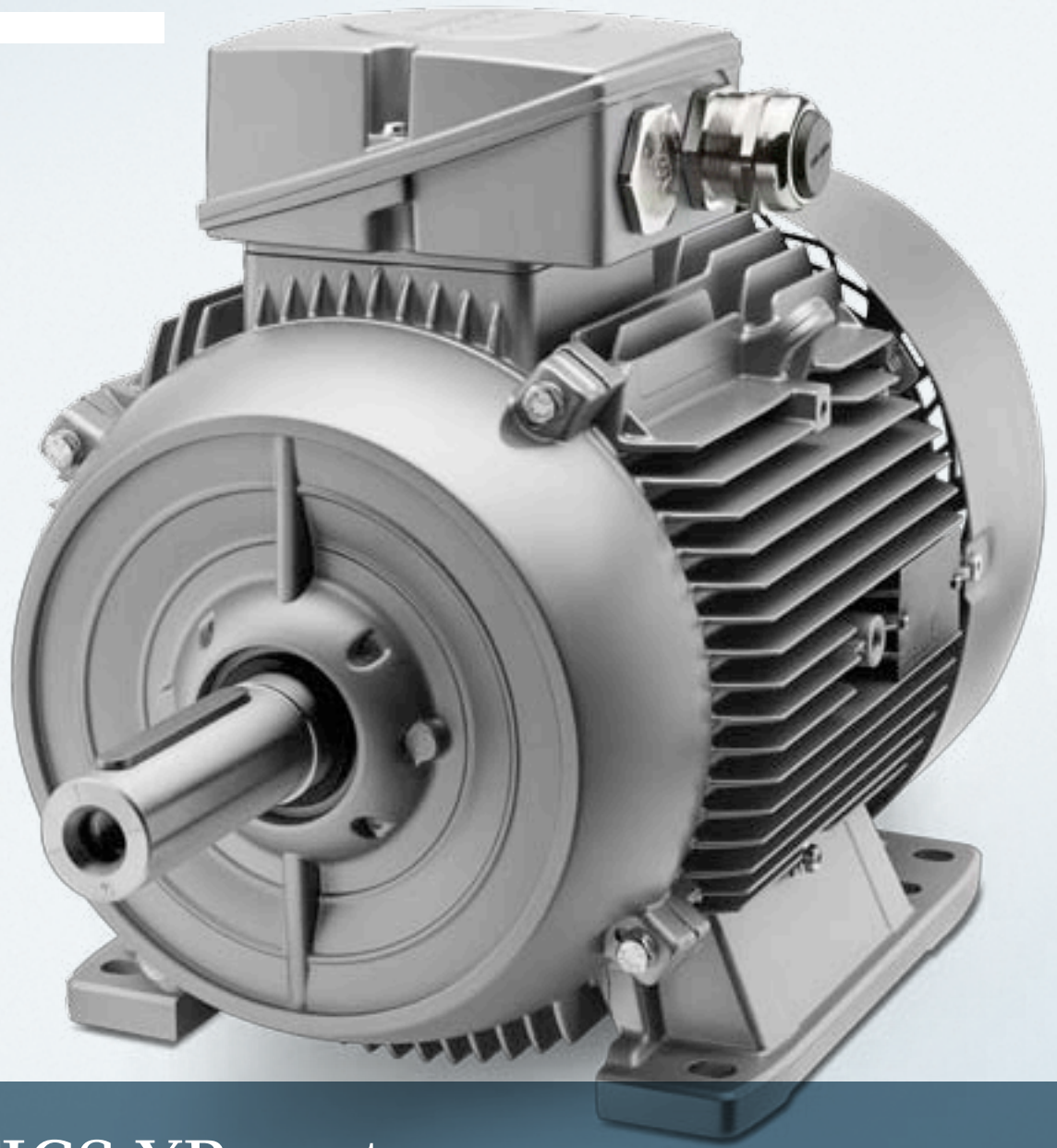


SIEMENS



SIMOTICS XP motors

Explosion protected 1MB1 motors in type of protection Ex t and Ex nA – for safe and energy-efficient operation

[siemens.com/simotics-xp](https://www.siemens.com/simotics-xp)

Answers for industry.

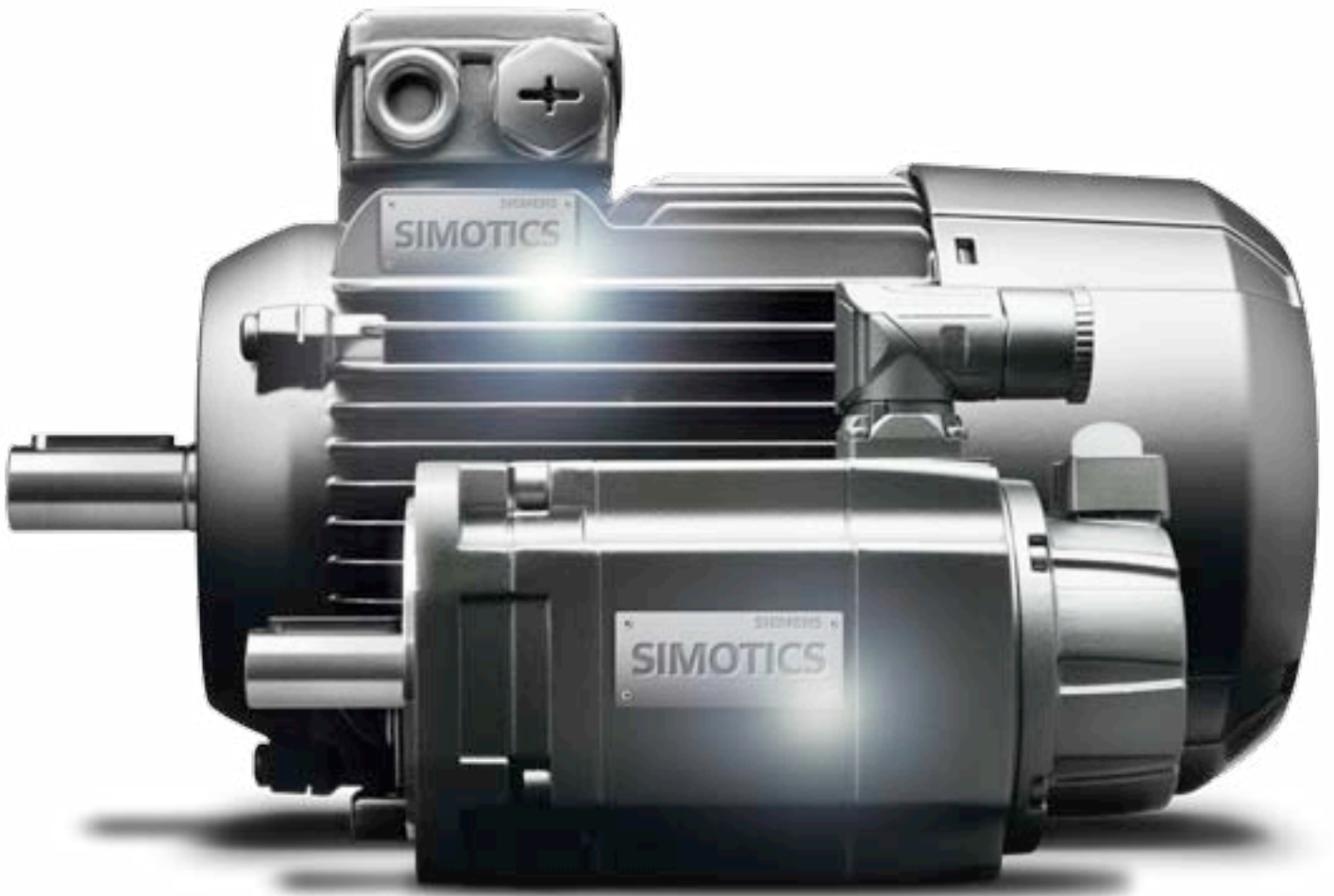
The world's largest range of motors – SIMOTICS

The history behind the world's most comprehensive range of motors today started about 150 years ago when in 1866, Werner von Siemens developed the dynamoelectric principle. This was the platform for the design of high-performance electric motors, therefore creating the basis for the widespread use of electric motors in industry. Motor development has been a core business of the company since then – and Siemens, with experience that goes back more than a century, sets the pace when it comes to innovative motor technology.






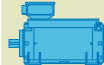





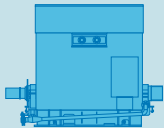
Today, countless millions of motors from Siemens are efficiently powering industrial plants and systems around the globe: in all sectors, applications and power classes. The range starts with energy-efficient low-voltage motors through motion control motors with a high dynamic performance up to powerful high-voltage motors and well-proven DC motors. Motors that have proven themselves in countless applications and that are extremely attractive as a result of their quality, efficiency and compactness. The only thing that was missing up until now was a name reflecting their overall performance. We now have it: SIMOTICS.

SIMOTICS stands for:

- 125 years of experience in building electric motors
- The most extensive range of motors worldwide
- Optimum solutions in all sectors, regions and power classes
- Innovative motor technologies with the highest quality and reliability
- Highest dynamic performance, precision and efficiency but at the same time, with an optimum level of compactness
- Motor-side integration into the drive train
- A global network of skill sets and worldwide service around the clock



SIMOTICS

Low-voltage motors for line and converter operation						Motors for motion control				DC motors	High-voltage motors
General Purpose	Severe Duty	Trans-standard	Definite Purpose	Explosion Protected	High Torque	Servo	Main	Linear	Torque	Direct current	High voltage
GP	SD	TN	DP	XP	HT	S	M	L	T	DC	HV
											

Safety from every perspective

Our explosion-protected SIMOTICS XP motors in non-sparking and dust explosion protection versions are based on our well-proven standard 1LE1 motors. They safely and reliably comply with the requirements for hazardous Zones 2, 21 and 22. Especially the IE2 (High Efficiency) and IE3 (Premium Efficiency) versions guarantee environmentally friendly operation with a fast payback time. A common platform offers flexibility: Each motor is based on an integrated, unified concept to address all of the global markets.

Platform concept – standard around the globe

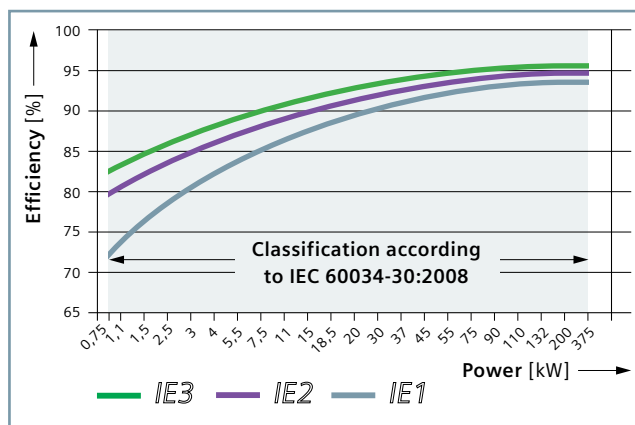
1MB1 motors are based on the same platform as our well-proven 1LE1 motors. They have the same dimensions and operating data, and with their diagonally split terminal box, guarantee simple installation and commissioning.

Efficiency and safety

The 1MB1 series ensures that the mechanical interface to the driven machine remains the same when transitioning to a higher efficiency class. In many cases even the length remains the same. Presently, globalization and different local efficiency regulations are challenges that must be met. The platform concept of the motor family offers products that take into account local requirements.

Already equipped today to tackle the challenges of tomorrow

From 750 Watts up to 375 kW, the motors are classified in efficiency classes according to IEC 60034-30. In order to ensure that the motors can be simply changed over to a higher efficiency class, they are offered as compact as possible; frequently with the same dimensions, irrespective of the efficiency class. This is what we promise: Whether IE1 or IE3, within the 1MB1 family, the interfaces to your driven machine do not change.



Environmentally compatible production

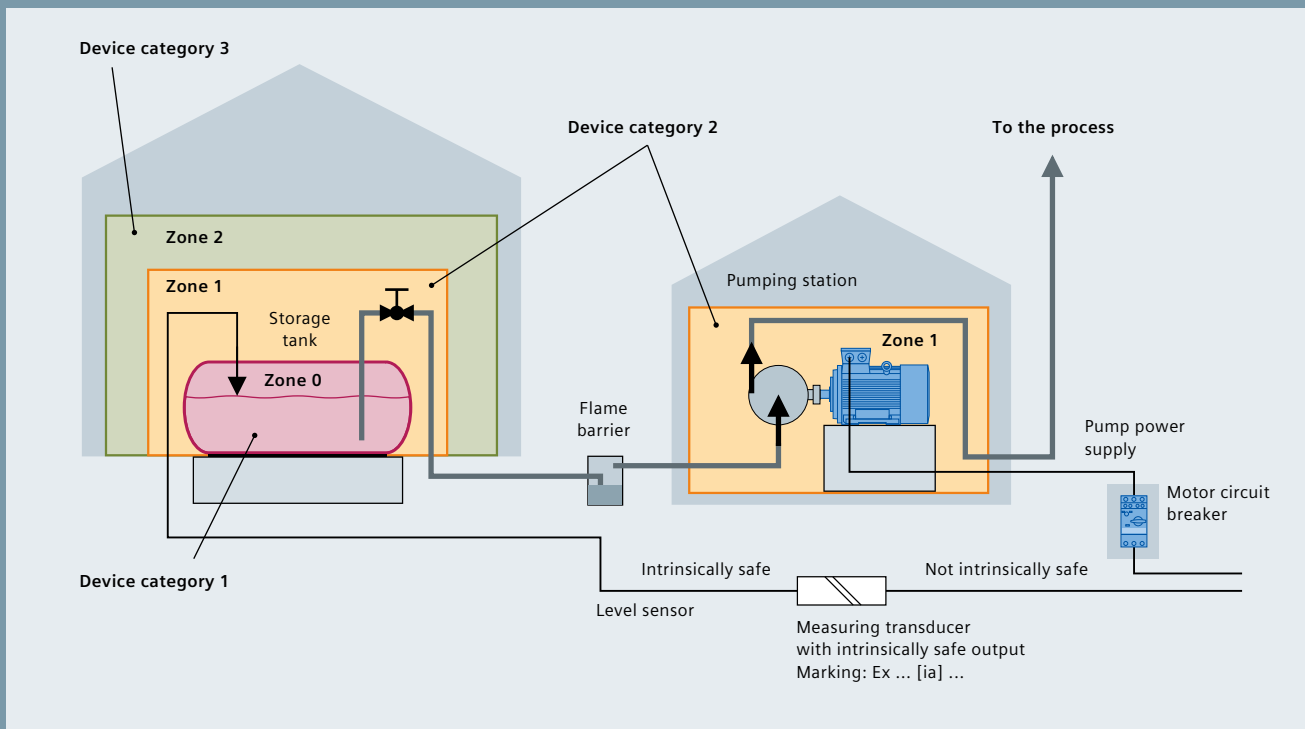
Our motors are manufactured employing the latest, environmentally friendly technologies. Here, we place a lot of emphasis on an environmentally compatible production environment that carefully uses valuable resources with solvent-free impregnation and paint. For motors, we combine high-quality materials for maximum efficiency and, in turn, you benefit from a compact, reliable motor.

Create something new - while keeping what has been well proven

You can depend on the technology leader! Although our 1MB1 series of motors is packed with new and innovative features, a lot stays the same: We can provide you with our proven, reliable service – locally around the world in over 130 countries. Benefit from our products that are perfectly coordinated with one another, from the motor to the control system – for standard and integrated systems from a single source.

And a lot more: Because, as one of the world's leading suppliers of drive and automation technology, we understand the requirements of our customers and we incorporate these into all of our developments. Discover the possibilities and potential that our 1MB1 low-voltage motors offer!

An example of zone classification (according to ATEX)



Device category	Avoiding effective sources of ignition	Level of safety	Can be used in zones	Presence of an explosive atmosphere
3	In normal operation	Normal	2, 22	Infrequently and briefly
2	Also for the usual operating disturbances	High	1,2, 21, 22	Occasionally
1	Also for infrequent operating disturbances	Very high	0, 1, 2, 20, 21, 22	For long period of time, continuously or frequently

The first step when planning and selecting explosion-protected equipment is that the company operating the plant or system classifies the operating and plant areas into hazardous zones. The company operating the plant is also responsible for creating an explosion-protection document which documents:

- that the explosive hazards were determined and an assessment was carried out
- that necessary and appropriate measures have been taken to avoid hazards due to explosions
- which areas are classified into which zones
- ...

The zone classification refers to normal plant operation.

SIMOTICS XP:

Motors with aluminum frame

Motors with aluminum frame are suitable for a wide range of drive applications in environments with infrequent or occasional explosive hazards as a result of dust or gas. As the motors are especially light, they are ideally suited for applications involving pumps, fans and compressors. However, they also operate reliably in mixer applications.

Compactness

The well-proven motors from shaft height 100 up to 160 have the same frame for efficiency classes IE1 and IE2. This represents a special advantage, as machines do not have to be redesigned when upgrading their efficiency. In some cases, even the motors with Premium Efficiency (IE3) have the same frame as those of High Efficiency motors. However, it is always guaranteed that the mechanical interface to the driven machine remains the same.

Especially user friendly

The well-proven terminal box of the 1LE1 series has been kept. It is diagonally split, and can be rotated through $4 \times 90^\circ$. This makes it simpler to install motors in restricted spaces, as the motor connecting cable can be routed to the motor from any direction. This simplifies and shortens installation. In addition, the terminal box is preconfigured with a terminal board.

Application areas with difficult requirements

SIMOTICS XP motors reliably operate in dust explosive atmospheres, Zones 21 and 22 as well as in the chemical industry, plastics processing and grain mills. The same is true for explosive atmospheres of Zone 2 such as in gas plants, coking plants, paint shops, distilleries and breweries.



Explosion-protected motors in a design close to the standard design.

High degree of functionality combined with a dynamic optical design:
1MB1 motor with protective cover



Data, facts, details – General Purpose motors	
Frame size	100L to 160L
Power range	0,75 kW to 18,5 kW
No. of poles	2/4/6/8
Motor material	Frame: aluminum Terminal box: aluminum Fan cover: metal
Efficiency classes	IE1 = Standard Efficiency IE2 = High Efficiency IE3 = Premium Efficiency
Efficiency classification according to IEC 60034-30	IE1, IE2, IE3 (2-, 4-, 6-pole)
Certificate from a nominated testing body for all types of protection	Zone 21: II 2D Ex tb IIIC Zone 22: II 3D Ex tc IIIB Zone 2: II 3G Ex nA IIC T3 Gc
Degree of protection	IP55: Zone 22 and Zone 2 IP65: Zone 21
Voltages	All of the usual voltages
Frequency	50 Hz and 60 Hz
Type of construction	All of the usual types of construction
Cooling type	Surface cooled (TEFC)
Temperature class	155 (F) utilized to 130 (B)
Insulation system	DURIGNIT® IR 2000

More information:

Motors

www.siemens.com/simotics

Efficiency classes for low-voltage motors

www.siemens.com/international-efficiency

Energy-efficient production and energy management

www.siemens.com/energy-efficient-production

Tools

www.siemens.com/engineering-tools

Contact person

www.siemens.com/automation/partner

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