characteristics load, of which the load torque characteristics is referred in the following diagram:



By usage with admissible torque and below, the motor can be operated with self cooling; by usage over the admissible torque line, the motor with forced ventilation is needed.



TIP These motors do not have a special series for converter operation – they are suited as standard. On-line or converter operation.

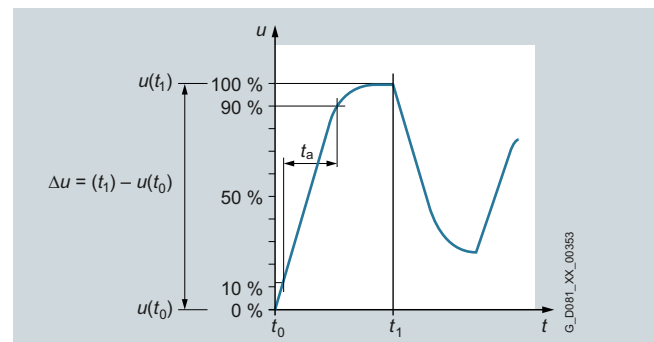
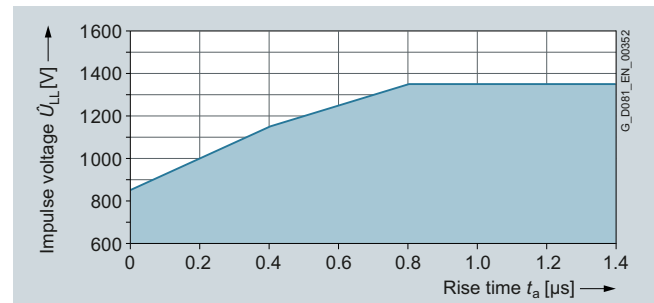
At operating speeds above rated speed the noise and vibration levels increase and the bearing lifetime reduces. Attention should be paid to the re-greasing intervals and the grease service life. For converter operation with frequencies greater than 60 Hz special balancing is required for compliance with the specified limit values.

Voltage (peak and gradient) withstand levels

The dielectric stress of the winding insulation is determined by:

- the peak voltage, rise time and frequency of the impulses produced by the converter.
- the characteristics and the length of the connection leads between the converter and motor.
- the winding construction and other system parameters, especially the voltages between the different parts of the winding and the ground represent dielectric stress at the insulation system.

The standard insulation of our motors is designed to withstand voltage peak and gradient which is shown in the diagram:



Did you know

As the motor gets larger so does the internal surface area between the stator and rotor. That surface has a stray capacitance which can lead to a voltage on the shaft – and that voltage can lead to bearing failure (bearing currents). The situation is aggravated by converter operation. Siemens recommends the use of insulated bearings for motors of frame size ≥ 250. The insulated bearing as an option can be supplied out of our standard catalog portfolio D 81.1 and on request for the 1LE0 series.

| SIMOTICS General Purpose | | | | | | | |
|--------------------------|-----------------|-----------------------------|-----------|---|-----------|--|-----------|
| Frame size | Number of poles | Cast-iron series | | | | | |
| | | IE1 efficiency 1LE0102 | | IE2 & IE3 efficiencies 1LE0101 & 1LE0103 | | IE1, IE2 & IE3 efficiencies 1LE002. | |
| | | max. mechanical speed | f_{max} | max. mechanical speed | f_{max} | max. mechanical speed | f_{max} |
| 80 | 2 | 5200 | 87 | 5200 | 87 | 5200 | 87 |
| | 4 | 3600 | 120 | 3600 | 120 | 3600 | 120 |
| | 6 | 2400 | 120 | 2400 | 120 | 2400 | 120 |
| 90 | 2 | 5200 | 87 | 5200 | 87 | 5200 | 87 |
| | 4 | 3600 | 120 | 3600 | 120 | 3600 | 120 |
| | 6 | 2400 | 120 | 2400 | 120 | 2400 | 120 |
| 100 | 2 | 5200 | 87 | 5200 | 87 | 5200 | 87 |
| | 4 | 3600 | 120 | 3600 | 120 | 3600 | 120 |
| | 6 | 2400 | 120 | 2400 | 120 | 2400 | 120 |
| 112 | 2 | 5200 | 87 | 5200 | 87 | 5200 | 87 |
| | 4 | 3600 | 120 | 3600 | 120 | 3600 | 120 |
| | 6 | 2400 | 120 | 2400 | 120 | 2400 | 120 |
| 132 | 2 | 4500 | 75 | 4500 | 75 | 4500 | 75 |
| | 4 | 2700 | 90 | 2700 | 90 | 2700 | 90 |
| | 6 | 2400 | 120 | 2400 | 120 | 2400 | 120 |
| 160 | 2 | 4500 | 75 | 4500 | 75 | 4500 | 75 |
| | 4 | 2700 | 90 | 2700 | 90 | 2700 | 90 |
| | 6 | 2400 | 120 | 2400 | 120 | 2400 | 120 |
| 180 | 2 | 4500 | 75 | 4500 | 75 | 4500 | 75 |
| | 4 | 2700 | 90 | 2700 | 90 | 2700 | 90 |
| | 6 | 2400 | 120 | 2400 | 120 | 2400 | 120 |
| 200 | 2 | 4500 | 75 | 4500 | 75 | 4500 | 75 |
| | 4 | 2300 | 77 | 2300 | 77 | 2300 | 77 |
| | 6 | 1800 | 90 | 1800 | 90 | 1800 | 90 |
| 225 | 2 | 3600 | 60 | 3600 | 60 | 3600 | 60 |
| | 4 | 2300 | 77 | 2300 | 77 | 2300 | 77 |
| | 6 | 1800 | 90 | 1800 | 90 | 1800 | 90 |
| 250 | 2 | 3600 | 60 | 3600 | 60 | 3600 | 60 |
| | 4 | 2300 | 77 | 2300 | 77 | 2300 | 77 |
| | 6 | 1800 | 90 | 1800 | 90 | 1800 | 90 |
| 280 | 2 | 3600 | 60 | 3600 | 60 | 3600 | 60 |
| | 4 | 2300 | 77 | 2300 | 77 | 2300 | 77 |
| | 6 | 1800 | 90 | 1800 | 90 | 1800 | 90 |
| 315 | 2 | 3600 | 60 | 3600 | 60 | 3600 | 60 |
| | 4 | 2300 | 77 | 2300 | 77 | 2300 | 77 |
| | 6 | 1800 | 90 | 1800 | 90 | 1800 | 90 |
| 355 | 2 | 3600 | 60 | 3600 | 60 | 3600 | 60 |
| | 4 | 2300 | 77 | 2300 | 77 | 2300 | 77 |
| | 6 | 1800 | 90 | 1800 | 90 | 1800 | 90 |

Mechanical stress and grease lifetime (converter operation).

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

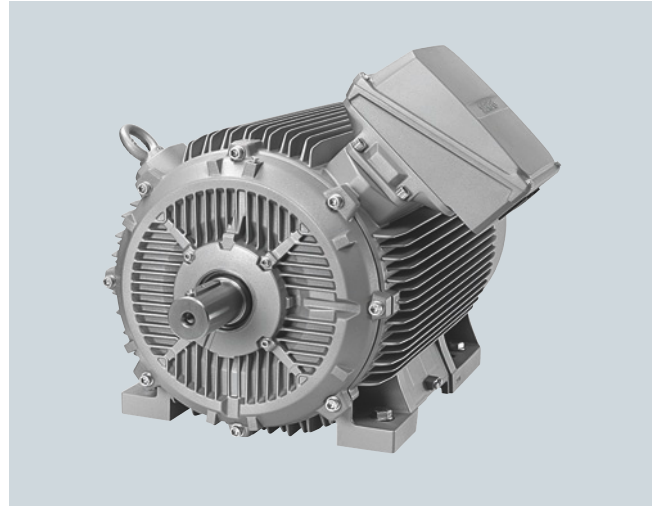
Ventilation/noise generation (converter operation).

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

Mechanical limit speeds

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

With converter operation, the reduction factors for constant torque and drives for fans, pumps and compressors must be observed.

**TIP**

By use of converter operation, motors can run at speeds higher than 50 Hz or 60 Hz nominal speed. High speeds that exceed the rated speed of a motor can lead to increased vibration and substantially decrease the life expectancy of the bearings. The maximum mechanical speed of a motor must not be exceeded due to risk of failure. More detailed information on request.

Noise

Motors are often used in applications in which noise is a primary concern. The use of converters can excite the surfaces of motors and the sound of diverse frequencies can be resonated in the cooling channels.

Siemens has addressed this issue but modifying the core design.

Surfaces, shapes and materials and air channels have been optimized. The result is a motor which is quieter, especially with converter operation.

In order to define the motor noise level, the A-weighted sound pressure level (L_A) is measured at several points on the measuring plane (1 m away from the motor surface). The measurement is carried out in a room with low reflection. As a result of noise reflection, the level can be increased up to 3 dB(A) depending on the acoustic properties of the surroundings.

The A sound power level is normally used when engineering projects and when it is necessary to determine the noise radiated from a group of motors whose envelope dimensions differ significantly.

| SIMOTICS General Purpose | | | | | | | | | |
|--------------------------|---|----------------------|----------------------|---------------------------|----------------------|----------------------|---------------------------|----------------------|----------------------|
| Output (kW) | Sound pressure level L_{pfa} / Sound power level L_{WA} (dB(A)) | | | | | | | | |
| | Cast-iron series | | | | | | | | |
| | IE1 efficiency 1LE0102 | | | IE2 efficiency 1LE0101 | | | IE3 efficiency 1LE0103 | | |
| | 3000 rpm (2-pole) | 1500 rpm (4-pole) | 1000 rpm (6-pole) | 3000 rpm (2-pole) | 1500 rpm (4-pole) | 1000 rpm (6-pole) | 3000 rpm (2-pole) | 1500 rpm (4-pole) | 1000 rpm (6-pole) |
| 0.55 | – | 45/57 | 44/56 | – | 45/57 | 44/56 | – | 45/56 | 44/55 |
| 0.75 | 53/65 | 45/57 | 48/60 | 53/65 | 45/57 | 48/60 | 51/62 | 45/56 | 45/57 |
| 1.1 | 53/65 | 48/60 | 48/60 | 53/65 | 47/59 | 48/60 | 51/62 | 47/59 | 45/57 |
| 1.5 | 60/72 | 48/60 | 54/66 | 60/72 | 47/59 | 52/64 | 55/67 | 47/59 | 49/61 |
| 2.2 | 60/72 | 57/69 | 54/66 | 60/72 | 55/67 | 54/66 | 55/67 | 52/64 | 53/65 |
| 3 | 64/76 | 57/69 | 57/69 | 62/74 | 55/67 | 56/69 | 62/74 | 52/64 | 57/69 |
| 4 | 65/77 | 57/69 | 57/69 | 63/75 | 55/67 | 56/69 | 65/77 | 53/65 | 57/69 |
| 5.5 | 68/80 | 58/71 | 57/69 | 66/79 | 57/70 | 56/69 | 67/79 | 59/71 | 57/69 |
| 7.5 | 68/80 | 58/71 | 61/73 | 66/79 | 57/70 | 60/73 | 67/79 | 59/71 | 61/73 |
| 11 | 70/83 | 61/74 | 61/73 | 67/80 | 60/73 | 60/73 | 69/81 | 61/73 | 61/73 |
| 15 | 70/83 | 61/74 | 61/74 | 67/80 | 60/73 | 61/74 | 69/81 | 61/73 | 59/73 |
| 18.5 | 70/83 | 63/76 | 65/78 | 67/80 | 61/74 | 65/78 | 69/81 | 63/76 | 59/73 |
| 22 | 72/85 | 63/76 | 65/78 | 69/82 | 61/74 | 65/78 | 70/83 | 63/76 | 59/73 |
| 30 | 76/90 | 65/78 | 66/80 | 71/84 | 63/76 | 65/79 | 71/84 | 63/76 | 60/74 |
| 37 | 76/90 | 66/80 | 66/80 | 71/84 | 63/77 | 65/79 | 71/84 | 65/78 | 62/76 |
| 45 | 76/90 | 66/79 | 66/80 | 74/88 | 63/77 | 65/79 | 72/85 | 65/78 | 64/78 |
| 55 | 78/92 | 67/81 | 66/80 | 74/88 | 64/78 | 65/79 | 75/89 | 66/79 | 64/78 |
| 75 | 79/93 | 70/84 | 70/84 | 74/88 | 66/80 | 66/80 | 77/91 | 66/80 | 69/83 |
| 90 | 79/93 | 70/84 | 70/84 | 76/90 | 66/80 | 66/80 | 77/91 | 66/80 | 69/83 |
| 110 | 80/94 | 76/90 | 70/84 | 78/92 | 69/83 | 68/82 | 78/92 | 74/88 | 69/83 |
| 132 | 80/94 | 76/90 | 70/84 | 78/92 | 69/83 | 68/83 | 78/92 | 74/88 | 69/83 |
| 160 | 80/94 | 78/92 | 77/92 | 81/95 | 69/83 | 72/87 | 78/92 | 74/88 | 71/85 |
| 185 | 85/98 | 78/92 | 77/92 | 81/95 | 74/88 | 75/90 | 78/92 | 74/88 | 71/85 |
| 200 | 85/98 | 78/92 | 77/92 | 81/95 | 74/88 | 75/90 | 78/92 | 74/88 | 71/85 |
| 220 | 86/101 | 86/101 | 77/92 | 86/101 | 82/97 | 75/90 | 85/100 | 81/95 | 71/85 |
| 250 | 86/101 | 86/101 | – | 86/101 | 82/97 | – | 85/100 | 81/95 | 71/85 |
| 280 | 88/103 | 86/101 | – | 88/103 | 85/100 | – | 85/100 | 81/95 | – |
| 315 | 88/103 | 86/101 | – | 88/103 | 85/100 | – | 85/100 | 81/95 | – |

Bearings

The bearings are especially important in order that the motor runs perfectly. A good selection of bearing will guarantee long lubrication intervals, low noise, low-vibration operation and longer lifetime as well.

There are many types of bearing: diverse ball and roller bearings, tapered roller bearings and specialized bearings. Siemens has selected an applicable range of single-shielded and double-shielded bearings. Z for when regreasing is needed and ZZ when no-regreasing is wished for. C62 as standard and suitable for not applications, C63 for driven loads with cantilever forces/radial forces C63 standard FS 280 and bigger.

Sealed-for-life bearings are avoided as they bring inherent disadvantages in operation temperatures and limit operating speeds.

Special bearings are avoided due to their disadvantages outside of their specific application.

TIP



Factors that reduce the lifetime of a bearing:

- Operating a motor beyond the rated speed increases the motor vibration and results in an additional radial and axial force on the bearing.
- Increased motor vibration due to the environment or other equipment results in an higher radial and axial force.

The bearing lifetime of motors with horizontal type of construction is at least 40000 hours if there is no additional axial loading at the coupling output and at least 20000 hours with the maximum admissible loads. This assumes that the motor is operated at 50 Hz.

A bearing is only as good as its lubrication. Siemens designed a special lithium complex grease – Unirex N3. It gives a super thermal stability for optimized bearing life. The grease gives a great temperature range from –30 to 130 °C – with an intermittent temperature reserve to 165 °C.

| Frame size | Number of poles | Grease lifetime up to CT 40 °C ¹⁾ |
|---|-----------------|--|
| Grease for bearings with permanent lubrication | | |
| 80 ... 250 | 2, 4, 6 | 20000 or 40000 (h) ²⁾ |
| Grease for regreasable bearings | | |
| 100 ... 160 | 2, 4, 6 | 8000 (h) |
| 180 ... 250 | 2 | 4000 (h) |
| 180 ... 250 | 4, 6 | 8000 (h) |
| 280 ... 315 | 2 | 3000 (h) |
| 280 ... 315 | 4, 6 | 5000 (h) |
| 355 | 2 | 2000 (h) |
| 355 | 4, 6 | 4000 (h) |

¹⁾ If the coolant temperature is increased by 10 K, the grease lifetime and regreasing interval are halved.

²⁾ 40000 h apply to horizontally installed motors with coupling output without additional axial loads.

Cantilever force

This force acts transversely at the center line of the motor shaft extension. The cantilever force is calculated from the circumferential force multiplied by the pre-tension factor, which is dependent on the mechanical transmission characteristics of the particular belt.

The permissible cantilever forces for the individual motor frame sizes and speeds are specified in Catalog D 81.1. For motors with deep-groove ball bearings, the permissible cantilever force can be increased by replacing the bearings at the drive end with cylindrical roller bearings.

In order to calculate the admissible cantilever forces for a radial load, the line of force (i.e. the center line of the pulley) of the cantilever force F_Q (N) must lie within the free shaft extension (dimension x).

Dimension x [mm] is the distance between the point of application of force F_Q and the shaft shoulder.

Dimension x_{max} corresponds to the length of the shaft extension. Total cantilever force is calculated using the following equation.

$$F_Q = c \cdot F_U$$

The pre-tension factor c is a value gained from experience by the belt manufacturer. The following approximate value can be assumed.

- For normal flat leather belts with an idler pulley, $c = 2$.
- For V-belts, $c = 2$ to 2.5.
- For special synthetic belts (depending on the type and load), $c = 2$ to 2.5.

The circumferential force F_U (N) is calculated using the following equation.

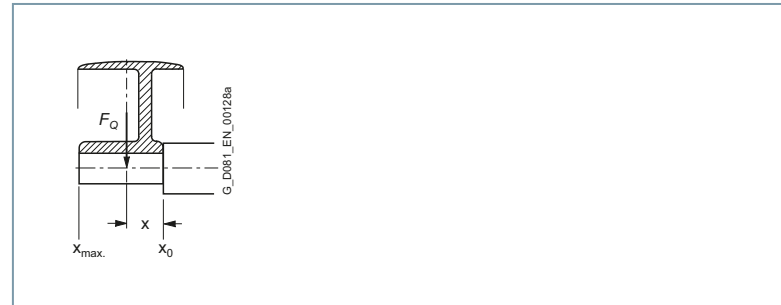
$$F_U = 2 \cdot 10^7 \frac{P}{n \times D}$$

F_U = circumferential force in N

P = rated motor power (transmitted power) in kW

n = rated motor speed

D = pulleys in mm.



Belt drive

A belt drive is used to connect two parallel shafts, the motor shaft with the shaft of the driven machine, whereby the speed can be simultaneously changed corresponding to the ratio between the two belt pulley diameters.

The belt must be pre-tensioned so that it can transmit the circumferential force through friction. The pre-tension factor indicates how much higher the actual tension load (cantilever force) is than the circumferential force (peripheral force).

Today, flat belts are almost always manufactured out of plastic with an adhesive coating (e.g. chrome leather). Pre-tension factor, approx. 2 to 2.5. The pre-tension factor for V-belts is approx. 1.5 to 2.5.

The belt must be able to transmit the power at the defined circumferential velocity. This defines the belt thickness and width. The belt supplier specifies the pre-tension factor. The recommended circumferential velocity is approx. 35 m/s for flat belts and approx. 25 m/s for V-belts. Steel belt pulleys must be used for circumferential velocities greater than 26 m/s due to the centrifugal force which occurs.

The actual cantilever force (belt tension) must be compared with the cantilever force permissible for the motor to select the correct motor and bearing sizes.

Bearings – Bearing types

Standard bearing assignment

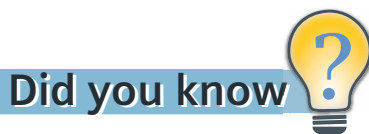
| SIMOTICS General Purpose | | | | | | | | | | |
|--------------------------|-----------------|---------------------------|---------------------|------------|---|---------------------|------------|--|---------------------|------------|
| Frame size | Number of poles | Cast-iron series | | | | | | | | |
| | | IE1 efficiency 1LE0102 | | | IE2 & IE3 efficiencies 1LE0101 & 1LE0103 | | | IE1, IE2 & IE3 efficiencies 1LE002. ¹⁾ | | |
| | | Drive end | Non-drive end | | Drive end | Non-drive end | | Drive end | Non-drive end | |
| | | (Horizontal mounting) | (Vertical mounting) | | (Horizontal mounting) | (Vertical mounting) | | (Horizontal mounting) | (Vertical mounting) | |
| 80 | 2 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 |
| | 4 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 |
| | 6 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 | 6204 2Z C3 |
| 90 | 2 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 |
| | 4 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 |
| | 6 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 | 6205 2Z C3 |
| 100 | 2 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 4 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 6 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| 112 | 2 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 4 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 6 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| 132 | 2 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 |
| | 4 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 |
| | 6 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6208 2Z C3 |
| 160 | 2 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 |
| | 4 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 |
| | 6 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6209 2Z C3 |
| 180 | 2 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 |
| | 4 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6310 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 |
| | 6 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6310 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 | 6210 Z C3 |
| 200 | 2 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 |
| | 4 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6312 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 |
| | 6 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6312 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 | 6212 Z C3 |
| 225 | 2 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 |
| | 4 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6313 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 |
| | 6 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6313 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 | 6213 Z C3 |
| 250 | 2 | 6215 C3 | 6215 C3 | 7215 AC | 6215 C3 | 6215 C3 | 7215 AC | 6215 C3 | 6215 C3 | 7215 AC |
| | 4 | 6215 C3 | 6215 C3 | 7215 AC | 6315 C3 | 6215 C3 | 7215 AC | 6215 C3 | 6215 C3 | 7215 AC |
| | 6 | 6215 C3 | 6215 C3 | 7215 AC | 6315 C3 | 6215 C3 | 7215 AC | 6215 C3 | 6215 C3 | 7215 AC |
| 280 | 2 | 6317 C3 | 6317 C3 | 7317 AC | 6317 C3 | 6317 C3 | 7317 AC | 6317 C3 | 6317 C3 | 7317 AC |
| | 4 | 6317 C3 | 6317 C3 | 7317 AC | 6317 C3 | 6317 C3 | 7317 AC | 6317 C3 | 6317 C3 | 7317 AC |
| | 6 | 6317 C3 | 6317 C3 | 7317 AC | 6317 C3 | 6317 C3 | 7317 AC | 6317 C3 | 6317 C3 | 7317 AC |
| 315 | 2 | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC |
| | 4 | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC |
| | 6 | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC |
| 355 | 2 | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC | 6319 C3 | 6319 C3 | 7319 AC |
| | 4 | 6322 C3 | 6322 C3 | 7322 AC | 6322 C3 | 6322 C3 | 7322 AC | 6322 C3 | 6322 C3 | 7322 AC |
| | 6 | 6322 C3 | 6322 C3 | 7322 AC | 6322 C3 | 6322 C3 | 7322 AC | 6322 C3 | 6322 C3 | 7322 AC |

¹⁾ Only for Option Line motors with efficiency classes IE2 and IE3:
use of standard bearings e.g. SKF, NSK.

Bearings – Bearing types

Bearing design for increased cantilever forces

| SIMOTICS General Purpose | | | | | | | | | | |
|--------------------------|-----------------|------------------------|---------------------|------------|--|---------------------|------------|-------------------------------------|---------------------|------------|
| Frame size | Number of poles | Cast-iron series | | | | | | | | |
| | | IE1 efficiency 1LE0102 | | | IE2 & IE3 efficiencies 1LE0101 & 1LE0103 | | | IE1, IE2 & IE3 efficiencies 1LE002. | | |
| | | Drive end | Non-drive end | | Drive end | Non-drive end | | Drive end | Non-drive end | |
| | | (Horizontal mounting) | (Vertical mounting) | | (Horizontal mounting) | (Vertical mounting) | | (Horizontal mounting) | (Vertical mounting) | |
| 80 | 2 | - | - | - | - | - | - | - | - | - |
| | 4 | - | - | - | - | - | - | - | - | - |
| | 6 | - | - | - | - | - | - | - | - | - |
| 90 | 2 | - | - | - | - | - | - | - | - | - |
| | 4 | - | - | - | - | - | - | - | - | - |
| | 6 | - | - | - | - | - | - | - | - | - |
| 100 | 2 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 4 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 6 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| 112 | 2 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 4 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | - | - | - | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| | 6 | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 | - | - | - | 6306 2Z C3 | 6206 2Z C3 | 6206 2Z C3 |
| 132 | 2 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 |
| | 4 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | - | - | - | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 |
| | 6 | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 | - | - | - | 6308 2Z C3 | 6208 2Z C3 | 6208 2Z C3 |
| 160 | 2 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 |
| | 4 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | - | - | - | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 |
| | 6 | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 | - | - | - | 6309 2Z C3 | 6209 2Z C3 | 6209 2Z C3 |
| 180 | 2 | NU210 | 6210 Z C3 | 6210 Z C3 | NU210 | 6210 Z C3 | 6210 Z C3 | NU210 | 6210 Z C3 | 6210 Z C3 |
| | 4 | NU210 | 6210 Z C3 | 6210 Z C3 | NU210 | 6210 Z C3 | 6210 Z C3 | NU210 | 6210 Z C3 | 6210 Z C3 |
| | 6 | NU210 | 6210 Z C3 | 6210 Z C3 | NU210 | 6210 Z C3 | 6210 Z C3 | NU210 | 6210 Z C3 | 6210 Z C3 |
| 200 | 2 | NU212 | 6212 Z C3 | 6212 Z C3 | NU212 | 6212 Z C3 | 6212 Z C3 | NU212 | 6212 Z C3 | 6212 Z C3 |
| | 4 | NU212 | 6212 Z C3 | 6212 Z C3 | NU212 | 6212 Z C3 | 6212 Z C3 | NU212 | 6212 Z C3 | 6212 Z C3 |
| | 6 | NU212 | 6212 Z C3 | 6212 Z C3 | NU212 | 6212 Z C3 | 6212 Z C3 | NU212 | 6212 Z C3 | 6212 Z C3 |
| 225 | 2 | NU213 | 6213 Z C3 | 6213 Z C3 | NU213 | 6213 Z C3 | 6213 Z C3 | NU213 | 6213 Z C3 | 6213 Z C3 |
| | 4 | NU213 | 6213 Z C3 | 6213 Z C3 | NU213 | 6213 Z C3 | 6213 Z C3 | NU213 | 6213 Z C3 | 6213 Z C3 |
| | 6 | NU213 | 6213 Z C3 | 6213 Z C3 | NU213 | 6213 Z C3 | 6213 Z C3 | NU213 | 6213 Z C3 | 6213 Z C3 |
| 250 | 2 | NU215 | 6215 C3 | 7215 AC | NU215 | 6215 C3 | 7215 AC | NU215 | 6215 C3 | 7215 AC |
| | 4 | NU215 | 6215 C3 | 7215 AC | NU215 | 6215 C3 | 7215 AC | NU215 | 6215 C3 | 7215 AC |
| | 6 | NU215 | 6215 C3 | 7215 AC | NU215 | 6215 C3 | 7215 AC | NU215 | 6215 C3 | 7215 AC |
| 280 | 2 | NU317 | 6317 C3 | 7317 AC | NU317 | 6317 C3 | 7317 AC | NU317 | 6317 C3 | 7317 AC |
| | 4 | NU317 | 6317 C3 | 7317 AC | NU317 | 6317 C3 | 7317 AC | NU317 | 6317 C3 | 7317 AC |
| | 6 | NU317 | 6317 C3 | 7317 AC | NU317 | 6317 C3 | 7317 AC | NU317 | 6317 C3 | 7317 AC |
| 315 | 2 | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC |
| | 4 | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC |
| | 6 | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC |
| 355 | 2 | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC | NU319 | 6319 C3 | 7319 AC |
| | 4 | NU322 | 6322 C3 | 7322 AC | NU322 | 6322 C3 | 7322 AC | NU322 | 6322 C3 | 7322 AC |
| | 6 | NU322 | 6322 C3 | 7322 AC | NU322 | 6322 C3 | 7322 AC | NU322 | 6322 C3 | 7322 AC |



Did you know

When the load pulls sideways on the shaft, it is called a radial load. A heavy radial load is a belt or pulley drive. If in doubt, it is common to use "C63" or strengthened bearings.

Bearings – Cantilever forces

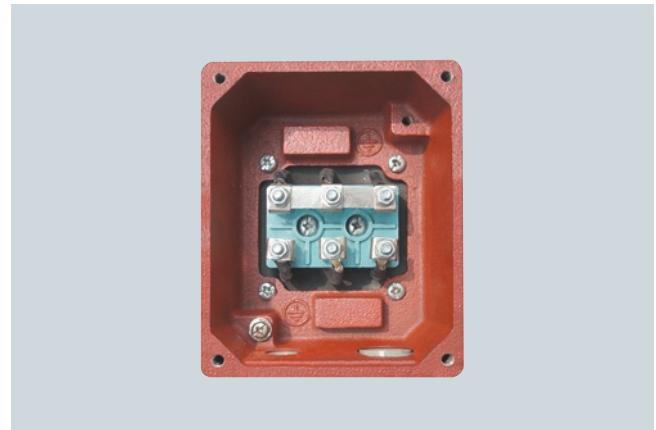
Admissible cantilever forces for standard version

| SIMOTICS General Purpose | | | | | | | |
|--------------------------|-----------------|---------------------------|--------------------|---|--------------------|--|--------------------|
| Frame size | Number of poles | Cast-iron series | | | | | |
| | | IE1 efficiency 1LE0102 | | IE2 & IE3 efficiencies 1LE0101 & 1LE0103 | | IE1, IE2 & IE3 efficiencies 1LE002. | |
| | | for x_0 N | for x_{max} N | for x_0 N | for x_{max} N | for x_0 N | for x_{max} N |
| 80 | 2 | 620 | 510 | 620 | 510 | 620 | 510 |
| | 4 | 790 | 640 | 790 | 640 | 790 | 640 |
| | 6 | 910 | 740 | 910 | 740 | 910 | 740 |
| 90 | 2 | 700 | 560 | 700 | 560 | 700 | 560 |
| | 4 | 880 | 720 | 880 | 720 | 880 | 720 |
| | 6 | 1020 | 820 | 1020 | 820 | 1020 | 820 |
| 100 | 2 | 980 | 790 | 980 | 790 | 980 | 790 |
| | 4 | 1230 | 990 | 1230 | 990 | 1230 | 990 |
| | 6 | 1420 | 1140 | 1420 | 1140 | 1420 | 1140 |
| 112 | 2 | 980 | 790 | 980 | 790 | 980 | 790 |
| | 4 | 1230 | 990 | 1870 | 1540 | 1230 | 990 |
| | 6 | 1420 | 1140 | 2140 | 1720 | 1420 | 1140 |
| 132 | 2 | 1440 | 1120 | 1440 | 1120 | 1440 | 1120 |
| | 4 | 1820 | 1420 | 2720 | 2170 | 1820 | 1420 |
| | 6 | 2080 | 1630 | 3100 | 2420 | 2080 | 1630 |
| 160 | 2 | 1560 | 1240 | 1560 | 1240 | 1560 | 1240 |
| | 4 | 1970 | 1570 | 3300 | 2600 | 1970 | 1570 |
| | 6 | 2260 | 1800 | 3750 | 2900 | 2260 | 1800 |
| 180 | 2 | 1820 | 1470 | 1820 | 1470 | 1820 | 1470 |
| | 4 | 2300 | 1900 | 4000 | 3300 | 2300 | 1900 |
| | 6 | 2630 | 2150 | 4500 | 3700 | 2630 | 2150 |
| 200 | 2 | 2650 | 2230 | 2650 | 2230 | 2650 | 2230 |
| | 4 | 3350 | 2800 | 5400 | 4530 | 3350 | 2800 |
| | 6 | 3850 | 3230 | 6200 | 5200 | 3850 | 3230 |
| 225 | 2 | 3000 | 2540 | 3000 | 2540 | 3000 | 2540 |
| | 4 | 3700 | 3000 | 5900 | 4800 | 3700 | 3000 |
| | 6 | 4250 | 3470 | 6800 | 5550 | 4250 | 3470 |
| 250 | 2 | 3150 | 2620 | 3150 | 2620 | 3150 | 2620 |
| | 4 | 3950 | 3280 | 7350 | 6100 | 3950 | 3280 |
| | 6 | 4600 | 3820 | 8450 | 7000 | 4600 | 3820 |
| 280 | 2 | 6600 | 5550 | 6600 | 5550 | 6600 | 5550 |
| | 4 | 8300 | 6950 | 8300 | 6950 | 8300 | 6950 |
| | 6 | 9650 | 8120 | 9650 | 8120 | 9650 | 8120 |
| 315 | 2 | 7100 | 6200 | 7100 | 6200 | 7100 | 6200 |
| | 4 | 8700 | 7250 | 8700 | 7250 | 8700 | 7250 |
| | 6 | 10000 | 8500 | 10000 | 8500 | 10000 | 8500 |
| 355 | 2 | 6800 | 6000 | 6800 | 6000 | 6800 | 6000 |
| | 4 | 11500 | 10000 | 11500 | 10000 | 11500 | 10000 |
| | 6 | 13200 | 11600 | 13200 | 11600 | 13200 | 11600 |

Bearing design for increased cantilever forces

| SIMOTICS General Purpose | | | | | | | |
|--------------------------|-----------------|---------------------------|--------------------|---|--------------------|--|--------------------|
| Frame size | Number of poles | Cast-iron series | | | | | |
| | | IE1 efficiency 1LE0102 | | IE2 & IE3 efficiencies 1LE0101 & 1LE0103 | | IE1, IE2 & IE3 efficiencies 1LE002. | |
| | | for x_0 N | for x_{max} N | for x_0 N | for x_{max} N | for x_0 N | for x_{max} N |
| 80 | 2 | – | – | – | – | – | – |
| | 4 | – | – | – | – | – | – |
| | 6 | – | – | – | – | – | – |
| 90 | 2 | – | – | – | – | – | – |
| | 4 | – | – | – | – | – | – |
| | 6 | – | – | – | – | – | – |
| 100 | 2 | 1480 | 1220 | 1480 | 1220 | 1480 | 1220 |
| | 4 | 1870 | 1540 | 1870 | 1540 | 1870 | 1540 |
| | 6 | 2140 | 1720 | 2140 | 1720 | 2140 | 1720 |
| 112 | 2 | 1480 | 1220 | 1480 | 1220 | 1480 | 1220 |
| | 4 | 1870 | 1540 | – | – | 1870 | 1540 |
| | 6 | 2140 | 1720 | – | – | 2140 | 1720 |
| 132 | 2 | 2100 | 1700 | 2100 | 1700 | 2100 | 1700 |
| | 4 | 2720 | 2170 | – | – | 2720 | 2170 |
| | 6 | 3100 | 2420 | – | – | 3100 | 2420 |
| 160 | 2 | 2650 | 2120 | 2650 | 2120 | 2650 | 2120 |
| | 4 | 3300 | 2600 | – | – | 3300 | 2600 |
| | 6 | 3750 | 2900 | – | – | 3750 | 2900 |
| 180 | 2 | 3300 | 2700 | 3300 | 2700 | 3300 | 2700 |
| | 4 | 4200 | 3400 | 4200 | 3400 | 4200 | 3400 |
| | 6 | 4750 | 3900 | 4750 | 3900 | 4750 | 3900 |
| 200 | 2 | 5000 | 4200 | 5000 | 4200 | 5000 | 4200 |
| | 4 | 6330 | 5320 | 6330 | 5320 | 6330 | 5320 |
| | 6 | 7250 | 6080 | 7250 | 6080 | 7250 | 6080 |
| 225 | 2 | 5650 | 4800 | 5650 | 4800 | 5650 | 4800 |
| | 4 | 6950 | 5600 | 6950 | 5600 | 6950 | 5600 |
| | 6 | 7900 | 6500 | 7900 | 6500 | 7900 | 6500 |
| 250 | 2 | 6700 | 5600 | 6700 | 5600 | 6700 | 5600 |
| | 4 | 8500 | 7000 | 8500 | 7000 | 8500 | 7000 |
| | 6 | 9500 | 7800 | 9500 | 7800 | 9500 | 7800 |
| 280 | 2 | 11500 | 9500 | 11500 | 9500 | 11500 | 9500 |
| | 4 | 17000 | 14000 | 17000 | 14000 | 17000 | 14000 |
| | 6 | 20000 | 17000 | 20000 | 17000 | 20000 | 17000 |
| 315 | 2 | 14600 | 12300 | 14600 | 12300 | 14600 | 12300 |
| | 4 | 20000 | 16500 | 20000 | 16500 | 20000 | 16500 |
| | 6 | 23000 | 19000 | 23000 | 19000 | 23000 | 19000 |
| 355 | 2 | 15800 | 14000 | 15800 | 14000 | 15800 | 14000 |
| | 4 | 22000 | 19000 | 22000 | 19000 | 22000 | 19000 |
| | 6 | 25000 | 22000 | 25000 | 22000 | 25000 | 22000 |

Terminal box



| Frame size | Cast-iron series | | | | |
|---|-------------------------------|----------------------|--------------------------------------|---------------------------------|-----------------------|
| | IE1, IE2 and IE3 efficiencies | | | | |
| | Number of terminals | Contact screw thread | 1LE0 | | |
| Max. connectable cross-section (mm ²) | | | Outer cable diameter (sealing range) | Cable entry size (screwed plug) | |
| 80 | 6 | M4 | 1.5 | 13 ... 18 | M25 × 1.5 + M16 × 1.5 |
| 90 | 6 | M4 | 1.5 | 13 ... 18 | M25 × 1.5 + M16 × 1.5 |
| 100 | 6 | M4 | 4 | 18 ... 25 | M32 × 1.5 + M32 × 1.5 |
| 112 | 6 | M4 | 4 | 18 ... 25 | M32 × 1.5 + M32 × 1.5 |
| 132 | 6 | M4 | 6 | 18 ... 25 | M32 × 1.5 + M32 × 1.5 |
| 160 | 6 | M5 | 16 | 22 ... 32 | M40 × 1.5 + M40 × 1.5 |
| 180 | 6 | M5 | 16 | 22 ... 32 | M40 × 1.5 + M40 × 1.5 |
| 200 | 6 | M6 | 25 | 32 ... 38 | M50 × 1.5 + M50 × 1.5 |
| 225 | 6 | M8 | 35 | 32 ... 38 | M50 × 1.5 + M50 × 1.5 |
| 250 | 6 | M10 | 120 | 37 ... 44 | M63 × 1.5 + M63 × 1.5 |
| 280 | 6 | M10 | 120 | 37 ... 44 | M63 × 1.5 + M63 × 1.5 |
| 315 | 6 | M12 | 240 | 37 ... 44 | M63 × 1.5 + M63 × 1.5 |
| 355 | 6 | M16 | 240 | 44 ... 57 | M72 × 2 + M72 × 2 |

Packaging size

| Frame size | Cast-iron series | | | | | |
|------------|--------------------------|------|-------|----------------|------|------|
| | Packaging size mm | | | | | |
| | IE1 and IE2 efficiencies | | | IE3 efficiency | | |
| | Length | 1LE0 | | Length | 1LE0 | |
| Width | | High | Width | | High | |
| 80 | 335 | 225 | 260 | 395 | 225 | 260 |
| 90 | 400 | 225 | 280 | 455 | 225 | 280 |
| 100 | 445 | 275 | 315 | 515 | 275 | 315 |
| 112 | 455 | 275 | 335 | 515 | 275 | 335 |
| 132 | 565 | 335 | 385 | 615 | 335 | 385 |
| 160 | 730 | 460 | 580 | 730 | 460 | 580 |
| 180 | 800 | 460 | 630 | 820 | 460 | 630 |
| 200 | 830 | 510 | 695 | 905 | 510 | 695 |
| 225 | 905 | 560 | 735 | 990 | 560 | 735 |
| 250 | 980 | 660 | 810 | 1060 | 660 | 810 |
| 280 | 1090 | 675 | 920 | 1215 | 675 | 920 |
| 315 | 1390 | 770 | 1060 | 1485 | 770 | 1060 |
| 355 | 1605 | 905 | 1260 | 1710 | 905 | 1260 |



Did you know

Power

Power is the work performed in a unit of time, measured in W (Watt).

Dimensions:

$$\begin{aligned}
 1 \text{ W} &= \text{J/s} \text{ (1 Joule per second)} \\
 &= 1 \text{ Nm/s} \text{ (1 Newton meter per second)} \\
 &= 1 \text{ kgm}^2/\text{s}^3 \\
 &= 0.102 \text{ kpm/s} \\
 1 \text{ kW} &= 1.36 \text{ hp}
 \end{aligned}$$

The following applies to three-phase motors:

$$P_N = \sqrt{3} \cdot V_{\text{supply}} \cdot I_{\text{supply}} \cdot \eta \cdot \cos \varphi$$

| | |
|----------------|--------------------|
| P_N | Rated power in W |
| V | Rated voltage in V |
| I | Line current in A |
| η | Efficiency |
| $\cos \varphi$ | Power factor |

The rated power is one of the most important parameters of a motor. According to DIN 42673 – and maintaining the regulations according to VDE 0530 – the individual motor frame sizes are assigned specific power ratings for continuous duty S1. Different operating conditions or different duty types generally result in a change in the rated power.



Did you know

Torque

Torque is generated by the effect of force applied to a lever arm. This is the product of force multiplied by the vertical distance from the axis of rotation; for belt drives, e.g. circumferential force multiplied by the radius of the belt pulley.

$$M = 9.55 \cdot P \cdot \frac{1000}{n}$$

| | |
|-----|--------------|
| M | Torque in Nm |
| P | Power in kW |
| n | Speed in rpm |



Did you know

Speed

The synchronous speed n_s (rpm) of a three-phase induction motor is obtained from the line frequency f and the pole pair number p (4-pole $\rightarrow 2p = 4$).

$$n_s = \frac{120 \cdot f}{2 \cdot p}$$

When connected to a 50 Hz line supply, a $2p = 4$ -pole motor has a synchronous speed of

$$\frac{120 \cdot 50}{4} = 1500 \text{ rpm}$$

The synchronous speeds of the generally used 2, 4, and 6-pole motors are correspondingly obtained

- at a line frequency of 50 Hz
3000, 1500, 1000 rpm
- at a line frequency of 60 Hz
3600, 1800, 1200 rpm

The rotor of a three-phase induction motor rotates with a lower speed (with slip) than the rotating field.

Slip s is calculated according to the following formula:

$$s = \frac{n_s - n}{n_s} \cdot 100$$

| | |
|-------|--------------------------|
| s | Slip as a % |
| n_s | Synchronous speed in rpm |
| n | Rotor speed in rpm |

The rated slip s_N is correspondingly calculated.

The rotor losses of the motor are approximately proportional to the slip. The objective is to achieve a low rated slip in order to achieve a good efficiency.

The rated slip depends on the motor size.

For instance, for small motors, it is approx. 10% and for large motors, approx. 1%.

Handling and storage

When lifting the motors, always use the lifting eyes provided. Prior to lifting the motor make sure that the lifting eyes are installed correctly and tightened. Never lift a motor using the rotor shaft and fan cover. In addition, care must be taken during lifting and lowering of the motor to avoid any shocks or vibrations which can result in bearing damages.

It is recommended that all motors be stored in a dry, dust-free environment and free of excessive vibrations.

If the DE and NDE bearings are of the sealed types, it is recommended that they are replaced if storage has exceeded 2 years from date of motor manufacture. If the motors have the regreasable bearings, then the recommendation is to replace the grease after 2 years of storage.

The service life of the motor can be considerably reduced if the storage period extends beyond 2 years in environments with high moisture and dirt. If necessary, the insulation resistance of the winding could be measured to determine the health of the motor prior to installation and start-up.

Machined surfaces (flange, DE rotor shaft) are treated at the factory with an anticorrosive agent to prevent rusting. However, these surfaces should be retreated during storage as deemed necessary. It is recommended that the motor shaft is rotated by hand on a frequent basis to ensure even grease distribution.

Certificates

ISO 9001 Quality Management System Certificate



ISO 14001 Environmental Management System Certificate



SIMOTICS Distribution Line and Option Line

SIMOTICS Distribution Line – Motor selection and article number code

Overview

The article number consists of a combination of figures and letters and is divided into three blocks linked with hyphens for a better overview.

The first block (Position 1 to 7) identifies the motor type and efficiency level; the second block (Position 8 to 12)

defines the motor frame size and length, the number of poles and in some cases the frequency/output; and in the third block (Position 13 to 16) the frequency/output, type of construction and other design features are encoded.

Article number code

| Structure | Position: 1 2 3 4 5 6 7 - 8 9 10 11 12 - 13 14 15 16 - Z |
|----------------------------|--|
| Position 1 to 6: | Low-voltage motor series • Cast iron / Distribution Line 1 L E 0 1 0 |
| Position 7: | Motor efficiency • Motor with High Efficiency – IE2 • Motor with Standard Efficiency – IE1 • Motor with Premium Efficiency – IE3 1 2 3 |
| Position 8 and 9: | Frame size • 0D = 080; 0E = 090 • 1A = 100; 1B = 112; 1C = 132; 1D = 160; 1E = 180 • 2A = 200; 2B = 225; 2C = 250; 2D = 280 • 3A = 315; 3B = 355 |
| Position 10: | Number of poles • A: 2-pole; B: 4-pole; C: 6-pole |
| Position 11: | Frame length • 0 or 1 = S (short) • 2, 3 or 4 = M (medium) • 4, 5, 6 or 7 = L (long) ^(a) |
| Position 12 and 13: | Voltage, circuit and frequency • 21: 220 VΔ/380 VY 50 Hz • 33: 380 VΔ/660 VY 50 Hz • 22: 230 VΔ/400 VY 50 Hz • 34: 400 VΔ/690 VY 50 Hz • 41: 525 VΔ 50 Hz • 23: 240 VΔ/415 VY 50 Hz • 35: 415 VΔ 50 Hz |
| Position 14: | Type of construction • A: IM B3 • J: IM B35 • F: IM B5 • G: IM V1 • K: IM B14 |
| Position 15: | Motor protection • A: without winding protection • B: 3 PTC thermistors for tripping |
| Position 16: | Terminal box position (view from drive end) • 4: Terminal box top |
| | Special order versions Encoded – additional order (option) code required ^(a) |

^(a) For deviations in the second and third block from the catalog codes, -Z should be used as alphanumeric values appropriate, e.g. 1LE0101-1DB23-4AB4-Z B02.

Ordering example

| Selection criteria | Requirement | Structure of the Article No. |
|---|--|------------------------------|
| Motor type | Cast-iron motor with IP55 degree of protection | 1LE010 ■■■■■■-■■■■■ |
| Efficiency | High Efficiency IE2 | 1LE0101-■■■■■-■■■■■ |
| Motor frame size / No. of poles / Speed | 160 / 4-pole / 1500 rpm | 1LE0101-1DB2 ■■■■■ |
| Rated output | 11 kW | |
| Voltage and frequency | 400 V, 50 Hz | 1LE0101-1DB23-4■■■■ |
| Type of construction | IM B3 | 1LE0101-1DB23-4A■■■ |
| Motor protection | 3 PTC thermistors | 1LE0101-1DB23-4AB■ |
| Terminal box position | Terminal box top | 1LE0101-1DB23-4AB4 |
| Special versions | Anti-condensation heating for 230 V | 1LE0101-1DB23-4AB4-Z Q02 |



Did you know

All our described motors have a repeated starting capability. Those motors used on a frequency converter ramping quickly from 0 Hz do not overheat and have an unlimited starting capability. (also see section “converter application”) Those motors started direct on-line heat slightly each time they start. The number of starts can only be calculated if many parameters are known. As a rule, three successive normal starts for a cold motor and two successive starts for a warm motor are accepted.

Motor selection

Here is our comprehensive distribution motor portfolio, offering cast-iron series IE1, IE2 and IE3 efficiencies.

Our portfolio is covering power ratings from 0.55 up to 315 kW and frame sizes 80 to 355.

| SIMOTICS General Purpose | | | | | | | | | |
|--------------------------|--------------------------|---|---|--------------------------|---|---|--------------------------|---|---|
| Cast-iron series | | | | | | | | | |
| Efficiency class | IE1 | | | IE2 | | | IE3 | | |
| Series | 1LE0102 | | | 1LE0101 | | | 1LE0103 | | |
| No. of poles | 2 | 4 | 6 | 2 | 4 | 6 | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | | Self-ventilated (IC 411) | | | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | | IP55 | | | IP55 | | |
| Insulation | Thermal class 155 (F) | | | Thermal class 155 (F) | | | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | | Thermal class 130 (B) | | | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | | 80 ... 355 | | | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | | 0.55 ... 315 kW | | | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | | 2.6 ... 2412 Nm | | | 2.5 ... 2406.8 Nm | | |
| Rated power (kW) | | | | | | | | | |
| 0.55 | - | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ |
| 0.75 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1.1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1.5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2.2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5.5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 7.5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 18.5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 22 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 37 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 45 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 55 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 75 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 90 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 110 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 132 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 160 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 185 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 200 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 220 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 250 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 280 | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | - |
| 315 | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | - |

✓ = Available
 - = Not available



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Distribution Line – IE1

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE1 | | |
| Series | 1LE0102 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|-------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 V Δ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.75 | 0.86 | 80 M | 1LE0102-ODA22-2..4 | IE1 | 2800 | 2.6 | 1.76 | 0.86 | 72.1 | 73 | 71.1 | 5.1 | 2.3 | 2.7 | 0.0008 | D | 15 |
| 1.1 | 1.3 | 80 M | 1LE0102-ODA32-2..4 | IE1 | 2830 | 3.7 | 2.5 | 0.86 | 75 | 77.3 | 74.4 | 6 | 2.6 | 3.1 | 0.001 | E | 17.5 |
| 1.5 | 1.75 | 90 S | 1LE0102-OEA02-2..4 | IE1 | 2885 | 5 | 3.3 | 0.85 | 77.2 | 76.9 | 73.5 | 6.9 | 2.5 | 3.2 | 0.0017 | F | 22 |
| 2.2 | 2.55 | 90 L | 1LE0102-OEA42-2..4 | IE1 | 2885 | 7.3 | 4.5 | 0.87 | 79.7 | 80.5 | 78.1 | 7.5 | 2.7 | 3.4 | 0.0022 | F | 26 |
| 3 | 3.45 | 100 L | 1LE0102-1AA42-2..4 | IE1 | 2850 | 10 | 6.3 | 0.85 | 81.5 | 82.1 | 79.9 | 6.9 | 3 | 3.7 | 0.0033 | F | 33 |
| 4 | 4.6 | 112 M | 1LE0102-1BA22-2..4 | IE1 | 2910 | 13.1 | 8.2 | 0.85 | 83.1 | 83.7 | 81.5 | 7.8 | 2.9 | 4.2 | 0.0064 | L | 39 |
| 5.5 | 6.3 | 132 S | 1LE0102-1CA02-2..4 | IE1 | 2915 | 18 | 10.9 | 0.86 | 84.7 | 85.3 | 83.7 | 6.9 | 2 | 3.1 | 0.013 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0102-1CA12-2..4 | IE1 | 2920 | 24.5 | 14.3 | 0.88 | 86 | 87.2 | 86.2 | 7.1 | 2 | 2.9 | 0.015 | K | 62 |
| 400 V Δ / 690 VY | | | | | | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 1LE0102-1AA43-4..4 | IE1 | 2850 | 10 | 6.3 | 0.85 | 81.5 | 82.1 | 79.9 | 6.9 | 3 | 3.7 | 0.0033 | F | 33 |
| 4 | 4.6 | 112 M | 1LE0102-1BA23-4..4 | IE1 | 2910 | 13.1 | 8.2 | 0.85 | 83.1 | 83.7 | 81.5 | 7.8 | 2.9 | 4.2 | 0.0064 | L | 39 |
| 5.5 | 6.3 | 132 S | 1LE0102-1CA03-4..4 | IE1 | 2915 | 18 | 10.9 | 0.86 | 84.7 | 85.3 | 83.7 | 6.9 | 2 | 3.1 | 0.013 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0102-1CA13-4..4 | IE1 | 2920 | 24.5 | 14.3 | 0.88 | 86 | 87.2 | 86.2 | 7.1 | 2 | 2.9 | 0.015 | K | 62 |
| 11 | 12.6 | 160 M | 1LE0102-1DA23-4..4 | IE1 | 2925 | 35.9 | 21.5 | 0.84 | 87.6 | 88.2 | 87.1 | 6.3 | 2 | 3.1 | 0.028 | J | 93 |
| 15 | 17.3 | 160 M | 1LE0102-1DA33-4..4 | IE1 | 2930 | 48.9 | 28.5 | 0.85 | 88.7 | 89.3 | 87.4 | 7 | 2.2 | 3.2 | 0.034 | K | 101 |
| 18.5 | 21.3 | 160 L | 1LE0102-1DA43-4..4 | IE1 | 2935 | 60 | 35 | 0.86 | 89.3 | 89.9 | 89.1 | 7.6 | 2.5 | 3.4 | 0.041 | K | 120 |
| 22 | 24.5 | 180 M | 1LE0102-1EA23-4..4 | IE1 | 2925 | 72 | 40.5 | 0.87 | 89.9 | 90.6 | 90 | 7.6 | 2.7 | 3.5 | 0.072 | K | 151 |
| 30 | 33.5 | 200 L | 1LE0102-2AA43-4..4 | IE1 | 2950 | 97 | 55 | 0.87 | 90.7 | 90.8 | 89 | 7.5 | 2.5 | 3.2 | 0.12 | K | 224 |
| 37 | 41.5 | 200 L | 1LE0102-2AA53-4..4 | IE1 | 2950 | 120 | 67 | 0.88 | 91.2 | 91.6 | 90.4 | 7.4 | 2.6 | 3.2 | 0.15 | K | 242 |
| 45 | 51 | 225 M | 1LE0102-2BA23-4..4 | IE1 | 2960 | 145 | 81 | 0.88 | 91.7 | 91.9 | 90.5 | 7.6 | 2.8 | 3.3 | 0.23 | K | 304 |
| 55 | 62 | 250 M | 1LE0102-2CA23-4..4 | IE1 | 2970 | 177 | 98 | 0.88 | 92.1 | 92.4 | 90.7 | 7.7 | 2.5 | 3.1 | 0.4 | K | 374 |
| 75 | 84 | 280 S | 1LE0102-2DA03-4..4 | IE1 | 2970 | 241 | 134 | 0.87 | 92.7 | 92.6 | 91.1 | 6.7 | 2.7 | 3 | 0.7 | J | 540 |
| 90 | 101 | 280 M | 1LE0102-2DA23-4..4 | IE1 | 2975 | 289 | 159 | 0.88 | 93 | 93.2 | 91.3 | 7.2 | 2.8 | 3 | 0.82 | J | 560 |
| 110 | 123 | 315 S | 1LE0102-3AA03-4..4 | IE1 | 2982 | 353 | 189 | 0.9 | 93.3 | 93.1 | 91.2 | 7.5 | 2.2 | 3.1 | 1.4 | K | 735 |
| 132 | 148 | 315 M | 1LE0102-3AA23-4..4 | IE1 | 2980 | 423 | 220 | 0.92 | 93.5 | 93.1 | 91.7 | 7.5 | 2.3 | 2.9 | 1.7 | J | 850 |
| 160 | 180 | 315 L | 1LE0102-3AA53-4..4 | IE1 | 2982 | 513 | 265 | 0.92 | 93.8 | 93.6 | 92.5 | 7.6 | 2.5 | 2.8 | 1.9 | J | 960 |
| 185 | 207 | 315 L | 1LE0102-3AA63-4..4 | IE1 | 2978 | 594 | 310 | 0.92 | 93.9 | 93.9 | 93.1 | 7.5 | 2.4 | 2.8 | 2.3 | J | 1070 |
| 200 | 224 | 315 L | 1LE0102-3AA73-4..4 | IE1 | 2980 | 641 | 335 | 0.92 | 94 | 94.3 | 93.2 | 7.9 | 2.5 | 2.6 | 2.3 | K | 1080 |
| 220 | 246 | 355 M | 1LE0102-3BA23-4..4 | IE1 | 2985 | 704 | 370 | 0.9 | 94.8 | 95 | 92.8 | 6.5 | 2 | 2.1 | 2.9 | H | 1590 |
| 250 | 280 | 355 M | 1LE0102-3BA33-4..4 | IE1 | 2985 | 800 | 420 | 0.9 | 95.2 | 95.2 | 93 | 6.5 | 2 | 2.1 | 3 | H | 1620 |
| 280 | 314 | 355 L | 1LE0102-3BA53-4..4 | IE1 | 2985 | 896 | 470 | 0.9 | 95.2 | 95.2 | 92.9 | 6.5 | 2 | 2.1 | 3.5 | H | 1820 |
| 315 | 353 | 355 L | 1LE0102-3BA63-4..4 | IE1 | 2985 | 1008 | 530 | 0.9 | 95.4 | 95.4 | 93.2 | 6.5 | 2 | 2.1 | 3.5 | H | 1830 |

SIMOTICS Distribution Line – IE1



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE1 | | |
| Series | 1LE0102 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|-------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 V Δ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0102-0DB22-2..4 | – | 1415 | 3.7 | 1.43 | 0.81 | 69.4 | 69.9 | 66.8 | 4.5 | 2 | 2.6 | 0.0016 | D | 17 |
| 0.75 | 0.86 | 80 M | 1LE0102-0DB32-2..4 | IE1 | 1405 | 5.1 | 1.87 | 0.81 | 72.1 | 73.7 | 71.8 | 4.8 | 2 | 2.6 | 0.0019 | D | 18.5 |
| 1.1 | 1.3 | 90 S | 1LE0102-0EB02-2..4 | IE1 | 1420 | 7.4 | 2.65 | 0.8 | 75 | 77.3 | 74.3 | 5.4 | 2 | 2.6 | 0.0027 | E | 23 |
| 1.5 | 1.75 | 90 L | 1LE0102-0EB42-2..4 | IE1 | 1425 | 10 | 3.5 | 0.81 | 77.2 | 77.3 | 75.1 | 5.6 | 2 | 2.5 | 0.0034 | E | 26 |
| 2.2 | 2.55 | 100 L | 1LE0102-1AB42-2..4 | IE1 | 1425 | 14.8 | 4.95 | 0.81 | 79.7 | 80.7 | 78.7 | 5.8 | 2.4 | 2.9 | 0.0063 | E | 30 |
| 3 | 3.45 | 100 L | 1LE0102-1AB52-2..4 | IE1 | 1420 | 20.2 | 6.4 | 0.83 | 81.5 | 83.1 | 81.5 | 6.5 | 2.8 | 3.1 | 0.0081 | E | 33 |
| 4 | 4.6 | 112 M | 1LE0102-1BB22-2..4 | IE1 | 1445 | 26.4 | 8.8 | 0.79 | 83.1 | 83.3 | 81.5 | 7.4 | 2.8 | 3.3 | 0.011 | M | 44 |
| 5.5 | 6.3 | 132 S | 1LE0102-1CB02-2..4 | IE1 | 1450 | 36.2 | 11.4 | 0.82 | 84.7 | 85.5 | 84.3 | 6.5 | 2 | 3.1 | 0.019 | K | 61 |
| 7.5 | 8.6 | 132 M | 1LE0102-1CB22-2..4 | IE1 | 1435 | 50 | 15.4 | 0.82 | 86 | 87.2 | 87.2 | 6.4 | 2.3 | 3.1 | 0.025 | K | 70 |
| 400 V Δ / 690 VY | | | | | | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1LE0102-1AB43-4..4 | IE1 | 1425 | 14.8 | 4.9 | 0.81 | 79.7 | 80.7 | 78.7 | 5.8 | 2.4 | 2.9 | 0.0063 | E | 30 |
| 3 | 3.45 | 100 L | 1LE0102-1AB53-4..4 | IE1 | 1420 | 20.2 | 6.4 | 0.83 | 81.5 | 83.1 | 81.5 | 6.5 | 2.8 | 3.1 | 0.0081 | E | 33 |
| 4 | 4.6 | 112 M | 1LE0102-1BB23-4..4 | IE1 | 1445 | 26.4 | 8.8 | 0.79 | 83.1 | 83.3 | 81.5 | 7.4 | 2.8 | 3.3 | 0.011 | M | 44 |
| 5.5 | 6.3 | 132 S | 1LE0102-1CB03-4..4 | IE1 | 1450 | 36.2 | 11.4 | 0.82 | 84.7 | 85.5 | 84.3 | 6.5 | 2 | 3.1 | 0.019 | K | 61 |
| 7.5 | 8.6 | 132 M | 1LE0102-1CB23-4..4 | IE1 | 1435 | 50 | 15.4 | 0.82 | 86 | 87.2 | 87.2 | 6.4 | 2.3 | 3.1 | 0.025 | K | 70 |
| 11 | 12.6 | 160 M | 1LE0102-1DB23-4..4 | IE1 | 1455 | 72 | 21.5 | 0.84 | 87.6 | 88.5 | 87.8 | 6.9 | 2.2 | 3.3 | 0.045 | K | 99 |
| 15 | 17.3 | 160 L | 1LE0102-1DB43-4..4 | IE1 | 1460 | 98 | 29 | 0.84 | 88.7 | 89.4 | 88.6 | 7.8 | 2.7 | 3.8 | 0.06 | L | 125 |
| 18.5 | 21.3 | 180 M | 1LE0102-1EB23-4..4 | IE1 | 1470 | 120 | 35 | 0.85 | 89.3 | 90.3 | 89.9 | 7.8 | 2.7 | 3.5 | 0.13 | L | 163 |
| 22 | 24.5 | 180 L | 1LE0102-1EB43-4..4 | IE1 | 1465 | 143 | 41.5 | 0.85 | 89.9 | 90.9 | 89.9 | 7.8 | 2.4 | 3.2 | 0.14 | L | 179 |
| 30 | 33.5 | 200 L | 1LE0102-2AB43-4..4 | IE1 | 1470 | 195 | 56 | 0.85 | 90.7 | 91.6 | 90.5 | 7.4 | 2.4 | 3.1 | 0.22 | K | 235 |
| 37 | 41.5 | 225 S | 1LE0102-2BB03-4..4 | IE1 | 1470 | 240 | 68 | 0.86 | 91.2 | 91.8 | 91 | 7.3 | 2.3 | 2.8 | 0.44 | K | 295 |
| 45 | 51 | 225 M | 1LE0102-2BB23-4..4 | IE1 | 1475 | 292 | 82 | 0.87 | 91.7 | 92.4 | 92 | 7.8 | 2.9 | 3.3 | 0.5 | K | 322 |
| 55 | 62 | 250 M | 1LE0102-2CB23-4..4 | IE1 | 1478 | 356 | 101 | 0.86 | 92.1 | 92.8 | 92 | 7.6 | 3 | 2.8 | 0.8 | K | 410 |
| 75 | 84 | 280 S | 1LE0102-2DB03-4..4 | IE1 | 1480 | 484 | 133 | 0.88 | 92.7 | 93.3 | 92.2 | 7.2 | 2.6 | 2.8 | 1.3 | J | 540 |
| 90 | 101 | 280 M | 1LE0102-2DB23-4..4 | IE1 | 1485 | 579 | 159 | 0.88 | 93 | 93.5 | 92.2 | 7.8 | 2.7 | 2.8 | 1.4 | K | 600 |
| 110 | 123 | 315 S | 1LE0102-3AB03-4..4 | IE1 | 1490 | 706 | 200 | 0.85 | 93.3 | 93.4 | 92.5 | 8.6 | 2.8 | 3.1 | 2.2 | L | 745 |
| 132 | 148 | 315 M | 1LE0102-3AB23-4..4 | IE1 | 1488 | 848 | 235 | 0.87 | 93.5 | 93.8 | 93.4 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 180 | 315 L | 1LE0102-3AB53-4..4 | IE1 | 1488 | 1030 | 285 | 0.87 | 93.8 | 94 | 93.6 | 7.4 | 3 | 2.9 | 3 | K | 950 |
| 185 | 207 | 315 L | 1LE0102-3AB63-4..4 | IE1 | 1490 | 1185 | 325 | 0.88 | 93.9 | 94.1 | 93.6 | 7.6 | 3 | 2.9 | 3.6 | K | 1060 |
| 200 | 224 | 315 L | 1LE0102-3AB73-4..4 | IE1 | 1488 | 1285 | 345 | 0.88 | 94 | 94.3 | 94.1 | 7.4 | 3 | 3 | 3.7 | J | 1070 |
| 220 | 246 | 355 M | 1LE0102-3BB23-4..4 | IE1 | 1490 | 1410 | 380 | 0.87 | 95 | 95.1 | 93.1 | 6.5 | 2.1 | 2.2 | 6.6 | H | 1630 |
| 250 | 280 | 355 M | 1LE0102-3BB33-4..4 | IE1 | 1490 | 1602 | 435 | 0.87 | 95.2 | 95.2 | 93.6 | 6.5 | 2.1 | 2.2 | 6.9 | H | 1650 |
| 280 | 314 | 355 L | 1LE0102-3BB53-4..4 | IE1 | 1490 | 1795 | 485 | 0.87 | 95.2 | 95.2 | 93.4 | 6.5 | 2.1 | 2.2 | 7.7 | H | 1820 |
| 315 | 353 | 355 L | 1LE0102-3BB63-4..4 | IE1 | 1490 | 2019 | 550 | 0.87 | 95.2 | 95.3 | 93.6 | 6.5 | 2.1 | 2.2 | 8.5 | H | 1890 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Distribution Line – IE1

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE1 | | |
| Series | 1LE0102 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0102-0DC32-2..4 | - | 910 | 5.8 | 1.6 | 0.74 | 67.5 | 68.7 | 65.6 | 3.8 | 2.1 | 2.4 | 0.0024 | C | 18 |
| 0.75 | 0.86 | 90 S | 1LE0102-0EC02-2..4 | IE1 | 925 | 7.7 | 2.1 | 0.74 | 70 | 71.5 | 68.9 | 3.9 | 2 | 2.5 | 0.0028 | C | 25 |
| 1.1 | 1.3 | 90 L | 1LE0102-0EC42-2..4 | IE1 | 935 | 11.3 | 3 | 0.73 | 72.9 | 74 | 71.8 | 4.4 | 2.2 | 2.7 | 0.0038 | D | 26 |
| 1.5 | 1.75 | 100 L | 1LE0102-1AC42-2..4 | IE1 | 940 | 15.4 | 3.8 | 0.76 | 75.2 | 77.2 | 74.7 | 4.6 | 2.1 | 2.6 | 0.0074 | D | 32 |
| 2.2 | 2.55 | 112 M | 1LE0102-1BC22-2..4 | IE1 | 940 | 22.3 | 5.5 | 0.75 | 77.7 | 79.2 | 78.1 | 5.2 | 2.4 | 3 | 0.01 | E | 42 |
| 3 | 3.45 | 132 S | 1LE0102-1CC02-2..4 | IE1 | 955 | 30 | 7.5 | 0.73 | 79.7 | 80.9 | 79.3 | 5.2 | 2 | 2.8 | 0.018 | E | 56 |
| 4 | 4.6 | 132 M | 1LE0102-1CC22-2..4 | IE1 | 955 | 40 | 9.7 | 0.73 | 81.4 | 82.2 | 79.4 | 5.6 | 2.1 | 2.9 | 0.023 | K | 65 |
| 5.5 | 6.3 | 132 M | 1LE0102-1CC32-2..4 | IE1 | 955 | 55 | 12.9 | 0.74 | 83.1 | 84.2 | 83 | 6 | 2.3 | 3.2 | 0.029 | K | 73 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 1LE0102-1AC43-4..4 | IE1 | 940 | 15.4 | 3.8 | 0.76 | 75.2 | 77.2 | 74.7 | 4.6 | 2.1 | 2.6 | 0.0074 | D | 32 |
| 2.2 | 2.55 | 112 M | 1LE0102-1BC23-4..4 | IE1 | 940 | 22.3 | 5.4 | 0.75 | 77.7 | 79.2 | 78.1 | 5.2 | 2.4 | 3 | 0.01 | E | 42 |
| 3 | 3.45 | 132 S | 1LE0102-1CC03-4..4 | IE1 | 955 | 30 | 7.4 | 0.73 | 79.7 | 80.9 | 79.3 | 5.2 | 2 | 2.8 | 0.018 | E | 56 |
| 4 | 4.6 | 132 M | 1LE0102-1CC23-4..4 | IE1 | 955 | 40 | 9.7 | 0.73 | 81.4 | 82.2 | 79.4 | 5.6 | 2.1 | 2.9 | 0.023 | K | 65 |
| 5.5 | 6.3 | 132 M | 1LE0102-1CC33-4..4 | IE1 | 955 | 55 | 12.9 | 0.74 | 83.1 | 84.2 | 83 | 6 | 2.3 | 3.2 | 0.029 | K | 73 |
| 7.5 | 8.6 | 160 M | 1LE0102-1DC23-4..4 | IE1 | 965 | 74 | 16.8 | 0.76 | 84.7 | 85.4 | 84.5 | 5.8 | 2 | 2.9 | 0.052 | K | 101 |
| 11 | 12.6 | 160 L | 1LE0102-1DC43-4..4 | IE1 | 965 | 109 | 24 | 0.76 | 86.4 | 87 | 86 | 6.6 | 2.2 | 3.1 | 0.072 | K | 128 |
| 15 | 17.3 | 180 L | 1LE0102-1EC43-4..4 | IE1 | 970 | 148 | 32 | 0.78 | 87.7 | 88.7 | 88.4 | 6.5 | 2.3 | 3 | 0.18 | K | 169 |
| 18.5 | 21.3 | 200 L | 1LE0102-2AC43-4..4 | IE1 | 975 | 182.1 | 36.5 | 0.82 | 88.6 | 90 | 90.1 | 5.8 | 2.2 | 2.8 | 0.26 | J | 218 |
| 22 | 24.5 | 200 L | 1LE0102-2AC53-4..4 | IE1 | 975 | 215 | 43 | 0.82 | 89.2 | 90.5 | 90.5 | 6.5 | 2.3 | 2.8 | 0.31 | J | 237 |
| 30 | 33.5 | 225 M | 1LE0102-2BC23-4..4 | IE1 | 978 | 293 | 58 | 0.83 | 90.2 | 91.4 | 90.5 | 6.7 | 2.4 | 2.8 | 0.6 | K | 290 |
| 37 | 41.5 | 250 M | 1LE0102-2CC23-4..4 | IE1 | 982 | 360 | 71 | 0.83 | 90.8 | 91.5 | 91.2 | 7.5 | 3 | 2.8 | 0.89 | K | 389 |
| 45 | 51 | 280 S | 1LE0102-2DC03-4..4 | IE1 | 985 | 437 | 84 | 0.85 | 91.4 | 92.4 | 92.3 | 7.1 | 2.5 | 2.8 | 1.1 | K | 500 |
| 55 | 62 | 280 M | 1LE0102-2DC23-4..4 | IE1 | 988 | 532 | 102 | 0.85 | 91.9 | 92.6 | 92.4 | 7.5 | 2.4 | 2.7 | 1.4 | K | 525 |
| 75 | 84 | 315 S | 1LE0102-3AC03-4..4 | IE1 | 988 | 725 | 141 | 0.83 | 92.6 | 93 | 92.4 | 7.5 | 2.4 | 3 | 2.3 | K | 675 |
| 90 | 101 | 315 M | 1LE0102-3AC23-4..4 | IE1 | 986 | 872 | 166 | 0.84 | 92.9 | 93.4 | 93.2 | 7 | 2.3 | 2.8 | 2.8 | K | 830 |
| 110 | 123 | 315 L | 1LE0102-3AC53-4..4 | IE1 | 986 | 1066 | 200 | 0.86 | 93.3 | 93.9 | 93.8 | 6.5 | 2.2 | 2.7 | 3.4 | J | 915 |
| 132 | 148 | 315 L | 1LE0102-3AC63-4..4 | IE1 | 988 | 1278 | 235 | 0.86 | 93.5 | 94.2 | 93.6 | 7.8 | 2.2 | 2.4 | 3.9 | K | 1010 |
| 160 | 180 | 355 M | 1LE0102-3BC23-4..4 | IE1 | 989 | 1545 | 275 | 0.88 | 94.5 | 94.6 | 92.4 | 6.5 | 2 | 2.1 | 7.7 | H | 1640 |
| 185 | 207 | 355 M | 1LE0102-3BC33-4..4 | IE1 | 989 | 1786 | 320 | 0.88 | 94.5 | 94.6 | 92.6 | 6.5 | 2 | 2.1 | 8.4 | H | 1680 |
| 200 | 224 | 355 M | 1LE0102-3BC43-4..4 | IE1 | 989 | 1931 | 345 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 9.1 | H | 1720 |
| 220 | 246 | 355 L | 1LE0102-3BC53-4..4 | IE1 | 989 | 2124 | 380 | 0.88 | 94.7 | 94.7 | 92.6 | 6.5 | 2 | 2.1 | 10.1 | H | 1840 |
| 250 | 280 | 355 L | 1LE0102-3BC63-4..4 | IE1 | 989 | 2414 | 430 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 11.4 | H | 1920 |

SIMOTICS Distribution Line – IE1

TIP

The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| Cast-iron series | |
|-----------------------|---|
| Efficiency class | IE1 |
| Series | 1LE0102 |
| No. of poles | 2 4 6 |
| Cooling | Self-ventilated (IC 411) |
| Degree of protection | IP55 |
| Insulation | Thermal class 155 (F) |
| Utilization | Thermal class 130 (B) |
| Frame size | 80 ... 355 |
| Rated output at 50 Hz | 0.55 ... 315 kW |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm |

Electrical data – 1LE0 – IE1 – 2-pole (IE1 cast iron) 3000 rpm 2-pole, 525 V 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated | | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|--------------------|------------|--------------------|----------|--------------|--------------|--------------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|---------------------------------------|--------------|--------------------------|
| | | | | speed rpm | torque Nm | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 0.75 | 80 M | 1LE0102-ODA24-1..4 | IE1 | 2800 | 2.6 | 1.33 | 0.86 | 72.1 | 73 | 71.1 | 5.1 | 2.3 | 2.7 | 0.0008 | D | 15 |
| 1.1 | 80 M | 1LE0102-ODA34-1..4 | IE1 | 2830 | 3.7 | 1.88 | 0.86 | 75 | 77.3 | 74.4 | 6 | 2.6 | 3.1 | 0.001 | E | 17.5 |
| 1.5 | 90 S | 1LE0102-OEA04-1..4 | IE1 | 2885 | 5 | 2.5 | 0.85 | 77.2 | 76.9 | 73.5 | 6.9 | 2.5 | 3.2 | 0.0017 | F | 22 |
| 2.2 | 90 L | 1LE0102-OEA44-1..4 | IE1 | 2885 | 7.3 | 3.5 | 0.87 | 79.7 | 80.5 | 78.1 | 7.5 | 2.7 | 3.4 | 0.0022 | F | 26 |
| 3 | 100 L | 1LE0102-1AA44-1..4 | IE1 | 2850 | 10 | 4.8 | 0.85 | 81.5 | 82.1 | 79.9 | 6.9 | 3 | 3.7 | 0.0033 | F | 33 |
| 4 | 112 M | 1LE0102-1BA24-1..4 | IE1 | 2910 | 13.1 | 6.2 | 0.85 | 83.1 | 83.7 | 81.5 | 7.8 | 2.9 | 4.2 | 0.0064 | L | 39 |
| 5.5 | 132 S | 1LE0102-1CA04-1..4 | IE1 | 2915 | 18 | 8.3 | 0.86 | 84.7 | 85.3 | 83.7 | 6.9 | 2 | 3.1 | 0.013 | K | 56 |
| 7.5 | 132 S | 1LE0102-1CA14-1..4 | IE1 | 2920 | 24.5 | 10.9 | 0.88 | 86 | 87.2 | 86.2 | 7.1 | 2 | 2.9 | 0.015 | K | 62 |
| 11 | 160 M | 1LE0102-1DA24-1..4 | IE1 | 2925 | 35.9 | 16.3 | 0.84 | 87.6 | 88.2 | 87.1 | 6.3 | 2 | 3.1 | 0.028 | J | 93 |
| 15 | 160 M | 1LE0102-1DA34-1..4 | IE1 | 2930 | 48.9 | 21.5 | 0.85 | 88.7 | 89.3 | 87.4 | 7 | 2.2 | 3.2 | 0.034 | K | 101 |
| 18.5 | 160 L | 1LE0102-1DA44-1..4 | IE1 | 2935 | 60 | 26.5 | 0.86 | 89.3 | 89.9 | 89.1 | 7.6 | 2.5 | 3.4 | 0.041 | K | 120 |
| 22 | 180 M | 1LE0102-1EA24-1..4 | IE1 | 2925 | 72 | 31 | 0.87 | 89.9 | 90.6 | 90 | 7.6 | 2.7 | 3.5 | 0.072 | K | 151 |
| 30 | 200 L | 1LE0102-2AA44-1..4 | IE1 | 2950 | 97 | 42 | 0.87 | 90.7 | 90.8 | 89 | 7.5 | 2.5 | 3.2 | 0.12 | K | 224 |
| 37 | 200 L | 1LE0102-2AA54-1..4 | IE1 | 2950 | 120 | 51 | 0.88 | 91.2 | 91.6 | 90.4 | 7.4 | 2.6 | 3.2 | 0.15 | K | 242 |
| 45 | 225 M | 1LE0102-2BA24-1..4 | IE1 | 2960 | 145 | 62 | 0.88 | 91.7 | 91.9 | 90.5 | 7.6 | 2.8 | 3.3 | 0.23 | K | 304 |
| 55 | 250 M | 1LE0102-2CA24-1..4 | IE1 | 2970 | 177 | 75 | 0.88 | 92.1 | 92.4 | 90.7 | 7.7 | 2.5 | 3.1 | 0.4 | K | 374 |
| 75 | 280 S | 1LE0102-2DA04-1..4 | IE1 | 2970 | 241 | 102 | 0.87 | 92.7 | 92.6 | 91.1 | 6.7 | 2.7 | 3 | 0.7 | J | 540 |
| 90 | 280 M | 1LE0102-2DA24-1..4 | IE1 | 2975 | 289 | 121 | 0.88 | 93 | 93.2 | 91.3 | 7.2 | 2.8 | 3 | 0.82 | J | 560 |
| 110 | 315 S | 1LE0102-3AA04-1..4 | IE1 | 2982 | 353 | 144 | 0.9 | 93.3 | 93.1 | 91.2 | 7.5 | 2.2 | 3.1 | 1.4 | K | 735 |
| 132 | 315 M | 1LE0102-3AA24-1..4 | IE1 | 2980 | 423 | 170 | 0.92 | 93.5 | 93.1 | 91.7 | 7.5 | 2.3 | 2.9 | 1.7 | J | 850 |
| 160 | 315 L | 1LE0102-3AA54-1..4 | IE1 | 2982 | 513 | 205 | 0.92 | 93.8 | 93.6 | 92.5 | 7.6 | 2.5 | 2.8 | 1.9 | J | 960 |
| 185 | 315 L | 1LE0102-3AA64-1..4 | IE1 | 2978 | 594 | 235 | 0.92 | 93.9 | 93.9 | 93.1 | 7.5 | 2.4 | 2.8 | 2.3 | J | 1070 |
| 200 | 315 L | 1LE0102-3AA74-1..4 | IE1 | 2980 | 641 | 255 | 0.92 | 94 | 94.3 | 93.2 | 7.9 | 2.5 | 2.6 | 2.3 | K | 1080 |
| 220 | 355 M | 1LE0102-3BA24-1..4 | IE1 | 2985 | 704 | 280 | 0.9 | 94.8 | 95 | 92.8 | 6.5 | 2 | 2.1 | 2.9 | H | 1590 |
| 250 | 355 M | 1LE0102-3BA34-1..4 | IE1 | 2985 | 800 | 320 | 0.9 | 95.2 | 95.2 | 93 | 6.5 | 2 | 2.1 | 3 | H | 1620 |
| 280 | 355 L | 1LE0102-3BA54-1..4 | IE1 | 2985 | 896 | 360 | 0.9 | 95.2 | 95.2 | 92.9 | 6.5 | 2 | 2.1 | 3.5 | H | 1820 |
| 315 | 355 L | 1LE0102-3BA64-1..4 | IE1 | 2985 | 1008 | 405 | 0.9 | 95.4 | 95.4 | 93.2 | 6.5 | 2 | 2.1 | 3.5 | H | 1830 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).


SIMOTICS Distribution Line – IE1

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE1 | | |
| Series | 1LE0102 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

Electrical data – 1LE0 – IE1 – 4-pole (IE1 cast iron) 1500 rpm 4-pole, 525 V 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated | | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|--------------------|------------|--------------------|----------|--------------|--------------|--------------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|---------------------------------------|--------------|--------------------------|
| | | | | speed rpm | torque Nm | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 0.55 | 80 M | 1LE0102-0DB24-1..4 | - | 1415 | 3.7 | 1.08 | 0.81 | 69.4 | 69.9 | 66.8 | 4.5 | 2 | 2.6 | 0.0016 | D | 17 |
| 0.75 | 80 M | 1LE0102-0DB34-1..4 | IE1 | 1405 | 5.1 | 1.41 | 0.81 | 72.1 | 73.7 | 71.8 | 4.8 | 2 | 2.6 | 0.0019 | D | 18.5 |
| 1.1 | 90 S | 1LE0102-0EB04-1..4 | IE1 | 1420 | 7.4 | 2.05 | 0.8 | 75 | 77.3 | 74.3 | 5.4 | 2 | 2.6 | 0.0027 | E | 23 |
| 1.5 | 90 L | 1LE0102-0EB44-1..4 | IE1 | 1425 | 10 | 2.65 | 0.81 | 77.2 | 77.3 | 75.1 | 5.6 | 2 | 2.5 | 0.0034 | E | 26 |
| 2.2 | 100 L | 1LE0102-1AB44-1..4 | IE1 | 1425 | 14.8 | 3.75 | 0.81 | 79.7 | 80.7 | 78.7 | 5.8 | 2.4 | 2.9 | 0.0063 | E | 30 |
| 3 | 100 L | 1LE0102-1AB54-1..4 | IE1 | 1420 | 20.2 | 4.85 | 0.83 | 81.5 | 83.1 | 81.5 | 6.5 | 2.8 | 3.1 | 0.0081 | E | 33 |
| 4 | 112 M | 1LE0102-1BB24-1..4 | IE1 | 1445 | 26.4 | 6.7 | 0.79 | 83.1 | 83.3 | 81.5 | 7.4 | 2.8 | 3.3 | 0.011 | M | 44 |
| 5.5 | 132 S | 1LE0102-1CB04-1..4 | IE1 | 1450 | 36.2 | 8.7 | 0.82 | 84.7 | 85.5 | 84.3 | 6.5 | 2 | 3.1 | 0.019 | K | 61 |
| 7.5 | 132 M | 1LE0102-1CB24-1..4 | IE1 | 1435 | 50 | 11.7 | 0.82 | 86 | 87.2 | 87.2 | 6.4 | 2.3 | 3.1 | 0.025 | K | 70 |
| 11 | 160 M | 1LE0102-1DB24-1..4 | IE1 | 1455 | 72 | 16.3 | 0.84 | 87.6 | 88.5 | 87.8 | 6.9 | 2.2 | 3.3 | 0.045 | K | 99 |
| 15 | 160 L | 1LE0102-1DB44-1..4 | IE1 | 1460 | 98 | 22 | 0.84 | 88.7 | 89.4 | 88.6 | 7.8 | 2.7 | 3.8 | 0.06 | L | 125 |
| 18.5 | 180 M | 1LE0102-1EB24-1..4 | IE1 | 1470 | 120 | 27 | 0.85 | 89.3 | 90.3 | 89.9 | 7.8 | 2.7 | 3.5 | 0.13 | L | 163 |
| 22 | 180 L | 1LE0102-1EB44-1..4 | IE1 | 1465 | 143 | 31.5 | 0.85 | 89.9 | 90.9 | 89.9 | 7.8 | 2.4 | 3.2 | 0.14 | L | 179 |
| 30 | 200 L | 1LE0102-2AB44-1..4 | IE1 | 1470 | 195 | 42.5 | 0.85 | 90.7 | 91.6 | 90.5 | 7.4 | 2.4 | 3.1 | 0.22 | K | 235 |
| 37 | 225 S | 1LE0102-2BB04-1..4 | IE1 | 1470 | 240 | 52 | 0.86 | 91.2 | 91.8 | 91 | 7.3 | 2.3 | 2.8 | 0.44 | K | 295 |
| 45 | 225 M | 1LE0102-2BB24-1..4 | IE1 | 1475 | 292 | 62 | 0.87 | 91.7 | 92.4 | 92 | 7.8 | 2.9 | 3.3 | 0.5 | K | 322 |
| 55 | 250 M | 1LE0102-2CB24-1..4 | IE1 | 1478 | 356 | 77 | 0.86 | 92.1 | 92.8 | 92 | 7.6 | 3 | 2.8 | 0.8 | K | 410 |
| 75 | 280 S | 1LE0102-2DB04-1..4 | IE1 | 1480 | 484 | 101 | 0.88 | 92.7 | 93.3 | 92.2 | 7.2 | 2.6 | 2.8 | 1.3 | J | 540 |
| 90 | 280 M | 1LE0102-2DB24-1..4 | IE1 | 1485 | 579 | 121 | 0.88 | 93 | 93.5 | 92.2 | 7.8 | 2.7 | 2.8 | 1.4 | K | 600 |
| 110 | 315 S | 1LE0102-3AB04-1..4 | IE1 | 1490 | 706 | 153 | 0.85 | 93.3 | 93.4 | 92.5 | 8.6 | 2.8 | 3.1 | 2.2 | L | 745 |
| 132 | 315 M | 1LE0102-3AB24-1..4 | IE1 | 1488 | 848 | 177 | 0.87 | 93.5 | 93.8 | 93.4 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 315 L | 1LE0102-3AB54-1..4 | IE1 | 1488 | 1030 | 215 | 0.87 | 93.8 | 94 | 93.6 | 7.4 | 3 | 2.9 | 3 | K | 950 |
| 185 | 315 L | 1LE0102-3AB64-1..4 | IE1 | 1490 | 1185 | 245 | 0.88 | 93.9 | 94.1 | 93.6 | 7.6 | 3 | 2.9 | 3.6 | K | 1060 |
| 200 | 315 L | 1LE0102-3AB74-1..4 | IE1 | 1488 | 1285 | 265 | 0.88 | 94 | 94.3 | 94.1 | 7.4 | 3 | 3 | 3.7 | J | 1070 |
| 220 | 355 M | 1LE0102-3BB24-1..4 | IE1 | 1490 | 1410 | 290 | 0.87 | 95 | 95.1 | 93.1 | 6.5 | 2.1 | 2.2 | 6.6 | H | 1630 |
| 250 | 355 M | 1LE0102-3BB34-1..4 | IE1 | 1490 | 1602 | 330 | 0.87 | 95.2 | 95.2 | 93.6 | 6.5 | 2.1 | 2.2 | 6.9 | H | 1650 |
| 280 | 355 L | 1LE0102-3BB54-1..4 | IE1 | 1490 | 1795 | 370 | 0.87 | 95.2 | 95.2 | 93.4 | 6.5 | 2.1 | 2.2 | 7.7 | H | 1820 |
| 315 | 355 L | 1LE0102-3BB64-1..4 | IE1 | 1490 | 2019 | 420 | 0.87 | 95.2 | 95.3 | 93.6 | 6.5 | 2.1 | 2.2 | 8.5 | H | 1890 |

SIMOTICS Distribution Line – IE1

TIP 

The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE1 | | |
| Series | 1LE0102 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

| Electrical data – 1LE0 – IE1 – 6-pole | | | | (IE1 cast iron) 1000 rpm 6-pole, 525 V 50 Hz | | | | | | | | | | | | |
|---------------------------------------|------------|--------------------|----------|--|--------------|--------------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|---------------------------------------|--------------|--------------------------|
| Rated output kW | Frame size | Article number | IE class | Rated | | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
| | | | | speed rpm | torque Nm | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 0.55 | 80 M | 1LE0102-ODC34-1..4 | – | 910 | 5.8 | 1.21 | 0.74 | 67.5 | 68.7 | 65.6 | 3.8 | 2.1 | 2.4 | 0.0024 | C | 18 |
| 0.75 | 90 S | 1LE0102-0EC04-1..4 | IE1 | 925 | 7.7 | 1.59 | 0.74 | 70 | 71.5 | 68.9 | 3.9 | 2 | 2.5 | 0.0028 | C | 25 |
| 1.1 | 90 L | 1LE0102-0EC44-1..4 | IE1 | 935 | 11.3 | 2.3 | 0.73 | 72.9 | 74 | 71.8 | 4.4 | 2.2 | 2.7 | 0.0038 | D | 26 |
| 1.5 | 100 L | 1LE0102-1AC44-1..4 | IE1 | 940 | 15.4 | 2.9 | 0.76 | 75.2 | 77.2 | 74.7 | 4.6 | 2.1 | 2.6 | 0.0074 | D | 32 |
| 2.2 | 112 M | 1LE0102-1BC24-1..4 | IE1 | 940 | 22.3 | 4.15 | 0.75 | 77.7 | 79.2 | 78.1 | 5.2 | 2.4 | 3 | 0.01 | E | 42 |
| 3 | 132 S | 1LE0102-1CC04-1..4 | IE1 | 955 | 30 | 5.7 | 0.73 | 79.7 | 80.9 | 79.3 | 5.2 | 2 | 2.8 | 0.018 | E | 56 |
| 4 | 132 M | 1LE0102-1CC24-1..4 | IE1 | 955 | 40 | 7.4 | 0.73 | 81.4 | 82.2 | 79.4 | 5.6 | 2.1 | 2.9 | 0.023 | K | 65 |
| 5.5 | 132 M | 1LE0102-1CC34-1..4 | IE1 | 955 | 55 | 9.8 | 0.74 | 83.1 | 84.2 | 83 | 6 | 2.3 | 3.2 | 0.029 | K | 73 |
| 7.5 | 160 M | 1LE0102-1DC24-1..4 | IE1 | 965 | 74 | 12.8 | 0.76 | 84.7 | 85.4 | 84.5 | 5.8 | 2 | 2.9 | 0.052 | K | 101 |
| 11 | 160 L | 1LE0102-1DC44-1..4 | IE1 | 965 | 109 | 18.5 | 0.76 | 86.4 | 87 | 86 | 6.6 | 2.2 | 3.1 | 0.072 | K | 128 |
| 15 | 180 L | 1LE0102-1EC44-1..4 | IE1 | 970 | 148 | 24.5 | 0.78 | 87.7 | 88.7 | 88.4 | 6.5 | 2.3 | 3 | 0.18 | K | 169 |
| 18.5 | 200 L | 1LE0102-2AC44-1..4 | IE1 | 975 | 182.1 | 28 | 0.82 | 88.6 | 90 | 90.1 | 5.8 | 2.2 | 2.8 | 0.26 | J | 218 |
| 22 | 200 L | 1LE0102-2AC54-1..4 | IE1 | 975 | 215 | 33 | 0.82 | 89.2 | 90.5 | 90.5 | 6.5 | 2.3 | 2.8 | 0.31 | J | 237 |
| 30 | 225 M | 1LE0102-2BC24-1..4 | IE1 | 978 | 293 | 44 | 0.83 | 90.2 | 91.4 | 90.5 | 6.7 | 2.4 | 2.8 | 0.6 | K | 290 |
| 37 | 250 M | 1LE0102-2CC24-1..4 | IE1 | 982 | 360 | 54 | 0.83 | 90.8 | 91.5 | 91.2 | 7.5 | 3 | 2.8 | 0.89 | K | 389 |
| 45 | 280 S | 1LE0102-2DC04-1..4 | IE1 | 985 | 437 | 64 | 0.85 | 91.4 | 92.4 | 92.3 | 7.1 | 2.5 | 2.8 | 1.1 | K | 500 |
| 55 | 280 M | 1LE0102-2DC24-1..4 | IE1 | 988 | 532 | 77 | 0.85 | 91.9 | 92.6 | 92.4 | 7.5 | 2.4 | 2.7 | 1.4 | K | 525 |
| 75 | 315 S | 1LE0102-3AC04-1..4 | IE1 | 988 | 725 | 107 | 0.83 | 92.6 | 93 | 92.4 | 7.5 | 2.4 | 3 | 2.3 | K | 675 |
| 90 | 315 M | 1LE0102-3AC24-1..4 | IE1 | 986 | 872 | 127 | 0.84 | 92.9 | 93.4 | 93.2 | 7 | 2.3 | 2.8 | 2.8 | K | 830 |
| 110 | 315 L | 1LE0102-3AC54-1..4 | IE1 | 986 | 1066 | 152 | 0.86 | 93.3 | 93.9 | 93.8 | 6.5 | 2.2 | 2.7 | 3.4 | J | 915 |
| 132 | 315 L | 1LE0102-3AC64-1..4 | IE1 | 988 | 1278 | 181 | 0.86 | 93.5 | 94.2 | 93.6 | 7.8 | 2.2 | 2.4 | 3.9 | K | 1010 |
| 160 | 355 M | 1LE0102-3BC24-1..4 | IE1 | 989 | 1545 | 210 | 0.88 | 94.5 | 94.6 | 92.4 | 6.5 | 2 | 2.1 | 7.7 | H | 1640 |
| 185 | 355 M | 1LE0102-3BC34-1..4 | IE1 | 989 | 1786 | 240 | 0.88 | 94.5 | 94.6 | 92.6 | 6.5 | 2 | 2.1 | 8.4 | H | 1680 |
| 200 | 355 M | 1LE0102-3BC44-1..4 | IE1 | 989 | 1931 | 260 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 9.1 | H | 1720 |
| 220 | 355 L | 1LE0102-3BC54-1..4 | IE1 | 989 | 2124 | 290 | 0.88 | 94.7 | 94.7 | 92.6 | 6.5 | 2 | 2.1 | 10.1 | H | 1840 |
| 250 | 355 L | 1LE0102-3BC64-1..4 | IE1 | 989 | 2414 | 330 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 11.4 | H | 1920 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Distribution Line – IE2

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE2 | | |
| Series | 1LE0101 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.75 | 0.86 | 80 M | 1LE0101-ODA22-2..4 | IE2 | 2795 | 2.6 | 1.67 | 0.84 | 77.4 | 78.5 | 78.5 | 5.6 | 2.4 | 2.4 | 0.0008 | D | 15.5 |
| 1.1 | 1.3 | 80 M | 1LE0101-ODA32-2..4 | IE2 | 2835 | 3.7 | 2.4 | 0.84 | 79.6 | 80.6 | 77.4 | 6 | 2.8 | 3.2 | 0.0012 | E | 17.5 |
| 1.5 | 1.75 | 90 S | 1LE0101-OEA02-2..4 | IE2 | 2890 | 5 | 3.2 | 0.84 | 81.3 | 81.7 | 78 | 6.5 | 2.4 | 3.1 | 0.0021 | E | 23 |
| 2.2 | 2.55 | 90 L | 1LE0101-OEA42-2..4 | IE2 | 2890 | 7.3 | 4.55 | 0.85 | 83.2 | 83.7 | 80.8 | 7.2 | 2.6 | 3.5 | 0.0026 | F | 26 |
| 3 | 3.45 | 100 L | 1LE0101-1AA42-2..4 | IE2 | 2885 | 9.9 | 6.1 | 0.84 | 84.6 | 85.1 | 84.1 | 7.5 | 4 | 4.5 | 0.0036 | F | 34 |
| 4 | 4.6 | 112 M | 1LE0101-1BA22-2..4 | IE2 | 2930 | 13 | 7.8 | 0.86 | 85.8 | 86.6 | 84.7 | 7.5 | 2.2 | 2.9 | 0.0064 | L | 40 |
| 5.5 | 6.3 | 132 S | 1LE0101-1CA02-2.B4 | IE2 | 2930 | 17.9 | 10.5 | 0.87 | 87 | 87.6 | 86.9 | 7.5 | 2.2 | 2.9 | 0.014 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0101-1CA12-2.B4 | IE2 | 2930 | 24.4 | 13.8 | 0.89 | 88.1 | 88.8 | 88.5 | 7.5 | 2.3 | 2.9 | 0.017 | K | 62 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 1LE0101-1AA43-4..4 | IE2 | 2885 | 9.9 | 6.1 | 0.84 | 84.6 | 85.1 | 84.1 | 7.5 | 4 | 4.5 | 0.0036 | F | 34 |
| 4 | 4.6 | 112 M | 1LE0101-1BA23-4..4 | IE2 | 2930 | 13 | 7.8 | 0.86 | 85.8 | 86.6 | 84.7 | 7.5 | 2.2 | 2.9 | 0.0064 | L | 40 |
| 5.5 | 6.3 | 132 S | 1LE0101-1CA03-4.B4 | IE2 | 2930 | 17.9 | 10.5 | 0.87 | 87 | 87.6 | 86.9 | 7.5 | 2.2 | 2.9 | 0.014 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0101-1CA13-4.B4 | IE2 | 2930 | 24.4 | 13.8 | 0.89 | 88.1 | 88.8 | 88.5 | 7.5 | 2.3 | 2.9 | 0.017 | K | 62 |
| 11 | 12.6 | 160 M | 1LE0101-1DA23-4.B4 | IE2 | 2935 | 35.8 | 20.5 | 0.86 | 89.4 | 90.1 | 89.3 | 7.5 | 2.2 | 2.9 | 0.031 | K | 96 |
| 15 | 17.3 | 160 M | 1LE0101-1DA33-4.B4 | IE2 | 2935 | 48.8 | 28 | 0.86 | 90.3 | 91 | 90.5 | 7.5 | 2.4 | 3.2 | 0.038 | K | 106 |
| 18.5 | 21.3 | 160 L | 1LE0101-1DA43-4.B4 | IE2 | 2935 | 60.2 | 33 | 0.89 | 90.9 | 91.7 | 91.5 | 7.5 | 2.4 | 3.2 | 0.046 | K | 125 |
| 22 | 24.5 | 180 M | 1LE0101-1EA23-4.B4 | IE2 | 2935 | 71.6 | 40 | 0.87 | 91.3 | 91.8 | 91.1 | 7.6 | 2.5 | 3.2 | 0.072 | K | 152 |
| 30 | 33.5 | 200 L | 1LE0101-2AA43-4.B4 | IE2 | 2955 | 97 | 55 | 0.86 | 92 | 92.3 | 91.5 | 7.5 | 2.5 | 3.2 | 0.13 | K | 229 |
| 37 | 41.5 | 200 L | 1LE0101-2AA53-4.B4 | IE2 | 2955 | 120 | 66 | 0.88 | 92.5 | 92.8 | 92.3 | 7.5 | 2.5 | 3.2 | 0.15 | K | 245 |
| 45 | 51 | 225 M | 1LE0101-2BA23-4.B4 | IE2 | 2965 | 145 | 80 | 0.88 | 92.9 | 93.1 | 92.5 | 7.9 | 2.5 | 3.1 | 0.24 | K | 307 |
| 55 | 62 | 250 M | 1LE0101-2CA23-4.B4 | IE2 | 2970 | 177 | 97 | 0.88 | 93.2 | 93.2 | 91.8 | 7.5 | 2.5 | 3 | 0.42 | K | 378 |
| 75 | 84 | 280 S | 1LE0101-2DA03-4.B4 | IE2 | 2975 | 241 | 133 | 0.87 | 93.8 | 93.8 | 92.7 | 7.5 | 2.8 | 3 | 0.75 | K | 550 |
| 90 | 101 | 280 M | 1LE0101-2DA23-4.B4 | IE2 | 2978 | 289 | 159 | 0.87 | 94.1 | 94.1 | 92.9 | 7.5 | 3 | 3.1 | 0.88 | K | 570 |
| 110 | 123 | 315 S | 1LE0101-3AA03-4.B4 | IE2 | 2982 | 352 | 187 | 0.9 | 94.3 | 94.3 | 93.3 | 7.5 | 2.2 | 2.6 | 1.4 | J | 740 |
| 132 | 148 | 315 M | 1LE0101-3AA23-4.B4 | IE2 | 2982 | 423 | 220 | 0.91 | 94.6 | 94.6 | 93.9 | 7.5 | 2.3 | 2.9 | 1.7 | J | 855 |
| 160 | 180 | 315 L | 1LE0101-3AA53-4.B4 | IE2 | 2982 | 512 | 265 | 0.92 | 94.8 | 95.1 | 94.1 | 7.5 | 2.5 | 2.8 | 1.9 | J | 970 |
| 185 | 207 | 315 L | 1LE0101-3AA63-4.B4 | IE2 | 2982 | 592 | 305 | 0.92 | 95 | 95.3 | 94.2 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1080 |
| 200 | 224 | 315 L | 1LE0101-3AA73-4.B4 | IE2 | 2982 | 641 | 330 | 0.92 | 95 | 95.3 | 94.4 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1090 |
| 220 | 246 | 355 M | 1LE0101-3BA23-4.B4 | IE2 | 2980 | 705 | 370 | 0.9 | 95 | 95 | 92.8 | 7.1 | 2 | 2.2 | 2.9 | J | 1600 |
| 250 | 280 | 355 M | 1LE0101-3BA33-4.B4 | IE2 | 2980 | 801 | 420 | 0.9 | 95 | 95 | 93 | 7.1 | 2 | 2.2 | 3 | J | 1650 |
| 280 | 314 | 355 L | 1LE0101-3BA53-4.B4 | IE2 | 2980 | 897 | 475 | 0.9 | 95 | 95.1 | 93 | 7.1 | 2 | 2.2 | 3.5 | J | 1830 |
| 315 | 353 | 355 L | 1LE0101-3BA63-4.B4 | IE2 | 2980 | 1009 | 530 | 0.9 | 95 | 95.1 | 93.1 | 7.1 | 2 | 2.3 | 3.5 | J | 1840 |

SIMOTICS Distribution Line – IE2

TIP

The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0101 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0101-0DB22-2..4 | – | 1425 | 3.7 | 1.34 | 0.8 | 74 | 74.7 | 70.1 | 6 | 2 | 2.7 | 0.0021 | F | 17.5 |
| 0.75 | 0.86 | 80 M | 1LE0101-0DB32-2..4 | IE2 | 1440 | 5 | 1.82 | 0.75 | 79.6 | 79.6 | 76.8 | 6.5 | 2.8 | 3.5 | 0.0027 | F | 19 |
| 1.1 | 1.3 | 90 S | 1LE0101-0EB02-2..4 | IE2 | 1440 | 7.3 | 2.65 | 0.75 | 81.4 | 81.4 | 77.6 | 7 | 2.8 | 3.5 | 0.0041 | G | 24 |
| 1.5 | 1.75 | 90 L | 1LE0101-0EB42-2..4 | IE2 | 1440 | 9.9 | 3.45 | 0.76 | 82.8 | 82.8 | 80.2 | 7 | 3 | 3.8 | 0.0047 | G | 27 |
| 2.2 | 2.55 | 100 L | 1LE0101-1AB42-2..4 | IE2 | 1435 | 14.6 | 4.8 | 0.79 | 84.3 | 85 | 83.1 | 7 | 3 | 3.2 | 0.0081 | F | 33 |
| 3 | 3.45 | 100 L | 1LE0101-1AB52-2..4 | IE2 | 1435 | 20 | 6.4 | 0.79 | 85.5 | 86.3 | 84.2 | 7 | 3 | 3.2 | 0.01 | F | 37 |
| 4 | 4.6 | 112 M | 1LE0101-1BB22-2..4 | IE2 | 1445 | 26.4 | 8.4 | 0.79 | 86.6 | 87.1 | 85.8 | 7.1 | 2.7 | 3.1 | 0.011 | L | 45 |
| 5.5 | 6.3 | 132 S | 1LE0101-1CB02-2.B4 | IE2 | 1460 | 36 | 11.5 | 0.79 | 87.7 | 88.2 | 86.9 | 7.5 | 2.5 | 3.1 | 0.021 | L | 61 |
| 7.5 | 8.6 | 132 M | 1LE0101-1CB22-2.B4 | IE2 | 1460 | 49.1 | 14.9 | 0.82 | 88.7 | 89.4 | 88.8 | 7.7 | 2.7 | 3.2 | 0.029 | L | 73 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1LE0101-1AB43-4..4 | IE2 | 1435 | 14.6 | 4.75 | 0.79 | 84.3 | 85 | 83.1 | 7 | 3 | 3.2 | 0.0081 | F | 33 |
| 3 | 3.45 | 100 L | 1LE0101-1AB53-4..4 | IE2 | 1435 | 20 | 6.4 | 0.79 | 85.5 | 86.3 | 84.2 | 7 | 3 | 3.2 | 0.01 | F | 37 |
| 4 | 4.6 | 112 M | 1LE0101-1BB23-4..4 | IE2 | 1445 | 26.4 | 8.455 | 0.79 | 86.6 | 87.1 | 85.8 | 7.1 | 2.7 | 3.1 | 0.011 | L | 45 |
| 5.5 | 6.3 | 132 S | 1LE0101-1CB03-4.B4 | IE2 | 1460 | 36 | 11.495 | 0.79 | 87.7 | 88.2 | 86.9 | 7.5 | 2.5 | 3.1 | 0.021 | L | 61 |
| 7.5 | 8.6 | 132 M | 1LE0101-1CB23-4.B4 | IE2 | 1460 | 49.1 | 14.915 | 0.82 | 88.7 | 89.4 | 88.8 | 7.7 | 2.7 | 3.2 | 0.029 | L | 73 |
| 11 | 12.6 | 160 M | 1LE0101-1DB23-4.B4 | IE2 | 1465 | 71.7 | 21 | 0.84 | 89.8 | 90.4 | 90.1 | 7.5 | 2.5 | 3.1 | 0.051 | K | 103 |
| 15 | 17.3 | 160 L | 1LE0101-1DB43-4.B4 | IE2 | 1465 | 97.8 | 28.025 | 0.85 | 90.6 | 91.3 | 90.6 | 7.8 | 2.7 | 3.2 | 0.066 | K | 130 |
| 18.5 | 21.3 | 180 M | 1LE0101-1EB23-4.B4 | IE2 | 1465 | 121 | 34.5 | 0.85 | 91.2 | 91.8 | 91.8 | 7.3 | 2.5 | 3.2 | 0.13 | K | 165 |
| 22 | 24.5 | 180 L | 1LE0101-1EB43-4.B4 | IE2 | 1465 | 143 | 41 | 0.85 | 91.6 | 92.3 | 92.7 | 7.3 | 2.4 | 3.2 | 0.14 | K | 180 |
| 30 | 33.5 | 200 L | 1LE0101-2AB43-4.B4 | IE2 | 1470 | 195 | 55 | 0.85 | 92.3 | 92.9 | 92.9 | 7.3 | 2.7 | 3.2 | 0.22 | K | 238 |
| 37 | 41.5 | 225 S | 1LE0101-2BB03-4.B4 | IE2 | 1475 | 240 | 67 | 0.86 | 92.7 | 93.2 | 92.9 | 7.3 | 2.7 | 3.2 | 0.45 | K | 298 |
| 45 | 51 | 225 M | 1LE0101-2BB23-4.B4 | IE2 | 1475 | 291 | 80 | 0.87 | 93.1 | 93.5 | 93.9 | 7.3 | 2.7 | 3.2 | 0.51 | K | 322 |
| 55 | 62 | 250 M | 1LE0101-2CB23-4.B4 | IE2 | 1480 | 355 | 99 | 0.86 | 93.5 | 93.9 | 93.3 | 7.5 | 3.1 | 3.5 | 0.8 | K | 410 |
| 75 | 84 | 280 S | 1LE0101-2DB03-4.B4 | IE2 | 1485 | 482 | 132 | 0.87 | 94 | 94.3 | 93.9 | 7.5 | 2.7 | 3.1 | 1.4 | K | 555 |
| 90 | 101 | 280 M | 1LE0101-2DB23-4.B4 | IE2 | 1485 | 579 | 159 | 0.87 | 94.2 | 94.3 | 94.2 | 7.5 | 2.7 | 3.1 | 1.5 | K | 610 |
| 110 | 123 | 315 S | 1LE0101-3AB03-4.B4 | IE2 | 1488 | 706 | 195 | 0.86 | 94.5 | 94.5 | 93.9 | 7.3 | 2.8 | 2.9 | 2.2 | K | 750 |
| 132 | 148 | 315 M | 1LE0101-3AB23-4.B4 | IE2 | 1486 | 848 | 230 | 0.88 | 94.7 | 94.7 | 95 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 180 | 315 L | 1LE0101-3AB53-4.B4 | IE2 | 1488 | 1027 | 275 | 0.88 | 94.9 | 94.9 | 95.1 | 7.4 | 3 | 2.9 | 3 | J | 960 |
| 185 | 207 | 315 L | 1LE0101-3AB63-4.B4 | IE2 | 1488 | 1187 | 320 | 0.88 | 95.1 | 95.1 | 95 | 7.4 | 3 | 3 | 3.6 | J | 1070 |
| 200 | 224 | 315 L | 1LE0101-3AB73-4.B4 | IE2 | 1488 | 1284 | 345 | 0.88 | 95.1 | 95.1 | 95.1 | 7.4 | 3 | 3 | 3.7 | J | 1080 |
| 220 | 246 | 355 M | 1LE0101-3BB23-4.B4 | IE2 | 1490 | 1410 | 370 | 0.9 | 95.1 | 95.2 | 93.3 | 6.9 | 2 | 2.2 | 6.6 | J | 1640 |
| 250 | 280 | 355 M | 1LE0101-3BB33-4.B4 | IE2 | 1490 | 1602 | 420 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 6.9 | J | 1680 |
| 280 | 314 | 355 L | 1LE0101-3BB53-4.B4 | IE2 | 1490 | 1795 | 470 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 7.7 | J | 1830 |
| 315 | 353 | 355 L | 1LE0101-3BB63-4.B4 | IE2 | 1490 | 2019 | 530 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 8.5 | J | 1900 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Distribution Line – IE2

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE2 | | |
| Series | 1LE0101 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0101-0DC32-2..4 | – | 895 | 5.9 | 1.48 | 0.76 | 71 | 72 | 68.5 | 3.8 | 2.1 | 2.4 | 0.0028 | C | 18.5 |
| 0.75 | 0.86 | 90 S | 1LE0101-0EC02-2..4 | IE2 | 935 | 7.7 | 2 | 0.71 | 75.9 | 76.5 | 72.7 | 3.9 | 2 | 2.5 | 0.0038 | C | 26 |
| 1.1 | 1.3 | 90 L | 1LE0101-0EC42-2..4 | IE2 | 945 | 11.1 | 2.85 | 0.71 | 78.1 | 78.1 | 75.7 | 4.4 | 2.2 | 2.7 | 0.0046 | D | 27 |
| 1.5 | 1.75 | 100 L | 1LE0101-1AC42-2..4 | IE2 | 945 | 15.2 | 3.7 | 0.74 | 79.8 | 80.1 | 78.2 | 4.6 | 2.1 | 2.6 | 0.0086 | D | 34 |
| 2.2 | 2.55 | 112 M | 1LE0101-1BC22-2..4 | IE2 | 950 | 22.1 | 5.4 | 0.73 | 81.8 | 82.5 | 81 | 5.2 | 2.4 | 3 | 0.012 | E | 44 |
| 3 | 3.45 | 132 S | 1LE0101-1CC02-2.B4 | IE2 | 960 | 29.8 | 7.2 | 0.73 | 83.3 | 84.3 | 83.4 | 5.2 | 2 | 2.8 | 0.019 | E | 56 |
| 4 | 4.6 | 132 M | 1LE0101-1CC22-2.B4 | IE2 | 960 | 39.8 | 9.4 | 0.73 | 84.6 | 85.4 | 84.5 | 5.6 | 2.1 | 2.9 | 0.024 | K | 66 |
| 5.5 | 6.3 | 132 M | 1LE0101-1CC32-2.B4 | IE2 | 960 | 54.7 | 12.3 | 0.75 | 86 | 86.6 | 85.7 | 6 | 2.3 | 3.2 | 0.031 | K | 75 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 1LE0101-1AC43-4..4 | IE2 | 945 | 15.2 | 3.65 | 0.74 | 79.8 | 80.1 | 78.2 | 4.6 | 2.1 | 2.6 | 0.0086 | D | 34 |
| 2.2 | 2.55 | 112 M | 1LE0101-1BC23-4..4 | IE2 | 950 | 22.1 | 5.3 | 0.73 | 81.8 | 82.5 | 81 | 5.2 | 2.4 | 3 | 0.012 | E | 44 |
| 3 | 3.45 | 132 S | 1LE0101-1CC03-4.B4 | IE2 | 960 | 29.8 | 7.1 | 0.73 | 83.3 | 84.3 | 83.4 | 5.2 | 2 | 2.8 | 0.019 | D | 56 |
| 4 | 4.6 | 132 M | 1LE0101-1CC23-4.B4 | IE2 | 960 | 39.8 | 9.3 | 0.73 | 84.6 | 85.4 | 84.5 | 5.6 | 2.1 | 2.9 | 0.024 | K | 66 |
| 5.5 | 6.3 | 132 M | 1LE0101-1CC33-4.B4 | IE2 | 960 | 54.7 | 12.4 | 0.75 | 86 | 86.6 | 85.7 | 6 | 2.3 | 3.2 | 0.031 | K | 75 |
| 7.5 | 8.6 | 160 M | 1LE0101-1DC23-4.B4 | IE2 | 965 | 74.2 | 16.2 | 0.77 | 87.2 | 87.9 | 87.2 | 5.8 | 2 | 2.9 | 0.056 | J | 104 |
| 11 | 12.6 | 160 L | 1LE0101-1DC43-4.B4 | IE2 | 965 | 109 | 23 | 0.78 | 88.7 | 89.4 | 89.5 | 6.6 | 2.2 | 3.1 | 0.077 | K | 132 |
| 15 | 17.3 | 180 L | 1LE0101-1EC43-4.B4 | IE2 | 975 | 147 | 31 | 0.78 | 89.7 | 90.4 | 89.9 | 6.5 | 2.3 | 3 | 0.18 | K | 170 |
| 18.5 | 21.3 | 200 L | 1LE0101-2AC43-4.B4 | IE2 | 975 | 181 | 36.5 | 0.81 | 90.4 | 91 | 91.8 | 5.8 | 2.2 | 2.8 | 0.27 | J | 220 |
| 22 | 24.5 | 200 L | 1LE0101-2AC53-4.B4 | IE2 | 975 | 215 | 43 | 0.82 | 90.9 | 91.4 | 91.9 | 6.5 | 2.3 | 2.8 | 0.32 | J | 240 |
| 30 | 33.5 | 225 M | 1LE0101-2BC23-4.B4 | IE2 | 980 | 292 | 57 | 0.83 | 91.7 | 92.3 | 92.7 | 6.7 | 2.4 | 2.8 | 0.62 | J | 294 |
| 37 | 41.5 | 250 M | 1LE0101-2CC23-4.B4 | IE2 | 982 | 360 | 69 | 0.83 | 92.2 | 92.8 | 92.3 | 7.5 | 3 | 2.8 | 0.91 | K | 394 |
| 45 | 51 | 280 S | 1LE0101-2DC03-4.B4 | IE2 | 985 | 436 | 83 | 0.85 | 92.7 | 93.3 | 93.5 | 7.1 | 2.5 | 2.8 | 1.2 | K | 510 |
| 55 | 62 | 280 M | 1LE0101-2DC23-4.B4 | IE2 | 986 | 533 | 101 | 0.85 | 93.1 | 93.7 | 93.6 | 7.5 | 2.4 | 2.7 | 1.5 | K | 535 |
| 75 | 84 | 315 S | 1LE0101-3AC03-4.B4 | IE2 | 986 | 726 | 136 | 0.85 | 93.7 | 94.3 | 93.8 | 7.5 | 2.4 | 3 | 2.3 | K | 680 |
| 90 | 101 | 315 M | 1LE0101-3AC23-4.B4 | IE2 | 986 | 872 | 163 | 0.85 | 94 | 94.5 | 94.4 | 7 | 2.3 | 2.8 | 2.8 | J | 835 |
| 110 | 123 | 315 L | 1LE0101-3AC53-4.B4 | IE2 | 988 | 1063 | 195 | 0.86 | 94.3 | 94.7 | 94.6 | 6.5 | 2.2 | 2.7 | 3.9 | J | 975 |
| 132 | 148 | 315 L | 1LE0101-3AC63-4.B4 | IE2 | 988 | 1276 | 230 | 0.86 | 94.6 | 95 | 94.9 | 7.8 | 2.2 | 2.4 | 4.3 | K | 1030 |
| 160 | 180 | 355 M | 1LE0101-3BC23-4.B4 | IE2 | 990 | 1543 | 280 | 0.87 | 94.8 | 95.1 | 93.5 | 6.5 | 2 | 2.1 | 7.7 | J | 1650 |
| 185 | 207 | 355 M | 1LE0101-3BC33-4.B4 | IE2 | 990 | 1785 | 325 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 8.4 | J | 1690 |
| 200 | 224 | 355 M | 1LE0101-3BC43-4.B4 | IE2 | 990 | 1929 | 350 | 0.87 | 95 | 95.3 | 93.6 | 6.5 | 2 | 2.1 | 9.1 | J | 1730 |
| 220 | 246 | 355 L | 1LE0101-3BC53-4.B4 | IE2 | 990 | 2122 | 385 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 10.1 | J | 1850 |
| 250 | 280 | 355 L | 1LE0101-3BC63-4.B4 | IE2 | 990 | 2412 | 435 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 11.4 | J | 1930 |

SIMOTICS Distribution Line – IE2



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0101 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

Electrical data – 1LE0 – IE2 – 2-pole (IE2 cast iron) 3000 rpm 2-pole, 525 V 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated | | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg | |
|-----------------|------------|--------------------|----------|-----------|-----------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|------|
| | | | | speed rpm | torque Nm | | 100% load % | 75% load % | 50% load % | | | | | | | |
| 0.75 | 80 M | 1LE0101-0DA24-1..4 | IE2 | 2795 | 2.6 | 1.27 | 0.84 | 77.4 | 78.5 | 78.5 | 5.6 | 2.4 | 2.4 | 0.0008 | D | 15.5 |
| 1.1 | 80 M | 1LE0101-0DA34-1..4 | IE2 | 2835 | 3.7 | 1.81 | 0.84 | 79.6 | 80.6 | 77.4 | 6 | 2.8 | 3.2 | 0.0012 | E | 17.5 |
| 1.5 | 90 S | 1LE0101-0EA04-1..4 | IE2 | 2890 | 5 | 2.4 | 0.84 | 81.3 | 81.7 | 78 | 6.5 | 2.4 | 3.1 | 0.0021 | E | 23 |
| 2.2 | 90 L | 1LE0101-0EA44-1..4 | IE2 | 2890 | 7.3 | 3.45 | 0.85 | 83.2 | 83.7 | 80.8 | 7.2 | 2.6 | 3.5 | 0.0026 | F | 26 |
| 3 | 100 L | 1LE0101-1AA44-1..4 | IE2 | 2885 | 9.9 | 4.65 | 0.84 | 84.6 | 85.1 | 84.1 | 7.5 | 4 | 4.5 | 0.0036 | F | 34 |
| 4 | 112 M | 1LE0101-1BA24-1..4 | IE2 | 2930 | 13 | 5.9 | 0.86 | 85.8 | 86.6 | 84.7 | 7.5 | 2.2 | 2.9 | 0.0064 | L | 40 |
| 5.5 | 132 S | 1LE0101-1CA04-1.B4 | IE2 | 2930 | 17.9 | 8 | 0.87 | 87 | 87.6 | 86.9 | 7.5 | 2.2 | 2.9 | 0.014 | K | 56 |
| 7.5 | 132 S | 1LE0101-1CA14-1.B4 | IE2 | 2930 | 24.4 | 10.5 | 0.89 | 88.1 | 88.8 | 88.5 | 7.5 | 2.3 | 2.9 | 0.017 | K | 62 |
| 11 | 160 M | 1LE0101-1DA24-1.B4 | IE2 | 2935 | 35.8 | 15.6 | 0.86 | 89.4 | 90.1 | 89.3 | 7.5 | 2.2 | 2.9 | 0.031 | K | 96 |
| 15 | 160 M | 1LE0101-1DA34-1.B4 | IE2 | 2935 | 48.8 | 21.5 | 0.86 | 90.3 | 91 | 90.5 | 7.5 | 2.4 | 3.2 | 0.038 | K | 106 |
| 18.5 | 160 L | 1LE0101-1DA44-1.B4 | IE2 | 2935 | 60.2 | 25 | 0.89 | 90.9 | 91.7 | 91.5 | 7.5 | 2.4 | 3.2 | 0.046 | K | 125 |
| 22 | 180 M | 1LE0101-1EA24-1.B4 | IE2 | 2935 | 71.6 | 30.5 | 0.87 | 91.3 | 91.8 | 91.1 | 7.6 | 2.5 | 3.2 | 0.072 | K | 152 |
| 30 | 200 L | 1LE0101-2AA44-1.B4 | IE2 | 2955 | 97 | 42 | 0.86 | 92 | 92.3 | 91.5 | 7.5 | 2.5 | 3.2 | 0.13 | K | 229 |
| 37 | 200 L | 1LE0101-2AA54-1.B4 | IE2 | 2955 | 120 | 50 | 0.88 | 92.5 | 92.8 | 92.3 | 7.5 | 2.5 | 3.2 | 0.15 | K | 245 |
| 45 | 225 M | 1LE0101-2BA24-1.B4 | IE2 | 2965 | 145 | 61 | 0.88 | 92.9 | 93.1 | 92.5 | 7.9 | 2.5 | 3.1 | 0.24 | K | 307 |
| 55 | 250 M | 1LE0101-2CA24-1.B4 | IE2 | 2970 | 177 | 74 | 0.88 | 93.2 | 93.2 | 91.8 | 7.5 | 2.5 | 3 | 0.42 | K | 378 |
| 75 | 280 S | 1LE0101-2DA04-1.B4 | IE2 | 2975 | 241 | 101 | 0.87 | 93.8 | 93.8 | 92.7 | 7.5 | 2.8 | 3 | 0.75 | K | 550 |
| 90 | 280 M | 1LE0101-2DA24-1.B4 | IE2 | 2978 | 289 | 121 | 0.87 | 94.1 | 94.1 | 92.9 | 7.5 | 3 | 3.1 | 0.88 | K | 570 |
| 110 | 315 S | 1LE0101-3AA04-1.B4 | IE2 | 2982 | 352 | 143 | 0.9 | 94.3 | 94.3 | 93.3 | 7.5 | 2.2 | 2.6 | 1.4 | J | 740 |
| 132 | 315 M | 1LE0101-3AA24-1.B4 | IE2 | 2982 | 423 | 170 | 0.91 | 94.6 | 94.6 | 93.9 | 7.5 | 2.3 | 2.9 | 1.7 | J | 855 |
| 160 | 315 L | 1LE0101-3AA54-1.B4 | IE2 | 2982 | 512 | 205 | 0.92 | 94.8 | 95.1 | 94.1 | 7.5 | 2.5 | 2.8 | 1.9 | J | 970 |
| 185 | 315 L | 1LE0101-3AA64-1.B4 | IE2 | 2982 | 592 | 230 | 0.92 | 95 | 95.3 | 94.2 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1080 |
| 200 | 315 L | 1LE0101-3AA74-1.B4 | IE2 | 2982 | 641 | 255 | 0.92 | 95 | 95.3 | 94.4 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1090 |
| 220 | 355 M | 1LE0101-3BA24-1.B4 | IE2 | 2980 | 705 | 280 | 0.9 | 95 | 95 | 92.8 | 7.1 | 2 | 2.2 | 2.9 | J | 1600 |
| 250 | 355 M | 1LE0101-3BA34-1.B4 | IE2 | 2980 | 801 | 320 | 0.9 | 95 | 95 | 93 | 7.1 | 2 | 2.2 | 3 | J | 1650 |
| 280 | 355 L | 1LE0101-3BA54-1.B4 | IE2 | 2980 | 897 | 360 | 0.9 | 95 | 95.1 | 93 | 7.1 | 2 | 2.2 | 3.5 | J | 1830 |
| 315 | 355 L | 1LE0101-3BA64-1.B4 | IE2 | 2980 | 1009 | 405 | 0.9 | 95 | 95.1 | 93.1 | 7.1 | 2 | 2.3 | 3.5 | J | 1840 |

Electrical data – 1LE0 – IE2 – 4-pole (IE2 cast iron) 1500 rpm 4-pole, 525 V 50 Hz

| | | | | | | | | | | | | | | | | |
|------|-------|--------------------|-----|------|------|------|------|------|------|------|-----|-----|-----|--------|---|------|
| 0.55 | 80 M | 1LE0101-0DB24-1..4 | - | 1425 | 3.7 | 1.01 | 0.8 | 74 | 74.7 | 70.1 | 6 | 2 | 2.7 | 0.0021 | F | 17.5 |
| 0.75 | 80 M | 1LE0101-0DB34-1..4 | IE2 | 1440 | 5 | 1.38 | 0.75 | 79.6 | 79.6 | 76.8 | 6.5 | 2.8 | 3.5 | 0.0027 | F | 19 |
| 1.1 | 90 S | 1LE0101-0EB04-1..4 | IE2 | 1440 | 7.3 | 1.99 | 0.75 | 81.4 | 81.4 | 77.6 | 7 | 2.8 | 3.5 | 0.0041 | G | 24 |
| 1.5 | 90 L | 1LE0101-0EB44-1..4 | IE2 | 1440 | 9.9 | 2.6 | 0.76 | 82.8 | 82.8 | 80.2 | 7 | 3 | 3.8 | 0.0047 | G | 27 |
| 2.2 | 100 L | 1LE0101-1AB44-1..4 | IE2 | 1435 | 14.6 | 3.6 | 0.79 | 84.3 | 85 | 83.1 | 7 | 3 | 3.2 | 0.0081 | F | 33 |
| 3 | 100 L | 1LE0101-1AB54-1..4 | IE2 | 1435 | 20 | 4.85 | 0.79 | 85.5 | 86.3 | 84.2 | 7 | 3 | 3.2 | 0.01 | F | 37 |
| 4 | 112 M | 1LE0101-1BB24-1..4 | IE2 | 1445 | 26.4 | 6.4 | 0.79 | 86.6 | 87.1 | 85.8 | 7.1 | 2.7 | 3.1 | 0.011 | L | 45 |
| 5.5 | 132 S | 1LE0101-1CB04-1.B4 | IE2 | 1460 | 36 | 8.8 | 0.79 | 87.7 | 88.2 | 86.9 | 7.5 | 2.5 | 3.1 | 0.021 | L | 61 |
| 7.5 | 132 M | 1LE0101-1CB24-1.B4 | IE2 | 1460 | 49.1 | 11.4 | 0.82 | 88.7 | 89.4 | 88.8 | 7.7 | 2.7 | 3.2 | 0.029 | L | 73 |
| 11 | 160 M | 1LE0101-1DB24-1.B4 | IE2 | 1465 | 71.7 | 15.9 | 0.84 | 89.8 | 90.4 | 90.1 | 7.5 | 2.5 | 3.1 | 0.051 | K | 103 |
| 15 | 160 L | 1LE0101-1DB44-1.B4 | IE2 | 1465 | 97.8 | 21.5 | 0.85 | 90.6 | 91.3 | 90.6 | 7.8 | 2.7 | 3.2 | 0.066 | K | 130 |
| 18.5 | 180 M | 1LE0101-1EB24-1.B4 | IE2 | 1465 | 121 | 26.5 | 0.85 | 91.2 | 91.8 | 91.8 | 7.3 | 2.5 | 3.2 | 0.13 | K | 165 |
| 22 | 180 L | 1LE0101-1EB44-1.B4 | IE2 | 1465 | 143 | 31 | 0.85 | 91.6 | 92.3 | 92.7 | 7.3 | 2.4 | 3.2 | 0.14 | K | 180 |
| 30 | 200 L | 1LE0101-2AB44-1.B4 | IE2 | 1470 | 195 | 42 | 0.85 | 92.3 | 92.9 | 92.9 | 7.3 | 2.7 | 3.2 | 0.22 | K | 238 |
| 37 | 225 S | 1LE0101-2BB04-1.B4 | IE2 | 1475 | 240 | 51 | 0.86 | 92.7 | 93.2 | 92.9 | 7.3 | 2.7 | 3.2 | 0.45 | K | 298 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

SIMOTICS Distribution Line – IE2

| Cast-iron series | | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0101 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Electrical data – 1LE0 – IE2 – 4-pole (IE2 cast iron) 1500 rpm 4-pole, 525 V 50 Hz | | | | | | | | | | | | | | | | |
|--|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------|--------------|-----------------------|
| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm² | Torque class | Net weight (IM B3) kg |
| | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 45 | 225 M | 1LE0101-2BB24-1.B4 | IE2 | 1475 | 291 | 61 | 0.87 | 93.1 | 93.5 | 93.9 | 7.3 | 2.7 | 3.2 | 0.51 | K | 322 |
| 55 | 250 M | 1LE0101-2CB24-1.B4 | IE2 | 1480 | 355 | 75 | 0.86 | 93.5 | 93.9 | 93.3 | 7.5 | 3.1 | 3.5 | 0.8 | K | 410 |
| 75 | 280 S | 1LE0101-2DB04-1.B4 | IE2 | 1485 | 482 | 101 | 0.87 | 94 | 94.3 | 93.9 | 7.5 | 2.7 | 3.1 | 1.4 | K | 555 |
| 90 | 280 M | 1LE0101-2DB24-1.B4 | IE2 | 1485 | 579 | 121 | 0.87 | 94.2 | 94.3 | 94.2 | 7.5 | 2.7 | 3.1 | 1.5 | K | 610 |
| 110 | 315 S | 1LE0101-3AB04-1.B4 | IE2 | 1488 | 706 | 148 | 0.86 | 94.5 | 94.5 | 93.9 | 7.3 | 2.8 | 2.9 | 2.2 | K | 750 |
| 132 | 315 M | 1LE0101-3AB24-1.B4 | IE2 | 1486 | 848 | 174 | 0.88 | 94.7 | 94.7 | 95 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 315 L | 1LE0101-3AB54-1.B4 | IE2 | 1488 | 1027 | 210 | 0.88 | 94.9 | 94.9 | 95.1 | 7.4 | 3 | 2.9 | 3 | J | 960 |
| 185 | 315 L | 1LE0101-3AB64-1.B4 | IE2 | 1488 | 1187 | 240 | 0.88 | 95.1 | 95.1 | 95 | 7.4 | 3 | 3 | 3.6 | J | 1070 |
| 200 | 315 L | 1LE0101-3AB74-1.B4 | IE2 | 1488 | 1284 | 265 | 0.88 | 95.1 | 95.1 | 95.1 | 7.4 | 3 | 3 | 3.7 | J | 1080 |
| 220 | 355 M | 1LE0101-3BB24-1.B4 | IE2 | 1490 | 1410 | 280 | 0.9 | 95.1 | 95.2 | 93.3 | 6.9 | 2 | 2.2 | 6.6 | J | 1640 |
| 250 | 355 M | 1LE0101-3BB34-1.B4 | IE2 | 1490 | 1602 | 320 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 6.9 | J | 1680 |
| 280 | 355 L | 1LE0101-3BB54-1.B4 | IE2 | 1490 | 1795 | 360 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 7.7 | J | 1830 |
| 315 | 355 L | 1LE0101-3BB64-1.B4 | IE2 | 1490 | 2019 | 405 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 8.5 | J | 1900 |

| Electrical data – 1LE0 – IE2 – 6-pole (IE2 cast iron) 1000 rpm 6-pole, 525 V 50 Hz | | | | | | | | | | | | | | | | |
|--|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------|--------------|-----------------------|
| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm² | Torque class | Net weight (IM B3) kg |
| | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 0.55 | 80 M | 1LE0101-0DC34-1.4 | – | 895 | 5.9 | 1.12 | 0.76 | 71 | 72 | 68.5 | 3.8 | 2.1 | 2.4 | 0.0028 | C | 18.5 |
| 0.75 | 90 S | 1LE0101-0EC04-1.4 | IE2 | 935 | 7.7 | 1.52 | 0.71 | 75.9 | 76.5 | 72.7 | 3.9 | 2 | 2.5 | 0.0038 | C | 26 |
| 1.1 | 90 L | 1LE0101-0EC44-1.4 | IE2 | 945 | 11.1 | 2.15 | 0.71 | 78.1 | 78.1 | 75.7 | 4.4 | 2.2 | 2.7 | 0.0046 | D | 27 |
| 1.5 | 100 L | 1LE0101-1AC44-1.4 | IE2 | 945 | 15.2 | 2.8 | 0.74 | 79.8 | 80.1 | 78.2 | 4.6 | 2.1 | 2.6 | 0.0086 | D | 34 |
| 2.2 | 112 M | 1LE0101-1BC24-1.4 | IE2 | 950 | 22.1 | 4.05 | 0.73 | 81.8 | 82.5 | 81 | 5.2 | 2.4 | 3 | 0.012 | E | 44 |
| 3 | 132 S | 1LE0101-1CC04-1.B4 | IE2 | 960 | 29.8 | 5.4 | 0.73 | 83.3 | 84.3 | 83.4 | 5.2 | 2 | 2.8 | 0.019 | D | 56 |
| 4 | 132 M | 1LE0101-1CC24-1.B4 | IE2 | 960 | 39.8 | 7.1 | 0.73 | 84.6 | 85.4 | 84.5 | 5.6 | 2.1 | 2.9 | 0.024 | K | 66 |
| 5.5 | 132 M | 1LE0101-1CC34-1.B4 | IE2 | 960 | 54.7 | 9.4 | 0.75 | 86 | 86.6 | 85.7 | 6 | 2.3 | 3.2 | 0.031 | K | 75 |
| 7.5 | 160 M | 1LE0101-1DC24-1.B4 | IE2 | 965 | 74.2 | 12.3 | 0.77 | 87.2 | 87.9 | 87.2 | 5.8 | 2 | 2.9 | 0.056 | J | 104 |
| 11 | 160 L | 1LE0101-1DC44-1.B4 | IE2 | 965 | 109 | 17.4 | 0.78 | 88.7 | 89.4 | 89.5 | 6.6 | 2.2 | 3.1 | 0.077 | K | 132 |
| 15 | 180 L | 1LE0101-1EC44-1.B4 | IE2 | 975 | 147 | 23.5 | 0.78 | 89.7 | 90.4 | 89.9 | 6.5 | 2.3 | 3 | 0.18 | K | 170 |
| 18.5 | 200 L | 1LE0101-2AC44-1.B4 | IE2 | 975 | 181 | 28 | 0.81 | 90.4 | 91 | 91.8 | 5.8 | 2.2 | 2.8 | 0.27 | J | 220 |
| 22 | 200 L | 1LE0101-2AC54-1.B4 | IE2 | 975 | 215 | 32.5 | 0.82 | 90.9 | 91.4 | 91.9 | 6.5 | 2.3 | 2.8 | 0.32 | J | 240 |
| 30 | 225 M | 1LE0101-2BC24-1.B4 | IE2 | 980 | 292 | 43.5 | 0.83 | 91.7 | 92.3 | 92.7 | 6.7 | 2.4 | 2.8 | 0.62 | J | 294 |
| 37 | 250 M | 1LE0101-2CC24-1.B4 | IE2 | 982 | 360 | 53 | 0.83 | 92.2 | 92.8 | 92.3 | 7.5 | 3 | 2.8 | 0.91 | K | 394 |
| 45 | 280 S | 1LE0101-2DC04-1.B4 | IE2 | 985 | 436 | 63 | 0.85 | 92.7 | 93.3 | 93.5 | 7.1 | 2.5 | 2.8 | 1.2 | K | 510 |
| 55 | 280 M | 1LE0101-2DC24-1.B4 | IE2 | 986 | 533 | 77 | 0.85 | 93.1 | 93.7 | 93.6 | 7.5 | 2.4 | 2.7 | 1.5 | K | 535 |
| 75 | 315 S | 1LE0101-3AC04-1.B4 | IE2 | 986 | 726 | 104 | 0.85 | 93.7 | 94.3 | 93.8 | 7.5 | 2.4 | 3 | 2.3 | K | 680 |
| 90 | 315 M | 1LE0101-3AC24-1.B4 | IE2 | 986 | 872 | 124 | 0.85 | 94 | 94.5 | 94.4 | 7 | 2.3 | 2.8 | 2.8 | J | 835 |
| 110 | 315 L | 1LE0101-3AC54-1.B4 | IE2 | 988 | 1063 | 148 | 0.86 | 94.3 | 94.7 | 94.6 | 6.5 | 2.2 | 2.7 | 3.9 | J | 975 |
| 132 | 315 L | 1LE0101-3AC64-1.B4 | IE2 | 988 | 1276 | 177 | 0.86 | 94.6 | 95 | 94.9 | 7.8 | 2.2 | 2.4 | 4.3 | K | 1030 |
| 160 | 355 M | 1LE0101-3BC24-1.B4 | IE2 | 990 | 1543 | 215 | 0.87 | 94.8 | 95.1 | 93.5 | 6.5 | 2 | 2.1 | 7.7 | J | 1650 |
| 185 | 355 M | 1LE0101-3BC34-1.B4 | IE2 | 990 | 1785 | 245 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 8.4 | J | 1690 |
| 200 | 355 M | 1LE0101-3BC44-1.B4 | IE2 | 990 | 1929 | 270 | 0.87 | 95 | 95.3 | 93.6 | 6.5 | 2 | 2.1 | 9.1 | J | 1730 |
| 220 | 355 L | 1LE0101-3BC54-1.B4 | IE2 | 990 | 2122 | 295 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 10.1 | J | 1850 |
| 250 | 355 L | 1LE0101-3BC64-1.B4 | IE2 | 990 | 2412 | 335 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 11.4 | J | 1930 |

SIMOTICS Distribution Line – IE3



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE3 | | |
| Series | 1LE0103 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.75 Nm | | |

| Electrical data – 1LE0 – IE3 – 2-pole (IE3 cast iron) 3000 rpm 2-pole, 400 V 50 Hz | | | | | | | | | | | | | | | | | |
|--|------------|----------------|---------------------|-------------|--------------|---------------|--------------------|---------------|----------|----------|------------------|-----------------|-------------------|-------------------|--------------|--------------------|------|
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| Rated output | Frame size | Article number | IE class | Rated speed | Rated torque | Rated current | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia | Torque class | Net weight (IM B3) | |
| | | | | | | | | 100% load | 75% load | 50% load | | | | | | | |
| 50 Hz kW | 60 Hz kW | | | rpm | Nm | A | | % | % | % | | | | kgm ² | kg | | |
| 0.75 | 0.86 | 80 M | 1LE0103-0DA22-2..4 | IE3 | 2835 | 2.5 | 1.56 | 0.86 | 80.7 | 82.92 | 82.9 | 6 | 2.4 | 3 | 0.00208 | J | 16 |
| 1.1 | 1.3 | 80 M | 1LE0103-0DA32-2..4 | IE3 | 2870 | 3.7 | 2.3 | 0.83 | 82.7 | 83.98 | 83.9 | 6.5 | 2.4 | 3.4 | 0.00154 | K | 18 |
| 1.5 | 1.75 | 90 S | 1LE0103-0EA02-2..4 | IE3 | 2900 | 4.9 | 3 | 0.86 | 84.2 | 84.77 | 82.3 | 6.5 | 2 | 3.4 | 0.00276 | K | 24 |
| 2.2 | 2.55 | 90 L | 1LE0103-0EA42-2..4 | IE3 | 2910 | 7.2 | 4.2 | 0.88 | 85.9 | 87.19 | 86.5 | 7.5 | 2.3 | 3.6 | 0.00356 | K | 28 |
| 3 | 3.45 | 100 L | 1LE0103-1AA42-2..4 | IE3 | 2875 | 10.0 | 5.7 | 0.87 | 87.1 | 88.29 | 88.3 | 7.8 | 2.6 | 3.6 | 0.00462 | L | 39 |
| 4 | 4.6 | 112 M | 1LE0103-1BA22-2..4 | IE3 | 2925 | 13.1 | 7.3 | 0.9 | 88.1 | 89.56 | 89.8 | 7.8 | 2.6 | 3.6 | 0.0088 | K | 46 |
| 5.5 | 6.3 | 132 S | 1LE0103-1CA02-2..B4 | IE3 | 2930 | 17.9 | 10 | 0.89 | 89.2 | 90.24 | 90.3 | 7.5 | 2.3 | 3.6 | 0.0185 | K | 64 |
| 7.5 | 8.6 | 132 S | 1LE0103-1CA12-2..B4 | IE3 | 2925 | 24.5 | 13.3 | 0.9 | 90.1 | 91.46 | 92.2 | 7.5 | 2.3 | 3.6 | 0.0232 | K | 71 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 1LE0103-1AA43-4..4 | IE3 | 2875 | 10.0 | 5.7 | 0.87 | 87.1 | 88.3 | 88.3 | 7.8 | 2.6 | 3.6 | 0.0046 | L | 39 |
| 4 | 4.6 | 112 M | 1LE0103-1BA23-4..4 | IE3 | 2925 | 13.1 | 7.3 | 0.9 | 88.1 | 89.6 | 89.8 | 7.8 | 2.6 | 3.6 | 0.0088 | K | 46 |
| 5.5 | 6.3 | 132 S | 1LE0103-1CA03-4..B4 | IE3 | 2930 | 17.9 | 10 | 0.89 | 89.2 | 90.2 | 90.3 | 7.5 | 2.3 | 3.6 | 0.0185 | K | 64 |
| 7.5 | 8.6 | 132 S | 1LE0103-1CA13-4..B4 | IE3 | 2925 | 24.5 | 13.4 | 0.9 | 90.1 | 91.5 | 92.2 | 7.5 | 2.3 | 3.6 | 0.0232 | K | 71 |
| 11 | 12.6 | 160 M | 1LE0103-1DA23-4..B4 | IE3 | 2935 | 35.8 | 19.6 | 0.89 | 91.2 | 92.0 | 91.7 | 7.5 | 2.3 | 2.5 | 0.0390 | K | 99 |
| 15 | 17.3 | 160 M | 1LE0103-1DA33-4..B4 | IE3 | 2930 | 48.9 | 26.5 | 0.89 | 91.9 | 92.6 | 92.5 | 7.5 | 2.4 | 3.4 | 0.0472 | K | 107 |
| 18.5 | 21.3 | 160 L | 1LE0103-1DA43-4..B4 | IE3 | 2940 | 60.1 | 32.5 | 0.89 | 92.4 | 93.0 | 92.9 | 7.8 | 2.4 | 3.4 | 0.0577 | K | 131 |
| 22 | 24.5 | 180 M | 1LE0103-1EA23-4..B4 | IE3 | 2950 | 71.2 | 38.5 | 0.89 | 92.7 | 93.0 | 92.4 | 7.8 | 2.4 | 3.4 | 0.0770 | K | 171 |
| 30 | 33.5 | 200 L | 1LE0103-2AA43-4..B4 | IE3 | 2955 | 97.0 | 52 | 0.89 | 93.3 | 93.4 | 92.4 | 7.8 | 2.4 | 3.4 | 0.1330 | K | 250 |
| 37 | 41.5 | 200 L | 1LE0103-2AA53-4..B4 | IE3 | 2955 | 119.6 | 64 | 0.89 | 93.7 | 93.9 | 93.3 | 7.8 | 2.4 | 3.4 | 0.1520 | K | 260 |
| 45 | 51 | 225 M | 1LE0103-2BA23-4..B4 | IE3 | 2960 | 145.2 | 78 | 0.89 | 94 | 94.3 | 93.8 | 7.8 | 2.4 | 3.2 | 0.2540 | K | 342 |
| 55 | 62 | 250 M | 1LE0103-2CA23-4..B4 | IE3 | 2975 | 176.6 | 95 | 0.89 | 94.3 | 94.1 | 93.1 | 7.8 | 2.4 | 3.2 | 0.4430 | K | 425 |
| 75 | 84 | 280 S | 1LE0103-2DA03-4..B4 | IE3 | 2975 | 240.8 | 128 | 0.89 | 94.7 | 94.8 | 94.1 | 7.2 | 2.4 | 3 | 0.7800 | J | 545 |
| 90 | 101 | 280 M | 1LE0103-2DA23-4..B4 | IE3 | 2975 | 288.9 | 152 | 0.9 | 95 | 95.3 | 95 | 7.2 | 2.4 | 3.4 | 0.9500 | J | 620 |
| 110 | 123 | 315 S | 1LE0103-3AA03-4..B4 | IE3 | 2975 | 353.1 | 185 | 0.9 | 95.2 | 95.1 | 94.5 | 8.5 | 1.8 | 2.6 | 1.3000 | K | 790 |
| 132 | 148 | 315 M | 1LE0103-3AA23-4..B4 | IE3 | 2980 | 423.0 | 220 | 0.9 | 95.4 | 95.3 | 92.4 | 8.5 | 2.1 | 2.6 | 1.5100 | K | 960 |
| 160 | 180 | 315 L | 1LE0103-3AA53-4..B4 | IE3 | 2978 | 513.1 | 265 | 0.91 | 95.6 | 95.7 | 95.3 | 8.5 | 2.1 | 2.6 | 1.8100 | K | 1060 |
| 185 | 207 | 315 L | 1LE0103-3AA63-4..B4 | IE3 | 2978 | 593.3 | 305 | 0.92 | 95.7 | 95.9 | 95.7 | 8.5 | 2.3 | 2.6 | 2.1900 | K | 1145 |
| 200 | 224 | 315 L | 1LE0103-3AA73-4..B4 | IE3 | 2982 | 640.5 | 330 | 0.92 | 95.8 | 95.9 | 95.7 | 8.5 | 2.6 | 3.2 | 2.1900 | K | 1165 |
| 220 | 246 | 355 M | 1LE0103-3BA23-4..B4 | IE3 | 2986 | 704.0 | 370 | 0.90 | 95.8 | 95.4 | 94.2 | 8.5 | 2.2 | 2.8 | 3.0000 | K | 1490 |
| 250 | 280 | 355 M | 1LE0103-3BA33-4..B4 | IE3 | 2985 | 800.0 | 420 | 0.90 | 95.8 | 95.7 | 94.6 | 8 | 2.2 | 2.8 | 3.0000 | K | 1490 |
| 280 | 314 | 355 L | 1LE0103-3BA53-4..B4 | IE3 | 2988 | 895.0 | 470 | 0.9 | 95.8 | 95.7 | 94.9 | 8.5 | 2.2 | 2.8 | 3.5000 | K | 1620 |
| 315 | 353 | 355 L | 1LE0103-3BA63-4..B4 | IE3 | 2982 | 1009.0 | 530 | 0.9 | 95.8 | 95.8 | 95.3 | 8 | 2.2 | 2.8 | 3.5 | K | 1670 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Distribution Line – IE3

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE3 | | |
| Series | 1LE0103 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.8 ... 2406.8 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed | Rated torque | Rated current | Power factor | Efficiency at | | | Starting current | Break-down torque | Moment of inertia | Torque class | Net weight (IM B3) | |
|-------------------------|----------|------------|--------------------|----------|-------------|--------------|---------------|--------------|---------------|------------|------------|------------------|-------------------|-------------------|--------------|--------------------|------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 V Δ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0103-0DB22-2..4 | IE3 | 1440 | 3.65 | 1.29 | 0.76 | 80.8 | 81.77 | 80.2 | 5.5 | 2.2 | 3.2 | 0.0022 | K | 16.5 |
| 0.75 | 0.86 | 80 M | 1LE0103-0DB32-2..4 | IE3 | 1445 | 4.96 | 1.75 | 0.75 | 82.5 | 82.92 | 80.7 | 6 | 2.7 | 3.7 | 0.0025 | K | 18 |
| 1.1 | 1.3 | 90 S | 1LE0103-0EB02-2..4 | IE3 | 1430 | 7.35 | 2.4 | 0.79 | 84.1 | 85.07 | 83.9 | 6.5 | 2.7 | 3.7 | 0.0039 | K | 24 |
| 1.5 | 1.75 | 90 L | 1LE0103-0EB42-2..4 | IE3 | 1440 | 9.95 | 3.2 | 0.79 | 85.3 | 86 | 85.2 | 6.5 | 2.7 | 3.8 | 0.0050 | K | 27 |
| 2.2 | 2.55 | 100 L | 1LE0103-1AB42-2..4 | IE3 | 1445 | 14.54 | 4.45 | 0.82 | 86.7 | 87.11 | 85.7 | 8.3 | 3.7 | 4.6 | 0.0113 | M | 42 |
| 3 | 3.45 | 100 L | 1LE0103-1AB52-2..4 | IE3 | 1450 | 19.76 | 6 | 0.82 | 87.7 | 88.06 | 87.1 | 8.3 | 3.7 | 4.6 | 0.0131 | M | 46 |
| 4 | 4.6 | 112 M | 1LE0103-1BB22-2..4 | IE3 | 1450 | 26.34 | 7.9 | 0.82 | 88.6 | 89.59 | 89.2 | 8.3 | 3.7 | 4.6 | 0.0149 | M | 52 |
| 5.5 | 6.3 | 132 S | 1LE0103-1CB02-2.B4 | IE3 | 1455 | 36.10 | 10.5 | 0.84 | 89.6 | 90.87 | 91.1 | 7.8 | 2.4 | 3.8 | 0.0285 | L | 71 |
| 7.5 | 8.6 | 132 M | 1LE0103-1CB22-2.B4 | IE3 | 1455 | 49.23 | 14.1 | 0.85 | 90.4 | 91.69 | 93.2 | 7.8 | 2.4 | 3.8 | 0.0356 | L | 83 |
| 400 V Δ / 690 VY | | | | | | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1LE0103-1AB43-4..4 | IE3 | 1445 | 14.54 | 4.45 | 0.82 | 86.7 | 87.11 | 85.7 | 8.3 | 3.7 | 4.6 | 0.01125 | M | 42 |
| 3 | 3.45 | 100 L | 1LE0103-1AB53-4..4 | IE3 | 1450 | 19.76 | 6 | 0.82 | 87.7 | 88.06 | 87.1 | 8.3 | 3.7 | 4.6 | 0.01313 | M | 46 |
| 4 | 4.6 | 112 M | 1LE0103-1BB23-4..4 | IE3 | 1450 | 26.34 | 7.9 | 0.82 | 88.6 | 89.59 | 89.2 | 8.3 | 3.7 | 4.6 | 0.01493 | M | 52 |
| 5.5 | 6.3 | 132 S | 1LE0103-1CB03-4.B4 | IE3 | 1455 | 36.10 | 10.5 | 0.84 | 89.6 | 90.87 | 91.1 | 7.8 | 2.4 | 3.8 | 0.02847 | L | 71 |
| 7.5 | 8.6 | 132 M | 1LE0103-1CB23-4.B4 | IE3 | 1455 | 49.23 | 14.1 | 0.85 | 90.4 | 91.69 | 93.2 | 7.8 | 2.4 | 3.8 | 0.03561 | L | 83 |
| 11 | 12.6 | 160 M | 1LE0103-1DB23-4.B4 | IE3 | 1460 | 71.95 | 20 | 0.86 | 91.4 | 92.4 | 92.6 | 7.8 | 2.4 | 3.8 | 0.06482 | K | 110 |
| 15 | 17.3 | 160 L | 1LE0103-1DB43-4.B4 | IE3 | 1460 | 98.12 | 27.5 | 0.86 | 92.1 | 92.91 | 93 | 7.8 | 2.6 | 3.8 | 0.08109 | K | 134 |
| 18.5 | 21.3 | 180 M | 1LE0103-1EB23-4.B4 | IE3 | 1470 | 120.19 | 34.5 | 0.83 | 92.6 | 93 | 92.5 | 7.8 | 2.6 | 3.6 | 0.12600 | L | 170 |
| 22 | 24.5 | 180 L | 1LE0103-1EB43-4.B4 | IE3 | 1470 | 142.93 | 41 | 0.83 | 93 | 93.7 | 93.6 | 7.8 | 2.6 | 3.6 | 0.14600 | L | 192 |
| 30 | 33.5 | 200 L | 1LE0103-2AB43-4.B4 | IE3 | 1470 | 194.90 | 55 | 0.84 | 93.6 | 94.3 | 94.2 | 7.8 | 2.6 | 3.6 | 0.22000 | K | 255 |
| 37 | 41.5 | 225 S | 1LE0103-2BB03-4.B4 | IE3 | 1478 | 239.07 | 67 | 0.85 | 93.9 | 94.1 | 93.4 | 8.3 | 3.3 | 3.6 | 0.46100 | L | 315 |
| 45 | 51 | 225 M | 1LE0103-2BB23-4.B4 | IE3 | 1478 | 290.76 | 81 | 0.85 | 94.2 | 94.2 | 93.7 | 8.3 | 3.3 | 3.6 | 0.47900 | L | 342 |
| 55 | 62 | 250 M | 1LE0103-2CB23-4.B4 | IE3 | 1482 | 354.42 | 98 | 0.86 | 94.6 | 95 | 94.7 | 7.6 | 2.6 | 3.3 | 0.82000 | K | 440 |
| 75 | 84 | 280 S | 1LE0103-2DB03-4.B4 | IE3 | 1485 | 482.32 | 133 | 0.86 | 95 | 95.3 | 95.3 | 7.6 | 2.6 | 3 | 1.31000 | K | 580 |
| 90 | 101 | 280 M | 1LE0103-2DB23-4.B4 | IE3 | 1485 | 578.79 | 157 | 0.87 | 95.2 | 95.64 | 95.5 | 7.6 | 2.6 | 3 | 1.69000 | K | 685 |
| 110 | 123 | 315 S | 1LE0103-3AB03-4.B4 | IE3 | 1488 | 705.98 | 191 | 0.87 | 95.4 | 95.7 | 95.4 | 7.9 | 3.3 | 3 | 2.77000 | K | 800 |
| 132 | 148 | 315 M | 1LE0103-3AB23-4.B4 | IE3 | 1488 | 847.18 | 230 | 0.87 | 95.6 | 95.9 | 95.5 | 7.9 | 3.3 | 3 | 3.00000 | K | 1035 |
| 160 | 180 | 315 L | 1LE0103-3AB53-4.B4 | IE3 | 1488 | 1026.88 | 275 | 0.87 | 95.8 | 96.1 | 95.8 | 7.9 | 3.3 | 3 | 3.14000 | K | 1065 |
| 185 | 207 | 315 L | 1LE0103-3AB63-4.B4 | IE3 | 1488 | 1187.33 | 320 | 0.87 | 95.9 | 96.2 | 95.8 | 7.9 | 3.3 | 3 | 3.46000 | K | 1115 |
| 200 | 224 | 315 L | 1LE0103-3AB73-4.B4 | IE3 | 1490 | 1281.88 | 340 | 0.88 | 96 | 96.3 | 96.1 | 7.9 | 3.3 | 3 | 3.79000 | K | 1175 |
| 220 | 246 | 355 M | 1LE0103-3BB23-4.B4 | IE3 | 1492 | 1408.18 | 375 | 0.88 | 96 | 96.01 | 95.3 | 8 | 2 | 3.2 | 6.90000 | K | 1670 |
| 250 | 280 | 355 M | 1LE0103-3BB33-4.B4 | IE3 | 1490 | 1602.35 | 425 | 0.88 | 96 | 96.04 | 95.3 | 7.8 | 1.8 | 2.9 | 6.90000 | K | 1670 |
| 280 | 314 | 355 L | 1LE0103-3BB53-4.B4 | IE3 | 1490 | 1794.63 | 480 | 0.88 | 96 | 96.11 | 95.7 | 7.8 | 1.8 | 2.9 | 7.70000 | K | 1700 |
| 315 | 353 | 355 L | 1LE0103-3BB63-4.B4 | IE3 | 1490 | 2018.96 | 540 | 0.88 | 96 | 96.13 | 95.8 | 8 | 1.8 | 2.9 | 8.50000 | K | 1790 |

SIMOTICS Distribution Line – IE3



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE3 | | |
| Series | 1LE0103 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated torque | | Rated current | Power factor | Efficiency at | | | Starting current | Break-down torque | Moment of inertia | Torque class | Net weight (IM B3) | |
|------------------------|----------|------------|--------------------|----------|--------------|---------|---------------|--------------|---------------|------------|------------|------------------|-------------------|-------------------|--------------|--------------------|------|
| 50 Hz kW | 60 Hz kW | | | | speed rpm | Nm | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0103-0DC32-2..4 | IE3 | 935 | 5.62 | 1.53 | 0.67 | 77.2 | 77.45 | 74.6 | 5 | 2.7 | 3.4 | 0.00310 | K | 19.5 |
| 0.75 | 0.86 | 90 S | 1LE0103-0EC02-2..4 | IE3 | 940 | 7.62 | 1.96 | 0.7 | 78.9 | 80.32 | 78 | 5 | 2.4 | 3.2 | 0.00436 | K | 25 |
| 1.1 | 1.3 | 90 L | 1LE0103-0EC42-2..4 | IE3 | 945 | 11.12 | 2.85 | 0.69 | 81 | 81.58 | 80.4 | 5.5 | 2.7 | 3.5 | 0.00513 | K | 28 |
| 1.5 | 1.75 | 100 L | 1LE0103-1AC42-2..4 | IE3 | 945 | 15.16 | 3.55 | 0.74 | 82.5 | 84.13 | 82.9 | 5.5 | 2.7 | 3.5 | 0.01136 | K | 42 |
| 2.2 | 2.55 | 112 M | 1LE0103-1BC22-2..4 | IE3 | 945 | 22.23 | 5.1 | 0.74 | 84.3 | 86.11 | 95.7 | 6 | 2.7 | 3.4 | 0.01451 | K | 50 |
| 3 | 3.45 | 132 S | 1LE0103-1CC02-2.B4 | IE3 | 965 | 29.69 | 6.7 | 0.75 | 85.6 | 86.6 | 86 | 6 | 2.7 | 4 | 0.02666 | K | 67 |
| 4 | 4.6 | 132 M | 1LE0103-1CC22-2.B4 | IE3 | 955 | 40.00 | 8.9 | 0.75 | 86.8 | 88.54 | 88.7 | 6 | 2.3 | 3.4 | 0.03045 | K | 76 |
| 5.5 | 6.3 | 132 M | 1LE0103-1CC32-2.B4 | IE3 | 960 | 54.71 | 11.9 | 0.76 | 88 | 89.15 | 89 | 6.5 | 2.3 | 4 | 0.04125 | K | 88 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 1LE0103-1AC43-4..4 | IE3 | 945 | 15.16 | 3.55 | 0.74 | 82.50 | 84.13 | 82.90 | 5.5 | 2.7 | 3.5 | 0.0114 | K | 42 |
| 2.2 | 2.55 | 112 M | 1LE0103-1BC23-4..4 | IE3 | 945 | 22.23 | 5.1 | 0.74 | 84.30 | 86.11 | 95.70 | 6 | 2.7 | 3.4 | 0.0145 | K | 50 |
| 3 | 3.45 | 132 S | 1LE0103-1CC03-4.B4 | IE3 | 965 | 29.69 | 6.7 | 0.75 | 85.60 | 86.60 | 86.00 | 6 | 2.7 | 4 | 0.0267 | K | 67 |
| 4 | 4.6 | 132 M | 1LE0103-1CC23-4.B4 | IE3 | 955 | 40.00 | 8.9 | 0.75 | 86.80 | 88.54 | 88.70 | 6 | 2.3 | 3.4 | 0.0305 | K | 76 |
| 5.5 | 6.3 | 132 M | 1LE0103-1CC33-4.B4 | IE3 | 960 | 54.71 | 11.9 | 0.76 | 88.00 | 89.15 | 89.00 | 6.5 | 2.3 | 4 | 0.0413 | K | 88 |
| 7.5 | 8.6 | 160 M | 1LE0103-1DC23-4.B4 | IE3 | 965 | 74.22 | 15.6 | 0.78 | 89.10 | 90.36 | 90.30 | 6.5 | 2.3 | 3.6 | 0.0703 | K | 112 |
| 11 | 12.6 | 160 L | 1LE0103-1DC43-4.B4 | IE3 | 970 | 108.30 | 22.5 | 0.78 | 90.30 | 90.30 | 89.80 | 7 | 2.3 | 3.6 | 0.0707 | K | 144 |
| 15 | 17.3 | 180 L | 1LE0103-1EC43-4.B4 | IE3 | 975 | 146.92 | 29.5 | 0.8 | 91.20 | 92.10 | 91.80 | 7 | 2.3 | 3 | 0.1850 | K | 175 |
| 18.5 | 21.3 | 200 L | 1LE0103-2AC43-4.B4 | IE3 | 978 | 180.65 | 36.5 | 0.8 | 91.70 | 92.45 | 92.20 | 7 | 2.3 | 3 | 0.2840 | K | 235 |
| 22 | 24.5 | 200 L | 1LE0103-2AC53-4.B4 | IE3 | 978 | 214.83 | 43 | 0.8 | 92.20 | 93.10 | 93.00 | 7 | 2.4 | 3 | 0.3270 | K | 251 |
| 30 | 33.5 | 225 M | 1LE0103-2BC23-4.B4 | IE3 | 982 | 291.75 | 56 | 0.83 | 92.90 | 93.90 | 94.30 | 7.6 | 2.4 | 3 | 0.7100 | K | 350 |
| 37 | 41.5 | 250 M | 1LE0103-2CC23-4.B4 | IE3 | 985 | 358.73 | 68 | 0.84 | 93.30 | 94.10 | 94.10 | 7.6 | 2.4 | 3 | 1.0300 | K | 430 |
| 45 | 51 | 280 S | 1LE0103-2DC03-4.B4 | IE3 | 985 | 436.29 | 83 | 0.84 | 93.70 | 94.47 | 94.40 | 7.8 | 3 | 3 | 1.4000 | K | 520 |
| 55 | 62 | 280 M | 1LE0103-2DC23-4.B4 | IE3 | 988 | 531.63 | 100 | 0.84 | 94.10 | 94.60 | 94.50 | 7.8 | 3 | 3 | 1.7000 | K | 585 |
| 75 | 84 | 315 S | 1LE0103-3AC03-4.B4 | IE3 | 990 | 723.48 | 136 | 0.84 | 94.60 | 95.00 | 94.70 | 7.8 | 2.6 | 3 | 2.7300 | K | 790 |
| 90 | 101 | 315 M | 1LE0103-3AC23-4.B4 | IE3 | 990 | 868.18 | 163 | 0.84 | 94.90 | 95.26 | 94.90 | 7.8 | 2.6 | 3 | 3.2900 | K | 950 |
| 110 | 123 | 315 L | 1LE0103-3AC53-4.B4 | IE3 | 991 | 1060.04 | 196 | 0.85 | 95.10 | 95.30 | 94.90 | 7.8 | 2.6 | 3 | 4.1700 | K | 1085 |
| 132 | 148 | 315 L | 1LE0103-3AC63-4.B4 | IE3 | 991 | 1272.05 | 235 | 0.85 | 95.40 | 95.70 | 95.40 | 7.8 | 2.6 | 3 | 4.4900 | K | 1135 |
| 160 | 180 | 355 M | 1LE0103-3BC23-4.B4 | IE3 | 994 | 1537.22 | 290 | 0.84 | 95.60 | 95.65 | 95.20 | 8.5 | 3 | 2.4 | 8.4000 | L | 1770 |
| 185 | 207 | 355 M | 1LE0103-3BC33-4.B4 | IE3 | 993 | 1779.20 | 330 | 0.84 | 95.70 | 95.81 | 95.30 | 8.5 | 3 | 2.4 | 8.4000 | L | 1770 |
| 200 | 224 | 355 M | 1LE0103-3BC43-4.B4 | IE3 | 993 | 1923.46 | 360 | 0.84 | 95.80 | 95.91 | 95.40 | 8.5 | 3 | 2.4 | 11.2000 | L | 1810 |
| 220 | 246 | 355 L | 1LE0103-3BC53-4.B4 | IE3 | 993 | 2115.81 | 395 | 0.84 | 95.80 | 95.95 | 95.60 | 8.5 | 3 | 2.4 | 11.4000 | L | 1980 |
| 250 | 280 | 355 L | 1LE0103-3BC63-4.B4 | IE3 | 992 | 2406.75 | 450 | 0.84 | 95.8 | 96.09 | 95.9 | 8.5 | 3 | 2.4 | 11.4 | L | 2010 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

SIMOTICS Distribution Line – IE3

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE3 | | |
| Series | 1LE0103 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

| Electrical data – 1LE0 – IE3 – 2-pole (IE3 cast iron) 3000 rpm 2-pole, 525 VΔ 50 Hz | | | | | | | | | | | | | | | | |
|---|------------|--------------------|----------|-------------|--------------|---------------|--------------|---------------|----------|----------|------------------|-----------------|-------------------|-------------------|--------------|--------------------|
| Rated output | Frame size | Article number | IE class | Rated speed | Rated torque | Rated current | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia | Torque class | Net weight (IM B3) |
| kW | | | | rpm | Nm | A | | 100% load | 75% load | 50% load | | | | kgm ² | | kg |
| 0.75 | 80 M | 1LE0103-ODA24-1..4 | IE3 | 2835 | 2.5 | 1.19 | 0.86 | 80.7 | 82.9 | 82.9 | 6 | 2.4 | 3 | 0.002083 | J | 16 |
| 1.1 | 80 M | 1LE0103-ODA34-1..4 | IE3 | 2870 | 3.7 | 1.76 | 0.83 | 82.7 | 84.0 | 83.9 | 6.5 | 2.4 | 3.4 | 0.001537 | K | 18 |
| 1.5 | 90 S | 1LE0103-OEA04-1..4 | IE3 | 2900 | 4.9 | 2.3 | 0.86 | 84.2 | 84.8 | 82.3 | 6.5 | 2 | 3.4 | 0.002764 | K | 24 |
| 2.2 | 90 L | 1LE0103-OEA44-1..4 | IE3 | 2910 | 7.2 | 3.2 | 0.88 | 85.9 | 87.2 | 86.5 | 7.5 | 2.3 | 3.6 | 0.003557 | K | 28 |
| 3 | 100 L | 1LE0103-1AA44-1..4 | IE3 | 2875 | 10.0 | 4.35 | 0.87 | 87.1 | 88.3 | 88.3 | 7.8 | 2.6 | 3.6 | 0.004619 | L | 39 |
| 4 | 112 M | 1LE0103-1BA24-1..4 | IE3 | 2925 | 13.1 | 5.5 | 0.9 | 88.1 | 89.6 | 89.8 | 7.8 | 2.6 | 3.6 | 0.00879 | K | 46 |
| 5.5 | 132 S | 1LE0103-1CA04-1.B4 | IE3 | 2930 | 17.9 | 7.6 | 0.89 | 89.2 | 90.2 | 90.3 | 7.5 | 2.3 | 3.6 | 0.01847 | K | 64 |
| 7.5 | 132 S | 1LE0103-1CA14-1.B4 | IE3 | 2925 | 24.5 | 10.2 | 0.9 | 90.1 | 91.5 | 92.2 | 7.5 | 2.3 | 3.6 | 0.023231 | K | 71 |
| 11 | 160 M | 1LE0103-1DA24-1.B4 | IE3 | 2935 | 35.8 | 14.9 | 0.89 | 91.2 | 92.0 | 91.7 | 7.5 | 2.3 | 2.5 | 0.03903 | K | 99 |
| 15 | 160 M | 1LE0103-1DA34-1.B4 | IE3 | 2930 | 48.9 | 20 | 0.89 | 91.9 | 92.6 | 92.5 | 7.5 | 2.4 | 3.4 | 0.0472 | K | 107 |
| 18.5 | 160 L | 1LE0103-1DA44-1.B4 | IE3 | 2940 | 60.1 | 24.5 | 0.89 | 92.4 | 93.0 | 92.9 | 7.8 | 2.4 | 3.4 | 0.05773 | K | 131 |
| 22 | 180 M | 1LE0103-1EA24-1.B4 | IE3 | 2950 | 71.2 | 29.5 | 0.89 | 92.7 | 93.0 | 92.4 | 7.8 | 2.4 | 3.4 | 0.077 | K | 171 |
| 30 | 200 L | 1LE0103-2AA44-1.B4 | IE3 | 2955 | 97.0 | 39.5 | 0.89 | 93.3 | 93.4 | 92.4 | 7.8 | 2.4 | 3.4 | 0.133 | K | 250 |
| 37 | 200 L | 1LE0103-2AA54-1.B4 | IE3 | 2955 | 119.6 | 49 | 0.89 | 93.7 | 93.9 | 93.3 | 7.8 | 2.4 | 3.4 | 0.152 | K | 260 |
| 45 | 225 M | 1LE0103-2BA24-1.B4 | IE3 | 2960 | 145.2 | 59 | 0.89 | 94.0 | 94.3 | 93.8 | 7.8 | 2.4 | 3.2 | 0.254 | K | 342 |
| 55 | 250 M | 1LE0103-2CA24-1.B4 | IE3 | 2975 | 176.6 | 72 | 0.89 | 94.3 | 94.1 | 93.1 | 7.8 | 2.4 | 3.2 | 0.443 | K | 425 |
| 75 | 280 S | 1LE0103-2DA04-1.B4 | IE3 | 2975 | 240.8 | 98 | 0.89 | 94.7 | 94.8 | 94.1 | 7.2 | 2.4 | 3 | 0.78 | J | 545 |
| 90 | 280 M | 1LE0103-2DA24-1.B4 | IE3 | 2975 | 288.9 | 116 | 0.9 | 95.0 | 95.3 | 95.0 | 7.2 | 2.4 | 3.4 | 0.95 | J | 620 |
| 110 | 315 S | 1LE0103-3AA04-1.B4 | IE3 | 2975 | 353.1 | 141 | 0.9 | 95.2 | 95.1 | 94.5 | 8.5 | 1.8 | 2.6 | 1.3 | K | 790 |
| 132 | 315 M | 1LE0103-3AA24-1.B4 | IE3 | 2980 | 423.0 | 169 | 0.9 | 95.4 | 95.3 | 92.4 | 8.5 | 2.1 | 2.6 | 1.51 | K | 960 |
| 160 | 315 L | 1LE0103-3AA54-1.B4 | IE3 | 2978 | 513.1 | 200 | 0.91 | 95.6 | 95.7 | 95.3 | 8.5 | 2.1 | 2.6 | 1.81 | K | 1060 |
| 185 | 315 L | 1LE0103-3AA64-1.B4 | IE3 | 2978 | 593.3 | 230 | 0.92 | 95.7 | 95.9 | 95.7 | 8.5 | 2.3 | 2.6 | 2.19 | K | 1145 |
| 200 | 315 L | 1LE0103-3AA74-1.B4 | IE3 | 2982 | 640.5 | 250 | 0.92 | 95.8 | 95.9 | 95.7 | 8.5 | 2.6 | 3.2 | 2.19 | K | 1165 |
| 220 | 355 M | 1LE0103-3BA24-1.B4 | IE3 | 2986 | 704.0 | 280 | 0.90 | 95.8 | 95.4 | 94.2 | 8.5 | 2.2 | 2.8 | 3 | K | 1490 |
| 250 | 355 M | 1LE0103-3BA34-1.B4 | IE3 | 2985 | 800.0 | 320 | 0.90 | 95.8 | 95.7 | 94.6 | 8 | 2.2 | 2.8 | 3 | K | 1490 |
| 280 | 355 L | 1LE0103-3BA54-1.B4 | IE3 | 2988 | 895.0 | 355 | 0.9 | 95.8 | 95.7 | 94.9 | 8.5 | 2.2 | 2.8 | 3.5 | K | 1620 |
| 315 | 355 L | 1LE0103-3BA64-1.B4 | IE3 | 2982 | 1009.0 | 400 | 0.9 | 95.8 | 95.8 | 95.3 | 8 | 2.2 | 2.8 | 3.5 | K | 1670 |

| Electrical data – 1LE0 – IE3 – 4-pole (IE3 cast iron) 1500 rpm 4-pole, 525 VΔ 50 Hz | | | | | | | | | | | | | | | | |
|---|------------|--------------------|----------|-------------|--------------|---------------|--------------|---------------|----------|----------|------------------|-----------------|-------------------|-------------------|--------------|--------------------|
| Rated output | Frame size | Article number | IE class | Rated speed | Rated torque | Rated current | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia | Torque class | Net weight (IM B3) |
| kW | | | | rpm | Nm | A | | 100% load | 75% load | 50% load | | | | kgm ² | | kg |
| 0.55 | 80 M | 1LE0103-0DB24-1..4 | IE3 | 1440 | 3.6 | 0.98 | 0.76 | 80.8 | 81.8 | 80.2 | 5.5 | 2.2 | 3.2 | 0.002155 | K | 16.5 |
| 0.75 | 80 M | 1LE0103-0DB34-1..4 | IE3 | 1445 | 5.0 | 1.33 | 0.75 | 82.5 | 82.9 | 80.7 | 6 | 2.7 | 3.7 | 0.002501 | K | 18 |
| 1.1 | 90 S | 1LE0103-0EB04-1..4 | IE3 | 1430 | 7.3 | 1.82 | 0.79 | 84.1 | 85.1 | 83.9 | 6.5 | 2.7 | 3.7 | 0.003888 | K | 24 |
| 1.5 | 90 L | 1LE0103-0EB44-1..4 | IE3 | 1440 | 9.9 | 2.45 | 0.79 | 85.3 | 86.0 | 85.2 | 6.5 | 2.7 | 3.8 | 0.004992 | K | 27 |
| 2.2 | 100 L | 1LE0103-1AB44-1..4 | IE3 | 1445 | 14.5 | 3.4 | 0.82 | 86.7 | 87.1 | 85.7 | 8.3 | 3.7 | 4.6 | 0.01125 | M | 42 |
| 3 | 100 L | 1LE0103-1AB54-1..4 | IE3 | 1450 | 19.8 | 4.6 | 0.82 | 87.7 | 88.1 | 87.1 | 8.3 | 3.7 | 4.6 | 0.01313 | M | 46 |
| 4 | 112 M | 1LE0103-1BB24-1..4 | IE3 | 1450 | 26.3 | 6.1 | 0.82 | 88.6 | 89.6 | 89.2 | 8.3 | 3.7 | 4.6 | 0.014928 | M | 52 |
| 5.5 | 132 S | 1LE0103-1CB04-1.B4 | IE3 | 1455 | 36.1 | 8 | 0.84 | 89.6 | 90.9 | 91.1 | 7.8 | 2.4 | 3.8 | 0.028465 | L | 71 |
| 7.5 | 132 M | 1LE0103-1CB24-1.B4 | IE3 | 1455 | 49.2 | 10.7 | 0.85 | 90.4 | 91.7 | 93.2 | 7.8 | 2.4 | 3.8 | 0.03561 | L | 83 |
| 11 | 160 M | 1LE0103-1DB24-1.B4 | IE3 | 1460 | 72.0 | 15.4 | 0.86 | 91.4 | 92.4 | 92.6 | 7.8 | 2.4 | 3.8 | 0.06482 | K | 110 |
| 15 | 160 L | 1LE0103-1DB44-1.B4 | IE3 | 1460 | 98.1 | 21 | 0.86 | 92.1 | 92.9 | 93.0 | 7.8 | 2.6 | 3.8 | 0.08109 | K | 134 |
| 18.5 | 180 M | 1LE0103-1EB24-1.B4 | IE3 | 1470 | 120.2 | 26.5 | 0.83 | 92.6 | 93.0 | 92.5 | 7.8 | 2.6 | 3.6 | 0.126 | L | 170 |
| 22 | 180 L | 1LE0103-1EB44-1.B4 | IE3 | 1470 | 142.9 | 31.5 | 0.83 | 93.0 | 93.7 | 93.6 | 7.8 | 2.6 | 3.6 | 0.146 | L | 192 |
| 30 | 200 L | 1LE0103-2AB44-1.B4 | IE3 | 1470 | 194.9 | 42 | 0.84 | 93.6 | 94.3 | 94.2 | 7.8 | 2.6 | 3.6 | 0.22 | K | 255 |

SIMOTICS Distribution Line – IE3



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE3 | | |
| Series | 1LE0103 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2406.8 Nm | | |

Electrical data – 1LE0 – IE3 – 4-pole (IE3 cast iron) 1500 rpm 4-pole, 525 VΔ 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm² | Torque class | Net weight (IM B3) kg |
|--------------------|------------|--------------------|----------|--------------------|--------------------|--------------------|--------------|----------------|---------------|---------------|------------------|-----------------|-------------------|---------------------------|--------------|--------------------------|
| | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 37 | 225 S | 1LE0103-2BB04-1.B4 | IE3 | 1478 | 239.1 | 51 | 0.85 | 93.9 | 94.1 | 93.4 | 8.3 | 3.3 | 3.6 | 0.461 | L | 315 |
| 45 | 225 M | 1LE0103-2BB24-1.B4 | IE3 | 1478 | 290.8 | 62 | 0.85 | 94.2 | 94.2 | 93.7 | 8.3 | 3.3 | 3.6 | 0.479 | L | 342 |
| 55 | 250 M | 1LE0103-2CB24-1.B4 | IE3 | 1482 | 354.4 | 74 | 0.86 | 94.6 | 95.0 | 94.7 | 7.6 | 2.6 | 3.3 | 0.82 | K | 440 |
| 75 | 280 S | 1LE0103-2DB04-1.B4 | IE3 | 1485 | 482.3 | 101 | 0.86 | 95.0 | 95.3 | 95.3 | 7.6 | 2.6 | 3 | 1.31 | K | 580 |
| 90 | 280 M | 1LE0103-2DB24-1.B4 | IE3 | 1485 | 578.8 | 120 | 0.87 | 95.2 | 95.6 | 95.5 | 7.6 | 2.6 | 3 | 1.69 | K | 685 |
| 110 | 315 S | 1LE0103-3AB04-1.B4 | IE3 | 1488 | 706.0 | 146 | 0.87 | 95.4 | 95.7 | 95.4 | 7.9 | 3.3 | 3 | 2.77 | K | 800 |
| 132 | 315 M | 1LE0103-3AB24-1.B4 | IE3 | 1488 | 847.2 | 175 | 0.87 | 95.6 | 95.9 | 95.5 | 7.9 | 3.3 | 3 | 3 | K | 1035 |
| 160 | 315 L | 1LE0103-3AB54-1.B4 | IE3 | 1488 | 1026.9 | 210 | 0.87 | 95.8 | 96.1 | 95.8 | 7.9 | 3.3 | 3 | 3.14 | K | 1065 |
| 185 | 315 L | 1LE0103-3AB64-1.B4 | IE3 | 1488 | 1187.3 | 245 | 0.87 | 95.9 | 96.2 | 95.8 | 7.9 | 3.3 | 3 | 3.46 | K | 1115 |
| 200 | 315 L | 1LE0103-3AB74-1.B4 | IE3 | 1490 | 1281.9 | 260 | 0.88 | 96.0 | 96.3 | 96.1 | 7.9 | 3.3 | 3 | 3.79 | K | 1175 |
| 220 | 355 M | 1LE0103-3BB24-1.B4 | IE3 | 1492 | 1408.2 | 285 | 0.88 | 96.0 | 96.0 | 95.3 | 8 | 2 | 3.2 | 6.9 | K | 1670 |
| 250 | 355 M | 1LE0103-3BB34-1.B4 | IE3 | 1490 | 1602.3 | 325 | 0.88 | 96.0 | 96.0 | 95.3 | 7.8 | 1.8 | 2.9 | 6.9 | K | 1670 |
| 280 | 355 L | 1LE0103-3BB54-1.B4 | IE3 | 1490 | 1794.6 | 365 | 0.88 | 96.0 | 96.1 | 95.7 | 7.8 | 1.8 | 2.9 | 7.7 | K | 1700 |
| 315 | 355 L | 1LE0103-3BB64-1.B4 | IE3 | 1490 | 2019.0 | 410 | 0.88 | 96.0 | 96.1 | 95.8 | 8 | 1.8 | 2.9 | 8.5 | K | 1790 |

Electrical data – 1LE0 – IE3 – 6-pole (IE3 cast iron) 1000 rpm 6-pole, 525 VΔ 50 Hz

| | | | | | | | | | | | | | | | | |
|------|-------|--------------------|-----|-----|--------|------|------|------|--------|------|-----|-----|-----|----------|---|------|
| 0.55 | 80 M | 1LE0103-0DC34-1..4 | IE3 | 935 | 5.6 | 1.17 | 0.67 | 77.2 | 77.45 | 74.6 | 5 | 2.7 | 3.4 | 0.003101 | K | 19.5 |
| 0.75 | 90 S | 1LE0103-0EC04-1..4 | IE3 | 940 | 7.6 | 1.49 | 0.7 | 78.9 | 80.32 | 78 | 5 | 2.4 | 3.2 | 0.00436 | K | 25 |
| 1.1 | 90 L | 1LE0103-0EC44-1..4 | IE3 | 945 | 11.1 | 2.15 | 0.69 | 81 | 81.58 | 80.4 | 5.5 | 2.7 | 3.5 | 0.00513 | K | 28 |
| 1.5 | 100 L | 1LE0103-1AC44-1..4 | IE3 | 945 | 15.2 | 2.7 | 0.74 | 82.5 | 84.13 | 82.9 | 5.5 | 2.7 | 3.5 | 0.01136 | K | 42 |
| 2.2 | 112 M | 1LE0103-1BC24-1..4 | IE3 | 945 | 22.2 | 3.9 | 0.74 | 84.3 | 86.11 | 95.7 | 6 | 2.7 | 3.4 | 0.014506 | K | 50 |
| 3 | 132 S | 1LE0103-1CC04-1.B4 | IE3 | 965 | 29.7 | 5.1 | 0.75 | 85.6 | 86.6 | 86 | 6 | 2.7 | 4 | 0.02666 | K | 67 |
| 4 | 132 M | 1LE0103-1CC24-1.B4 | IE3 | 955 | 40.0 | 6.8 | 0.75 | 86.8 | 88.54 | 88.7 | 6 | 2.3 | 3.4 | 0.03045 | K | 76 |
| 5.5 | 132 M | 1LE0103-1CC34-1.B4 | IE3 | 960 | 54.7 | 9 | 0.76 | 88 | 89.15 | 89 | 6.5 | 2.3 | 4 | 0.04125 | K | 88 |
| 7.5 | 160 M | 1LE0103-1DC24-1.B4 | IE3 | 965 | 74.2 | 11.9 | 0.78 | 89.1 | 90.36 | 90.3 | 6.5 | 2.3 | 3.6 | 0.0703 | K | 112 |
| 11 | 160 L | 1LE0103-1DC44-1.B4 | IE3 | 970 | 108.3 | 17.2 | 0.78 | 90.3 | 90.3 | 89.8 | 7 | 2.3 | 3.6 | 0.07068 | K | 144 |
| 15 | 180 L | 1LE0103-1EC44-1.B4 | IE3 | 975 | 146.9 | 22.5 | 0.8 | 91.2 | 92.1 | 91.8 | 7 | 2.3 | 3 | 0.185 | K | 175 |
| 18.5 | 200 L | 1LE0103-2AC44-1.B4 | IE3 | 978 | 180.6 | 27.5 | 0.8 | 91.7 | 92.45 | 92.2 | 7 | 2.3 | 3 | 0.284 | K | 235 |
| 22 | 200 L | 1LE0103-2AC54-1.B4 | IE3 | 978 | 214.8 | 33 | 0.8 | 92.2 | 93.1 | 93 | 7 | 2.4 | 3 | 0.327 | K | 251 |
| 30 | 225 M | 1LE0103-2BC24-1.B4 | IE3 | 982 | 291.8 | 43 | 0.83 | 92.9 | 93.9 | 94.3 | 7.6 | 2.4 | 3 | 0.71 | K | 350 |
| 37 | 250 M | 1LE0103-2CC24-1.B4 | IE3 | 985 | 358.7 | 52 | 0.84 | 93.3 | 94.1 | 94.1 | 7.6 | 2.4 | 3 | 1.03 | K | 430 |
| 45 | 280 S | 1LE0103-2DC04-1.B4 | IE3 | 985 | 436.3 | 63 | 0.84 | 93.7 | 94.67 | 94.4 | 7.8 | 3 | 3 | 1.4 | K | 520 |
| 55 | 280 M | 1LE0103-2DC24-1.B4 | IE3 | 988 | 531.6 | 77 | 0.84 | 94.1 | 94.6 | 94.5 | 7.8 | 3 | 3 | 1.7 | K | 585 |
| 75 | 315 S | 1LE0103-3AC04-1.B4 | IE3 | 990 | 723.5 | 104 | 0.84 | 94.6 | 95 | 94.7 | 7.8 | 2.6 | 3 | 2.73 | K | 790 |
| 90 | 315 M | 1LE0103-3AC24-1.B4 | IE3 | 990 | 868.2 | 124 | 0.84 | 94.9 | 95.256 | 94.9 | 7.8 | 2.6 | 3 | 3.29 | K | 950 |
| 110 | 315 L | 1LE0103-3AC54-1.B4 | IE3 | 991 | 1060.0 | 150 | 0.85 | 95.1 | 95.3 | 94.9 | 7.8 | 2.6 | 3 | 4.17 | K | 1085 |
| 132 | 315 L | 1LE0103-3AC64-1.B4 | IE3 | 991 | 1272.0 | 179 | 0.85 | 95.4 | 95.7 | 95.4 | 7.8 | 2.6 | 3 | 4.49 | K | 1135 |
| 160 | 355 M | 1LE0103-3BC24-1.B4 | IE3 | 994 | 1537.2 | 220 | 0.84 | 95.6 | 95.65 | 95.2 | 8.5 | 3 | 2.4 | 8.4 | L | 1770 |
| 185 | 355 M | 1LE0103-3BC34-1.B4 | IE3 | 993 | 1779.2 | 255 | 0.84 | 95.7 | 95.81 | 95.3 | 8.5 | 3 | 2.4 | 8.4 | L | 1770 |
| 200 | 355 M | 1LE0103-3BC44-1.B4 | IE3 | 993 | 1923.5 | 275 | 0.84 | 95.8 | 95.91 | 95.4 | 8.5 | 3 | 2.4 | 11.2 | L | 1810 |
| 220 | 355 L | 1LE0103-3BC54-1.B4 | IE3 | 993 | 2115.8 | 300 | 0.84 | 95.8 | 95.95 | 95.6 | 8.5 | 3 | 2.4 | 11.4 | L | 1980 |
| 250 | 355 L | 1LE0103-3BC64-1.B4 | IE3 | 992 | 2406.8 | 340 | 0.84 | 95.8 | 96.09 | 95.9 | 8.5 | 3 | 2.4 | 11.4 | L | 2010 |

SIMOTICS Distribution Line – List of options

| Cast iron | | Series | | | | |
|--|--|--------|--|-----------|--|--|
| SIMOTICS GP 1LE0102 Standard Efficiency IE1 | | 4 | | available | | |
| SIMOTICS GP 1LE0101 High Efficiency IE2 & 1LE0103 Premium Efficiency IE3 | | 5 | | available | | |

| Option description | Motor type | Order code | Series availability | 80 | 90 | 100 |
|--|-------------------|------------|---------------------|--------|--------|--------|
| Voltage and frequency | | | | | | |
| 220 VΔ/380 VY, 50 Hz | 1LE.....2-1... | | 4, 5 | ✓ | ✓ | ✓ |
| 230 VΔ/400 VY, 50 Hz | 1LE.....2-2... | | 4, 5 | □ | □ | □ |
| 400 V, 50 Hz, 690 V, 50 Hz | 1LE.....3-4... | | 4, 5 | – | – | □ |
| 380 V, 50 Hz, 660 V, 50 Hz | 1LE010.....3-3... | | 4, 5 | – | – | ✓ |
| 415 V, 50 Hz | 1LE010.....2-3... | | 4, 5 | ✓ | ✓ | ✓ |
| 415 V, 50 Hz | 1LE010.....3-5... | | 4, 5 | ✓ | ✓ | ✓ |
| 525 V, 50 Hz | 1LE010.....4-1... | | 4, 5 | ✓ | ✓ | ✓ |
| Types of construction | | | | | | |
| IM B3 | 1LE.....A.. | | 4, 5 | □ | □ | □ |
| IM B35 | 1LE.....J.. | | 4, 5 | ✓ | ✓ | ✓ |
| IM B5 | 1LE.....F.. | | 4, 5 | ✓ | ✓ | ✓ |
| IM V1 | 1LE.....G.. | | 4, 5 | ✓ | ✓ | ✓ |
| IM B14 | 1LE.....K.. | | 4, 5 | ✓ | ✓ | ✓ |
| Mechanical version and degrees of protection | | | | | | |
| Condensation drainage holes | 1LE.....-Z | H03 | 4, 5 | ◇ | ◇ | ◇ |
| Prepared for mountings, center hole only | 1LE.....-Z | G40 | 5 | □ 5 | □ 5 | □ 5 |
| Heating and ventilation | | | | | | |
| Anti-condensation heating for 230 V | 1LE.....-Z | Q02 | 4, 5 | ✓ | ✓ | ✓ |
| Anti-condensation heating for 115 V | 1LE.....-Z | Q03 | 4, 5 | ✓ | ✓ | ✓ |
| Sheet metal fan cover | 1LE0..... | F74 | 4, 5 | □ 4, 5 | □ 4, 5 | □ 4, 5 |
| Motor protection | | | | | | |
| Without protection | 1LE.....A. | | 4, 5 | □ | □ | □ |
| Motor protection with PTC thermistor with 1 or 3 embedded temperature sensors for tripping | 1LE.....B. | A11 | 4, 5 | ✓ | ✓ | ✓ |
| Bearings and lubrication | | | | | | |
| Bearing design for increased cantilever forces | 1LE.....-Z | L22 | 4, 5 | – | – | ✓ |
| Regreasing device | 1LE.....-Z | L23 | 4, 5 | – | – | ✓ |
| Packaging, safety notes, documentation and test certificate | | | | | | |
| Extra rating plate for voltage tolerance | 1LE0..... | B07 | 4, 5 | □ 4, 5 | □ 4, 5 | □ 4, 5 |
| Acceptance test certificate 3.1 in accordance with EN 10204 (routine test) | 1LE.....-Z | B02 | 4, 5 | ✓ | ✓ | ✓ |
| CE marking | | | | □ (b) | □ (b) | □ (b) |
| Sea-worthy packing for export | | | | □ | □ | □ |



The most common features are already embedded in our distribution motors, such as metal fan cover, 3 × PTC, etc. In addition you can also enjoy an exclusive package price on 1LE0. When you place the order, you simply add these standard features in the article number according to the option guideline below. Our 1LE0 series already include all embedded features in the basic article number.

| available | | | available | | | | | | available |
|----------------|----------------|----------------|------------|------------|------------|------------|------------|------------|------------|
| available | | | available | | | | | | available |
| 112 | 132 | 160 | 180 | 200 | 225 | 250 | 280 | 315 | 355 |
| ✓ | ✓ | - | - | - | - | - | - | - | - |
| □ | □ | - | - | - | - | - | - | - | - |
| □ | □ | □ | □ | □ | □ | □ | □ | □ | □ |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | - | - | - | - | - | - | - | - |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| □ | □ | □ | □ | □ | □ | □ | □ | □ | □ |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | - | - | - | - | - | - | - |
| □ 4, 5 | □ 4, 5 | □ 4, 5 | □ | □ | □ | □ | □ | □ | □ |
| □ 5 | □ 5 | □ 5 | □ 5 | □ 5 | □ 5 | □ 5 | □ 5 | □ 5 | □ 5 |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| □ 4, 5 | □ 4, 5 | □ 4, 5 | □ | □ | □ | □ | □ | □ | □ |
| □ | □ 4 - 5 | □ 4 - 5 | □ 4 - 5 | □ 4 - 5 | □ 4 - 5 | □ 4 - 5 | □ 4 - 5 | □ 4 - 5 | □ 4 - 5 |
| ✓ | ✓ 4 □ 5 | ✓ 4 □ 5 | ✓ 4 □ 5 | ✓ 4 □ 5 | ✓ 4 □ 5 | ✓ 4 □ 5 | ✓ 4 □ 5 | ✓ 4 □ 5 | ✓ 4 □ 5 |
| ✓ 4 □ 5 (a) | ✓ 4 □ 5 (a) | ✓ 4 □ 5 (a) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | □ | □ | □ |
| □ 4, 5 | □ 4, 5 | □ 4, 5 | □ | □ | □ | □ | □ | □ | □ |
| ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| □ (b) | □ (b) | □ (b) | □ (b) | □ (b) | □ (b) | □ (b) | □ (b) | □ (b) | □ (b) |
| □ | □ | □ | □ | □ | □ | □ | □ | □ | □ |

- Standard
- ✓ Option in distribution portfolio
- ◇ Not available in distribution portfolio, only from standard catalog
- Not available
- (a) Standard for 4-pole and 6-pole motor, optional for 2-pole motor
- (b) Not available for type of construction IM V1

SIMOTICS Option Line – Motor selection and article number code

Overview

The article number consists of a combination of figures and letters and is divided into three blocks linked with hyphens for a better overview.

The first block (Position 1 to 7) identifies the motor type and efficiency level; the second block (Position 8 to 12)

defines the motor frame size and length, the number of poles and in some cases the frequency/output; and in the third block (Position 13 to 16) the frequency/output, type of construction and other design features are encoded.

Article number code

| Structure | Position: 1 2 3 4 5 6 7 - 8 9 10 11 12 - 13 14 15 16 - Z |
|----------------------------|---|
| Position 1 to 6: | Low-voltage motor series • 1LE0 Option Line |
| Position 7: | Motor efficiency • Motor with High Efficiency – IE2 • Motor with Standard Efficiency – IE1 • Motor with Premium Efficiency – IE3 |
| Position 8 to 11: | Frame size, number of poles and frame length Refer to page 36 |
| Position 12 and 13: | Voltage, circuit and frequency • 22: 230 VΔ/400 VY 50 Hz • 34: 400 VΔ/690 VY 50 Hz • 35: 415 VΔ 50 Hz • 21: 220 VΔ/380 VY 50 Hz • 33: 380 VΔ/660 VY 50 Hz • 90 ^(a) : special voltage & frequency • 23: 240 VΔ/415 VY 50 Hz • 41: 525 VΔ 50 Hz |
| Position 14: | Type of construction (refer to page 14) • A: IM B3 • J: IM B35 • F: IM B5 • G: IM V1 • K: IM B14 • T: IM B6 • U: IM B7 • V: IM B8 • C: IM V5 • D: IM V6 • N: IM B34 • M: IM V18 • L: IM V19 • W: IM V15 • Y: IM V35 • H: IM V3 |
| Position 15: | Motor protection • A: without winding protection • B: 3 PTC thermistors for tripping • C: 6 PTC thermistors for alarm and tripping • F: 1 temperature sensor KTY 84-130 • H: 3 resistance thermometers Pt100 • J: 6 resistance thermometers Pt100 |
| Position 16: | Terminal box position (view from drive end) • 4: Terminal box top • 5: Terminal box right • 6: Terminal box left |
| | Special order versions Encoded – additional order (option) code required ^(a) |

^(a) For deviations in the second and third block from the catalog codes, -Z or 90 should be used as alphanumeric values appropriate, e.g. 1LE0021-1DB43-4AB4-Z B02; or 1LE0021-1DB49-0AB4 M2A.

Ordering example

1LE0021-1DB43-4AH4-Z F70+B02

1LE0 Option Line motor, IE2 High Efficiency motor, FS 160, 4-pole, 400 VΔ/690 VY 50 Hz, IM B3, 3 resistance thermometers Pt100, terminal box top included separately driven fan (F70) and acceptance test certificate 3.1 in accordance with EN 10204 (B02).



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE1

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE1 | | |
| Series | 1LE0022 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.75 | 0.86 | 80 M | 1LE0022-ODA22-2... | IE1 | 2800 | 2.6 | 1.76 | 0.86 | 72.1 | 73 | 71.1 | 5.1 | 2.3 | 2.7 | 0.0008 | D | 15 |
| 1.1 | 1.3 | 80 M | 1LE0022-ODA32-2... | IE1 | 2830 | 3.7 | 2.5 | 0.86 | 75 | 77.3 | 74.4 | 6 | 2.6 | 3.1 | 0.001 | E | 17.5 |
| 1.5 | 1.75 | 90 S | 1LE0022-OEA02-2... | IE1 | 2885 | 5 | 3.3 | 0.85 | 77.2 | 76.9 | 73.5 | 6.9 | 2.5 | 3.2 | 0.0017 | F | 22 |
| 2.2 | 2.55 | 90 L | 1LE0022-OEA42-2... | IE1 | 2885 | 7.3 | 4.5 | 0.87 | 79.7 | 80.5 | 78.1 | 7.5 | 2.7 | 3.4 | 0.0022 | F | 26 |
| 3 | 3.45 | 100 L | 1LE0022-1AA42-2... | IE1 | 2850 | 10 | 6.3 | 0.85 | 81.5 | 82.1 | 79.9 | 6.9 | 3 | 3.7 | 0.0033 | F | 33 |
| 4 | 4.6 | 112 M | 1LE0022-1BA22-2... | IE1 | 2910 | 13.1 | 8.2 | 0.85 | 83.1 | 83.7 | 81.5 | 7.8 | 2.9 | 4.2 | 0.0064 | L | 39 |
| 5.5 | 6.3 | 132 S | 1LE0022-1CA02-2... | IE1 | 2915 | 18 | 10.9 | 0.86 | 84.7 | 85.3 | 83.7 | 6.9 | 2 | 3.1 | 0.013 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0022-1CA12-2... | IE1 | 2920 | 24.5 | 14.3 | 0.88 | 86 | 87.2 | 86.2 | 7.1 | 2 | 2.9 | 0.015 | K | 62 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 1LE0022-1AA43-4... | IE1 | 2850 | 10 | 6.3 | 0.85 | 81.5 | 82.1 | 79.9 | 6.9 | 3 | 3.7 | 0.0033 | F | 33 |
| 4 | 4.6 | 112 M | 1LE0022-1BA23-4... | IE1 | 2910 | 13.1 | 8.2 | 0.85 | 83.1 | 83.7 | 81.5 | 7.8 | 2.9 | 4.2 | 0.0064 | L | 39 |
| 5.5 | 6.3 | 132 S | 1LE0022-1CA03-4... | IE1 | 2915 | 18 | 10.9 | 0.86 | 84.7 | 85.3 | 83.7 | 6.9 | 2 | 3.1 | 0.013 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0022-1CA13-4... | IE1 | 2920 | 24.5 | 14.3 | 0.88 | 86 | 87.2 | 86.2 | 7.1 | 2 | 2.9 | 0.015 | K | 62 |
| 11 | 12.6 | 160 M | 1LE0022-1DA23-4... | IE1 | 2925 | 35.9 | 21.5 | 0.84 | 87.6 | 88.2 | 87.1 | 6.3 | 2 | 3.1 | 0.028 | J | 93 |
| 15 | 17.3 | 160 M | 1LE0022-1DA33-4... | IE1 | 2930 | 48.9 | 28.5 | 0.85 | 88.7 | 89.3 | 87.4 | 7 | 2.2 | 3.2 | 0.034 | K | 101 |
| 18.5 | 21.3 | 160 L | 1LE0022-1DA43-4... | IE1 | 2935 | 60 | 35 | 0.86 | 89.3 | 89.9 | 89.1 | 7.6 | 2.5 | 3.4 | 0.041 | K | 120 |
| 22 | 24.5 | 180 M | 1LE0022-1EA23-4... | IE1 | 2925 | 72 | 40.5 | 0.87 | 89.9 | 90.6 | 90 | 7.6 | 2.7 | 3.5 | 0.072 | K | 151 |
| 30 | 33.5 | 200 L | 1LE0022-2AA43-4... | IE1 | 2950 | 97 | 55 | 0.87 | 90.7 | 90.8 | 89 | 7.5 | 2.5 | 3.2 | 0.12 | K | 224 |
| 37 | 41.5 | 200 L | 1LE0022-2AA53-4... | IE1 | 2950 | 120 | 67 | 0.88 | 91.2 | 91.6 | 90.4 | 7.4 | 2.6 | 3.2 | 0.15 | K | 242 |
| 45 | 51 | 225 M | 1LE0022-2BA23-4... | IE1 | 2960 | 145 | 81 | 0.88 | 91.7 | 91.9 | 90.5 | 7.6 | 2.8 | 3.3 | 0.23 | K | 304 |
| 55 | 62 | 250 M | 1LE0022-2CA23-4... | IE1 | 2970 | 177 | 98 | 0.88 | 92.1 | 92.4 | 90.7 | 7.7 | 2.5 | 3.1 | 0.4 | K | 374 |
| 75 | 84 | 280 S | 1LE0022-2DA03-4... | IE1 | 2970 | 241 | 134 | 0.87 | 92.7 | 92.6 | 91.1 | 6.7 | 2.7 | 3 | 0.7 | J | 540 |
| 90 | 101 | 280 M | 1LE0022-2DA23-4... | IE1 | 2975 | 289 | 159 | 0.88 | 93 | 93.2 | 91.3 | 7.2 | 2.8 | 3 | 0.82 | J | 560 |
| 110 | 123 | 315 S | 1LE0022-3AA03-4... | IE1 | 2982 | 353 | 189 | 0.9 | 93.3 | 93.1 | 91.2 | 7.5 | 2.2 | 3.1 | 1.4 | K | 735 |
| 132 | 148 | 315 M | 1LE0022-3AA23-4... | IE1 | 2980 | 423 | 220 | 0.92 | 93.5 | 93.1 | 91.7 | 7.5 | 2.3 | 2.9 | 1.7 | J | 850 |
| 160 | 180 | 315 L | 1LE0022-3AA53-4... | IE1 | 2982 | 513 | 265 | 0.92 | 93.8 | 93.6 | 92.5 | 7.6 | 2.5 | 2.8 | 1.9 | J | 960 |
| 185 | 207 | 315 L | 1LE0022-3AA63-4... | IE1 | 2978 | 594 | 310 | 0.92 | 93.9 | 93.9 | 93.1 | 7.5 | 2.4 | 2.8 | 2.3 | J | 1070 |
| 200 | 224 | 315 L | 1LE0022-3AA73-4... | IE1 | 2980 | 641 | 335 | 0.92 | 94 | 94.3 | 93.2 | 7.9 | 2.5 | 2.6 | 2.3 | K | 1080 |
| 220 | 246 | 355 M | 1LE0022-3BA23-4... | IE1 | 2985 | 704 | 370 | 0.9 | 94.8 | 95 | 92.8 | 6.5 | 2 | 2.1 | 2.9 | H | 1590 |
| 250 | 280 | 355 M | 1LE0022-3BA33-4... | IE1 | 2985 | 800 | 420 | 0.9 | 95.2 | 95.2 | 93 | 6.5 | 2 | 2.1 | 3 | H | 1620 |
| 280 | 314 | 355 L | 1LE0022-3BA53-4... | IE1 | 2985 | 896 | 470 | 0.9 | 95.2 | 95.2 | 92.9 | 6.5 | 2 | 2.1 | 3.5 | H | 1820 |
| 315 | 353 | 355 L | 1LE0022-3BA63-4... | IE1 | 2985 | 1008 | 530 | 0.9 | 95.4 | 95.4 | 93.2 | 6.5 | 2 | 2.1 | 3.5 | H | 1830 |

SIMOTICS Option Line – IE1



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE1 | | |
| Series | 1LE0022 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|-------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 V Δ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0022-0DB22-2... | - | 1415 | 3.7 | 1.43 | 0.81 | 69.4 | 69.9 | 66.8 | 4.5 | 2 | 2.6 | 0.0016 | D | 17 |
| 0.75 | 0.86 | 80 M | 1LE0022-0DB32-2... | IE1 | 1405 | 5.1 | 1.87 | 0.81 | 72.1 | 73.7 | 71.8 | 4.8 | 2 | 2.6 | 0.0019 | D | 18.5 |
| 1.1 | 1.3 | 90 S | 1LE0022-0EB02-2... | IE1 | 1420 | 7.4 | 2.65 | 0.8 | 75 | 77.3 | 74.3 | 5.4 | 2 | 2.6 | 0.0027 | E | 23 |
| 1.5 | 1.75 | 90 L | 1LE0022-0EB42-2... | IE1 | 1425 | 10 | 3.5 | 0.81 | 77.2 | 77.3 | 75.1 | 5.6 | 2 | 2.5 | 0.0034 | E | 26 |
| 2.2 | 2.55 | 100 L | 1LE0022-1AB42-2... | IE1 | 1425 | 14.8 | 4.95 | 0.81 | 79.7 | 80.7 | 78.7 | 5.8 | 2.4 | 2.9 | 0.0063 | E | 30 |
| 3 | 3.45 | 100 L | 1LE0022-1AB52-2... | IE1 | 1420 | 20.2 | 6.4 | 0.83 | 81.5 | 83.1 | 81.5 | 6.5 | 2.8 | 3.1 | 0.0081 | E | 33 |
| 4 | 4.6 | 112 M | 1LE0022-1BB22-2... | IE1 | 1445 | 26.4 | 8.8 | 0.79 | 83.1 | 83.3 | 81.5 | 7.4 | 2.8 | 3.3 | 0.011 | M | 44 |
| 5.5 | 6.3 | 132 S | 1LE0022-1CB02-2... | IE1 | 1450 | 36.2 | 11.4 | 0.82 | 84.7 | 85.5 | 84.3 | 6.5 | 2 | 3.1 | 0.019 | K | 61 |
| 7.5 | 8.6 | 132 M | 1LE0022-1CB22-2... | IE1 | 1435 | 50 | 15.4 | 0.82 | 86 | 87.2 | 87.2 | 6.4 | 2.3 | 3.1 | 0.025 | K | 70 |
| 400 V Δ / 690 VY | | | | | | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1LE0022-1AB43-4... | IE1 | 1425 | 14.8 | 4.9 | 0.81 | 79.7 | 80.7 | 78.7 | 5.8 | 2.4 | 2.9 | 0.0063 | E | 30 |
| 3 | 3.45 | 100 L | 1LE0022-1AB53-4... | IE1 | 1420 | 20.2 | 6.4 | 0.83 | 81.5 | 83.1 | 81.5 | 6.5 | 2.8 | 3.1 | 0.0081 | E | 33 |
| 4 | 4.6 | 112 M | 1LE0022-1BB23-4... | IE1 | 1445 | 26.4 | 8.8 | 0.79 | 83.1 | 83.3 | 81.5 | 7.4 | 2.8 | 3.3 | 0.011 | M | 44 |
| 5.5 | 6.3 | 132 S | 1LE0022-1CB03-4... | IE1 | 1450 | 36.2 | 11.4 | 0.82 | 84.7 | 85.5 | 84.3 | 6.5 | 2 | 3.1 | 0.019 | K | 61 |
| 7.5 | 8.6 | 132 M | 1LE0022-1CB23-4... | IE1 | 1435 | 50 | 15.4 | 0.82 | 86 | 87.2 | 87.2 | 6.4 | 2.3 | 3.1 | 0.025 | K | 70 |
| 11 | 12.6 | 160 M | 1LE0022-1DB23-4... | IE1 | 1455 | 72 | 21.5 | 0.84 | 87.6 | 88.5 | 87.8 | 6.9 | 2.2 | 3.3 | 0.045 | K | 99 |
| 15 | 17.3 | 160 L | 1LE0022-1DB43-4... | IE1 | 1460 | 98 | 29 | 0.84 | 88.7 | 89.4 | 88.6 | 7.8 | 2.7 | 3.8 | 0.06 | L | 125 |
| 18.5 | 21.3 | 180 M | 1LE0022-1EB23-4... | IE1 | 1470 | 120 | 35 | 0.85 | 89.3 | 90.3 | 89.9 | 7.8 | 2.7 | 3.5 | 0.13 | L | 163 |
| 22 | 24.5 | 180 L | 1LE0022-1EB43-4... | IE1 | 1465 | 143 | 41.5 | 0.85 | 89.9 | 90.9 | 89.9 | 7.8 | 2.4 | 3.2 | 0.14 | L | 179 |
| 30 | 33.5 | 200 L | 1LE0022-2AB43-4... | IE1 | 1470 | 195 | 56 | 0.85 | 90.7 | 91.6 | 90.5 | 7.4 | 2.4 | 3.1 | 0.22 | K | 235 |
| 37 | 41.5 | 225 S | 1LE0022-2BB03-4... | IE1 | 1470 | 240 | 68 | 0.86 | 91.2 | 91.8 | 91 | 7.3 | 2.3 | 2.8 | 0.44 | K | 295 |
| 45 | 51 | 225 M | 1LE0022-2BB23-4... | IE1 | 1475 | 292 | 82 | 0.87 | 91.7 | 92.4 | 92 | 7.8 | 2.9 | 3.3 | 0.5 | K | 322 |
| 55 | 62 | 250 M | 1LE0022-2CB23-4... | IE1 | 1478 | 356 | 101 | 0.86 | 92.1 | 92.8 | 92 | 7.6 | 3 | 2.8 | 0.8 | K | 410 |
| 75 | 84 | 280 S | 1LE0022-2DB03-4... | IE1 | 1480 | 484 | 133 | 0.88 | 92.7 | 93.3 | 92.2 | 7.2 | 2.6 | 2.8 | 1.3 | J | 540 |
| 90 | 101 | 280 M | 1LE0022-2DB23-4... | IE1 | 1485 | 579 | 159 | 0.88 | 93 | 93.5 | 92.2 | 7.8 | 2.7 | 2.8 | 1.4 | K | 600 |
| 110 | 123 | 315 S | 1LE0022-3AB03-4... | IE1 | 1490 | 706 | 200 | 0.85 | 93.3 | 93.4 | 92.5 | 8.6 | 2.8 | 3.1 | 2.2 | L | 745 |
| 132 | 148 | 315 M | 1LE0022-3AB23-4... | IE1 | 1488 | 848 | 235 | 0.87 | 93.5 | 93.8 | 93.4 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 180 | 315 L | 1LE0022-3AB53-4... | IE1 | 1488 | 1030 | 285 | 0.87 | 93.8 | 94 | 93.6 | 7.4 | 3 | 2.9 | 3 | K | 950 |
| 185 | 207 | 315 L | 1LE0022-3AB63-4... | IE1 | 1490 | 1185 | 325 | 0.88 | 93.9 | 94.1 | 93.6 | 7.6 | 3 | 2.9 | 3.6 | K | 1060 |
| 200 | 224 | 315 L | 1LE0022-3AB73-4... | IE1 | 1488 | 1285 | 345 | 0.88 | 94 | 94.3 | 94.1 | 7.4 | 3 | 3 | 3.7 | J | 1070 |
| 220 | 246 | 355 M | 1LE0022-3BB23-4... | IE1 | 1490 | 1410 | 380 | 0.87 | 95 | 95.1 | 93.1 | 6.5 | 2.1 | 2.2 | 6.6 | H | 1630 |
| 250 | 280 | 355 M | 1LE0022-3BB33-4... | IE1 | 1490 | 1602 | 435 | 0.87 | 95.2 | 95.2 | 93.6 | 6.5 | 2.1 | 2.2 | 6.9 | H | 1650 |
| 280 | 314 | 355 L | 1LE0022-3BB53-4... | IE1 | 1490 | 1795 | 485 | 0.87 | 95.2 | 95.2 | 93.4 | 6.5 | 2.1 | 2.2 | 7.7 | H | 1820 |
| 315 | 353 | 355 L | 1LE0022-3BB63-4... | IE1 | 1490 | 2019 | 550 | 0.87 | 95.2 | 95.3 | 93.6 | 6.5 | 2.1 | 2.2 | 8.5 | H | 1890 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE1

| Cast-iron series | | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE1 | | |
| Series | 1LE0022 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

| Electrical data – 1LE0 – IE1 – 6-pole | | (IE1 cast iron) 1000 rpm 6-pole, 400 V 50 Hz | | | | | | | | | | | | | | | |
|---------------------------------------|------------|--|--------------------|-------------|--------------|---------------|--------------------|---------------|----------|----------|------------------|-----------------|-------------------|-------------------|--------------|--------------------|------|
| Rated output | Frame size | Article number | IE class | Rated speed | Rated torque | Rated current | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia | Torque class | Net weight (IM B3) | |
| | | | | | | | | 100% load | 75% load | 50% load | | | | | | | |
| 50 Hz kW | 60 Hz kW | | | rpm | Nm | A | | % | % | % | | | | kgm ² | | kg | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0022-0DC32-2... | – | 910 | 5.8 | 1.6 | 0.74 | 67.5 | 68.7 | 65.6 | 3.8 | 2.1 | 2.4 | 0.0024 | C | 18 |
| 0.75 | 0.86 | 90 S | 1LE0022-0EC02-2... | IE1 | 925 | 7.7 | 2.1 | 0.74 | 70 | 71.5 | 68.9 | 3.9 | 2 | 2.5 | 0.0028 | C | 25 |
| 1.1 | 1.3 | 90 L | 1LE0022-0EC42-2... | IE1 | 935 | 11.3 | 3 | 0.73 | 72.9 | 74 | 71.8 | 4.4 | 2.2 | 2.7 | 0.0038 | D | 26 |
| 1.5 | 1.75 | 100 L | 1LE0022-1AC42-2... | IE1 | 940 | 15.4 | 3.8 | 0.76 | 75.2 | 77.2 | 74.7 | 4.6 | 2.1 | 2.6 | 0.0074 | D | 32 |
| 2.2 | 2.55 | 112 M | 1LE0022-1BC22-2... | IE1 | 940 | 22.3 | 5.5 | 0.75 | 77.7 | 79.2 | 78.1 | 5.2 | 2.4 | 3 | 0.01 | E | 42 |
| 3 | 3.45 | 132 S | 1LE0022-1CC02-2... | IE1 | 955 | 30 | 7.5 | 0.73 | 79.7 | 80.9 | 79.3 | 5.2 | 2 | 2.8 | 0.018 | E | 56 |
| 4 | 4.6 | 132 M | 1LE0022-1CC22-2... | IE1 | 955 | 40 | 9.7 | 0.73 | 81.4 | 82.2 | 79.4 | 5.6 | 2.1 | 2.9 | 0.023 | K | 65 |
| 5.5 | 6.3 | 132 M | 1LE0022-1CC32-2... | IE1 | 955 | 55 | 12.9 | 0.74 | 83.1 | 84.2 | 83 | 6 | 2.3 | 3.2 | 0.029 | K | 73 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 1LE0022-1AC43-4... | IE1 | 940 | 15.4 | 3.8 | 0.76 | 75.2 | 77.2 | 74.7 | 4.6 | 2.1 | 2.6 | 0.0074 | D | 32 |
| 2.2 | 2.55 | 112 M | 1LE0022-1BC23-4... | IE1 | 940 | 22.3 | 5.4 | 0.75 | 77.7 | 79.2 | 78.1 | 5.2 | 2.4 | 3 | 0.01 | E | 42 |
| 3 | 3.45 | 132 S | 1LE0022-1CC03-4... | IE1 | 955 | 30 | 7.4 | 0.73 | 79.7 | 80.9 | 79.3 | 5.2 | 2 | 2.8 | 0.018 | E | 56 |
| 4 | 4.6 | 132 M | 1LE0022-1CC23-4... | IE1 | 955 | 40 | 9.7 | 0.73 | 81.4 | 82.2 | 79.4 | 5.6 | 2.1 | 2.9 | 0.023 | K | 65 |
| 5.5 | 6.3 | 132 M | 1LE0022-1CC33-4... | IE1 | 955 | 55 | 12.9 | 0.74 | 83.1 | 84.2 | 83 | 6 | 2.3 | 3.2 | 0.029 | K | 73 |
| 7.5 | 8.6 | 160 M | 1LE0022-1DC23-4... | IE1 | 965 | 74 | 16.8 | 0.76 | 84.7 | 85.4 | 84.5 | 5.8 | 2 | 2.9 | 0.052 | K | 101 |
| 11 | 12.6 | 160 L | 1LE0022-1DC43-4... | IE1 | 965 | 109 | 24 | 0.76 | 86.4 | 87 | 86 | 6.6 | 2.2 | 3.1 | 0.072 | K | 128 |
| 15 | 17.3 | 180 L | 1LE0022-1EC43-4... | IE1 | 970 | 148 | 32 | 0.78 | 87.7 | 88.7 | 88.4 | 6.5 | 2.3 | 3 | 0.18 | K | 169 |
| 18.5 | 21.3 | 200 L | 1LE0022-2AC43-4... | IE1 | 975 | 182.1 | 36.5 | 0.82 | 88.6 | 90 | 90.1 | 5.8 | 2.2 | 2.8 | 0.26 | J | 218 |
| 22 | 24.5 | 200 L | 1LE0022-2AC53-4... | IE1 | 975 | 215 | 43 | 0.82 | 89.2 | 90.5 | 90.5 | 6.5 | 2.3 | 2.8 | 0.31 | J | 237 |
| 30 | 33.5 | 225 M | 1LE0022-2BC23-4... | IE1 | 978 | 293 | 58 | 0.83 | 90.2 | 91.4 | 90.5 | 6.7 | 2.4 | 2.8 | 0.6 | K | 290 |
| 37 | 41.5 | 250 M | 1LE0022-2CC23-4... | IE1 | 982 | 360 | 71 | 0.83 | 90.8 | 91.5 | 91.2 | 7.5 | 3 | 2.8 | 0.89 | K | 389 |
| 45 | 51 | 280 S | 1LE0022-2DC03-4... | IE1 | 985 | 437 | 84 | 0.85 | 91.4 | 92.4 | 92.3 | 7.1 | 2.5 | 2.8 | 1.1 | K | 500 |
| 55 | 62 | 280 M | 1LE0022-2DC23-4... | IE1 | 988 | 532 | 102 | 0.85 | 91.9 | 92.6 | 92.4 | 7.5 | 2.4 | 2.7 | 1.4 | K | 525 |
| 75 | 84 | 315 S | 1LE0022-3AC03-4... | IE1 | 988 | 725 | 141 | 0.83 | 92.6 | 93 | 92.4 | 7.5 | 2.4 | 3 | 2.3 | K | 675 |
| 90 | 101 | 315 M | 1LE0022-3AC23-4... | IE1 | 986 | 872 | 166 | 0.84 | 92.9 | 93.4 | 93.2 | 7 | 2.3 | 2.8 | 2.8 | K | 830 |
| 110 | 123 | 315 L | 1LE0022-3AC53-4... | IE1 | 986 | 1066 | 200 | 0.86 | 93.3 | 93.9 | 93.8 | 6.5 | 2.2 | 2.7 | 3.4 | J | 915 |
| 132 | 148 | 315 L | 1LE0022-3AC63-4... | IE1 | 988 | 1278 | 235 | 0.86 | 93.5 | 94.2 | 93.6 | 7.8 | 2.2 | 2.4 | 3.9 | K | 1010 |
| 160 | 180 | 355 M | 1LE0022-3BC23-4... | IE1 | 989 | 1545 | 275 | 0.88 | 94.5 | 94.6 | 92.4 | 6.5 | 2 | 2.1 | 7.7 | H | 1640 |
| 185 | 207 | 355 M | 1LE0022-3BC33-4... | IE1 | 989 | 1786 | 320 | 0.88 | 94.5 | 94.6 | 92.6 | 6.5 | 2 | 2.1 | 8.4 | H | 1680 |
| 200 | 224 | 355 M | 1LE0022-3BC43-4... | IE1 | 989 | 1931 | 345 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 9.1 | H | 1720 |
| 220 | 246 | 355 L | 1LE0022-3BC53-4... | IE1 | 989 | 2124 | 380 | 0.88 | 94.7 | 94.7 | 92.6 | 6.5 | 2 | 2.1 | 10.1 | H | 1840 |
| 250 | 280 | 355 L | 1LE0022-3BC63-4... | IE1 | 989 | 2414 | 430 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 11.4 | H | 1920 |

SIMOTICS Option Line – IE1



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

| Cast-iron series | | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE1 | | |
| Series | 1LE0022 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

Electrical data – 1LE0 – IE1 – 2-pole (IE1 cast iron) 3000 rpm 2-pole, 525 VΔ 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated | | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg | |
|--------------------|------------|--------------------|----------|-----------|-----------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|------|
| | | | | speed rpm | torque Nm | | 100% load % | 75% load % | 50% load % | | | | | | | |
| 0.75 | 80 M | 1LE0022-ODA24-1... | IE1 | 2800 | 2.6 | 1.33 | 0.86 | 72.1 | 73 | 71.1 | 5.1 | 2.3 | 2.7 | 0.0008 | D | 15 |
| 1.1 | 80 M | 1LE0022-ODA34-1... | IE1 | 2830 | 3.7 | 1.88 | 0.86 | 75 | 77.3 | 74.4 | 6 | 2.6 | 3.1 | 0.001 | E | 17.5 |
| 1.5 | 90 S | 1LE0022-OEA04-1... | IE1 | 2885 | 5 | 2.5 | 0.85 | 77.2 | 76.9 | 73.5 | 6.9 | 2.5 | 3.2 | 0.0017 | F | 22 |
| 2.2 | 90 L | 1LE0022-OEA44-1... | IE1 | 2885 | 7.3 | 3.5 | 0.87 | 79.7 | 80.5 | 78.1 | 7.5 | 2.7 | 3.4 | 0.0022 | F | 26 |
| 3 | 100 L | 1LE0022-1AA44-1... | IE1 | 2850 | 10 | 4.8 | 0.85 | 81.5 | 82.1 | 79.9 | 6.9 | 3 | 3.7 | 0.0033 | F | 33 |
| 4 | 112 M | 1LE0022-1BA24-1... | IE1 | 2910 | 13.1 | 6.2 | 0.85 | 83.1 | 83.7 | 81.5 | 7.8 | 2.9 | 4.2 | 0.0064 | L | 39 |
| 5.5 | 132 S | 1LE0022-1CA04-1... | IE1 | 2915 | 18 | 8.3 | 0.86 | 84.7 | 85.3 | 83.7 | 6.9 | 2 | 3.1 | 0.013 | K | 56 |
| 7.5 | 132 S | 1LE0022-1CA14-1... | IE1 | 2920 | 24.5 | 10.9 | 0.88 | 86 | 87.2 | 86.2 | 7.1 | 2 | 2.9 | 0.015 | K | 62 |
| 11 | 160 M | 1LE0022-1DA24-1... | IE1 | 2925 | 35.9 | 16.3 | 0.84 | 87.6 | 88.2 | 87.1 | 6.3 | 2 | 3.1 | 0.028 | J | 93 |
| 15 | 160 M | 1LE0022-1DA34-1... | IE1 | 2930 | 48.9 | 21.5 | 0.85 | 88.7 | 89.3 | 87.4 | 7 | 2.2 | 3.2 | 0.034 | K | 101 |
| 18.5 | 160 L | 1LE0022-1DA44-1... | IE1 | 2935 | 60 | 26.5 | 0.86 | 89.3 | 89.9 | 89.1 | 7.6 | 2.5 | 3.4 | 0.041 | K | 120 |
| 22 | 180 M | 1LE0022-1EA24-1... | IE1 | 2925 | 72 | 31 | 0.87 | 89.9 | 90.6 | 90 | 7.6 | 2.7 | 3.5 | 0.072 | K | 151 |
| 30 | 200 L | 1LE0022-2AA44-1... | IE1 | 2950 | 97 | 42 | 0.87 | 90.7 | 90.8 | 89 | 7.5 | 2.5 | 3.2 | 0.12 | K | 224 |
| 37 | 200 L | 1LE0022-2AA54-1... | IE1 | 2950 | 120 | 51 | 0.88 | 91.2 | 91.6 | 90.4 | 7.4 | 2.6 | 3.2 | 0.15 | K | 242 |
| 45 | 225 M | 1LE0022-2BA24-1... | IE1 | 2960 | 145 | 62 | 0.88 | 91.7 | 91.9 | 90.5 | 7.6 | 2.8 | 3.3 | 0.23 | K | 304 |
| 55 | 250 M | 1LE0022-2CA24-1... | IE1 | 2970 | 177 | 75 | 0.88 | 92.1 | 92.4 | 90.7 | 7.7 | 2.5 | 3.1 | 0.4 | K | 374 |
| 75 | 280 S | 1LE0022-2DA04-1... | IE1 | 2970 | 241 | 102 | 0.87 | 92.7 | 92.6 | 91.1 | 6.7 | 2.7 | 3 | 0.7 | J | 540 |
| 90 | 280 M | 1LE0022-2DA24-1... | IE1 | 2975 | 289 | 121 | 0.88 | 93 | 93.2 | 91.3 | 7.2 | 2.8 | 3 | 0.82 | J | 560 |
| 110 | 315 S | 1LE0022-3AA04-1... | IE1 | 2982 | 353 | 144 | 0.9 | 93.3 | 93.1 | 91.2 | 7.5 | 2.2 | 3.1 | 1.4 | K | 735 |
| 132 | 315 M | 1LE0022-3AA24-1... | IE1 | 2980 | 423 | 170 | 0.92 | 93.5 | 93.1 | 91.7 | 7.5 | 2.3 | 2.9 | 1.7 | J | 850 |
| 160 | 315 L | 1LE0022-3AA54-1... | IE1 | 2982 | 513 | 205 | 0.92 | 93.8 | 93.6 | 92.5 | 7.6 | 2.5 | 2.8 | 1.9 | J | 960 |
| 185 | 315 L | 1LE0022-3AA64-1... | IE1 | 2978 | 594 | 235 | 0.92 | 93.9 | 93.9 | 93.1 | 7.5 | 2.4 | 2.8 | 2.3 | J | 1070 |
| 200 | 315 L | 1LE0022-3AA74-1... | IE1 | 2980 | 641 | 255 | 0.92 | 94 | 94.3 | 93.2 | 7.9 | 2.5 | 2.6 | 2.3 | K | 1080 |
| 220 | 355 M | 1LE0022-3BA24-1... | IE1 | 2985 | 704 | 280 | 0.9 | 94.8 | 95 | 92.8 | 6.5 | 2 | 2.1 | 2.9 | H | 1590 |
| 250 | 355 M | 1LE0022-3BA34-1... | IE1 | 2985 | 800 | 320 | 0.9 | 95.2 | 95.2 | 93 | 6.5 | 2 | 2.1 | 3 | H | 1620 |
| 280 | 355 L | 1LE0022-3BA54-1... | IE1 | 2985 | 896 | 360 | 0.9 | 95.2 | 95.2 | 92.9 | 6.5 | 2 | 2.1 | 3.5 | H | 1820 |
| 315 | 355 L | 1LE0022-3BA64-1... | IE1 | 2985 | 1008 | 405 | 0.9 | 95.4 | 95.4 | 93.2 | 6.5 | 2 | 2.1 | 3.5 | H | 1830 |

Electrical data – 1LE0 – IE1 – 4-pole (IE1 cast iron) 1500 rpm 4-pole, 525 VΔ 50 Hz

| | | | | | | | | | | | | | | | | |
|------|-------|--------------------|-----|------|------|------|------|------|------|------|-----|-----|-----|--------|---|------|
| 0.55 | 80 M | 1LE0022-0DB24-1... | - | 1415 | 3.7 | 1.08 | 0.81 | 69.4 | 69.9 | 66.8 | 4.5 | 2 | 2.6 | 0.0016 | D | 17 |
| 0.75 | 80 M | 1LE0022-0DB34-1... | IE1 | 1405 | 5.1 | 1.41 | 0.81 | 72.1 | 73.7 | 71.8 | 4.8 | 2 | 2.6 | 0.0019 | D | 18.5 |
| 1.1 | 90 S | 1LE0022-0EB04-1... | IE1 | 1420 | 7.4 | 2.05 | 0.8 | 75 | 77.3 | 74.3 | 5.4 | 2 | 2.6 | 0.0027 | E | 23 |
| 1.5 | 90 L | 1LE0022-0EB44-1... | IE1 | 1425 | 10 | 2.65 | 0.81 | 77.2 | 77.3 | 75.1 | 5.6 | 2 | 2.5 | 0.0034 | E | 26 |
| 2.2 | 100 L | 1LE0022-1AB44-1... | IE1 | 1425 | 14.8 | 3.75 | 0.81 | 79.7 | 80.7 | 78.7 | 5.8 | 2.4 | 2.9 | 0.0063 | E | 30 |
| 3 | 100 L | 1LE0022-1AB54-1... | IE1 | 1420 | 20.2 | 4.85 | 0.83 | 81.5 | 83.1 | 81.5 | 6.5 | 2.8 | 3.1 | 0.0081 | E | 33 |
| 4 | 112 M | 1LE0022-1BB24-1... | IE1 | 1445 | 26.4 | 6.7 | 0.79 | 83.1 | 83.3 | 81.5 | 7.4 | 2.8 | 3.3 | 0.011 | M | 44 |
| 5.5 | 132 S | 1LE0022-1CB04-1... | IE1 | 1450 | 36.2 | 8.7 | 0.82 | 84.7 | 85.5 | 84.3 | 6.5 | 2 | 3.1 | 0.019 | K | 61 |
| 7.5 | 132 M | 1LE0022-1CB24-1... | IE1 | 1435 | 50 | 11.7 | 0.82 | 86 | 87.2 | 87.2 | 6.4 | 2.3 | 3.1 | 0.025 | K | 70 |
| 11 | 160 M | 1LE0022-1DB24-1... | IE1 | 1455 | 72 | 16.3 | 0.84 | 87.6 | 88.5 | 87.8 | 6.9 | 2.2 | 3.3 | 0.045 | K | 99 |
| 15 | 160 L | 1LE0022-1DB44-1... | IE1 | 1460 | 98 | 22 | 0.84 | 88.7 | 89.4 | 88.6 | 7.8 | 2.7 | 3.8 | 0.06 | L | 125 |
| 18.5 | 180 M | 1LE0022-1EB24-1... | IE1 | 1470 | 120 | 27 | 0.85 | 89.3 | 90.3 | 89.9 | 7.8 | 2.7 | 3.5 | 0.13 | L | 163 |
| 22 | 180 L | 1LE0022-1EB44-1... | IE1 | 1465 | 143 | 31.5 | 0.85 | 89.9 | 90.9 | 89.9 | 7.8 | 2.4 | 3.2 | 0.14 | L | 179 |
| 30 | 200 L | 1LE0022-2AB44-1... | IE1 | 1470 | 195 | 42.5 | 0.85 | 90.7 | 91.6 | 90.5 | 7.4 | 2.4 | 3.1 | 0.22 | K | 235 |
| 37 | 225 S | 1LE0022-2BB04-1... | IE1 | 1470 | 240 | 52 | 0.86 | 91.2 | 91.8 | 91 | 7.3 | 2.3 | 2.8 | 0.44 | K | 295 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE1

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE1 | | |
| Series | 1LE0022 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2414 Nm | | |

Electrical data – 1LE0 – IE1 – 4-pole (IE1 cast iron) 1500 rpm 4-pole, 525 VΔ 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at load % | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm² | Torque class | Net weight (IM B3) kg |
|-----------------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|----------------------|------|------|------------------|-----------------|-------------------|------------------------|--------------|-----------------------|
| | | | | | | | | 100% | 75% | 50% | | | | | | |
| 45 | 225 M | 1LE0022-2BB24-1... | IE1 | 1475 | 292 | 62 | 0.87 | 91.7 | 92.4 | 92 | 7.8 | 2.9 | 3.3 | 0.5 | K | 322 |
| 55 | 250 M | 1LE0022-2CB24-1... | IE1 | 1478 | 356 | 77 | 0.86 | 92.1 | 92.8 | 92 | 7.6 | 3 | 2.8 | 0.8 | K | 410 |
| 75 | 280 S | 1LE0022-2DB04-1... | IE1 | 1480 | 484 | 101 | 0.88 | 92.7 | 93.3 | 92.2 | 7.2 | 2.6 | 2.8 | 1.3 | J | 540 |
| 90 | 280 M | 1LE0022-2DB24-1... | IE1 | 1485 | 579 | 121 | 0.88 | 93 | 93.5 | 92.2 | 7.8 | 2.7 | 2.8 | 1.4 | K | 600 |
| 110 | 315 S | 1LE0022-3AB04-1... | IE1 | 1490 | 706 | 153 | 0.85 | 93.3 | 93.4 | 92.5 | 8.6 | 2.8 | 3.1 | 2.2 | L | 745 |
| 132 | 315 M | 1LE0022-3AB24-1... | IE1 | 1488 | 848 | 177 | 0.87 | 93.5 | 93.8 | 93.4 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 315 L | 1LE0022-3AB54-1... | IE1 | 1488 | 1030 | 215 | 0.87 | 93.8 | 94 | 93.6 | 7.4 | 3 | 2.9 | 3 | K | 950 |
| 185 | 315 L | 1LE0022-3AB64-1... | IE1 | 1490 | 1185 | 245 | 0.88 | 93.9 | 94.1 | 93.6 | 7.6 | 3 | 2.9 | 3.6 | K | 1060 |
| 200 | 315 L | 1LE0022-3AB74-1... | IE1 | 1488 | 1285 | 265 | 0.88 | 94 | 94.3 | 94.1 | 7.4 | 3 | 3 | 3.7 | J | 1070 |
| 220 | 355 M | 1LE0022-3BB24-1... | IE1 | 1490 | 1410 | 290 | 0.87 | 95 | 95.1 | 93.1 | 6.5 | 2.1 | 2.2 | 6.6 | H | 1630 |
| 250 | 355 M | 1LE0022-3BB34-1... | IE1 | 1490 | 1602 | 330 | 0.87 | 95.2 | 95.2 | 93.6 | 6.5 | 2.1 | 2.2 | 6.9 | H | 1650 |
| 280 | 355 L | 1LE0022-3BB54-1... | IE1 | 1490 | 1795 | 370 | 0.87 | 95.2 | 95.2 | 93.4 | 6.5 | 2.1 | 2.2 | 7.7 | H | 1820 |
| 315 | 355 L | 1LE0022-3BB64-1... | IE1 | 1490 | 2019 | 420 | 0.87 | 95.2 | 95.3 | 93.6 | 6.5 | 2.1 | 2.2 | 8.5 | H | 1890 |

Electrical data – 1LE0 – IE1 – 6-pole (IE1 cast iron) 1000 rpm 6-pole, 525 VΔ 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at load % | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm² | Torque class | Net weight (IM B3) kg |
|-----------------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|----------------------|------|------|------------------|-----------------|-------------------|------------------------|--------------|-----------------------|
| | | | | | | | | 100% | 75% | 50% | | | | | | |
| 0.55 | 80 M | 1LE0022-0DC34-1... | - | 910 | 5.8 | 1.21 | 0.74 | 67.5 | 68.7 | 65.6 | 3.8 | 2.1 | 2.4 | 0.0024 | C | 18 |
| 0.75 | 90 S | 1LE0022-0EC04-1... | IE1 | 925 | 7.7 | 1.59 | 0.74 | 70 | 71.5 | 68.9 | 3.9 | 2 | 2.5 | 0.0028 | C | 25 |
| 1.1 | 90 L | 1LE0022-0EC44-1... | IE1 | 935 | 11.3 | 2.3 | 0.73 | 72.9 | 74 | 71.8 | 4.4 | 2.2 | 2.7 | 0.0038 | D | 26 |
| 1.5 | 100 L | 1LE0022-1AC44-1... | IE1 | 940 | 15.4 | 2.9 | 0.76 | 75.2 | 77.2 | 74.7 | 4.6 | 2.1 | 2.6 | 0.0074 | D | 32 |
| 2.2 | 112 M | 1LE0022-1BC24-1... | IE1 | 940 | 22.3 | 4.15 | 0.75 | 77.7 | 79.2 | 78.1 | 5.2 | 2.4 | 3 | 0.01 | E | 42 |
| 3 | 132 S | 1LE0022-1CC04-1... | IE1 | 955 | 30 | 5.7 | 0.73 | 79.7 | 80.9 | 79.3 | 5.2 | 2 | 2.8 | 0.018 | E | 56 |
| 4 | 132 M | 1LE0022-1CC24-1... | IE1 | 955 | 40 | 7.4 | 0.73 | 81.4 | 82.2 | 79.4 | 5.6 | 2.1 | 2.9 | 0.023 | K | 65 |
| 5.5 | 132 M | 1LE0022-1CC34-1... | IE1 | 955 | 55 | 9.8 | 0.74 | 83.1 | 84.2 | 83 | 6 | 2.3 | 3.2 | 0.029 | K | 73 |
| 7.5 | 160 M | 1LE0022-1DC24-1... | IE1 | 965 | 74 | 12.8 | 0.76 | 84.7 | 85.4 | 84.5 | 5.8 | 2 | 2.9 | 0.052 | K | 101 |
| 11 | 160 L | 1LE0022-1DC44-1... | IE1 | 965 | 109 | 18.5 | 0.76 | 86.4 | 87 | 86 | 6.6 | 2.2 | 3.1 | 0.072 | K | 128 |
| 15 | 180 L | 1LE0022-1EC44-1... | IE1 | 970 | 148 | 24.5 | 0.78 | 87.7 | 88.7 | 88.4 | 6.5 | 2.3 | 3 | 0.18 | K | 169 |
| 18.5 | 200 L | 1LE0022-2AC44-1... | IE1 | 975 | 182.1 | 28 | 0.82 | 88.6 | 90 | 90.1 | 5.8 | 2.2 | 2.8 | 0.26 | J | 218 |
| 22 | 200 L | 1LE0022-2AC54-1... | IE1 | 975 | 215 | 33 | 0.82 | 89.2 | 90.5 | 90.5 | 6.5 | 2.3 | 2.8 | 0.31 | J | 237 |
| 30 | 225 M | 1LE0022-2BC24-1... | IE1 | 978 | 293 | 44 | 0.83 | 90.2 | 91.4 | 90.5 | 6.7 | 2.4 | 2.8 | 0.6 | K | 290 |
| 37 | 250 M | 1LE0022-2CC24-1... | IE1 | 982 | 360 | 54 | 0.83 | 90.8 | 91.5 | 91.2 | 7.5 | 3 | 2.8 | 0.89 | K | 389 |
| 45 | 280 S | 1LE0022-2DC04-1... | IE1 | 985 | 437 | 64 | 0.85 | 91.4 | 92.4 | 92.3 | 7.1 | 2.5 | 2.8 | 1.1 | K | 500 |
| 55 | 280 M | 1LE0022-2DC24-1... | IE1 | 988 | 532 | 77 | 0.85 | 91.9 | 92.6 | 92.4 | 7.5 | 2.4 | 2.7 | 1.4 | K | 525 |
| 75 | 315 S | 1LE0022-3AC04-1... | IE1 | 988 | 725 | 107 | 0.83 | 92.6 | 93 | 92.4 | 7.5 | 2.4 | 3 | 2.3 | K | 675 |
| 90 | 315 M | 1LE0022-3AC24-1... | IE1 | 986 | 872 | 127 | 0.84 | 92.9 | 93.4 | 93.2 | 7 | 2.3 | 2.8 | 2.8 | K | 830 |
| 110 | 315 L | 1LE0022-3AC54-1... | IE1 | 986 | 1066 | 152 | 0.86 | 93.3 | 93.9 | 93.8 | 6.5 | 2.2 | 2.7 | 3.4 | J | 915 |
| 132 | 315 L | 1LE0022-3AC64-1... | IE1 | 988 | 1278 | 181 | 0.86 | 93.5 | 94.2 | 93.6 | 7.8 | 2.2 | 2.4 | 3.9 | K | 1010 |
| 160 | 355 M | 1LE0022-3BC24-1... | IE1 | 989 | 1545 | 210 | 0.88 | 94.5 | 94.6 | 92.4 | 6.5 | 2 | 2.1 | 7.7 | H | 1640 |
| 185 | 355 M | 1LE0022-3BC34-1... | IE1 | 989 | 1786 | 240 | 0.88 | 94.5 | 94.6 | 92.6 | 6.5 | 2 | 2.1 | 8.4 | H | 1680 |
| 200 | 355 M | 1LE0022-3BC44-1... | IE1 | 989 | 1931 | 260 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 9.1 | H | 1720 |
| 220 | 355 L | 1LE0022-3BC54-1... | IE1 | 989 | 2124 | 290 | 0.88 | 94.7 | 94.7 | 92.6 | 6.5 | 2 | 2.1 | 10.1 | H | 1840 |
| 250 | 355 L | 1LE0022-3BC64-1... | IE1 | 989 | 2414 | 330 | 0.88 | 94.7 | 94.7 | 93.4 | 6.5 | 2 | 2.1 | 11.4 | H | 1920 |

SIMOTICS Option Line – IE2



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0021 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.75 | 0.86 | 80 M | 1LE0021-ODA22-2... | IE2 | 2795 | 2.6 | 1.67 | 0.84 | 77.4 | 78.5 | 78.5 | 5.6 | 2.4 | 2.4 | 0.0008 | D | 15.5 |
| 1.1 | 1.3 | 80 M | 1LE0021-ODA32-2... | IE2 | 2835 | 3.7 | 2.4 | 0.84 | 79.6 | 80.6 | 77.4 | 6 | 2.8 | 3.2 | 0.0012 | E | 17.5 |
| 1.5 | 1.75 | 90 S | 1LE0021-0EA02-2... | IE2 | 2890 | 5 | 3.2 | 0.84 | 81.3 | 81.7 | 78 | 6.5 | 2.4 | 3.1 | 0.0021 | E | 23 |
| 2.2 | 2.55 | 90 L | 1LE0021-0EA42-2... | IE2 | 2890 | 7.3 | 4.55 | 0.85 | 83.2 | 83.7 | 80.8 | 7.2 | 2.6 | 3.5 | 0.0026 | F | 26 |
| 3 | 3.45 | 100 L | 1LE0021-1AA42-2... | IE2 | 2885 | 9.9 | 6.1 | 0.84 | 84.6 | 85.1 | 84.1 | 7.5 | 4 | 4.5 | 0.0036 | F | 34 |
| 4 | 4.6 | 112 M | 1LE0021-1BA22-2... | IE2 | 2930 | 13 | 7.8 | 0.86 | 85.8 | 86.6 | 84.7 | 7.5 | 2.2 | 2.9 | 0.0064 | L | 40 |
| 5.5 | 6.3 | 132 S | 1LE0021-1CA02-2... | IE2 | 2930 | 17.9 | 10.5 | 0.87 | 87 | 87.6 | 86.9 | 7.5 | 2.2 | 2.9 | 0.014 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0021-1CA12-2... | IE2 | 2930 | 24.4 | 13.8 | 0.89 | 88.1 | 88.8 | 88.5 | 7.5 | 2.3 | 2.9 | 0.017 | K | 62 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 1LE0021-1AA43-4... | IE2 | 2885 | 9.9 | 6.1 | 0.84 | 84.6 | 85.1 | 84.1 | 7.5 | 4 | 4.5 | 0.0036 | F | 34 |
| 4 | 4.6 | 112 M | 1LE0021-1BA23-4... | IE2 | 2930 | 13 | 7.8 | 0.86 | 85.8 | 86.6 | 84.7 | 7.5 | 2.2 | 2.9 | 0.0064 | L | 40 |
| 5.5 | 6.3 | 132 S | 1LE0021-1CA03-4... | IE2 | 2930 | 17.9 | 10.5 | 0.87 | 87 | 87.6 | 86.9 | 7.5 | 2.2 | 2.9 | 0.014 | K | 56 |
| 7.5 | 8.6 | 132 S | 1LE0021-1CA13-4... | IE2 | 2930 | 24.4 | 13.8 | 0.89 | 88.1 | 88.8 | 88.5 | 7.5 | 2.3 | 2.9 | 0.017 | K | 62 |
| 11 | 12.6 | 160 M | 1LE0021-1DA23-4... | IE2 | 2935 | 35.8 | 20.5 | 0.86 | 89.4 | 90.1 | 89.3 | 7.5 | 2.2 | 2.9 | 0.031 | K | 96 |
| 15 | 17.3 | 160 M | 1LE0021-1DA33-4... | IE2 | 2935 | 48.8 | 28 | 0.86 | 90.3 | 91 | 90.5 | 7.5 | 2.4 | 3.2 | 0.038 | K | 106 |
| 18.5 | 21.3 | 160 L | 1LE0021-1DA43-4... | IE2 | 2935 | 60.2 | 33 | 0.89 | 90.9 | 91.7 | 91.5 | 7.5 | 2.4 | 3.2 | 0.046 | K | 125 |
| 22 | 24.5 | 180 M | 1LE0021-1EA23-4... | IE2 | 2935 | 71.6 | 40 | 0.87 | 91.3 | 91.8 | 91.1 | 7.6 | 2.5 | 3.2 | 0.072 | K | 152 |
| 30 | 33.5 | 200 L | 1LE0021-2AA43-4... | IE2 | 2955 | 97 | 55 | 0.86 | 92 | 92.3 | 91.5 | 7.5 | 2.5 | 3.2 | 0.13 | K | 229 |
| 37 | 41.5 | 200 L | 1LE0021-2AA53-4... | IE2 | 2955 | 120 | 66 | 0.88 | 92.5 | 92.8 | 92.3 | 7.5 | 2.5 | 3.2 | 0.15 | K | 245 |
| 45 | 51 | 225 M | 1LE0021-2BA23-4... | IE2 | 2965 | 145 | 80 | 0.88 | 92.9 | 93.1 | 92.5 | 7.9 | 2.5 | 3.1 | 0.24 | K | 307 |
| 55 | 62 | 250 M | 1LE0021-2CA23-4... | IE2 | 2970 | 177 | 97 | 0.88 | 93.2 | 93.2 | 91.8 | 7.5 | 2.5 | 3 | 0.42 | K | 378 |
| 75 | 84 | 280 S | 1LE0021-2DA03-4... | IE2 | 2975 | 241 | 133 | 0.87 | 93.8 | 93.8 | 92.7 | 7.5 | 2.8 | 3 | 0.75 | K | 550 |
| 90 | 101 | 280 M | 1LE0021-2DA23-4... | IE2 | 2978 | 289 | 159 | 0.87 | 94.1 | 94.1 | 92.9 | 7.5 | 3 | 3.1 | 0.88 | K | 570 |
| 110 | 123 | 315 S | 1LE0021-3AA03-4... | IE2 | 2982 | 352 | 187 | 0.9 | 94.3 | 94.3 | 93.3 | 7.5 | 2.2 | 2.6 | 1.4 | J | 740 |
| 132 | 148 | 315 M | 1LE0021-3AA23-4... | IE2 | 2982 | 423 | 220 | 0.91 | 94.6 | 94.6 | 93.9 | 7.5 | 2.3 | 2.9 | 1.7 | J | 855 |
| 160 | 180 | 315 L | 1LE0021-3AA53-4... | IE2 | 2982 | 512 | 265 | 0.92 | 94.8 | 95.1 | 94.1 | 7.5 | 2.5 | 2.8 | 1.9 | J | 970 |
| 185 | 207 | 315 L | 1LE0021-3AA63-4... | IE2 | 2982 | 592 | 305 | 0.92 | 95 | 95.3 | 94.2 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1080 |
| 200 | 224 | 315 L | 1LE0021-3AA73-4... | IE2 | 2982 | 641 | 330 | 0.92 | 95 | 95.3 | 94.4 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1090 |
| 220 | 246 | 355 M | 1LE0021-3BA23-4... | IE2 | 2980 | 705 | 370 | 0.9 | 95 | 95 | 92.8 | 7.1 | 2 | 2.2 | 2.9 | J | 1600 |
| 250 | 280 | 355 M | 1LE0021-3BA33-4... | IE2 | 2980 | 801 | 420 | 0.9 | 95 | 95 | 93 | 7.1 | 2 | 2.2 | 3 | J | 1650 |
| 280 | 314 | 355 L | 1LE0021-3BA53-4... | IE2 | 2980 | 897 | 475 | 0.9 | 95 | 95.1 | 93 | 7.1 | 2 | 2.2 | 3.5 | J | 1830 |
| 315 | 353 | 355 L | 1LE0021-3BA63-4... | IE2 | 2980 | 1009 | 530 | 0.9 | 95 | 95.1 | 93.1 | 7.1 | 2 | 2.3 | 3.5 | J | 1840 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE2

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0021 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|-------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 V Δ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0021-0DB22-2... | - | 1425 | 3.7 | 1.34 | 0.8 | 74 | 74.7 | 70.1 | 6 | 2 | 2.7 | 0.0021 | F | 17.5 |
| 0.75 | 0.86 | 80 M | 1LE0021-0DB32-2... | IE2 | 1440 | 5 | 1.82 | 0.75 | 79.6 | 79.6 | 76.8 | 6.5 | 2.8 | 3.5 | 0.0027 | F | 19 |
| 1.1 | 1.3 | 90 S | 1LE0021-0EB02-2... | IE2 | 1440 | 7.3 | 2.65 | 0.75 | 81.4 | 81.4 | 77.6 | 7 | 2.8 | 3.5 | 0.0041 | G | 24 |
| 1.5 | 1.75 | 90 L | 1LE0021-0EB42-2... | IE2 | 1440 | 9.9 | 3.45 | 0.76 | 82.8 | 82.8 | 80.2 | 7 | 3 | 3.8 | 0.0047 | G | 27 |
| 2.2 | 2.55 | 100 L | 1LE0021-1AB42-2... | IE2 | 1435 | 14.6 | 4.8 | 0.79 | 84.3 | 85 | 83.1 | 7 | 3 | 3.2 | 0.0081 | F | 33 |
| 3 | 3.45 | 100 L | 1LE0021-1AB52-2... | IE2 | 1435 | 20 | 6.4 | 0.79 | 85.5 | 86.3 | 84.2 | 7 | 3 | 3.2 | 0.01 | F | 37 |
| 4 | 4.6 | 112 M | 1LE0021-1BB22-2... | IE2 | 1445 | 26.4 | 8.4 | 0.79 | 86.6 | 87.1 | 85.8 | 7.1 | 2.7 | 3.1 | 0.011 | L | 45 |
| 5.5 | 6.3 | 132 S | 1LE0021-1CB02-2... | IE2 | 1460 | 36 | 11.5 | 0.79 | 87.7 | 88.2 | 86.9 | 7.5 | 2.5 | 3.1 | 0.021 | L | 61 |
| 7.5 | 8.6 | 132 M | 1LE0021-1CB22-2... | IE2 | 1460 | 49.1 | 14.9 | 0.82 | 88.7 | 89.4 | 88.8 | 7.7 | 2.7 | 3.2 | 0.029 | L | 73 |
| 400 V Δ / 690 VY | | | | | | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1LE0021-1AB43-4... | IE2 | 1435 | 14.6 | 4.75 | 0.79 | 84.3 | 85 | 83.1 | 7 | 3 | 3.2 | 0.0081 | F | 33 |
| 3 | 3.45 | 100 L | 1LE0021-1AB53-4... | IE2 | 1435 | 20 | 6.4 | 0.79 | 85.5 | 86.3 | 84.2 | 7 | 3 | 3.2 | 0.01 | F | 37 |
| 4 | 4.6 | 112 M | 1LE0021-1BB23-4... | IE2 | 1445 | 26.4 | 8.455 | 0.79 | 86.6 | 87.1 | 85.8 | 7.1 | 2.7 | 3.1 | 0.011 | L | 45 |
| 5.5 | 6.3 | 132 S | 1LE0021-1CB03-4... | IE2 | 1460 | 36 | 11.495 | 0.79 | 87.7 | 88.2 | 86.9 | 7.5 | 2.5 | 3.1 | 0.021 | L | 61 |
| 7.5 | 8.6 | 132 M | 1LE0021-1CB23-4... | IE2 | 1460 | 49.1 | 14.915 | 0.82 | 88.7 | 89.4 | 88.8 | 7.7 | 2.7 | 3.2 | 0.029 | L | 73 |
| 11 | 12.6 | 160 M | 1LE0021-1DB23-4... | IE2 | 1465 | 71.7 | 21 | 0.84 | 89.8 | 90.4 | 90.1 | 7.5 | 2.5 | 3.1 | 0.051 | K | 103 |
| 15 | 17.3 | 160 L | 1LE0021-1DB43-4... | IE2 | 1465 | 97.8 | 28.025 | 0.85 | 90.6 | 91.3 | 90.6 | 7.8 | 2.7 | 3.2 | 0.066 | K | 130 |
| 18.5 | 21.3 | 180 M | 1LE0021-1EB23-4... | IE2 | 1465 | 121 | 34.5 | 0.85 | 91.2 | 91.8 | 91.8 | 7.3 | 2.5 | 3.2 | 0.13 | K | 165 |
| 22 | 24.5 | 180 L | 1LE0021-1EB43-4... | IE2 | 1465 | 143 | 41 | 0.85 | 91.6 | 92.3 | 92.7 | 7.3 | 2.4 | 3.2 | 0.14 | K | 180 |
| 30 | 33.5 | 200 L | 1LE0021-2AB43-4... | IE2 | 1470 | 195 | 55 | 0.85 | 92.3 | 92.9 | 92.9 | 7.3 | 2.7 | 3.2 | 0.22 | K | 238 |
| 37 | 41.5 | 225 S | 1LE0021-2BB03-4... | IE2 | 1475 | 240 | 67 | 0.86 | 92.7 | 93.2 | 92.9 | 7.3 | 2.7 | 3.2 | 0.45 | K | 298 |
| 45 | 51 | 225 M | 1LE0021-2BB23-4... | IE2 | 1475 | 291 | 80 | 0.87 | 93.1 | 93.5 | 93.9 | 7.3 | 2.7 | 3.2 | 0.51 | K | 322 |
| 55 | 62 | 250 M | 1LE0021-2CB23-4... | IE2 | 1480 | 355 | 99 | 0.86 | 93.5 | 93.9 | 93.3 | 7.5 | 3.1 | 3.5 | 0.8 | K | 410 |
| 75 | 84 | 280 S | 1LE0021-2DB03-4... | IE2 | 1485 | 482 | 132 | 0.87 | 94 | 94.3 | 93.9 | 7.5 | 2.7 | 3.1 | 1.4 | K | 555 |
| 90 | 101 | 280 M | 1LE0021-2DB23-4... | IE2 | 1485 | 579 | 159 | 0.87 | 94.2 | 94.3 | 94.2 | 7.5 | 2.7 | 3.1 | 1.5 | K | 610 |
| 110 | 123 | 315 S | 1LE0021-3AB03-4... | IE2 | 1488 | 706 | 195 | 0.86 | 94.5 | 94.5 | 93.9 | 7.3 | 2.8 | 2.9 | 2.2 | K | 750 |
| 132 | 148 | 315 M | 1LE0021-3AB23-4... | IE2 | 1486 | 848 | 230 | 0.88 | 94.7 | 94.7 | 95 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 180 | 315 L | 1LE0021-3AB53-4... | IE2 | 1488 | 1027 | 275 | 0.88 | 94.9 | 94.9 | 95.1 | 7.4 | 3 | 2.9 | 3 | J | 960 |
| 185 | 207 | 315 L | 1LE0021-3AB63-4... | IE2 | 1488 | 1187 | 320 | 0.88 | 95.1 | 95.1 | 95 | 7.4 | 3 | 3 | 3.6 | J | 1070 |
| 200 | 224 | 315 L | 1LE0021-3AB73-4... | IE2 | 1488 | 1284 | 345 | 0.88 | 95.1 | 95.1 | 95.1 | 7.4 | 3 | 3 | 3.7 | J | 1080 |
| 220 | 246 | 355 M | 1LE0021-3BB23-4... | IE2 | 1490 | 1410 | 370 | 0.9 | 95.1 | 95.2 | 93.3 | 6.9 | 2 | 2.2 | 6.6 | J | 1640 |
| 250 | 280 | 355 M | 1LE0021-3BB33-4... | IE2 | 1490 | 1602 | 420 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 6.9 | J | 1680 |
| 280 | 314 | 355 L | 1LE0021-3BB53-4... | IE2 | 1490 | 1795 | 470 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 7.7 | J | 1830 |
| 315 | 353 | 355 L | 1LE0021-3BB63-4... | IE2 | 1490 | 2019 | 530 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 8.5 | J | 1900 |

SIMOTICS Option Line – IE2



TIP

The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0021 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0021-ODC32-2... | – | 895 | 5.9 | 1.48 | 0.76 | 71 | 72 | 68.5 | 3.8 | 2.1 | 2.4 | 0.0028 | C | 18.5 |
| 0.75 | 0.86 | 90 S | 1LE0021-OEC02-2... | IE2 | 935 | 7.7 | 2 | 0.71 | 75.9 | 76.5 | 72.7 | 3.9 | 2 | 2.5 | 0.0038 | C | 26 |
| 1.1 | 1.3 | 90 L | 1LE0021-OEC42-2... | IE2 | 945 | 11.1 | 2.85 | 0.71 | 78.1 | 78.1 | 75.7 | 4.4 | 2.2 | 2.7 | 0.0046 | D | 27 |
| 1.5 | 1.75 | 100 L | 1LE0021-1AC42-2... | IE2 | 945 | 15.2 | 3.7 | 0.74 | 79.8 | 80.1 | 78.2 | 4.6 | 2.1 | 2.6 | 0.0086 | D | 34 |
| 2.2 | 2.55 | 112 M | 1LE0021-1BC22-2... | IE2 | 950 | 22.1 | 5.4 | 0.73 | 81.8 | 82.5 | 81 | 5.2 | 2.4 | 3 | 0.012 | E | 44 |
| 3 | 3.45 | 132 S | 1LE0021-1CC02-2... | IE2 | 960 | 29.8 | 7.2 | 0.73 | 83.3 | 84.3 | 83.4 | 5.2 | 2 | 2.8 | 0.019 | E | 56 |
| 4 | 4.6 | 132 M | 1LE0021-1CC22-2... | IE2 | 960 | 39.8 | 9.4 | 0.73 | 84.6 | 85.4 | 84.5 | 5.6 | 2.1 | 2.9 | 0.024 | K | 66 |
| 5.5 | 6.3 | 132 M | 1LE0021-1CC32-2... | IE2 | 960 | 54.7 | 12.3 | 0.75 | 86 | 86.6 | 85.7 | 6 | 2.3 | 3.2 | 0.031 | K | 75 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 1LE0021-1AC43-4... | IE2 | 945 | 15.2 | 3.65 | 0.74 | 79.8 | 80.1 | 78.2 | 4.6 | 2.1 | 2.6 | 0.0086 | D | 34 |
| 2.2 | 2.55 | 112 M | 1LE0021-1BC23-4... | IE2 | 950 | 22.1 | 5.3 | 0.73 | 81.8 | 82.5 | 81 | 5.2 | 2.4 | 3 | 0.012 | E | 44 |
| 3 | 3.45 | 132 S | 1LE0021-1CC03-4... | IE2 | 960 | 29.8 | 7.1 | 0.73 | 83.3 | 84.3 | 83.4 | 5.2 | 2 | 2.8 | 0.019 | D | 56 |
| 4 | 4.6 | 132 M | 1LE0021-1CC23-4... | IE2 | 960 | 39.8 | 9.3 | 0.73 | 84.6 | 85.4 | 84.5 | 5.6 | 2.1 | 2.9 | 0.024 | K | 66 |
| 5.5 | 6.3 | 132 M | 1LE0021-1CC33-4... | IE2 | 960 | 54.7 | 12.4 | 0.75 | 86 | 86.6 | 85.7 | 6 | 2.3 | 3.2 | 0.031 | K | 75 |
| 7.5 | 8.6 | 160 M | 1LE0021-1DC23-4... | IE2 | 965 | 74.2 | 16.2 | 0.77 | 87.2 | 87.9 | 87.2 | 5.8 | 2 | 2.9 | 0.056 | J | 104 |
| 11 | 12.6 | 160 L | 1LE0021-1DC43-4... | IE2 | 965 | 109 | 23 | 0.78 | 88.7 | 89.4 | 89.5 | 6.6 | 2.2 | 3.1 | 0.077 | K | 132 |
| 15 | 17.3 | 180 L | 1LE0021-1EC43-4... | IE2 | 975 | 147 | 31 | 0.78 | 89.7 | 90.4 | 89.9 | 6.5 | 2.3 | 3 | 0.18 | K | 170 |
| 18.5 | 21.3 | 200 L | 1LE0021-2AC43-4... | IE2 | 975 | 181 | 36.5 | 0.81 | 90.4 | 91 | 91.8 | 5.8 | 2.2 | 2.8 | 0.27 | J | 220 |
| 22 | 24.5 | 200 L | 1LE0021-2AC53-4... | IE2 | 975 | 215 | 43 | 0.82 | 90.9 | 91.4 | 91.9 | 6.5 | 2.3 | 2.8 | 0.32 | J | 240 |
| 30 | 33.5 | 225 M | 1LE0021-2BC23-4... | IE2 | 980 | 292 | 57 | 0.83 | 91.7 | 92.3 | 92.7 | 6.7 | 2.4 | 2.8 | 0.62 | J | 294 |
| 37 | 41.5 | 250 M | 1LE0021-2CC23-4... | IE2 | 982 | 360 | 69 | 0.83 | 92.2 | 92.8 | 92.3 | 7.5 | 3 | 2.8 | 0.91 | K | 394 |
| 45 | 51 | 280 S | 1LE0021-2DC03-4... | IE2 | 985 | 436 | 83 | 0.85 | 92.7 | 93.3 | 93.5 | 7.1 | 2.5 | 2.8 | 1.2 | K | 510 |
| 55 | 62 | 280 M | 1LE0021-2DC23-4... | IE2 | 986 | 533 | 101 | 0.85 | 93.1 | 93.7 | 93.6 | 7.5 | 2.4 | 2.7 | 1.5 | K | 535 |
| 75 | 84 | 315 S | 1LE0021-3AC03-4... | IE2 | 986 | 726 | 136 | 0.85 | 93.7 | 94.3 | 93.8 | 7.5 | 2.4 | 3 | 2.3 | K | 680 |
| 90 | 101 | 315 M | 1LE0021-3AC23-4... | IE2 | 986 | 872 | 163 | 0.85 | 94 | 94.5 | 94.4 | 7 | 2.3 | 2.8 | 2.8 | J | 835 |
| 110 | 123 | 315 L | 1LE0021-3AC53-4... | IE2 | 988 | 1063 | 195 | 0.86 | 94.3 | 94.7 | 94.6 | 6.5 | 2.2 | 2.7 | 3.9 | J | 975 |
| 132 | 148 | 315 L | 1LE0021-3AC63-4... | IE2 | 988 | 1276 | 230 | 0.86 | 94.6 | 95 | 94.9 | 7.8 | 2.2 | 2.4 | 4.3 | K | 1030 |
| 160 | 180 | 355 M | 1LE0021-3BC23-4... | IE2 | 990 | 1543 | 280 | 0.87 | 94.8 | 95.1 | 93.5 | 6.5 | 2 | 2.1 | 7.7 | J | 1650 |
| 185 | 207 | 355 M | 1LE0021-3BC33-4... | IE2 | 990 | 1785 | 325 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 8.4 | J | 1690 |
| 200 | 224 | 355 M | 1LE0021-3BC43-4... | IE2 | 990 | 1929 | 350 | 0.87 | 95 | 95.3 | 93.6 | 6.5 | 2 | 2.1 | 9.1 | J | 1730 |
| 220 | 246 | 355 L | 1LE0021-3BC53-4... | IE2 | 990 | 2122 | 385 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 10.1 | J | 1850 |
| 250 | 280 | 355 L | 1LE0021-3BC63-4... | IE2 | 990 | 2412 | 435 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 11.4 | J | 1930 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE2

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0021 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

Electrical data – 1LE0 – IE2 – 2-pole (IE2 cast iron) 3000 rpm 2-pole, 525 VΔ 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Rated power factor | Efficiency at load % | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|-----------------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------------|----------------------|------|------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| | | | | | | | | 100% | 75% | 50% | | | | | | |
| 0.75 | 80 M | 1LE0021-0DA24-1... | IE2 | 2795 | 2.6 | 1.27 | 0.84 | 77.4 | 78.5 | 78.5 | 5.6 | 2.4 | 2.4 | 0.0008 | D | 15.5 |
| 1.1 | 80 M | 1LE0021-0DA34-1... | IE2 | 2835 | 3.7 | 1.81 | 0.84 | 79.6 | 80.6 | 77.4 | 6 | 2.8 | 3.2 | 0.0012 | E | 17.5 |
| 1.5 | 90 S | 1LE0021-0EA04-1... | IE2 | 2890 | 5 | 2.4 | 0.84 | 81.3 | 81.7 | 78 | 6.5 | 2.4 | 3.1 | 0.0021 | E | 23 |
| 2.2 | 90 L | 1LE0021-0EA44-1... | IE2 | 2890 | 7.3 | 3.45 | 0.85 | 83.2 | 83.7 | 80.8 | 7.2 | 2.6 | 3.5 | 0.0026 | F | 26 |
| 3 | 100 L | 1LE0021-1AA44-1... | IE2 | 2885 | 9.9 | 4.65 | 0.84 | 84.6 | 85.1 | 84.1 | 7.5 | 4 | 4.5 | 0.0036 | F | 34 |
| 4 | 112 M | 1LE0021-1BA24-1... | IE2 | 2930 | 13 | 5.9 | 0.86 | 85.8 | 86.6 | 84.7 | 7.5 | 2.2 | 2.9 | 0.0064 | L | 40 |
| 5.5 | 132 S | 1LE0021-1CA04-1... | IE2 | 2930 | 17.9 | 8 | 0.87 | 87 | 87.6 | 86.9 | 7.5 | 2.2 | 2.9 | 0.014 | K | 56 |
| 7.5 | 132 S | 1LE0021-1CA14-1... | IE2 | 2930 | 24.4 | 10.5 | 0.89 | 88.1 | 88.8 | 88.5 | 7.5 | 2.3 | 2.9 | 0.017 | K | 62 |
| 11 | 160 M | 1LE0021-1DA24-1... | IE2 | 2935 | 35.8 | 15.6 | 0.86 | 89.4 | 90.1 | 89.3 | 7.5 | 2.2 | 2.9 | 0.031 | K | 96 |
| 15 | 160 M | 1LE0021-1DA34-1... | IE2 | 2935 | 48.8 | 21.5 | 0.86 | 90.3 | 91 | 90.5 | 7.5 | 2.4 | 3.2 | 0.038 | K | 106 |
| 18.5 | 160 L | 1LE0021-1DA44-1... | IE2 | 2935 | 60.2 | 25 | 0.89 | 90.9 | 91.7 | 91.5 | 7.5 | 2.4 | 3.2 | 0.046 | K | 125 |
| 22 | 180 M | 1LE0021-1EA24-1... | IE2 | 2935 | 71.6 | 30.5 | 0.87 | 91.3 | 91.8 | 91.1 | 7.6 | 2.5 | 3.2 | 0.072 | K | 152 |
| 30 | 200 L | 1LE0021-1EA44-1... | IE2 | 2955 | 97 | 42 | 0.86 | 92 | 92.3 | 91.5 | 7.5 | 2.5 | 3.2 | 0.13 | K | 229 |
| 37 | 200 L | 1LE0021-2AA54-1... | IE2 | 2955 | 120 | 50 | 0.88 | 92.5 | 92.8 | 92.3 | 7.5 | 2.5 | 3.2 | 0.15 | K | 245 |
| 45 | 225 M | 1LE0021-2BA24-1... | IE2 | 2965 | 145 | 61 | 0.88 | 92.9 | 93.1 | 92.5 | 7.9 | 2.5 | 3.1 | 0.24 | K | 307 |
| 55 | 250 M | 1LE0021-2CA24-1... | IE2 | 2970 | 177 | 74 | 0.88 | 93.2 | 93.2 | 91.8 | 7.5 | 2.5 | 3 | 0.42 | K | 378 |
| 75 | 280 S | 1LE0021-2DA04-1... | IE2 | 2975 | 241 | 101 | 0.87 | 93.8 | 93.8 | 92.7 | 7.5 | 2.8 | 3 | 0.75 | K | 550 |
| 90 | 280 M | 1LE0021-2DA24-1... | IE2 | 2978 | 289 | 121 | 0.87 | 94.1 | 94.1 | 92.9 | 7.5 | 3 | 3.1 | 0.88 | K | 570 |
| 110 | 315 S | 1LE0021-3AA04-1... | IE2 | 2982 | 352 | 143 | 0.9 | 94.3 | 94.3 | 93.3 | 7.5 | 2.2 | 2.6 | 1.4 | J | 740 |
| 132 | 315 M | 1LE0021-3AA24-1... | IE2 | 2982 | 423 | 170 | 0.91 | 94.6 | 94.6 | 93.9 | 7.5 | 2.3 | 2.9 | 1.7 | J | 855 |
| 160 | 315 L | 1LE0021-3AA54-1... | IE2 | 2982 | 512 | 205 | 0.92 | 94.8 | 95.1 | 94.1 | 7.5 | 2.5 | 2.8 | 1.9 | J | 970 |
| 185 | 315 L | 1LE0021-3AA64-1... | IE2 | 2982 | 592 | 230 | 0.92 | 95 | 95.3 | 94.2 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1080 |
| 200 | 315 L | 1LE0021-3AA74-1... | IE2 | 2982 | 641 | 255 | 0.92 | 95 | 95.3 | 94.4 | 7.5 | 2.5 | 2.8 | 2.3 | J | 1090 |
| 220 | 355 M | 1LE0021-3BA24-1... | IE2 | 2980 | 705 | 280 | 0.9 | 95 | 95 | 92.8 | 7.1 | 2 | 2.2 | 2.9 | J | 1600 |
| 250 | 355 M | 1LE0021-3BA34-1... | IE2 | 2980 | 801 | 320 | 0.9 | 95 | 95 | 93 | 7.1 | 2 | 2.2 | 3 | J | 1650 |
| 280 | 355 L | 1LE0021-3BA54-1... | IE2 | 2980 | 897 | 360 | 0.9 | 95 | 95.1 | 93 | 7.1 | 2 | 2.2 | 3.5 | J | 1830 |
| 315 | 355 L | 1LE0021-3BA64-1... | IE2 | 2980 | 1009 | 405 | 0.9 | 95 | 95.1 | 93.1 | 7.1 | 2 | 2.3 | 3.5 | J | 1840 |

Electrical data – 1LE0 – IE2 – 4-pole (IE2 cast iron) 1500 rpm 4-pole, 525 VΔ 50 Hz

| | | | | | | | | | | | | | | | | |
|------|-------|--------------------|-----|------|------|------|------|------|------|------|-----|-----|-----|--------|---|------|
| 0.55 | 80 M | 1LE0021-0DB24-1... | - | 1425 | 3.7 | 1.01 | 0.8 | 74 | 74.7 | 70.1 | 6 | 2 | 2.7 | 0.0021 | F | 17.5 |
| 0.75 | 80 M | 1LE0021-0DB34-1... | IE2 | 1440 | 5 | 1.38 | 0.75 | 79.6 | 79.6 | 76.8 | 6.5 | 2.8 | 3.5 | 0.0027 | F | 19 |
| 1.1 | 90 S | 1LE0021-0EB04-1... | IE2 | 1440 | 7.3 | 1.99 | 0.75 | 81.4 | 81.4 | 77.6 | 7 | 2.8 | 3.5 | 0.0041 | G | 24 |
| 1.5 | 90 L | 1LE0021-0EB44-1... | IE2 | 1440 | 9.9 | 2.6 | 0.76 | 82.8 | 82.8 | 80.2 | 7 | 3 | 3.8 | 0.0047 | G | 27 |
| 2.2 | 100 L | 1LE0021-1AB44-1... | IE2 | 1435 | 14.6 | 3.6 | 0.79 | 84.3 | 85 | 83.1 | 7 | 3 | 3.2 | 0.0081 | F | 33 |
| 3 | 100 L | 1LE0021-1AB54-1... | IE2 | 1435 | 20 | 4.85 | 0.79 | 85.5 | 86.3 | 84.2 | 7 | 3 | 3.2 | 0.01 | F | 37 |
| 4 | 112 M | 1LE0021-1BB24-1... | IE2 | 1445 | 26.4 | 6.4 | 0.79 | 86.6 | 87.1 | 85.8 | 7.1 | 2.7 | 3.1 | 0.011 | L | 45 |
| 5.5 | 132 S | 1LE0021-1CB04-1... | IE2 | 1460 | 36 | 8.8 | 0.79 | 87.7 | 88.2 | 86.9 | 7.5 | 2.5 | 3.1 | 0.021 | L | 61 |
| 7.5 | 132 M | 1LE0021-1CB24-1... | IE2 | 1460 | 49.1 | 11.4 | 0.82 | 88.7 | 89.4 | 88.8 | 7.7 | 2.7 | 3.2 | 0.029 | L | 73 |
| 11 | 160 M | 1LE0021-1DB24-1... | IE2 | 1465 | 71.7 | 15.9 | 0.84 | 89.8 | 90.4 | 90.1 | 7.5 | 2.5 | 3.1 | 0.051 | K | 103 |
| 15 | 160 L | 1LE0021-1DB44-1... | IE2 | 1465 | 97.8 | 21.5 | 0.85 | 90.6 | 91.3 | 90.6 | 7.8 | 2.7 | 3.2 | 0.066 | K | 130 |
| 18.5 | 180 M | 1LE0021-1EB24-1... | IE2 | 1465 | 121 | 26.5 | 0.85 | 91.2 | 91.8 | 91.8 | 7.3 | 2.5 | 3.2 | 0.13 | K | 165 |
| 22 | 180 L | 1LE0021-1EB44-1... | IE2 | 1465 | 143 | 31 | 0.85 | 91.6 | 92.3 | 92.7 | 7.3 | 2.4 | 3.2 | 0.14 | K | 180 |
| 30 | 200 L | 1LE0021-2AB44-1... | IE2 | 1470 | 195 | 42 | 0.85 | 92.3 | 92.9 | 92.9 | 7.3 | 2.7 | 3.2 | 0.22 | K | 238 |
| 37 | 225 S | 1LE0021-2BB04-1... | IE2 | 1475 | 240 | 51 | 0.86 | 92.7 | 93.2 | 92.9 | 7.3 | 2.7 | 3.2 | 0.45 | K | 298 |

SIMOTICS Option Line – IE2



TIP

The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE2 | | |
| Series | 1LE0021 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.6 ... 2412 Nm | | |

| Electrical data – 1LE0 – IE2 – 4-pole (IE2 cast iron) 1500 rpm 4-pole, 525 VΔ 50 Hz | | | | | | | | | | | | | | | | |
|---|------------|--------------------|----------|-----------|-----------|--------------------|---------------|------------|------------|------------------|-------------------|------------------------------------|--------------|-----------------------|---|------|
| Rated output kW | Frame size | Article number | IE class | Rated | | Rated power factor | Efficiency at | | | Starting current | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg | | |
| | | | | speed rpm | torque Nm | | 100% load % | 75% load % | 50% load % | | | | | | | |
| 45 | 225 M | 1LE0021-2BB24-1... | IE2 | 1475 | 291 | 61 | 0.87 | 93.1 | 93.5 | 93.9 | 7.3 | 2.7 | 3.2 | 0.51 | K | 322 |
| 55 | 250 M | 1LE0021-2CB24-1... | IE2 | 1480 | 355 | 75 | 0.86 | 93.5 | 93.9 | 93.3 | 7.5 | 3.1 | 3.5 | 0.8 | K | 410 |
| 75 | 280 S | 1LE0021-2DB04-1... | IE2 | 1485 | 482 | 101 | 0.87 | 94 | 94.3 | 93.9 | 7.5 | 2.7 | 3.1 | 1.4 | K | 555 |
| 90 | 280 M | 1LE0021-2DB24-1... | IE2 | 1485 | 579 | 121 | 0.87 | 94.2 | 94.3 | 94.2 | 7.5 | 2.7 | 3.1 | 1.5 | K | 610 |
| 110 | 315 S | 1LE0021-3AB04-1... | IE2 | 1488 | 706 | 148 | 0.86 | 94.5 | 94.5 | 93.9 | 7.3 | 2.8 | 2.9 | 2.2 | K | 750 |
| 132 | 315 M | 1LE0021-3AB24-1... | IE2 | 1486 | 848 | 174 | 0.88 | 94.7 | 94.7 | 95 | 7.3 | 2.5 | 2.7 | 2.5 | J | 875 |
| 160 | 315 L | 1LE0021-3AB54-1... | IE2 | 1488 | 1027 | 210 | 0.88 | 94.9 | 94.9 | 95.1 | 7.4 | 3 | 2.9 | 3 | J | 960 |
| 185 | 315 L | 1LE0021-3AB64-1... | IE2 | 1488 | 1187 | 240 | 0.88 | 95.1 | 95.1 | 95 | 7.4 | 3 | 3 | 3.6 | J | 1070 |
| 200 | 315 L | 1LE0021-3AB74-1... | IE2 | 1488 | 1284 | 265 | 0.88 | 95.1 | 95.1 | 95.1 | 7.4 | 3 | 3 | 3.7 | J | 1080 |
| 220 | 355 M | 1LE0021-3BB24-1... | IE2 | 1490 | 1410 | 280 | 0.9 | 95.1 | 95.2 | 93.3 | 6.9 | 2 | 2.2 | 6.6 | J | 1640 |
| 250 | 355 M | 1LE0021-3BB34-1... | IE2 | 1490 | 1602 | 320 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 6.9 | J | 1680 |
| 280 | 355 L | 1LE0021-3BB54-1... | IE2 | 1490 | 1795 | 360 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 7.7 | J | 1830 |
| 315 | 355 L | 1LE0021-3BB64-1... | IE2 | 1490 | 2019 | 405 | 0.9 | 95.1 | 95.2 | 93.8 | 6.9 | 2 | 2.2 | 8.5 | J | 1900 |

| Electrical data – 1LE0 – IE2 – 6-pole (IE2 cast iron) 1000 rpm 6-pole, 525 VΔ 50 Hz | | | | | | | | | | | | | | | | |
|---|------------|--------------------|----------|-----------|-----------|--------------------|---------------|------------|------------|------------------|-------------------|------------------------------------|--------------|-----------------------|---|------|
| Rated output kW | Frame size | Article number | IE class | Rated | | Rated power factor | Efficiency at | | | Starting current | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg | | |
| | | | | speed rpm | torque Nm | | 100% load % | 75% load % | 50% load % | | | | | | | |
| 0.55 | 80 M | 1LE0021-0DC34-1... | - | 895 | 5.9 | 1.12 | 0.76 | 71 | 72 | 68.5 | 3.8 | 2.1 | 2.4 | 0.0028 | C | 18.5 |
| 0.75 | 90 S | 1LE0021-0EC04-1... | IE2 | 935 | 7.7 | 1.52 | 0.71 | 75.9 | 76.5 | 72.7 | 3.9 | 2 | 2.5 | 0.0038 | C | 26 |
| 1.1 | 90 L | 1LE0021-0EC44-1... | IE2 | 945 | 11.1 | 2.15 | 0.71 | 78.1 | 78.1 | 75.7 | 4.4 | 2.2 | 2.7 | 0.0046 | D | 27 |
| 1.5 | 100 L | 1LE0021-1AC44-1... | IE2 | 945 | 15.2 | 2.8 | 0.74 | 79.8 | 80.1 | 78.2 | 4.6 | 2.1 | 2.6 | 0.0086 | D | 34 |
| 2.2 | 112 M | 1LE0021-1BC24-1... | IE2 | 950 | 22.1 | 4.05 | 0.73 | 81.8 | 82.5 | 81 | 5.2 | 2.4 | 3 | 0.012 | E | 44 |
| 3 | 132 S | 1LE0021-1CC04-1... | IE2 | 960 | 29.8 | 5.4 | 0.73 | 83.3 | 84.3 | 83.4 | 5.2 | 2 | 2.8 | 0.019 | D | 56 |
| 4 | 132 M | 1LE0021-1CC24-1... | IE2 | 960 | 39.8 | 7.1 | 0.73 | 84.6 | 85.4 | 84.5 | 5.6 | 2.1 | 2.9 | 0.024 | K | 66 |
| 5.5 | 132 M | 1LE0021-1CC34-1... | IE2 | 960 | 54.7 | 9.4 | 0.75 | 86 | 86.6 | 85.7 | 6 | 2.3 | 3.2 | 0.031 | K | 75 |
| 7.5 | 160 M | 1LE0021-1DC24-1... | IE2 | 965 | 74.2 | 12.3 | 0.77 | 87.2 | 87.9 | 87.2 | 5.8 | 2 | 2.9 | 0.056 | J | 104 |
| 11 | 160 L | 1LE0021-1DC44-1... | IE2 | 965 | 109 | 17.4 | 0.78 | 88.7 | 89.4 | 89.5 | 6.6 | 2.2 | 3.1 | 0.077 | K | 132 |
| 15 | 180 L | 1LE0021-1EC44-1... | IE2 | 975 | 147 | 23.5 | 0.78 | 89.7 | 90.4 | 89.9 | 6.5 | 2.3 | 3 | 0.18 | K | 170 |
| 18.5 | 200 L | 1LE0021-2AC44-1... | IE2 | 975 | 181 | 28 | 0.81 | 90.4 | 91 | 91.8 | 5.8 | 2.2 | 2.8 | 0.27 | J | 220 |
| 22 | 200 L | 1LE0021-2AC54-1... | IE2 | 975 | 215 | 32.5 | 0.82 | 90.9 | 91.4 | 91.9 | 6.5 | 2.3 | 2.8 | 0.32 | J | 240 |
| 30 | 225 M | 1LE0021-2BC24-1... | IE2 | 980 | 292 | 43.5 | 0.83 | 91.7 | 92.3 | 92.7 | 6.7 | 2.4 | 2.8 | 0.62 | J | 294 |
| 37 | 250 M | 1LE0021-2CC24-1... | IE2 | 982 | 360 | 53 | 0.83 | 92.2 | 92.8 | 92.3 | 7.5 | 3 | 2.8 | 0.91 | K | 394 |
| 45 | 280 S | 1LE0021-2DC04-1... | IE2 | 985 | 436 | 63 | 0.85 | 92.7 | 93.3 | 93.5 | 7.1 | 2.5 | 2.8 | 1.2 | K | 510 |
| 55 | 280 M | 1LE0021-2DC24-1... | IE2 | 986 | 533 | 77 | 0.85 | 93.1 | 93.7 | 93.6 | 7.5 | 2.4 | 2.7 | 1.5 | K | 535 |
| 75 | 315 S | 1LE0021-3AC04-1... | IE2 | 986 | 726 | 104 | 0.85 | 93.7 | 94.3 | 93.8 | 7.5 | 2.4 | 3 | 2.3 | K | 680 |
| 90 | 315 M | 1LE0021-3AC24-1... | IE2 | 986 | 872 | 124 | 0.85 | 94 | 94.5 | 94.4 | 7 | 2.3 | 2.8 | 2.8 | J | 835 |
| 110 | 315 L | 1LE0021-3AC54-1... | IE2 | 988 | 1063 | 148 | 0.86 | 94.3 | 94.7 | 94.6 | 6.5 | 2.2 | 2.7 | 3.9 | J | 975 |
| 132 | 315 L | 1LE0021-3AC64-1... | IE2 | 988 | 1276 | 177 | 0.86 | 94.6 | 95 | 94.9 | 7.8 | 2.2 | 2.4 | 4.3 | K | 1030 |
| 160 | 355 M | 1LE0021-3BC24-1... | IE2 | 990 | 1543 | 215 | 0.87 | 94.8 | 95.1 | 93.5 | 6.5 | 2 | 2.1 | 7.7 | J | 1650 |
| 185 | 355 M | 1LE0021-3BC34-1... | IE2 | 990 | 1785 | 245 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 8.4 | J | 1690 |
| 200 | 355 M | 1LE0021-3BC44-1... | IE2 | 990 | 1929 | 270 | 0.87 | 95 | 95.3 | 93.6 | 6.5 | 2 | 2.1 | 9.1 | J | 1730 |
| 220 | 355 L | 1LE0021-3BC54-1... | IE2 | 990 | 2122 | 295 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 10.1 | J | 1850 |
| 250 | 355 L | 1LE0021-3BC64-1... | IE2 | 990 | 2412 | 335 | 0.87 | 95 | 95.3 | 93.5 | 6.5 | 2 | 2.1 | 11.4 | J | 1930 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE3

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE3 | | |
| Series | 1LE0023 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------------------|--------------|-----------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.75 | 0.86 | 80 M | 1LE0023-ODA22-2... | IE3 | 2835 | 2.5 | 1.56 | 0.86 | 80.7 | 82.92 | 82.9 | 6 | 2.4 | 3 | 0.00208 | J | 16 |
| 1.1 | 1.3 | 80 M | 1LE0023-ODA32-2... | IE3 | 2870 | 3.7 | 2.3 | 0.83 | 82.7 | 83.98 | 83.9 | 6.5 | 2.4 | 3.4 | 0.00154 | K | 18 |
| 1.5 | 1.75 | 90 S | 1LE0023-OEA02-2... | IE3 | 2900 | 4.9 | 3 | 0.86 | 84.2 | 84.77 | 82.3 | 6.5 | 2 | 3.4 | 0.00276 | K | 24 |
| 2.2 | 2.55 | 90 L | 1LE0023-OEA42-2... | IE3 | 2910 | 7.2 | 4.2 | 0.88 | 85.9 | 87.19 | 86.5 | 7.5 | 2.3 | 3.6 | 0.00356 | K | 28 |
| 3 | 3.45 | 100 L | 1LE0023-1AA42-2... | IE3 | 2875 | 10.0 | 5.7 | 0.87 | 87.1 | 88.29 | 88.3 | 7.8 | 2.6 | 3.6 | 0.00462 | L | 39 |
| 4 | 4.6 | 112 M | 1LE0023-1BA22-2... | IE3 | 2925 | 13.1 | 7.3 | 0.9 | 88.1 | 89.56 | 89.8 | 7.8 | 2.6 | 3.6 | 0.0088 | K | 46 |
| 5.5 | 6.3 | 132 S | 1LE0023-1CA02-2... | IE3 | 2930 | 17.9 | 10 | 0.89 | 89.2 | 90.24 | 90.3 | 7.5 | 2.3 | 3.6 | 0.0185 | K | 64 |
| 7.5 | 8.6 | 132 S | 1LE0023-1CA12-2... | IE3 | 2925 | 24.5 | 13.3 | 0.9 | 90.1 | 91.46 | 92.2 | 7.5 | 2.3 | 3.6 | 0.0232 | K | 71 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 1LE0023-1AA43-4... | IE3 | 2875 | 10.0 | 5.7 | 0.87 | 87.1 | 88.3 | 88.3 | 7.8 | 2.6 | 3.6 | 0.0046 | L | 39 |
| 4 | 4.6 | 112 M | 1LE0023-1BA23-4... | IE3 | 2925 | 13.1 | 7.3 | 0.9 | 88.1 | 89.6 | 89.8 | 7.8 | 2.6 | 3.6 | 0.0088 | K | 46 |
| 5.5 | 6.3 | 132 S | 1LE0023-1CA03-4... | IE3 | 2930 | 17.9 | 10 | 0.89 | 89.2 | 90.2 | 90.3 | 7.5 | 2.3 | 3.6 | 0.0185 | K | 64 |
| 7.5 | 8.6 | 132 S | 1LE0023-1CA13-4... | IE3 | 2925 | 24.5 | 13.4 | 0.9 | 90.1 | 91.5 | 92.2 | 7.5 | 2.3 | 3.6 | 0.0232 | K | 71 |
| 11 | 12.6 | 160 M | 1LE0023-1DA23-4... | IE3 | 2935 | 35.8 | 19.6 | 0.89 | 91.2 | 92.0 | 91.7 | 7.5 | 2.3 | 2.5 | 0.0390 | K | 99 |
| 15 | 17.3 | 160 M | 1LE0023-1DA33-4... | IE3 | 2930 | 48.9 | 26.5 | 0.89 | 91.9 | 92.6 | 92.5 | 7.5 | 2.4 | 3.4 | 0.0472 | K | 107 |
| 18.5 | 21.3 | 160 L | 1LE0023-1DA43-4... | IE3 | 2940 | 60.1 | 32.5 | 0.89 | 92.4 | 93.0 | 92.9 | 7.8 | 2.4 | 3.4 | 0.0577 | K | 131 |
| 22 | 24.5 | 180 M | 1LE0023-1EA23-4... | IE3 | 2950 | 71.2 | 38.5 | 0.89 | 92.7 | 93.0 | 92.4 | 7.8 | 2.4 | 3.4 | 0.0770 | K | 171 |
| 30 | 33.5 | 200 L | 1LE0023-2AA43-4... | IE3 | 2955 | 97.0 | 52 | 0.89 | 93.3 | 93.4 | 92.4 | 7.8 | 2.4 | 3.4 | 0.1330 | K | 250 |
| 37 | 41.5 | 200 L | 1LE0023-2AA53-4... | IE3 | 2955 | 119.6 | 64 | 0.89 | 93.7 | 93.9 | 93.3 | 7.8 | 2.4 | 3.4 | 0.1520 | K | 260 |
| 45 | 51 | 225 M | 1LE0023-2BA23-4... | IE3 | 2960 | 145.2 | 78 | 0.89 | 94 | 94.3 | 93.8 | 7.8 | 2.4 | 3.2 | 0.2540 | K | 342 |
| 55 | 62 | 250 M | 1LE0023-2CA23-4... | IE3 | 2975 | 176.6 | 95 | 0.89 | 94.3 | 94.1 | 93.1 | 7.8 | 2.4 | 3.2 | 0.4430 | K | 425 |
| 75 | 84 | 280 S | 1LE0023-2DA03-4... | IE3 | 2975 | 240.8 | 128 | 0.89 | 94.7 | 94.8 | 94.1 | 7.2 | 2.4 | 3 | 0.7800 | J | 545 |
| 90 | 101 | 280 M | 1LE0023-2DA23-4... | IE3 | 2975 | 288.9 | 152 | 0.9 | 95 | 95.3 | 95 | 7.2 | 2.4 | 3.4 | 0.9500 | J | 620 |
| 110 | 123 | 315 S | 1LE0023-3AA03-4... | IE3 | 2975 | 353.1 | 185 | 0.9 | 95.2 | 95.1 | 94.5 | 8.5 | 1.8 | 2.6 | 1.3000 | K | 790 |
| 132 | 148 | 315 M | 1LE0023-3AA23-4... | IE3 | 2980 | 423.0 | 220 | 0.9 | 95.4 | 95.3 | 92.4 | 8.5 | 2.1 | 2.6 | 1.5100 | K | 960 |
| 160 | 180 | 315 L | 1LE0023-3AA53-4... | IE3 | 2978 | 513.1 | 265 | 0.91 | 95.6 | 95.7 | 95.3 | 8.5 | 2.1 | 2.6 | 1.8100 | K | 1060 |
| 185 | 207 | 315 L | 1LE0023-3AA63-4... | IE3 | 2978 | 593.3 | 305 | 0.92 | 95.7 | 95.9 | 95.7 | 8.5 | 2.3 | 2.6 | 2.1900 | K | 1145 |
| 200 | 224 | 315 L | 1LE0023-3AA73-4... | IE3 | 2982 | 640.5 | 330 | 0.92 | 95.8 | 95.9 | 95.7 | 8.5 | 2.6 | 3.2 | 2.1900 | K | 1165 |
| 220 | 246 | 355 M | 1LE0023-3BA23-4... | IE3 | 2986 | 704.0 | 370 | 0.90 | 95.8 | 95.4 | 94.2 | 8.5 | 2.2 | 2.8 | 3.0000 | K | 1490 |
| 250 | 280 | 355 M | 1LE0023-3BA33-4... | IE3 | 2985 | 800.0 | 420 | 0.90 | 95.8 | 95.7 | 94.6 | 8 | 2.2 | 2.8 | 3.0000 | K | 1490 |
| 280 | 314 | 355 L | 1LE0023-3BA53-4... | IE3 | 2988 | 895.0 | 470 | 0.9 | 95.8 | 95.7 | 94.9 | 8.5 | 2.2 | 2.8 | 3.5000 | K | 1620 |
| 315 | 353 | 355 L | 1LE0023-3BA63-4... | IE3 | 2982 | 1009.0 | 530 | 0.9 | 95.8 | 95.8 | 95.3 | 8 | 2.2 | 2.8 | 3.5 | K | 1670 |

SIMOTICS Option Line – IE3



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

| Cast-iron series | | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE3 | | |
| Series | 1LE0023 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

| Electrical data – 1LE0 – IE3 – 4-pole | | (IE3 cast iron) 1500 rpm 4-pole, 400 V 50 Hz | | | | | | | | | | | | | | | |
|---------------------------------------|------------|--|--------------------|-------------|--------------|---------------|--------------|---------------|----------|----------|------------------|-----------------|-------------------|-------------------|--------------|--------------------|------|
| Rated output | Frame size | Article number | IE class | Rated speed | Rated torque | Rated current | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia | Torque class | Net Weight (IM B3) | |
| | | | | | | | | 100% load | 75% load | 50% load | | | | | | | |
| 50 Hz | 60 Hz | | | rpm | Nm | A | | % | % | % | | | | kgm ² | kg | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0023-0DB22-2... | IE3 | 1440 | 3.65 | 1.29 | 0.76 | 80.8 | 81.77 | 80.2 | 5.5 | 2.2 | 3.2 | 0.0022 | K | 16.5 |
| 0.75 | 0.86 | 80 M | 1LE0023-0DB32-2... | IE3 | 1445 | 4.96 | 1.75 | 0.75 | 82.5 | 82.92 | 80.7 | 6 | 2.7 | 3.7 | 0.0025 | K | 18 |
| 1.1 | 1.3 | 90 S | 1LE0023-0EB02-2... | IE3 | 1430 | 7.35 | 2.4 | 0.79 | 84.1 | 85.07 | 83.9 | 6.5 | 2.7 | 3.7 | 0.0039 | K | 24 |
| 1.5 | 1.75 | 90 L | 1LE0023-0EB42-2... | IE3 | 1440 | 9.95 | 3.2 | 0.79 | 85.3 | 86 | 85.2 | 6.5 | 2.7 | 3.8 | 0.0050 | K | 27 |
| 2.2 | 2.55 | 100 L | 1LE0023-1AB42-2... | IE3 | 1445 | 14.54 | 4.45 | 0.82 | 86.7 | 87.11 | 85.7 | 8.3 | 3.7 | 4.6 | 0.0113 | M | 42 |
| 3 | 3.45 | 100 L | 1LE0023-1AB52-2... | IE3 | 1450 | 19.76 | 6 | 0.82 | 87.7 | 88.06 | 87.1 | 8.3 | 3.7 | 4.6 | 0.0131 | M | 46 |
| 4 | 4.6 | 112 M | 1LE0023-1BB22-2... | IE3 | 1450 | 26.34 | 7.9 | 0.82 | 88.6 | 89.59 | 89.2 | 8.3 | 3.7 | 4.6 | 0.0149 | M | 52 |
| 5.5 | 6.3 | 132 S | 1LE0023-1CB02-2... | IE3 | 1455 | 36.10 | 10.5 | 0.84 | 89.6 | 90.87 | 91.1 | 7.8 | 2.4 | 3.8 | 0.0285 | L | 71 |
| 7.5 | 8.6 | 132 M | 1LE0023-1CB22-2... | IE3 | 1455 | 49.23 | 14.1 | 0.85 | 90.4 | 91.69 | 93.2 | 7.8 | 2.4 | 3.8 | 0.0356 | L | 83 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1LE0023-1AB43-4... | IE3 | 1445 | 14.54 | 4.45 | 0.82 | 86.7 | 87.11 | 85.7 | 8.3 | 3.7 | 4.6 | 0.01125 | M | 42 |
| 3 | 3.45 | 100 L | 1LE0023-1AB53-4... | IE3 | 1450 | 19.76 | 6 | 0.82 | 87.7 | 88.06 | 87.1 | 8.3 | 3.7 | 4.6 | 0.01313 | M | 46 |
| 4 | 4.6 | 112 M | 1LE0023-1BB23-4... | IE3 | 1450 | 26.34 | 7.9 | 0.82 | 88.6 | 89.59 | 89.2 | 8.3 | 3.7 | 4.6 | 0.01493 | M | 52 |
| 5.5 | 6.3 | 132 S | 1LE0023-1CB03-4... | IE3 | 1455 | 36.10 | 10.5 | 0.84 | 89.6 | 90.87 | 91.1 | 7.8 | 2.4 | 3.8 | 0.02847 | L | 71 |
| 7.5 | 8.6 | 132 M | 1LE0023-1CB23-4... | IE3 | 1455 | 49.23 | 14.1 | 0.85 | 90.4 | 91.69 | 93.2 | 7.8 | 2.4 | 3.8 | 0.03561 | L | 83 |
| 11 | 12.6 | 160 M | 1LE0023-1DB23-4... | IE3 | 1460 | 71.95 | 20 | 0.86 | 91.4 | 92.4 | 92.6 | 7.8 | 2.4 | 3.8 | 0.06482 | K | 110 |
| 15 | 17.3 | 160 L | 1LE0023-1DB43-4... | IE3 | 1460 | 98.12 | 27.5 | 0.86 | 92.1 | 92.91 | 93 | 7.8 | 2.6 | 3.8 | 0.08109 | K | 134 |
| 18.5 | 21.3 | 180 M | 1LE0023-1EB23-4... | IE3 | 1470 | 120.19 | 34.5 | 0.83 | 92.6 | 93 | 92.5 | 7.8 | 2.6 | 3.6 | 0.12600 | L | 170 |
| 22 | 24.5 | 180 L | 1LE0023-1EB43-4... | IE3 | 1470 | 142.93 | 41 | 0.83 | 93 | 93.7 | 93.6 | 7.8 | 2.6 | 3.6 | 0.14600 | L | 192 |
| 30 | 33.5 | 200 L | 1LE0023-2AB43-4... | IE3 | 1470 | 194.90 | 55 | 0.84 | 93.6 | 94.3 | 94.2 | 7.8 | 2.6 | 3.6 | 0.22000 | K | 255 |
| 37 | 41.5 | 225 S | 1LE0023-2BB03-4... | IE3 | 1478 | 239.07 | 67 | 0.85 | 93.9 | 94.1 | 93.4 | 8.3 | 3.3 | 3.6 | 0.46100 | L | 315 |
| 45 | 51 | 225 M | 1LE0023-2BB23-4... | IE3 | 1478 | 290.76 | 81 | 0.85 | 94.2 | 94.2 | 93.7 | 8.3 | 3.3 | 3.6 | 0.47900 | L | 342 |
| 55 | 62 | 250 M | 1LE0023-2CB23-4... | IE3 | 1482 | 354.42 | 98 | 0.86 | 94.6 | 95 | 94.7 | 7.6 | 2.6 | 3.3 | 0.82000 | K | 440 |
| 75 | 84 | 280 S | 1LE0023-2DB03-4... | IE3 | 1485 | 482.32 | 133 | 0.86 | 95 | 95.3 | 95.3 | 7.6 | 2.6 | 3 | 1.31000 | K | 580 |
| 90 | 101 | 280 M | 1LE0023-2DB23-4... | IE3 | 1485 | 578.79 | 157 | 0.87 | 95.2 | 95.64 | 95.5 | 7.6 | 2.6 | 3 | 1.69000 | K | 685 |
| 110 | 123 | 315 S | 1LE0023-3AB03-4... | IE3 | 1488 | 705.98 | 191 | 0.87 | 95.4 | 95.7 | 95.4 | 7.9 | 3.3 | 3 | 2.77000 | K | 800 |
| 132 | 148 | 315 M | 1LE0023-3AB23-4... | IE3 | 1488 | 847.18 | 230 | 0.87 | 95.6 | 95.9 | 95.5 | 7.9 | 3.3 | 3 | 3.00000 | K | 1035 |
| 160 | 180 | 315 L | 1LE0023-3AB53-4... | IE3 | 1488 | 1026.88 | 275 | 0.87 | 95.8 | 96.1 | 95.8 | 7.9 | 3.3 | 3 | 3.14000 | K | 1065 |
| 185 | 207 | 315 L | 1LE0023-3AB63-4... | IE3 | 1488 | 1187.33 | 320 | 0.87 | 95.9 | 96.2 | 95.8 | 7.9 | 3.3 | 3 | 3.46000 | K | 1115 |
| 200 | 224 | 315 L | 1LE0023-3AB73-4... | IE3 | 1490 | 1281.88 | 340 | 0.88 | 96 | 96.3 | 96.1 | 7.9 | 3.3 | 3 | 3.79000 | K | 1175 |
| 220 | 246 | 355 M | 1LE0023-3BB23-4... | IE3 | 1492 | 1408.18 | 375 | 0.88 | 96 | 96.01 | 95.3 | 8 | 2 | 3.2 | 6.90000 | K | 1670 |
| 250 | 280 | 355 M | 1LE0023-3BB33-4... | IE3 | 1490 | 1602.35 | 425 | 0.88 | 96 | 96.04 | 95.3 | 7.8 | 1.8 | 2.9 | 6.90000 | K | 1670 |
| 280 | 314 | 355 L | 1LE0023-3BB53-4... | IE3 | 1490 | 1794.63 | 480 | 0.88 | 96 | 96.11 | 95.7 | 7.8 | 1.8 | 2.9 | 7.70000 | K | 1700 |
| 315 | 353 | 355 L | 1LE0023-3BB63-4... | IE3 | 1490 | 2018.96 | 540 | 0.88 | 96 | 96.13 | 95.8 | 8 | 1.8 | 2.9 | 8.50000 | K | 1790 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE3

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE3 | | |
| Series | 1LE0023 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

| Rated output | | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm² | Torque class | Weight (IM B3) kg |
|------------------------|----------|------------|--------------------|----------|-----------------|-----------------|-----------------|--------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------|--------------|-------------------|
| 50 Hz kW | 60 Hz kW | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 230 VΔ / 400 VY | | | | | | | | | | | | | | | | | |
| 0.55 | 0.63 | 80 M | 1LE0023-ODC32-2... | IE3 | 935 | 5.62 | 1.53 | 0.67 | 77.2 | 77.45 | 74.6 | 5 | 2.7 | 3.4 | 0.00310 | K | 19.5 |
| 0.75 | 0.86 | 90 S | 1LE0023-OEC02-2... | IE3 | 940 | 7.62 | 1.96 | 0.7 | 78.9 | 80.32 | 78 | 5 | 2.4 | 3.2 | 0.00436 | K | 25 |
| 1.1 | 1.3 | 90 L | 1LE0023-OEC42-2... | IE3 | 945 | 11.12 | 2.85 | 0.69 | 81 | 81.58 | 80.4 | 5.5 | 2.7 | 3.5 | 0.00513 | K | 28 |
| 1.5 | 1.75 | 100 L | 1LE0023-1AC42-2... | IE3 | 945 | 15.16 | 3.55 | 0.74 | 82.5 | 84.13 | 82.9 | 5.5 | 2.7 | 3.5 | 0.01136 | K | 42 |
| 2.2 | 2.55 | 112 M | 1LE0023-1BC22-2... | IE3 | 945 | 22.23 | 5.1 | 0.74 | 84.3 | 86.11 | 95.7 | 6 | 2.7 | 3.4 | 0.01451 | K | 50 |
| 3 | 3.45 | 132 S | 1LE0023-1CC02-2... | IE3 | 965 | 29.69 | 6.7 | 0.75 | 85.6 | 86.6 | 86 | 6 | 2.7 | 4 | 0.02666 | K | 67 |
| 4 | 4.6 | 132 M | 1LE0023-1CC22-2... | IE3 | 955 | 40.00 | 8.9 | 0.75 | 86.8 | 88.54 | 88.7 | 6 | 2.3 | 3.4 | 0.03045 | K | 76 |
| 5.5 | 6.3 | 132 M | 1LE0023-1CC32-2... | IE3 | 960 | 54.71 | 11.9 | 0.76 | 88 | 89.15 | 89 | 6.5 | 2.3 | 4 | 0.04125 | K | 88 |
| 400 VΔ / 690 VY | | | | | | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 1LE0023-1AC43-4... | IE3 | 945 | 15.16 | 3.55 | 0.74 | 82.50 | 84.13 | 82.90 | 5.5 | 2.7 | 3.5 | 0.0114 | K | 42 |
| 2.2 | 2.55 | 112 M | 1LE0023-1BC23-4... | IE3 | 945 | 22.23 | 5.1 | 0.74 | 84.30 | 86.11 | 95.70 | 6 | 2.7 | 3.4 | 0.0145 | K | 50 |
| 3 | 3.45 | 132 S | 1LE0023-1CC03-4... | IE3 | 965 | 29.69 | 6.7 | 0.75 | 85.60 | 86.60 | 86.00 | 6 | 2.7 | 4 | 0.0267 | K | 67 |
| 4 | 4.6 | 132 M | 1LE0023-1CC23-4... | IE3 | 955 | 40.00 | 8.9 | 0.75 | 86.80 | 88.54 | 88.70 | 6 | 2.3 | 3.4 | 0.0305 | K | 76 |
| 5.5 | 6.3 | 132 M | 1LE0023-1CC33-4... | IE3 | 960 | 54.71 | 11.9 | 0.76 | 88.00 | 89.15 | 89.00 | 6.5 | 2.3 | 4 | 0.0413 | K | 88 |
| 7.5 | 8.6 | 160 M | 1LE0023-1DC23-4... | IE3 | 965 | 74.22 | 15.6 | 0.78 | 89.10 | 90.36 | 90.30 | 6.5 | 2.3 | 3.6 | 0.0703 | K | 112 |
| 11 | 12.6 | 160 L | 1LE0023-1DC43-4... | IE3 | 970 | 108.30 | 22.5 | 0.78 | 90.30 | 90.30 | 89.80 | 7 | 2.3 | 3.6 | 0.0707 | K | 144 |
| 15 | 17.3 | 180 L | 1LE0023-1EC43-4... | IE3 | 975 | 146.92 | 29.5 | 0.8 | 91.20 | 92.10 | 91.80 | 7 | 2.3 | 3 | 0.1850 | K | 175 |
| 18.5 | 21.3 | 200 L | 1LE0023-2AC43-4... | IE3 | 978 | 180.65 | 36.5 | 0.8 | 91.70 | 92.45 | 92.20 | 7 | 2.3 | 3 | 0.2840 | K | 235 |
| 22 | 24.5 | 200 L | 1LE0023-2AC53-4... | IE3 | 978 | 214.83 | 43 | 0.8 | 92.20 | 93.10 | 93.00 | 7 | 2.4 | 3 | 0.3270 | K | 251 |
| 30 | 33.5 | 225 M | 1LE0023-2BC23-4... | IE3 | 982 | 291.75 | 56 | 0.83 | 92.90 | 93.90 | 94.30 | 7.6 | 2.4 | 3 | 0.7100 | K | 350 |
| 37 | 41.5 | 250 M | 1LE0023-2CC23-4... | IE3 | 985 | 358.73 | 68 | 0.84 | 93.30 | 94.10 | 94.10 | 7.6 | 2.4 | 3 | 1.0300 | K | 430 |
| 45 | 51 | 280 S | 1LE0023-2DC03-4... | IE3 | 985 | 436.29 | 83 | 0.84 | 93.70 | 94.47 | 94.40 | 7.8 | 3 | 3 | 1.4000 | K | 520 |
| 55 | 62 | 280 M | 1LE0023-2DC23-4... | IE3 | 988 | 531.63 | 100 | 0.84 | 94.10 | 94.60 | 94.50 | 7.8 | 3 | 3 | 1.7000 | K | 585 |
| 75 | 84 | 315 S | 1LE0023-3AC03-4... | IE3 | 990 | 723.48 | 136 | 0.84 | 94.60 | 95.00 | 94.70 | 7.8 | 2.6 | 3 | 2.7300 | K | 790 |
| 90 | 101 | 315 M | 1LE0023-3AC23-4... | IE3 | 990 | 868.18 | 163 | 0.84 | 94.90 | 95.26 | 94.90 | 7.8 | 2.6 | 3 | 3.2900 | K | 950 |
| 110 | 123 | 315 L | 1LE0023-3AC53-4... | IE3 | 991 | 1060.04 | 196 | 0.85 | 95.10 | 95.30 | 94.90 | 7.8 | 2.6 | 3 | 4.1700 | K | 1085 |
| 132 | 148 | 315 L | 1LE0023-3AC63-4... | IE3 | 991 | 1272.05 | 235 | 0.85 | 95.40 | 95.70 | 95.40 | 7.8 | 2.6 | 3 | 4.4900 | K | 1135 |
| 160 | 180 | 355 M | 1LE0023-3BC23-4... | IE3 | 994 | 1537.22 | 290 | 0.84 | 95.60 | 95.65 | 95.20 | 8.5 | 3 | 2.4 | 8.4000 | L | 1770 |
| 185 | 207 | 355 M | 1LE0023-3BC33-4... | IE3 | 993 | 1779.20 | 330 | 0.84 | 95.70 | 95.81 | 95.30 | 8.5 | 3 | 2.4 | 8.4000 | L | 1770 |
| 200 | 224 | 355 M | 1LE0023-3BC43-4... | IE3 | 993 | 1923.46 | 360 | 0.84 | 95.80 | 95.91 | 95.40 | 8.5 | 3 | 2.4 | 11.2000 | L | 1810 |
| 220 | 246 | 355 L | 1LE0023-3BC53-4... | IE3 | 993 | 2115.81 | 395 | 0.84 | 95.80 | 95.95 | 95.60 | 8.5 | 3 | 2.4 | 11.4000 | L | 1980 |
| 250 | 280 | 355 L | 1LE0023-3BC63-4... | IE3 | 992 | 2406.8 | 450 | 0.84 | 95.8 | 96.1 | 95.9 | 8.5 | 3 | 2.4 | 11.4 | L | 2010 |

SIMOTICS Option Line – IE3



TIP

The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE3 | | |
| Series | 1LE0023 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

| Electrical data – 1LE0 – IE3 – 2-pole (IE3 cast iron) 3000 rpm 2-pole, 525 VA 50 Hz | | | | | | | | | | | | | | | | |
|---|------------|--------------------|----------|-------|--------|--------------|---------------|----------|----------|------------------|-----------------|-------------------|-------------------|--------------|----------------|------|
| Rated output | Frame size | Article number | IE class | Rated | | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia | Torque class | Weight (IM B3) | |
| | | | | speed | torque | | 100% load | 75% load | 50% load | | | | | | | |
| kW | | | | rpm | Nm | A | % | % | % | | | | kgm ² | | kg | |
| 0.75 | 80 M | 1LE0023-ODA24-1... | IE3 | 2835 | 2.5 | 1.19 | 0.86 | 80.7 | 82.9 | 82.9 | 6 | 2.4 | 3 | 0.002083 | J | 16 |
| 1.1 | 80 M | 1LE0023-ODA34-1... | IE3 | 2870 | 3.7 | 1.76 | 0.83 | 82.7 | 84.0 | 83.9 | 6.5 | 2.4 | 3.4 | 0.001537 | K | 18 |
| 1.5 | 90 S | 1LE0023-OEA04-1... | IE3 | 2900 | 4.9 | 2.3 | 0.86 | 84.2 | 84.8 | 82.3 | 6.5 | 2 | 3.4 | 0.002764 | K | 24 |
| 2.2 | 90 L | 1LE0023-OEA44-1... | IE3 | 2910 | 7.2 | 3.2 | 0.88 | 85.9 | 87.2 | 86.5 | 7.5 | 2.3 | 3.6 | 0.003557 | K | 28 |
| 3 | 100 L | 1LE0023-1AA44-1... | IE3 | 2875 | 10.0 | 4.35 | 0.87 | 87.1 | 88.3 | 88.3 | 7.8 | 2.6 | 3.6 | 0.004619 | L | 39 |
| 4 | 112 M | 1LE0023-1BA24-1... | IE3 | 2925 | 13.1 | 5.5 | 0.9 | 88.1 | 89.6 | 89.8 | 7.8 | 2.6 | 3.6 | 0.00879 | K | 46 |
| 5.5 | 132 S | 1LE0023-1CA04-1... | IE3 | 2930 | 17.9 | 7.6 | 0.89 | 89.2 | 90.2 | 90.3 | 7.5 | 2.3 | 3.6 | 0.01847 | K | 64 |
| 7.5 | 132 S | 1LE0023-1CA14-1... | IE3 | 2925 | 24.5 | 10.2 | 0.9 | 90.1 | 91.5 | 92.2 | 7.5 | 2.3 | 3.6 | 0.023231 | K | 71 |
| 11 | 160 M | 1LE0023-1DA24-1... | IE3 | 2935 | 35.8 | 14.9 | 0.89 | 91.2 | 92.0 | 91.7 | 7.5 | 2.3 | 2.5 | 0.03903 | K | 99 |
| 15 | 160 M | 1LE0023-1DA34-1... | IE3 | 2930 | 48.9 | 20 | 0.89 | 91.9 | 92.6 | 92.5 | 7.5 | 2.4 | 3.4 | 0.0472 | K | 107 |
| 18.5 | 160 L | 1LE0023-1DA44-1... | IE3 | 2940 | 60.1 | 24.5 | 0.89 | 92.4 | 93.0 | 92.9 | 7.8 | 2.4 | 3.4 | 0.05773 | K | 131 |
| 22 | 180 M | 1LE0023-1EA24-1... | IE3 | 2950 | 71.2 | 29.5 | 0.89 | 92.7 | 93.0 | 92.4 | 7.8 | 2.4 | 3.4 | 0.077 | K | 171 |
| 30 | 200 L | 1LE0023-2AA44-1... | IE3 | 2955 | 97.0 | 39.5 | 0.89 | 93.3 | 93.4 | 92.4 | 7.8 | 2.4 | 3.4 | 0.133 | K | 250 |
| 37 | 200 L | 1LE0023-2AA54-1... | IE3 | 2955 | 119.6 | 49 | 0.89 | 93.7 | 93.9 | 93.3 | 7.8 | 2.4 | 3.4 | 0.152 | K | 260 |
| 45 | 225 M | 1LE0023-2BA24-1... | IE3 | 2960 | 145.2 | 59 | 0.89 | 94.0 | 94.3 | 93.8 | 7.8 | 2.4 | 3.2 | 0.254 | K | 342 |
| 55 | 250 M | 1LE0023-2CA24-1... | IE3 | 2975 | 176.6 | 72 | 0.89 | 94.3 | 94.1 | 93.1 | 7.8 | 2.4 | 3.2 | 0.443 | K | 425 |
| 75 | 280 S | 1LE0023-2DA04-1... | IE3 | 2975 | 240.8 | 98 | 0.89 | 94.7 | 94.8 | 94.1 | 7.2 | 2.4 | 3 | 0.78 | J | 545 |
| 90 | 280 M | 1LE0023-2DA24-1... | IE3 | 2975 | 288.9 | 116 | 0.9 | 95.0 | 95.3 | 95.0 | 7.2 | 2.4 | 3.4 | 0.95 | J | 620 |
| 110 | 315 S | 1LE0023-3AA04-1... | IE3 | 2975 | 353.1 | 141 | 0.9 | 95.2 | 95.1 | 94.5 | 8.5 | 1.8 | 2.6 | 1.3 | K | 790 |
| 132 | 315 M | 1LE0023-3AA24-1... | IE3 | 2980 | 423.0 | 169 | 0.9 | 95.4 | 95.3 | 92.4 | 8.5 | 2.1 | 2.6 | 1.51 | K | 960 |
| 160 | 315 L | 1LE0023-3AA54-1... | IE3 | 2978 | 513.1 | 200 | 0.91 | 95.6 | 95.7 | 95.3 | 8.5 | 2.1 | 2.6 | 1.81 | K | 1060 |
| 185 | 315 L | 1LE0023-3AA64-1... | IE3 | 2978 | 593.3 | 230 | 0.92 | 95.7 | 95.9 | 95.7 | 8.5 | 2.3 | 2.6 | 2.19 | K | 1145 |
| 200 | 315 L | 1LE0023-3AA74-1... | IE3 | 2982 | 640.5 | 250 | 0.92 | 95.8 | 95.9 | 95.7 | 8.5 | 2.6 | 3.2 | 2.19 | K | 1165 |
| 220 | 355 M | 1LE0023-3BA24-1... | IE3 | 2986 | 704.0 | 280 | 0.90 | 95.8 | 95.4 | 94.2 | 8.5 | 2.2 | 2.8 | 3 | K | 1490 |
| 250 | 355 M | 1LE0023-3BA34-1... | IE3 | 2985 | 800.0 | 320 | 0.90 | 95.8 | 95.7 | 94.6 | 8 | 2.2 | 2.8 | 3 | K | 1490 |
| 280 | 355 L | 1LE0023-3BA54-1... | IE3 | 2988 | 895.0 | 355 | 0.9 | 95.8 | 95.7 | 94.9 | 8.5 | 2.2 | 2.8 | 3.5 | K | 1620 |
| 315 | 355 L | 1LE0023-3BA64-1... | IE3 | 2982 | 1009.0 | 400 | 0.9 | 95.8 | 95.8 | 95.3 | 8 | 2.2 | 2.8 | 3.5 | K | 1670 |



The nominal torque of the motor is easy to calculate;
 Torque (Nm) = Power (kW) × 9550 / Speed (rpm).

SIMOTICS Option Line – IE3

| | | | |
|------------------------------|--------------------------|---|---|
| | Cast-iron series | | |
| Efficiency class | IE3 | | |
| Series | 1LE0023 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

Electrical data – 1LE0 – IE3 – 4-pole (IE3 cast iron) 1500 rpm 4-pole, 525 VA 50 Hz

| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm ² | Torque class | Net weight (IM B3) kg |
|--------------------|------------|--------------------|----------|--------------------|--------------------|--------------------|--------------|---------------|------------|------------|------------------|-----------------|-------------------|---------------------------------------|--------------|--------------------------|
| | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 0.55 | 80 M | 1LE0023-0DB24-1... | IE3 | 1440 | 3.6 | 0.98 | 0.76 | 80.8 | 81.8 | 80.2 | 5.5 | 2.2 | 3.2 | 0.002155 | K | 16.5 |
| 0.75 | 80 M | 1LE0023-0DB34-1... | IE3 | 1445 | 5.0 | 1.33 | 0.75 | 82.5 | 82.9 | 80.7 | 6 | 2.7 | 3.7 | 0.002501 | K | 18 |
| 1.1 | 90 S | 1LE0023-0EB04-1... | IE3 | 1430 | 7.3 | 1.82 | 0.79 | 84.1 | 85.1 | 83.9 | 6.5 | 2.7 | 3.7 | 0.003888 | K | 24 |
| 1.5 | 90 L | 1LE0023-0EB44-1... | IE3 | 1440 | 9.9 | 2.45 | 0.79 | 85.3 | 86.0 | 85.2 | 6.5 | 2.7 | 3.8 | 0.004992 | K | 27 |
| 2.2 | 100 L | 1LE0023-1AB44-1... | IE3 | 1445 | 14.5 | 3.4 | 0.82 | 86.7 | 87.1 | 85.7 | 8.3 | 3.7 | 4.6 | 0.01125 | M | 42 |
| 3 | 100 L | 1LE0023-1AB54-1... | IE3 | 1450 | 19.8 | 4.6 | 0.82 | 87.7 | 88.1 | 87.1 | 8.3 | 3.7 | 4.6 | 0.01313 | M | 46 |
| 4 | 112 M | 1LE0023-1BB24-1... | IE3 | 1450 | 26.3 | 6.1 | 0.82 | 88.6 | 89.6 | 89.2 | 8.3 | 3.7 | 4.6 | 0.014928 | M | 52 |
| 5.5 | 132 S | 1LE0023-1CB04-1... | IE3 | 1455 | 36.1 | 8 | 0.84 | 89.6 | 90.9 | 91.1 | 7.8 | 2.4 | 3.8 | 0.028465 | L | 71 |
| 7.5 | 132 M | 1LE0023-1CB24-1... | IE3 | 1455 | 49.2 | 10.7 | 0.85 | 90.4 | 91.7 | 93.2 | 7.8 | 2.4 | 3.8 | 0.03561 | L | 83 |
| 11 | 160 M | 1LE0023-1DB24-1... | IE3 | 1460 | 72.0 | 15.4 | 0.86 | 91.4 | 92.4 | 92.6 | 7.8 | 2.4 | 3.8 | 0.06482 | K | 110 |
| 15 | 160 L | 1LE0023-1DB44-1... | IE3 | 1460 | 98.1 | 21 | 0.86 | 92.1 | 92.9 | 93.0 | 7.8 | 2.6 | 3.8 | 0.08109 | K | 134 |
| 18.5 | 180 M | 1LE0023-1EB24-1... | IE3 | 1470 | 120.2 | 26.5 | 0.83 | 92.6 | 93.0 | 92.5 | 7.8 | 2.6 | 3.6 | 0.126 | L | 170 |
| 22 | 180 L | 1LE0023-1EB44-1... | IE3 | 1470 | 142.9 | 31.5 | 0.83 | 93.0 | 93.7 | 93.6 | 7.8 | 2.6 | 3.6 | 0.146 | L | 192 |
| 30 | 200 L | 1LE0023-2AB44-1... | IE3 | 1470 | 194.9 | 42 | 0.84 | 93.6 | 94.3 | 94.2 | 7.8 | 2.6 | 3.6 | 0.22 | K | 255 |
| 37 | 225 S | 1LE0023-2BB04-1... | IE3 | 1478 | 239.1 | 51 | 0.85 | 93.9 | 94.1 | 93.4 | 8.3 | 3.3 | 3.6 | 0.461 | L | 315 |
| 45 | 225 M | 1LE0023-2BB24-1... | IE3 | 1478 | 290.8 | 62 | 0.85 | 94.2 | 94.2 | 93.7 | 8.3 | 3.3 | 3.6 | 0.479 | L | 342 |
| 55 | 250 M | 1LE0023-2CB24-1... | IE3 | 1482 | 354.4 | 74 | 0.86 | 94.6 | 95.0 | 94.7 | 7.6 | 2.6 | 3.3 | 0.82 | K | 440 |
| 75 | 280 S | 1LE0023-2DB04-1... | IE3 | 1485 | 482.3 | 101 | 0.86 | 95.0 | 95.3 | 95.3 | 7.6 | 2.6 | 3 | 1.31 | K | 580 |
| 90 | 280 M | 1LE0023-2DB24-1... | IE3 | 1485 | 578.8 | 120 | 0.87 | 95.2 | 95.6 | 95.5 | 7.6 | 2.6 | 3 | 1.69 | K | 685 |
| 110 | 315 S | 1LE0023-3AB04-1... | IE3 | 1488 | 706.0 | 146 | 0.87 | 95.4 | 95.7 | 95.4 | 7.9 | 3.3 | 3 | 2.77 | K | 800 |
| 132 | 315 M | 1LE0023-3AB24-1... | IE3 | 1488 | 847.2 | 175 | 0.87 | 95.6 | 95.9 | 95.5 | 7.9 | 3.3 | 3 | 3 | K | 1035 |
| 160 | 315 L | 1LE0023-3AB54-1... | IE3 | 1488 | 1026.9 | 210 | 0.87 | 95.8 | 96.1 | 95.8 | 7.9 | 3.3 | 3 | 3.14 | K | 1065 |
| 185 | 315 L | 1LE0023-3AB64-1... | IE3 | 1488 | 1187.3 | 245 | 0.87 | 95.9 | 96.2 | 95.8 | 7.9 | 3.3 | 3 | 3.46 | K | 1115 |
| 200 | 315 L | 1LE0023-3AB74-1... | IE3 | 1490 | 1281.9 | 260 | 0.88 | 96.0 | 96.3 | 96.1 | 7.9 | 3.3 | 3 | 3.79 | K | 1175 |
| 220 | 355 M | 1LE0023-3BB24-1... | IE3 | 1492 | 1408.2 | 285 | 0.88 | 96.0 | 96.0 | 95.3 | 8 | 2 | 3.2 | 6.9 | K | 1670 |
| 250 | 355 M | 1LE0023-3BB34-1... | IE3 | 1490 | 1602.3 | 325 | 0.88 | 96.0 | 96.0 | 95.3 | 7.8 | 1.8 | 2.9 | 6.9 | K | 1670 |
| 280 | 355 L | 1LE0023-3BB54-1... | IE3 | 1490 | 1794.6 | 365 | 0.88 | 96.0 | 96.1 | 95.7 | 7.8 | 1.8 | 2.9 | 7.7 | K | 1700 |
| 315 | 355 L | 1LE0023-3BB64-1... | IE3 | 1490 | 2019.0 | 410 | 0.88 | 96.0 | 96.1 | 95.8 | 8 | 1.8 | 2.9 | 8.5 | K | 1790 |

SIMOTICS Option Line – IE3



TIP
 The nominal torque of the motor is easy to calculate;
 Torque (Nm) =
 Power (kW) × 9550 / Speed (rpm).

| | Cast-iron series | | |
|-----------------------|--------------------------|---|---|
| Efficiency class | IE3 | | |
| Series | 1LE0023 | | |
| No. of poles | 2 | 4 | 6 |
| Cooling | Self-ventilated (IC 411) | | |
| Degree of protection | IP55 | | |
| Insulation | Thermal class 155 (F) | | |
| Utilization | Thermal class 130 (B) | | |
| Frame size | 80 ... 355 | | |
| Rated output at 50 Hz | 0.55 ... 315 kW | | |
| Rated torque at 50 Hz | 2.5 ... 2406.8 Nm | | |

| Electrical data – 1LE0 – IE3 – 6-pole (IE3 cast iron) 1000 rpm 6-pole, 525 VΔ 50 Hz | | | | | | | | | | | | | | | | |
|---|------------|---------------------|----------|-----------------|-----------------|-----------------|--------------|---------------|------------|------------|------------------|-----------------|-------------------|------------------------|--------------|-----------------------|
| Rated output kW | Frame size | Article number | IE class | Rated speed rpm | Rated torque Nm | Rated current A | Power factor | Efficiency at | | | Starting current | Starting torque | Break-down torque | Moment of inertia kgm² | Torque class | Net weight (IM B3) kg |
| | | | | | | | | 100% load % | 75% load % | 50% load % | | | | | | |
| 0.55 | 80 M | 1LE0023-0DC34-1... | IE3 | 935 | 5.6 | 1.17 | 0.67 | 77.2 | 77.45 | 74.6 | 5 | 2.7 | 3.4 | 0.003101 | K | 19.5 |
| 0.75 | 90 S | 1LE0023-0EC04-1... | IE3 | 940 | 7.6 | 1.49 | 0.7 | 78.9 | 80.32 | 78 | 5 | 2.4 | 3.2 | 0.00436 | K | 25 |
| 1.1 | 90 L | 1LE0023-0EC44-1... | IE3 | 945 | 11.1 | 2.15 | 0.69 | 81 | 81.58 | 80.4 | 5.5 | 2.7 | 3.5 | 0.00513 | K | 28 |
| 1.5 | 100 L | 1LE0023-1AC44-1... | IE3 | 945 | 15.2 | 2.7 | 0.74 | 82.5 | 84.13 | 82.9 | 5.5 | 2.7 | 3.5 | 0.01136 | K | 42 |
| 2.2 | 112 M | 1LE0023-1BC24-1... | IE3 | 945 | 22.2 | 3.9 | 0.74 | 84.3 | 86.11 | 95.7 | 6 | 2.7 | 3.4 | 0.014506 | K | 50 |
| 3 | 132 S | 1LE0023-1CC04-1... | IE3 | 965 | 29.7 | 5.1 | 0.75 | 85.6 | 86.6 | 86 | 6 | 2.7 | 4 | 0.02666 | K | 67 |
| 4 | 132 M | 1LE0023-1CC24-1... | IE3 | 955 | 40.0 | 6.8 | 0.75 | 86.8 | 88.54 | 88.7 | 6 | 2.3 | 3.4 | 0.03045 | K | 76 |
| 5.5 | 132 M | 1LE0023-1CC34-1... | IE3 | 960 | 54.7 | 9 | 0.76 | 88 | 89.15 | 89 | 6.5 | 2.3 | 4 | 0.04125 | K | 88 |
| 7.5 | 160 M | 1LE0023-1DC24-1... | IE3 | 965 | 74.2 | 11.9 | 0.78 | 89.1 | 90.36 | 90.3 | 6.5 | 2.3 | 3.6 | 0.0703 | K | 112 |
| 11 | 160 L | 1LE0023-1DC44-1... | IE3 | 970 | 108.3 | 17.2 | 0.78 | 90.3 | 90.3 | 89.8 | 7 | 2.3 | 3.6 | 0.07068 | K | 144 |
| 15 | 180 L | 1LE0023-1EC44-1... | IE3 | 975 | 146.9 | 22.5 | 0.8 | 91.2 | 92.1 | 91.8 | 7 | 2.3 | 3 | 0.185 | K | 175 |
| 18.5 | 200 L | 1LE0023-2AC44-1... | IE3 | 978 | 180.6 | 27.5 | 0.8 | 91.7 | 92.45 | 92.2 | 7 | 2.3 | 3 | 0.284 | K | 235 |
| 22 | 200 L | 1LE0023-2AC54-1... | IE3 | 978 | 214.8 | 33 | 0.8 | 92.2 | 93.1 | 93 | 7 | 2.4 | 3 | 0.327 | K | 251 |
| 30 | 225 M | 1LE0023-2BC24-1... | IE3 | 982 | 291.8 | 43 | 0.83 | 92.9 | 93.9 | 94.3 | 7.6 | 2.4 | 3 | 0.71 | K | 350 |
| 37 | 250 M | 1LE0023-2CC24-1... | IE3 | 985 | 358.7 | 52 | 0.84 | 93.3 | 94.1 | 94.1 | 7.6 | 2.4 | 3 | 1.03 | K | 430 |
| 45 | 280 S | 1LE0023-2DC04-1... | IE3 | 985 | 436.3 | 63 | 0.84 | 93.7 | 94.467 | 94.4 | 7.8 | 3 | 3 | 1.4 | K | 520 |
| 55 | 280 M | 1LE0023-2DC24-1... | IE3 | 988 | 531.6 | 77 | 0.84 | 94.1 | 94.6 | 94.5 | 7.8 | 3 | 3 | 1.7 | K | 585 |
| 75 | 315 S | 1LE0023-3AC04-1... | IE3 | 990 | 723.5 | 104 | 0.84 | 94.6 | 95 | 94.7 | 7.8 | 2.6 | 3 | 2.73 | K | 790 |
| 90 | 315 M | 1LE0023-3AC24-1... | IE3 | 990 | 868.2 | 124 | 0.84 | 94.9 | 95.256 | 94.9 | 7.8 | 2.6 | 3 | 3.29 | K | 950 |
| 110 | 315 L | 1LE0023-3AC54-1... | IE3 | 991 | 1060.0 | 150 | 0.85 | 95.1 | 95.3 | 94.9 | 7.8 | 2.6 | 3 | 4.17 | K | 1085 |
| 132 | 315 L | 1LE0023-3AC64-1... | IE3 | 991 | 1272.0 | 179 | 0.85 | 95.4 | 95.7 | 95.4 | 7.8 | 2.6 | 3 | 4.49 | K | 1135 |
| 160 | 355 M | 1LE0023-3BC24-1... | IE3 | 994 | 1537.2 | 220 | 0.84 | 95.6 | 95.65 | 95.2 | 8.5 | 3 | 2.4 | 8.4 | L | 1770 |
| 185 | 355 M | 1LE0023-3BC34-1.... | IE3 | 993 | 1779.2 | 255 | 0.84 | 95.7 | 95.81 | 95.3 | 8.5 | 3 | 2.4 | 8.4 | L | 1770 |
| 200 | 355 M | 1LE0023-3BC44-1.... | IE3 | 993 | 1923.5 | 275 | 0.84 | 95.8 | 95.91 | 95.4 | 8.5 | 3 | 2.4 | 11.2 | L | 1810 |
| 220 | 355 L | 1LE0023-3BC54-1... | IE3 | 993 | 2115.8 | 300 | 0.84 | 95.8 | 95.95 | 95.6 | 8.5 | 3 | 2.4 | 11.4 | L | 1980 |
| 250 | 355 L | 1LE0023-3BC64-1... | IE3 | 992 | 2406.8 | 340 | 0.84 | 95.8 | 96.09 | 95.9 | 8.5 | 3 | 2.4 | 11.4 | L | 2010 |

SIMOTICS Option Line – List of options

Remark: The basic 1LE0 extended option motor does not include any option as standard.

| Motor frame size | 12 th & 13 th position of the Article No. | Option code ¹⁾ | Description |
|--------------------------------|---|---------------------------|--|
| Voltage and frequency | | | |
| FS 80 ~ 132 | 21 | | 220 VΔ/380 VY 50 Hz, 440 VY 60 Hz ²⁾ |
| FS 100 ~ 355 | 33 | | 380 VΔ/660 VY 50 Hz, 440 VΔ 60 Hz ²⁾ |
| FS 80 ~ 132 | 22 | | 230 VΔ/400 VY 50 Hz, 460 VY 60 Hz ²⁾ |
| FS 100 ~ 355 | 34 | | 400 VΔ/690 VY 50 Hz, 460 VΔ 60 Hz ²⁾ |
| FS 80 ~ 355 | 23 | | 240 VΔ/415 VY 50 Hz, 440 VΔ 60 Hz |
| FS 80 ~ 355 | 35 | | 415 VΔ 50 Hz, 480 VΔ 60 Hz |
| FS 80 ~ 355 | 41 | | 525 VΔ 50 Hz |
| FS 80 ~ 355 | 90 | M2A | 220 VΔ/380 VY 60 Hz (50 Hz output) |
| FS 80 ~ 355 | 90 | M2B | 380 VΔ 60 Hz (50 Hz output) |
| FS 80 ~ 355 | 90 | M2C | 440 VY 60 Hz (50 Hz output) |
| FS 80 ~ 355 | 90 | M2D | 440 VΔ 60 Hz (50 Hz output) |
| FS 80 ~ 355 | 90 | M2E | 460 VY 60 Hz (50 Hz output) |
| FS 80 ~ 355 | 90 | M2F | 460 VΔ 60 Hz (50 Hz output) |
| FS 80 ~ 355 | 90 | M1A | 220 VΔ/380 VY 60 Hz (60 Hz output) |
| FS 80 ~ 355 | 90 | M1B | 380 VΔ/660 VY 60 Hz (60 Hz output) |
| FS 80 ~ 355 | 90 | M1C | 440 VY 60 Hz (60 Hz output) |
| FS 80 ~ 355 | 90 | M1D | 440 VΔ 60 Hz (60 Hz output) |
| FS 80 ~ 355 | 90 | M1E | 460 VY 60 Hz (60 Hz output) |
| FS 80 ~ 355 | 90 | M1F | 460 VΔ 60 Hz (60 Hz output) |
| FS 80 ~ 355 | 90 | X04 | 480 VY 60 Hz (60 Hz output) |
| FS 80 ~ 355 | 90 | X20 | 480 VΔ 60 Hz (60 Hz output) |
| Motor frame size | 15 th position of the Article No. | Option code ¹⁾ | Description |
| Motor protection | | | |
| FS 80 ~ 355 | A ²⁾ | | Without motor protection |
| FS 80 ~ 355 | B | | Motor protection with PTC thermistors with three embedded temperature sensors for tripping |
| FS 80 ~ 355 | C | | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping |
| FS 100 ~ 355 | F | | Motor temperature detection with embedded temperature sensor KTY 84-130 |
| FS 80 ~ 355 | H | | Installation of three Pt100 resistance thermometers |
| FS 80 ~ 355 | J | | Installation of six Pt100 resistance thermometers |
| Motor frame size | 16 th position of the Article No. | Option code ¹⁾ | Description |
| Motor terminal box | | | |
| FS 80 ~ 355 | 4 | | Terminal box top, cable entry on right (view from DE) |
| FS 80 ~ 355 | 5 | | Terminal box on RHS |
| FS 80 ~ 355 | 6 | | Terminal box on LHS |
| FS 80 ~ 355 | | R10 ³⁾ | Rotation of the terminal box through 90°, entry from DE |
| FS 80 ~ 355 | | R11 | Rotation of the terminal box through 90°, entry from NDE |
| FS 80 ~ 355 | | R12 | Rotation of the terminal box through 180°, cable entry at left side from DE view |
| FS 80 ~ 355 | | H08 ⁴⁾ | Terminal box on NDE |
| FS 80 ~ 355 | | L97 | Additional connection box |
| Windings and insulation | | | |
| FS 80 ~ 355 | | N01 | Temperature class 155 (F), used acc. to 155 (F), with service factor (SF) |
| FS 80 ~ 355 | | N10 | Temperature class 180 (H) |
| FS 80 ~ 355 | | Q04 | Anti-condensation heating for 220 V |
| FS 80 ~ 355 | | Q02 | Anti-condensation heating for 230 V |

¹⁾ Article No. supplement with option code when ordering.

²⁾ Without additional charge.

³⁾ For FS 80 to 112 motor, R10 only in combination with option code H08 (Terminal box on NDE) possible.

⁴⁾ Cable entry on terminal box towards the non-drive end.



For FS 80 ... 160, the floating bearings are assembled. For FS 180 ... 355, the floating bearing at DE, and the fixed bearing at NDE are assembled. If vertical mounting, the axial and trust load have to be considered.

| Motor frame size | | Option code ¹⁾ | Description |
|---|--|---------------------------|--|
| Bearings | | | |
| FS 100 ~ 355 | | L22 | Bearing design for increased cantilever forces |
| FS 80 ~ 160 | | L20 | Located bearing DE |
| FS 100 ~ 250 | | L23 ⁵⁾ | Regreasing device |
| FS 180 ~ 355 | | Q72 | Installation of 2 Pt100 screw-in resistance thermometers for bearings |
| FS 250 ~ 355 | | L53 ⁶⁾ | Insulated bearing |
| FS 250 ~ 355 | | Q01 | Measuring nipple for SPM shock pulse measurement for bearing inspection |
| FS 80 - 355 | | L80 | SKF bearing |
| Balance and vibration quantity | | | |
| FS 80 ~ 355 | | L00 | Vibration quantity level B |
| Mechanical version and degree of protection | | | |
| FS 80 ~ 355 | | L05 ⁷⁾⁸⁾ | Second standard shaft extension |
| FS 80 ~ 355 | | H00 ⁹⁾ | Protective cover (canopy) |
| FS 80 ~ 355 | | H03 ¹⁰⁾ | Condensation drainage holes |
| FS 80 ~ 280 | | H04 ¹¹⁾ | External earthing |
| FS 80 ~ 355 | | H22 | IP56 degree of protection (non-heavy-sea) |
| Modular technology | | | |
| FS 80 ~ 355 | | F70 ¹²⁾ | Mounting of separately driven fan |
| FS 80 ~ 355 | | F90 ¹³⁾ | Without external fan and without fan cover |
| FS 80 ~ 355 | | F76 | Metal fan |
| FS 112 ~ 355 | | G04 | Mounting of LL 861 900 220 rotary pulse encoder |
| FS 80 ~ 355 | | W74 | Prepared for of LL 861 900 220 encoder |
| FS 112 ~ 355 | | X05 | Prepared for of LL 861 900 220 encoder |
| FS 80 ~ 355 | | X50 | Mounting of Omron rotary pulse encoder (E6B2-CWZ1X) and separately driven fan |
| Rating plate and test certificates | | | |
| FS 80 ~ 355 | | B02 | Acceptance test certificate 3.1 according to EN 10204 |
| Paint finish | | | |
| FS 80 ~ 355 | | S01 | Unpainted, only primed |
| FS 80 ~ 355 | | S80 | Standard finish in RAL 7032 |
| FS 80 ~ 355 | | S81 | Standard finish in RAL 9006 |
| FS 80 ~ 355 | | W88 | Design for TH, W, F1, WF1 and Sea air resistant |
| Coolant temperature | | | |
| FS 80 ~ 355 | | D03 | Coolant temperature -40 to +40 °C |
| Versions in accordance with standards and specifications | | | |
| FS 80 ~ 90 | | D01 | CCC China Compulsory Certification (only for IE2 & IE3 motors) |
| FS 80 ~ 355 | | D34 | China Energy Efficiency Label (only for IE2 & IE3 motors) |
| FS 80 ~ 355 | | D47 | TR CU product safety certificate EAC for the Eurasian Customs Union |
| Marine certificate | | | |
| FS 80 ~ 355 | | E11 | With certification acc. to GL (Germanischer Lloyd), Germany, cooling temperature. 45 °C, thermal. class. 155 (F), utilised acc. to F |

⁵⁾ FS 280, FS 315 and FS 355 motor with the regreasing device as standard.

⁶⁾ For horizontal mounting motor, the insulated bearing is located at NDE. For vertical mounting motor, the insulated bearing is located at DE.

⁷⁾ Not possible in combination with canopy or separately driven fan (order code: F70).

⁸⁾ Second standard shaft extension on NDE is smaller than DE and provides output at the level of the next smaller frame size.

⁹⁾ Only applicable for the types of construction IM V5, IM V1, IM V15 and IM V18. Not possible in combination with option code L05.

¹⁰⁾ Position of the condensation drainage hole will be adapted to the type of construction of the motor accordingly.

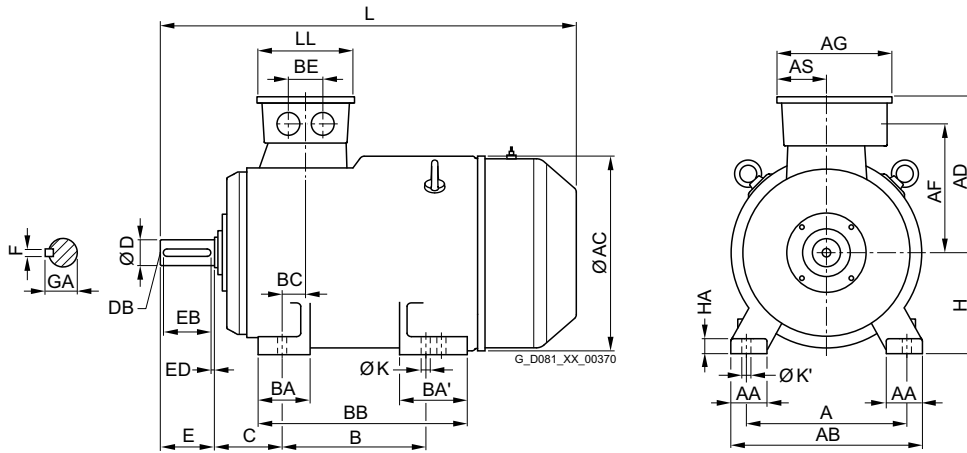
¹¹⁾ FS 315 and FS 355 motor with external earthing as standard.

¹²⁾ When the separately driven fan is mounted, the length of the motor increases by Δl.

¹³⁾ Without fan and fan cover, the length of the motor decreases by Δl. By using the power output of rating plate, the motor must have external cooling by air flow. The correct motor cooling is in responsibility of customer. Missing or wrong cooling reduces the lifetime or damages the motor.

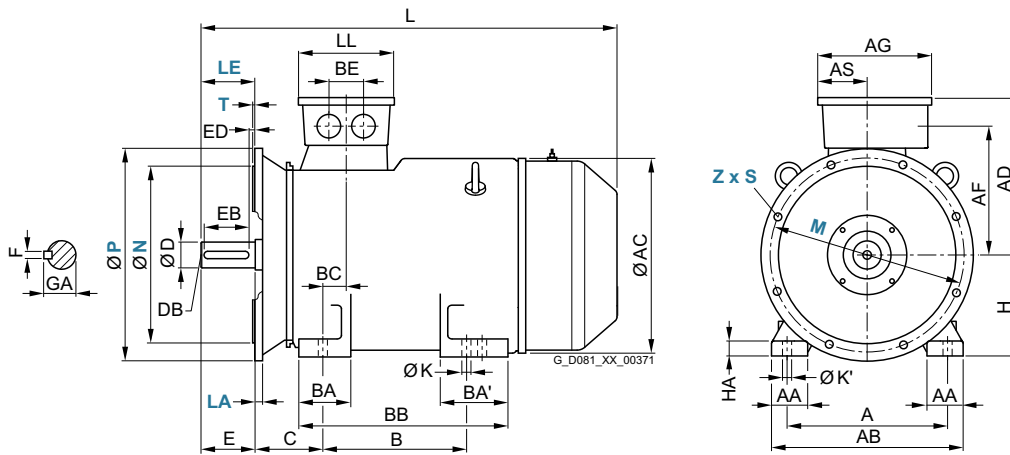
SIMOTICS 1LE0 – Dimensional drawings

IM B3



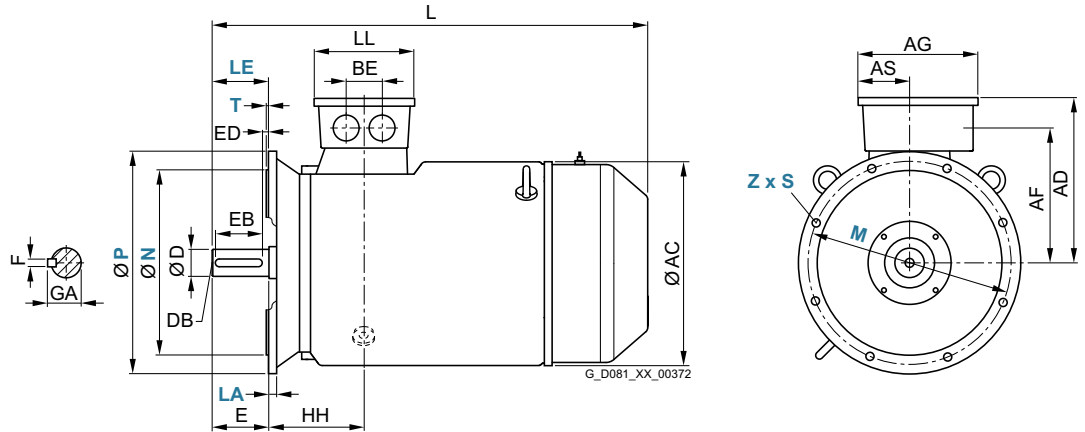
IM B35

For flange dimensions, see Page 82 (Z = the number of retaining holes)



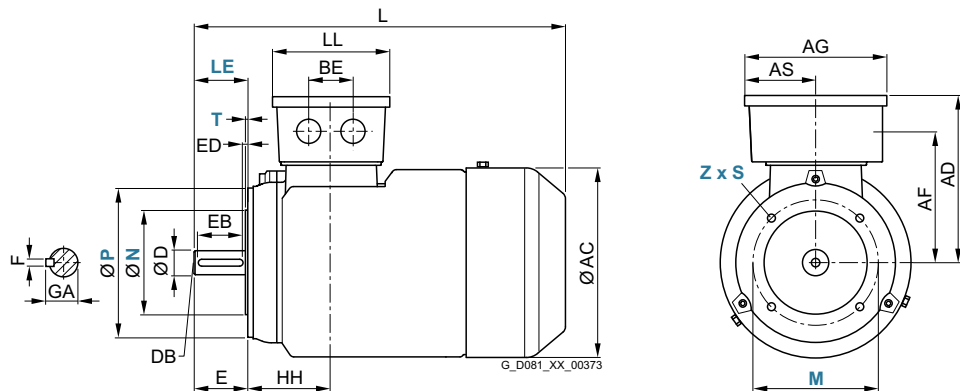
IM B5 and IM V1

For flange dimensions, see Page 82 (Z = the number of retaining holes)



IM B14

For flange dimensions, see Page 82 (Z = the number of retaining holes)



Cast-iron series – 1LE0 – IE1 & IE2

| For motor | | Dimension designation acc. to IEC | | | | | | | | | | | | | | | | | |
|------------|---------------------|-----------------------------------|-----|-----|-----|------------------|--------|--------|-----|-------|-----------------|--------|-----|------|-----|-----|------------------|-----|----|
| Frame size | Motor type 1LE0- | Number of poles | A | AA | AB | AC ¹⁾ | AD/AD' | AF/AF' | AG | AS | B ²⁾ | BA/BA' | BB | BC | BE | C | CA ²⁾ | H | HA |
| 80 M | OD.2 | 2 | 125 | 36 | 160 | 157 | 142 | 110.5 | 161 | 65.5 | 100 | 44 | 135 | 26 | 42 | 50 | 103 | 80 | 10 |
| | | 4, 6 | 125 | 36 | 160 | 157 | 142 | 110.5 | 161 | 65.5 | 100 | 44 | 135 | 26 | 42 | 50 | 103 | 80 | 10 |
| | OD.3 | 2, 4, 6 | 125 | 36 | 160 | 157 | 142 | 110.5 | 161 | 65.5 | 100 | 44 | 135 | 26 | 42 | 50 | 103 | 80 | 10 |
| 90 S | OE.0 | 2, 4, 6 | 140 | 46 | 175 | 175 | 152 | 120.5 | 161 | 65.5 | 100 | 46 | 140 | 20 | 42 | 56 | 115 | 90 | 10 |
| 90 L | OE.4 | | 140 | 46 | 175 | 175 | 152 | 120.5 | 161 | 65.5 | 125 | 46 | 165 | 20 | 42 | 56 | 115 | 90 | 10 |
| 100 L | 1A.4 | 2, 4, 6 | 160 | 45 | 200 | 196 | 177 | 140 | 175 | 70 | 140 | 45 | 176 | 30.5 | 54 | 63 | 133 | 100 | 12 |
| | 1A.5 | 4 | 160 | 45 | 200 | 196 | 177 | 140 | 175 | 70 | 140 | 45 | 176 | 30.5 | 54 | 63 | 133 | 100 | 12 |
| 112 M | 1B.2 | 2, 4, 6 | 190 | 45 | 226 | 221 | 188.5 | 152 | 175 | 70 | 140 | 50 | 180 | 22 | 54 | 70 | 129.5 | 112 | 12 |
| 132 S | 1C.0 | 2, 4, 6 | 216 | 50 | 256 | 259 | 191.5 | 175 | 175 | 70 | 140 | 64 | 186 | 32.5 | 54 | 89 | 178 | 132 | 15 |
| | 1C.1 | 2 | 216 | 50 | 256 | 259 | 191.5 | 175 | 175 | 70 | 140 | 64 | 186 | 32.5 | 54 | 89 | 178 | 132 | 15 |
| 132 M | 1C.2 | 4, 6 | 216 | 50 | 256 | 259 | 191.5 | 175 | 175 | 70 | 178 | 64 | 224 | 32.5 | 54 | 89 | 185 | 132 | 15 |
| | 1C.3 | 6 | 216 | 50 | 256 | 259 | 191.5 | 175 | 175 | 70 | 178 | 64 | 224 | 32.5 | 54 | 89 | 185 | 132 | 15 |
| 160 M | 1D.2 | 2, 4, 6 | 254 | 60 | 314 | 312 | 255 | 206 | 231 | 94 | 210 | 70 | 258 | 51 | 68 | 108 | 194 | 160 | 20 |
| | 1D.3 | 2 | 254 | 60 | 314 | 312 | 255 | 206 | 231 | 94 | 210 | 70 | 258 | 51 | 68 | 108 | 194 | 160 | 20 |
| 160 L | 1D.4 | 2, 4, 6 | 254 | 60 | 314 | 312 | 255 | 206 | 231 | 94 | 254 | 70 | 302 | 51 | 68 | 108 | 210 | 160 | 20 |
| 180 M | 1E.2 | 2, 4 | 279 | 65 | 339 | 356 | 270 | 221 | 231 | 94 | 241 | 80 | 301 | 37 | 68 | 121 | 219 | 180 | 20 |
| 180 L | 1E.4 | 4, 6 | 279 | 65 | 339 | 356 | 270 | 221 | 231 | 94 | 279 | 80 | 339 | 37 | 68 | 121 | 216 | 180 | 20 |
| 200 L | 2A.4 | 2, 6 | 318 | 70 | 378 | 397 | 300 | 247.5 | 288 | 107.5 | 305 | 80 | 369 | 69 | 85 | 133 | 234 | 200 | 25 |
| | 2A.5 | 2, 4, 6 | 318 | 70 | 378 | 397 | 300 | 247.5 | 288 | 107.5 | 305 | 80 | 369 | 69 | 85 | 133 | 234 | 200 | 25 |
| 225 S | 2B.0 | 4 | 356 | 80 | 436 | 442 | 327 | 274 | 288 | 107.5 | 286 | 80 | 348 | 63 | 85 | 149 | 255 | 225 | 34 |
| 225 M | 2B.2 | 2 | 356 | 80 | 436 | 442 | 327 | 274 | 288 | 107.5 | 311 | 80 | 373 | 63 | 85 | 149 | 255 | 225 | 34 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 250 M | 2C.2 | 2 | 406 | 90 | 490 | 488 | 373 | 310.5 | 342 | 123 | 349 | 100 | 421 | 92 | 84 | 169 | 269 | 250 | 40 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 280 S | 2D.0 | 2, 4, 6 | 457 | 100 | 540 | 538 | 413 | 350.5 | 342 | 123 | 368 | 115 | 454 | 72 | 84 | 190 | 237 | 280 | 40 |
| 280 M | 2D.2 | 2, 4, 6 | 457 | 100 | 540 | 538 | 413 | 350.5 | 342 | 123 | 419 | 115 | 505 | 72 | 84 | 190 | 288 | 280 | 40 |
| 315 S | 3A.0 | 2, 4, 6 | 508 | 120 | 610 | 608 | 482 | 401 | 401 | 148 | 406 | 165 | 520 | 75 | 110 | 216 | 351 | 315 | 50 |
| 315 M | 3A.2 | 2, 4, 6 | 508 | 120 | 610 | 608 | 482 | 401 | 401 | 148 | 457/508 | 165 | 668 | 75 | 110 | 216 | 480 | 315 | 50 |
| | | | | | | | | | | | | | | | | | | | |
| 315 L | 3A.5/3A.6/ 3A.7 | 2, 4 | 508 | 120 | 610 | 608 | 482 | 401 | 401 | 148 | 457/508 | 165 | 668 | 75 | 110 | 216 | 480 | 315 | 50 |
| | | 6 | 508 | 120 | 610 | 608 | 482 | 401 | 401 | 148 | 457/508 | 165 | 668 | 75 | 110 | 216 | 480 | 315 | 50 |
| 355 M | 3B.2/3B.3 | 2, 4, 6 | 610 | 116 | 726 | 718 | 655 | 572 | 472 | 198.5 | 560/630 | - | 750 | - | 130 | 254 | 536 | 355 | 52 |
| | | 6 | 610 | 116 | 726 | 718 | 655 | 572 | 472 | 198.5 | 560/630 | - | 750 | - | 130 | 254 | 536 | 355 | 52 |
| 355 L | 3B.5/3B.6 | 2, 4, 6 | 610 | 116 | 726 | 718 | 655 | 572 | 472 | 198.5 | 560/630 | - | 750 | - | 130 | 254 | 536 | 355 | 52 |

¹⁾ Measured across the bolt heads.

²⁾ This dimension is assigned in IEC 60072-1 to the frame size listed.

| For motor | | | Dimension designation acc. to IEC | | | | | DE shaft extension | | | | | | |
|--------------|---------------------|-----------------|-----------------------------------|------|-------|-------|-----|--------------------|-----|-----|-----|-----|----|------|
| Frame size | Motor type 1LE0- | Number of poles | HH | K/K' | L | LC | LL | D | DB | E | EB | ED | F | GA |
| | | | 80 M | OD.2 | 2 | 76 | 10 | 288 | 323 | 109 | 19 | M6 | 40 | 32 |
| | | 4, 6 | 76 | 10 | 288 | 323 | 109 | 19 | M6 | 40 | 32 | 3.5 | 6 | 21.5 |
| | OD.3 | 2, 4, 6 | 76 | 10 | 288 | 323 | 109 | 19 | M6 | 40 | 32 | 3.5 | 6 | 21.5 |
| 90 S | 0E.0 | 2, 4, 6 | 76 | 10 | 316 | 361 | 109 | 24 | M8 | 50 | 40 | 3.5 | 8 | 27 |
| 90 L | 0E.4 | | 76 | 10 | 341 | 386 | 109 | 24 | M8 | 50 | 40 | 3.5 | 8 | 27 |
| 100 L | 1A.4 | 2, 4, 6 | 93.5 | 12 | 390 | 446 | 118 | 28 | M10 | 60 | 50 | 3.5 | 8 | 31 |
| | 1A.5 | 4 | 93.5 | 12 | 390 | 446 | 118 | 28 | M10 | 60 | 50 | 3.5 | 8 | 31 |
| 112 M | 1B.2 | 2, 4, 6 | 92 | 12 | 393.5 | 449.5 | 118 | 28 | M10 | 60 | 50 | 3.5 | 8 | 31 |
| 132 S | 1C.0 | 2, 4, 6 | 121.5 | 12 | 480 | 547 | 118 | 38 | M12 | 80 | 70 | 4 | 10 | 41 |
| | 1C.1 | 2 | 121.5 | 12 | 480 | 547 | 118 | 38 | M12 | 80 | 70 | 4 | 10 | 41 |
| 132 M | 1C.2 | 4, 6 | 121.5 | 12 | 525 | 592 | 118 | 38 | M12 | 80 | 70 | 4 | 10 | 41 |
| | 1C.3 | 6 | 121.5 | 12 | 525 | 592 | 118 | 38 | M12 | 80 | 70 | 4 | 10 | 41 |
| 160 M | 1D.2 | 2, 4, 6 | 159 | 15 | 614 | 701 | 158 | 42 | M16 | 110 | 100 | 5 | 12 | 45 |
| | 1D.3 | 2 | 159 | 15 | 614 | 701 | 158 | 42 | M16 | 110 | 100 | 5 | 12 | 45 |
| 160 L | 1D.4 | 2, 4, 6 | 159 | 15 | 674 | 761 | 158 | 42 | M16 | 110 | 100 | 5 | 12 | 45 |
| 180 M | 1E.2 | 2, 4 | 158 | 15 | 683 | 801 | 158 | 48 | M16 | 110 | 100 | 5 | 14 | 51.5 |
| 180 L | 1E.4 | 4, 6 | 158 | 15 | 718 | 836 | 158 | 48 | M16 | 110 | 100 | 5 | 14 | 51.5 |
| 200 L | 2A.4 | 2, 6 | 202 | 19 | 772 | 892 | 215 | 55 | M20 | 110 | 100 | 5 | 16 | 59 |
| | 2A.5 | 2, 4, 6 | 202 | 19 | 772 | 892 | 215 | 55 | M20 | 110 | 100 | 5 | 16 | 59 |
| 225 S | 2B.0 | 4 | 212 | 19 | 820 | 940 | 215 | 60 | M20 | 140 | 125 | 5 | 18 | 64 |
| 225 M | 2B.2 | 2 | 212 | 19 | 815 | 935 | 215 | 55 | M20 | 110 | 100 | 5 | 16 | 59 |
| | | 4, 6 | | | 845 | 965 | | 60 | | 140 | 125 | | 18 | 64 |
| 250 M | 2C.2 | 2 | 260 | 24 | 917 | 1037 | 246 | 60 | M20 | 140 | 125 | 5 | 18 | 64 |
| | | 4, 6 | | | | 1067 | | 65 | | | | | | 69 |
| 280 S | 2D.0 | 2 | 262 | 24 | 976 | 1126 | 246 | 65 | M20 | 140 | 125 | 5 | 18 | 69 |
| | | 4, 6 | | | | | | 75 | | | | 5 | 20 | 79.5 |
| 280 M | 2D.2 | 2 | 262 | 24 | 1027 | 1177 | 246 | 65 | M20 | 140 | 125 | 5 | 18 | 69 |
| | | 4, 6 | | | | | | 75 | | | | | 20 | 79.5 |
| 315 S | 3A.0 | 2 | 291 | 28 | 1113 | 1265 | 296 | 65 | M20 | 140 | 125 | 6 | 18 | 69 |
| | | 4, 6 | | | 1143 | 1295 | | 80 | | 170 | 140 | | 22 | 85 |
| 315 M | 3A.2 | 2 | 291 | 28 | 1293 | 1445 | 296 | 65 | M20 | 140 | 125 | 6 | 18 | 69 |
| | | 4, 6 | | | 1323 | 1475 | | 80 | | 170 | | | 22 | 85 |
| 315 L | 3A.5/3A.6/ | 2 | 291 | 28 | 1293 | 1445 | 296 | 65 | M20 | 140 | 125 | 6 | 18 | 69 |
| | 3A.7 | 4 | | | 1323 | 1475 | | 80 | | 170 | 140 | | 22 | 85 |
| | 3A.5/3A.6 | 6 | 291 | 28 | 1323 | 1475 | 296 | 80 | M20 | 170 | 140 | 6 | 22 | 85 |
| 355 M | 3B.2/3B.3 | 2 | 298 | 28 | 1490 | 1652 | 397 | 75 | M20 | 140 | 125 | 6 | 20 | 79.5 |
| | | 4, 6 | | | 1520 | 1712 | | 95 | M24 | 170 | 140 | | 25 | 100 |
| | 3B.4 | 6 | 298 | 28 | 1520 | 1712 | 397 | 95 | M24 | 170 | 140 | 6 | 25 | 100 |
| 355 L | 3B.5/3B.6 | 2 | 298 | 28 | 1490 | 1652 | 397 | 75 | M20 | 140 | 125 | 6 | 20 | 79.5 |
| | | 4, 6 | | | 1520 | 1712 | | 95 | M24 | 170 | 140 | | 25 | 100 |

Cast-iron series – 1LE0 – IE3

| For motor | | Dimension designation acc. to IEC | | | | | | | | | | | | | | | | | |
|------------|---------------------|-----------------------------------|-----|-----|-----|------------------|--------|--------|-----|-------|-----------------|---------|-----|------|-----|-----------------------|------------------|-----|----|
| Frame size | Motor type 1LE0- | Number of poles | A | AA | AB | AC ¹⁾ | AD/AD' | AF/AF' | AG | AS | B ²⁾ | BA/BA' | BB | BC | BE | C | CA ²⁾ | H | HA |
| 80 M | OD.2 | 2 | 125 | 36 | 160 | 157 | 142 | 110.5 | 145 | 65.5 | 100 | 44 | 135 | 26 | 42 | 50 | 143 | 80 | 10 |
| | | 4, 6 | 125 | 36 | 160 | 157 | 142 | 110.5 | 145 | 65.5 | 100 | 44 | 135 | 26 | 42 | 50 | 143 | 80 | 10 |
| | OD.3 | 2, 4, 6 | 125 | 36 | 160 | 157 | 142 | 110.5 | 145 | 65.5 | 100 | 44 | 135 | 26 | 42 | 50 | 143 | 80 | 10 |
| 90 S | OE.0 | 2, 4, 6 | 140 | 46 | 175 | 175 | 152 | 120.5 | 145 | 65.5 | 100 | 46 | 140 | 20 | 42 | 56 | 165 | 90 | 10 |
| 90 L | OE.4 | | 140 | 46 | 175 | 175 | 152 | 120.5 | 145 | 65.5 | 125 | 46 | 165 | 20 | 42 | 56 | 165 | 90 | 10 |
| 100 L | 1A.4 | 2, 4, 6 | 160 | 45 | 200 | 196 | 177 | 140 | 163 | 70 | 140 | 45 | 176 | 30.5 | 54 | 63/78 ³⁾ | 203.5 | 100 | 12 |
| | 1A.5 | 4 | 160 | 45 | 200 | 196 | 177 | 140 | 163 | 70 | 140 | 45 | 176 | 30.5 | 54 | 63/78 ³⁾ | 203.5 | 100 | 12 |
| 112 M | 1B.2 | 2, 4, 6 | 190 | 45 | 226 | 221 | 188.5 | 152 | 163 | 70 | 140 | 50 | 180 | 22 | 54 | 70 | 182 | 112 | 12 |
| 132 S | 1C.0 | 2, 4, 6 | 216 | 50 | 256 | 259 | 212 | 175 | 163 | 70 | 140 | 64 | 186 | 32.5 | 54 | 89/104 ³⁾ | 213 | 132 | 15 |
| | 1C.1 | 2 | 216 | 50 | 256 | 259 | 212 | 175 | 163 | 70 | 140 | 64 | 186 | 32.5 | 54 | 89/104 ³⁾ | 213 | 132 | 15 |
| 132 M | 1C.2 | 4, 6 | 216 | 50 | 256 | 259 | 212 | 175 | 163 | 70 | 178 | 64 | 224 | 32.5 | 54 | 89/111 ³⁾ | 220 | 132 | 15 |
| | 1C.3 | 6 | 216 | 50 | 256 | 259 | 212 | 175 | 163 | 70 | 178 | 64 | 224 | 32.5 | 54 | 89/111 ³⁾ | 220 | 132 | 15 |
| 160 M | 1D.2 | 2, 4, 6 | 254 | 60 | 314 | 312 | 255 | 206 | 231 | 94 | 210 | 70 | 258 | 51 | 68 | 108/112 ³⁾ | 193 | 160 | 20 |
| | 1D.3 | 2 | 254 | 60 | 314 | 312 | 255 | 206 | 231 | 94 | 210 | 70 | 258 | 51 | 68 | 108/112 ³⁾ | 193 | 160 | 20 |
| 160 L | 1D.4 | 2, 4, 6 | 254 | 60 | 314 | 312 | 255 | 206 | 231 | 94 | 254 | 70 | 302 | 51 | 68 | 108/128 ³⁾ | 209 | 160 | 20 |
| 180 M | 1E.2 | 2, 4 | 279 | 65 | 339 | 356 | 270 | 221 | 231 | 94 | 241 | 80 | 301 | 37 | 68 | 121/150 ³⁾ | 246 | 180 | 20 |
| 180 L | 1E.4 | 4, 6 | 279 | 65 | 339 | 356 | 270 | 221 | 231 | 94 | 279 | 80 | 339 | 37 | 68 | 121/152 ³⁾ | 248 | 180 | 20 |
| 200 L | 2A.4 | 2, 6 | 318 | 70 | 378 | 397 | 300 | 247.5 | 288 | 107.5 | 305 | 80 | 369 | 69 | 85 | 133/158 ³⁾ | 259 | 200 | 25 |
| | 2A.5 | 2, 4, 6 | 318 | 70 | 378 | 397 | 300 | 247.5 | 288 | 107.5 | 305 | 80 | 369 | 69 | 85 | 133/158 ³⁾ | 259 | 200 | 25 |
| 225 S | 2B.0 | 4 | 356 | 80 | 436 | 442 | 327 | 274 | 288 | 107.5 | 286 | 90 | 348 | 63 | 85 | 149/136 ³⁾ | 245 | 225 | 34 |
| 225 M | 2B.2 | 2 | 356 | 80 | 436 | 442 | 327 | 274 | 288 | 107.5 | 311 | 90 | 373 | 63 | 85 | 149/166 ³⁾ | 275 | 225 | 34 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 250 M | 2C.2 | 2 | 406 | 90 | 490 | 488 | 373 | 310.5 | 342 | 123 | 349 | 100 | 421 | 92 | 84 | 168/208 ³⁾ | 309 | 250 | 40 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 280 S | 2D.0 | 2, 4, 6 | 457 | 100 | 540 | 538 | 413 | 350.5 | 342 | 123 | 368 | 115 | 454 | 72 | 84 | 190/172 ³⁾ | 293 | 280 | 40 |
| 280 M | 2D.2 | 2 | 457 | 100 | 540 | 538 | 413 | 350.5 | 342 | 123 | 419 | 115 | 505 | 72 | 84 | 190/172 ³⁾ | 293 | 280 | 40 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 315 S | 3A.0 | 2 | 508 | 120 | 610 | 608 | 482 | 401 | 401 | 148 | 406 | 140 | 520 | 75 | 110 | 216/230 ³⁾ | 401 | 315 | 50 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 315 M | 3A.2 | 2 | 508 | 120 | 610 | 608 | 482 | 401 | 401 | 148 | 457/508 | 165/215 | 668 | 75 | 110 | 216/409 ³⁾ | 580 | 315 | 50 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 315 L | 3A.5/3A.6/ 3A.7 | 2, 4, 6 | 508 | 120 | 610 | 608 | 482 | 401 | 401 | 148 | 457/508 | 165/215 | 668 | 75 | 110 | 216/358 ³⁾ | 529 | 315 | 50 |
| 355 M | 3B.2/3B.3 | 2 | 610 | 120 | 730 | 695 | 646 | 545 | 464 | 173.5 | 560/630 | 153/207 | 750 | 27 | 130 | 254/378 ³⁾ | 547 | 355 | 53 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 355 L | 3B.4 | 2 | 610 | 120 | 730 | 695 | 646 | 545 | 464 | 173.5 | 560/630 | 153/207 | 750 | 27 | 130 | 254/378 ³⁾ | 547 | 355 | 53 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |
| 355 L | 3B.5/3B.6 | 2 | 610 | 120 | 730 | 695 | 646 | 545 | 464 | 173.5 | 560/630 | 153/207 | 750 | 27 | 130 | 254/308 ³⁾ | 547 | 355 | 53 |
| | | 4, 6 | | | | | | | | | | | | | | | | | |

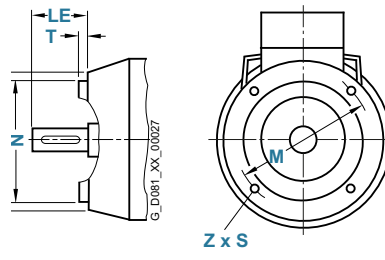
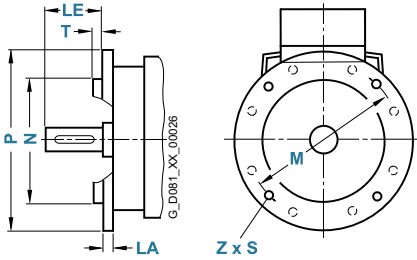
1) Measured across the bolt heads.
 2) This dimension is assigned in IEC 60072-1 to the frame size listed.
 3) Only for the motor configured with H08 option.

| For motor | | | Dimension designation acc. to IEC | | | | | DE shaft extension | | | | | | |
|------------|------------|-----------------|-----------------------------------|------|------|-------|-----|--------------------|-----|-----|-----|----|----|------|
| Frame size | Motor type | Number of poles | HH | K/K' | L | LC | LL | D | DB | E | EB | ED | F | GA |
| 80 M | OD.2 | 2 | 76 | 10 | 328 | 363 | 109 | 19 | M6 | 40 | 32 | 4 | 6 | 21.5 |
| | | 4, 6 | 76 | 10 | 328 | 363 | 109 | 19 | M6 | 40 | 32 | 4 | 6 | 21.5 |
| | OD.3 | 2, 4, 6 | 76 | 10 | 328 | 363 | 109 | 19 | M6 | 40 | 32 | 4 | 6 | 21.5 |
| 90 S | OE.0 | 2, 4, 6 | 76 | 10 | 366 | 411 | 109 | 24 | M8 | 50 | 40 | 5 | 8 | 27 |
| 90 L | OE.4 | | 76 | 10 | 391 | 436 | 109 | 24 | M8 | 50 | 40 | 5 | 8 | 27 |
| 100 L | 1A.4 | 2, 4, 6 | 93.5 | 12 | 460 | 516.5 | 118 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| | 1A.5 | 4 | 93.5 | 12 | 460 | 516.5 | 118 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| 112 M | 1B.2 | 2, 4, 6 | 92 | 12 | 448 | 502 | 118 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| 132 S | 1C.0 | 2, 4, 6 | 121.5 | 12 | 515 | 582 | 118 | 38 | M12 | 80 | 70 | 5 | 10 | 41 |
| | 1C.1 | 2 | 121.5 | 12 | 515 | 582 | 118 | 38 | M12 | 80 | 70 | 5 | 10 | 41 |
| 132 M | 1C.2 | 4, 6 | 121.5 | 12 | 560 | 627 | 118 | 38 | M12 | 80 | 70 | 5 | 10 | 41 |
| | 1C.3 | 6 | 121.5 | 12 | 560 | 627 | 118 | 38 | M12 | 80 | 70 | 5 | 10 | 41 |
| 160 M | 1D.2 | 2, 4, 6 | 159 | 15 | 614 | 701 | 158 | 42 | M16 | 110 | 100 | 5 | 12 | 45 |
| | 1D.3 | 2 | 159 | 15 | 614 | 701 | 158 | 42 | M16 | 110 | 100 | 5 | 12 | 45 |
| 160 L | 1D.4 | 2, 4, 6 | 159 | 15 | 674 | 761 | 158 | 42 | M16 | 110 | 100 | 5 | 12 | 45 |
| 180 M | 1E.2 | 2, 4 | 158 | 15 | 718 | 836 | 158 | 48 | M16 | 110 | 100 | 5 | 14 | 51.5 |
| 180 L | 1E.4 | 4, 6 | 158 | 15 | 758 | 876 | 158 | 48 | M16 | 110 | 100 | 5 | 14 | 51.5 |
| 200 L | 2A.4 | 2, 6 | 202 | 19 | 807 | 927 | 215 | 55 | M20 | 110 | 100 | 5 | 16 | 59 |
| | 2A.5 | 2, 4, 6 | 202 | 19 | 807 | 927 | 215 | 55 | M20 | 110 | 100 | 5 | 16 | 59 |
| 225 S | 2B.0 | 4 | 212 | 19 | 845 | 965 | 215 | 60 | M20 | 140 | 125 | 10 | 18 | 64 |
| 225 M | 2B.2 | 2 | 212 | 19 | 820 | 940 | 215 | 55 | M20 | 110 | 100 | 5 | 16 | 59 |
| | | 4, 6 | | | 875 | 995 | | 60 | | 140 | 125 | 10 | 18 | 64 |
| 250 M | 2C.2 | 2 | 260 | 24 | 967 | 1087 | 246 | 60 | M20 | 140 | 125 | 10 | 18 | 64 |
| | | 4, 6 | | | | 1117 | | 65 | | | | | | 69 |
| 280 S | 2D.0 | 2 | 262 | 24 | 991 | 1141 | 246 | 65 | M20 | 140 | 125 | 10 | 18 | 69 |
| | | 4, 6 | | | | | | 75 | | | | 10 | 20 | 79.5 |
| 280 M | 2D.2 | 2 | 262 | 24 | 1042 | 1192 | 246 | 65 | M20 | 140 | 125 | 10 | 18 | 69 |
| | | 4, 6 | | | | | | 75 | | | | | 20 | 79.5 |
| 315 S | 3A.0 | 2 | 291 | 28 | 1163 | 1315 | 296 | 65 | M20 | 140 | 125 | 10 | 18 | 69 |
| | | 4, 6 | | | 1193 | 1545 | | 80 | | 170 | 140 | 25 | 22 | 85 |
| 315 M | 3A.2 | 2 | 291 | 28 | 1393 | 1345 | 296 | 65 | M20 | 140 | 125 | 10 | 18 | 69 |
| | | 4, 6 | | | 1423 | 1575 | | 80 | | 170 | 140 | 25 | 22 | 85 |
| 315 L | 3A.5/3A.6/ | 2 | 291 | 28 | 1393 | 1345 | 296 | 65 | M20 | 140 | 125 | 10 | 18 | 69 |
| | 3A.7 | 4, 6 | | | 1423 | 1575 | | 80 | | 170 | 140 | 25 | 22 | 85 |
| 355 M | 3B.2/3B.3 | 2 | 281 | 28 | 1490 | 1642 | 397 | 75 | M20 | 140 | 125 | 10 | 20 | 79.5 |
| | | 4, 6 | | | 1520 | 1702 | | 95 | M24 | 170 | 140 | 25 | 25 | 100 |
| 355 L | 3B.4 | 6 | 281 | 28 | 1520 | 1702 | | 95 | M24 | 170 | 140 | 25 | 25 | 100 |
| | | 2 | 281 | 28 | 1490 | 1642 | 397 | 75 | M20 | 140 | 125 | 10 | 20 | 79.5 |
| | | 4, 6 | | | 1520 | 1702 | | 95 | M24 | 170 | 140 | 25 | 25 | 100 |

SIMOTICS 1LE0 – Flange dimensions

Type of construction – IM B5

Type of construction – IM B14



In IEC 60072-1, the frame sizes are allocated flange FF with through holes and flange FT with tapped holes. The designation of flange A and C according to DIN 42948 (invalid since September 2003) are also listed for information purposes. See the table below. (Z = the number of retaining holes).

| Frame size | Type of construction | Flange type | Flange with through holes (FF/A) / tapped holes (FT/C) | | Dimension designation acc. to IEC | | | | | | | |
|--------------------------------|-----------------------------|-----------------|--|-------------------|-----------------------------------|---------|-----|-----|-----|------|-----|---|
| | | | Acc. to IEC 60072-1 | Acc. to DIN 42948 | LA | LE | M | N | P | S | T | Z |
| Cast-iron series – 1LE0 | | | | | | | | | | | | |
| 80 | IM B5, IM B35, IM V1, IM V3 | Flange | FF165 | A 200 | 10 | 40 | 165 | 130 | 200 | 12 | 3.5 | 4 |
| | IM B14, IM V18, IM V19 | Standard flange | FT100 | C 120 | – | 40 | 100 | 80 | 120 | M6 | 3 | 4 |
| 90 | IM B5, IM B35, IM V1, IM V3 | Flange | FF165 | A 200 | 10 | 50 | 165 | 130 | 200 | 12 | 3.5 | 4 |
| | IM B14, IM V18, IM V19 | Standard flange | FT115 | C 140 | – | 50 | 115 | 95 | 140 | M8 | 3 | 4 |
| 100 | IM B5, IM B35, IM V1, IM V3 | Flange | FF215 | A 250 | 11 | 60 | 215 | 180 | 250 | 14.5 | 4 | 4 |
| | IM B14, IM V18, IM V19 | Standard flange | FT130 | C 160 | – | 60 | 130 | 110 | 160 | M8 | 3.5 | 4 |
| 112 | IM B5, IM B35, IM V1, IM V3 | Flange | FF215 | A 250 | 11 | 60 | 215 | 180 | 250 | 14.5 | 4 | 4 |
| | IM B14, IM V18, IM V19 | Standard flange | FT130 | C 160 | – | 60 | 130 | 110 | 160 | M8 | 3.5 | 4 |
| 132 | IM B5, IM B35, IM V1, IM V3 | Flange | FF265 | A 300 | 12 | 80 | 265 | 230 | 300 | 14.5 | 4 | 4 |
| | IM B14, IM V18, IM V19 | Standard flange | FT165 | C 200 | – | 80 | 165 | 130 | 200 | M10 | 3.5 | 4 |
| 160 | IM B5, IM B35, IM V1, IM V3 | Flange | FF300 | A 350 | 13 | 110 | 300 | 250 | 350 | 18.5 | 5 | 4 |
| | IM B14, IM V18, IM V19 | Standard flange | FT215 | C 250 | – | 110 | 215 | 180 | 250 | M12 | 4 | 4 |
| 180 | IM B5, IM B35, IM V1, IM V3 | Flange | FF300 | A 350 | 15 | 110 | 300 | 250 | 350 | 18.5 | 5 | 4 |
| 200 | IM B5, IM B35, IM V1, IM V3 | Flange | FF350 | A 400 | 17 | 110 | 350 | 300 | 400 | 18.5 | 5 | 4 |
| 225 | IM B5, IM B35, IM V1, IM V3 | Flange | FF400 | A 450 | 20 | 110/140 | 400 | 350 | 450 | 18.5 | 5 | 8 |
| 250 | IM B5, IM B35, IM V1, IM V3 | Flange | FF500 | A 550 | 22 | 140 | 500 | 450 | 550 | 18.5 | 5 | 8 |
| 280 | IM B5, IM B35, IM V1, IM V3 | Flange | FF500 | A 550 | 22 | 140 | 500 | 450 | 550 | 18.5 | 5 | 8 |
| 315 | IM B5, IM B35, IM V1, IM V3 | Flange | FF600 | A 660 | 22 | 140/170 | 600 | 550 | 660 | 24 | 6 | 8 |
| 355 | IM B5, IM B35, IM V1, IM V3 | Flange | FF740 | A 800 | 22 | 140/170 | 740 | 680 | 800 | 24 | 6 | 8 |

Notes

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