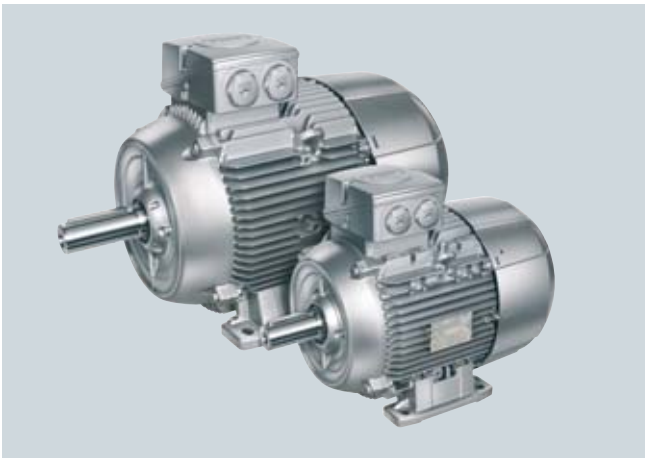
# New Generation 1LE1/1PC1

## Orientation



### Overview



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

With this in mind, we have already developed a new generation of low-voltage motors that you can use in drives to move even more than before. Innovative copper rotors that we develop and manufacture entirely in-house create the perfect conditions for motors with a high degree of efficiency (EFF2 and EFF1 motors are located in the same housing). The new motors for EFF1 (High Efficiency) offer considerable energy savings and protect our environment.

The modular mounting concept also provides total flexibility: Each motor is based on a uniform concept for all markets worldwide. Our motors are manufactured in accordance with modern ecological principles and give machines and plants more drive. Worldwide and for every application. Efficiency over the complete life cycle is a clear benefit of our motors especially for the use of 1LE1/1PC1 designed to EFF1. All machine manufacturers and plant operators can profit from this – not to mention the environment. We will be launching our new 1LE1/1PC1 motors onto the market step by step.

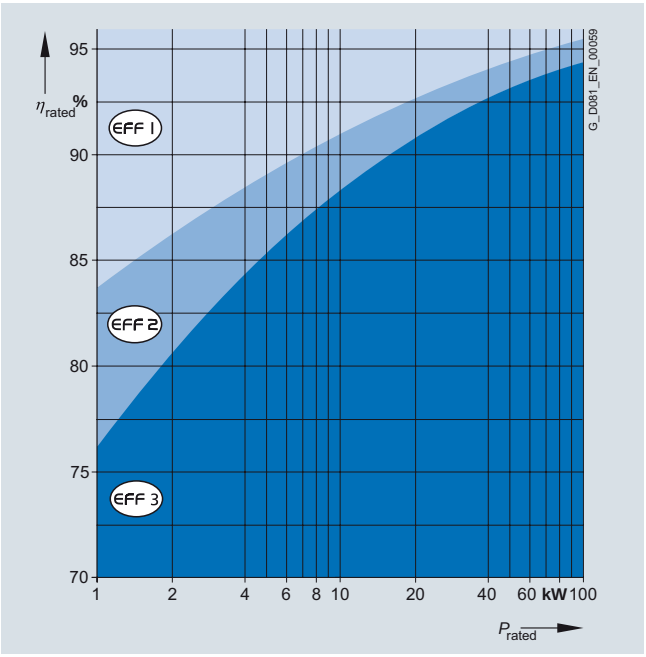
#### *Classified energy-saving motors for an efficient energy balance*

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

Efficiency requirements according to CEMEP

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

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




At a glance: EU/CEMEP for Europe

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

Efficiency requirements according to EPACT

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

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

The EPACT efficiency requirements exclude, for example:

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

## Overview (continued)

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

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

At a glance: EPACT/CSA for North America

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

### *Motors with increased output and compact construction (1LE1)*

Motors with increased output and compact construction can be used to advantage in confined spaces. For a slightly longer overall length, the output is at least as high as that of the next larger shaft height. These compact motors are also optimized for efficiency. They are available in EFF1 and EFF2 and therefore reduce the operating costs.

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

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

### *Standard motors with reduced output without fan cover and external fan (1PC1)*

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

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

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

### *Motors delivered ex-stock with shorter delivery time – General Line 1LE1*

The most popular basic versions of the 1LE1 motor series can be supplied ex-stock and are termed the "General Line".

A so-called "Sector version" will be available soon for some of the motors available from stock. These include a located bearing at the drive end (DE), PTC thermistor and screwed-on feet for the IM B35 type of construction.

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

## Benefits

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

### *Greater efficiency*

Instead of cast-aluminum rotors, the new copper technology is used in the EFF1 motors. The motors are therefore considerably more compact. EFF2 and EFF1 motors are based on the same housing. For changeover to the higher efficiency class – from EFF2 to EFF1 – reconstruction of the machine is no longer necessary. Savings are achieved in time and costs. And what is more: You can save a considerable amount of energy with EFF1 motors because they have power losses of up to 40 % less than EFF2 motors. The energy saving potential and life cycle costs of the new motors can be calculated with our SinaSave™ software. You can download the SinaSave program in the Internet using the following link: http://www.siemens.com/energysaving. For more information, see catalog part 11 "Appendix", "Energy-saving program SinaSave". Our 1LE1 motors also impress customers with their extremely long life and their weight-optimized design has a positive effect on the stability of the equipment unit.

### *More application*

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

### *Improved design*

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

### *Greater output*

For the same shaft height, our high-performance motors offer an additional complete rated output level. The best is: We are also consistently implementing energy efficiency improvements here, too. The motors are offered – based on the categories of CEMEP – in high efficiency and improved efficiency versions.

### *More flexibility*

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

1) Canadian Standard Association
2) Underwriters Laboratories Inc.
3) China Quality Certification

## Orientation



### Application

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

The wide field of implementation includes the following applications:

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

### Technical specifications

Technical data at a glance

This table lists the most important technical data. For more information and details, see catalog part 0 “Introduction”.

| | |
|---|---|
| Type of motor | IEC Squirrel-Cage Motors 1LE1/1PC1 |
| Connection types | Star connection/delta connection<br>You can establish the connection type used from the Order No. supplements in the selection and ordering data for the required motor. |
| Number of poles | 2, 4, 6, 8 |
| Frame sizes | 100 L to 160 L |
| Rated output | 0.75 ... 22 kW (motor series 1LE1)/0.3 … 9 kW (motor series 1PC1) |
| Frequencies | 50 Hz and 60 Hz |
| Versions | Self-ventilated 1LE1 energy-saving motors with:<br>• Improved efficiency (EFF2)<br>• High efficiency (EFF1)<br>Self-ventilated 1LE1 motors with increased output and:<br>• Improved efficiency (EFF2)<br>• High efficiency (EFF1)<br>Forced-air-cooled 1LE1 motors without external fan and fan cover with:<br>• Improved efficiency (EFF2)<br>• High efficiency (EFF1)<br>Self-cooled 1PC1 motors without external fan and fan cover with:<br>• Improved efficiency<br>• High efficiency |
| Marking | EU/CEMEP efficiency classification, EFF1: 2-, 4-pole, EFF2: 2-, 4-pole<br>US Energy Policy Act EPACT: 2-, 4-, 6-pole |
| Rated speed (synchronous speed) | 750 ... 3000 rpm |
| Rated torque | 9.9 ... 150 Nm (motor series 1LE1)/4.05 … 60 Nm (motor series 1PC1) |
| Insulation of the stator winding according to EN 60034-1 (IEC 60034-1) | Temperature class 155 (F), used acc. to temperature class 130 (B) (also for motors with increased output)<br>DURIGNIT IR 2000 insulation system |
| Degree of protection according to EN 60034-5 (IEC 60034-5) | IP55 as standard |
| Cooling according to EN 60034-6 (IEC 60034-6) | Self-ventilated (motor series 1LE1)<br>frame sizes 100 L to 160 L (IC 411),<br>Forced-air-cooled (motor series 1LE1 with order code F90)<br>frame sizes 100 L to 160 L (IC 416)<br>Self-cooled (motor series 1PC1)<br>frame sizes 100 L to 160 L (IC 410) |
| Admissible coolant temperature and site altitude | –20 °C ... +40 °C as standard, site altitude up to 1000 m above sea level.<br>See “Coolant temperature and site altitude” in catalog part 0 “Introduction”. |
| Standard voltages according to EN 60038 (IEC 60038) | 50 Hz: 230 V, 400 V, 500 V, 690 V<br>The voltage to be used can be found in the selection and ordering data for the required motor. |
| Type of construction according to EN 60034-7 (IEC 60034-7) | Without flange:<br>IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6, IM V5 with protective cover<br>With flange:<br>IM B5, IM V1 without protective cover, IM V1 with protective cover, IM V3, IM B35<br>With standard flange and special flange (next larger flange):<br>IM B14, IM V19, IM V18 without protective cover, IM V18 with protective cover, IM B34 |
| Paint finish<br>Suitability of paint finish for climate group according to IEC 60721, Part 2-1 | Standard: Color RAL 7030 stone gray<br>See “Paint finish” in catalog part 0 “Introduction”. |
| Vibration quantity level according to EN 60034-14 (IEC 60034-14) | Level A (normal – without special vibration requirements)<br>Optionally: Level B (with special vibration requirements)<br>See “Balance and vibration quantity” in catalog part 0 “Introduction”. |
| Shaft extension according to DIN 748 (IEC 60072) | Balance type: Half-key balancing as standard<br>See “Balance and vibration quantity” in catalog part 0 “Introduction”. |
| Sound pressure level according to DIN EN ISO 1680 (tolerance +3 dB) | The sound pressure level is listed in the selection and ordering data for the required motor. |
| Weights | The weight is listed in the selection and ordering data for the required motor. |
| Modular mounting concept | Rotary pulse encoder, brake, separately driven fan or prepared for mountings |
| Consistent series concept | • Cast housing feet, screw-mounted feet available as an option and retrofittable<br>• Connection box obliquely partitioned and rotatable through 4 x 90°<br>• Bearings at DE and NDE are of identical design, reinforced bearings available as an option |
| Options | See the selection and ordering data for “Special versions” |

## Selection and ordering data

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

General Line motors with shorter delivery time

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1LE1 (motors with external fan)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 3 ... 18.5 | 2835 ... 2935 | 10 ... 60 | 6 ... 34 | **1/8 ... 1/11** |
| **1500, 4-pole** | **100 L ... 160 L** | 2.2 ... 15 | 1425 ... 1460 | 14.8 ... 98 | 4.85 ... 29.5 | **1/12 ... 1/15** |
| **1000, 6-pole** | **100 L ... 160 L** | 1.5 ... 11 | 930 ... 970 | 15.3 ... 110 | 3.95 ... 23.5 | **1/16 ... 1/17** |

Self-ventilated energy-saving motors with improved efficiency (Improved Efficiency EFF2)

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1LE1 (motors with external fan)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 3 ... 18.5 | 2835 ... 2935 | 10 ... 60 | 6 ... 34 | **1/18 ... 1/19** |
| **1500, 4-pole** | **100 L ... 160 L** | 2.2 ... 15 | 1425 ... 1460 | 14.8 ... 98 | 4.85 ... 29.5 | **1/18 ... 1/19** |
| **1000, 6-pole** | **100 L ... 160 L** | 1.5 ... 11 | 930 ... 970 | 15.3 ... 110 | 3.95 ... 23.5 | **1/18 ... 1/19** |
| **750, 8-pole** | **100 L ... 160 L** | 0.75 ... 7.5 | 700 ... 720 | 10.4 ... 100 | 2.65 ... 18.6 | **1/18 ... 1/19** |

Self-ventilated energy-saving motors with high efficiency (High Efficiency EFF1)

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW/HP | rpm | Nm | A | |
| **Aluminum series 1LE1 (motors with external fan)** | | | | | | |
| **For use according to CEMEP** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 3 ... 18.5 | 2905 ... 2955 | 9.9 ... 60 | 5.9 ... 33 | **1/22 ... 1/23** |
| **1500, 4-pole** | **100 L ... 160 L** | 2.2 ... 15 | 1455 ... 1475 | 14 ... 97 | 4.55 ... 27.5 | **1/22 ... 1/23** |
| **1000, 6-pole** | **100 L ... 160 L** | 1.5 ... 11 | 965 ... 975 | 15 ... 108 | 3.5 ... 22 | **1/22 ... 1/23** |
| **750, 8-pole** | **100 L ... 160 L** | 0.75 ... 7.5 | 720 ... 735 | 9.9 ... 98 | 2.75 ... 17.4 | **1/22 ... 1/23** |
| **For use in the North American market according to EPACT** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 4 ... 25 | 3520 ... 3565 | 8.1 ... 50 | 5.2 ... 29 | **1/26 ... 1/27** |
| **1500, 4-pole** | **100 L ... 160 L** | 3 ... 20 | 1760 ... 1780 | 12 ... 80 | 4.05 ... 24.5 | **1/26 ... 1/27** |
| **1000, 6-pole** | **100 L ... 160 L** | 2 ... 15 | 1170 ... 1180 | 12 ... 89 | 3.15 ... 19.6 | **1/26 ... 1/27** |

Self-ventilated motors with increased output and improved efficiency (Improved Efficiency EFF2)

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1LE1 (motors with external fan)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 4 ... 22 | 2850 ... 2930 | 13.3 ... 72 | 7.9 ... 39.5 | **1/30 ... 1/31** |
| **1500, 4-pole** | **100 L ... 160 L** | 4 ... 18.5 | 1430 ... 1460 | 26.8 ... 121 | 8.5 ... 35 | **1/30 ... 1/31** |
| **1000, 6-pole** | **100 L ... 160 L** | 2.2 ... 15 | 930 ... 965 | 22.5 ... 148 | 5.3 ... 33 | **1/30 ... 1/31** |

Self-ventilated motors with increased output and high efficiency (High Efficiency EFF1)

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1LE1 (motors with external fan)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 4 ... 22 | 2905 ... 2955 | 13 ... 71 | 7.6 ... 38.5 | **1/34 ... 1/35** |
| **1500, 4-pole** | **100 L ... 160 L** | 4 ... 18.5 | 1460 ... 1475 | 26 ... 120 | 8.2 ... 34 | **1/34 ... 1/35** |
| **1000, 6-pole** | **100 L ... 160 L** | 2.2 ... 15 | 960 ... 975 | 22 ... 147 | 4.95 ... 29.5 | **1/34 ... 1/35** |

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## Selection and ordering data (continued)

Forced-air cooled motors without external fan and fan cover with improved efficiency (Improved Efficiency EFF2)

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1LE1 (motors without external fan and fan cover)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 3 ... 18.5 | 2835 ... 2935 | 10 ... 60 | 6 ... 34 | **1/38 ... 1/39** |
| **1500, 4-pole** | **100 L ... 160 L** | 2.2 ... 15 | 1425 ... 1460 | 14.8 ... 98 | 4.85 ... 29.5 | **1/38 ... 1/39** |
| **1000, 6-pole** | **100 L ... 160 L** | 1.5 ... 11 | 930 ... 970 | 15.3 ... 110 | 3.95 ... 23.5 | **1/38 ... 1/39** |
| **750, 8-pole** | **100 L ... 160 L** | 0.75 ... 7.5 | 700 ... 720 | 10.4 ... 100 | 2.65 ... 18.6 | **1/38 ... 1/39** |

Forced-air cooled motors without external fan and fan cover with high efficiency (High Efficiency EFF1)

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1LE1 (motors without external fan and fan cover)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 3 ... 18.5 | 2905 ... 2955 | 9.9 ... 60 | 5.9 ... 33 | **1/42 ... 1/43** |
| **1500, 4-pole** | **100 L ... 160 L** | 2.2 ... 15 | 1455 ... 1475 | 14 ... 97 | 4.55 ... 27.5 | **1/42 ... 1/43** |
| **1000, 6-pole** | **100 L ... 160 L** | 1.5 ... 11 | 965 ... 975 | 15 ... 108 | 3.5 ... 22 | **1/42 ... 1/43** |
| **750, 8-pole** | **100 L ... 160 L** | 0.75 ... 7.5 | 720 ... 735 | 9.9 ... 98 | 2.75 ... 17.4 | **1/42 ... 1/43** |

Self-cooled motors without external fan and fan cover with improved efficiency

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1PC1 (motors without external fan and fan cover)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 1.2 ... 7.4 | 2830 ... 2935 | 4.05 ... 24 | 2.3 ... 12.9 | **1/46 ... 1/47** |
| **1500, 4-pole** | **100 L ... 160 L** | 0.88 ... 6 | 1420 ... 1460 | 5.92 ... 39 | 1.8... 10.9 | **1/46 ... 1/47** |
| **1000, 6-pole** | **100 L ... 160 L** | 0.6 .. 4.4 | 930 ... 970 | 6.12 ... 43 | 1.4 ... 8.9 | **1/46 ... 1/47** |
| **750, 8-pole** | **100 L ... 160 L** | 0.3 ... 3 | 695 ... 730 | 4.05 ... 24 | 0.97 ... 6.8 | **1/46 ... 1/47** |

Self-cooled motors without external fan and fan cover with high efficiency

| Speed | Frame size | Rated output | Rated speed | Rated torque | Rated current at 400 V | Detailed selection and ordering data Page |
|---|---|---|---|---|---|---|
| rpm | | kW | rpm | Nm | A | |
| **Aluminum series 1PC1 (motors without external fan and fan cover)** | | | | | | |
| **3000, 2-pole** | **100 L ... 160 L** | 1.4 ... 9 | 2920 ... 2960 | 4.6 ... 29 | 2.6 ... 15.2 | **1/50 ... 1/51** |
| **1500, 4-pole** | **100 L ... 160 L** | 1.1 ... 6.2 | 1460 ... 1480 | 7.2 ... 40 | 2.2 ... 11.4 | **1/50 ... 1/51** |
| **1000, 6-pole** | **100 L ... 160 L** | 0.85 ... 6.5 | 960 ... 975 | 8.5 ... 64 | 1.92 ... 13.2 | **1/50 ... 1/51** |
| **750, 8-pole** | **100 L ... 160 L** | 0.37 ... 4.6 | 720 ... 730 | 4.8 ... 60 | 1.28 ... 10.8 | **1/50 ... 1/51** |

## More information

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

At
http://www.siemens.com/automation/partner
you can find details of Siemens contact partners worldwide responsible for particular technologies.

You can obtain in most cases a contact partner for

- technical support
- spare parts/repairs
- service
- training
- sales or
- technical support/engineering

The selection procedure starts with:

- a country
- a product or
- a sector.

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

## General Line motors with shorter delivery time



### Selection and ordering data

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | | | |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| **230 V∆/400 VY, 50 Hz; 460 VY, 60 Hz** | | | | | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6 [1] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA42-2AA0** | | 20 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA22-2AA0** | | 25 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA02-2AA0** | | 35 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA12-2AA0** | | 40 |
| • With flange: IM B5, IM V1 without protective cover, IM V3 [2] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA42-2FA0** | | 21 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA22-2FA0** | | 26 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA02-2FA0** | | 40 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA12-2FA0** | | 45 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA42-2FB0** | | 21 |
| • With standard flange: IM B14, IM V18 without protective cover, IM V19 [3] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.3 | 0.87 | 6 | **1LE1002-1AA42-2KA0** | | 22 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA22-2KA0** | | 27 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.
2) Only the type of construction IM B5 will be stamped on the rating plate.
3) Only the type of construction IM B14 will be stamped on the rating plate.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting as multiple of rated torque $T_{LR}/T_{rated}$ | Locked-rotor current as multiple of rated current $I_{LR}/I_{rated}$ | Breakdown torque $T_B/T_{rated}$ | Torque class CL | Moment of inertia $J$ kgm$^2$ | Noise at rated output: Measuring-surface sound pressure level at 50 Hz $L_{pfA}$ dB(A) | Noise at rated output: Sound pressure level at 50 Hz $L_{WA}$ dB(A) | Flange size according to DIN EN 50347 |
|---|---|---|---|---|---|---|---|---|
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | |
| **230 V∆/400 VY, 50 Hz; 460 VY, 60 Hz** | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AA42-2AA0** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 | |
| **1LE1002-1BA22-2AA0** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 | |
| **1LE1002-1CA02-2AA0** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 | |
| **1LE1002-1CA12-2AA0** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 | |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AA42-2FA0** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 | FF 215 |
| **1LE1002-1BA22-2FA0** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 | FF 215 |
| **1LE1002-1CA02-2FA0** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 | FF 265 |
| **1LE1002-1CA12-2FA0** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 | FF 265 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1AA42-2FB0** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 | FF 215 |
| • With standard flange: IM B14, IM V18 without protective cover, IM V19[3] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AA42-2KA0** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 | FT 130 |
| **1LE1002-1BA22-2KA0** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 | FT 130 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.
2) Only the type of construction IM B5 will be stamped on the rating plate.
3) Only the type of construction IM B14 will be stamped on the rating plate.

## General Line motors with shorter delivery time



### Selection and ordering data (continued)

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | | | |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| **400 V Δ/690 VY, 50 Hz; 460 V Δ, 60 Hz** | | | | | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA43-4AA0** | | 20 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA23-4AA0** | | 25 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA03-4AA0** | | 35 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA13-4AA0** | | 40 |
| 11 | 12.6 | 160 M | 2920 | 36 | EFF2 | 88.4 | 88.5 | 0.85 | 21 | **1LE1002-1DA23-4AA0** | | 60 |
| 15 | 17.3 | 160 M | 2930 | 49 | EFF2 | 89.5 | 89.7 | 0.84 | 29 | **1LE1002-1DA33-4AA0** | | 68 |
| 18.5 | 21.3 | 160 L | 2935 | 60 | EFF2 | 90.9 | 91 | 0.86 | 34 | **1LE1002-1DA43-4AA0** | | 78 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA43-4AB0** | | 20 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA23-4AB0** | | 25 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA03-4AB0** | | 35 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA13-4AB0** | | 40 |
| 11 | 12.6 | 160 M | 2920 | 36 | EFF2 | 88.4 | 88.5 | 0.85 | 21 | **1LE1002-1DA23-4AB0** | | 60 |
| 15 | 17.3 | 160 M | 2930 | 49 | EFF2 | 89.5 | 89.7 | 0.84 | 29 | **1LE1002-1DA33-4AB0** | | 68 |
| 18.5 | 21.3 | 160 L | 2935 | 60 | EFF2 | 90.9 | 91 | 0.86 | 34 | **1LE1002-1DA43-4AB0** | | 78 |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA43-4FA0** | | 21 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA23-4FA0** | | 26 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA03-4FA0** | | 40 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA13-4FA0** | | 45 |
| 11 | 12.6 | 160 M | 2920 | 36 | EFF2 | 88.4 | 88.5 | 0.85 | 21 | **1LE1002-1DA23-4FA0** | | 69 |
| 15 | 17.3 | 160 M | 2930 | 49 | EFF2 | 89.5 | 89.7 | 0.84 | 29 | **1LE1002-1DA33-4FA0** | | 77 |
| 18.5 | 21.3 | 160 L | 2935 | 60 | EFF2 | 90.9 | 91 | 0.86 | 34 | **1LE1002-1DA43-4FA0** | | 87 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA23-4FB0** | | 26 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA03-4FB0** | | 40 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA13-4FB0** | | 45 |
| 11 | 12.6 | 160 M | 2920 | 36 | EFF2 | 88.4 | 88.5 | 0.85 | 21 | **1LE1002-1DA23-4FB0** | | 69 |
| 15 | 17.3 | 160 M | 2930 | 49 | EFF2 | 89.5 | 89.7 | 0.84 | 29 | **1LE1002-1DA33-4FB0** | | 77 |
| 18.5 | 21.3 | 160 L | 2935 | 60 | EFF2 | 90.9 | 91 | 0.86 | 34 | **1LE1002-1DA43-4FB0** | | 87 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.

2) Only the type of construction IM B5 will be stamped on the rating plate.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting as multiple of rated torque $T_{LR}/T_{rated}$ | Locked-rotor current as multiple of rated current $I_{LR}/I_{rated}$ | Breakdown torque $T_B/T_{rated}$ | Torque class CL | Moment of inertia $J$ kgm$^2$ | Noise at rated output: Measuring-surface sound pressure level at 50 Hz $L_{pfA}$ dB(A) | Noise at rated output: Sound pressure level at 50 Hz $L_{WA}$ dB(A) | Flange size according to DIN EN 50347 |
|---|---|---|---|---|---|---|---|---|
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | |
| **400 V∆/690 VY, 50 Hz; 460 V∆, 60 Hz** | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AA43-4AA0** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 | |
| **1LE1002-1BA23-4AA0** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 | |
| **1LE1002-1CA03-4AA0** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 | |
| **1LE1002-1CA13-4AA0** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 | |
| **1LE1002-1DA23-4AA0** | 2.1 | 6.1 | 2.7 | 16 | 0.02971 | 70 | 82 | |
| **1LE1002-1DA33-4AA0** | 2.5 | 6.1 | 3.2 | 16 | 0.03619 | 70 | 82 | |
| **1LE1002-1DA43-4AA0** | 2.5 | 7 | 3.2 | 16 | 0.04395 | 70 | 82 | |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1AA43-4AB0** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 | |
| **1LE1002-1BA23-4AB0** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 | |
| **1LE1002-1CA03-4AB0** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 | |
| **1LE1002-1CA13-4AB0** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 | |
| **1LE1002-1DA23-4AB0** | 2.1 | 6.1 | 2.7 | 16 | 0.02971 | 70 | 82 | |
| **1LE1002-1DA33-4AB0** | 2.5 | 6.1 | 3.2 | 16 | 0.03619 | 70 | 82 | |
| **1LE1002-1DA43-4AB0** | 2.5 | 7 | 3.2 | 16 | 0.04395 | 70 | 82 | |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AA43-4FA0** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 | FF 215 |
| **1LE1002-1BA23-4FA0** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 | FF 215 |
| **1LE1002-1CA03-4FA0** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 | FF 265 |
| **1LE1002-1CA13-4FA0** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 | FF 265 |
| **1LE1002-1DA23-4FA0** | 2.1 | 6.1 | 2.7 | 16 | 0.02971 | 70 | 82 | FF 300 |
| **1LE1002-1DA33-4FA0** | 2.5 | 6.1 | 3.2 | 16 | 0.03619 | 70 | 82 | FF 300 |
| **1LE1002-1DA43-4FA0** | 2.5 | 7 | 3.2 | 16 | 0.04395 | 70 | 82 | FF 300 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1BA23-4FB0** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 | FF 215 |
| **1LE1002-1CA03-4FB0** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 | FF 265 |
| **1LE1002-1CA13-4FB0** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 | FF 265 |
| **1LE1002-1DA23-4FB0** | 2.1 | 6.1 | 2.7 | 16 | 0.02971 | 70 | 82 | FF 300 |
| **1LE1002-1DA33-4FB0** | 2.5 | 6.1 | 3.2 | 16 | 0.03619 | 70 | 82 | FF 300 |
| **1LE1002-1DA43-4FB0** | 2.5 | 7 | 3.2 | 16 | 0.04395 | 70 | 82 | FF 300 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.

2) Only the type of construction IM B5 will be stamped on the rating plate.

## General Line motors with shorter delivery time



### Selection and ordering data (continued)

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | | | |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| **230 V Δ/400 VY, 50 Hz; 460 VY, 60 Hz** | | | | | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1)] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB42-2AA0** | | 18 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB52-2AA0** | | 22 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB22-2AA0** | | 27 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB02-2AA0** | | 38 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB22-2AA0** | | 44 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB22-2AA0** | | 62 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB42-2AA0** | | 73 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB42-2AB0** | | 18 |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2)] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB42-2FA0** | | 19 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB52-2FA0** | | 23 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB22-2FA0** | | 28 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB02-2FA0** | | 43 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB22-2FA0** | | 49 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB22-2FA0** | | 71 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB42-2FA0** | | 82 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB42-2FB0** | | 19 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB52-2FB0** | | 23 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB22-2FB0** | | 28 |
| • With standard flange: IM B14, IM V18 without protective cover, IM V19[3)] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB42-2KA0** | | 20 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB52-2KA0** | | 24 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB22-2KA0** | | 29 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.
2) Only the type of construction IM B5 will be stamped on the rating plate.
3) Only the type of construction IM B14 will be stamped on the rating plate.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting as multiple of rated torque $T_{LR}/T_{rated}$ | Locked-rotor current as multiple of rated current $I_{LR}/I_{rated}$ | Breakdown torque $T_B/T_{rated}$ | Torque class CL | Moment of inertia $J$ kgm$^2$ | Noise at rated output: Measuring-surface sound pressure level at 50 Hz $L_{pfA}$ dB(A) | Noise at rated output: Sound pressure level at 50 Hz $L_{WA}$ dB(A) | Flange size according to DIN EN 50347 |
|---|---|---|---|---|---|---|---|---|
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | |
| **230 V∆/400 VY, 50 Hz; 460 VY, 60 Hz** | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AB42-2AA0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 | |
| **1LE1002-1AB52-2AA0** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 | |
| **1LE1002-1BB22-2AA0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | |
| **1LE1002-1CB02-2AA0** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 | |
| **1LE1002-1CB22-2AA0** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 | |
| **1LE1002-1DB22-2AA0** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 | |
| **1LE1002-1DB42-2AA0** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 | |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1AB42-2AB0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 63 | 75 | |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AB42-2FA0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 | FF 215 |
| **1LE1002-1AB52-2FA0** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 | FF 215 |
| **1LE1002-1BB22-2FA0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | FF 215 |
| **1LE1002-1CB02-2FA0** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 | FF 265 |
| **1LE1002-1CB22-2FA0** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 | FF 265 |
| **1LE1002-1DB22-2FA0** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 | FF 300 |
| **1LE1002-1DB42-2FA0** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 | FF 300 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1AB42-2FB0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 | FF 215 |
| **1LE1002-1AB52-2FB0** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 | FF 215 |
| **1LE1002-1BB22-2FB0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | FF 215 |
| • With standard flange: IM B14, IM V18 without protective cover, IM V19[3] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AB42-2KA0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 | FT 130 |
| **1LE1002-1AB52-2KA0** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 63 | 75 | FT 130 |
| **1LE1002-1BB22-2KA0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | FT 130 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.
2) Only the type of construction IM B5 will be stamped on the rating plate.
3) Only the type of construction IM B14 will be stamped on the rating plate.

## General Line motors with shorter delivery time



### Selection and ordering data (continued)

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | | | |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| **400 V Δ/690 VY, 50 Hz; 460 V Δ, 60 Hz** | | | | | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB43-4AA0** | | 18 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB53-4AA0** | | 22 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB23-4AA0** | | 27 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB03-4AA0** | | 38 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB23-4AA0** | | 44 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB23-4AA0** | | 62 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB43-4AA0** | | 73 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB43-4AB0** | | 18 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB53-4AB0** | | 22 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB23-4AB0** | | 27 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB03-4AB0** | | 38 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB23-4AB0** | | 44 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB23-4AB0** | | 62 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB43-4AB0** | | 73 |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB43-4FA0** | | 19 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB53-4FA0** | | 23 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB23-4FA0** | | 28 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB03-4FA0** | | 43 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB23-4FA0** | | 49 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB23-4FA0** | | 71 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB43-4FA0** | | 82 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB23-4FB0** | | 28 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB03-4FB0** | | 43 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB23-4FB0** | | 49 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB23-4FB0** | | 71 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB43-4FB0** | | 82 |
| • With flange: IM B35 | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB03-4JA0** | | 43 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB23-4JA0** | | 49 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB23-4JA0** | | 71 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB43-4JA0** | | 82 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.

2) Only the type of construction IM B5 will be stamped on the rating plate.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting as multiple of rated torque | Locked-rotor current as multiple of rated current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | | Flange size according to DIN EN 50347 |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz | |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) | |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | |
| **400 V∆/690 VY, 50 Hz; 460 V∆, 60 Hz** | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AB43-4AA0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 | |
| **1LE1002-1AB53-4AA0** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 | |
| **1LE1002-1BB23-4AA0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | |
| **1LE1002-1CB03-4AA0** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 | |
| **1LE1002-1CB23-4AA0** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 | |
| **1LE1002-1DB23-4AA0** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 | |
| **1LE1002-1DB43-4AA0** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 | |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1AB43-4AB0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 | |
| **1LE1002-1AB53-4AB0** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 | |
| **1LE1002-1BB23-4AB0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | |
| **1LE1002-1CB03-4AB0** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 | |
| **1LE1002-1CB23-4AB0** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 | |
| **1LE1002-1DB23-4AB0** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 | |
| **1LE1002-1DB43-4AB0** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 | |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AB43-4FA0** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 | FF 215 |
| **1LE1002-1AB53-4FA0** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 | FF 215 |
| **1LE1002-1BB23-4FA0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | FF 215 |
| **1LE1002-1CB03-4FA0** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 | FF 265 |
| **1LE1002-1CB23-4FA0** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 | FF 265 |
| **1LE1002-1DB23-4FA0** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 | FF 300 |
| **1LE1002-1DB43-4FA0** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 | FF 300 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1BB23-4FB0** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 | FF 215 |
| **1LE1002-1CB03-4FB0** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 | FF 265 |
| **1LE1002-1CB23-4FB0** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 | FF 265 |
| **1LE1002-1DB23-4FB0** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 | FF 300 |
| **1LE1002-1DB43-4FB0** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 | FF 300 |
| • With flange: IM B35 | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1CB03-4JA0** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 | FF 265 |
| **1LE1002-1CB23-4JA0** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 | FF 265 |
| **1LE1002-1DB23-4JA0** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 | FF 300 |
| **1LE1002-1DB43-4JA0** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 | FF 300 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible,
non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.

2) Only the type of construction IM B5 will be stamped on the rating plate.

## General Line motors with shorter delivery time



### Selection and ordering data (continued)

| Rated output at | | Frame size | Operating values at rated output | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | | | |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| **230 V Δ/400 VY, 50 Hz; 460 VY, 60 Hz** | | | | | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 940 | 15.3 | | 74 | 72.6 | 0.74 | 3.95 | **1LE1002-1AC42-2AA0** | | 19 |
| 2.2 | 2.55 | 112 M | 930 | 23 | | 78 | 78.1 | 0.77 | 5.3 | **1LE1002-1BC22-2AA0** | | 25 |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC02-2AA0** | | 34 |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC22-2AA0** | | 39 |
| 5.5 | 6.3 | 132 M | 950 | 55 | | 85 | 85.3 | 0.75 | 12.4 | **1LE1002-1CC32-2AA0** | | 48 |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 940 | 15.3 | | 74 | 72.6 | 0.74 | 3.95 | **1LE1002-1AC42-2FA0** | | 20 |
| 2.2 | 2.55 | 112 M | 930 | 23 | | 78 | 78.1 | 0.77 | 5.3 | **1LE1002-1BC22-2FA0** | | 26 |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC02-2FA0** | | 39 |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC22-2FA0** | | 44 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 940 | 15.3 | | 74 | 72.6 | 0.74 | 3.95 | **1LE1002-1AC42-2FB0** | | 20 |
| 2.2 | 2.55 | 112 M | 930 | 23 | | 78 | 78.1 | 0.77 | 5.3 | **1LE1002-1BC22-2FB0** | | 26 |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC02-2FB0** | | 39 |
| • With standard flange: IM B14, IM V18 without protective cover, IM V19[3] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 940 | 15.3 | | 74 | 72.6 | 0.74 | 3.95 | **1LE1002-1AC42-2KA0** | | 21 |
| 2.2 | 2.55 | 112 M | 930 | 23 | | 78 | 78.1 | 0.77 | 5.3 | **1LE1002-1BC22-2KA0** | | 27 |
| **400 V Δ/690 VY, 50 Hz; 460 V Δ, 60 Hz** | | | | | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC03-4AA0** | | 34 |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC23-4AA0** | | 39 |
| 5.5 | 6.3 | 132 M | 950 | 55 | | 85 | 85.3 | 0.75 | 12.4 | **1LE1002-1CC33-4AA0** | | 48 |
| 7.5 | 8.6 | 160 M | 970 | 75 | | 86 | 85.4 | 0.73 | 17.2 | **1LE1002-1DC23-4AA0** | | 72 |
| 11 | 12.6 | 160 L | 965 | 110 | | 87.6 | 87.9 | 0.77 | 23.5 | **1LE1002-1DC43-4AA0** | | 92 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC03-4AB0** | | 34 |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC23-4AB0** | | 39 |
| 5.5 | 6.3 | 132 M | 950 | 55 | | 85 | 85.3 | 0.75 | 12.4 | **1LE1002-1CC33-4AB0** | | 48 |
| 7.5 | 8.6 | 160 M | 970 | 75 | | 86 | 86.5 | 0.73 | 17.2 | **1LE1002-1DC23-4AB0** | | 72 |
| 11 | 12.6 | 160 L | 965 | 110 | | 87.6 | 87.9 | 0.77 | 23.5 | **1LE1002-1DC43-4AB0** | | 92 |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | | | | | |
| - Without motor protection | | | | | | | | | | | | |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC03-4FA0** | | 39 |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC23-4FA0** | | 44 |
| 5.5 | 6.3 | 132 M | 950 | 55 | | 85 | 85.3 | 0.75 | 12.4 | **1LE1002-1CC33-4FA0** | | 53 |
| 7.5 | 8.6 | 160 M | 970 | 75 | | 86 | 85.4 | 0.73 | 17.2 | **1LE1002-1DC23-4FA0** | | 81 |
| 11 | 12.6 | 160 L | 965 | 110 | | 87.6 | 87.9 | 0.77 | 23.5 | **1LE1002-1DC43-4FA0** | | 101 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | | | | | |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC23-4FB0** | | 44 |
| 5.5 | 6.3 | 132 M | 950 | 55 | | 85 | 85.3 | 0.75 | 12.4 | **1LE1002-1CC33-4FB0** | | 53 |
| 7.5 | 8.6 | 160 M | 970 | 75 | | 86 | 85.4 | 0.73 | 17.2 | **1LE1002-1DC23-4FB0** | | 81 |
| 11 | 12.6 | 160 L | 965 | 110 | | 87.6 | 87.9 | 0.77 | 23.5 | **1LE1002-1DC43-4FB0** | | 101 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible, non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.
2) Only the type of construction IM B5 will be stamped on the rating plate.
3) Only the type of construction IM B14 will be stamped on the rating plate.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting as multiple of rated torque $T_{LR}/T_{rated}$ | Locked-rotor current as multiple of rated current $I_{LR}/I_{rated}$ | Breakdown torque $T_B/T_{rated}$ | Torque class CL | Moment of inertia $J$ kgm$^2$ | Noise at rated output: Measuring-surface sound pressure level at 50 Hz $L_{pfA}$ dB(A) | Noise at rated output: Sound pressure level at 50 Hz $L_{WA}$ dB(A) | Flange size according to DIN EN 50347 |
|---|---|---|---|---|---|---|---|---|
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | |
| **230 V∆/400 VY, 50 Hz; 460 VY, 60 Hz** | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AC42-2AA0** | 2 | 4 | 2.2 | 16 | 0.0065 | 59 | 71 | |
| **1LE1002-1BC22-2AA0** | 2.1 | 4.1 | 2.4 | 16 | 0.0065 | 57 | 69 | |
| **1LE1002-1CC02-2AA0** | 2 | 4.6 | 2.6 | 16 | 0.0167 | 63 | 75 | |
| **1LE1002-1CC22-2AA0** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 | |
| **1LE1002-1CC32-2AA0** | 2.5 | 5.2 | 2.8 | 16 | 0.02734 | 63 | 75 | |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AC42-2FA0** | 2 | 4 | 2.2 | 16 | 0.0065 | 59 | 71 | FF 215 |
| **1LE1002-1BC22-2FA0** | 2.3 | 4.1 | 2.5 | 16 | 0.0092 | 57 | 69 | FF 215 |
| **1LE1002-1CC02-2FA0** | 2 | 4.6 | 2.6 | 16 | 0.0167 | 63 | 75 | FF 265 |
| **1LE1002-1CC22-2FA0** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 | FF 265 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1AC42-2FB0** | 2 | 4 | 2.2 | 16 | 0.0065 | 59 | 71 | FF 215 |
| **1LE1002-1BC22-2FB0** | 2.3 | 4.1 | 2.5 | 16 | 0.0092 | 68 | 80 | FF 215 |
| **1LE1002-1CC02-2FB0** | 2 | 4.6 | 2.6 | 16 | 0.0167 | 63 | 75 | FF 265 |
| • With standard flange: IM B14, IM V18 without protective cover, IM V19[3] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1AC42-2KA0** | 2 | 4 | 2.2 | 16 | 0.0065 | 59 | 71 | FT 130 |
| **1LE1002-1BC22-2KA0** | 2.3 | 4.1 | 2.5 | 16 | 0.0092 | 68 | 80 | FT 130 |
| **400 V∆/690 VY, 50 Hz; 460 V∆, 60 Hz** | | | | | | | | |
| • Without flange: IM B3, IM B6, IM B7, IM B8, IM V5 without protective cover, IM V6[1] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1CC03-4AA0** | 2 | 4.6 | 2.6 | 16 | 0.017 | 63 | 75 | |
| **1LE1002-1CC23-4AA0** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 | |
| **1LE1002-1CC33-4AA0** | 2.5 | 5.2 | 2.8 | 16 | 0.02734 | 63 | 75 | |
| **1LE1002-1DC23-4AA0** | 2.1 | 5.5 | 2.9 | 16 | 0.04993 | 68 | 80 | |
| **1LE1002-1DC43-4AA0** | 1.9 | 5.9 | 2.7 | 16 | 0.0678 | 68 | 80 | |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1CC03-4AB0** | 2 | 4.6 | 2.6 | 16 | 0.0167 | 63 | 75 | |
| **1LE1002-1CC23-4AB0** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 | |
| **1LE1002-1CC33-4AB0** | 2.5 | 5.2 | 2.8 | 16 | 0.02734 | 63 | 75 | |
| **1LE1002-1DC23-4AB0** | 2.1 | 5.5 | 2.9 | 16 | 0.04993 | 68 | 80 | |
| **1LE1002-1DC43-4AB0** | 1.9 | 5.9 | 2.7 | 16 | 0.0678 | 68 | 80 | |
| • With flange: IM B5, IM V1 without protective cover, IM V3[2] | | | | | | | | |
| - Without motor protection | | | | | | | | |
| **1LE1002-1CC03-4FA0** | 2 | 4.6 | 2.6 | 16 | 0.0167 | 63 | 75 | FF 265 |
| **1LE1002-1CC23-4FA0** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 | FF 265 |
| **1LE1002-1CC33-4FA0** | 2.5 | 5.2 | 2.8 | 16 | 0.02734 | 63 | 75 | FF 265 |
| **1LE1002-1DC23-4FA0** | 2.1 | 5.5 | 2.9 | 16 | 0.04993 | 68 | 80 | FF 300 |
| **1LE1002-1DC43-4FA0** | 1.9 | 5.9 | 2.7 | 16 | 0.0678 | 68 | 80 | FF 300 |
| - With motor protection with PTC thermistors with 3 embedded temperature sensors for tripping | | | | | | | | |
| **1LE1002-1CC23-4FB0** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 | FF 265 |
| **1LE1002-1CC33-4FB0** | 2.5 | 5.2 | 2.8 | 16 | 0.02734 | 63 | 75 | FF 265 |
| **1LE1002-1DC23-4FB0** | 2.1 | 5.5 | 2.9 | 16 | 0.04993 | 68 | 80 | FF 300 |
| **1LE1002-1DC43-4FB0** | 1.9 | 5.9 | 2.7 | 16 | 0.0678 | 68 | 80 | FF 300 |

These motors are standard painted with special finish color RAL 7030 (stone gray).

Additional options like protective cover and condensation drainage holes are not possible.

(Connection box on top, cast feet, only basic versions possible, non-drive end (NDE) cannot be modified)

1) Only the type of construction IM B3 will be stamped on the rating plate.
2) Only the type of construction IM B5 will be stamped on the rating plate.
3) Only the type of construction IM B14 will be stamped on the rating plate.

## Self-ventilated energy-saving motors with improved efficiency



### Selection and ordering data

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see table from Page 1/20. | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA4❑-❑❑❑❑** | | 20 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA2❑-❑❑❑❑** | | 25 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA0❑-❑❑❑❑** | | 35 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA1❑-❑❑❑❑** | | 40 |
| 11 | 12.6 | 160 M | 2920 | 36 | EFF2 | 88.4 | 88.5 | 0.85 | 21 | **1LE1002-1DA2❑-❑❑❑❑** | | 60 |
| 15 | 17.3 | 160 M | 2930 | 49 | EFF2 | 89.5 | 89.7 | 0.84 | 29 | **1LE1002-1DA3❑-❑❑❑❑** | | 68 |
| 18.5 | 21.3 | 160 L | 2935 | 60 | EFF2 | 90.9 | 91 | 0.86 | 34 | **1LE1002-1DA4❑-❑❑❑❑** | | 78 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB4❑-❑❑❑❑** | | 18 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB5❑-❑❑❑❑** | | 22 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB2❑-❑❑❑❑** | | 27 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB0❑-❑❑❑❑** | | 38 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB2❑-❑❑❑❑** | | 44 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB2❑-❑❑❑❑** | | 62 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB4❑-❑❑❑❑** | | 73 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 940 | 15.3 | | 74 | 72.6 | 0.74 | 3.95 | **1LE1002-1AC4❑-❑❑❑❑** | | 19 |
| 2.2 | 2.55 | 112 M | 930 | 23 | | 78 | 78.1 | 0.77 | 5.3 | **1LE1002-1BC2❑-❑❑❑❑** | | 25 |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC0❑-❑❑❑❑** | | 34 |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC2❑-❑❑❑❑** | | 39 |
| 5.5 | 6.3 | 132 M | 950 | 55 | | 85 | 85.3 | 0.75 | 12.4 | **1LE1002-1CC3❑-❑❑❑❑** | | 48 |
| 7.5 | 8.6 | 160 M | 970 | 75 | | 86 | 85.4 | 0.73 | 17.2 | **1LE1002-1DC2❑-❑❑❑❑** | | 72 |
| 11 | 12.6 | 160 L | 965 | 110 | | 87.6 | 87.9 | 0.77 | 23.5 | **1LE1002-1DC4❑-❑❑❑❑** | | 92 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.75 | 0.86 | 100 L | 705 | 10.4 | | 65.4 | 60.2 | 0.62 | 2.65 | **1LE1002-1AD4❑-❑❑❑❑** | | 17 |
| 1.1 | 1.3 | 100 L | 705 | 15.1 | | 68.3 | 67.6 | 0.63 | 3.7 | **1LE1002-1AD5❑-❑❑❑❑** | | 22 |
| 1.5 | 1.75 | 112 M | 700 | 20 | | 75.9 | 72.8 | 0.68 | 4.2 | **1LE1002-1BD2❑-❑❑❑❑** | | 25 |
| 2.2 | 2.55 | 132 S | 715 | 29 | | 81 | 80.4 | 0.66 | 5.9 | **1LE1002-1CD0❑-❑❑❑❑** | | 37 |
| 3 | 3.45 | 132 M | 710 | 40 | | 81.6 | 81.4 | 0.68 | 7.8 | **1LE1002-1CD2❑-❑❑❑❑** | | 44 |
| 4 | 4.6 | 160 M | 720 | 53 | | 80 | 78.7 | 0.69 | 10.4 | **1LE1002-1DD2❑-❑❑❑❑** | | 60 |
| 5.5 | 6.3 | 160 M | 720 | 73 | | 83.5 | 83.9 | 0.70 | 13.6 | **1LE1002-1DD3❑-❑❑❑❑** | | 72 |
| 7.5 | 8.6 | 160 L | 715 | 100 | | 83.5 | 84.7 | 0.70 | 18.6 | **1LE1002-1DD4❑-❑❑❑❑** | | 91 |

Note:
The 2-, 4-, and 6-pole motors listed above can be delivered ex stock with shorter delivery time.
These motors can be selected from defined versions (voltages, types of construction, motor protection and position of the connection box) in section “General Line motors with shorter delivery time” on Pages 1/8 to 1/17.

Order No. supplements, see from Page 1/20.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque | Locked-rotor current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | with direct starting as multiple of rated | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | torque | current | torque | | | | |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AA4❑-❑❑❑❑** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 |
| **1LE1002-1BA2❑-❑❑❑❑** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 |
| **1LE1002-1CA0❑-❑❑❑❑** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 |
| **1LE1002-1CA1❑-❑❑❑❑** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 |
| **1LE1002-1DA2❑-❑❑❑❑** | 2.1 | 6.1 | 2.7 | 16 | 0.02971 | 70 | 82 |
| **1LE1002-1DA3❑-❑❑❑❑** | 2.5 | 6.1 | 3.2 | 16 | 0.03619 | 70 | 82 |
| **1LE1002-1DA4❑-❑❑❑❑** | 2.5 | 7 | 3.2 | 16 | 0.04395 | 70 | 82 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AB4❑-❑❑❑❑** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 |
| **1LE1002-1AB5❑-❑❑❑❑** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 |
| **1LE1002-1BB2❑-❑❑❑❑** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 |
| **1LE1002-1CB0❑-❑❑❑❑** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 |
| **1LE1002-1CB2❑-❑❑❑❑** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 |
| **1LE1002-1DB2❑-❑❑❑❑** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 |
| **1LE1002-1DB4❑-❑❑❑❑** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AC4❑-❑❑❑❑** | 2 | 4 | 2.2 | 16 | 0.0065 | 61 | 73 |
| **1LE1002-1BC2❑-❑❑❑❑** | 2.3 | 4.1 | 2.5 | 16 | 0.0092 | 68 | 80 |
| **1LE1002-1CC0❑-❑❑❑❑** | 2 | 4.6 | 2.6 | 16 | 0.0167 | 63 | 75 |
| **1LE1002-1CC2❑-❑❑❑❑** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 |
| **1LE1002-1CC3❑-❑❑❑❑** | 2.5 | 5.2 | 2.8 | 16 | 0.02734 | 63 | 75 |
| **1LE1002-1DC2❑-❑❑❑❑** | 2.1 | 5.5 | 2.9 | 16 | 0.04993 | 68 | 80 |
| **1LE1002-1DC4❑-❑❑❑❑** | 1.9 | 5.9 | 2.7 | 16 | 0.0678 | 68 | 80 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AD4❑-❑❑❑❑** | 1.9 | 3 | 2.2 | 16 | 0.0056 | 60 | 72 |
| **1LE1002-1AD5❑-❑❑❑❑** | 2 | 3.2 | 2.3 | 16 | 0.0078 | 60 | 72 |
| **1LE1002-1BD2❑-❑❑❑❑** | 1.9 | 3.4 | 2.1 | 16 | 0.0094 | 63 | 75 |
| **1LE1002-1CD0❑-❑❑❑❑** | 1.7 | 3.9 | 2.4 | 13 | 0.0186 | 63 | 75 |
| **1LE1002-1CD2❑-❑❑❑❑** | 1.8 | 3.9 | 2.2 | 13 | 0.02372 | 63 | 75 |
| **1LE1002-1DD2❑-❑❑❑❑** | 1.7 | 3.8 | 2.3 | 13 | 0.0439 | 63 | 75 |
| **1LE1002-1DD3❑-❑❑❑❑** | 1.6 | 4 | 2.2 | 13 | 0.0562 | 63 | 75 |
| **1LE1002-1DD4❑-❑❑❑❑** | 1.7 | 3.8 | 2.2 | 13 | 0.0772 | 63 | 75 |

1

## Selection and ordering data (continued)

### *Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard voltages | | | | Further voltages | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1LE1002-1A..❑-❑...** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B..❑-❑...** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C..❑-❑...** | **132 S/M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D..❑-❑...** | **160 M/L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Without flange | | | | | | | With flange (acc. to DIN EN 50347) | | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | IM V5 with protective cover [3] [4] [5] | Flange size | IM B5 [3] [6] | IM V1 without protective cover [3] | IM V1 with protective cover [3] [4] [5] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | **C** | | **F** | **G** | **G** | **H** | **J** |
| Order No. supplement **-Z** with order code | | – | – | – | – | – | – | **-Z H00** | | – | – | **-Z H00** | – | – |
| **1LE1002-1A...-❑..** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-❑..** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-❑..** | **132 S/M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 265** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-❑..** | **160 M/L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 300** | ✓ | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With standard flange (acc. to DIN EN 50347) | | | | | | | With standard flange (next larger standerd flange acc. to DIN EN 50347) | | | | | |
| | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 |
| | | | **K** | **L** | **M** | **M** | **N** | | | **K** | **L** | **M** | **M** | **N** |
| Order No.supplement **-Z** with order code | | | – | – | – | **-Z H00** | – | | | **-Z P01** | **-Z P01** | **-Z P01** | **-Z H00 P01** | **-Z P01** |
| **1LE1002-1A...-❑..** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-❑..** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-❑..** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-❑..** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ | | – | – | – | – | – | – |

❑ Standard version
✓ With additional charge

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate. With type of construction IM V5 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) Option second shaft extension (order code **L05**) not possible.

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

6) The types of construction IM V3 and IM V1 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate. With type of construction IM V1 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

7) The types of construction IM V19 and IM V18 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate. With type of construction IM V18 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | | **A** | **B** | **C** | **F** | **Z** | **Z** |
| | Order code | | | | | **Q2A** | **Q3A** |
| **1LE1002-1A...-..❑.** | **100 L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-..❑.** | **112 M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-..❑.** | **132 S/M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-..❑.** | **160 M/L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

| Motortyp | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [3] | Connection box on LHS [3] | Connection box bottom [3] |
| | | **4** | **5** | **6** | **7** |
| **1LE1002-1A...-...❑** | **100 L** | □ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-...❑** | **112 M** | □ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-...❑** | **132 S/M** | □ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-...❑** | **160 M/L** | □ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, cast feet as standard. Screwed-on feet are available with order code **H01**, see "Special versions".

[3] With type of construction, screwed-on feet as standard.

## Self-ventilated energy-saving motors with high efficiency



### Selection and ordering data

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see table from Page 1/24. | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF1 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **For use according to CEMEP** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2905 | 9.9 | EFF1 | 86.7 | 87.5 | 0.84 | 5.9 | **1LE1001-1AA4❑-❑❑❑❑** | | 21 |
| 4 | 4.6 | 112 M | 2950 | 13 | EFF1 | 88 | 88.5 | 0.86 | 7.4 | **1LE1001-1BA2❑-❑❑❑❑** | | 27 |
| 5.5 | 6.3 | 132 S | 2950 | 18 | EFF1 | 89.5 | 90.6 | 0.87 | 10.2 | **1LE1001-1CA0❑-❑❑❑❑** | | 39 |
| 7.5 | 8.6 | 132 S | 2950 | 24 | EFF1 | 90 | 91 | 0.87 | 13.8 | **1LE1001-1CA1❑-❑❑❑❑** | | 43 |
| 11 | 12.6 | 160 M | 2955 | 36 | EFF1 | 90.8 | 91 | 0.87 | 20 | **1LE1001-1DA2❑-❑❑❑❑** | | 67 |
| 15 | 17.3 | 160 M | 2955 | 48 | EFF1 | 91.4 | 91.5 | 0.88 | 27 | **1LE1001-1DA3❑-❑❑❑❑** | | 75 |
| 18.5 | 21.3 | 160 L | 2955 | 60 | EFF1 | 92 | 92.5 | 0.88 | 33 | **1LE1001-1DA4❑-❑❑❑❑** | | 84 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1455 | 14 | EFF1 | 86.4 | 87 | 0.81 | 4.55 | **1LE1001-1AB4❑-❑❑❑❑** | | 21 |
| 3 | 3.45 | 100 L | 1455 | 20 | EFF1 | 87.4 | 88 | 0.82 | 6 | **1LE1001-1AB5❑-❑❑❑❑** | | 25 |
| 4 | 4.6 | 112 M | 1460 | 26 | EFF1 | 88.3 | 88.5 | 0.81 | 8.1 | **1LE1001-1BB2❑-❑❑❑❑** | | 29 |
| 5.5 | 6.3 | 132 S | 1465 | 36 | EFF1 | 89.2 | 89.5 | 0.80 | 11.2 | **1LE1001-1CB0❑-❑❑❑❑** | | 42 |
| 7.5 | 8.6 | 132 M | 1465 | 49 | EFF1 | 90.1 | 91 | 0.83 | 14.4 | **1LE1001-1CB2❑-❑❑❑❑** | | 49 |
| 11 | 12.6 | 160 M | 1470 | 71 | EFF1 | 91.2 | 91.8 | 0.85 | 20.5 | **1LE1001-1DB2❑-❑❑❑❑** | | 71 |
| 15 | 17.3 | 160 L | 1475 | 97 | EFF1 | 92 | 92.4 | 0.85 | 27.5 | **1LE1001-1DB4❑-❑❑❑❑** | | 83 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 970 | 15 | | 84.5 | 84.5 | 0.73 | 3.5 | **1LE1001-1AC4❑-❑❑❑❑** | | 25 |
| 2.2 | 2.55 | 112 M | 965 | 22 | | 85 | 85 | 0.75 | 5 | **1LE1001-1BC2❑-❑❑❑❑** | | 29 |
| 3 | 3.45 | 132 S | 970 | 30 | | 85 | 85 | 0.74 | 6.9 | **1LE1001-1CC0❑-❑❑❑❑** | | 38 |
| 4 | 4.6 | 132 M | 970 | 39 | | 86 | 86 | 0.78 | 8.6 | **1LE1001-1CC2❑-❑❑❑❑** | | 43 |
| 5.5 | 6.3 | 132 M | 970 | 54 | | 88 | 88 | 0.77 | 11.8 | **1LE1001-1CC3❑-❑❑❑❑** | | 52 |
| 7.5 | 8.6 | 160 M | 975 | 73 | | 89 | 89 | 0.77 | 15.8 | **1LE1001-1DC2❑-❑❑❑❑** | | 77 |
| 11 | 12.6 | 160 L | 975 | 108 | | 89.5 | 89 | 0.80 | 22 | **1LE1001-1DC4❑-❑❑❑❑** | | 93 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.75 | 0.86 | 100 L | 725 | 9.9 | | 68 | 65 | 0.58 | 2.75 | **1LE1001-1AD4❑-❑❑❑❑** | | 21 |
| 1.1 | 1.3 | 100 L | 725 | 14 | | 68 | 64.5 | 0.58 | 4.05 | **1LE1001-1AD5❑-❑❑❑❑** | | 25 |
| 1.5 | 1.75 | 112 M | 720 | 20 | | 77 | 75.5 | 0.67 | 4.2 | **1LE1001-1BD2❑-❑❑❑❑** | | 29 |
| 2.2 | 2.55 | 132 S | 725 | 29 | | 77.5 | 76.7 | 0.63 | 6.5 | **1LE1001-1CD0❑-❑❑❑❑** | | 41 |
| 3 | 3.45 | 132 M | 730 | 40 | | 84 | 82 | 0.65 | 7.9 | **1LE1001-1CD2❑-❑❑❑❑** | | 49 |
| 4 | 4.6 | 160 M | 730 | 52 | | 87 | 88 | 0.69 | 9.6 | **1LE1001-1DD2❑-❑❑❑❑** | | 69 |
| 5.5 | 6.3 | 160 M | 735 | 72 | | 87.5 | 89 | 0.69 | 13.2 | **1LE1001-1DD3❑-❑❑❑❑** | | 82 |
| 7.5 | 8.6 | 160 L | 730 | 98 | | 88 | 89 | 0.72 | 17 | **1LE1001-1DD4❑-❑❑❑❑** | | 94 |

Order No. supplements, see from Page 1/24.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque | Locked-rotor current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | with direct starting as multiple of rated | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | torque | current | torque | | | | |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | |
| **For use according to CEMEP** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AA4❑-❑❑❑❑** | 2.3 | 7 | 3.3 | 16 | 0.0044 | 67 | 79 |
| **1LE1001-1BA2❑-❑❑❑❑** | 2.4 | 7.4 | 3.3 | 16 | 0.0092 | 69 | 81 |
| **1LE1001-1CA0❑-❑❑❑❑** | 1.8 | 6.7 | 2.9 | 16 | 0.02012 | 68 | 80 |
| **1LE1001-1CA1❑-❑❑❑❑** | 2.2 | 7.5 | 3.1 | 16 | 0.02353 | 68 | 80 |
| **1LE1001-1DA2❑-❑❑❑❑** | 2.1 | 7.4 | 3.2 | 16 | 0.04471 | 70 | 82 |
| **1LE1001-1DA3❑-❑❑❑❑** | 2.4 | 7.6 | 3.4 | 16 | 0.05277 | 70 | 82 |
| **1LE1001-1DA4❑-❑❑❑❑** | 2.9 | 7.9 | 3.6 | 16 | 0.06085 | 70 | 82 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AB4❑-❑❑❑❑** | 2.1 | 6.9 | 3.3 | 16 | 0.0086 | 60 | 72 |
| **1LE1001-1AB5❑-❑❑❑❑** | 2 | 6.9 | 3.1 | 16 | 0.0109 | 60 | 72 |
| **1LE1001-1BB2❑-❑❑❑❑** | 2.5 | 7.1 | 3.2 | 16 | 0.014 | 58 | 70 |
| **1LE1001-1CB0❑-❑❑❑❑** | 2.3 | 6.9 | 2.9 | 16 | 0.02698 | 64 | 76 |
| **1LE1001-1CB2❑-❑❑❑❑** | 2.3 | 6.9 | 2.9 | 16 | 0.03353 | 64 | 76 |
| **1LE1001-1DB2❑-❑❑❑❑** | 2.2 | 6.7 | 2.8 | 16 | 0.06495 | 65 | 77 |
| **1LE1001-1DB4❑-❑❑❑❑** | 2.5 | 7.3 | 3 | 16 | 0.08281 | 65 | 77 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AC4❑-❑❑❑❑** | 2 | 6.2 | 2.9 | 16 | 0.0113 | 59 | 71 |
| **1LE1001-1BC2❑-❑❑❑❑** | 2.1 | 6 | 3.1 | 16 | 0.0139 | 57 | 69 |
| **1LE1001-1CC0❑-❑❑❑❑** | 1.6 | 5.6 | 2.6 | 13 | 0.02371 | 63 | 75 |
| **1LE1001-1CC2❑-❑❑❑❑** | 1.6 | 5.6 | 2.5 | 13 | 0.02918 | 63 | 75 |
| **1LE1001-1CC3❑-❑❑❑❑** | 1.9 | 6.1 | 2.8 | 16 | 0.03673 | 63 | 75 |
| **1LE1001-1DC2❑-❑❑❑❑** | 1.8 | 6.3 | 2.8 | 16 | 0.0754 | 67 | 79 |
| **1LE1001-1DC4❑-❑❑❑❑** | 1.7 | 6.2 | 2.7 | 16 | 0.0975 | 67 | 79 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AD4❑-❑❑❑❑** | 1.6 | 4 | 2.8 | 13 | 0.0086 | 60 | 72 |
| **1LE1001-1AD5❑-❑❑❑❑** | 1.8 | 4 | 2.8 | 13 | 0.0109 | 60 | 72 |
| **1LE1001-1BD2❑-❑❑❑❑** | 1.4 | 4.2 | 2.4 | 13 | 0.014 | 63 | 75 |
| **1LE1001-1CD0❑-❑❑❑❑** | 1.4 | 3.6 | 1.8 | 10 | 0.02698 | 63 | 75 |
| **1LE1001-1CD2❑-❑❑❑❑** | 1.4 | 5 | 2.4 | 10 | 0.03463 | 63 | 75 |
| **1LE1001-1DD2❑-❑❑❑❑** | 1.8 | 4.3 | 2 | 13 | 0.0649 | 63 | 75 |
| **1LE1001-1DD3❑-❑❑❑❑** | 2.1 | 4.4 | 2.1 | 13 | 0.0828 | 63 | 75 |
| **1LE1001-1DD4❑-❑❑❑❑** | 1.9 | 4.5 | 2.1 | 13 | 0.0982 | 63 | 75 |

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## Selection and ordering data (continued)

### *Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Standard voltages** | | | | **Further voltages** | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1LE1001-1A..❑-❑...** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B..❑-❑...** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C..❑-❑...** | **132 S/M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D..❑-❑...** | **160 M/L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Without flange** | | | | | | | **With flange (acc. to DIN EN 50347)** | | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | IM V5 with protective cover [3] [4] [5] | Flange size | IM B5 [3] [6] | IM V1 without protective cover [3] | IM V1 with protective cover [3] [4] [5] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | **C** | | **F** | **G** | **G** | **H** | **J** |
| | Order No. supplement **-Z** with order code | – | – | – | – | – | – | **-Z H00** | | – | – | **-Z H00** | – | – |
| **1LE1001-1A...-❑..** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..** | **132 S/M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 265** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..** | **160 M/L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 300** | ✓ | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **With standard flange (acc. to DIN EN 50347)** | | | | | | | **With standard flange (next larger standerd flange acc. to DIN EN 50347)** | | | | | |
| | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 |
| | | | **K** | **L** | **M** | **M** | **N** | | | **K** | **L** | **M** | **M** | **N** |
| | Order No. supplement **-Z** with order code | | – | – | – | **-Z H00** | – | | | **-Z P01** | **-Z P01** | **-Z P01** | **-Z H00 P01** | **-Z P01** |
| **1LE1001-1A...-❑..** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ | | – | – | – | – | – | – |

❑ Standard version
✓ With additional charge

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate. With type of construction IM V5 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) Option second shaft extension (order code **L05**) not possible.

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

6) The types of construction IM V3 and IM V1 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate. With type of construction IM V1 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

7) The types of construction IM V19 and IM V18 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate. With type of construction IM V18 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | Order code | **A** | **B** | **C** | **F** | **Z Q2A** | **Z Q3A** |
| **1LE1001-1A...-..❑.** | **100 L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-..❑.** | **112 M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-..❑.** | **132 S/M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-..❑.** | **160 M/L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [3] | Connection box on LHS [3] | Connection box bottom [3] |
| | | **4** | **5** | **6** | **7** |
| **1LE1001-1A...-...❑** | **100 L** | □ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-...❑** | **112 M** | □ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-...❑** | **132 S/M** | □ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-...❑** | **160 M/L** | □ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, cast feet as standard. Screwed-on feet are available with order code **H01**, see "Special versions".

[3] With type of construction, screwed-on feet as standard.

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## Selection and ordering data (continued)

| Rated output at | | Frame size | Operating values at rated output | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 60 Hz | Rated torque at 60 Hz | EPACT with CC-No. CCxxx | Nominal efficiency at 60 Hz | Power factor at 60 Hz 4/4-load | Rated current at 460 V, 60 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see from Page 1/28 | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ HP | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | |
| **For use in the North American market according to EPACT** | | | | | | | | | | | |
| **2-pole – 3600 rpm at 60 Hz** | | | | | | | | | | | |
| 3 | 4 | 100 L | 3520 | 8.1 | A. S. | 86.5 | 0.83 | 5.2 | **1LE1001-1AA4❑-❑❑❑❑** | | 21 |
| 4 | 5 | 112 M | 3565 | 9.9 | A. S. | 87.5 | 0.84 | 6.3 | **1LE1001-1BA2❑-❑❑❑❑** | | 27 |
| 5.5 | 7.5 | 132 S | 3560 | 15 | A. S. | 89.5 | 0.86 | 9 | **1LE1001-1CA0❑-❑❑❑❑** | | 39 |
| 7.5 | 10 | 132 S | 3560 | 20 | A. S. | 90.2 | 0.87 | 12 | **1LE1001-1CA1❑-❑❑❑❑** | | 43 |
| 11 | 15 | 160 M | 3560 | 30 | A. S. | 90.2 | 0.86 | 17.8 | **1LE1001-1DA2❑-❑❑❑❑** | | 67 |
| 15 | 20 | 160 M | 3565 | 40 | A. S. | 91 | 0.87 | 24 | **1LE1001-1DA3❑-❑❑❑❑** | | 75 |
| 18.5 | 25 | 160 L | 3565 | 50 | A. S. | 91.7 | 0.87 | 29 | **1LE1001-1DA4❑-❑❑❑❑** | | 84 |
| **4-pole – 1800 rpm at 60 Hz** | | | | | | | | | | | |
| 2.2 | 3 | 100 L | 1760 | 12 | A. S. | 87.5 | 0.78 | 4.05 | **1LE1001-1AB4❑-❑❑❑❑** | | 21 |
| 3 | 4 | 100 L | 1765 | 16 | A. S. | 87.5 | 0.79 | 5.4 | **1LE1001-1AB5❑-❑❑❑❑** | | 25 |
| 4 | 5 | 112 M | 1770 | 20 | A. S. | 88.5 | 0.77 | 6.8 | **1LE1001-1BB2❑-❑❑❑❑** | | 29 |
| 5.5 | 7.5 | 132 S | 1770 | 30 | A. S. | 89.5 | 0.78 | 9.9 | **1LE1001-1CB0❑-❑❑❑❑** | | 42 |
| 7.5 | 10 | 132 M | 1770 | 40 | A. S. | 89.5 | 0.82 | 12.8 | **1LE1001-1CB2❑-❑❑❑❑** | | 49 |
| 11 | 15 | 160 M | 1775 | 59 | A. S. | 91 | 0.84 | 18.1 | **1LE1001-1DB2❑-❑❑❑❑** | | 71 |
| 15 | 20 | 160 L | 1780 | 80 | A. S. | 91.7 | 0.84 | 24.5 | **1LE1001-1DB4❑-❑❑❑❑** | | 83 |
| **6-pole – 1200 rpm at 60 Hz** | | | | | | | | | | | |
| 1.5 | 2 | 100 L | 1175 | 12 | A. S. | 86.5 | 0.69 | 3.15 | **1LE1001-1AC4❑-❑❑❑❑** | | 25 |
| 2.2 | 3 | 112 M | 1170 | 18 | A. S. | 87.5 | 0.73 | 4.3 | **1LE1001-1BC2❑-❑❑❑❑** | | 29 |
| 3 | 4 | 132 S | 1175 | 24 | A. S. | 87.5 | 0.7 | 6.1 | **1LE1001-1CC0❑-❑❑❑❑** | | 38 |
| 4 | 5 | 132 M | 1180 | 30 | A. S. | 87.5 | 0.73 | 7.3 | **1LE1001-1CC2❑-❑❑❑❑** | | 43 |
| 5.5 | 7.5 | 132 M | 1175 | 45 | A. S. | 89.5 | 0.74 | 10.4 | **1LE1001-1CC3❑-❑❑❑❑** | | 52 |
| 7.5 | 10 | 160 M | 1180 | 61 | A. S. | 89.5 | 0.74 | 14.2 | **1LE1001-1DC2❑-❑❑❑❑** | | 77 |
| 11 | 15 | 160 L | 1180 | 89 | A. S. | 90.2 | 0.78 | 19.6 | **1LE1001-1DC4❑-❑❑❑❑** | | 93 |

A. S. Available soon

Order No. supplements, see from Page 1/28.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting torque | Locked-rotor current as multiple of rated current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | | | | | | Measuring-surface sound pressure level at 60 Hz | Sound pressure level at 60 Hz |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | |
| **For use in the North American market according to EPACT** | | | | | | | |
| **2-pole – 3600 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AA4❑-❑❑❑❑** | 2.56 | 7.3 | 3.83 | 16 | 0.0044 | 71 | 83 |
| **1LE1001-1BA2❑-❑❑❑❑** | 2.9 | 7.8 | 4 | 16 | 0.0092 | 73 | 85 |
| **1LE1001-1CA0❑-❑❑❑❑** | 2.04 | 6.9 | 3.3 | 16 | 0.02012 | 72 | 84 |
| **1LE1001-1CA1❑-❑❑❑❑** | 2.3 | 7.4 | 3.56 | 16 | 0.02353 | 72 | 84 |
| **1LE1001-1DA2❑-❑❑❑❑** | 2.38 | 7.4 | 3.63 | 16 | 0.04471 | 77 | 89 |
| **1LE1001-1DA3❑-❑❑❑❑** | 2.76 | 7.6 | 3.91 | 16 | 0.05277 | 77 | 89 |
| **1LE1001-1DA4❑-❑❑❑❑** | 3.31 | 7.9 | 4.1 | 16 | 0.06085 | 77 | 89 |
| **4-pole – 1800 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AB4❑-❑❑❑❑** | 2.45 | 7.3 | 3.85 | 16 | 0.0086 | 62 | 74 |
| **1LE1001-1AB5❑-❑❑❑❑** | 2.38 | 7.5 | 3.68 | 16 | 0.0109 | 62 | 74 |
| **1LE1001-1BB2❑-❑❑❑❑** | 3 | 7.5 | 4 | 16 | 0.014 | 62 | 74 |
| **1LE1001-1CB0❑-❑❑❑❑** | 2.61 | 7.3 | 3.29 | 16 | 0.02698 | 68 | 80 |
| **1LE1001-1CB2❑-❑❑❑❑** | 2.7 | 7.1 | 3.407 | 16 | 0.03353 | 68 | 80 |
| **1LE1001-1DB2❑-❑❑❑❑** | 2.65 | 7 | 3.22 | 16 | 0.06495 | 69 | 81 |
| **1LE1001-1DB4❑-❑❑❑❑** | 2.79 | 7.7 | 3.37 | 16 | 0.08281 | 69 | 81 |
| **6-pole – 1200 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AC4❑-❑❑❑❑** | 2.33 | 6.4 | 3.38 | 16 | 0.0113 | 62 | 74 |
| **1LE1001-1BC2❑-❑❑❑❑** | 2.3 | 6.5 | 3.4 | 16 | 0.0139 | 60 | 72 |
| **1LE1001-1CC0❑-❑❑❑❑** | 1.75 | 5.8 | 3.03 | 13 | 0.02371 | 67 | 79 |
| **1LE1001-1CC2❑-❑❑❑❑** | 2.08 | 5.8 | 3.166 | 13 | 0.02918 | 67 | 79 |
| **1LE1001-1CC3❑-❑❑❑❑** | 2.04 | 6.3 | 3.17 | 16 | 0.03673 | 67 | 79 |
| **1LE1001-1DC2❑-❑❑❑❑** | 1.95 | 6.3 | 3.213 | 16 | 0.0754 | 70 | 82 |
| **1LE1001-1DC4❑-❑❑❑❑** | 1.834 | 6.2 | 2.98 | 16 | 0.0975 | 70 | 82 |

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## Selection and ordering data (continued)

### *Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | |
|---|---|---|---|
| | | **Standard voltages** | |
| | | 60 Hz | |
| | | 460 VY | 460 VΔ |
| | | see "Selection and ordering data" for outputs at 60 Hz | |
| | | **22** | **34** |
| **1LE1001-1A..❑-❑...** | **100 L** | ○ | ○ |
| **1LE1001-1B..❑-❑...** | **112 M** | ○ | ○ |
| **1LE1001-1C..❑-❑...** | **132 S/M** | ○ | ○ |
| **1LE1001-1D..❑-❑...** | **160 M/L** | ○ | ○ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Type of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **With flange** | | | | | | | **With flange (acc. to DIN EN 50347)** | | | | | |
| | | IM B3 1) 2) | IM B6 2) | IM B7 2) | IM B8 2) | IM V6 2) | IM V5 without protection cover 2) | IM V5 with protection cover 2) 3) 4) | Flange size | IM B5 2) 5) | IM V1 without protection cover 2) | IM V1 with protection cover 2) 3) 4) | IM V3 2) | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | **C** | | **F** | **G** | **G** | **H** | **J** |
| Order No. supplement **-Z** with order code | | – | – | – | – | – | – | **-Z H00** | | – | – | **-Z H00** | – | – |
| **1LE1001-1A...-❑..** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..** | **132 S/M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 265** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..** | **160 M/L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 300** | ✓ | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Type of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **With standard flange (acc. to DIN EN 50347)** | | | | | | | **With standard flange (next larger standerd flange acc. to DIN EN 50347)** | | | | | |
| | | Flange size | IM B14 2) 6) | IM V19 2) | IM V18 without protective cover 2) | IM V18 with protective cover 2) 3) 4) | IM B34 | | Flange size | IM B14 2) 6) | IM V19 2) | IM V18 without protective cover 2) | IM V18 with protective 2) 3) 4) | IM B34 |
| | | | **K** | **L** | **M** | **M** | **N** | | | **K** | **L** | **M** | **M** | **N** |
| Order No. supplement **-Z** with order code | | | – | – | – | **-Z H00** | – | | | **-Z P01** | **-Z P01** | **-Z P01** | **-Z H00 P01** | **-Z P01** |
| **1LE1001-1A...-❑..** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ | | – | – | – | – | – | – |

❑ Standard version
✓ With additional charge

1) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate. With type of construction IM V5 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

2) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

3) Option second shaft extension (order code **L05**) not possible

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

5) The types of construction IM V3 and IM V1 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate. With type of construction IM V1 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

6) The types of construction IM V19 and IM V18 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate. With type of construction IM V18 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | | **A** | **B** | **C** | **F** | **Z** | **Z** |
| | Order code | | | | | **Q2A** | **Q3A** |
| **1LE1001-1A...-..❑.** | **100 L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-..❑.** | **112 M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-..❑.** | **132 S/M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-..❑.** | **160 M/L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [3] | Connection box on LHS [3] | Connection box bottom [3] |
| | | **4** | **5** | **6** | **7** |
| **1LE1001-1A...-...❑** | **100 L** | □ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-...❑** | **112 M** | □ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-...❑** | **132 S/M** | □ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-...❑** | **160 M/L** | □ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, cast feet as standard. Screwed-on feet are available with order code **H01**, see "Special versions".

[3] With type of construction, screwed-on feet as standard.

## Self-ventilated motors with increased output and improved efficiency



### Selection and ordering data

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V. 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see table from Page 1/32. | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)** [1] | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 4 | 4.6 | 100 L | 2850 | 13.3 | EFF2 | 85.6 | 86.2 | 0.85 | 7.9 | **1LE1002-1AA6❑-❑❑❑❑** | | 25 |
| 5.5 | 6.3 | 112 M | 2935 | 18 | EFF2 | 87 | 85.5 | 0.86 | 10.6 | **1LE1002-1BA6❑-❑❑❑❑** | | 31 |
| 11 | 12.6 | 132 M | 2920 | 36 | EFF2 | 90 | 90.7 | 0.90 | 19.6 | **1LE1002-1CA6❑-❑❑❑❑** | | 53 |
| 22 | 24.5 | 160 L | 2930 | 72 | EFF2 | 91.6 | 91.4 | 0.88 | 39.5 | **1LE1002-1DA6❑-❑❑❑❑** | | 85 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 4 | 4.6 | 100 L | 1430 | 26.8 | EFF2 | 84.2 | 85.1 | 0.81 | 8.5 | **1LE1002-1AB6❑-❑❑❑❑** | | 27 |
| 5.5 | 6.3 | 112 M | 1420 | 37 | EFF2 | 85.7 | 86.5 | 0.81 | 11 | **1LE1002-1BB6❑-❑❑❑❑** | | 33 |
| 11 | 12.6 | 132 M | 1450 | 72 | EFF2 | 88.8 | 89.3 | 0.84 | 21.5 | **1LE1002-1CB6❑-❑❑❑❑** | | 58 |
| 18.5 | 21.3 | 160 L | 1460 | 121 | EFF2 | 90 | 90.2 | 0.85 | 35 | **1LE1002-1DB6❑-❑❑❑❑** | | 85 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 930 | 22.5 | | 76 | 77.3 | 0.78 | 5.3 | **1LE1002-1AC6❑-❑❑❑❑** | | 24 |
| 3 | 3.45 | 112 M | 945 | 30 | | 79 | 78.2 | 0.72 | 7.6 | **1LE1002-1BC6❑-❑❑❑❑** | | 32 |
| 7.5 | 8.6 | 132 M | 950 | 75 | | 85.5 | 85.7 | 0.74 | 17.2 | **1LE1002-1CC6❑-❑❑❑❑** | | 54 |
| 15 | 17.3 | 160 L | 965 | 148 | | 88 | 88 | 0.75 | 33 | **1LE1002-1DC6❑-❑❑❑❑** | | 109 |

Order No. supplements, see from Page 1/32.

[1] For Order No. 1LE1002-1CC6❑-❑❑❑❑ use acc. to temperature class 155 (F).

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque | Locked-rotor current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | with direct starting as multiple of rated | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | torque | current | torque | | | | |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AA6❑-❑❑❑❑** | 4.5 | 7 | 4.1 | 16 | 0.0044 | 67 | 79 |
| **1LE1002-1BA6❑-❑❑❑❑** | 2.9 | 7.5 | 3.8 | 16 | 0.0085 | 69 | 81 |
| **1LE1002-1CA6❑-❑❑❑❑** | 2.8 | 7.5 | 3.7 | 16 | 0.02233 | 68 | 80 |
| **1LE1002-1DA6❑-❑❑❑❑** | 2.6 | 7.5 | 3.4 | 16 | 0.04913 | 70 | 82 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AB6❑-❑❑❑❑** | 2.9 | 5.8 | 3.1 | 16 | 0.01 | 60 | 72 |
| **1LE1002-1BB6❑-❑❑❑❑** | 3 | 5.8 | 3.1 | 16 | 0.0124 | 58 | 70 |
| **1LE1002-1CB6❑-❑❑❑❑** | 2.5 | 7.2 | 3 | 16 | 0.03259 | 64 | 76 |
| **1LE1002-1DB6❑-❑❑❑❑** | 2.7 | 7.2 | 3.2 | 16 | 0.06843 | 65 | 77 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AC6❑-❑❑❑❑** | 2 | 4 | 2.2 | 16 | 0.0084 | 59 | 71 |
| **1LE1002-1BC6❑-❑❑❑❑** | 2.9 | 4.6 | 3 | 16 | 0.0128 | 57 | 69 |
| **1LE1002-1CC6❑-❑❑❑❑** | 2.4 | 5.3 | 3 | 16 | 0.032 | 63 | 75 |
| **1LE1002-1DC6❑-❑❑❑❑** | 2.9 | 6 | 3.4 | 16 | 0.0936 | 67 | 79 |

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## Selection and ordering data (continued)

### *Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard voltages | | | | Further voltages | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1LE1002-1A..❑-❑...** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B..❑-❑...** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C..❑-❑...** | **132 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D..❑-❑...** | **160 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Without flange | | | | | | | With flange (acc. to DIN EN 50347) | | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | IM V5 with protective cover [3] [4] [5] | Flange size | IM B5 [3] [6] | IM V1 without protective cover [3] | IM V1 with protective cover [3] [4] [5] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | **C** | | **F** | **G** | **G** | **H** | **J** |
| Order No. supplement **-Z** with order code | | – | – | – | – | – | – | **-Z H00** | | – | – | **-Z H00** | – | – |
| **1LE1002-1A...-.❑..** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-.❑..** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-.❑..** | **132 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 265** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-.❑..** | **160 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 300** | ✓ | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With standard flange (acc. to DIN EN 50347) | | | | | | | With standard flange (next larger standerd flange acc. to DIN EN 50347) | | | | | |
| | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 |
| | | | **K** | **L** | **M** | **M** | **N** | | | **K** | **L** | **M** | **M** | **N** |
| Order No. supplement **-Z** with order code | | | – | – | – | **-Z H00** | – | | | **-Z P01** | **-Z P01** | **-Z P01** | **-Z H00 P01** | **-Z P01** |
| **1LE1002-1A...-.❑..** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-.❑..** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-.❑..** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-.❑..** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ | | – | – | – | – | – | – |

❑ Standard version
✓ With additional charge

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate. With type of construction IM V5 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) Option second shaft extension (order code **L05**) not possible.

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

6) The types of construction IM V3 and IM V1 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate. With type of construction IM V1 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

7) The types of construction IM V19 and IM V18 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate. With type of construction IM V18 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | Order code | A | B | C | F | Z Q2A | Z Q3A |
| 1LE1002-1A...-..❑. | 100 L | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1002-1B...-..❑. | 112 M | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1002-1C...-..❑. | 132 M | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1002-1D...-..❑. | 160 L | □ | ✓ | ✓ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [2] | Connection box on LHS [2] | Connection box bottom [2] |
| | | 4 | 5 | 6 | 7 |
| 1LE1002-1A...-...❑ | 100 L | □ | ✓ | ✓ | ✓ |
| 1LE1002-1B...-...❑ | 112 M | □ | ✓ | ✓ | ✓ |
| 1LE1002-1C...-...❑ | 132 M | □ | ✓ | ✓ | ✓ |
| 1LE1002-1D...-...❑ | 160 L | □ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, screwed-on feet as standard.

## Self-ventilated motors with increased output and high efficiency



### Selection and ordering data

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V. 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see table from Page 1/36. | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF1 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 4 | 4.6 | 100 L | 2905 | 13 | EFF1 | 88 | 89 | 0.86 | 7.6 | **1LE1001-1AA6❑-❑❑❑❑** | | 26 |
| 5.5 | 6.3 | 112 M | 2950 | 18 | EFF1 | 89 | 88.5 | 0.89 | 10 | **1LE1001-1BA6❑-❑❑❑❑** | | 34 |
| 11 | 12.6 | 132 M | 2955 | 36 | EFF1 | 91.5 | 92.5 | 0.89 | 19.4 | **1LE1001-1CA6❑-❑❑❑❑** | | 57 |
| 22 | 25.3 | 160 L | 2955 | 71 | EFF1 | 92.8 | 93.5 | 0.89 | 38.5 | **1LE1001-1DA6❑-❑❑❑❑** | | 94 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 4 | 4.6 | 100 L | 1460 | 26 | EFF1 | 88.3 | 88.3 | 0.8 | 8.2 | **1LE1001-1AB6❑-❑❑❑❑** | | 30 |
| 5.5 | 6.3 | 112 M | 1460 | 36 | EFF1 | 89.2 | 89.2 | 0.81 | 11 | **1LE1001-1BB6❑-❑❑❑❑** | | 34 |
| 11 | 12.6 | 132 M | 1465 | 72 | EFF1 | 91 | 91.0 | 0.84 | 21 | **1LE1001-1CB6❑-❑❑❑❑** | | 64 |
| 18.5 | 21.3 | 160 L | 1475 | 120 | EFF1 | 92.4 | 92.4 | 0.85 | 34 | **1LE1001-1DB6❑-❑❑❑❑** | | 100 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 965 | 22 | | 84.5 | 85.6 | 0.76 | 4.95 | **1LE1001-1AC6❑-❑❑❑❑** | | 30 |
| 3 | 3.45 | 112 M | 960 | 30 | | 84.5 | 84.7 | 0.79 | 6.5 | **1LE1001-1BC6❑-❑❑❑❑** | | 34 |
| 7.5 | 8.6 | 132 M | 970 | 74 | | 88.5 | 88.5 | 0.77 | 15.4 | **1LE1001-1CC6❑-❑❑❑❑** | | 64 |
| 15 | 17.3 | 160 L | 975 | 147 | | 90.6 | 91 | 0.81 | 29.5 | **1LE1001-1DC6❑-❑❑❑❑** | | 115 |

Order No. supplements, see from Page 1/36.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque | Locked-rotor current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | with direct starting as multiple of rated | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | torque | current | torque | | | | |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, with increased output, used acc. to temperature class 130 (B)** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AA6❑-❑❑❑❑** | 2.5 | 7.6 | 3.5 | 16 | 0.0054 | 67 | 79 |
| **1LE1001-1BA6❑-❑❑❑❑** | 2.2 | 7.7 | 3.3 | 16 | 0.0119 | 73 | 85 |
| **1LE1001-1CA6❑-❑❑❑❑** | 2.5 | 7.9 | 3.2 | 16 | 0.03143 | 68 | 80 |
| **1LE1001-1DA6❑-❑❑❑❑** | 3.1 | 8.4 | 3.7 | 16 | 0.06764 | 70 | 82 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AB6❑-❑❑❑❑** | 2.2 | 7.5 | 3.5 | 16 | 0.0137 | 60 | 72 |
| **1LE1001-1BB6❑-❑❑❑❑** | 2.5 | 7.1 | 3.1 | 16 | 0.0166 | 58 | 70 |
| **1LE1001-1CB6❑-❑❑❑❑** | 2.9 | 7.7 | 3.1 | 16 | 0.04571 | 64 | 76 |
| **1LE1001-1DB6❑-❑❑❑❑** | 2.8 | 7.7 | 3.3 | 16 | 0.09854 | 65 | 77 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AC6❑-❑❑❑❑** | 1.9 | 5.7 | 2.9 | 16 | 0.0137 | 59 | 71 |
| **1LE1001-1BC6❑-❑❑❑❑** | 2.1 | 6 | 3.1 | 16 | 0.0166 | 57 | 69 |
| **1LE1001-1CC6❑-❑❑❑❑** | 2.1 | 6.5 | 3 | 16 | 0.04572 | 63 | 75 |
| **1LE1001-1DC6❑-❑❑❑❑** | 1.9 | 6.5 | 2.9 | 16 | 0.1208 | 67 | 79 |

1

## Selection and ordering data (continued)

### *Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard voltages | | | | Further voltages | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1LE1001-1A..❑-❑...** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B..❑-❑...** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C..❑-❑...** | **132 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D..❑-❑...** | **160 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Without flange | | | | | | | With flange (acc. to DIN EN 50347) | | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | IM V5 with protective cover [3] [4] [5] | Flange size | IM B5 [3] [6] | IM V1 without protective cover [3] | IM V1 with protective cover [3] [4] [5] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | **C** | | **F** | **G** | **G** | **H** | **J** |
| Order No. supplement **-Z** with order code | | – | – | – | – | – | – | **-Z H00** | | – | – | **-Z H00** | – | – |
| **1LE1001-1A...-❑..** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..** | **132 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 265** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..** | **160 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | ✓ | **FF 300** | ✓ | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With standard flange (acc. to DIN EN 50347) | | | | | | | With standard flange (next larger standerd flange acc. to DIN EN 50347) | | | | | |
| | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 | | Flange size | IM B14 [3] [7] | IM V19 [3] | IM V18 without protective cover [3] | IM V18 with protective cover [3] [4] [5] | IM B34 |
| | | | **K** | **L** | **M** | **M** | **N** | | | **K** | **L** | **M** | **M** | **N** |
| Order No. supplement **-Z** with order code | | | – | – | – | **-Z H00** | – | | | **-Z P01** | **-Z P01** | **-Z P01** | **-Z H00 P01** | **-Z P01** |
| **1LE1001-1A...-❑..** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | ✓ | | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | ✓ | | – | – | – | – | – | – |

❑ Standard version
✓ With additional charge

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate. With type of construction IM V5 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) Option second shaft extension (order code **L05**) not possible.

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

6) The types of construction IM V3 and IM V1 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate. With type of construction IM V1 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

7) The types of construction IM V19 and IM V18 without protective cover/with protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate. With type of construction IM V18 with protective cover, the protective cover has to be additionally ordered with order code **H00**. The protective cover is not stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | Order code | A | B | C | F | Z Q2A | Z Q3A |
| 1LE1001-1A...-..❑. | 100 L | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1001-1B...-..❑. | 112 M | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1001-1C...-..❑. | 132 M | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1001-1D...-..❑. | 160 L | □ | ✓ | ✓ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [2] | Connection box on LHS [2] | Connection box bottom [2] |
| | | 4 | 5 | 6 | 7 |
| 1LE1001-1A...-...❑ | 100 L | □ | ✓ | ✓ | ✓ |
| 1LE1001-1B...-...❑ | 112 M | □ | ✓ | ✓ | ✓ |
| 1LE1001-1C...-...❑ | 132 M | □ | ✓ | ✓ | ✓ |
| 1LE1001-1D...-...❑ | 160 L | □ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, screwed-on feet as standard.

## Forced-air cooled motors without external fan and fan cover with improved efficiency



### Selection and ordering data

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. with -Z and order code | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V. 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see table from Page 1/40. | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF2 | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2835 | 10 | EFF2 | 82.6 | 83.2 | 0.87 | 6 | **1LE1002-1AA4❑-❑❑❑❑-Z F90** | | 20 |
| 4 | 4.6 | 112 M | 2930 | 13 | EFF2 | 84.8 | 84.4 | 0.86 | 7.9 | **1LE1002-1BA2❑-❑❑❑❑-Z F90** | | 25 |
| 5.5 | 6.3 | 132 S | 2905 | 18 | EFF2 | 86 | 86.6 | 0.89 | 10.4 | **1LE1002-1CA0❑-❑❑❑❑-Z F90** | | 35 |
| 7.5 | 8.6 | 132 S | 2925 | 24 | EFF2 | 87.6 | 88.7 | 0.88 | 14 | **1LE1002-1CA1❑-❑❑❑❑-Z F90** | | 40 |
| 11 | 12.6 | 160 M | 2920 | 36 | EFF2 | 88.4 | 88.5 | 0.85 | 21 | **1LE1002-1DA2❑-❑❑❑❑-Z F90** | | 60 |
| 15 | 17.3 | 160 M | 2930 | 49 | EFF2 | 89.5 | 89.7 | 0.84 | 29 | **1LE1002-1DA3❑-❑❑❑❑-Z F90** | | 68 |
| 18.5 | 21.3 | 160 L | 2935 | 60 | EFF2 | 90.9 | 91 | 0.86 | 34 | **1LE1002-1DA4❑-❑❑❑❑-Z F90** | | 78 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1425 | 14.8 | EFF2 | 81 | 84 | 0.81 | 4.85 | **1LE1002-1AB4❑-❑❑❑❑-Z F90** | | 18 |
| 3 | 3.45 | 100 L | 1425 | 20.2 | EFF2 | 82.8 | 83.6 | 0.85 | 6.2 | **1LE1002-1AB5❑-❑❑❑❑-Z F90** | | 22 |
| 4 | 4.6 | 112 M | 1435 | 27 | EFF2 | 84.2 | 85.1 | 0.84 | 8.2 | **1LE1002-1BB2❑-❑❑❑❑-Z F90** | | 27 |
| 5.5 | 6.3 | 132 S | 1450 | 36 | EFF2 | 86 | 86.5 | 0.83 | 11.2 | **1LE1002-1CB0❑-❑❑❑❑-Z F90** | | 38 |
| 7.5 | 8.6 | 132 M | 1450 | 49 | EFF2 | 87 | 87.4 | 0.83 | 15 | **1LE1002-1CB2❑-❑❑❑❑-Z F90** | | 44 |
| 11 | 12.6 | 160 M | 1460 | 72 | EFF2 | 88.4 | 88.1 | 0.82 | 22 | **1LE1002-1DB2❑-❑❑❑❑-Z F90** | | 62 |
| 15 | 17.3 | 160 L | 1460 | 98 | EFF2 | 89.4 | 89.7 | 0.82 | 29.5 | **1LE1002-1DB4❑-❑❑❑❑-Z F90** | | 73 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 940 | 15.3 | | 74 | 72.6 | 0.74 | 3.95 | **1LE1002-1AC4❑-❑❑❑❑-Z F90** | | 19 |
| 2.2 | 2.55 | 112 M | 930 | 23 | | 78 | 78.1 | 0.77 | 5.3 | **1LE1002-1BC2❑-❑❑❑❑-Z F90** | | 25 |
| 3 | 3.45 | 132 S | 955 | 30 | | 80 | 79.4 | 0.74 | 7.3 | **1LE1002-1CC0❑-❑❑❑❑-Z F90** | | 34 |
| 4 | 4.6 | 132 M | 950 | 40 | | 83 | 83.4 | 0.76 | 9.2 | **1LE1002-1CC2❑-❑❑❑❑-Z F90** | | 39 |
| 5.5 | 6.3 | 132 M | 950 | 55 | | 85 | 85.3 | 0.75 | 12.4 | **1LE1002-1CC3❑-❑❑❑❑-Z F90** | | 48 |
| 7.5 | 8.6 | 160 M | 970 | 75 | | 86 | 85.4 | 0.73 | 17.2 | **1LE1002-1DC2❑-❑❑❑❑-Z F90** | | 72 |
| 11 | 12.6 | 160 L | 965 | 110 | | 87.6 | 87.9 | 0.77 | 23.5 | **1LE1002-1DC4❑-❑❑❑❑-Z F90** | | 92 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.75 | 0.86 | 100 L | 705 | 10.4 | | 65.4 | 60.2 | 0.62 | 2.65 | **1LE1002-1AD4❑-❑❑❑❑-Z F90** | | 17 |
| 1.1 | 1.3 | 100 L | 705 | 15.1 | | 68.3 | 67.6 | 0.63 | 3.71 | **1LE1002-1AD5❑-❑❑❑❑-Z F90** | | 22 |
| 1.5 | 1.75 | 112 M | 700 | 20 | | 75.9 | 72.8 | 0.68 | 4.2 | **1LE1002-1BD2❑-❑❑❑❑-Z F90** | | 25 |
| 2.2 | 2.55 | 132 S | 715 | 29 | | 81 | 80 | 0.66 | 5.9 | **1LE1002-1CD0❑-❑❑❑❑-Z F90** | | 37 |
| 3 | 3.45 | 132 M | 710 | 40 | | 81.6 | 81 | 0.68 | 7.8 | **1LE1002-1CD2❑-❑❑❑❑-Z F90** | | 44 |
| 4 | 4.6 | 160 M | 720 | 53 | | 80 | 78.7 | 0.69 | 10.4 | **1LE1002-1DD2❑-❑❑❑❑-Z F90** | | 60 |
| 5.5 | 6.3 | 160 M | 720 | 73 | | 83.5 | 83.9 | 0.70 | 13.6 | **1LE1002-1DD3❑-❑❑❑❑-Z F90** | | 72 |
| 7.5 | 8.6 | 160 L | 715 | 100 | | 83.5 | 84.7 | 0.70 | 18.6 | **1LE1002-1DD4❑-❑❑❑❑-Z F90** | | 91 |

Order No. supplements, see from Page 1/40.

## Selection and ordering data (continued)

| Order No. with -Z and order code | Locked-rotor torque | Locked-rotor current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | with direct starting as multiple of rated | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | torque | current | torque | | | | |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AA4❑-❑❑❑❑-Z F90** | 3.2 | 6.2 | 2.9 | 16 | 0.0034 | 67 | 79 |
| **1LE1002-1BA2❑-❑❑❑❑-Z F90** | 2.7 | 7.3 | 3.7 | 16 | 0.0067 | 69 | 81 |
| **1LE1002-1CA0❑-❑❑❑❑-Z F90** | 2 | 5.6 | 2.6 | 16 | 0.01267 | 68 | 80 |
| **1LE1002-1CA1❑-❑❑❑❑-Z F90** | 2.2 | 6.4 | 3 | 16 | 0.01601 | 68 | 80 |
| **1LE1002-1DA2❑-❑❑❑❑-Z F90** | 2.1 | 6.1 | 2.7 | 16 | 0.02971 | 70 | 82 |
| **1LE1002-1DA3❑-❑❑❑❑-Z F90** | 2.5 | 6.1 | 3.2 | 16 | 0.03619 | 70 | 82 |
| **1LE1002-1DA4❑-❑❑❑❑-Z F90** | 2.5 | 7 | 3.2 | 16 | 0.04395 | 70 | 82 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AB4❑-❑❑❑❑-Z F90** | 2.3 | 5.1 | 2.7 | 16 | 0.0059 | 60 | 72 |
| **1LE1002-1AB5❑-❑❑❑❑-Z F90** | 2.4 | 5.4 | 2.6 | 16 | 0.0078 | 60 | 72 |
| **1LE1002-1BB2❑-❑❑❑❑-Z F90** | 2.2 | 5.3 | 2.6 | 16 | 0.0102 | 58 | 70 |
| **1LE1002-1CB0❑-❑❑❑❑-Z F90** | 2.3 | 6.2 | 2.7 | 16 | 0.0186 | 64 | 76 |
| **1LE1002-1CB2❑-❑❑❑❑-Z F90** | 2.5 | 6.6 | 2.9 | 16 | 0.02371 | 64 | 76 |
| **1LE1002-1DB2❑-❑❑❑❑-Z F90** | 2.3 | 6.4 | 3.1 | 16 | 0.04395 | 65 | 77 |
| **1LE1002-1DB4❑-❑❑❑❑-Z F90** | 2.5 | 7 | 3.4 | 16 | 0.05616 | 65 | 77 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AC4❑-❑❑❑❑-Z F90** | 2 | 4 | 2.2 | 16 | 0.0065 | 59 | 71 |
| **1LE1002-1BC2❑-❑❑❑❑-Z F90** | 2.3 | 4.1 | 2.5 | 16 | 0.0092 | 57 | 69 |
| **1LE1002-1CC0❑-❑❑❑❑-Z F90** | 2 | 4.6 | 2.6 | 16 | 0.0167 | 63 | 75 |
| **1LE1002-1CC2❑-❑❑❑❑-Z F90** | 2.1 | 4.7 | 2.5 | 16 | 0.02116 | 63 | 75 |
| **1LE1002-1CC3❑-❑❑❑❑-Z F90** | 2.5 | 5.2 | 2.8 | 16 | 0.02734 | 63 | 75 |
| **1LE1002-1DC2❑-❑❑❑❑-Z F90** | 2.1 | 5.5 | 2.9 | 16 | 0.04993 | 68 | 80 |
| **1LE1002-1DC4❑-❑❑❑❑-Z F90** | 1.9 | 5.9 | 2.7 | 16 | 0.0678 | 68 | 80 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | |
| **1LE1002-1AD4❑-❑❑❑❑-Z F90** | 1.9 | 3 | 2.2 | 16 | 0.0056 | 60 | 72 |
| **1LE1002-1AD5❑-❑❑❑❑-Z F90** | 2 | 3.2 | 2.3 | 16 | 0.0078 | 60 | 72 |
| **1LE1002-1BD2❑-❑❑❑❑-Z F90** | 1.9 | 3.4 | 2.1 | 16 | 0.0094 | 63 | 75 |
| **1LE1002-1CD0❑-❑❑❑❑-Z F90** | 1.7 | 3.9 | 2.4 | 13 | 0.0186 | 63 | 75 |
| **1LE1002-1CD2❑-❑❑❑❑-Z F90** | 1.8 | 3.9 | 2.2 | 13 | 0.02372 | 63 | 75 |
| **1LE1002-1DD2❑-❑❑❑❑-Z F90** | 1.7 | 3.8 | 2.3 | 13 | 0.0439 | 63 | 75 |
| **1LE1002-1DD3❑-❑❑❑❑-Z F90** | 1.6 | 4 | 2.2 | 13 | 0.0562 | 63 | 75 |
| **1LE1002-1DD4❑-❑❑❑❑-Z F90** | 1.7 | 3.8 | 2.2 | 13 | 0.0772 | 63 | 75 |

## Forced-air cooled motors without external fan and fan cover with improved efficiency

1

### Selection and ordering data (continued)

*Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard voltages | | | | Further voltages | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1LE1002-1A..❑-❑...-Z F90** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B..❑-❑...-Z F90** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C..❑-❑...-Z F90** | **132 S/M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D..❑-❑...-Z F90** | **160 M/L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Without flange | | | | | | With flange (acc. to DIN EN 50347) | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | Flange size | IM B5 [3] [4] | IM V1 without protective cover [3] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | | **F** | **G** | **H** | **J** |
| | Order No. supplement **-Z** with order code | – | – | – | – | – | – | | – | – | – | – |
| **1LE1002-1A...-.❑..-Z F90** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-.❑..-Z F90** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-.❑..-Z F90** | **132 S/M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 265** | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-.❑..-Z F90** | **160 M/L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 300** | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With standard flange (acc. to DIN EN 50347) | | | | | | With standard flange (next larger standerd flange acc. to DIN EN 50347) | | | | |
| | | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 | | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 |
| | | | **K** | **L** | **M** | **N** | | | **K** | **L** | **M** | **N** |
| | Order No. supplement **-Z** with order code | | – | – | – | – | | | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** |
| **1LE1002-1A...-.❑..-Z F90** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-.❑..-Z F90** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-.❑..-Z F90** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | | **FT 215** | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-.❑..-Z F90** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | | – | – | – | – | – |

❑ Standard version
✓ With additional charge

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) The types of construction IM V3 and IM V1 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate.

5) The types of construction IM V19 and IM V18 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | | **A** | **B** | **C** | **F** | **Z** | **Z** |
| | Order code | | | | | **Q2A** | **Q3A** |
| **1LE1002-1A...-..❑.-Z F90** | **100 L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-..❑.-Z F90** | **112 M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-..❑.-Z F90** | **132 S/M** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-..❑.-Z F90** | **160 M/L** | □ | ✓ | ✓ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [3] | Connection box on LHS [3] | Connection box bottom [3] |
| | | **4** | **5** | **6** | **7** |
| **1LE1002-1A...-...❑-Z F90** | **100 L** | □ | ✓ | ✓ | ✓ |
| **1LE1002-1B...-...❑-Z F90** | **112 M** | □ | ✓ | ✓ | ✓ |
| **1LE1002-1C...-...❑-Z F90** | **132 S/M** | □ | ✓ | ✓ | ✓ |
| **1LE1002-1D...-...❑-Z F90** | **160 M/L** | □ | ✓ | ✓ | ✓ |

□ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, cast feet as standard. Screwed-on feet are available with order code **H01**, see "Special versions".

[3] With type of construction, screwed-on feet as standard.

## Forced-air cooled motors without external fan and fan cover with high efficiency



### Selection and ordering data (continued)

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. with -Z and order code | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see table from Page 1/44. | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | EFF | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 3 | 3.45 | 100 L | 2905 | 9.9 | EFF1 | 86.7 | 87.5 | 0.84 | 5.9 | **1LE1001-1AA4❑-❑❑❑❑-Z F90** | | 21 |
| 4 | 4.6 | 112 M | 2950 | 13 | EFF1 | 88 | 88.5 | 0.86 | 7.4 | **1LE1001-1BA2❑-❑❑❑❑-Z F90** | | 27 |
| 5.5 | 6.3 | 132 S | 2950 | 18 | EFF1 | 89.5 | 90.6 | 0.87 | 10.2 | **1LE1001-1CA0❑-❑❑❑❑-Z F90** | | 39 |
| 7.5 | 8.6 | 132 S | 2950 | 24 | EFF1 | 90 | 91 | 0.87 | 13.8 | **1LE1001-1CA1❑-❑❑❑❑-Z F90** | | 43 |
| 11 | 12.6 | 160 M | 2955 | 36 | EFF1 | 90.8 | 91 | 0.87 | 20 | **1LE1001-1DA2❑-❑❑❑❑-Z F90** | | 67 |
| 15 | 17.3 | 160 M | 2955 | 48 | EFF1 | 91.4 | 91.5 | 0.88 | 27 | **1LE1001-1DA3❑-❑❑❑❑-Z F90** | | 75 |
| 18.5 | 21.3 | 160 L | 2955 | 60 | EFF1 | 92 | 92.5 | 0.88 | 33 | **1LE1001-1DA4❑-❑❑❑❑-Z F90** | | 84 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 2.2 | 2.55 | 100 L | 1455 | 14 | EFF1 | 86.4 | 87 | 0.81 | 4.55 | **1LE1001-1AB4❑-❑❑❑❑-Z F90** | | 21 |
| 3 | 3.45 | 100 L | 1455 | 20 | EFF1 | 87.4 | 88 | 0.82 | 6 | **1LE1001-1AB5❑-❑❑❑❑-Z F90** | | 25 |
| 4 | 4.6 | 112 M | 1460 | 26 | EFF1 | 88.3 | 88.5 | 0.81 | 8.1 | **1LE1001-1BB2❑-❑❑❑❑-Z F90** | | 29 |
| 5.5 | 6.3 | 132 S | 1465 | 36 | EFF1 | 89.2 | 89.5 | 0.80 | 11.2 | **1LE1001-1CB0❑-❑❑❑❑-Z F90** | | 42 |
| 7.5 | 8.6 | 132 M | 1465 | 49 | EFF1 | 90.1 | 91 | 0.83 | 14.4 | **1LE1001-1CB2❑-❑❑❑❑-Z F90** | | 49 |
| 11 | 12.6 | 160 M | 1470 | 71 | EFF1 | 91.2 | 91.8 | 0.85 | 20.5 | **1LE1001-1DB2❑-❑❑❑❑-Z F90** | | 71 |
| 15 | 17.3 | 160 L | 1475 | 97 | EFF1 | 92 | 92.4 | 0.85 | 27.5 | **1LE1001-1DB4❑-❑❑❑❑-Z F90** | | 83 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 1.5 | 1.75 | 100 L | 970 | 15 | | 84.5 | 84.5 | 0.73 | 3.5 | **1LE1001-1AC4❑-❑❑❑❑-Z F90** | | 25 |
| 2.2 | 2.55 | 112 M | 965 | 22 | | 85 | 85 | 0.75 | 5 | **1LE1001-1BC2❑-❑❑❑❑-Z F90** | | 29 |
| 3 | 3.45 | 132 S | 970 | 30 | | 85 | 85 | 0.74 | 6.9 | **1LE1001-1CC0❑-❑❑❑❑-Z F90** | | 38 |
| 4 | 4.6 | 132 M | 970 | 39 | | 86 | 86 | 0.78 | 8.6 | **1LE1001-1CC2❑-❑❑❑❑-Z F90** | | 43 |
| 5.5 | 6.3 | 132 M | 970 | 54 | | 88 | 88 | 0.77 | 11.8 | **1LE1001-1CC3❑-❑❑❑❑-Z F90** | | 52 |
| 7.5 | 8.6 | 160 M | 975 | 73 | | 89 | 89 | 0.77 | 15.8 | **1LE1001-1DC2❑-❑❑❑❑-Z F90** | | 77 |
| 11 | 12.6 | 160 L | 975 | 108 | | 89.5 | 89 | 0.80 | 22 | **1LE1001-1DC4❑-❑❑❑❑-Z F90** | | 93 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.75 | 0.86 | 100 L | 725 | 9.9 | | 68 | 65 | 0.58 | 2.75 | **1LE1001-1AD4❑-❑❑❑❑-Z F90** | | 21 |
| 1.1 | 1.3 | 110 L | 725 | 14 | | 68 | 64.5 | 0.58 | 4.05 | **1LE1001-1AD5❑-❑❑❑❑-Z F90** | | 25 |
| 1.5 | 1.75 | 112 M | 720 | 20 | | 77 | 75.5 | 0.67 | 4.2 | **1LE1001-1BD2❑-❑❑❑❑-Z F90** | | 29 |
| 2.2 | 2.55 | 132 S | 725 | 29 | | 77.5 | 76.7 | 0.63 | 6.5 | **1LE1001-1CD0❑-❑❑❑❑-Z F90** | | 41 |
| 3 | 3.45 | 132 M | 730 | 40 | | 84 | 82 | 0.65 | 7.9 | **1LE1001-1CD2❑-❑❑❑❑-Z F90** | | 49 |
| 4 | 4.6 | 160 M | 730 | 52 | | 87 | 88 | 0.69 | 9.6 | **1LE1001-1DD2❑-❑❑❑❑-Z F90** | | 69 |
| 5.5 | 6.3 | 160 M | 735 | 72 | | 87.5 | 89 | 0.69 | 13.2 | **1LE1001-1DD3❑-❑❑❑❑-Z F90** | | 82 |
| 7.5 | 8.6 | 160 L | 730 | 98 | | 88 | 89 | 0.72 | 17 | **1LE1001-1DD4❑-❑❑❑❑-Z F90** | | 94 |

Order No. supplements, see from Page 1/44.

## Selection and ordering data (continued)

| Order No. with -Z and order code | Locked-rotor torque | Locked-rotor current | Breakdown torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | with direct starting as multiple of rated | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | torque | current | torque | | | | |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AA4❑-❑❑❑❑-Z F90** | 2.3 | 7 | 3.3 | 16 | 0.0044 | 67 | 79 |
| **1LE1001-1BA2❑-❑❑❑❑-Z F90** | 2.4 | 7.4 | 3.3 | 16 | 0.0092 | 69 | 81 |
| **1LE1001-1CA0❑-❑❑❑❑-Z F90** | 1.8 | 6.7 | 2.9 | 16 | 0.02012 | 68 | 80 |
| **1LE1001-1CA1❑-❑❑❑❑-Z F90** | 2.2 | 7.5 | 3.1 | 16 | 0.02353 | 68 | 80 |
| **1LE1001-1DA2❑-❑❑❑❑-Z F90** | 2.1 | 7.4 | 3.2 | 16 | 0.04471 | 70 | 82 |
| **1LE1001-1DA3❑-❑❑❑❑-Z F90** | 2.4 | 7.6 | 3.4 | 16 | 0.05277 | 70 | 82 |
| **1LE1001-1DA4❑-❑❑❑❑-Z F90** | 2.9 | 7.9 | 3.6 | 16 | 0.06085 | 70 | 82 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AB4❑-❑❑❑❑-Z F90** | 2.1 | 6.9 | 3.3 | 16 | 0.0086 | 60 | 72 |
| **1LE1001-1AB5❑-❑❑❑❑-Z F90** | 2 | 6.9 | 3.1 | 16 | 0.0109 | 60 | 72 |
| **1LE1001-1BB2❑-❑❑❑❑-Z F90** | 2.5 | 7.1 | 3.2 | 16 | 0.014 | 58 | 70 |
| **1LE1001-1CB0❑-❑❑❑❑-Z F90** | 2.3 | 6.9 | 2.9 | 16 | 0.02698 | 64 | 76 |
| **1LE1001-1CB2❑-❑❑❑❑-Z F90** | 2.3 | 6.9 | 2.9 | 16 | 0.03353 | 64 | 76 |
| **1LE1001-1DB2❑-❑❑❑❑-Z F90** | 2.2 | 6.7 | 2.8 | 16 | 0.06495 | 65 | 77 |
| **1LE1001-1DB4❑-❑❑❑❑-Z F90** | 2.5 | 7.3 | 3 | 16 | 0.08281 | 65 | 77 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AC4❑-❑❑❑❑-Z F90** | 2 | 6.2 | 2.9 | 16 | 0.0113 | 59 | 71 |
| **1LE1001-1BC2❑-❑❑❑❑-Z F90** | 2.1 | 6 | 3.1 | 16 | 0.0139 | 57 | 69 |
| **1LE1001-1CC0❑-❑❑❑❑-Z F90** | 1.6 | 5.6 | 2.6 | 13 | 0.02371 | 63 | 75 |
| **1LE1001-1CC2❑-❑❑❑❑-Z F90** | 1.6 | 5.6 | 2.5 | 13 | 0.02918 | 63 | 75 |
| **1LE1001-1CC3❑-❑❑❑❑-Z F90** | 1.9 | 6.1 | 2.8 | 16 | 0.03673 | 63 | 75 |
| **1LE1001-1DC2❑-❑❑❑❑-Z F90** | 1.8 | 6.3 | 2.8 | 16 | 0.0754 | 67 | 79 |
| **1LE1001-1DC4❑-❑❑❑❑-Z F90** | 1.7 | 6.2 | 2.7 | 16 | 0.0975 | 67 | 79 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | |
| **1LE1001-1AD4❑-❑❑❑❑-Z F90** | 1.6 | 4 | 2.8 | 13 | 0.0086 | 60 | 72 |
| **1LE1001-1AD5❑-❑❑❑❑-Z F90** | 1.8 | 4 | 2.8 | 13 | 0.0109 | 60 | 72 |
| **1LE1001-1BD2❑-❑❑❑❑-Z F90** | 1.4 | 4.2 | 2.4 | 13 | 0.014 | 63 | 75 |
| **1LE1001-1CD0❑-❑❑❑❑-Z F90** | 1.4 | 3.6 | 1.8 | 10 | 0.02698 | 63 | 75 |
| **1LE1001-1CD2❑-❑❑❑❑-Z F90** | 1.4 | 5 | 2.4 | 10 | 0.03463 | 63 | 75 |
| **1LE1001-1DD2❑-❑❑❑❑-Z F90** | 1.8 | 4.3 | 2 | 13 | 0.0649 | 63 | 75 |
| **1LE1001-1DD3❑-❑❑❑❑-Z F90** | 2.1 | 4.4 | 2.1 | 13 | 0.0828 | 63 | 75 |
| **1LE1001-1DD4❑-❑❑❑❑-Z F90** | 1.9 | 4.5 | 2.1 | 13 | 0.0982 | 63 | 75 |

## Forced-air cooled motors without external fan and fan cover with high efficiency



### Selection and ordering data (continued)

*Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard voltages | | | | Further voltages | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1LE1001-1A..❑-❑...-Z F90** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B..❑-❑...-Z F90** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C..❑-❑...-Z F90** | **132 S/M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D..❑-❑...-Z F90** | **160 M/L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Without flange | | | | | | With flange (acc. to DIN EN 50347) | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | Flange size | IM B5 [3] [4] | IM V1 without protective cover [3] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | | **F** | **G** | **H** | **J** |
| | Order No. supplement **-Z** with order code | – | – | – | – | – | – | | – | – | – | – |
| **1LE1001-1A...-❑..-Z F90** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..-Z F90** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..-Z F90** | **132 S/M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 265** | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..-Z F90** | **160 M/L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 300** | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Types of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With standard flange (acc. to DIN EN 50347) | | | | | | With standard flange (next larger standerd flange acc. to DIN EN 50347) | | | | |
| | | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 | | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 |
| | | | **K** | **L** | **M** | **N** | | | **K** | **L** | **M** | **N** |
| | Order No. supplement **-Z** with order code | | – | – | – | – | | | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** |
| **1LE1001-1A...-❑..-Z F90** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1B...-❑..-Z F90** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | | **FT 165** | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1C...-❑..-Z F90** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | | **FT 215** | ✓ | ✓ | ✓ | ✓ |
| **1LE1001-1D...-❑..-Z F90** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | | – | – | – | – | – |

❑ Standard version
✓ With extra price

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) The types of construction IM V3 and IM V1 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate.

5) The types of construction IM V19 and IM V18 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | | A | B | C | F | Z | Z |
| | Order code | | | | | Q2A | Q3A |
| 1LE1001-1A...-..❑.-Z F90 | 100 L | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1001-1B...-..❑.-Z F90 | 112 M | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1001-1C...-..❑.-Z F90 | 132 S/M | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 1LE1001-1D...-..❑.-Z F90 | 160 M/L | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |

❑ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [3] | Connection box on LHS [3] | Connection box bottom [3] |
| | | 4 | 5 | 6 | 7 |
| 1LE1001-1A ...-...❑-Z F90 | 100 L | ❑ | ✓ | ✓ | ✓ |
| 1LE1001-1B ...-...❑-Z F90 | 112 M | ❑ | ✓ | ✓ | ✓ |
| 1LE1001-1C ...-...❑-Z F90 | 132 S/M | ❑ | ✓ | ✓ | ✓ |
| 1LE1001-1D ...-...❑-Z F90 | 160 M/L | ❑ | ✓ | ✓ | ✓ |

❑ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, cast feet as standard. Screwed-on feet are available with order code **H01**, see "Special versions".

[3] With type of construction, screwed-on feet as standard.

## Self-cooled motors without external fan and fan cover with improved efficiency



### Selection and ordering data

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see from Page 1/48 | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 1.2 | | 100 L | 2830 | 4.05 | | 81.4 | | 0.92 | 2.3 | **1PC1002-1AA4❑-❑❑❑❑** | | 20 |
| 1.6 | | 112 M | 2925 | 5.2 | | 83.6 | | 0.93 | 2.95 | **1PC1002-1BA2❑-❑❑❑❑** | | 25 |
| 2.2 | | 132 S | 2910 | 7.24 | | 84 | | 0.94 | 4 | **1PC1002-1CA0❑-❑❑❑❑** | | 35 |
| 3 | | 132 S | 2920 | 9.8 | | 87 | | 0.93 | 5.35 | **1PC1002-1CA1❑-❑❑❑❑** | | 40 |
| 4.4 | | 160 M | 2830 | 15 | | 89.6 | | 0.9 | 7.9 | **1PC1002-1DA2❑-❑❑❑❑** | | 60 |
| 6 | | 160 M | 2935 | 20 | | 90 | | 0.91 | 10.6 | **1PC1002-1DA3❑-❑❑❑❑** | | 68 |
| 7.4 | | 160 L | 2930 | 24 | | 90.6 | | 0.92 | 12.9 | **1PC1002-1DA4❑-❑❑❑❑** | | 78 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.88 | | 100 L | 1420 | 5.92 | | 80.7 | | 0.88 | 1.8 | **1PC1002-1AB4❑-❑❑❑❑** | | 18 |
| 1.2 | | 100 L | 1420 | 8.06 | | 83 | | 0.89 | 2.35 | **1PC1002-1AB5❑-❑❑❑❑** | | 22 |
| 1.6 | | 112 M | 1430 | 11 | | 83.7 | | 0.89 | 3.1 | **1PC1002-1BB2❑-❑❑❑❑** | | 27 |
| 2.2 | | 132 S | 1450 | 14.53 | | 85.8 | | 0.89 | 4.15 | **1PC1002-1CB0❑-❑❑❑❑** | | 38 |
| 3 | | 132 M | 1450 | 19.8 | | 87.2 | | 0.89 | 5.58 | **1PC1002-1CB2❑-❑❑❑❑** | | 44 |
| 4.4 | | 160 M | 1460 | 29 | | 88 | | 0.88 | 8.2 | **1PC1002-1DB2❑-❑❑❑❑** | | 62 |
| 6 | | 160 L | 1460 | 39 | | 89.5 | | 0.89 | 10.9 | **1PC1002-1DB4❑-❑❑❑❑** | | 73 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.6 | | 100 L | 935 | 6.12 | | 76.1 | | 0.81 | 1.4 | **1PC1002-1AC4❑-❑❑❑❑** | | 19 |
| 0.88 | | 112 M | 930 | 9 | | 79 | | 0.82 | 1.96 | **1PC1002-1BC2❑-❑❑❑❑** | | 25 |
| 1.2 | | 132 S | 950 | 12 | | 80.7 | | 0.83 | 2.58 | **1PC1002-1CC0❑-❑❑❑❑** | | 34 |
| 1.6 | | 132 M | 950 | 16 | | 83.2 | | 0.83 | 3.35 | **1PC1002-1CC2❑-❑❑❑❑** | | 39 |
| 2.2 | | 132 M | 950 | 22.13 | | 85.1 | | 0.83 | 4.5 | **1PC1002-1CC3❑-❑❑❑❑** | | 48 |
| 3 | | 160 M | 970 | 30 | | 86.5 | | 0.81 | 6.2 | **1PC1002-1DC2❑-❑❑❑❑** | | 72 |
| 4.4 | | 160 L | 970 | 43 | | 88 | | 0.81 | 8.9 | **1PC1002-1DC4❑-❑❑❑❑** | | 92 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.3 | | 100 L | 710 | 4.05 | | 66.3 | | 0.67 | 0.97 | **1PC1002-1AD4❑-❑❑❑❑** | | 17 |
| 0.44 | | 100 L | 705 | 6 | | 71 | | 0.69 | 1.3 | **1PC1002-1AD5❑-❑❑❑❑** | | 22 |
| 0.6 | | 112 M | 695 | 8.2 | | 75.2 | | 0.72 | 1.6 | **1PC1002-1BD2❑-❑❑❑❑** | | 25 |
| 0.88 | | 132 S | 720 | 11.66 | | 80.6 | | 0.71 | 2.2 | **1PC1002-1CD0❑-❑❑❑❑** | | 37 |
| 1.2 | | 132 M | 720 | 16 | | 81.5 | | 0.72 | 2.95 | **1PC1002-1CD2❑-❑❑❑❑** | | 44 |
| 1.6 | | 160 M | 730 | 21 | | 82 | | 0.74 | 3.8 | **1PC1002-1DD2❑-❑❑❑❑** | | 60 |
| 2.2 | | 160 M | 730 | 29 | | 85 | | 0.74 | 5.1 | **1PC1002-1DD3❑-❑❑❑❑** | | 72 |
| 3 | | 160 L | 730 | 39 | | 86 | | 0.74 | 6.8 | **1PC1002-1DD4❑-❑❑❑❑** | | 91 |

Order No. supplements, see from Page 1/48.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting torque | Locked-rotor current as multiple of rated current | Breakdown torque as multiple of rated torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1PC1002-1AA4❑-❑❑❑❑** | 3 | 6 | 3 | 16 | 0.0034 | 67 | 79 |
| **1PC1002-1BA2❑-❑❑❑❑** | 2.3 | 7.2 | 3 | 13 | 0.0067 | 69 | 81 |
| **1PC1002-1CA0❑-❑❑❑❑** | 1.7 | 5.3 | 2.3 | 10 | 0.0127 | 62 | 74 |
| **1PC1002-1CA1❑-❑❑❑❑** | 2 | 6.3 | 2.8 | 13 | 0.0160 | 62 | 74 |
| **1PC1002-1DA2❑-❑❑❑❑** | 2.1 | 6.3 | 2.9 | 13 | 0.0297 | 60 | 72 |
| **1PC1002-1DA3❑-❑❑❑❑** | 2.5 | 7 | 3.1 | 16 | 0.0362 | 60 | 72 |
| **1PC1002-1DA4❑-❑❑❑❑** | 2.5 | 7 | 3.1 | 16 | 0.0439 | 60 | 72 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1PC1002-1AB4❑-❑❑❑❑** | 2 | 5.1 | 2.2 | 13 | 0.0059 | 60 | 72 |
| **1PC1002-1AB5❑-❑❑❑❑** | 2.2 | 5.4 | 2.4 | 13 | 0.0078 | 60 | 72 |
| **1PC1002-1BB2❑-❑❑❑❑** | 1.9 | 5.4 | 2.2 | 13 | 0.0102 | 58 | 70 |
| **1PC1002-1CB0❑-❑❑❑❑** | 2.2 | 5.7 | 2.6 | 13 | 0.0186 | 64 | 76 |
| **1PC1002-1CB2❑-❑❑❑❑** | 2.4 | 6.4 | 2.7 | 16 | 0.0237 | 64 | 76 |
| **1PC1002-1DB2❑-❑❑❑❑** | 2.1 | 7 | 2.8 | 13 | 0.0439 | 64 | 76 |
| **1PC1002-1DB4❑-❑❑❑❑** | 2.4 | 7.5 | 3 | 16 | 0.0562 | 64 | 76 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1PC1002-1AC4❑-❑❑❑❑** | 1.8 | 4.1 | 2 | 10 | 0.0065 | 59 | 71 |
| **1PC1002-1BC2❑-❑❑❑❑** | 2.1 | 4.2 | 2.2 | 13 | 0.0092 | 55 | 67 |
| **1PC1002-1CC0❑-❑❑❑❑** | 1.7 | 4.5 | 2.2 | 10 | 0.0167 | 63 | 75 |
| **1PC1002-1CC2❑-❑❑❑❑** | 1.9 | 4.6 | 2.2 | 13 | 0.0212 | 63 | 75 |
| **1PC1002-1CC3❑-❑❑❑❑** | 2.2 | 5 | 2.5 | 13 | 0.0274 | 63 | 75 |
| **1PC1002-1DC2❑-❑❑❑❑** | 2.1 | 6 | 2.7 | 13 | 0.0563 | 67 | 79 |
| **1PC1002-1DC4❑-❑❑❑❑** | 2.1 | 6.4 | 2.8 | 13 | 0.0780 | 67 | 79 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | |
| **1PC1002-1AD4❑-❑❑❑❑** | 1.8 | 3.3 | 2.2 | 10 | 0.0056 | 60 | 72 |
| **1PC1002-1AD5❑-❑❑❑❑** | 1.8 | 3.4 | 2.2 | 10 | 0.0078 | 60 | 72 |
| **1PC1002-1BD2❑-❑❑❑❑** | 1.7 | 3.3 | 1.9 | 10 | 0.0094 | 63 | 75 |
| **1PC1002-1CD0❑-❑❑❑❑** | 1.6 | 4.2 | 2.3 | 10 | 0.0186 | 63 | 75 |
| **1PC1002-1CD2❑-❑❑❑❑** | 1.7 | 4.2 | 2.3 | 10 | 0.0237 | 63 | 75 |
| **1PC1002-1DD2❑-❑❑❑❑** | 1.7 | 4.9 | 2.3 | 10 | 0.0439 | 63 | 75 |
| **1PC1002-1DD3❑-❑❑❑❑** | 1.5 | 5 | 2.3 | 10 | 0.0562 | 63 | 75 |
| **1PC1002-1DD4❑-❑❑❑❑** | 1.8 | 5.4 | 2.5 | 10 | 0.0772 | 63 | 75 |

## Self-cooled motors without external fan and fan cover with improved efficiency



### Selection and ordering data (continued)

*Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard voltages | | | | Further voltages | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1PC1002-1A..❑-❑...** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1B..❑-❑...** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1C..❑-❑...** | **132 S/M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1D..❑-❑...** | **160 M/L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Type of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With flange | | | | | | With flange (acc. to DIN EN 50347) | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | Flange size | IM B5 [3] [4] | IM V1 without protective cover [3] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | | **F** | **G** | **H** | **J** |
| | Order No. supplement **-Z** with order code | – | – | – | – | – | – | | – | – | – | – |
| **1PC1002-1A...-❑..** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1B...-❑..** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1C...-❑..** | **132 S/M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 265** | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1D...-❑..** | **160 M/L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 300** | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Type of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With standard flange (acc. to DIN EN 50347) | | | | | With standard flange (next larger standerd flange acc. to DIN EN 50347) | | | | | |
| | | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 | |
| | | | **K** | **L** | **M** | **N** | | **K** | **L** | **M** | **N** | |
| | Order No. supplement **-Z** with order code | | – | – | – | – | | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** | |
| **1PC1002-1A...-❑..** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | **FT 165** | ✓ | ✓ | ✓ | ✓ | |
| **1PC1002-1B...-❑..** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | **FT 165** | ✓ | ✓ | ✓ | ✓ | |
| **1PC1002-1C...-❑..** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | **FT 215** | ✓ | ✓ | ✓ | ✓ | |
| **1PC1002-1D...-❑..** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | – | – | – | – | – | |

❑ Standard version
✓ With additional charge

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) The types of construction IM V3 and IM V1 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate.

5) The types of construction IM V19 and IM V18 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | | **A** | **B** | **C** | **F** | **Z** | **Z** |
| | Order code | | | | | **Q2A** | **Q3A** |
| **1PC1002-1A...-..❑.** | **100 L** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1B...-..❑.** | **112 M** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1C...-..❑.** | **132 S/M** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1PC1002-1D...-..❑.** | **160 M/L** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |

❑ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [3] | Connection box on LHS [3] | Connection box bottom [3] |
| | | **4** | **5** | **6** | **7** |
| **1PC1002-1A...-...❑** | **100 L** | ❑ | ✓ | ✓ | ✓ |
| **1PC1002-1B...-...❑** | **112 M** | ❑ | ✓ | ✓ | ✓ |
| **1PC1002-1C...-...❑** | **132 S/M** | ❑ | ✓ | ✓ | ✓ |
| **1PC1002-1D...-...❑** | **160 M/L** | ❑ | ✓ | ✓ | ✓ |

❑ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, cast feet as standard. Screwed-on feet are available with order code **H01**, see "Special versions".

[3] With type of construction, screwed-on feet as standard.

## Self-cooled motors without external fan and fan cover with high efficiency



### Selection and ordering datal

| Rated output at | | Frame size | Operating values at rated output | | | | | | | Order No. | Price | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 Hz | 60 Hz | | Rated speed at 50 Hz | Rated torque at 50 Hz | Efficiency Class according to CEMEP | Efficiency at 50 Hz 4/4-load | Efficiency at 50 Hz 3/4-load | Power factor at 50 Hz 4/4-load | Rated current at 400 V, 50 Hz | For Order No. supplements for voltage, type of construction, motor protection and connection box, see from Page 1/52 | IM B3 type of construction | IM B3 type of construction approx. |
| $P_{rated}$ kW | $P_{rated}$ kW | FS | $n_{rated}$ rpm | $T_{rated}$ Nm | | $\eta_{rated}$ % | $\eta_{rated}$ % | $\cos\varphi_{rated}$ | $I_{rated}$ A | | | $m$ kg |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | | | | | | |
| 1.4 | | 100 L | 2920 | 4.6 | | 87.5 | | 0.88 | 2.6 | **1PC1001-1AA4❑-❑❑❑❑** | | 21 |
| 1.6 | | 112 M | 2955 | 5.2 | | 82 | | 0.9 | 3.15 | **1PC1001-1BA2❑-❑❑❑❑** | | 27 |
| 3.1 | | 132 S | 2955 | 10 | | 91 | | 0.89 | 5.5 | **1PC1001-1CA0❑-❑❑❑❑** | | 39 |
| 4.3 | | 132 S | 2955 | 14 | | 91.5 | | 0.9 | 7.5 | **1PC1001-1CA1❑-❑❑❑❑** | | 43 |
| 6.3 | | 160 M | 2955 | 20 | | 94.5 | | 0.89 | 10.8 | **1PC1001-1DA2❑-❑❑❑❑** | | 67 |
| 6.5 | | 160 M | 2960 | 21 | | 91.5 | | 0.9 | 11.4 | **1PC1001-1DA3❑-❑❑❑❑** | | 75 |
| 9 | | 160 L | 2960 | 29 | | 93.5 | | 0.91 | 15.2 | **1PC1001-1DA4❑-❑❑❑❑** | | 84 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | | | | | | |
| 1.1 | | 100 L | 1460 | 7.2 | | 86 | | 0.83 | 2.2 | **1PC1001-1AB4❑-❑❑❑❑** | | 21 |
| 1.5 | | 100 L | 1460 | 9.8 | | 86 | | 0.84 | 3 | **1PC1001-1AB5❑-❑❑❑❑** | | 25 |
| 2 | | 112 M | 1460 | 13 | | 88.5 | | 0.83 | 3.95 | **1PC1001-1BB2❑-❑❑❑❑** | | 29 |
| 2.6 | | 132 S | 1465 | 17 | | 89.5 | | 0.83 | 5.1 | **1PC1001-1CB0❑-❑❑❑❑** | | 42 |
| 4 | | 132 M | 1465 | 26 | | 89.5 | | 0.84 | 7.7 | **1PC1001-1CB2❑-❑❑❑❑** | | 49 |
| 6 | | 160 M | 1470 | 39 | | 91 | | 0.87 | 11 | **1PC1001-1DB2❑-❑❑❑❑** | | 71 |
| 6.2 | | 160 L | 1480 | 40 | | 91.5 | | 0.86 | 11.4 | **1PC1001-1DB4❑-❑❑❑❑** | | 83 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.85 | | 100 L | 960 | 8.5 | | 85 | | 0.75 | 1.92 | **1PC1001-1AC4❑-❑❑❑❑** | | 25 |
| 1.2 | | 112 M | 960 | 12 | | 83.5 | | 0.75 | 2.75 | **1PC1001-1BC2❑-❑❑❑❑** | | 29 |
| 1.5 | | 132 S | 970 | 15 | | 86.5 | | 0.77 | 3.25 | **1PC1001-1CC0❑-❑❑❑❑** | | 38 |
| 2.5 | | 132 M | 970 | 25 | | 87 | | 0.79 | 5.3 | **1PC1001-1CC2❑-❑❑❑❑** | | 43 |
| 2.7 | | 132 M | 975 | 26 | | 88 | | 0.77 | 5.8 | **1PC1001-1CC3❑-❑❑❑❑** | | 52 |
| 5 | | 160 M | 975 | 49 | | 89 | | 0.77 | 10.6 | **1PC1001-1DC2❑-❑❑❑❑** | | 77 |
| 6.5 | | 160 L | 975 | 64 | | 89.5 | | 0.8 | 13.2 | **1PC1001-1DC4❑-❑❑❑❑** | | 93 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | | | | | | |
| 0.37 | | 100 L | 730 | 4.8 | | 72.5 | | 0.58 | 1.28 | **1PC1001-1AD4❑-❑❑❑❑** | | 21 |
| 0.55 | | 100 L | 720 | 7.3 | | 73 | | 0.62 | 1.76 | **1PC1001-1AD5❑-❑❑❑❑** | | 25 |
| 0.75 | | 112 M | 720 | 9.9 | | 77.5 | | 0.66 | 2.1 | **1PC1001-1BD2❑-❑❑❑❑** | | 29 |
| 1.1 | | 132 S | 730 | 14 | | 82.5 | | 0.65 | 2.95 | **1PC1001-1CD0❑-❑❑❑❑** | | 41 |
| 1.5 | | 132 M | 730 | 20 | | 84 | | 0.68 | 3.8 | **1PC1001-1CD2❑-❑❑❑❑** | | 49 |
| 2.4 | | 160 M | 730 | 31 | | 88.5 | | 0.7 | 5.6 | **1PC1001-1DD2❑-❑❑❑❑** | | 69 |
| 3.3 | | 160 M | 730 | 43 | | 88 | | 0.7 | 7.7 | **1PC1001-1DD3❑-❑❑❑❑** | | 82 |
| 4.6 | | 160 L | 730 | 60 | | 88 | | 0.7 | 10.8 | **1PC1001-1DD4❑-❑❑❑❑** | | 94 |

Order No. supplements, see from Page 1/52.

## Selection and ordering data (continued)

| Order No. | Locked-rotor torque with direct starting torque | Locked-rotor current as multiple of rated current | Breakdown torque as multiple of rated torque | Torque class | Moment of inertia | Noise at rated output | |
|---|---|---|---|---|---|---|---|
| | | | | | | Measuring-surface sound pressure level at 50 Hz | Sound pressure level at 50 Hz |
| | $T_{LR}/T_{rated}$ | $I_{LR}/I_{rated}$ | $T_B/T_{rated}$ | CL | $J$ kgm$^2$ | $L_{pfA}$ dB(A) | $L_{WA}$ dB(A) |
| **Motor version: temperature class 155 (F), IP55 degree of protection, used acc. to temperature class 130 (B)** | | | | | | | |
| **2-pole – 3000 rpm at 50 Hz, 3600 rpm at 60 Hz** | | | | | | | |
| **1PC1001-1AA4❑-❑❑❑❑** | 2.1 | 8.3 | 3.6 | 13 | 0.0044 | 67 | 79 |
| **1PC1001-1BA2❑-❑❑❑❑** | 2.5 | 9.5 | 3.5 | 16 | 0.0092 | 69 | 81 |
| **1PC1001-1CA0❑-❑❑❑❑** | 1.9 | 7.1 | 2.9 | 13 | 0.0201 | 62 | 74 |
| **1PC1001-1CA1❑-❑❑❑❑** | 1.9 | 7.6 | 2.9 | 13 | 0.0235 | 62 | 74 |
| **1PC1001-1DA2❑-❑❑❑❑** | 1.8 | 7.1 | 3 | 10 | 0.0447 | 60 | 72 |
| **1PC1001-1DA3❑-❑❑❑❑** | 2.3 | 8.7 | 3.3 | 13 | 0.0528 | 60 | 72 |
| **1PC1001-1DA4❑-❑❑❑❑** | 2.4 | 8.7 | 3.2 | 16 | 0.0608 | 60 | 72 |
| **4-pole – 1500 rpm at 50 Hz, 1800 rpm at 60 Hz** | | | | | | | |
| **1PC1001-1AB4❑-❑❑❑❑** | 2.1 | 7.6 | 3.3 | 13 | 0.0086 | 60 | 72 |
| **1PC1001-1AB5❑-❑❑❑❑** | 2.2 | 7.8 | 3.5 | 13 | 0.0109 | 60 | 72 |
| **1PC1001-1BB2❑-❑❑❑❑** | 2.3 | 7.4 | 3.1 | 13 | 0.0140 | 58 | 70 |
| **1PC1001-1CB0❑-❑❑❑❑** | 2.2 | 7.5 | 2.8 | 13 | 0.0270 | 64 | 76 |
| **1PC1001-1CB2❑-❑❑❑❑** | 2.1 | 7.3 | 2.9 | 13 | 0.0335 | 64 | 76 |
| **1PC1001-1DB2❑-❑❑❑❑** | 1.8 | 6 | 2.5 | 10 | 0.0649 | 64 | 76 |
| **1PC1001-1DB4❑-❑❑❑❑** | 2.6 | 8.6 | 3.5 | 16 | 0.0828 | 64 | 76 |
| **6-pole – 1000 rpm at 50 Hz, 1200 rpm at 60 Hz** | | | | | | | |
| **1PC1001-1AC4❑-❑❑❑❑** | 1.7 | 5.5 | 2.6 | 10 | 0.0113 | 59 | 71 |
| **1PC1001-1BC2❑-❑❑❑❑** | 1.7 | 5.7 | 2.7 | 10 | 0.0139 | 55 | 67 |
| **1PC1001-1CC0❑-❑❑❑❑** | 1.4 | 5.5 | 2.4 | 7 | 0.0237 | 63 | 75 |
| **1PC1001-1CC2❑-❑❑❑❑** | 1.4 | 5.4 | 2.3 | 7 | 0.0292 | 63 | 75 |
| **1PC1001-1CC3❑-❑❑❑❑** | 1.9 | 6.8 | 3 | 13 | 0.0367 | 63 | 75 |
| **1PC1001-1DC2❑-❑❑❑❑** | 1.6 | 6 | 2.6 | 10 | 0.0754 | 67 | 79 |
| **1PC1001-1DC4❑-❑❑❑❑** | 1.6 | 6 | 2.6 | 10 | 0.0975 | 67 | 79 |
| **8-pole – 750 rpm at 50 Hz, 900 rpm at 60 Hz** | | | | | | | |
| **1PC1001-1AD4❑-❑❑❑❑** | 1.5 | 4.5 | 2.7 | 10 | 0.0086 | 60 | 72 |
| **1PC1001-1AD5❑-❑❑❑❑** | 1.6 | 4.4 | 2.5 | 10 | 0.0109 | 60 | 72 |
| **1PC1001-1BD2❑-❑❑❑❑** | 1.3 | 4.4 | 2.4 | 7 | 0.0140 | 63 | 75 |
| **1PC1001-1CD0❑-❑❑❑❑** | 1.2 | 4.5 | 2.1 | 7 | 0.0270 | 63 | 75 |
| **1PC1001-1CD2❑-❑❑❑❑** | 1.2 | 4.7 | 2.3 | 7 | 0.0346 | 63 | 75 |
| **1PC1001-1DD2❑-❑❑❑❑** | 1.6 | 4.4 | 1.8 | 10 | 0.0649 | 63 | 75 |
| **1PC1001-1DD3❑-❑❑❑❑** | 1.6 | 4.6 | 1.8 | 10 | 0.0828 | 63 | 75 |
| **1PC1001-1DD4❑-❑❑❑❑** | 1.5 | 4.5 | 1.8 | 10 | 0.0982 | 63 | 75 |

## Self-cooled motors without external fan and fan cover with high efficiency



### Selection and ordering data (continued)

*Order No. supplements*

| Motor type | Frame size | Positions 12 and 13: Voltages (voltage codes) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard voltages | | | | Further voltages | | | |
| | | 50 Hz | | | | 50 Hz | | | |
| | | 230 VΔ/400 VY | 400 VΔ/690 VY | 500 VY | 500 VΔ | 220 VΔ/380 VY | 380 VΔ/660 VY | 415 VY | 415 VΔ |
| | | 60 Hz | | | | Rated voltage range | | | |
| | | 460 VY | 460 VΔ | | | (210 … 230 VΔ/ 360 … 400 VY) [1] | (360 … 400 VΔ/ 625 … 695 VY) [1] | (395 … 435 VY) [1] | (395 … 435 VΔ) [1] |
| | | see "Selection and ordering data" for outputs at 60 Hz | | | | | | | |
| | | **22** | **34** | **27** | **40** | **21** | **33** | **23** | **35** |
| **1PC1001-1A..❑-❑...** | **100 L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1B..❑-❑...** | **112 M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1C..❑-❑...** | **132 S/M** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1D..❑-❑...** | **160 M/L** | ○ | ○ | ○ | ○ | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

Order other voltages with voltage code **9** in position 12, code **0** in position 13 and the corresponding order code (see "Special versions" in the "Selection and ordering data" under "Voltages", Page 1/54).

| Motor type | Frame size | Position 14: Type of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With flange | | | | | | With flange (acc. to DIN EN 50347) | | | | |
| | | IM B3 [2] [3] | IM B6 [3] | IM B7 [3] | IM B8 [3] | IM V6 [3] | IM V5 without protective cover [3] | Flange size | IM B5 [3] [4] | IM V1 without protective cover [3] | IM V3 [3] | IM B35 |
| | | **A** | **T** | **U** | **V** | **D** | **C** | | **F** | **G** | **H** | **J** |
| | Order No. supplement **-Z** with order code | – | – | – | – | – | – | | – | – | – | – |
| **1PC1001-1A...-❑..** | **100 L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1B...-❑..** | **112 M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 215** | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1C...-❑..** | **132 S/M** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 265** | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1D...-❑..** | **160 M/L** | ❑ | ❑ | ❑ | ❑ | ❑ | ❑ | **FF 300** | ✓ | ✓ | ✓ | ✓ |

| Motor type | Frame size | Position 14: Type of construction (type letter) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With standard flange (acc. to DIN EN 50347) | | | | | With standard flange (next larger standerd flange acc. to DIN EN 50347) | | | | | |
| | | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 | Flange size | IM B14 [3] [5] | IM V19 [3] | IM V18 without protective cover [3] | IM B34 | |
| | | | **K** | **L** | **M** | **N** | | **K** | **L** | **M** | **N** | |
| | Order No. supplement **-Z** with order code | | – | – | – | – | | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** | **-Z** **P01** | |
| **1PC1001-1A...-❑..** | **100 L** | **FT 130** | ✓ | ✓ | ✓ | ✓ | **FT 165** | ✓ | ✓ | ✓ | ✓ | |
| **1PC1001-1B...-❑..** | **112 M** | **FT 130** | ✓ | ✓ | ✓ | ✓ | **FT 165** | ✓ | ✓ | ✓ | ✓ | |
| **1PC1001-1C...-❑..** | **132 S/M** | **FT 165** | ✓ | ✓ | ✓ | ✓ | **FT 215** | ✓ | ✓ | ✓ | ✓ | |
| **1PC1001-1D...-❑..** | **160 M/L** | **FT 215** | ✓ | ✓ | ✓ | ✓ | – | – | – | – | – | |

❑ Standard version
✓ With additional charge

1) A rated voltage range is also specified on the rating plate.

2) The types of construction IM B6/7/8, IM V6 and IM V5 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B3 is then stamped on the rating plate.

3) The type of construction is stamped on the rating plate. When ordering with condensation drainage holes (order code **H03**), it is absolutely necessary to specify the type of construction for the exact position of the condensation drainage holes during manufacture.

4) The types of construction IM V3 and IM V1 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B5 is then stamped on the rating plate.

5) The types of construction IM V19 and IM V18 without protective cover are also possible as long as no condensation drainage holes (order code **H03**) and no stamping of these types of construction on the rating plate are required. As standard, the type of construction IM B14 is then stamped on the rating plate.

## Selection and ordering data (continued)

| Motor type | Frame size | Position 15: Motor protection (motor protection letter) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Without motor protection | Motor protection with PTC thermistors with 3 embedded temperature sensors for tripping [1] | Motor protection with PTC thermistors with 6 embedded temperature sensors for alarm and tripping [1] | Motor temperature detection with embedded temperature sensor KTY 84-130 [1] | NTC thermistors for tripping | Temperature detectors for tripping [1] |
| | | **A** | **B** | **C** | **F** | **Z** | **Z** |
| | Order code | | | | | **Q2A** | **Q3A** |
| **1PC1001-1A...-..❑.** | **100 L** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1B...-..❑.** | **112 M** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1C...-..❑.** | **132 S/M** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **1PC1001-1D...-..❑.** | **160 M/L** | ❑ | ✓ | ✓ | ✓ | ✓ | ✓ |

❑ Standard version
✓ With additional charge

| Motor type | Frame size | Position 16: Connection box (connection box code) | | | |
|---|---|---|---|---|---|
| | | Connection box top [2] | Connection box on RHS [3] | Connection box on LHS [3] | Connection box bottom [3] |
| | | **4** | **5** | **6** | **7** |
| **1PC1001-1A...-...❑** | **100 L** | ❑ | ✓ | ✓ | ✓ |
| **1PC1001-1B...-...❑** | **112 M** | ❑ | ✓ | ✓ | ✓ |
| **1PC1001-1C...-...❑** | **132 S/M** | ❑ | ✓ | ✓ | ✓ |
| **1PC1001-1D...-...❑** | **160 M/L** | ❑ | ✓ | ✓ | ✓ |

❑ Standard version
✓ With additional charge

[1] Evaluation with appropriate tripping unit (see Catalog LV 1) is recommended.

[2] With type of construction, cast feet as standard. Screwed-on feet are available with order code **H01**, see "Special versions".

[3] With type of construction, screwed-on feet as standard.

## Special versions

### Selection and ordering data

1

#### *Voltages*

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

*Not possible for General Line motors with shorter delivery time.*

For some non-standard voltages at 50 or 60 Hz, order codes are specified. They are ordered by specifying the code digit **9** for voltage in the 12th position and **0** in the 13th position of the Order No. and the appropriate order code.

| Special versions | Voltage code 12th / 13th position of the Order No. | | Additional identification code with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Self-ventilated energy-saving motors with improved efficiency**<br>**Self-ventilated energy-saving motors with high efficiency**<br>**Self-ventilated motors with increased output and improved efficiency**<br>**Self-ventilated motors with increased output and high efficiency**<br>**Forced-air cooled motors without external fan and fan cover with improved efficiency**<br>**Forced-air cooled motors without external fan and fan cover with high efficiency**<br>**Self-cooled motors without external fan and fan cover with improved efficiency**<br>**Self-cooled motors without external fan and fan cover with high efficiency** | | | | | | | | | | | | |
| | | | | | | | | | **1LE1/1PC1 (Aluminum)** | | | |
| **Voltage at 60 Hz** | | | | | | | | | | | | |
| 220 VΔ/380 VY; 50 Hz output | **9** | **0** | **M2A** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 220 VΔ/380 VY; 60 Hz output | **9** | **0** | **M1A** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 380 VΔ/660 VY; 50 Hz output | **9** | **0** | **M2B** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 380 VΔ/660 VY; 60 Hz output | **9** | **0** | **M1B** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 440 VY; 50 Hz output | **9** | **0** | **M2C** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 440 VY; 60 Hz output | **9** | **0** | **M1C** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 440 VΔ; 50 Hz output | **9** | **0** | **M2D** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 440 VΔ; 60 Hz output | **9** | **0** | **M1D** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 460 VY; 50 Hz output | **9** | **0** | **M2E** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 460 VY; 60 Hz output | **9** | **0** | **M1E** | | | | | | ○ | ○ | ○ | ○ |
| 460 VΔ; 50 Hz output | **9** | **0** | **M2F** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 460 VΔ; 60 Hz output | **9** | **0** | **M1F** | | | | | | ○ | ○ | ○ | ○ |
| 575 VY; 50 Hz output | **9** | **0** | **M2G** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 575 VY; 60 Hz output | **9** | **0** | **M1G** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 575 VΔ; 50 Hz output | **9** | **0** | **M2H** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 575 VΔ; 60 Hz output | **9** | **0** | **M1H** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Non-standard voltages and / or frequencies** | | | | | | | | | | | | |
| Non-standard winding for voltages between 200 V and 690 V (voltages outside this range are available on request) [1] | **9** | **0** | **M1Y** | | | | | | ✓ | ✓ | ✓ | ✓ |

○ Without additional charge
✓ With additional charge

[1] Plain text must be specified in the order: voltage, frequency, circuit, required rated output in kW.

### *Options*

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

*Not possible for General Line motors with shorter delivery time.*

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Self-ventilated energy-saving motors with improved efficiency**<br>**Self-ventilated energy-saving motors with high efficiency**<br>**Self-ventilated motors with increased output and improved efficiency**<br>**Self-ventilated motors with increased output and high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1 (Aluminum)** | | | |
| **Motor connection and connection box** | | | | | | | | | | |
| One cable gland, metal | **R15** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Rotation of the connection box through 90°, entry from DE | **R10** | | | | | | ○ | ○ | ○ | ○ |
| Rotation of the connection box through 90°, entry from NDE | **R11** | | | | | | ○ | ○ | ○ | ○ |
| Rotation of the connection box through 180° | **R12** | | | | | | ○ | ○ | ○ | ○ |
| Larger connection box | **R50** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Reduction piece for M cable gland in accordance with British standard, both cable entries mounted [1] | **R30** | | | | | | ✓ | ✓ | ✓ | ✓ |
| External earthing | **H04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 3 cables protruding, 0.5 m long [2)3)] | **R20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 3 cables protruding, 1.5 m long [2)3)] | **R21** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 6 cables protruding, 0.5 m long [2)] | **R22** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 6 cables protruding, 1.5 m long [2)] | **R23** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 6 cables protruding, 3 m long [2)] | **R24** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Connection box on NDE [4)] | **H08** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Windings and insulation** | | | | | | | | | | |
| Temperature class 155 (F), used acc. to 155 (F), with service factor (SF) | **N01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 155 (F), with increased output | **N02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature | **N03** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 180 (H) at rated power and max. CT 60 °C [5)] | **N11** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Increased air humidity/ temperature with 30 to 60 g water per $m^3$ of air | **N20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % | **N05** | | | | | | ✓ | ✓ | ✓ | ✓ |

For legend and footnotes, see Page 1/59.

## Special versions

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Self-ventilated energy-saving motors with improved efficiency**<br>**Self-ventilated energy-saving motors with high efficiency**<br>**Self-ventilated motors with increased output and improved efficiency**<br>**Self-ventilated motors with increased output and high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1 (Aluminum)** | | | |
| **Windings and insulation** (continued) | | | | | | | | | | |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % | **N06** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % | **N07** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % | **N08** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Increased air humidity/ temperature with 60 to 100 g water per $m^3$ of air | **N21** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 155 (F), other requirements | **Y52** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Colors and paint finish** | | | | | | | | | | |
| Special finish in RAL 7030 stone gray | | | | | | | □ | □ | □ | □ |
| Special finish in other standard RAL colors : RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005, Page 0/101 | **Y54** • and special finish RAL…. | | | | | | ✓ | ✓ | ✓ | ✓ |
| Special finish in special RAL colors: for RAL colors, see "Special finish in special RAL colors", Page 0/101 | **Y51** • and special finish RAL…. | | | | | | ✓ | ✓ | ✓ | ✓ |
| Special finish sea air resistant | **S03** | | | | | | O. R. | O. R. | O. R. | O. R. |
| Unpainted (only cast iron parts primed) | **S00** | | | | | | ○ | ○ | ○ | ○ |
| Unpainted, only primed | **S01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Modular technology – Basic versions** [6] | | | | | | | | | | |
| Mounting of separately driven fan | **F70** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Mounting of brake [7] | **F01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Mounting of 1XP8012-10 (HTL) rotary pulse encoder [8] | **G01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Mounting of 1XP8012-20 (TTL) rotary pulse encoder [8] | **G02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Modular technology – Additional versions** | | | | | | | | | | |
| Brake supply voltage 24 V DC | **F10** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Brake supply voltage 230 V AC, 50/60 Hz | **F11** | | | | | | ○ | ○ | ○ | ○ |
| Brake supply voltage 400 V AC, 50/60 Hz | **F12** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Mechanical manual brake release with lever (no locking) | **F50** | | | | | | ✓ | ✓ | ✓ | ✓ |

For legend and footnotes, see Page 1/59.

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Self-ventilated energy-saving motors with improved efficiency**<br>**Self-ventilated energy-saving motors with high efficiency**<br>**Self-ventilated motors with increased output and improved efficiency**<br>**Self-ventilated motors with increased output and high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1 (Aluminum)** | | | |
| **Special technology** [6] | | | | | | | | | | |
| Mounting of LL 861 900 220 rotary pulse encoder [8] | **G04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Mounting of HOG 9 D 1024 I rotary pulse encoder [8] | **G05** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Mounting of HOG 10 D 1024 I rotary pulse encoder [8] | **G06** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Mechanical design and degrees of protection** | | | | | | | | | | |
| Protective cover for types of construction [8] | **H00** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Screwed-on feet (instead of cast) | **H01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Radial seal on DE for flange-mounting motors with oil resistance to 0.1 bar [9] | **H23** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Low-noise version for 2-pole motors with clockwise direction of rotation | **F77** | | | | | | – | – | ✓ | ✓ |
| Low-noise version for 2-pole motors with counter-clockwise direction of rotation | **F78** | | | | | | – | – | ✓ | ✓ |
| IP65 degree of protection [10] | **H20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| IP56 degree of protection (non-heavy-sea) [11] | **H22** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Vibration-proof version | **H02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Condensation drainage holes [12] | **H03** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Non-rusting screws (externally) | **H07** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Prepared for mountings, only center hole [13] | **G40** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Prepared for mountings with D12 shaft [13] | **G41** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Prepared for mountings with D16 shaft [13] | **G42** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Protective cover for encoder (loosely enclosed – only for mountings acc. to order codes G40, G41 and G42) | **G43** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Coolant temperature and site altitude** | | | | | | | | | | |
| Coolant temperature –40 °C to +40 °C [14] | **D03** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Coolant temperature –30 °C to +40 °C [14] | **D04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Designs in accordance with standards and specifications** | | | | | | | | | | |
| Electrical according to NEMA MG1-12 [15] | **D30** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Design according to UL with "Recognition Mark" [16] | **D31** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Canadian regulations (CSA) [17] | **D40** | | | | | | ✓ | ✓ | ✓ | ✓ |
| PSE Mark Japan [18] | **D46** | | | | | | ✓ | ✓ | ✓ | – |

For legend and footnotes, see Page 1/59.

## Special versions



| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Self-ventilated energy-saving motors with improved efficiency<br>Self-ventilated energy-saving motors with high efficiency<br>Self-ventilated motors with increased output and improved efficiency<br>Self-ventilated motors with increased output and high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1 (Aluminum)** | | | |
| **Bearings and lubrication** | | | | | | | | | | |
| Measuring nipple for SPM shock pulse measurement for bearing inspection [19] | **Q01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Bearing design for increased cantilever forces | **L22** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Special bearing for DE and NDE, bearing size 63 | **L25** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Regreasing device [19] | **L23** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Located bearing at DE | **L20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Located bearing at NDE | **L21** | | | | | | ✓ | ✓ | ✓ | □ |
| **Balance and vibration quantity** | | | | | | | | | | |
| Vibration quantity A | | | | | | | □ | □ | □ | □ |
| Vibration quantity B | **L00** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Half-key balancing (standard) | | | | | | | □ | □ | □ | □ |
| Full-key balancing | **L02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Balancing without key | **L01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Shaft and rotor** | | | | | | | | | | |
| Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors | **L08** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Second standard shaft extension | **L05** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Shaft extension with standard dimensions, without featherkey way | **L04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Concentricity of shaft extension in accordance with DIN 42955 Tolerance R | **L07** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Standard shaft made of non-rusting steel | **L06** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Non-standard cylindrical shaft extension [20] | **Y55** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Heating and ventilation** | | | | | | | | | | |
| Fan cover for textile industry | **F75** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Metal external fan [21] | **F76** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Anti-condensation heaters for 230 V | **Q02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Anti-condensation heaters for 115 V | **Q03** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Sheet metal fan cover | **F74** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Rating plate and extra rating plates** | | | | | | | | | | |
| Second rating plate, loose | **M10** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Nirosta rating plate | **M11** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Extra rating plate or rating plate with deviating rating plate data | **Y80** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| Extra rating plate with identification codes | **Y82** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| Additional information on rating plate and on package label (max. of 20 characters) | **Y84** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |

For legend and footnotes, see Page 1/59.

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Self-ventilated energy-saving motors with improved efficiency**<br>**Self-ventilated energy-saving motors with high efficiency**<br>**Self-ventilated motors with increased output and improved efficiency**<br>**Self-ventilated motors with increased output and high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1 (Aluminum)** | | | |
| **Packaging, safety notes, documentation and test certificates** | | | | | | | | | | |
| Without safety and commissioning note. Customer's declaration of renouncement required. | **B00** | | | | | | ○ | ○ | ○ | ○ |
| With one safety and start-up guide per box pallet | **B01** | | | | | | ○ | ○ | ○ | ○ |
| Acceptance test certificate 3.1 in accordance with EN 10204 | **B02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Printed operating instructions English/German enclosed | **B04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Type test with heat run for horizontal motors, with acceptance | **B83** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Wire-lattice pallet | **B99** | | | | | | ○ | ○ | ○ | ○ |
| Connected in star for dispatch | **M01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Connected in delta for dispatch | **M02** | | | | | | ✓ | ✓ | ✓ | ✓ |

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

1) Not possible in combination with order code **R15** "One cable gland, metal".

2) In combination with motor protection (position 15 of the Order No.) or with option anti-condensation heater request required.

3) Not possible in combination with voltage code **22** or **34**.

4) Not possible in combination with the following order codes: **N01, N02, N03, N05, N06, N07, N08, N11.**
Use according to temperature class 155 (F) possible only.

5) Cannot be used for motors in UL version (order code **D31**). The grease lifetime specified in catalog part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease lifetime or relubrication interval is halved.

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

7) When quoting or ordering, it is necessary to provide the brake supply voltage for order codes **F10, F11** and **F12**.

8) All encoders are supplied with a protective cover as standard. The protective cover is not supplied with the combination rotary pulse encoder with separately driven fan, as, in this case, the roatry pulse encoder is installed under the fan cover.

9) Not possible for type of construction IM V3.

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

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

12) Supplied with the condensation drainage holes sealed at the drive end (DE) and non-drive end (NDE) (IP55, IP56, IP65). If condensation drainage holes are required for motors with IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to order the motors in their respective type of construction and order code **H03**, so that the condensation drainage holes can be mounted in the correct positional arrangement.

13) Motors that are prepared for additional mountings (order codes **G40, G41, G42**) are supplied without protective cover as standard. If a protective cover is requested as cover or as mechanical protection for mounting provided by the customer, it can be ordered with order code **G43**.
Not possible in combination with order code **L00**, vibration quantity level B.

14) In connection with mountings, the respective technical data must be observed; request required.

15) 1LE1 motors in EFF1 version without additional charge (standard version).

16) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.

17) The rated voltage is indicated on the rating plate without voltage range.

18) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.

19) Not possible when brake is mounted.

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

21) For 1LE1 motors with metal external fan, converter-fed operation is permitted. The metal external fan is not possible in combination with the low-noise version – order code **F77** or **F78**.

## Special versions

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

*Not possible for General Line motors with shorter delivery time.*

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Forced-air cooled motors without external fan and fan cover with improved efficiency<br>Forced-air cooled motors without external fan and fan cover with high efficiency<br>Self-cooled motors without external fan and fan cover with improved efficiency<br>Self-cooled motors without external fan and fan cover with high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1/1PC1 (Aluminum)** | | | |
| **Motor connection and connection box** | | | | | | | | | | |
| One cable gland, metal | **R15** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Rotation of the connection box through 90°, entry from DE | **R10** | | | | | | ○ | ○ | ○ | ○ |
| Rotation of the connection box through 90°, entry from NDE | **R11** | | | | | | ○ | ○ | ○ | ○ |
| Rotation of the connection box through 180° | **R12** | | | | | | ○ | ○ | ○ | ○ |
| Larger connection box | **R50** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Reduction piece for M cable gland in accordance with British standard, both cable entries mounted [1] | **R30** | | | | | | ✓ | ✓ | ✓ | ✓ |
| External earthing | **H04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 3 cables protruding, 0.5 m long [2][3] | **R20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 3 cables protruding, 1.5 m long [2][3] | **R21** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 6 cables protruding, 0.5 m long [2] | **R22** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 6 cables protruding, 1.5 m long [2] | **R23** | | | | | | ✓ | ✓ | ✓ | ✓ |
| 6 cables protruding, 3 m long [2] | **R24** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Connection box on NDE [4] | **H08** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Windings and insulation** | | | | | | | | | | |
| Temperature class 155 (F), used acc. to 155 (F), with service factor (SF) | **N01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 155 (F), with increased output | **N02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 155 (F), with increased coolant temperature | **N03** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 180 (H) at rated power and max. CT 60 °C [5] | **N11** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Increased air humidity/ temperature with 30 to 60 g water per $m^3$ of air | **N20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 45 °C, derating approx. 4 % | **N05** | | | | | | ✓ | ✓ | ✓ | ✓ |

For legend and footnotes, see Page 1/63.

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Forced-air cooled motors without external fan and fan cover with improved efficiency**<br>**Forced-air cooled motors without external fan and fan cover with high efficiency**<br>**Self-cooled motors without external fan and fan cover with improved efficiency**<br>**Self-cooled motors without external fan and fan cover with high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1/1PC1 (Aluminum)** | | | |
| **Windings and insulation** (continued) | | | | | | | | | | |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 50 °C, derating approx. 8 % | **N06** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 55 °C, derating approx. 13 % | **N07** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 130 (B), coolant temperature 60 °C, derating approx. 18 % | **N08** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Increased air humidity/ temperature with 60 to 100 g water per $m^3$ of air | **N21** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Temperature class 155 (F), used acc. to 155 (F), other requirements | **Y52** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Colors and paint finish** | | | | | | | | | | |
| Special finish in RAL 7030 stone gray | | | | | | | ◘ | ◘ | ◘ | ◘ |
| Special finish in other standard RAL colors : RAL 1002, 1013, 1015, 1019, 2003, 2004, 3000, 3007, 5007, 5009, 5010, 5012, 5015, 5017, 5018, 5019, 6011, 6019, 6021, 7000, 7001, 7004, 7011, 7016, 7022, 7031, 7032, 7033, 7035, 9001, 9002, 9005, Page 0/101 | **Y54** • and special finish RAL…. | | | | | | ✓ | ✓ | ✓ | ✓ |
| Special finish in special-RAL colors: for RAL colors, see "Special finish in special RAL colors", Page 0/101 | **Y51** • and special finish RAL…. | | | | | | ✓ | ✓ | ✓ | ✓ |
| Special finish sea air resistant | **S03** | | | | | | O. R. | O. R. | O. R. | O. R. |
| Unpainted (only cast iron parts primed) | **S00** | | | | | | ○ | ○ | ○ | ○ |
| Unpainted, only primed | **S01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Mechanical design and degree of protection** | | | | | | | | | | |
| Screwed-on feet (instead of cast) | **H01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Radial seal on DE for flange-mounting motors with oil resistance to 0.1 bar [6] | **H23** | | | | | | ✓ | ✓ | ✓ | ✓ |
| IP65 degree of protection | **H20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| IP56 degree of protection (non-heavy-sea) | **H22** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Vibration-proof version | **H02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Condensation drainage holes [7] | **H03** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Non-rusting screws (externally) | **H07** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Coolant temperature and site altitude** | | | | | | | | | | |
| Coolant temperature –40 °C to +40 °C | **D03** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Coolant temperature –30 °C to +40 °C | **D04** | | | | | | ✓ | ✓ | ✓ | ✓ |

For legend and footnotes, see Page 1/63.

## Special versions

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Forced-air cooled motors without external fan and fan cover with improved efficiency<br>Forced-air cooled motors without external fan and fan cover with high efficiency<br>Self-cooled motors without external fan and fan cover with improved efficiency<br>Self-cooled motors without external fan and fan cover with high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1/1PC1 (Aluminum)** | | | |
| **Designs in accordance with standards and specifications** | | | | | | | | | | |
| Electrical according to NEMA MG1-12 [8] | **D30** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Design according to UL with "Recognition Mark" [9] | **D31** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Canadian regulations (CSA) [10] | **D40** | | | | | | ✓ | ✓ | ✓ | ✓ |
| PSE Mark Japan [11] | **D46** | | | | | | ✓ | ✓ | ✓ | – |
| **Bearings and lubrication** | | | | | | | | | | |
| Measuring nipple for SPM shock pulse measurement for bearing inspection | **Q01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Bearing design for increased canteliver forces | **L22** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Special bearing for DE and NDE, bearing size 63 | **L25** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Regreasing device | **L23** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Located bearing at DE | **L20** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Located bearing at NDE | **L21** | | | | | | ✓ | ✓ | ✓ | □ |
| **Balance and vibration quantity** | | | | | | | | | | |
| Vibration quantity A | | | | | | | □ | □ | □ | □ |
| Vibration quantity B | **L00** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Half-key balancing (standard) | | | | | | | □ | □ | □ | □ |
| Full-key balancing | **L02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Balancing without key | **L01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Shaft and rotor** | | | | | | | | | | |
| Concentricity of shaft extension, coaxiality and linear movement in accordance with DIN 42955 Tolerance R for flange-mounting motors | **L08** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Shaft extension with standard dimensions, without featherkey way | **L04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Concentricity of shaft extension in accordance with DIN 42955 Tolerance R | **L07** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Standard shaft made of non-rusting steel | **L06** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Non-standard cylindrical shaft extension [12] | **Y55** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Heating and ventillation** | | | | | | | | | | |
| Anti-condensation heaters for 230 V | **Q02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Anti-condensation heaters for 115 V | **Q03** | | | | | | ✓ | ✓ | ✓ | ✓ |

For legend and footnotes, see Page 1/63.

| Special versions | Additional identification code **-Z** with order code and plain text if required | Motor type frame size | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 56 | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 |
| **Forced-air cooled motors without external fan and fan cover with improved efficiency**<br>**Forced-air cooled motors without external fan and fan cover with high efficiency**<br>**Self-cooled motors without external fan and fan cover with improved efficiency**<br>**Self-cooled motors without external fan and fan cover with high efficiency** | | | | | | | | | | |
| | | | | | | | **1LE1/1PC1 (Aluminum)** | | | |
| **Rating plate and extra rating plates** | | | | | | | | | | |
| Second rating plate, loose | **M10** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Nirosta rating plate | **M11** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Extra rating plate or rating plate with deviating rating plate data | **Y80** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| Extra rating plate with identification codes | **Y82** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| Additional information on rating plate and on package label (max. of 20 characters) | **Y84** • and identification code | | | | | | ✓ | ✓ | ✓ | ✓ |
| **Packaging, safety notes, documentation and test certificates** | | | | | | | | | | |
| Without safety and commissioning note.<br>Customer's declaration of renouncement required. | **B00** | | | | | | ○ | ○ | ○ | ○ |
| With one safety and start-up guide per box pallet | **B01** | | | | | | ○ | ○ | ○ | ○ |
| Acceptance test certificate 3.1 in accordance with EN 10204 | **B02** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Printed operating instructions English/German enclosed | **B04** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Type test with heat run for horizontal motors, with acceptance | **B83** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Wire-lattice pallet | **B99** | | | | | | ○ | ○ | ○ | ○ |
| Connected in star for dispatch | **M01** | | | | | | ✓ | ✓ | ✓ | ✓ |
| Connected in delta for dispatch | **M02** | | | | | | ✓ | ✓ | ✓ | ✓ |

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

1) Not possible in combination with order code **R15** "One cable gland, metal".

2) In combination with motor protection (position 15 of the Order No.) or with option anti-condensation heater request required.

3) Not possible in combination with voltage code **22** or **34**.

4) Not possible in combination with the following order codes: **N01, N02, N03, N05, N06, N07, N08, N11.**
Use according to temperature class 155 (F) possible only.

5) Cannot be used for motors in UL version (order code **D31**). The grease lifetime specified in catalog part 0 "Introduction" refers to CT 40 °C. When the coolant temperature rises by 10 K, the grease lifetime or relubrication interval is halved.

6) Not possible for type of construction IM V3.

7) Supplied with the condensation drainage holes sealed at the drive end (DE) and non-drive end (NDE) (IP55, IP56, IP65). If condensation drainage holes are required for motors with IM B6, IM B7 or IM B8 type of construction (feet located on side or top), it is necessary to order the motors in their respective type of construction and order code **H03**, so that the condensation drainage holes can be mounted in the correct positional arrangement.

8) 1LE1 motors in EFF1 version without additional charge (standard version).

9) Possible up to 600 V max. The rated voltage is indicated on the rating plate without voltage range.

10) The rated voltage is indicated on the rating plate without voltage range.

11) "Small power motors" with a rated output of up to 3 kW which are exported to Japan must bear the PSE marking.

12) When motors are ordered that have a longer or shorter shaft extension than normal, the required position and length of the featherkey way must be specified in a sketch. It must be ensured that only featherkeys in accordance with DIN 6885, Form A are permitted to be used. The featherkey way is positioned centrally on the shaft extension. The length is defined by the manufacturer normatively. Not valid for: Conical shafts, non-standard threaded journals, non-standard shaft tolerances, friction welded journals, extremely "thin" shafts, special geometry dimensions (e.g. square journals), hollow shafts. Valid for non-standard shaft extensions DE or NDE. The featherkeys are supplied in every case. For order code **Y55**:
- Dimensions D and DA ≤ internal diameter of roller bearing (see dimesnion tables under "Dimensions")
- Dimensions E and EA ≤ 2 x length E (normal) of the shaft extension

For an explanation of the order codes, see catalog part 0 "Introduction".

## Accessories



### Overview

#### *Couplings*

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

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

or

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

http://www.flender.com
e-mail: couplings@flender.com

#### *Mounting of encoder*

In the case of mounting by the customer.

Baumer Hübner GmbH
Planufer 92b
10967 Berlin, Germany
Tel. +49 (0) 30-690 03-0
Fax +49 (0) 30-690 03-104

http://www.baumerhuebner.com
e-mail: info@baumerhuebner.com

Leine & Linde (Deutschland) GmbH
Bahnhofstraße 36
73430 Aalen, Germany
Tel. +49 (0) 7361-78 093-0
Fax +49 (0) 7361-78 093-11

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

### More information

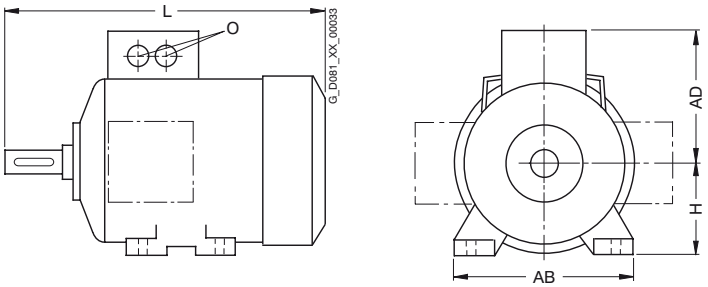
#### *Spare motors and repair parts*

- Supply commitment for spare motors and repair parts following delivery of the motor
  - For up to 5 years, in the event of total motor failure, Siemens will supply a comparable motor with regard to the mounting dimensions and functions (the type series may vary).
  - Repair parts will be supplied for up to 5 years.
  - For up to 10 years, Siemens will provide information and will, if necessary, supply documentation for repair parts.
- When repair parts are ordered, the following details must be provided:
  - Designation and part number
  - Order No. and factory number of the motor
- For bearing types, see the „Orientation”, “Technical data”, Page 0/124.
- For standard components, a supply commitment does not apply.
- Support – Hotline
  In Germany
  Tel.: 01 80 – 5 05 04 48

You will find telephone numbers for other countries on our Internet site:
http://www.siemens.com/automation/service&support

## Overview

### *Overall dimensions*




| Frame size | Type | Number of poles | Dimensions L | AD | H | AB | O |
|---|---|---|---|---|---|---|---|
| 100 L | General Line motors with shorter delivery time | | 395.5 [1] | 166 | 100 | 196 | 2 x M32 x1.5 |
| | Self-ventilated energy-saving motors with improved/high efficiency | | 395.5 [1] | 166 | 100 | 196 | 2 x M32 x1.5 |
| | Self-ventilated motors with increased output and improved/high efficiency | | 430.5 [1] | 166 | 100 | 196 | 2 x M32 x1.5 |
| | Forced-air-cooled motors without external fan and fan cover with improved/high efficiency | | 321.5 | 166 | 100 | 196 | 2 x M32 x1.5 |
| | Self-cooled motors without external fan and fan cover with improved/high efficiency | | 321.5 | 166 | 100 | 196 | 2 x M32 x1.5 |
| 112 M | General Line motors with shorter delivery time | | 389 [1] | 177 | 112 | 226 | 2 x M32 x1.5 |
| | Self-ventilated energy-saving motors with improved/high efficiency | | 389 [1] | 177 | 112 | 226 | 2 x M32 x1.5 |
| | Self-ventilated motors with increased output and improved/high efficiency | | 414 [1] | 177 | 112 | 226 | 2 x M32 x1.5 |
| | Forced-air-cooled motors without external fan and fan cover with improved/high efficiency | | 311 | 177 | 112 | 226 | 2 x M32 x1.5 |
| | Self-cooled motors without external fan and fan cover with improved/high efficiency | | 311 | 177 | 112 | 226 | 2 x M32 x1.5 |

| Frame size | Type | Number of poles | Dimensions L | AD | H | AB | O |
|---|---|---|---|---|---|---|---|
| 132 S/ 132 M | General Line motors with shorter delivery time | | 465 [1] | 202 | 132 | 256 | 2 x M32 x 1.5 |
| | Self-ventilated energy-saving motors with improved/high efficiency | | 465 [1] | 202 | 132 | 256 | 2 x M32 x 1.5 |
| | Self-ventilated motors with increased output and improved/high efficiency | | 515 [1] | 202 | 132 | 256 | 2 x M32 x 1.5 |
| | Forced-air-cooled motors without external fan and fan cover with improved/high efficiency | | 380.5 | 202 | 132 | 256 | 2 x M32 x 1.5 |
| | Self-cooled motors without external fan and fan cover with improved/high efficiency | | 380.5 | 202 | 132 | 256 | 2 x M32 x 1.5 |
| 160 M/ 160 L | General Line motors with shorter delivery time | | 604 [1] | 236.5 | 160 | 300 | 2 x M40 x 1.5 |
| | Self-ventilated energy-saving motors with improved/high efficiency | | 604 [1] | 236.5 | 160 | 300 | 2 x M40 x 1.5 |
| | Self-ventilated motors with increased output and improved/high efficiency | | 664 [1] | 236.5 | 160 | 300 | 2 x M40 x 1.5 |
| | Forced-air-cooled motors without external fan and fan cover with improved/high efficiency | | 510 | 236.5 | 160 | 300 | 2 x M40 x 1.5 |
| | Self-cooled motors without external fan and fan cover with improved/high efficiency | | 510 | 236.5 | 160 | 300 | 2 x M40 x 1.5 |

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

## Dimensions



### Overview (continued)

*Notes on the dimensions*

- Dimension drawings according to DIN EN 50347 and IEC 60072.
- Fits

The shaft extensions specified in the dimension tables (DIN 748) and centering spigot diameters (DIN EN 50347) are machined with the following fits:

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

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

- Dimension tolerances

For the following dimensions, the admissible deviations are given below:

| Dimension designation | Dimensions | Admissible deviation |
|---|---|---|
| H | up to 250 | –0.5 |
| | over 250 | –1.0 |
| E, EA | | –0.5 |

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

- All dimensions are specified in mm.

## More information

### *SD configurator*

**SD configurator (on DVD of the interactive catalog CA01 "Products for Automation and Drives")**


The interactive Catalog CA 01 contains over 100 000 products with approximately 5 million potential drive system product variants.

The **SD configurator** has been developed to facilitate selection of the correct motor and/or converter from the wide spectrum of A&D SD products. It is integrated as a "selection aid" in this catalog.

The **SD configurator** makes it easier to find the right drive solution. It supplies the correct order number as well as the corresponding documentation.

It can display operating instructions, factory test certificate, terminal box documentation, etc. and generates data sheets, dimension drawings and a start-up calculation for the relevant products.

It is also easy to assign a suitable converter to the selected motor.

The extensive help function not only explains the program functions, it also contains extensive technical background material.

**SD configurator product range:**
Low-voltage motors (energy-saving motors) with corresponding documentation and dimension drawings, low-voltage converters of the MICROMASTER 4 product series, SINAMICS G110 and SINAMICS G120 inverter chassis units as well as SINAMICS G120D distributed frequency inverters, and SIMATIC ET 200S FC and SIMATIC ET 200pro FC frequency converters for distributed I/O.

The interactive CA 01 catalog can be ordered from your local Siemens sales representative or on the Internet at http://www.siemens.com/automation/CA01

Links to tips, tricks and downloads for functional or content updates can be found at this address.

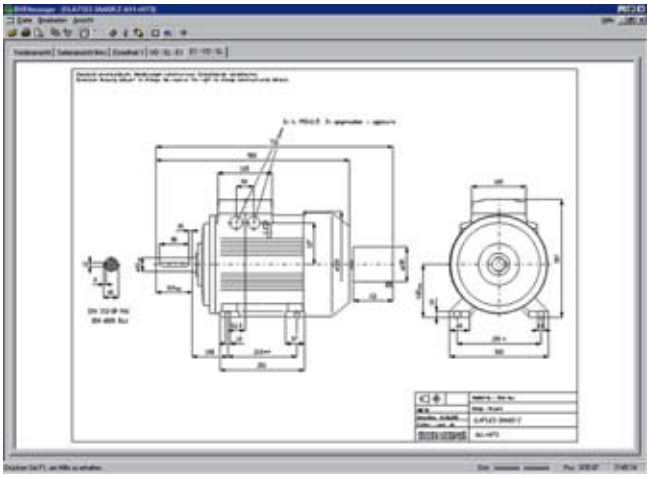
Order No. for CA 01, English International:
DVD: **E86060-D4001-A510-C7-7600**

*Note: The SD configurator offline tool within CA 01 can be updated for the new 1LE1 motor series online over the Internet.*

### *Dimension sheet generator*

(part of the SD configurator)

A dimension drawing can be created in the SD configurator for every configurable motor. A dimension drawing can be requested for every other motor.



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

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

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

The SD configurator has been integrated into the CA 01 electronic catalog as a selection aid (for further information, see above).

The interactive CA 01 catalog can be ordered from your local Siemens sales representative or on the Internet at http://www.siemens.com/automation/CA01.

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

Order No. for CA 01, English International
DVD: **E86060-D4001-A510-C7-7600**

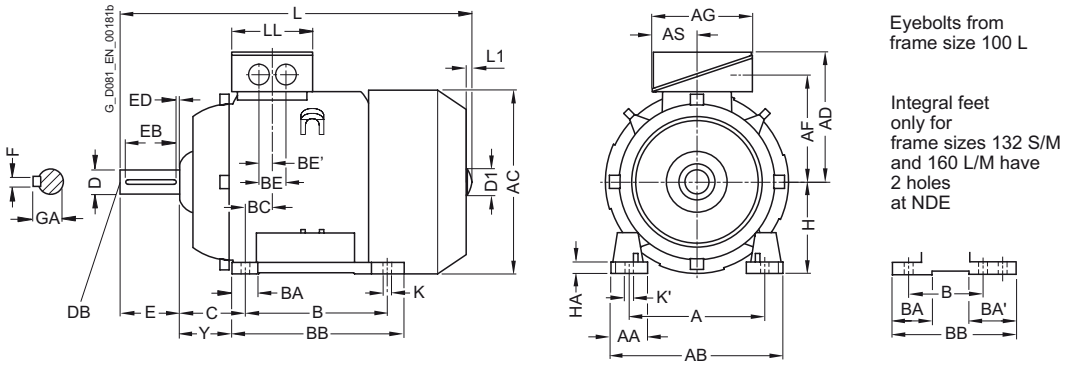
*Note:*
*The SD configurator offline tool within CA01 can be updated for the new 1LE1 motor series online over the Internet.*

## Dimensions

### Dimensional drawings

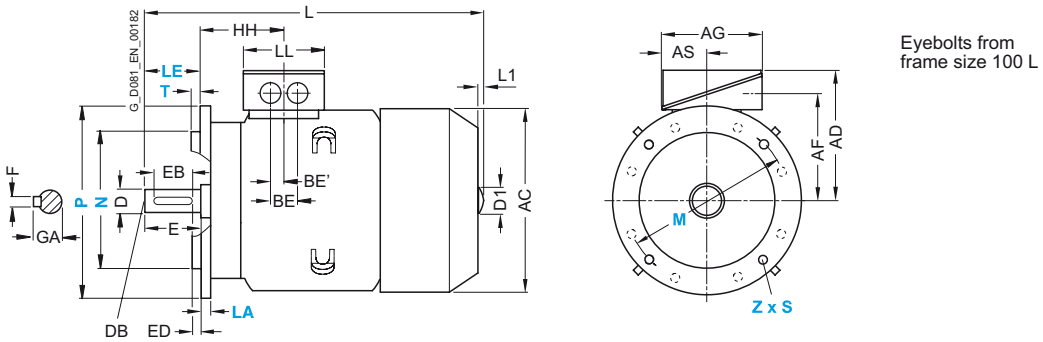
*Aluminum series 1LE1, frame sizes 100 to 160 – General Line motors with shorter delivery time*

**Type of construction IM B3**




**Types of construction IM B5 and IM V1**

For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




| For motor | | Dimension designation acc. to **IEC** | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame size | Number of poles | A | AA | AB | AC | AD | AF | AG | AS | B* | BA | BA' | BB | BC | BE | BE' | C | H | HA | Y[1)] |
| 100 L | 2, 4, 6, 8 | 160 | 42 | 196 | 198 | 166 | 125.5 | 135 | 63.5 | 140 | 37.5 | – | 176 | 33.5 | 50 | 25 | 63 | 100 | 12 | 45 |
| 112 M | 2, 4, 6, 8 | 190 | 46 | 226 | 222 | 177 | 136.5 | 135 | 63.5 | 140 | 35.4 | – | 176 | 26 | 50 | 25 | 70 | 112 | 12 | 52 |
| 132 S | 2, 4, 6, 8 | 216 | 53 | 256 | 262 | 202 | 159.5 | 155 | 70.5 | 140 | 38 | 76 | 218 | 26.5 | 48 | 24 | 89 | 132 | 15 | 69 |
| 132 M | 2, 4, 6, 8 | 216 | 53 | 256 | 262 | 202 | 159.5 | 155 | 70.5 | 178 | 38 | 76 | 218 | 26.5 | 48 | 24 | 89 | 132 | 15 | 69 |
| 160 M | 2, 4, 6, 8 | 254 | 60 | 300 | 314 | 236.5 | 190 | 175 | 77.5 | 210 | 44 | 89 | 300 | 47 | 57 | 28.5 | 108 | 160 | 18 | 85 |
| 160 L | 2, 4, 6, 8 | 254 | 60 | 300 | 314 | 236.5 | 190 | 175 | 77.5 | 254 | 44 | 89 | 300 | 47 | 57 | 28.5 | 108 | 160 | 18 | 85 |

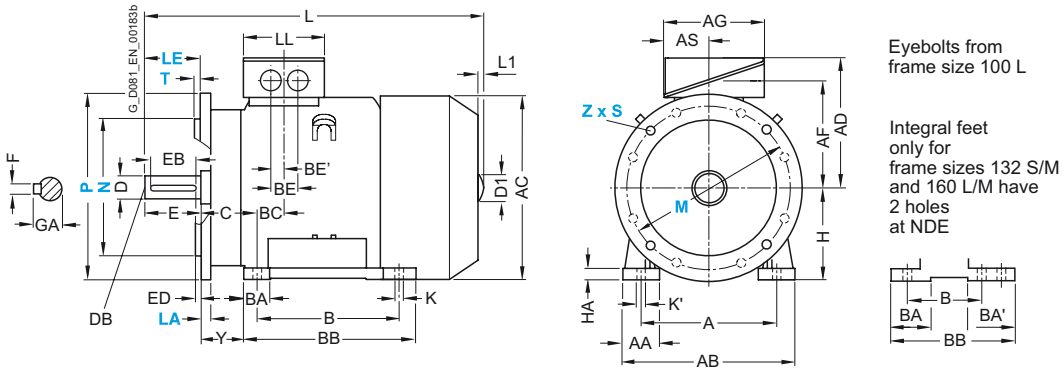
* This dimension is assigned in DIN EN 50347 to the frame size listed.

1) Additional information: not a standard dimension acc. to DIN 50347.

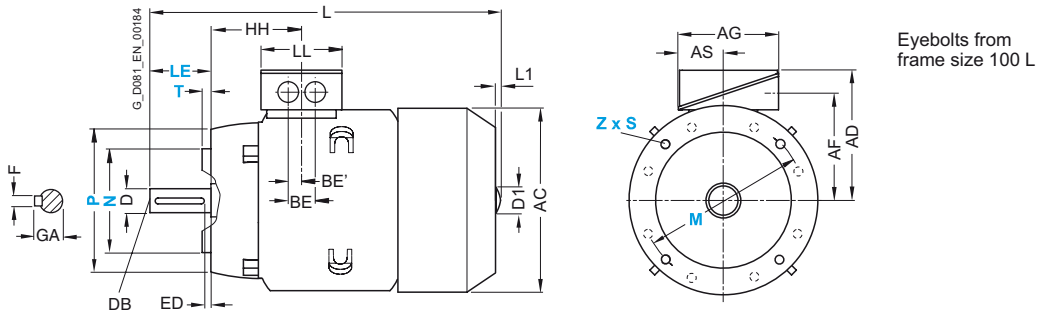
## Dimensional drawings (continued)

*Aluminum series 1LE1, frame sizes 100 to 160 – General Line motors with shorter delivery time*

**Type of construction IM B35**
For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




**Type of construction IM B14**
For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




| For motor | | Dimension designation acc. to **IEC** | | | | | | | DE shaft extension | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame size | Number of poles | HH | K | K' | L [1] | L1 | D1 | LL | D | DB | E | EB | ED | F | GA |
| 100 L | 2, 4, 6, 8 | 96.5 | 12 | 16 | 395.5 | 7 | 32 | 112 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| 112 M | 2, 4, 6, 8 | 96 | 12 | 16 | 389 | 7 | 32 | 112 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| 132 S | 2, 4, 6, 8 | 115.5 | 12 | 16 | 465 | 8.5 | 39 | 130 | 38 | M12 | 80 | 70 | 5 | 10 | 41 |
| 132 M | 2, 4, 6, 8 | 115.5 | 12 | 16 | 465 | 8.5 | 39 | 130 | 38 | M12 | 80 | 70 | 5 | 10 | 41 |
| 160 M | 2, 4, 6, 8 | 155 | 15 | 19 | 604 | 10 | 45 | 145 | 42 | M16 | 110 | 90 | 10 | 12 | 45 |
| 160 L | 2, 4, 6, 8 | 155 | 15 | 19 | 604 | 10 | 45 | 145 | 42 | M16 | 110 | 90 | 10 | 12 | 45 |

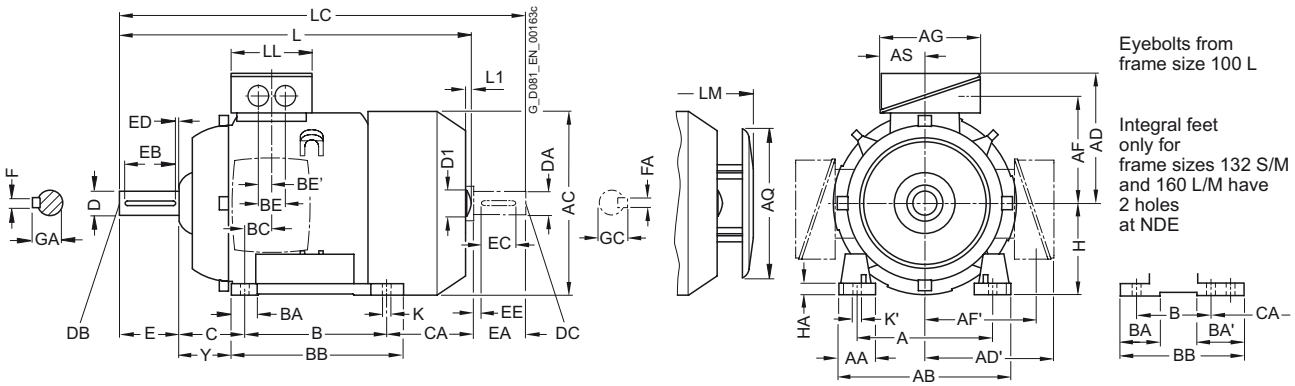
[1] The length is specified as far as the tip of the fan cover.

## Dimensions

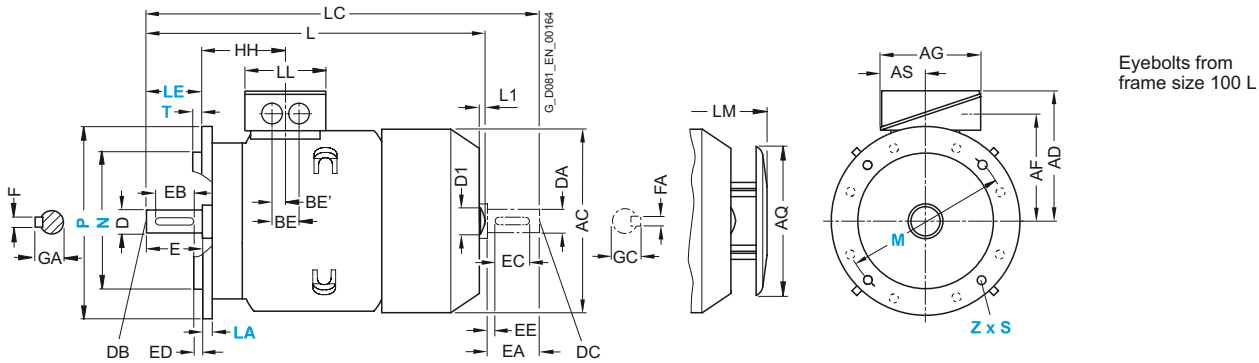
### Dimensional drawings (continued)

*Aluminum series 1LE1, frame sizes 100 to 160 – self-ventilated motors with improved/high efficiency*

**Type of construction IM B3**




**Types of construction IM B5 and IM V1**
For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




| For motor | | Dimension designation acc. to **IEC** | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame size | Number of poles | A | AA | AB | AC | AD | AD' | AF | AF' | AG | AQ | AS | B* | BA | BA' | BB | BC | BE | BE' | C | CA* | H | HA | Y[1] |
| 100 L | 2, 4, 6, 8 | 160 | 42 | 196 | 198 | 166 | 166 | 125.5 | 125.5 | 135 | 195 | 63.5 | 140 | 37.5 | – | 176 | 33.5 | 50 | 25 | 63 | 141 | 100 | 12 | 45 |
| 112 M | 2, 4, 6, 8 | 190 | 46 | 226 | 222 | 177 | 177 | 136.5 | 136.5 | 135 | 195 | 63.5 | 140 | 35.4 | – | 176 | 26 | 50 | 25 | 70 | 129.7 | 112 | 12 | 52 |
| 132 S | 2, 4, 6, 8 | 216 | 53 | 256 | 262 | 202 | 202 | 159.5 | 159.5 | 155 | 260 | 70.5 | 140 | 38 | 76 [2] | 218 [3] | 26.5 | 48 | 24 | 89 | 128.5 [4] | 132 | 15 | 69 |
| 132 M | 2, 4, 6, 8 | 216 | 53 | 256 | 262 | 202 | 202 | 159.5 | 159.5 | 155 | 260 | 70.5 | 178 | 38 | 76 | 218 | 26.5 | 48 | 24 | 89 | 128.5 [4] | 132 | 15 | 69 |
| 160 M | 2, 4, 6, 8 | 254 | 60 | 300 | 314 | 236.5 | 236.5 | 190 | 190 | 175 | 260 | 77.5 | 210 | 44 | 89 [5] | 300 [6] | 47 | 57 | 28.5 | 108 | 148 [7] | 160 | 18 | 85 |
| 160 L | 2, 4, 6, 8 | 254 | 60 | 300 | 314 | 236.5 | 236.5 | 190 | 190 | 175 | 260 | 77.5 | 254 | 44 | 89 | 300 | 47 | 57 | 28.5 | 108 | 148 [7] | 160 | 18 | 85 |

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

1) Additional information: not a standard dimension acc. to DIN 50347.

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

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

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

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

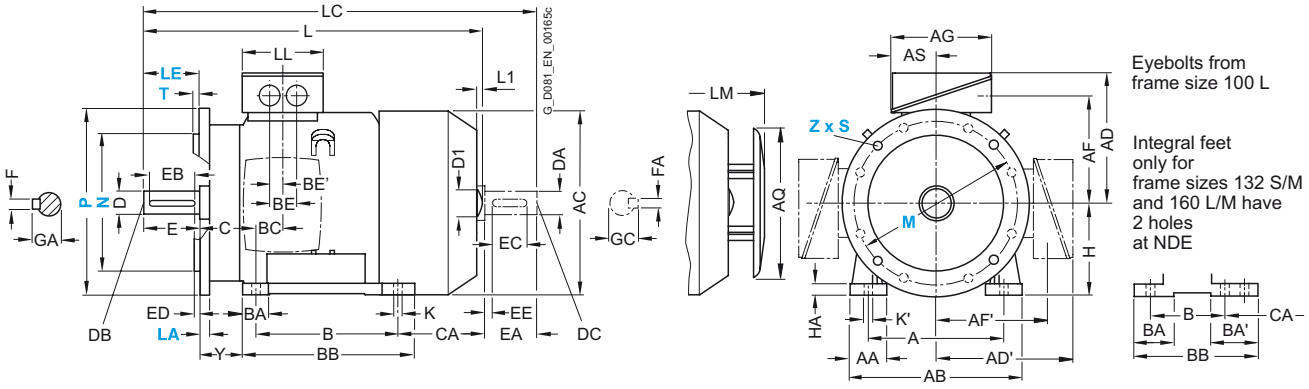
6) With screwed-on feet, dimension BB is 256 mm.

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

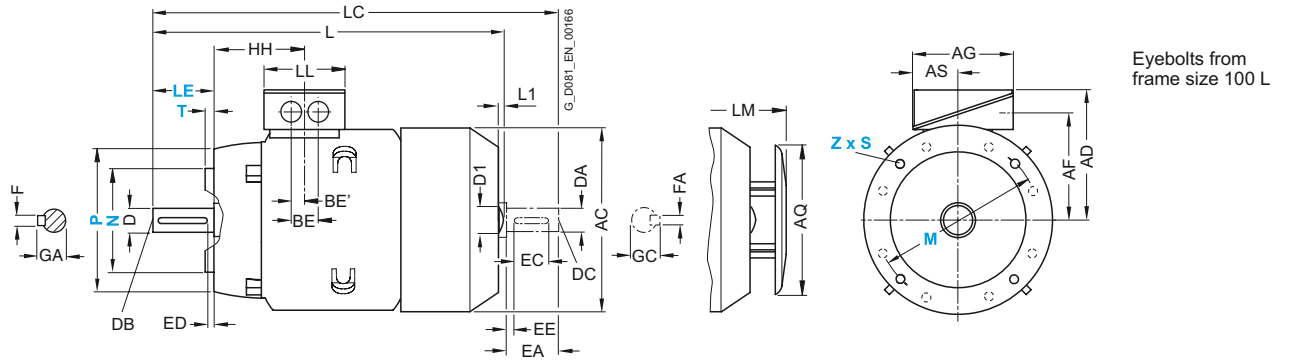
## Dimensional drawings (continued)

*Aluminum series 1LE1, frame sizes 100 to 160 – self-ventilated motors with improved/high efficiency*

**Type of construction IM B35**
For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




**Type of construction IM B14**
For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




| For motor | | Dimension designation acc. to **IEC** | | | | | | | | | DE shaft extension | | | | | | | NDE shaft extension | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame size | Number of poles | HH | K | K' | L [1)] | L1 | D1 | LC | LL | LM | D | DB | E | EB | ED | F | GA | DA | DC | EA | EC | EE | FA | GC |
| 100 L | 2, 4, 6, 8 | 96.5 | 12 | 16 | 395.5 | 7 | 32 | 454 | 112 | 428.5 | 28 | M10 | 60 | 50 | 5 | 8 | 31 | 24 | M8 | 50 | 40 | 5 | 8 | 27 |
| 112 M | 2, 4, 6, 8 | 96 | 12 | 16 | 389 | 7 | 32 | 450 | 112 | 422 | 28 | M10 | 60 | 50 | 5 | 8 | 31 | 24 | M8 | 50 | 40 | 5 | 8 | 27 |
| 132 S | 2, 4, 6, 8 | 115.5 | 12 | 16 | 465 | 8.5 | 39 | 535.5 | 130 | 500.5 | 38 | M12 | 80 | 70 | 5 | 10 | 41 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| 132 M | 2, 4, 6, 8 | 115.5 | 12 | 16 | 465 | 8.5 | 39 | 535.5 | 130 | 500.5 | 38 | M12 | 80 | 70 | 5 | 10 | 41 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| 160 M | 2, 4, 6, 8 | 155 | 15 | 19 | 604 | 10 | 45 | 730 | 145 | 638 | 42 | M16 | 110 | 90 | 10 | 12 | 45 | 42 | M16 | 110 | 90 | 10 | 12 | 45 |
| 160 L | 2, 4, 6, 8 | 155 | 15 | 19 | 604 | 10 | 45 | 730 | 145 | 638 | 42 | M16 | 110 | 90 | 10 | 12 | 45 | 42 | M16 | 110 | 90 | 10 | 12 | 45 |

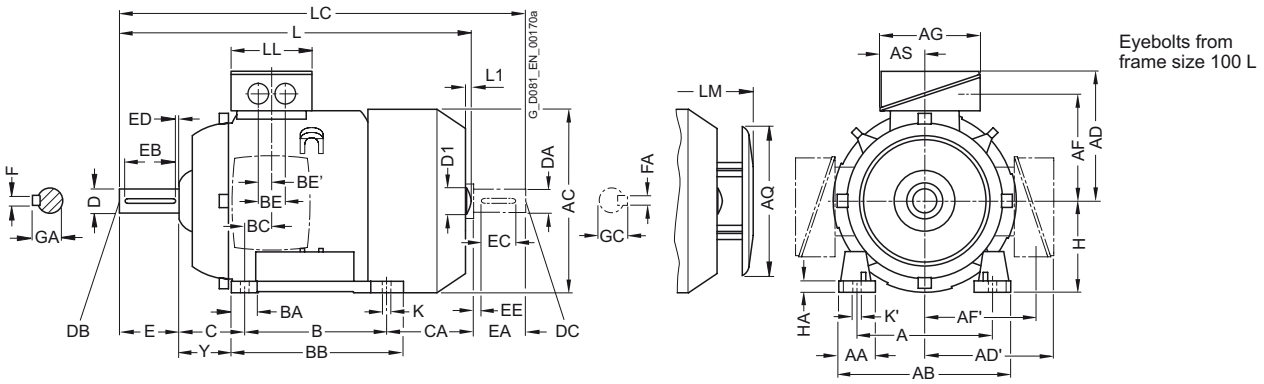
1) The length is specified as far as the tip of the fan cover.

## Dimensions

### Dimensional drawings (continued)

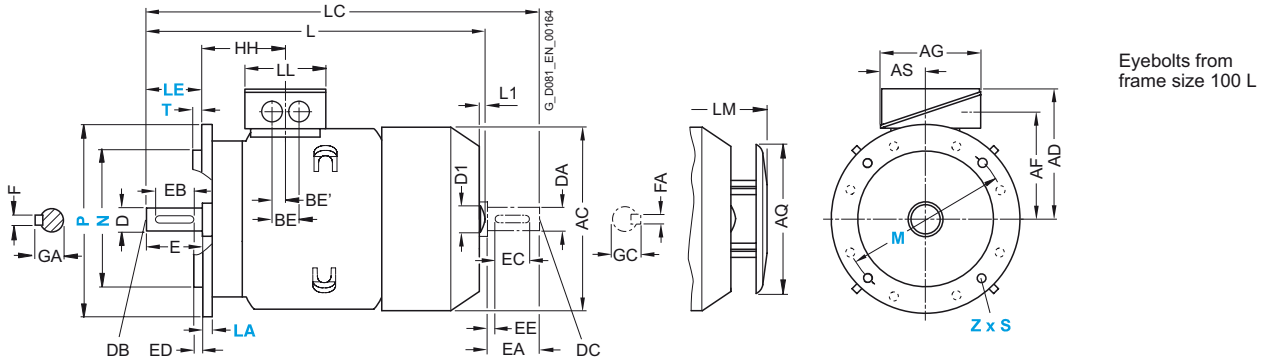
*Aluminum series 1LE1, frame sizes 100 to 160 – self-ventilated motors with increased output and improved/high efficiency*

**Type of construction IM B3**




**Type of construction IM B5 and IM V1**

For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




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

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

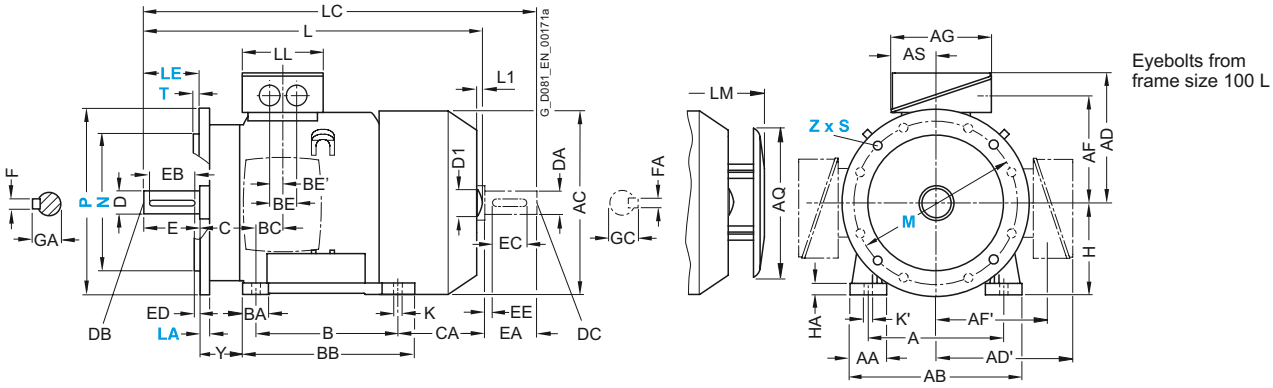
[1] Additional information: not a standard dimension acc. to DIN 50347.

## Dimensional drawings (continued)

*Aluminum series 1LE1, frame sizes 100 to 160 – self-ventilated motors with increased output and improved/high efficiency*

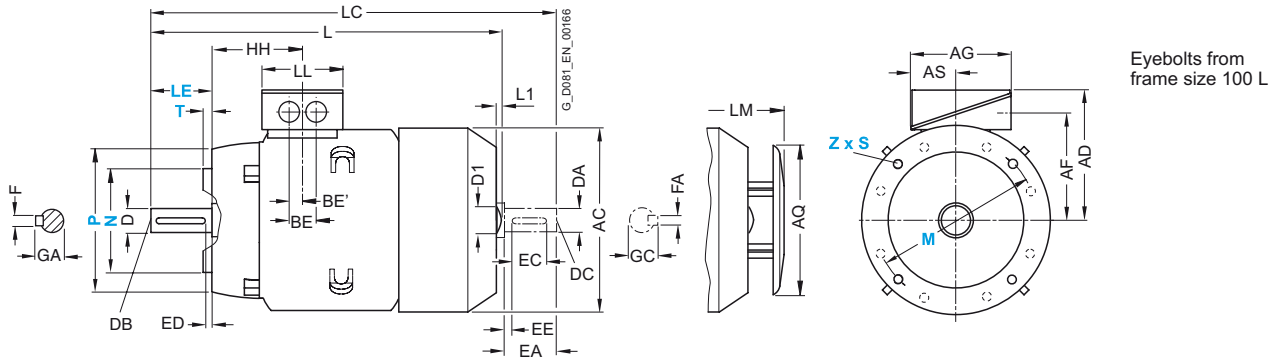
**Type of construction IM B35**

For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




**Type of construction IM B14**

For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




| For motor | | Dimension designation acc. to **IEC** | | | | | | | | | DE shaft extension | | | | | | | NDE shaft extension | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame size | Number of poles | HH | K | K' | L [1] | L1 | D1 | LC | LL | LM | D | DB | E | EB | ED | F | GA | DA | DC | EA | EC | EE | FA | GC |
| 100 L | 2, 4, 6, 8 | 96.5 | 12 | 16 | 430.5 | 7 | 32 | 489 | 112 | 463.5 | 28 | M10 | 60 | 50 | 5 | 8 | 31 | 24 | M8 | 50 | 40 | 5 | 8 | 27 |
| 112 M | 2, 4, 6, 8 | 96 | 12 | 16 | 414 | 7 | 32 | 475 | 112 | 447 | 28 | M10 | 60 | 50 | 5 | 8 | 31 | 24 | M8 | 50 | 40 | 5 | 8 | 27 |
| 132 M | 2, 4, 6, 8 | 115.5 | 12 | 16 | 515 | 8.5 | 39 | 585.5 | 130 | 550.5 | 38 | M12 | 80 | 70 | 5 | 10 | 41 | 28 | M10 | 60 | 50 | 5 | 8 | 31 |
| 160 L | 2, 4, 6, 8 | 155 | 15 | 19 | 664 | 10 | 45 | 790 | 145 | 698 | 42 | M16 | 110 | 90 | 10 | 12 | 45 | 42 | M16 | 110 | 90 | 10 | 12 | 45 |

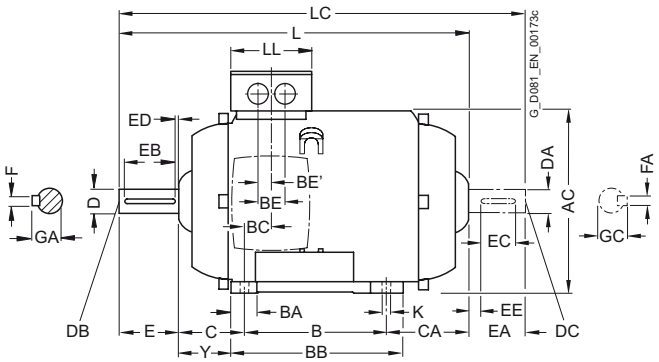
[1] The length is specified as far as the tip of the fan cover.

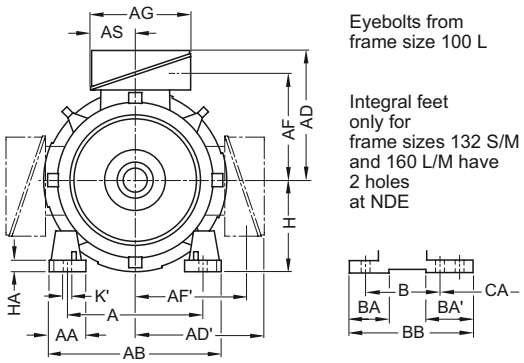
## Dimensions

### Dimensional drawings (continued)

*Aluminum series 1LE1, frame sizes 100 to 160 – forced-air cooled motors with improved/high efficiency*
*Aluminum series 1PC1, frame sizes 100 to 160 – self-cooled motors with improved/high efficiency*

**Type of construction IM B3**



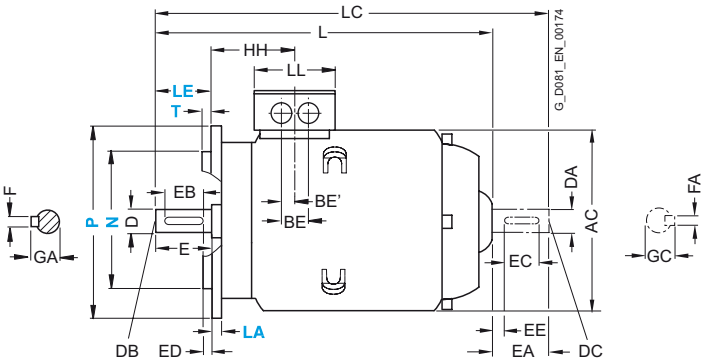



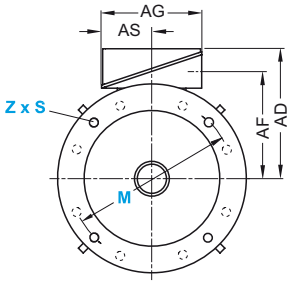

Eyebolts from frame size 100 L

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

**Type of construction IM B5 and IM V1**

For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




Eyebolts from frame size 100 L

| For motor | | Dimension designation acc. to **IEC** | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame size | Number of poles | A | AA | AB | AC | AD | AD' | AF | AF' | AG | AS | B* | BA | BA' | BB | BC | BE | BE' | C | CA* | H | HA | Y [1] |
| 100 L | 2, 4, 6, 8 | 160 | 42 | 196 | 197 | 166 | 166 | 125.5 | 125.5 | 135 | 63.5 | 140 | 37.5 | – | 176 | 33.5 | 50 | 25 | 63 | – | 100 | 12 | 45 |
| 112 M | 2, 4, 6, 8 | 190 | 46 | 226 | 221 | 177 | 177 | 136.5 | 136.5 | 135 | 63.5 | 140 | 35.4 | – | 176 | 26 | 50 | 25 | 70 | – | 112 | 12 | 52 |
| 132 S | 2, 4, 6, 8 | 216 | 53 | 256 | 261 | 202 | 202 | 159.5 | 159.5 | 155 | 70.5 | 140 | 38 | 76 [2] | 218 [3] | 26.5 | 48 | 24 | 89 | – | 132 | 15 | 69 |
| 132 M | 2, 4, 6, 8 | 216 | 53 | 256 | 261 | 202 | 202 | 159.5 | 159.5 | 155 | 70.5 | 178 | 38 | 76 | 218 | 26.5 | 48 | 24 | 89 | – | 132 | 15 | 69 |
| 160 M | 2, 4, 6, 8 | 254 | 60 | 300 | 314 | 236.5 | 236.5 | 190 | 190 | 175 | 77.5 | 210 | 44 | 89 [4] | 300 [5] | 47 | 57 | 28.5 | 108 | – | 160 | 18 | 85 |
| 160 L | 2, 4, 6, 8 | 254 | 60 | 300 | 314 | 236.5 | 236.5 | 190 | 190 | 175 | 77.5 | 254 | 44 | 89 | 300 | 47 | 57 | 28.5 | 108 | – | 160 | 18 | 85 |

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

1) Additional information: not a standard dimension acc. to DIN 50347.

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

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

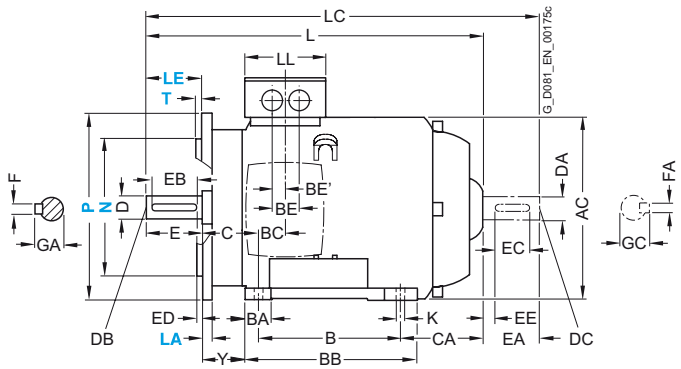
4) With screwed-on feet, dimension BA' is 44 mm.

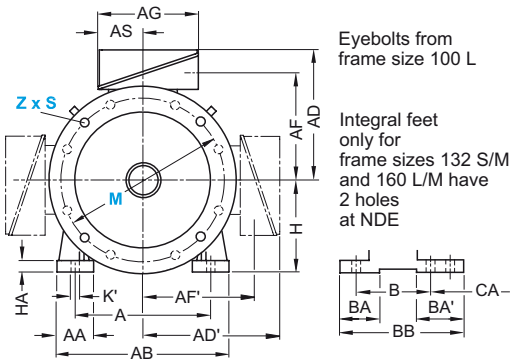
5) With screwed-on feet, dimension BB is 256 mm.

## Dimensional drawings (continued)

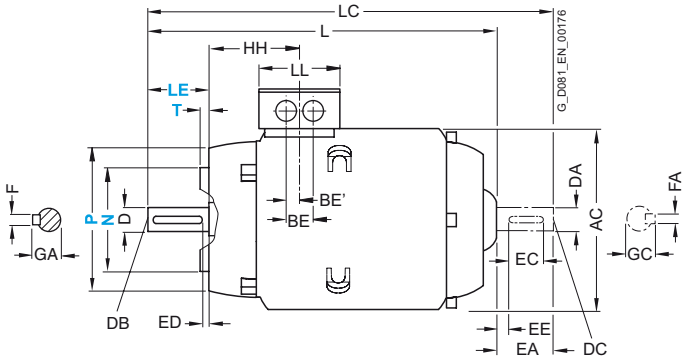
***Aluminum series 1LE1, frame sizes 100 to 160 – forced-air cooled motors with improved/high efficiency***
***Aluminum series 1PC1, frame sizes 100 to 160 – self-cooled motors with improved/high efficiency***

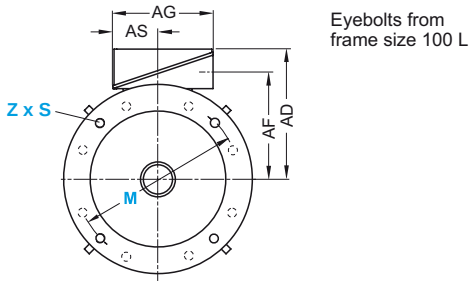
**Type of construction IM B35**
For flange dimensions, see Page 1/76 (Z = the number of retaining holes)




**Type of construction IM B14**
For flange dimensions, see Page 1/76 (Z = the number of retaining holes)



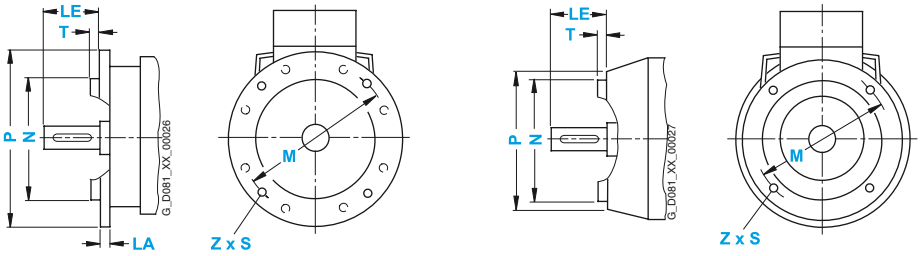




| For motor | | Dimension designation acc. to **IEC** | | | | | | DE shaft extension | | | | | | | NDE shaft extension | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame size | Number of poles | HH | K | K' | L | LC | LL | D | DB | E | EB | ED | F | GA | DA | DC | EA | EC | EE | FA | GC |
| 100 L | 2, 4, 6, 8 | 96.5 | 12 | 16 | 321.5 | – | 112 | 28 | M10 | 60 | 50 | 5 | 8 | 31 | – | – | – | – | – | – | – |
| 112 M | 2, 4, 6, 8 | 96 | 12 | 16 | 311 | – | 112 | 28 | M10 | 60 | 50 | 5 | 8 | 31 | – | – | – | – | – | – | – |
| 132 S | 2, 4, 6, 8 | 115.5 | 12 | 16 | 380.5 | – | 130 | 38 | M12 | 80 | 70 | 5 | 10 | 41 | – | – | – | – | – | – | – |
| 132 M | 2, 4, 6, 8 | 115.5 | 12 | 16 | 380.5 | – | 130 | 38 | M12 | 80 | 70 | 5 | 10 | 41 | – | – | – | – | – | – | – |
| 160 M | 2, 4, 6, 8 | 155 | 15 | 19 | 510 | – | 145 | 42 | M16 | 110 | 90 | 10 | 12 | 45 | – | – | – | – | – | – | – |
| 160 L | 2, 4, 6, 8 | 155 | 15 | 19 | 510 | – | 145 | 42 | M16 | 110 | 90 | 10 | 12 | 45 | – | – | – | – | – | – | – |

## Dimensions

### Dimensional drawings (continued)

*Flange dimensions*




In DIN EN 50347, flanges FF with through holes and flanges FT with tapped holes are assigned to frame sizes. The designation of flange A and C according to DIN 42948 (invalid since 09/2003) are also listed for information purposes. See the table below. (Z = the number of retaining holes)

| Frame size | Type of construction | Flange type | Flange with Through holes (**FF**/A) Tapped holes (**FT**/C) | | Dimension designation acc. to **IEC** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | According to DIN EN 50347 | Acc. to DIN 42948 | **LA** | **LE** | **M** | **N** | **P** | **S** | **T** | **Z** |
| **100 L** | IM B5, IM B35, IM V1, IM V3 | Flange | **FF 215** | A 250 | 11 | 60 | 215 | 180 | 250 | 14.5 | 4 | 4 |
| | IM B14, IM B34, IM V18, IM V19 | Standard flange | **FT 130** | C 160 | – | 60 | 130 | 110 | 160 | M8 | 3.5 | 4 |
| | IM B14, IM B34, IM V18, IM V19 | Special flange (next larger standard flange) | **FT 165** | C 200 | – | 60 | 165 | 130 | 200 | M10 | 3.5 | 4 |
| **112 M** | IM B5, IM B35, IM V1, IM V3 | Flange | **FF 215** | A 250 | 11 | 60 | 215 | 180 | 250 | 14.5 | 4 | 4 |
| | IM B14, IM B34, IM V18, IM V19 | Standard flange | **FT 130** | C 160 | – | 60 | 130 | 110 | 160 | M8 | 3.5 | 4 |
| | IM B14, IM B34, IM V18, IM V19 | Special flange (next larger standard flange) | **FT 165** | C 200 | – | 60 | 165 | 130 | 200 | M10 | 3.5 | 4 |
| **132 S, 132 M** | IM B5, IM B35, IM V1, IM V3 | Flange | **FF 265** | A 300 | 12 | 80 | 265 | 230 | 300 | 14.5 | 4 | 4 |
| | IM B14, IM B34, IM V18, IM V19 | Standard flange | **FT 165** | C 200 | – | 80 | 165 | 130 | 200 | M10 | 3.5 | 4 |
| | IM B14, IM B34, IM V18, IM V19 | Special flange (next larger standard flange) | **FT 215** | C 250 | – | 80 | 215 | 180 | 250 | M12 | 4 | 4 |
| **160 M, 160 L** | IM B5, IM B35, IM V1, IM V3 | Flansch | **FF 300** | A 350 | 13 | 110 | 300 | 250 | 350 | 18.5 | 5 | 4 |
| | IM B14, IM B34, IM V18, IM V19 | Normflansch | **FT 215** | C 250 | – | 110 | 215 | 180 | 250 | M12 | 4 | 4 |