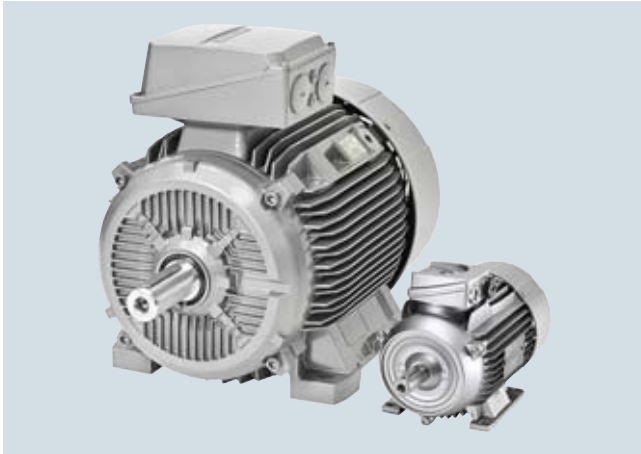


Orientation

SIMOTICS GP/SD 1LE1/1PC1 Standard Motors

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 minimizing energy consumption here to secure competitiveness today and in the future. The environment will also profit from reduced energy consumption.

This is the reason that already today we are developing a new generation of low-voltage motors. Innovative rotors create the best requisites for motors with a high degree of efficiency. IE1 and IE2 motors with the same output have the same dimensions. The new motors for IE2, IE3 and IE4 offer considerable energy savings and protect our environment. We also consider environmental compatibility and sustainable use of resources during production. Potting compounds and coatings are, for example, solvent-free.

The modular mounting concept provides total flexibility. Each motor is based on a uniform concept for all markets worldwide. Our motors are manufactured according to the most advanced ecological standards.

The new 1LE1 family of motors is therefore one of the most compact in the world, because it is manufactured using innovative technology. For an optimized design, a compound of highly conductive materials is used in the rotor (up to frame size 200). This results in minimum rotor losses and an excellent starting and switching response.

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

The 1LE1/1PC1 family of motors comprises two main series:

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

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

Brief overview	
Output and voltage range:	0.3 ... 45 kW for all commonly used voltages
Frame sizes and types of construction:	80 ... 200 in all common types of construction
Rated speed:	750 ... 3600 rpm
Number of poles:	2, 4, 6, 8
Efficiency classes:	• IE1 (Standard Efficiency) • IE2 (High Efficiency) • IE3 (Premium Efficiency) • IE4 (Super Premium Efficiency) • NEE (NEMA Energy Efficient, according to NEMA MG, Table 12-11) • NPE (NEMA Premium Efficient, according to NEMA MG, Table 12-12)

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

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

Brief overview	
Output and voltage range:	0.18 ... 200 kW for all commonly used voltages
Frame sizes and types of construction:	71 ... 315 in all common types of construction
Rated speed:	750 ... 3600 rpm
Number of poles:	2, 4, 6, 8
Efficiency classes:	• IE1 (Standard Efficiency) • IE2 (High Efficiency) • IE3 (Premium Efficiency) • IE4 (Super Premium Efficiency) • NEE (NEMA Energy Efficient, according to NEMA MG, Table 12-11) • NPE (NEMA Premium Efficient, according to NEMA MG, Table 12-12)

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

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

Motors with increased output and compact construction (1LE1)

Motors with increased output and compact construction can be used to advantage in confined spaces. For a slightly longer overall length, the output is at least as high as that of the next largest frame size. These compact motors are also optimized for efficiency. They are offered in IE2 and IE3 and therefore reduce operating costs.

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

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

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

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

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

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

Preferred and Express motors

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

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

The complete range is covered by Price List D 81.1 P Part 1 "Preferred and Express Motors".

Benefits

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

Greater efficiency

Innovative rotor and manufacturing technology has been implemented for the IE1, IE2, IE3 and IE4 high efficiency motor variants. The energy-efficient motors are therefore considerably more compact.

The SinaSave Webtool can be used to calculate the energy saving potential and life cycle costs of energy-efficient motors. SinaSave can be downloaded free of charge from the following website:

www.siemens.com/sinasave

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

A wider range of applications

The motors are certified for worldwide use and satisfy high standards of quality (confirmed, for example, by CSA²⁾, UL³⁾, CQC⁴⁾).

Improved design

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

Greater output

For the same frame size, the high-performance motors offer one complete rated output level more. We are also consistently implementing energy efficiency improvements here, too. The motors are offered (based on the categories of IEC 60034-30-1) in various efficiency classes.

More flexibility

The optimized design of the motors makes installation easier in general. Encoders, brakes and separately driven fans can be retrofitted easily. Terminal 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 500 V can be operated either directly on the line or on the converter.

For general purpose applications: SIMOTICS GP motors with an aluminum housingParticularly user friendly

The previously introduced, well-proven, obliquely partitioned terminal box is being implemented consistently throughout the entire motor series.

Special export line

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

¹⁾ Start of delivery ex stock planned for end of 2015.

²⁾ Canadian Standard Association

³⁾ Underwriters Laboratories Inc.

⁴⁾ China Quality Certification