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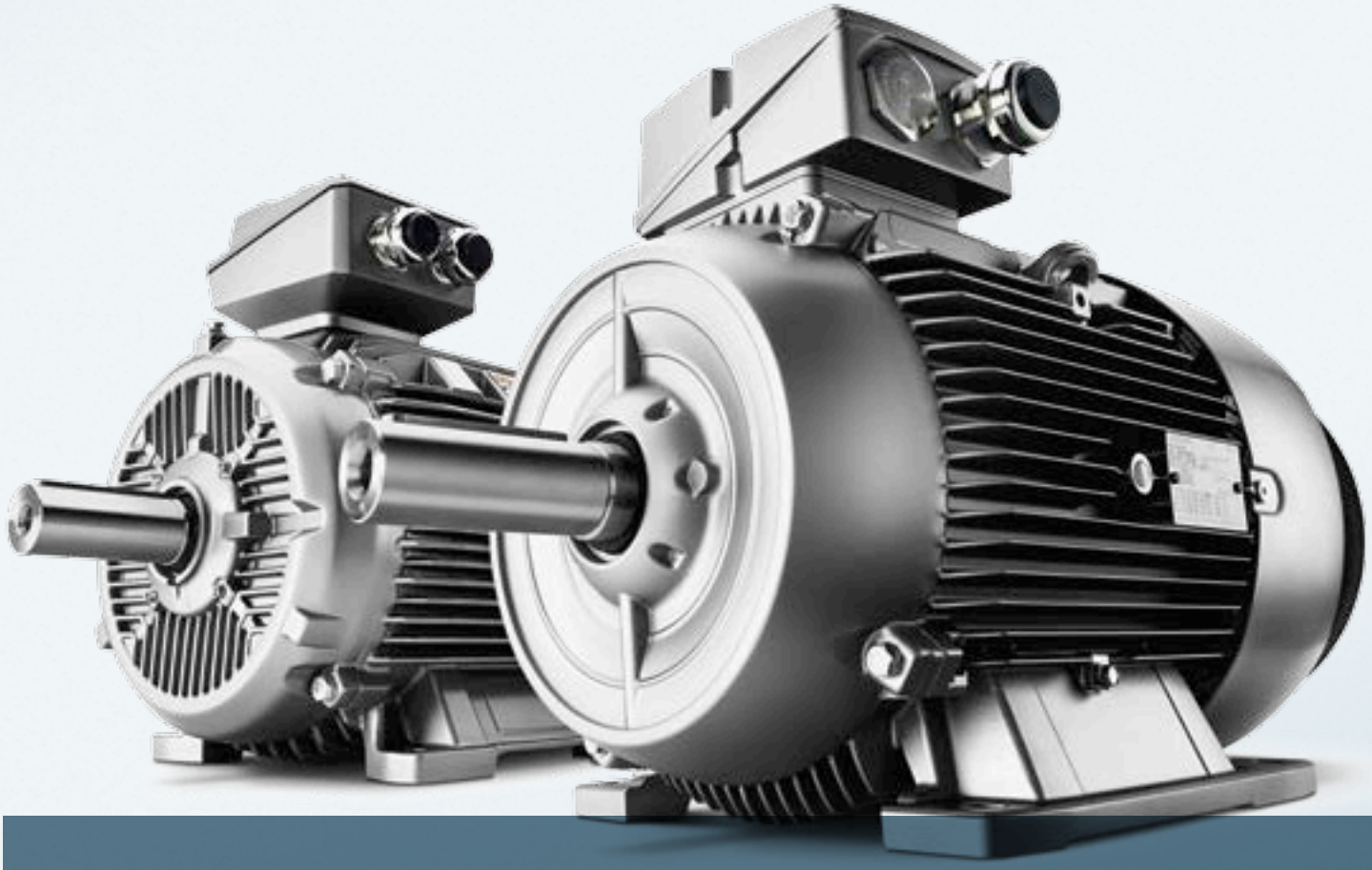


SIMOTICS XP Motors

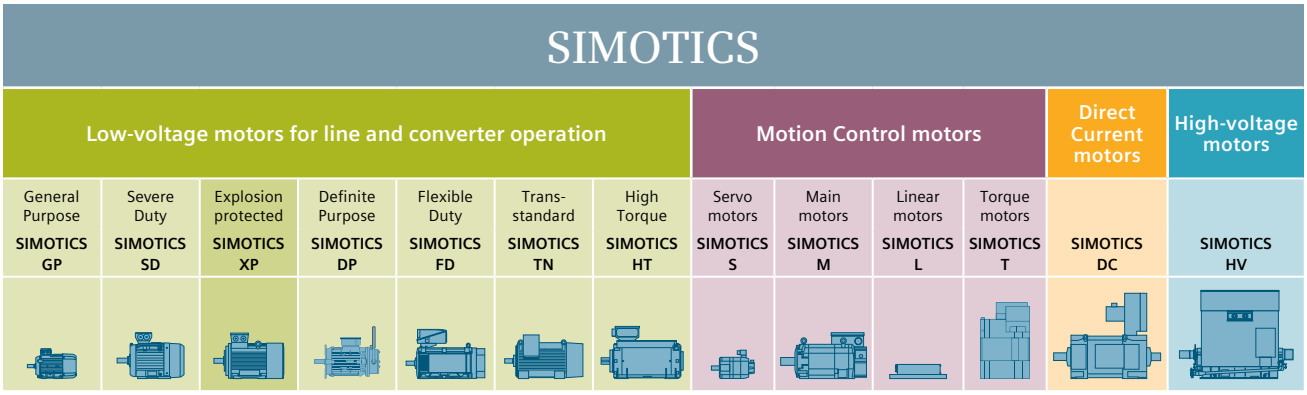
Explosion-protected 1MB1 motors in dust explosion protection and non-sparking versions

siemens.com/simotics-xp

Answers for industry.

Safe from every perspective

SIMOTICS XP explosion-protected motors belong to the world's most comprehensive motor portfolio: SIMOTICS includes low-voltage motors, motors for motion control applications, DC and high-voltage motors. With the widest range of power & performance classes and frame sizes, it is safe to say that you will find the optimum motor to address your specific requirements.



Safe from every perspective

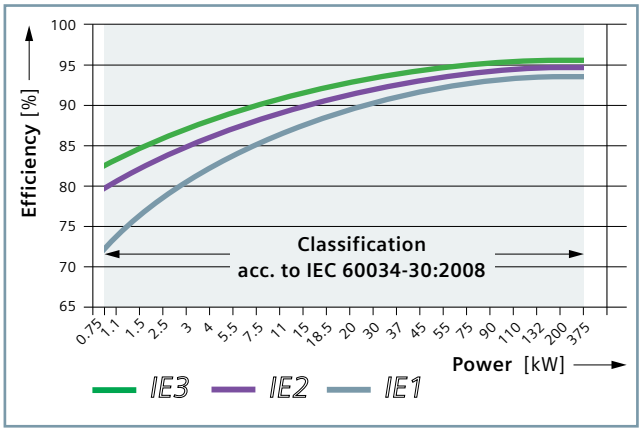
SIMOTICS XP explosion-protected motors in non-sparking and dust explosion protection versions safely and reliably comply with the requirements of hazardous zones 2, 21 and 22. Especially the versions in IE2 (High Efficiency) and IE3 (Premium Efficiency) guarantee environmentally friendly operation with a fast payback time.

Globally standard platform concept

1MB1 motors are based on the same platform as the 1LE1 motors, which have already proven themselves millions of times over. They have the same dimensions and operating data, and are extremely simple to install and commission as a result of the diagonally split terminal box.

Equipped today for the requirements of tomorrow

Motors from 750 W up to 375 kW are assigned efficiency classes according to IEC 60034-30. This regulation does not apply to explosion-protected motors. For energy-efficient operation, we offer our 1MB1 motors with efficiency classes IE2 and IE3.



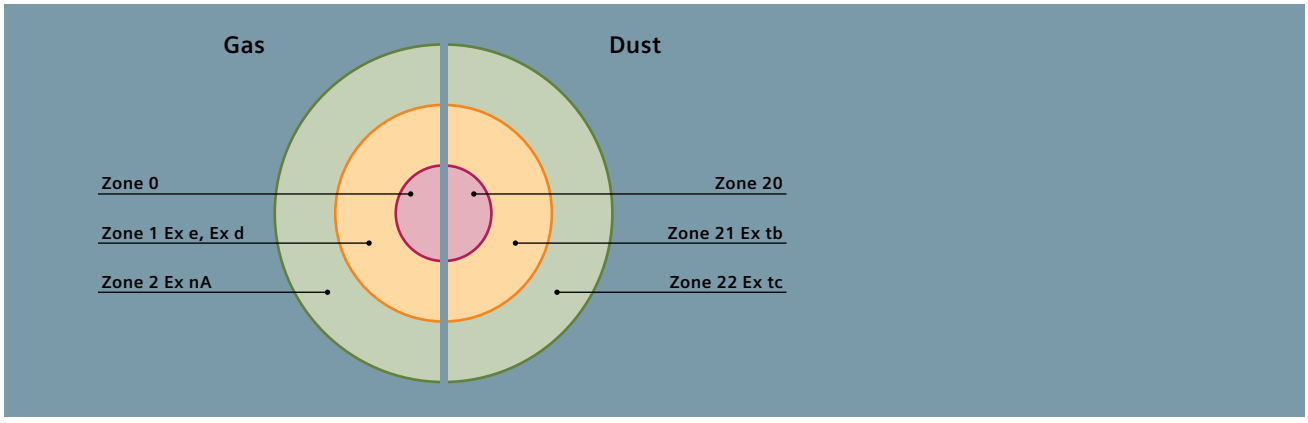
Efficiency and safety

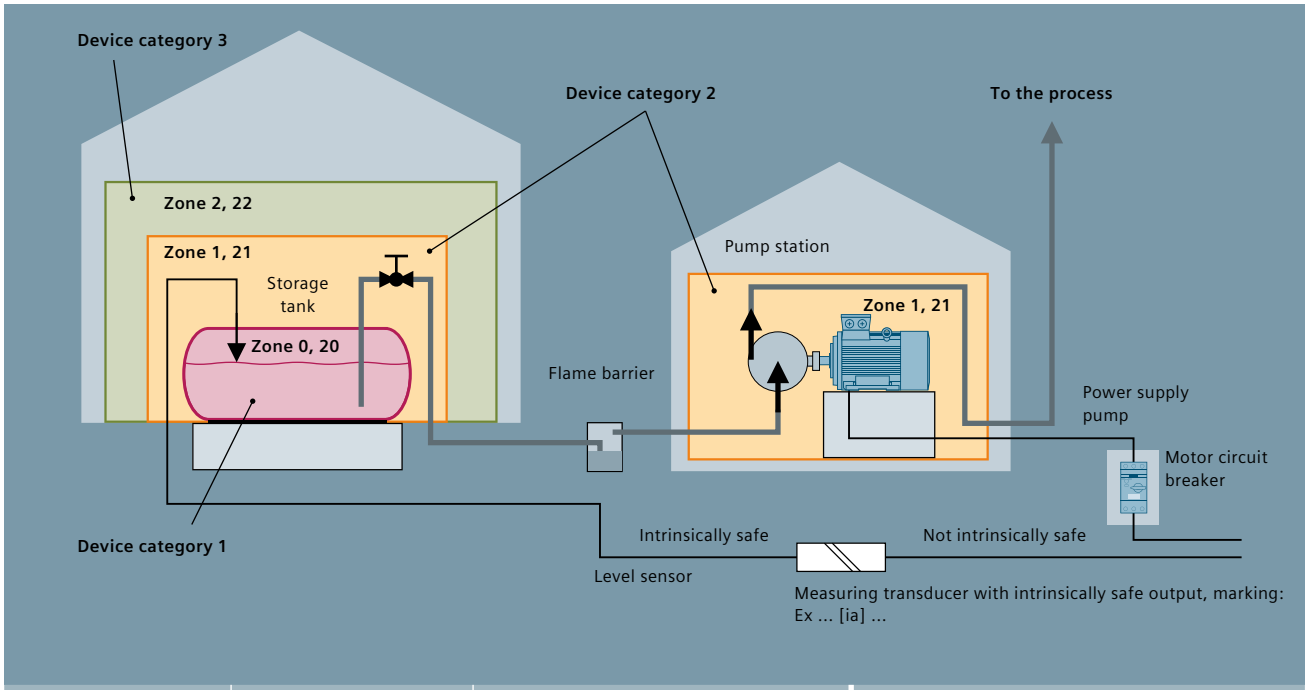
The 1MB1 series ensures that the mechanical interface to the driven load always remains the same when transitioning to a higher efficiency class. Generally, the length does not even change. Globalization and the different local efficiency regulations represent challenges that must be addressed.
The platform concept of the motor family offers products that take into account the widest range of local requirements.

Environmentally compatible production

Our motors are produced employing the latest environmentally friendly technologies. We put a lot of emphasis on environmentally compatible production that carefully uses resources with solvent-free impregnation and motor paint. When producing our motors, we combine high-quality materials to achieve maximum efficiency – and you obtain a compact and reliable motor.

Zone classification example (according to ATEX)





Device category	Degree of safety	Can be used in zones	Probability of the occurrence of an explosive atmosphere
3	Normal	○ 2, 22	○ Infrequently and briefly
2	High	○ 1, 21 ○ 2, 22	○ Occasionally
1	Very high	○ 0, 20 ○ 1, 21 ○ 2 22	○ For a long time, continuously or frequently

SIMOTICS XP: motors with cast iron enclosure

Motors with cast iron enclosure are admirably suited for drive applications in the process industry. They are especially rugged and the ideal choice, especially in the chemical and petrochemical industries – as well as in the oil & gas industry for applications involving pumps, fans and compressors. They also operate with a high degree of reliability as mixer and agitator drive.

Compactness

The motors are available in efficiency classes IE2 and IE3 in shaft heights from 100 to 315. The mechanical interface to the driven machine remains the same to ensure simple and straightforward retrofit.

Motors to address various demands

Every particular application has its own specific requirements. In order to be able to even better adapt the motor to the specific application, motors with cast iron enclosure are available in the Basic Line and Performance Line versions. The differences are listed in the table:

Function	Basic Line	Performance Line
Bearing size	62 (63 from shaft height 280)	63
Regreasing system	Standard from shaft height 280, optional for shaft heights 100 up to 250	Standard from shaft height 160, optional for shaft heights 100 to 132
Payment system	Standard paint finish, corrosivity category C2	Special paint finish, corrosivity category C3
Motor protection	Optional	PTC
Warranty	12 months	36 months

Rugged cast iron enclosure and reliable operation

Especially user friendly

1MB1 motors consequentially use the well proven terminal box of the 1LE1 series. It is diagonally split, and can be rotated 4x through 90°. This simplifies connecting the motor where space is restricted, as the motor connecting cable can be fed in from each direction. This makes work easier and the installation time is reduced. Further, the terminal box is preconfigured with a terminal board.

Reliability

Especially in hazardous zones, motor safety and reliability have topmost priority. As a consequence, the motors are designed and built so that they reliably operate in dust explosive atmospheres, Zones 21 and 22, as is the case in the chemical industry, plastic processing and agriculture – or in gas explosive atmospheres, Zone 2, which applies in the chemical and petrochemical industries as well as in the oil & gas industry.

High efficiency as well as safe and reliable operation over the complete lifecycle

Data, facts, details – motors with cast iron enclosure	
Size	100 L to 315 L
Power range	0.75 kW to 200 kW
Number of poles	2/4/6/8
Motor material	Enclosure: cast iron Terminal box: cast iron Fan cover: metal Rating plate: metal
Efficiency classes	IE2 = High Efficiency IE3 = Premium Efficiency
Efficiency classification acc. to IEC 60034-30	IE2, IE3 (2, 4, 6-pole)
Certificate of a notified 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
Degrees 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 method	Surface cooled (TEFC)
Temperature class	155 (F) utilized acc. to 130 (B)
Insulation system	DURIGNIT® IR 2000

SIMOTICS XP: motors with aluminum enclosure

Motors with aluminum enclosure are suitable for a wide range of drive applications in environments that are infrequently or occasionally subject to risk of explosion as a result of dust or gas. As the motors are especially light, they are ideal for pump, fan and compressor applications. However, they also operate reliably when it comes to agitators and mixers.

Compactness

In IE1 and E2, these well proven motors have the same enclosure from SH 100 up to 160. This is a special advantage, as machines do not have to be redesigned when moving to a higher efficiency. In some instances, even Premium Efficiency motors (IE3) have the same enclosure as High Efficiency motors. However, it is always guaranteed that the mechanical interface to the driven load remains the same.

Especially user friendly

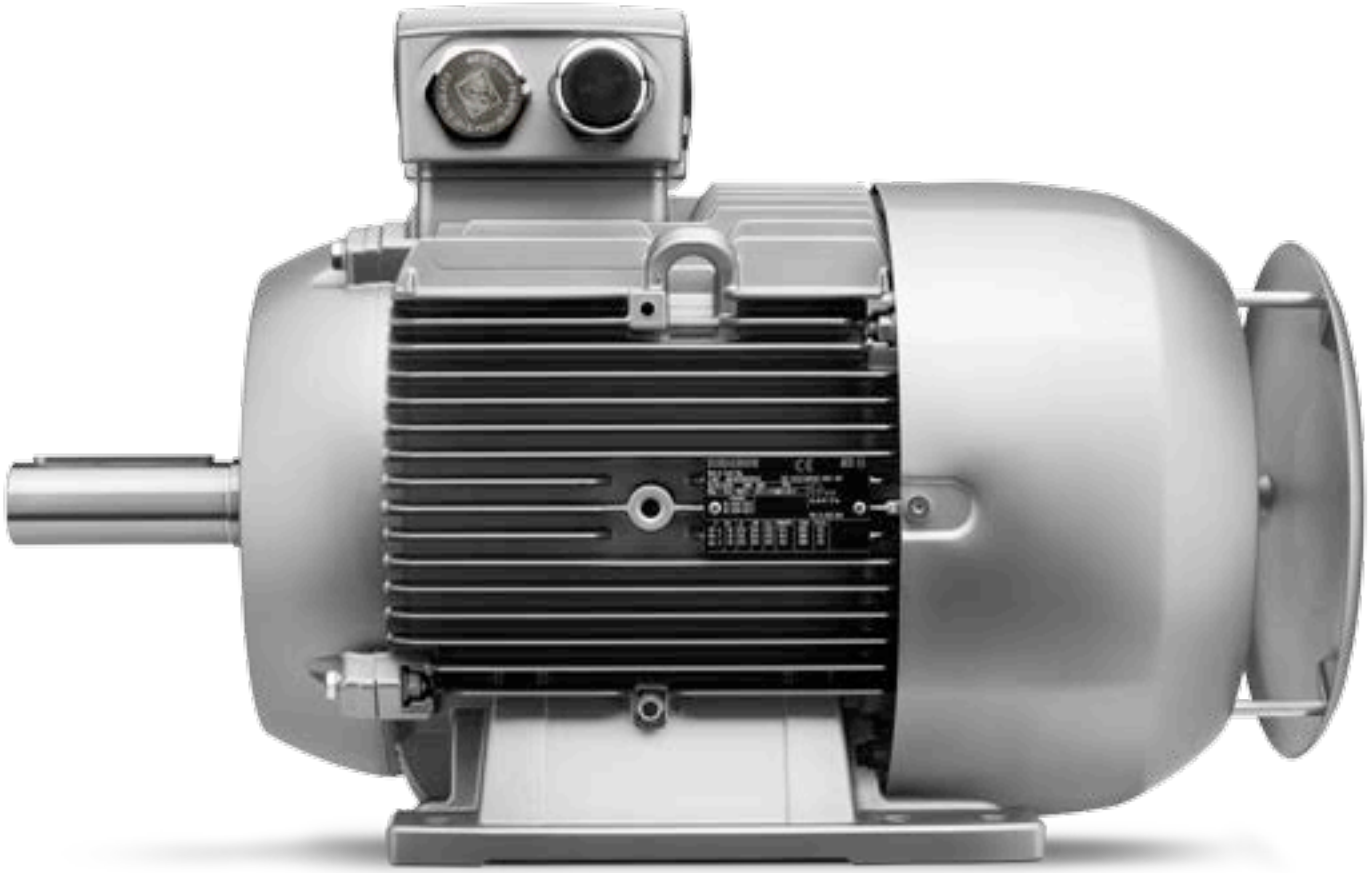
The well-proven terminal box of the 1LE1 series is also used here. It is diagonally split and can be rotated 4x through 90°. This makes it simpler to install the motors in restricted spaces as the motor connecting cable can be fed in from any direction.
This simplifies work and reduces the installation time. Further, the terminal box is equipped with a terminal board.

Reliability

SIMOTICS XP motors reliably operate in dust explosive atmospheres, Zones 21 and 22 as is the case in the woodworking industry, plastics processing and grain mills – or in gas explosive atmospheres Zone 2, such as gas stations, gas plants, coking plants, paint shops, distilleries and breweries.

Design close to the standard and simple handling

High degree of functionality combined with dynamic optical design:
1MB1 motor with canopy



Data, facts, details – motors with aluminum enclosure	
Size	100 L to 160 L
Power range	0.75 kW to 18.5 kW
Number of poles	2/4/6/8
Motor material	Enclosure: 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 notified body for all types protection	Zone 21: II 2D Ex tb IIIC Zone 22: II 3D Ex tc IIIB Zone 2: II 3G Ex nA IIC T3 Gc
Degrees 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 method	Surface cooled (TEFC)
Temperature class	155 (F) utilized acc. to 130 (B)
Insulation system	DURIGNIT® IR 2000

There’s more to it

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